TOWN OF BOURNE
INTERDEPARTMENTAL ADVISORY FORM

325

OWNER/APPLICANT: Elizabeth Gillis

PROJECT LOCATION: 10 Harbor Way

NATURE OF REQUEST: New Const.

DATE: Jan. 14, 2020 DEPARTMENT: Inspection

ENGINERRING:

MAP: 45.0 PARCEL: 19.00 LOT: 13

Date of recording: 9.13.2005 Area: 8586SF Frontage: 82.41' Year Built: 2020

Zone: R40 Resource District: No Town Road: No Paved: No

Contiguous Lots? See ZBA Flood Zone: AE 17' Within 100' of Wetland? No

Owner: Elizabeth Gillis Warden Remarks: See Previous Plans; Boundary Issues

Department Head 1.21.2020 Date

PLANNING DEPARTMENT:

X Concurs ____ Does Not Concur

Remarks: OFA + Lot coverage ok, per enclosed sheet dated 10.16.

Buildable: See ZBA remand decision 11/20/19 #2017-420

Town Planner Date

PLANNING BOARD:

____ Concurs ____ Does Not Concur

Remarks: ____

Chairman Date

CONSERVATION:

SE7-1933

____ Must File ( ) Determination or ( ) Notice of Intent

X Need not file

Agent or member 10-29-2020 Date

BOARD OF HEALTH or SEWER:

✓ Concurs ____ Does Not Concur

Remarks: Septic permit #36-20 / Easements, variances, and nitrogen aggregation plans

T. Guarino 3/13/2020

4-22-20 Emailed to

TOWN OF BOURNE
INSPECTORS' DEPARTMENT

24 Perry Avenue
Buzzards Bay, MA 02532
Tel. 508-759-0600 ext. 1512

BUILDING PERMIT

DATE: 4/21/2020

PERMIT #: 20325

LOCATION: 10 HARBOR WAY

MAP: 45 PARCEL: 19

ZONING DISTRICT: R-40

LOT or UNIT: -

FLOOD ZONE: AE 17'

LOT AREA: 8,586

OWNER/APPLICANT: ELIZABETH GILLIS

CONTRACTOR: JOHN BRINTNALL

PERMIT TO: NEW CONSTRUCTION - RESIDENTIAL

PROJECT: *CONSTRUCT 3 BEDROOM SINGLE FAMILY DWELLING AS PER APPROVED PLANS*

FOUNDATION ONLY Certification Required

ESTIMATED COST: $313,000

PERMIT FEE: $ WAIVED

Inspector of Buildings

POST THIS CARD SO IT IS VISIBLE FROM STREET

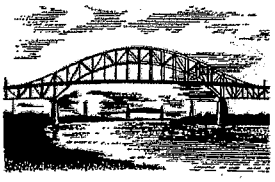
BUILDING INSPECTION APPROVALS	PLUMBING/GAS INSPECTION APPROVALS	ELECTRICAL INSPECTION APPROVALS
ROUGH	ROUGH	ROUGH
		FINAL
FINAL	FINAL	FIRE DEPT APPROVALS:
WORK SHALL NOT PROCEED UNTIL THE INSPECTOR HAS APPROVED THE VARIOUS STAGES OF CONSTRUCTION.	PERMIT WILL BECOME NULL AND VOID IF CONSTRUCTION WORK IS NOT STARTED WITHIN 6 MONTHS OF DATE THE PERMIT IS ISSUED AS NOTED ABOVE.	INSPECTIONS INDICATED ON THIS CARD CAN BE ARRANGED FOR BY TELEPHONE OR WRITTEN NOTIFICATION.

FOUNDATION ONLY Certification Required

APPROVED PLANS MUST BE RETAINED ON JOB SITE AND THIS CARD KEPT POSTED UNTIL FINAL INSPECTION HAS BEEN MADE. WHERE A CERTIFICATE OF OCCUPANCY IS REQUIRED, SUCH BUILDING SHALL NOT BE OCCUPIED UNTIL FINAL

TOWN OF BOURNE
Building Permit Application

24 Perry Avenue
Buzzards Bay, MA 02532
Tel. 508-759-0600 ext. 1512
Fax: 508-759-0611



Mail: ☐ Pick Up: ☐ Email: ☑ Bythebaybuilders@gmail.com

P/U Name/Phone #: _____

DATE: 1/7/20 FEE: waived

ADDRESS OF PROJECT: 10 Harbor Way

OWNER'S NAME: Elizabeth Gillis

OWNER'S MAILING ADDRESS: 34 Marisol Newport Coast, CA 92657 PHONE: 774-722-7327

ENGINEERING DEPARTMENT USE ONLY TL

Map:	45	Area:	8586 SF	Flood Zone:	✓
Parcel:	19	Frontage:	—	Elevations:	
Lot #:	13	< MILE OF COAST:	YES	Wet Lands:	No
Age:	—	Overlay:	No	Recorded:	YES
Zoning District:	R40	Town Sewer:		Septic:	✓
Water Resource:	No	Town Water:		Well:	✓

RECEIVED
JAN 14 2020

DESCRIPTION OF PROPOSED WORK

RESIDENTIAL: ✓ COMMERCIAL: ___

New Construction: ✓	Roof: ___	Siding: ___	Insulation: ___	Fence: ___
Addition: ___	Shed: ___	Tent: ___	Stove: ___	Solar: ___
DEMO: ___	Windows/Doors: ___		Storage Container: ___	
Occupancy Permit: ___	Sign: ___		Other (Specify Below): ___	

BRIEF DESCRIPTION OF PROPOSED WORK:
Modular Home / Manufactured Home

* BUILDINGS 75 YEARS OR OLDER ARE SUBJECT TO SECTION 3.1.4 OF TOWN BYLAWS AND REQUIRE A $50.00 FILING FEE AND SUBJECT TO PLANS UPON REQUEST.

BUILDING CHARACTERISTICS OF PROPOSED WORK

New Construction & Additions ONLY

	FIRST FLOOR	SECOND FLOOR	THIRD FLOOR
LENGTH	39'	39'	
WIDTH	27'-6"	27'-6"	
ELLS OR ADDITIONS			
SQ. FT. PER FLOOR	990	818	

GARAGE: _____ X _____ SQ. FT. _____

TOTAL SQ. FT. OF BUILDING: 1808

New Construction & Additions ONLY

Number of Stories: 2
Height: 32'-8" (TO HIGHEST POINT)

Number of Bedrooms: 3
Number of Bathrooms: 3
Number of Kitchens: 1

□□% OF LOT COVERAGE: 17 %

□□% OF GROSS FLOOR AREA TO LOT AREA: 23 %

New Construction and Additions ONLY

TYPE OF HEAT:

GAS: ✓ OIL: _____ ELECTRIC: _____

COMMERCIAL

USE GROUP: _____ TYPE OF CONSTRUCTION: _____

SPRINKLER SYSTEM: YES / NO PARKING SPACES: _____ HANDICAP SPACES: _____

ENGINEER/ARCHITECT: _____
CONTACT INFORMATION: _____

SET BACKS

29'-1" Feet from Front
38'-3 Feet from Rear

12'-1 Feet from Left
12'-3 Feet from Right

ESTIMATED CONSTRUCTION COST

Building: $ 270000
Electrical: $ 11000
Plumbing/Gas: $ 32000
Mechanical (HVAC): $
Mechanical (Fire Suppression): $
Total Project Cost: $ 313,000

Licensed Construction Supervisor (CSL)

Name of CSL Holder: John Brintnall
Address: 146 Blueberry Pond Dr
Brewster MA
Signature:
Phone: 774-722-7327
License Number: CS-106065
Expiration Date: 2/20/2020
List CSL Type (See Below): Unrestricted

Registered Home Improvement Contractor (HIC)

HIC Company/registrant Name: John E Brintnall
Address: 146 Blueberry Pond Dr
Brewster MA 02631
Signature:
Phone: 774-722-7327
Registration Number: 190754
Expiration Date: 02/22/2020

TYPE	DESCRIPTION
U	Unrestricted (up to 35,000 Cu.Ft.)
R	Restricted: 1 & 2 Family Dwelling
M	Masonry Only
RC	Residential Roofing Covering
WS	Residential Window and Siding
SF	Residential Solid Fuel Burning Appliance Installation
D	Residential Demolition

Workers' Compensation Insurance Affidavit (M.G.L. c. 152 § 25C(6))

Workers Compensation Insurance affidavit must be completed and submitted with this application. Failure to provide this affidavit will result in the denial of the issuance of the building permit

Signed Affidavit attached: Yes: ✓ No: ____

I, as **Contractor or Authorized Agent** hereby declare that the statements and information on the foregoing application are true and accurate, to the best of my knowledge and behalf.

Print Name of Contractor or Agent: John E Brintnall

Signature of Contractor

Date: 1/7/20

Owner Authorization to be completed when owner's agent or contractor applies for building permit

I, as Owner of the Subject property hereby authorize the above named contractor to act on my behalf in all matters relative to work authorized by this building permit application.

Signature of Owner
(signed under the pains and penalties of perjury)

Date: 1/3/20

OWNER RESPONSIBILITY FOR BUILDING PERMIT

An Owner who obtains a building permit to do his/her own work, or an owner who hires and unregistered contractor (not registered in the Home Improvement Contractor (HIC) Program), will ***not*** have access to the arbitration program or guaranty fund under M.G.L. c. 142A. Other important information on the HIC Program and Construction Supervisor Licensing (CSL) can be found in 780 CMR Regulations 110.R6 and 110.R5, respectfully.

Owners Signature

Date

For Town Use Only

TOWN SEWER / BOARD OF HEALTH

SEPTIC PERMIT # 36-20

COMMENTS:

approved

Signature: T. Guidrund 3/13/2020

CONSERVATION COMMISSION

FILE# _____

COMMENTS:

Signature: _____

GFA + Lot coverage ok per enclosed sheet dated 10.16.17 JC 1.24.

TOWN PLANNER

COMMENTS: Note site plan shows a property line overlap

GFA/Lot Coverage: however the engineer has shown the

Historic: yes / no side setback from overlap property line

Signature: CMoore 1/23/20

PLANNING BOARD

SITE PLAN REVIEW #: _____ SPECIAL PERMIT #: _____ WAIVER: _____

Signature: _____

ZONING BOARD OF APPEALS

SPECIAL PERMIT #: _____ VARIANCE #: _____

INSPECTOR OF BUILDINGS

COMMENTS:

4/16/2020

APPROVED BY INSPECTOR OF BUILDINGS

The Commonwealth of Massachusetts
Department of Industrial Accidents
1 Congress Street, Suite 100
Boston, MA 02114-2017
www.mass.gov/dia

Workers' Compensation Insurance Affidavit: Builders/Contractors/Electricians/Plumbers.
TO BE FILED WITH THE PERMITTING AUTHORITY.

Applicant Information **Please Print Legibly**

Name (Business/Organization/Individual): By the Bay Builders John E Brintnall

Address: 146 Blueberry Pond Dr

City/State/Zip: Brewster MA 02631 Phone #: 774-722-7327

Are you an employer? Check the appropriate box:

1. ☐ I am a employer with _____ employees (full and/or part-time).*
2. ☐ I am a sole proprietor or partnership and have no employees working for me in any capacity. [No workers' comp. insurance required.]
3. ☐ I am a homeowner doing all work myself. [No workers' comp. insurance required.]†
4. ☐ I am a homeowner and will be hiring contractors to conduct all work on my property. I will ensure that all contractors either have workers' compensation insurance or are sole proprietors with no employees.
5. ☑ I am a general contractor and I have hired the sub-contractors listed on the attached sheet. These sub-contractors have employees and have workers' comp. insurance.‡
6. ☐ We are a corporation and its officers have exercised their right of exemption per MGL c. 152, §1(4), and we have no employees. [No workers' comp. insurance required.]

Type of project (required):

7. ☑ New construction
8. ☐ Remodeling
9. ☐ Demolition
10. ☐ Building addition
11. ☐ Electrical repairs or additions
12. ☐ Plumbing repairs or additions
13. ☐ Roof repairs
14. ☐ Other _____

*Any applicant that checks box #1 must also fill out the section below showing their workers' compensation policy information.
† Homeowners who submit this affidavit indicating they are doing all work and then hire outside contractors must submit a new affidavit indicating such.
‡Contractors that check this box must attached an additional sheet showing the name of the sub-contractors and state whether or not those entities have employees. If the sub-contractors have employees, they must provide their workers' comp. policy number.

I am an employer that is providing workers' compensation insurance for my employees. Below is the policy and job site information.

Insurance Company Name: AEI Associated Employers Insurance

Policy # or Self-ins. Lic. #: WCC500501843720194 Expiration Date: 3/01/2020

Job Site Address: 10 Harbor Way City/State/Zip: Pocasset MA 02559

Attach a copy of the workers' compensation policy declaration page (showing the policy number and expiration date).

Failure to secure coverage as required under MGL c. 152, §25A is a criminal violation punishable by a fine up to $1,500.00 and/or one-year imprisonment, as well as civil penalties in the form of a STOP WORK ORDER and a fine of up to $250.00 a day against the violator. A copy of this statement may be forwarded to the Office of Investigations of the DIA for insurance coverage verification.

I do hereby certify under the pains and penalties of perjury that the information provided above is true and correct.

Signature: John E Brintnall Date: 1/7/20

Phone #: 774-722-7327

Official use only. Do not write in this area, to be completed by city or town official.

City or Town: _____ **Permit/License #** _____

Issuing Authority (circle one):
1. Board of Health 2. Building Department 3. City/Town Clerk 4. Electrical Inspector 5. Plumbing Inspector
6. Other _____

Contact Person: _____ **Phone #:** _____

Commonwealth of Massachusetts

Manufactured Buildings Program – Plan Identification Number Assignment

Name of Manufacturer	**ICON LEGACY CUSTOM MODULAR HOMES**	MC Identification Number	**352**
		Third Party Identification Number	**02**
Project Title	**ON# 6861**		
Use Group	**R3**	BBRS\DPS Identification Number	**0321-17**
Review by Program Director Required	All plans are reviewed by MA and should be stamped as below when approved	Date:	**07/24/17**

Manufactured Buildings Program

From: Linda Shea
Manufactured Buildings Program

Re: **Confirmation of Receipt of Building Plans & Assignment of BBRS\DPS Identification Number (BBRS\DPS I.D. Number)**

The Board of Building Regulations and Standards and Department of Public Safety (BBRS\DPS) has received your building plans for the referenced project and has assigned the identification number noted above (in the block marked **BBRS\DPS I.D. Number**). This number has been assigned for purposes of internal tracking methods. This number shall be used in reference to this project and on all future correspondences, inquiries and plan revisions.
Thank you for your cooperation with this matter.

Send all correspondences, inquiries and plan revisions to:
Office of Public Safety & Inspections - Linda Shea
50 Maple Street, Suite One
Milford, MA 01757-3698

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 03/04/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Cross Insurance - Augusta
116 Community Drive
Augusta ME 04330

CONTACT NAME: Tricia Shepard
PHONE (A/C, No, Ext): (207) 622-4787 **FAX (A/C, No):** (207) 622-0281
E-MAIL ADDRESS: tshepard@crossagency.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: American Fire & Casualty	24066
INSURER B: West American Ins Co	44393
INSURER C: Ohio Casualty Insurance Company	24074
INSURER D: Ohio Security Ins Co	24082
INSURER E:	
INSURER F:	

INSURED
Set Connectors Inc and SRH Custom Homes
36 Holman Lane
Norway ME 04268

COVERAGES **CERTIFICATE NUMBER:** CL193479590 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:			BKA(20)55998397	03/16/2019	03/16/2020	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 300,000
							MED EXP (Any one person)	$ 15,000
							PERSONAL & ADV INJURY	$ 1,000,000
							GENERAL AGGREGATE	$ 2,000,000
							PRODUCTS - COMP/OP AGG	$ 2,000,000
								$
B	AUTOMOBILE LIABILITY [X] ANY AUTO [X] OWNED AUTOS ONLY [X] SCHEDULED AUTOS [X] HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY			BAW(20)55998397	03/16/2019	03/16/2020	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
C	[X] UMBRELLA LIAB [X] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE DED [X] RETENTION $ 10,000			USO(20)55998397	03/16/2019	03/16/2020	Underinsured motorist	$ 1,000,000
							EACH OCCURRENCE	$ 1,000,000
							AGGREGATE	$ 1,000,000
								$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [ ] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		5101800825	03/20/2019	03/20/2020	[X] PER STATUTE [ ] OTH-ER	
							E.L. EACH ACCIDENT	$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Evidence of Liability Coverage.

CERTIFICATE HOLDER
Pleasant Bay Homes
256 Pleasant Bay Road
East Harwich MA 02645

CANCELLATION
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Tricia D. Shepard

ICON ★ LEGACY
Custom Modular Homes LLC

October 28, 2016

To: Building Inspector in the Commonwealth of MA

Re: Letter of Certification in accordance with The State Board of Building Regulations and Standards – The Massachusetts State Building Code - 780 CMR 110.R3.5.1.1 and all specialized codes - Licensed Construction Supervisors and Certified Installers

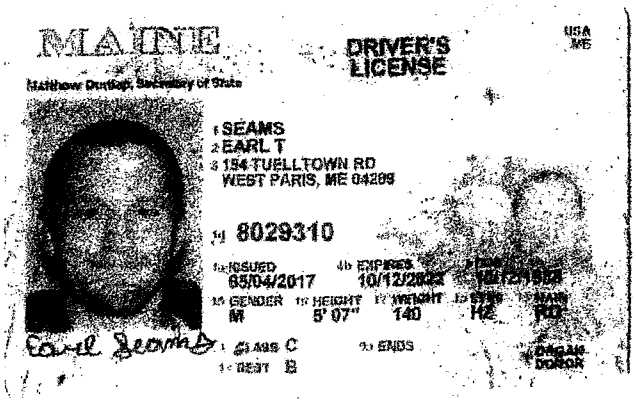
To Whom It May Concern:

This letter is to certify that Set Connectors, Inc.("Set Connectors "), an independent contractor, is experienced in the installation of Icon Legacy Custom Modular Homes, LLC ("ILCMH") manufactured modular units, and has registered with ILCMH. ILCMH has provided Set Connectors- with the required processes related to the installation of ILCMH manufactured modular units. Set Connectors- is responsible for and required to perform all installation procedures in accordance with the current approved ILCMH Set and Installation Manual, including but not limited to, lifting and installation procedures of the manufactured modular units, and required fastening and anchoring of the manufactured modular units, to assure the safe and proper placement and connection of the manufactured modular units to the field installed foundation.

This letter shall remain in effect for one (1) year from the date of issuance unless terminated in writing by either party (Set Connectors or ILCMH). Set Connectors -is responsible to provide information regarding any change in the status of their liability insurance. Termination of said liability insurance for any reason shall make this letter invalid.

Sincerely,

Bruce Bingaman
Sales Manager
ICON Legacy Custom Modular Homes, LLC



MAINE DRIVER'S LICENSE

Matthew Dunlap, Secretary of State

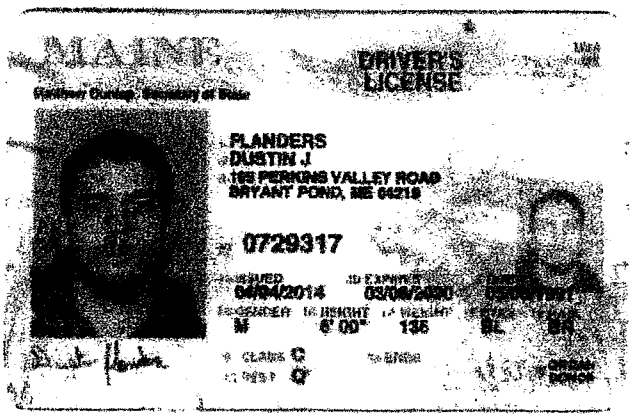
1 SEAMS
2 EARL T
3 154 TUELLTOWN RD
WEST PARIS, ME 04289

4d 8029310

4a ISSUED 05/04/2017
4b EXPIRES 10/12/2023
DOB 10/12/1958
15 GENDER M
16 HEIGHT 5' 07"
17 WEIGHT 140
18 EYES HZ
19 HAIR RD
9 CLASS C
10 ENDS
12 REST B
DONOR

Earl Seams

← Supervisor
Earl Seams



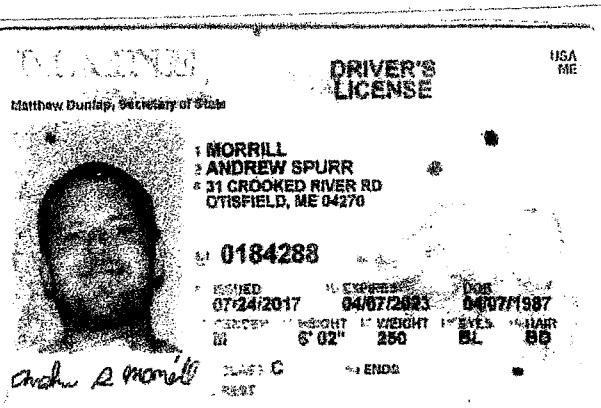
MAINE DRIVER'S LICENSE

Matthew Dunlap, Secretary of State

1 FLANDERS
2 DUSTIN J
3 105 PERKINS VALLEY ROAD
BRYANT POND, ME 04219

4d 0729317

4a ISSUED 04/04/2014
4b EXPIRES 03/06/2020
DOB
15 GENDER M
16 HEIGHT 6' 00"
17 WEIGHT 138
18 EYES BL
19 HAIR BR
9 CLASS C
12 REST C
DONOR



MAINE DRIVER'S LICENSE

USA ME

Matthew Dunlap, Secretary of State

1 MORRILL
2 ANDREW SPURR
3 31 CROOKED RIVER RD
OTISFIELD, ME 04270

4d 0184288

4a ISSUED 07/24/2017
4b EXPIRES 04/07/2023
DOB 04/07/1987
15 GENDER M
16 HEIGHT 6' 02"
17 WEIGHT 250
18 EYES BL
19 HAIR BR
9 CLASS C
10 ENDS
12 REST

Andrew R Morrill

← Superisor

MAINE
Matthew Dunlap, Secretary of State
DRIVER'S LICENSE

1 HOTT
2 RICHARD O
3 36 HOLMAN LANE
NORWAY, ME 04268

4d 9268289

4a ISSUED 02/04/2015 4b EXPIRES 02/03/2021 3 DOB 02/03/1976
15 GENDER M 16 HEIGHT 6' 01" 17 WEIGHT 217 18 EYES BR 19 HAIR BR
9 CLASS C 12 RSTR
ORGAN DONOR

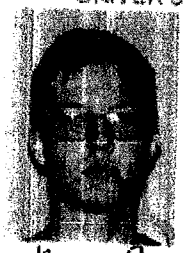
MAINE
Matthew Dunlap, Secretary of State
DRIVER'S LICENSE
USA ME

1 WARD
2 NATHAN O
3 69 ELM HILL ROAD
SOUTH PARIS, ME 04281

4d 8721215

4a ISSUED 10/19/2015 4b EXPIRES 08/14/2021 3 DOB 08/14/1975
15 GENDER M 16 HEIGHT 5' 11" 17 WEIGHT 210 18 EYES BL 19 HAIR BR
9 CLASS C 12 RSTR

MAINE
Matthew Dunlap, Secretary of State
DRIVER'S LICENSE
USA ME



UNDER 18 UNTIL 04/11/2017
UNDER 21 UNTIL 04/11/2020
4a ISSUED 08/23/2016
4b EXPIRES 04/11/2022
3 DOB 04/11/1999

Kane Page

4d 9431353

1 PAGE
2 KANE CHRISTOPHER
3 51 SKEETFIELD ROAD
OXFORD, ME 04270

15 GENDER M 16 HEIGHT 5' 08" 17 WEIGHT 150 18 EYES BL 19 HAIR BD
9 CLASS C 12 RSTR B
ORGAN DONOR

MAINE
Matthew Dunlap, Secretary of State
DRIVER'S LICENSE
USA ME

1 WOOD
2 DAVID R
3 81 RICH ROAD
HARRISON, ME 04040

4d 3770153

4a ISSUED 10/03/2014 4b EXPIRES 08/24/2020 3 DOB 08/24/1969
15 GENDER M 16 HEIGHT 5' 08" 17 WEIGHT 145 18 EYES BL 19 HAIR BR
9 CLASS C 10 ENDS I 12 RSTR
ORGAN DONOR

MAINE
Matthew Dunlap, Secretary of State
DRIVER'S LICENSE
USA ME

1 FLANDERS
2 DUSTIN J
3 165 PERKINS VALLEY ROAD
BRYANT POND, ME 04219

4d 0729317

4a ISSUED 04/04/2014 4b EXPIRES 03/06/2020 3 DOB 03/06/1971
15 GENDER M 16 HEIGHT 6' 00" 17 WEIGHT 135 18 EYES BL 19 HAIR BR
9 CLASS C 12 RSTR C
ORGAN DONOR

MAINE
IDENTIFICATION CARD
USA ME

1 SESSIONS
2 ADAM S
3 P O BOX 140
TURNER, ME 04282

4d 1074341

4a ISSUED 10/22/2018 4b EXPIRES 08/23/2
15 GENDER M 16 HEIGHT 5' 07" 17 WEIGHT 140

Supervisor

MAINE DRIVER'S LICENSE USA ME

Matthew Dunlap, Secretary of State

1 SEAMS
2 JASON A
3 154 TUELLTOWN RD
WEST PARIS, ME 04289

4d 9196220

4a ISSUED 05/10/2018 4b EXPIRES 01/22/2021 4c DOB 01/22/1976
15 GENDER M 16 HEIGHT 6' 00" 17 WEIGHT 195 18 EYES BL 19 HAIR BR
9 CLASS C 10 ENDS L
12 REST
ORGAN DONOR

Jason Seams

MAINE DRIVER'S LICENSE USA ME

Matthew Dunlap, Secretary of State

1 ROBINSON
2 JONATHAN MICHAEL
3 4 DAVIS ST APT 3
LEWISTON, ME 04240

4d 8055295

4a ISSUED 11/20/2013 4b EXPIRES 05/27/2019 4c DOB 05/27/1989
15 GENDER M 16 HEIGHT 5' 08" 17 WEIGHT 165 18 EYES GR 19 HAIR BR
9 CLASS C 10 ENDS
12 REST A

MAINE DRIVER'S LICENSE USA ME

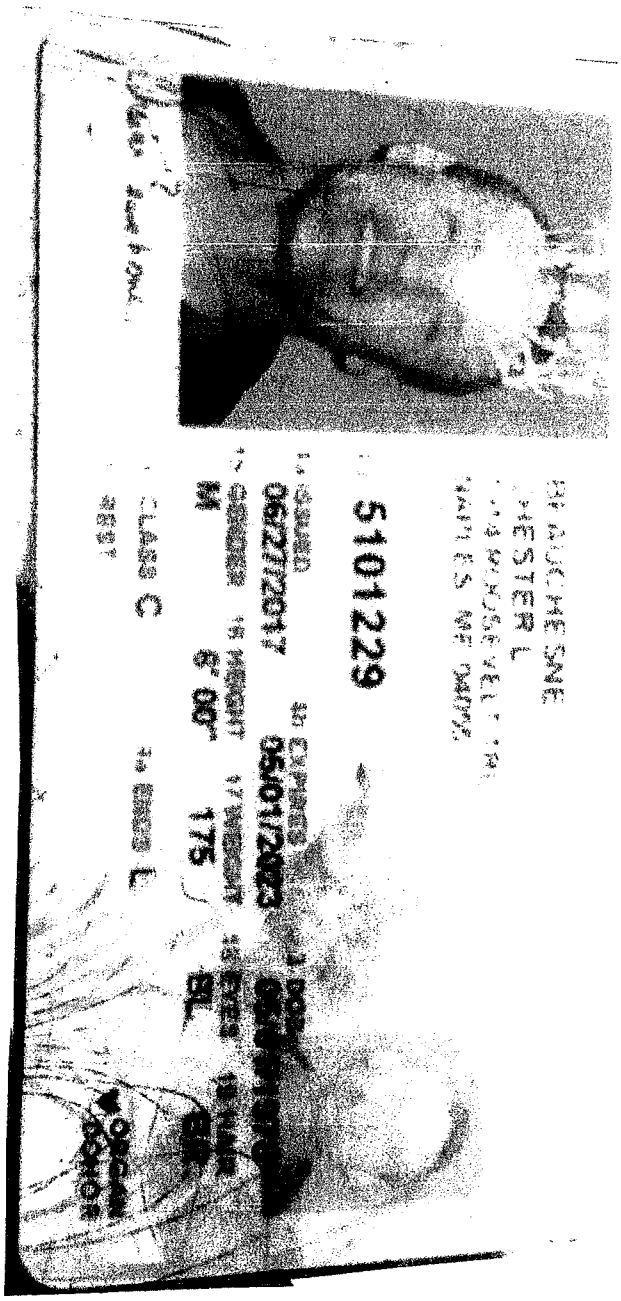
Matthew Dunlap, Secretary of State

1 SEAMS
2 EARL T
3 154 TUELLTOWN RD
WEST PARIS, ME 04289

4d 8029310

4a ISSUED 05/04/2017 4b EXPIRES 10/12/2021 4c DOB 10/12/1968
15 GENDER M 16 HEIGHT 5' 07" 17 WEIGHT 140 18 EYES HZ 19 HAIR RD
9 CLASS C 10 ENDS
12 REST B
ORGAN DONOR

Earl Seams



MAINE DRIVER'S LICENSE USA ME

Matthew Dunlap, Secretary of State

1 APTT
2 ALEXANDER G
3 102 JAM HILL RD
OXFORD, ME 04270

4d 5801333

4a ISSUED 04/06/2018 4b EXPIRES 05/10/2023 4c DOB 05/10/1976
15 GENDER M 16 HEIGHT 5' 09" 17 WEIGHT 130 18 EYES BL 19 HAIR BD
9 CLASS C 10 ENDS
12 REST B

Alexander Apptt

MAINE IDENTIFICATION CARD USA ME

Matthew Dunlap, Secretary of State

1 ARCHER
2 PETER R JR
3 23 PLAINS ROAD
HARRISON, ME 04040

4d 7559302

4a ISSUED 03/03/2016 4b EXPIRES 07/24/2019 4c DOB 07/24/1988
15 GENDER M 16 HEIGHT 5' 11" 17 WEIGHT 210 18 EYES BL 19 HAIR BD
ORGAN DONOR

Commonwealth of Massachusetts
Division of Professional Licensure
Board of Building Regulations and Standards
Construction Supervisor

CS-106065

Expires: 02/20/2020

JOHN E BRINTNALL
138 TUBMAN RD
BREWSTER MA 02631

Commissioner

Client#: 712698 BAXTEINC

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 9/25/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
USI Insurance Services LLC 3 Executive Park Drive, Suite 300 Bedford, NH 03110 855 874-0123	PHONE (A/C, No, Ext): 855 874-0123	FAX (A/C, No):
	E-MAIL ADDRESS:	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Old Republic Union Insurance Company	31143
INSURER B : Pennsylvania Manufacturers Assoc. Ins.	12262
INSURER C : Granite State Insurance Company	23809
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Baxter Inc
10 Bay View Street
West Yarmouth, MA 02673

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR X BI/PD Ded:5,000 GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC OTHER:			ORANGL00036000	03/29/2019	03/29/2020	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$1,000,000 $50,000 $none $1,000,000 $2,000,000 $2,000,000 $
B	AUTOMOBILE LIABILITY ANY AUTO OWNED AUTOS ONLY X HIRED AUTOS ONLY X SCHEDULED AUTOS X NON-OWNED AUTOS ONLY			1519011071869	03/29/2019	03/29/2020	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$1,000,000 $ $ $ $
A	UMBRELLA LIAB OCCUR X EXCESS LIAB CLAIMS-MADE DED RETENTION $none			ORANXS00021900	03/29/2019	03/29/2020	EACH OCCURRENCE AGGREGATE $	$5,000,000 $5,000,000 $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N: Y (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		2019011071869	10/06/2019	10/06/2020	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $1,000,000 $1,000,000 $1,000,000
C	Riggers			02LX0670460334	03/29/2019	03/29/2020	500,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

** Workers Comp Information **

Proprietors/Partners/Executive Officers/Members Excluded:

Jonathan H Baxter, President

Evidence of Insurance

CERTIFICATE HOLDER

Pleasant Bay Homes
P.O> Box 207
Harwich, MA 02645

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

FXDZP

MASSACHUSETTS COMMERCIAL DRIVER'S LICENSE

4a ISS 12-18-2014 | 5a END NONE | 4d NUMBER S65728837

4b EXP 12-27-2019 | 3. DOB 12-27-1972

9. CLASS AM | 12 REST NONE | 15. SEX M | 10 HAT 5-08

1. SHEA
2. DOUG E
8. 42 HOWARD AVE
BUZZARDS BAY, MA 02532

12-27-1972

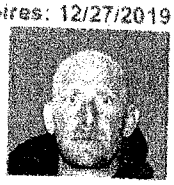
9. DD 12-18-2014 Rev 07-15-2009

Commonwealth of Massachusetts
Division of Professional Licensure

Hoisting Engineer

HE-102430 Expires: 12/27/2019

DOUGLAS E SHEA
17 SEA BREEZE DR
BOURNE MA 02532



Commissioner

CIC Certified Crane Operator
FOR
TB<21,TB21-75,TB>75,LBCR,LBCW

CIC Crane Institute Certification

OSHA Recognized

Douglas Shea
JUN-404720

ISSUED: 06/02/2016
EXPIRES: 06/02/2021

James Headley - CEO

Crane Institute of America Certification

Rhode Island Department of Labor and Training
Division of Workforce Regulation and Safety

HYDRAULIC CRANES 00016912

DOUGLAS E SHEA
17 SEA BREEZE DRIVE
BOURNE MA 02532

Assistant Director

12/31/2020
Expiration Date

OSHA 001100693

U.S. Department of Labor
Occupational Safety and Health Administration

Doug Shea

has successfully completed a 10 hour Occupational Safety and Health Training Course in

Construction Safety & Health

Richard Hughes (Trainer) 7/20/16 (Date)

30516

Cranes 101 Safety Training Specialists

This is to certify that:
Doug Shea
Has completed a course in accordance with
OSHA and ANSI standard of performance
Signalperson and Rigger
OSHA 1926.1400

This certificate is valid only while employed at:
Trainer: Baxter, Inc
Steve Landry

Expires:
06/11/2022

BAXTER CRANES & RIGGING

FORKLIFT SAFETY

Baxter Crane & Rigging verifies the participation and completion of powered Industrial Truck Operator training of the following employee:

Employee: Douglas E. Shea
Expires: 04/30/20

Bourne Appeals Board

Memo

To: Elizabeth Gillis Warden

Date: 11/20/2019

Re: Appeal 2017-A20 10 Harbor Way, Bourne MA

Enclosed is a copy of your approval. Once 21 days have elapsed from the date the decision was stamped in by the Town Clerk (11/20/2019), you may pick up 2 copies from the Town Clerk's office and bring them to the Barnstable Registry of Deeds (3195 Main St., Barnstable - (508) 362-7733) for recording.

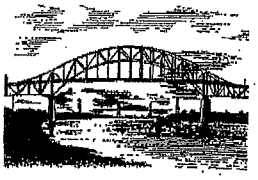
You will need to submit a recorded copy of the decision with your building permit (if applicable) and any plans to the Building Dept.

Thank you.

Cassie Hammond

Town of Bourne
Administrative Assistant
Building & Inspections
Board of Appeals
24 Perry Avenue
Buzzards Bay, MA 02532
508-759-0600 ext. 1512
508-759-0679 fax
https://www.townofbourne.com/

TOWN OF BOURNE
BOARD OF APPEALS
24 PERRY AVENUE
BUZZARDS BAY, MA 02532
TEL. 508-759-0615 EXT. 21
FAX 508-759-0611



FINAL DECISION

PETITION NUMBER: APPEAL 2017-A20
NAME OF APPLICANT/CURRENT PROPERTY OWNER: ELIZABETH GILLIS WARDEN
PROPERTY ADDRESS: 10 HARBOR WAY, BOURNE
REGISTRY OF DEEDS TITLE REFERENCE: BOOK # 20251 PAGE # 125
TOWN MAP: 45.0 PARCEL: 19

On November 6, 2019, the Board of Appeals voted to Accept the Decision of the Land Court and to Overrule the Decision of the Building Inspector in Denying a Building Permit, in accordance with Massachusetts General Laws Chapter 40A, section 8, and Sections 1210, 2420, and 2450 of the Bourne Zoning Bylaws, for the property located at 10 Harbor Way, Bourne (Wings Neck), Massachusetts, as shown on assessor's map # 45.0, parcel # 19 in a(n) R-80 zoning district.

The Board of Appeals certifies that the decision attached hereto is a true and correct copy of its decision to grant overrule the Decision of the Building Inspector to deny a Building Permit and that copies of said decision, and all plans referred to in the decision, have been filed with the Town Clerk.

The Board of Appeals also calls to the attention of the owner or applicant that General Laws, Chapter 40A, Section 11 provides that no ruling of said Board of Appeals, shall take effect until a copy of the decision bearing the certification of the town clerk that twenty days have elapsed after the decision has been filed or that, if an appeal has been filed, it has been dismissed or denied, is recorded in the registry of deeds for the county and district in which the land is located and indexed in the grantor index under the name of the owner of record or is recorded and noted on the owner's certificate of title. The owner or applicant shall pay the fee for such recording or registering. A copy of that recorded or registered decision shall be submitted to the Inspection Department office, as proof of filing, along with an application for a Building Permit.

Any person aggrieved by this decision may appeal to the Superior Court or Land Court as provided in M.G.L. Chapter 40A, Section 17, and by filing a NOTICE OF ACTION AND COMPLAINT with the Town Clerk within twenty (20) days of the date of filing of this decision.

Amy B. Kullar
For the Board of Appeals

Board of Appeals
Town of Bourne
(form approved August 17, 2011)

DECISION

On November 6, 2019, the appellant appeared before the Zoning Board of Appeals on remand from the Land Court. Previously, the Board had upheld the Building Inspector's Decision to Deny a Building Permit for the site, due to the fact that a prior Board of Appeals decision had determined that Harbor Way is not a road. The Land Court overturned the Building Inspector's Denial of the Building Permit, and at the hearing on November 6, 2019, the Board of Appeals determined that the Board would accept the decision of the Land Court regarding the status of Harbor Way as a road. Therefore, there is no basis for the Building Inspector to deny a Building Permit to the appellant, and the Zoning Board of Appeals directs that any further issues with the status of Harbor Way as a road shall be presented to the Planning Board, as pursuant to the Zoning Bylaws of the Town of Bourne, the Planning Board is the authority for all roads and ways within the Town of Bourne.

After hearing and due deliberation: on motion made by John O'Brien, and seconded by Wade Keene, it was voted: that the Board of Appeals shall accept the decision of the Land Court and accordingly, overrules the Building Inspector's decision to Deny a Building Permit to the appellant.

1. The Vote:

Voting in favor of overruling the Building Inspector's decision:
Amy Kullar, John O'Brien, Wade Keene, Kat Brennan, Deb Bryant

Voting against overruling the Building Inspector's decision:
None

2. Other Members Present:
James Beyer

Amy B. Kullar
For the Board of Appeals

Commonwealth of Massachusetts

Manufactured Buildings Program

Transmittal Form for all correspondences relating to Manufactured Buildings and Building Components

To: Linda McAlister factured Buildings Program	Phone Number:	Date Transmitted
Linda.McAlister e.ma.us	508-422-1955	7/12/17
Commonwealth of Massachusetts	Department of Public Safety	
Board of Building Regulations and Standards	50 Maple Street, Suite One	
Milford	Massachusetts	01757-3698

The person forwarding this material shall complete the following portion of this transmittal

Name of Person Transmitting Material: Brett Hebert	MC Number: 352	TPIA Number: 02

The following information is being transmitted to the Board of Building Regulations and Standards and / or the Department of Public Safety for reasons detailed below (Please check the appropriate box or give a further description of the transmitted items under the section labeled *other*. Be sure to identify the appropriate Use Group.)		Please indicate the Distinct Model and / or Serial Number pertaining to transmitted items	Use Group
Building Plans for Review and Approval	☐		
Building Plans forwarded as a record copy for your files (Review not required)	☒	ON#6861	R-3
Revised building plans for review. (Please clearly identify revisions on the plans.)	☐		
Revised Building Plans forwarded as a record copy for your files (Review not required - Please clearly identify revisions on the plans.)	☐		

Compliance Assurance Programs	Original Submission	☐	Modification to:	☐
Calculations Manual	Original Submission	☐	Modification to:	☐
Installation Manual	Original Submission	☐	Modification to:	☐
Systems Drawings	Original Submission	☐	Modification to:	☐

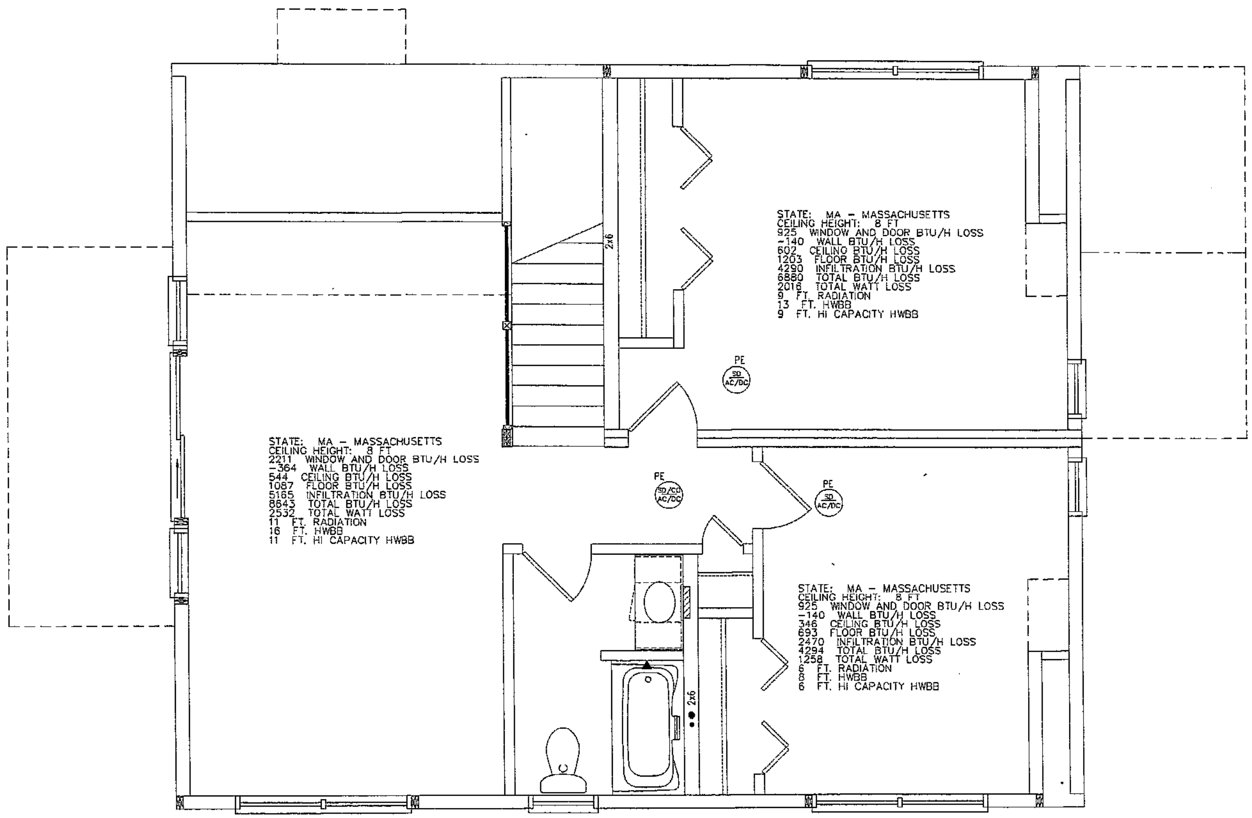
Other - Provide a detailed description of any other materials which are being transmitted. **Identify any revisions clearly along with BBRS number.** Also, identify the requested action.

Site Location: 10 HARBOR WAY, POCASSET, Ma 02559 (BARNSTABLE COUNTY)

The office transmitting this information has reviewed the above mentioned and attached materials and has found them, to the best of our knowledge and abilities, to be in compliance with the codes and \ or rules and regulations for the Commonwealth of Massachusetts' Manufactured Building Program, as applicable

Signed By for TPIA:	Digitally signed by Harold Raup DN: cn=Harold Raup, o=PFSTECO, ou, email=harold.raup@pfsteco.com, c=US Date: 2017.07.20 06:51:23 -04'00'	BBRS No: assigned by Mass.	Signed By for MASS:	

Print Form



STATE: MA – MASSACHUSETTS
CEILING HEIGHT: 8 FT
191 WINDOW AND DOOR BTU/H LOSS
-29 WALL BTU/H LOSS
259 CEILING BTU/H LOSS
519 FLOOR BTU/H LOSS
1230 INFILTRATION BTU/H LOSS
2170 TOTAL BTU/H LOSS
636 TOTAL WATT LOSS
3 FT. RADIATION
4 FT. HWBB
3 FT. HI CAPACITY HWBB

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
7/30/17
Approval limited to Factory Built Portion

ICON ★ LEGACY
CUSTOM MODULAR HOMES LLC
Make plans with us.
246 SAND HILL ROAD
SELINSGROVE, PA 17870
PHONE: (570) 374-3280
FAX: (570) 374-1122
WWW.ICONLEGACY.COM

DATE	REVISION	BY
11/15/16	PRELIM	PIF
02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

BUILDER: PLEASANT BAY HOMES
HOMEOWNER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET — STATE: MA — ZIP: 02559
COUNTY: BARNSTABLE — SNOW LOAD (LBS): 30 — WIND SPEED (MPH): 110
ORDER NO: 6861 — SERIAL NO — SQFT: 1,980 — TYPE: CAPE
FILE NAME: O#6861

2ND STORY HEAT LOSS

SERIAL #/ ORDER #: O#6861

PAGE #: HL2

JLA

REScheck Software Version 4.6.4
Compliance Certificate

Project ELIZABETH GILLIS

Energy Code:	**2015 IECC**
Location:	**Pocasset, Massachusetts**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**1,898 ft2**
Glazing Area	**25%**
Climate Zone:	**5 (6297 HDD)**
Permit Date:	
Permit Number:	

PFS Corporation
Northeast Region
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7/20/17
Approval limited to Factory Built Portion

Construction Site:
10 HAROR WAY
POCESSET, MA 02559

Owner/Agent:
PLEASANT BAY HOMES
256 PLEASANT BAY ROAD
HARWICH, MA 02615

Designer/Contractor:
ICON LEGACY CMH
246 SAND HILL ROAD
SELINSGROVE, PA 17870

Compliance: Passes using UA trade-off

Compliance: **5.0% Better Than Code** Maximum UA: **299** Your UA: **284**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules. It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
ABOVE COLLAR TIE: Flat Ceiling or Scissor Truss	824	38.0	0.0	0.030	25
BEHIND KNEE WALL: Flat Ceiling or Scissor Truss	107	38.0	0.0	0.030	3
SLOPED CEILING: Cathedral Ceiling	49	19.0	0.0	0.052	3
KNEE WALLS: Wood Frame, 16" o.c.	73	13.0	5.0	0.057	4
HOUSE WALLS: Wood Frame, 16" o.c.	1,811	21.0	0.0	0.057	75
Window 1: Vinyl/Fiberglass Frame:Double Pane with Low-E	314			0.310	97
Door 1: Glass	160			0.250	40
Door 2: Solid	22			0.170	4
Floor 1: All-Wood Joist/Truss:Over Unconditioned Space	990	30.0	0.0	0.033	33

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2015 IECC requirements in RES*check* Version 4.6.4 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

ICON LEGACY CMH
Name - Title

Brett Hebert
Signature

7/12/17
Date

RES*check* Software Version 4.6.4

Inspection Checklist

Energy Code: 2015 IECC

Requirements: 0.0% were addressed directly in the RES*check* software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.1, 103.2 [PR1][1]	Construction drawings and documentation demonstrate energy code compliance for the building envelope. Thermal envelope represented on construction documents.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
103.1, 103.2, 403.7 [PR3][1]	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the IECC Commercial Provisions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
302.1, 403.7 [PR2][2]	Heating and cooling equipment is sized per ACCA Manual S based on loads calculated per ACCA Manual J or other methods approved by the code official.	Heating: Btu/hr____ Cooling: Btu/hr____	Heating: Btu/hr____ Cooling: Btu/hr____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
7/20/17
Approval limited to Factory Built Portion

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Foundation Inspection	Complies?	Comments/Assumptions
303.2.1 [FO11]²	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.9 [FO12]²	Snow- and ice-melting system controls installed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
7/20/17
Approval limited to
Factory Built Portion

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.3.4 [FR1][1]	Door U-factor.	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
402.1.1, 402.3.1, 402.3.3, 402.3.6, 402.5 [FR2][1]	Glazing U-factor (area-weighted average).	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.1.3 [FR4][1]	U-factors of fenestration products are determined in accordance with the NFRC test procedure or taken from the default table.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.1.1 [FR23][1]	Air barrier and thermal barrier installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.3 [FR20][1]	Fenestration that is not site built is listed and labeled as meeting AAMA /WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.5 [FR16][2]	IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to indicate ≤2.0 cfm leakage at 75 Pa.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2.1 [FR12][1]	Supply and return ducts in attics insulated >= R-8 where duct is >= 3 inches in diameter and >= R-6 where < 3 inches. Supply and return ducts in other portions of the building insulated >= R-6 for diameter >= 3 inches and R-4.2 for < 3 inches in diameter.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.3.5 [FR15][3]	Building cavities are not used as ducts or plenums.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4 [FR17][2]	HVAC piping conveying fluids above 105 ºF or chilled fluids below 55 ºF are insulated to ≥R-3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4.1 [FR24][1]	Protection of insulation on HVAC piping.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.3 [FR18][2]	Hot water pipes are insulated to ≥R-3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.6 [FR19][2]	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
7/20/17
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1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Additional Comments/Assumptions:

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
7/20/17
Approval limited to
Factory Built Portion

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13][2]	All installed insulation is labeled or the installed R-values provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.1.1, 402.2.6 [IN1][1]	Floor insulation R-value.	R-____ ☐ Wood ☐ Steel	R-____ ☐ Wood ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2, 402.2.7 [IN2][1]	Floor insulation installed per manufacturer's instructions and in substantial contact with the underside of the subfloor, or floor framing cavity insulation is in contact with the top side of sheathing, or continuous insulation is installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.1.1, 402.2.5, 402.2.6 [IN3][1]	Wall insulation R-value. If this is a mass wall with at least ½ of the wall insulation on the wall exterior, the exterior insulation requirement applies (FR10).	R-____ ☐ Wood ☐ Mass ☐ Steel	R-____ ☐ Wood ☐ Mass ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2 [IN4][1]	Wall insulation is installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
7/20/17
Approval limited to Factory Built Portion

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.2.1, 402.2.2, 402.2.6 [FI1][1]	Ceiling insulation R-value.	R-____ ☐ Wood ☐ Steel	R-____ ☐ Wood ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.1.1.1, 303.2 [FI2][1]	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft².			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.2.3 [FI22][2]	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.2.4 [FI3][1]	Attic access hatch and door insulation ≥R-value of the adjacent assembly.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.1.2 [FI17][1]	Blower door test @ 50 Pa. <=5 ach in Climate Zones 1-2, and <=3 ach in Climate Zones 3-8.	ACH 50 =____	ACH 50 =____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2.3 [FI4][1]	Duct tightness test result of <=4 cfm/100 ft2 across the system or <=3 cfm/100 ft2 without air handler @ 25 Pa. For rough-in tests, verification may need to occur during Framing Inspection.	____ cfm/100 ft²	____ cfm/100 ft²	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.2 [FI27][1]	Ducts are pressure tested to determine air leakage with either: Rough-in test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the system including the manufacturer's air handler enclosure if installed at time of test. Postconstruction test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the entire system including the manufacturer's air handler enclosure.	____ cfm/100 ft²	____ cfm/100 ft²	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.2.1 [FI24][1]	Air handler leakage designated by manufacturer at <=2% of design air flow.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.1 [FI9][2]	Programmable thermostats installed for control of primary heating and cooling systems and initially set by manufacturer to code specifications.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.2 [FI10][2]	Heat pump thermostat installed on heat pumps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1 [FI11][2]	Circulating service hot water systems have automatic or accessible manual controls.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

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1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.6.1 [FI25][2]	All mechanical ventilation system fans not part of tested and listed HVAC equipment meet efficacy and air flow limits.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2 [FI26][2]	Hot water boilers supplying heat through one- or two-pipe heating systems have outdoor setback control to lower boiler water temperature based on outdoor temperature.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1.1 [FI28][2]	Heated water circulation systems have a circulation pump. The system return pipe is a dedicated return pipe or a cold water supply pipe. Gravity and thermos-syphon circulation systems are not present. Controls for circulating hot water system pumps start the pump with signal for hot water demand within the occupancy. Controls automatically turn off the pump when water is in circulation loop is at set-point temperature and no demand for hot water exists.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1.2 [FI29][2]	Electric heat trace systems comply with IEEE 515.1 or UL 515. Controls automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping.	PFS Corporation Northeast Region APPROVED H Raup – 3 7/20/17 Approval limited to Factory Built Portion		☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.2 [FI30][2]	Water distribution systems that have recirculation pumps that pump water from a heated water supply pipe back to the heated water source through a cold water supply pipe have a demand recirculation water system. Pumps have controls that manage operation of the pump and limit the temperature of the water entering the cold water piping to 104ºF.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.4 [FI31][2]	Drain water heat recovery units tested in accordance with CSA B55.1. Potable water-side pressure loss of drain water heat recovery units < 3 psi for individual units connected to one or two showers. Potable water-side pressure loss of drain water heat recovery units < 2 psi for individual units connected to three or more showers.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.1 [FI6][1]	75% of lamps in permanent fixtures or 75% of permanent fixtures have high efficacy lamps. Does not apply to low-voltage lighting.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.1.1 [FI23][3]	Fuel gas lighting systems have no continuous pilot light.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
401.3 [FI7][2]	Compliance certificate posted.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
303.3 [FI18][3]	Manufacturer manuals for mechanical and water heating systems have been provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

2015 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	21.00
Below-Grade Wall	0.00
Floor	30.00
Ceiling / Roof	38.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
Window	0.31	
Door	0.25	

Heating & Cooling Equipment	Efficiency
Heating System: _____	_____
Cooling System: _____	_____
Water Heater: _____	_____

Name: _____ Date: _____

Comments

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HIGH WIND CALCULATIONS
FOR

ICON - LEGACY
CUSTOM MODULAR HOMES, LLC

SELINSGROVE, PA

O#6861

ASCE 7-05, RISK CATEGORY II,
V_{asd} 110 MPH,
VELOCITY PRESSURE q = 25.81 psf
WIND EXPOSURE: C
MA

07/10/17

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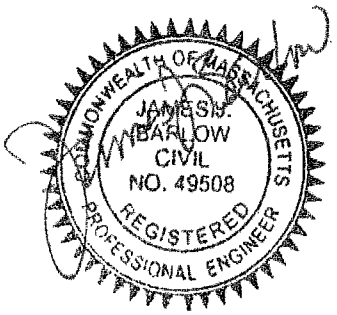
SECTION 4 **P48-49**
ALTERNATE CALCULATIONS



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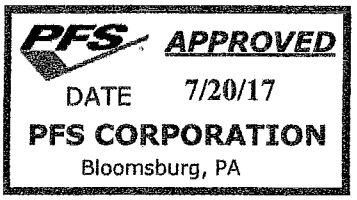

NARRATIVE
170394
0278nec2017
Legacy O#6861
Two-Story
27.5' x 39'
Roof Slope: 4.71:12
Wind Speed: 110 mph V_{asd}
Risk Category II
Exposure C
MA
Ethan Loewenthal
7/6/17

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It is assumed that the structure will be placed over a basement foundation system. The mean roof height (MRH) of the structure is adjusted per manufacturer drawings.

Ensure that the foundation is structurally adequate for the shear, uplift and downward point loads imposed at corner connections and similar locations.

The structure was analyzed using ASCE 7-05 basic wind speed (V_{asd} – nominal design 3 sec. gust mph) = 110 mph.

The house was modeled as a 5/12.

Where 2nd story overturning uplifts occur above 1st story openings, the 2nd floor band was designed to transfer the point loads to the edges of the openings on the 1st story.

A 1st story offset shearwall was designed. Because of the offset, tributary lengths were used to calculate the load on this offset wall, as well as the 1st story endwalls.

Where the 2nd story Endwall #2 does not align with the 1st story Endwall #2 below, the 2nd floor diaphragm was designed to transfer the shear load.

Tension connections were designed at ceiling and floor levels to carry shearwall loads across the matelines.

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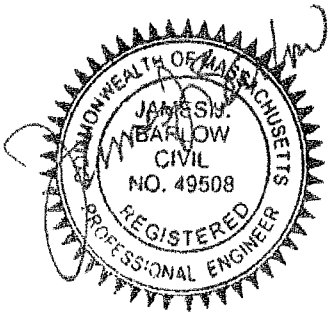
Section 1

ASCE 7-05 WIND LOAD CALCULATIONS



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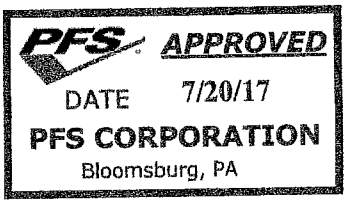

DESIGN INPUTS:

FIRST FLOOR WIDTH:	27.50 ft
SECOND FLOOR WIDTH:	27.50 ft
THIRD FLOOR WIDTH:	0.00 ft
FOURTH FLOOR WIDTH:	0.00 ft
FIRST FLOOR LENGTH:	39.00 ft
SECOND FLOOR LENGTH:	33.00 ft
THIRD FLOOR LENGTH:	0.00 ft
FOURTH FLOOR LENGTH:	0.00 ft
ROOF SPAN (RS):	27.50 ft
STUD SPACING:	16 in
TRUSS SPACING:	16 in
ROOF PITCH:	5 / 12
ROOF ANGLE (θ):	22.62 °
RAFTER LENGTH (L) =	14.90 ft
z =	30.00 ft
hr =	5.73 ft
hr / 2 =	2.87 ft
h =	**30.00** ft
WALL EFFECTIVE WIND AREA = h_s x STUD SPACING =	21.33
ROOF EFFECTIVE WIND AREA = L x TRUSS SPACING =	74.00 ft^2
MIN. WALL & ROOF EFFECTIVE AREA FOR FASTENERS =	0.17 ft^2

NO. OF STORIES:	2	
1st FLOOR WALL HEIGHT:	8.00	ft
2nd FLOOR WALL HEIGHT:	8.00	ft
3rd FLOOR WALL HEIGHT:	0.00	ft
4th FLOOR WALL HEIGHT:	0.00	ft
WIND SPEED:	110	mph
WIND EXPOSURE CASE:	C	

(WIND BORNE DEBRIS PROTECTION
IS REQUIRED FOR
HURRICANE PRONE REGIONS)

(IF ROOF SLOPE <= 10 DEGREES, USE EAVE HEIGHT)
(EFFECTIVE WIDTH NEED NOT BE LESS THAN 8ft / 3 = 2.66 ft)
(EFFECTIVE WIDTH NEED NOT BE LESS THAN 14.9ft / 3 = 4.96 ft)
(WORST CASE: 2" o.c. FASTENERS WITH 12" o.c. FRAMING)

a = 10% OF LEAST HORIZONTAL DIMENSION OR 0.4h, WHICHEVER IS SMALLER, BUT NOT LESS THAN EITHER 4% OF LEAST HORIZONTAL DIMENSION OR 3 ft. (p. 54, FIG. 6-10, NOTATION 9.a)

a: 0.1W = 0.1 * 27.5 ft = 2.75 ft OR 0.4h = 0.4 * 30 ft = 12 ft

LESSER = 2.75 ft

AND NOT LESS THAN EITHER:

0.04W = 0.04 * 27.5 ft = 1.1 ft

OR 3 ft:

a = 3 ft

DETERMINE WIND LOADS PER ASCE 7-05:

MAIN WIND FORCE RESISTING SYSTEM :

CONSTANTS:

WIND VELOCITY (V):	110 mph
VEL. PRESS. EXP. COEF. (K_h):	0.98
VEL. PRESS. EXP. COEF. (K_z):	0.98
MULT. for TOPO. FACTOR (K_1):	0.09
MULT. for TOPO. FACTOR (K_2):	0
MULT. for TOPO. FACTOR (K_3):	0
$K_{zt} = (1 + K_1 \times K_2 \times K_3)^2 =$	1

DIRECTIONALITY FACTOR (K_d):	0.85
$q_h = .00256 \times K_h \times K_{zt} \times Kd \times V^2 =$	25.81
$q_z = .00256 \times K_z \times K_{zt} \times Kd \times V^2 =$	25.81
GUST EFFECT FACTOR (G):	0.85
INTERNAL PRESS. COEF. (GC_{pi}):	0.18
	-0.18

PER TABLE 6-6, ASCE 7-05, pp 49, "EXTERNAL PRESSURE COEFFICIENTS, Cp"

WALL PRESSURE COEFICIENTS

SURFACE		Cp	USE WITH
WINDWARD WALL	ALL	0.8	qz
LEEWARD WALL	SIDE	-0.5	qh
LEEWARD WALL	END	-0.4	qh
SIDE WALL	ALL	-0.7	qh

ROOF PRESSURE COEFICIENTS FOR USE WITH qh
NORMAL TO RIDGE (WIND FROM SIDEWALL)

Cp - WINDWARD WALL	-0.60
	-0.10
Cp - LEEWARD WALL	0.60

PARALLEL TO RIDGE (WIND FROM ENDWALL)

Cp - 0 TO h/2	-1.17
Cp - h/2 TO h	-1.17
Cp - h TO 2h	-1.17
Cp - > 2h	-1.17
Cp	-0.18

LATERAL LOADS:

EXTERNAL PRESSURE COEFFICIENTS:
22.62 ° ROOF

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CASE A - WIND FROM SIDE WALL:

SIDE WALL:	GC_{pf1} =	0.54	GC_{pf1E} =	0.77
SIDE WALL:	GC_{pf4} =	-0.41	GC_{pf4E} =	-0.60

LOAD CALCULATIONS (WIND FROM SIDE WALL):

P = q GCp - qi (GCpi)

EXAMPLE:

P = qh GCp - qi (GCpi) = (25.81 psf x 0.85 x 0.8) - (25.81 x 0.18) = 12.9 psf

P = qh GCp - qi (GCpi) = (25.81 psf x 0.85 x 0.8) - (25.81 x -0.18) = 22.2 psf

WINDWARD	P =	12.90	psf
WINDWARD	P =	22.20	psf
LEEWARD	P =	-15.60	psf
LEEWARD	P =	-6.30	psf

WINDWARD	P =	-6.84	psf
WINDWARD	P =	2.45	psf
LEEWARD	P =	8.52	psf
LEEWARD	P =	17.81	psf

WINDWARD SIDE:

USE	28.50	psf	WIND LOAD

ROOF SIDE:

USE	-5.91	psf	WIND LOAD

CASE B - WIND FROM END WALL:

ENDWALL:	GC_{pf1} =	0.4	GC_{pf1E} =	0.61
ENDWALL:	GC_{pf4} =	-0.29	GC_{pf4E} =	-0.43

LOAD CALCULATIONS (WIND FROM END WALL):

P = q GCp - qi (GCpi)

EXAMPLE:

P = qz GCp - qi (GCpi) = (25.81 psf x 0.85 x 0.8) - (25.81 x 0.18) = 12.9 psf

P = qz GCp - qi (GCpi) = (25.81 psf x 0.85 x 0.8) - (25.81 x -0.18) = 22.2 psf

WINDWARD	P =	12.90	psf
WINDWARD	P =	22.20	psf
LEEWARD	P =	-13.40	psf
LEEWARD	P =	-4.10	psf

WINDWARD SIDE:

USE	26.30	psf	WIND LOAD

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WIND LOAD CALCULATIONS
(PER ASCE 7-05)

UPLIFT LOADS:

EXTERNAL PRESSURE COEFFICIENTS:
22.62 ° ROOF

CASE A - WIND FROM SIDE WALL:

ROOF:	GC_{pf2} =	-0.45	GC_{pf2E} =	-0.72
ROOF:	GC_{pf3} =	-0.47	GC_{pf3E} =	-0.65

LOAD CALCULATIONS (WIND FROM SIDE WALL):

P = q GCp - qi (GCpi)

EXAMPLE:

P = qh GCp - qi (GCpi) = (25.81 psf x 0.85 x -0.6) - (25.81 x 0.18) = -17.8 psf

P = qh GCp - qi (GCpi) = (25.81 psf x 0.85 x -0.6) - (25.81 x -0.18) = -8.5 psf

WINDWARD	P =	-17.80 psf
WINDWARD	P =	-8.50 psf
WINDWARD	P =	-6.80 psf
WINDWARD	P =	2.50 psf

LEEWARD	P =	8.50 psf
LEEWARD	P =	17.80 psf

WINDWARD SIDE:

USE	-17.80	psf WIND LOAD
USE	2.50	psf WIND LOAD

LEEWARD SIDE:

USE	8.50	psf WIND LOAD

THE MAXIMUM UPLIFT LOAD FOR 110 mph CASE A - WIND FROM SIDE WALL (MWFRS) IS -17.80 psf.

CASE B - WIND FROM END WALL:

ROOF:	GC_{pf2} =	-0.69	GC_{pf2E} =	-1.07
ROOF:	GC_{pf3} =	-0.37	GC_{pf3E} =	-0.53

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LOAD CALCULATIONS (WIND FROM END WALL):

P = q GCp - qi (GCpi)

EXAMPLE:

P = qh GCp - qi (GCpi) = (25.81 psf x 0.85 x -1.17) - (25.81 x 0.18) = -30.3 psf

P = qh GCp - qi (GCpi) = (25.81 psf x 0.85 x -0.18) - (25.81 x -0.18) = -21 psf

WINDWARD	P =	-30.30 psf
WINDWARD	P =	-21.00 psf
LEEWARD	P =	-8.60 psf
LEEWARD	P =	0.70 psf

WINDWARD SIDE:

USE	-30.30	psf WIND LOAD

LEEWARD SIDE:

USE	-8.60	psf WIND LOAD

THE MAXIMUM UPLIFT LOAD FOR 110 mph CASE B - WIND FROM END WALL (MWFRS) IS -30.30 psf.

CALCULATE LOADING ON BUILDING

LATERAL LOADS FROM WIND:

WIND PERPENDICULAR TO RIDGE:
WINDWARD SIDE:

USE	28.50	psf WIND LOAD

WIND PRESSURE (w) = 28.5 psf

MAX. WALL HEIGHT (H) = 8.00 ft

LAT = w * H / 2 = 28.5 psf * 8 ft / 2 =
LAT = 114 plf

WIND PARALLEL TO RIDGE:
WINDWARD SIDE:

USE	26.30	psf WIND LOAD

WIND PRESSURE (w) = 26.3 psf

MAX. WALL HEIGHT (H) = 13.730 ft (INCLUDES GABLE)

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WIND LOAD CALCULATIONS
(PER ASCE 7-05)

LAT = w * H / 2 = 26.3 psf * 13.73 ft / 2 =
LAT = 181 plf

UPLIFT LOADS FROM WIND:

WIND PERPENDICULAR TO RIDGE:
WINDWARD SIDE:

USE -17.80 psf WIND LOAD
USE 2.50 psf WIND LOAD

LEEWARD SIDE:

USE 8.50 psf WIND LOAD

WIND PRESSURE (w) = 17.8 psf
MAX. RAFTER LENGTH (L) = 14.90 ft

LAT = w * H / 2 = 17.8 psf * 14.9 ft / 2 =
LAT = 133 plf

WIND PARALLEL TO RIDGE:
WINDWARD SIDE:

USE -30.30 psf WIND LOAD

LEEWARD SIDE:

USE -8.60 psf WIND LOAD

WIND PRESSURE (w) = 30.3 psf
MAX. ROOF LENGTH (L) = 14.900 ft

LAT = w * H / 2 = 30.3 psf * 14.9 ft / 2 =
LAT = 226 plf

UPLIFT LOADING:

ROOF SPAN (RS) = 27.50 ft
ROOF PITCH: 5 / 12 ft
WIND PRESSURE = 30.3 psf ft
UPLIFT = **WIND PRESSURE * COS()*ROOF SPAN/2** / 12
= **384.609** psf

THIS IS THE UPLIFT IN THE SIDEWALL FROM TRUSS/ROOF
FROM TRUSS/ROOF

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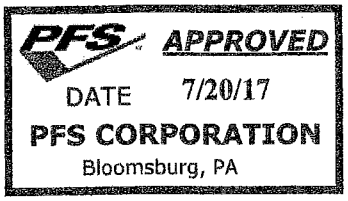
ft



LATERAL LOADING:

		ft
		ft
MAX. FLOOR WIDTH (W) =	27.5	
MAX. FLOOR LENGTH (L) =	39.00	
ROOF SPAN (RS) =	27.50	
ROOF PITCH:	5	
ROOF ANGLE (Θ) =	22.62	
MAX. WALL HEIGHT (H) =	8.00	psf
RIDGE ROOF HEIGHT (hr)=	5.73	
EDGE ROOF HEIGHT (he)=	2.5	28.5 psf * 8 ft=
		plf (w/ 0.6 FACTOR)

CALCULATE LATERAL PRESSURE AT FLOOR: (PERPENDICULAR TO RIDGE)

W_{LAT} = 28.5 psf

$w_{FL} = W_{LAT} * H$ =

w_{FL} = 228 26.3 psf * 8 ft=

CALCULATE LATERAL PRESSURE AT FLOOR: (PARALLEL TO RIDGE)

W_{LAT} = 26.3

$w_{FL} = W_{LAT} * H$ =

w_{FL} = 210 114 plf) (ASCE 7-10 FIGURE 27.4-1 NOTE 6)

CALCULATE LATERAL PRESSURE @ ROOF: (PERPENDICULAR TO RIDGE)

Sin () = 0.38443063

$w_{R\text{-}PER} = Wmax(roof) * hr*SIN() + w_{FL} / 2$ =

$w_{R\text{-}PER}$ = 30.3 psf * 2.20279997301131 ft + 228 plf / 2 =

(BUT NO LESS THAN: 228 plf / 2 = 114 plf) (ASCE 7-10 FIGURE 27.4-1 NOTE 6)

$w_{R\text{-}PER}$ = 180.75 **plf**

CALCULATE LATERAL PRESSURE @ ROOF: (PARALLEL TO RIDGE)

GABLE AREA (A_T) = RS * hr / 2 =

A_T = 27.5 ft * 5.73 ft / 2 =

A_T = 78.79 lbs

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WIND LOAD CALCULATIONS
(PER ASCE 7-05)

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TOTAL WIND LOAD (P_w) = (A_T - A_o) * W_{ff} + A_o * W_{fo} =
P_w = (78.79 ft^2) * 26.3 psf =
P_w = 2072

$W_{R\text{-}PAR}$ = P_w / R + W_f / 2 = mph
$W_{R\text{-}PAR}$ = 2072 lbs / 27.5 ft + 210 plf / 2 =
$W_{R\text{-}PAR}$ = 180 **plf**

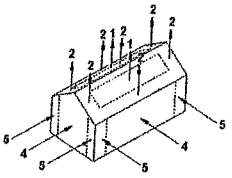
DETERMINE WIND LOADS PER ASCE 7-05 FOR ALL-HEIGHT BUILDINGS:

COMPONENTS AND CLADDING :

CONSTANTS:

WIND VELOCITY (V):	110
VEL. PRESS. EXP. COEF. (K_z):	0.98
MULT. for TOPO. FACTOR (K_1):	0.09
MULT. for TOPO. FACTOR (K_2):	0.00
MULT. for TOPO. FACTOR (K_3):	0.00
K_{zt}: = $(1 + K_1 \times K_2 \times K_3)^2$ =	1.00

DIRECTIONALITY FACTOR (K_d):	0.85
q_z: = .00256 x K_z x K_{zt} x Kd x V^2 =	25.81
q_i = q_h = q_z =	25.81
GUST EFFECT FACTOR (G):	0.85
INTERNAL PRESS. COEF. (GC_{pi}):	0.18
	-0.18



LATERAL LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

SIDE WALL:	FIELD:	GC_{pf4} =	-1.00
	EDGE:	GC_{pf5} =	-1.16

LOAD CALCULATIONS:

$P = q_h \times (GC_{pf} - GC_{pi})$

EXAMPLE:

$P_{4f} = q_h \times (GC_{pf4} - GC_{pi4})$ = 25.81 psf * [(-1 - 0.18)] = -30.46 psf

$P_{4f} = q_h \times (GC_{pf4} - GC_{pi4})$ = 25.81 psf * [(-1 - -0.18)] = -21.17 psf

FIELD:	P_{4f} =	-30.46	psf
FIELD:	P_{4f} =	-21.17	psf
EDGE:	P_{5f} =	-34.59	psf
EDGE:	P_{5f} =	-25.30	psf

USE **-18.28** psf WIND LOAD FOR FIELD.
USE **-20.75** psf WIND LOAD FOR EDGE.
****(W/ 0.6 FACTOR)**

UPLIFT LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

ROOF:	FIELD:	GC_{pf1} =	-0.81
	EDGE:	GC_{pf2} =	-1.27
	OVERHANG:	GC_{pf3} =	-2.20
	DOWNWARD:	GC_{pf1-3} =	0.37

LOAD CALCULATIONS:

$P_h = q_h \times (GC_p - GC_{pi})$

EXAMPLE:

$P_h = q_h \times (GC_{pf1} - GC_{pi1})$ = 25.81 psf * [(-0.81 - 0.18)] = -25.56 psf

$P_u = q_h \times (GC_{pf1} - GC_{pi1})$ = 25.81 psf * [(-0.81 - -0.18)] = -16.27 psf

FIELD:	P_{1f} =	-25.56	psf
FIELD:	P_U =	-16.27	psf

USE **-15.34** psf WIND LOAD FOR FIELD.
USE **-22.46** psf WIND LOAD FOR EDGE.
USE **-36.86** psf WIND LOAD FOR OVERHANG.
USE **8.52** psf DOWNWARD WIND LOAD.
****(W/ 0.6 FACTOR)**

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EDGE:	P_{zl} =	-37.43	psf
EDGE:	P_{zl} =	-28.14	psf
OVERHANG:	P_{zl} =	-61.43	psf
OVERHANG:	P_{zl} =	-52.14	psf
DOWNWARD:	P_{t-zl} =	4.91	psf
DOWNWARD:	P_{t-zl} =	14.20	psf

mph

DIRECTIONALITY FACTOR (K_d): 0.85

q_z: = .00256 x K_z x K_{zt} x Kd x V^2 = 25.81

$q_l = q_h = q_z$ = 25.81

GUST EFFECT FACTOR (G): 0.85

INTERNAL PRESS. COEF. (GC_{pi}): 0.18

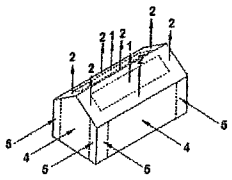
-0.18

DETERMINE WIND LOADS PER ASCE 7-05 FOR ALL-HEIGHT BUILDINGS:

COMPONENTS AND CLADDING: FOR FASTENERS ONLY (EFFECTIVE AREA SHALL BE NO GREATER THAN FASTENER TRIBUTARY AR

CONSTANTS:

WIND VELOCITY (V):	110
VEL. PRESS. EXP. COEF. (K_z):	0.98
MULT. for TOPO. FACTOR (K_1):	0.09
MULT. for TOPO. FACTOR (K_2):	0.00
MULT. for TOPO. FACTOR (K_3):	0.00
K_{zt}: = $(1 + K_1 \times K_2 \times K_3)^2$ =	1.00



LATERAL LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

SIDE WALL:) (ZONE 4):	GC_{pf4} =	-1.10
EDGE (ZONE 5):	GC_{pf5} =	-1.40

LOAD CALCULATIONS:

$P = q_h \times (GC_{pf} - GC_{pi})$

EXAMPLE:

$P_{4l} = q_h \times (GC_{pf4} - GC_{pi4})$ = 25.81 psf * [(-1.1 - 0.18)] = -33.04 psf

$P_{4l} = q_h \times (GC_{pf4} - GC_{pi4})$ = 25.81 psf * [(-1.1 - -0.18)] = -23.75 psf

FIELD (ZONE 4):	P_{4l} =	-33.04	psf
FIELD (ZONE 4):	P_{4l} =	-23.75	psf
EDGE (ZONE 5):	P_{5l} =	-40.78	psf
EDGE (ZONE 5):	P_{5l} =	-31.49	psf

USE	**19.82**	psf WIND LOAD FOR FIELD.
USE	**24.47**	psf WIND LOAD FOR EDGE.

****(W/ 0.6 FACTOR)**

UPLIFT LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

ROOF:) (ZONE 1):	GC_{pf1} =	-0.90
EDGE (ZONE 2):	GC_{pf2} =	-1.70
CORNER (ZONE 3):	GC_{pf3} =	-2.60
CORNER OH (ZONE 3):	GC_{pf1-3} =	-3.70

LOAD CALCULATIONS:

$P_h = q_h \times (GC_p - GC_{pi})$

EXAMPLE:

$P_h = q_h \times (GC_{pf1} - GC_{pi1})$ = 25.81 psf * [(-0.9 - 0.18)] = -27.88 psf

$P_{1l} = q_h \times (GC_{pf1} - GC_{pi1})$ = 25.81 psf * [(-0.9 - -0.18)] = -18.59 psf

FIELD (ZONE 1):	P_{1l} =	-27.88	psf

USE	**16.73**	psf WIND LOAD FOR FIELD (ZONE 1).
USE	**29.12**	psf WIND LOAD FOR EDGE (ZONE 2).
USE	**43.06**	psf WIND LOAD FOR CORNER (ZONE 3).
USE	**60.09**	psf WIND LOAD FOR CORNER OH (ZONE 3).

****(W/ 0.6 FACTOR)**

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Bloomsburg, PA

Section 2

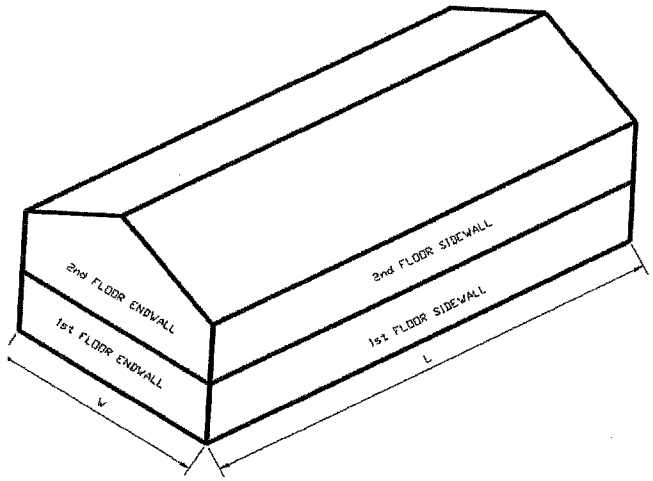
SHEAR WALL CALCULATIONS

COMMONWEALTH OF MASSACHUSETTS
JAMES M. BARLOW
CIVIL
NO. 49508
REGISTERED
PROFESSIONAL ENGINEER

07/10/17

SHEARWALL DESIGN
(per ASCE 7-05)

ICON - LEGACY CUSTOM MODULAR HOMES



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BUILDING INFORMATION:

JOB NUMBER =	170394
PLAN NAME / NUMBER =	O#6861
FIRST FLOOR WIDTH (W_1) =	27.5 ft
SECOND FLOOR WIDTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
ROOF SPAN =	27.5 ft
TRUSS SPACING (TOC)=	16 in
STUD SPACING (SOC) =	16 in
WIND SPEED (V3S) =	110 mph
EXPOSURE FACTOR =	C

SHEARWALL SUMMARY:

SHEATHING FASTENING MUST USE THE MORE RESTRICTIVE FASTENING OF THAT SPECIFIED FOR SHEARWALL SHEATHING FASTENING AND SHEATHING SUCTION FASTENING

FIRST FLOOR ENDWALL #1: 7/16" OSB EXTERIOR (BLOCKED) w/ 7/16" OSB INTERIOR (BLOCKED)
FAMILY / DINING WITH 8d COMMON NAILS SPACED AT 2" EDGE
***** SEGMENTED SHEARWALL - HOLDDOWNS REQUIRED AT EACH SEGMENT END *****
***** DOUBLE FRAMING MEMBERS AND DOUBLE BOTTOM PLATE REQUIRED AT PANEL EDGES. STAGGERED NAILING AT ALL PANEL EDGES ARE REQUIRED.**

FIRST FLOOR ENDWALL #2: 7/16" OSB EXTERIOR (BLOCKED) w/ 7/16" OSB INTERIOR (BLOCKED)
FOYER / MECH. ROOM WITH 8d COMMON NAILS SPACED AT 3" EDGE
***** SEGMENTED SHEARWALL - HOLDDOWNS REQUIRED AT EACH SEGMENT END *****

FIRST FLOOR OFFSET SHEARWALL: 7/16" OSB EXTERIOR (BLOCKED) w/ 7/16" OSB INTERIOR (BLOCKED)
BEDROOM #1 WITH 8d COMMON NAILS SPACED AT 6" EDGE

FIRST FLOOR SIDEWALL #1: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
FAMILY / BEDROOM #1 WITH 8d COMMON NAILS SPACED AT 6" EDGE

FIRST FLOOR SIDEWALL #2: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
DINING / MECH. ROOM WITH 8d COMMON NAILS SPACED AT 6" EDGE

SECOND FLOOR ENDWALL #1: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
SITTING WITH 8d COMMON NAILS SPACED AT 6" EDGE

SECOND FLOOR ENDWALL #2: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
BEDROOMS #2 & #3 WITH 8d COMMON NAILS SPACED AT 4" EDGE

SECOND FLOOR SIDEWALL #1: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
BEDROOM #2 WITH 8d COMMON NAILS SPACED AT 6" EDGE

SECOND FLOOR SIDEWALL #2: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
SITTING / BEDROOM #3 WITH 8d COMMON NAILS SPACED AT 6" EDGE

ROOF SHEATHING: 7/16" OSB (UN-BLOCKED) w/ 8d NAILING @ 6"/12"

CEILING SHEATHING: 1/2" GWB (UN-BLOCKED) w/ FASTENERS @ 7"/7"
FLOOR SHEATHING: 19/32" MIN. OSB (UN-BLOCKED) w/ 10d NAILING @ 6"/12"

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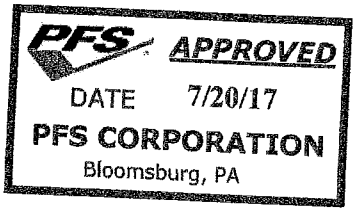

SHEATHING SUCTION FASTENING:

FOR ROOF ZONE 1: USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.
FOR ROOF ZONE 2: USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.
FOR ROOF ZONE 3 (CORNER): USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.
FOR ROOF ZONE 3OH (CORNER OVERHANG): USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.
FOR WALL ZONE 4: USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 10 in o.c.
FOR WALL ZONE 5: USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.
EDGE DIMENSION, a = 3 ft

CONNECTION SUMMARY:

CONNECTIONS TO BE AS SPECIFIED OR EQUIVALENT

UPLIFT CONNECTIONS

REQUIRED TRUSS TIE DOWN: USE (4) 0.131" x 2.5" COMMON NAIL (ENDNAILED) CEILING BAND TO TRUSS
AND USE (1) SIMPSON H2.5A EACH TRUSS
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 431 lbs

2nd FLOOR STUD TO TOP PLATE / CEILING BAND: USE A 1.5" x 26 ga. STRAP EACH STUD WITH (6) 8d NAIL(S) EACH END
OR WITH (9) 16 ga. STAPLE(S) EACH END
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 430 lbs

2nd FLOOR STUD TO FLOOR BAND: USE A 1.5" x 26 ga. STRAP EACH STUD WITH (6) 8d NAIL(S) EACH END
OR WITH (9) 16 ga. STAPLE(S) EACH END
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 354 lbs

2nd FLOOR BAND TO 1st CEILING BAND: USE A 1.5" x 26 ga. STRAP EACH STUD WITH (6) 8d NAIL(S) EACH END
OR WITH (9) 16 ga. STAPLE(S) EACH END
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 354 lbs

1st FLOOR STUD TO CEILING BAND: USE A 1.5" x 26 ga. STRAP EACH STUD WITH (6) 8d NAIL(S) EACH END
OR WITH (9) 16 ga. STAPLE(S) EACH END
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 299 lbs

1st FLOOR STUD TO FLOOR BAND: USE A 1.5" x 26 ga. STRAP EACH STUD WITH (6) 8d NAIL(S) EACH END
OR WITH (9) 16 ga. STAPLE(S) EACH END
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 223 lbs

FLOOR BAND TO SILL PLATE CONNECTION: USE (2) SIMPSON RSP4(1) PLATE AT EACH ANCHOR BOLT LOCATION
TO CONNECT FLOOR BAND TO SILL PLATE
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 557 lbs

LATERAL CONNECTIONS

TRUSS TO TOP PLATE CONNECTION: USE (1) 0.131" x 2.5" COMMON NAIL (TOENAILED) PER TRUSS

PLATE TO PLATE CONNECTION: ATTACH WITH 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 14" ON CENTER

PLATE TO STUD CONNECTION: USE (2) 0.162" x 3.5" COMMON NAIL (ENDNAILED) PER STUD

BOTTOM PLATE TO FLOOR CONNECTION: ATTACH WITH 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 14" ON CENTER

TOP PLATE SPLICES

TOP PLATE SPLICES SHALL BE A MINIMUM OF 2 ft w/ (2) ROWS 16d (0.162" x 3.5" COMMON NAIL (FACE NAILED)) 3" o.c
OR A MINIMUM OF 5 ft w/ (2) ROWS 16d (0.162" x 3.5" COMMON NAIL (FACE NAILED)) 12" o.c

HORIZONTAL FLOOR DIAPHRAGM CONTINUITY

SECOND FLOOR
MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (ALONG MATE LINE)
USE A MIN. OF (5) 1/2" DIA.THRU BOLTS
OR USE A MIN. OF (14) 3/8" DIA. X 12" LAG TOE SCREWS (SPACED A MAX. OF 28" o.c.)

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (AT ENDWALLS)
USE A 1.5" x 22 ga. STRAP WITH (5) 8d NAIL(S) EACH END
OR WITH (13) 16 ga. STAPLE(S) EACH END
TO ATTACH MODULE TO MODULE AT EACH ENDWALL
OR CONNECTION TO WITHSTAND A TENSILE FORCE OF 602 lbs

FIRST FLOOR
MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (ALONG MATE LINE)
USE A MIN. OF (6) 1/2" DIA.THRU BOLTS
OR USE A MIN. OF (17) 3/8" DIA. X 12" LAG TOE SCREWS (SPACED A MAX. OF 27" o.c.)

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (AT ENDWALLS)
USE A 1.5" x 26 ga. STRAP WITH (5) 8d NAIL(S) EACH END
OR WITH (8) 16 ga. STAPLE(S) EACH END
TO ATTACH MODULE TO MODULE AT EACH ENDWALL
OR CONNECTION TO WITHSTAND A TENSILE FORCE OF 382 lbs

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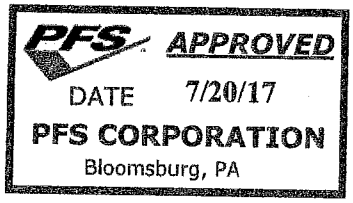

SHEAR CONNECTIONS

SECOND FLOOR ENDWALL

UNIT SHEAR SHEATHING TO FLOOR BAND: USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 2" O.C.
(AND SHEATHING TO TRUSS BOTTOM CHORD) OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 560 plf

UNIT UPLIFT SHEATHING TO FLOOR BAND: USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 560 plf
ALTERNATE: FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE

TRUSS BOTTOM CHORD TO TOP PLATE CONNECTION: USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 16" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE @ 63" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 2987 lbs

BANDS TO BANDS & BOTTOM / TOP PLATE CONNECTION: USE 0.162" x 3.5" COMMON NAIL (TOENAILED) AT 7" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE @ 28" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 6749 lbs

SECOND FLOOR SIDEWALL

UNIT SHEAR SHEATHING TO FLOOR BAND: USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 3" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 335 plf

UNIT UPLIFT SHEATHING TO FLOOR BAND: USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 3" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 335 plf
ALTERNATE: FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE

BANDS TO BANDS & BOTTOM / TOP PLATE CONNECTION: USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 5" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE @ 20" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 5377 lbs

FIRST FLOOR ENDWALL

UNIT SHEAR SHEATHING TO FLOOR BAND: USE SHEATHING CONNECTION WITH 3 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 1306 plf

UNIT UPLIFT SHEATHING TO FLOOR BAND: USE SHEATHING CONNECTION WITH 3 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 1306 plf
ALTERNATE: FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE

RIMBAND TO SILL PLATE CONNECTION: USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 2" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE @ 8" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 10768 lbs

SILL PLATE TO FOUNDATION CONNECTION: USE 1/2" ANCHOR BOLTS @ 14" O.C
OR USE 5/8" ANCHOR BOLTS @ 20" O.C
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 10768 lbs (784 plf)

FIRST FLOOR SIDEWALL

UNIT SHEAR SHEATHING TO FLOOR BAND: USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 404 plf

UNIT UPLIFT SHEATHING TO FLOOR BAND: USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 404 plf
ALTERNATE: FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE

RIMBAND TO SILL PLATE CONNECTION: USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 8" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE @ 36" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 7543 lbs

SILL PLATE TO FOUNDATION CONNECTION: USE 1/2" ANCHOR BOLTS @ 53" O.C
OR USE 5/8" ANCHOR BOLTS @ 72" O.C
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 7543 lbs (229 plf)

DESIGN PARAMETERS

MEAN ROOF HEIGHT (MRH) =	30.00 ft
NUMBER OF STORIES =	2
FIRST FLOOR WIDTH (W_1) =	27.5 ft
SECOND FLOOR WIDTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
BUILDING ASPECT RATIO (L/W) =	1.20
FLOOR JOIST DEPTH =	9.25 in
MAX. VERTICAL FLOOR OFFSET =	0 in
FLOOR ASPECT RATIO (L/W) =	1.20
MAX. FLOOR DIAPHRAGM OPENING WIDTH =	13.56 ft
MAX. FLOOR DIAPHRAGM OPENING LENGTH =	3.33 ft
FIRST FLOOR HEIGHT (H_1) =	8 ft
SECOND FLOOR HEIGHT (H_2) =	8 ft
CEILING ASPECT RATIO (L/W) =	1.20
MIN. SHEARWALL SEGMENT (H / 3.5) =	2.29 ft
ROOF PITCH =	5 /12

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SEE ADDITIONAL CALCULATIONS

CONNECTION INFORMATION:

TRUSS TO PLATE CONNECTORS

	UPLIFT STRENGTH:		SHEAR STRENGTH:	
(1) SIMPSON H2.5A	U =	535 lbs	F_2 =	110 lbs
(2) SIMPSON H2.5A	U =	1070 lbs	F_2 =	220 lbs
(2) SIMPSON LS50	U =	0 lbs	F_2 =	1260 lbs
	200 psi MINIMUM CONSTRUCTION ADHESIVE		Z =	100 psi (END-GRAIN)
	200 psi MINIMUM CONSTRUCTION ADHESIVE		Z =	200 psi (FACE)

FLAT STRAPS			**FASTENERS:** 8d NAIL		16 ga. STAPLE
1.5" x 26 ga. STRAP	Z =	485 lbs	Z =	76.7	49.9 lbs
1.5" x 22 ga. STRAP	Z =	810 lbs	Z =	127.2	48.6 lbs
1.5" x 20 ga. STRAP	Z =	973 lbs	Z =	127.3	48.3 lbs
(2) 1.5" x 22 ga. STRAP	Z =	1620 lbs	Z =	129.4	48.4 lbs
(2) 1.5 x 20 ga STRAP	Z =	1946 lbs	Z =	131.4	46 lbs

HOLDDOWNS w/ 1 1/2" EDGE DISTANCE **MINIMUM 8" STEM WALL** **ASSUME 3000 psi Fc CONCRETE**		
SIMPSON HHDQ11-SDS2.5	Z =	8505 lbs
SIMPSON HHDQ14-SDS2.5	Z =	10745 lbs
SIMPSON STHD14RJ	Z =	4430 lbs
SIMPSON HD12 W/(3) 2X6 STUDS	Z =	11055 lbs
1/2" DIA. THRU BOLT	Z =	623 lbs
1/2" ANCHOR BOLT	Z =	1056 lbs
5/8" ANCHOR BOLT	Z =	1488 lbs
3/8" DIA. X 12" LAG TOE SCREW	Z =	208 lbs
0.131" x 2.5" COMMON NAIL (FACE NAILED)	Z =	100 lbs
0.131" x 2.5" COMMON NAIL (TOENAILED)	Z =	83 lbs
0.131" x 2.5" COMMON NAIL (ENDNAILED)	Z =	67 lbs
0.162" x 3.5" COMMON NAIL (TOENAILED)	Z =	158 lbs
0.162" x 3.5" COMMON NAIL (FACE NAILED)	Z =	191 lbs
0.162" x 3.5" COMMON NAIL (ENDNAILED)	Z =	128 lbs
8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER	Z =	95 lbs
0.131" x 2.5" COMMON NAIL (FACE NAILED)	Z =	69 lbs (7/16" SIDE; WITHDRAWAL)
(1) SIMPSON LTP4 PLATE	Z =	575 lbs
SIMPSON RSP4(1) PLATE	Z =	285 lbs
1/2" GWB (UN-BLOCKED) w/ FASTENERS @ 7"/7"	Z =	70 plf
7/16" OSB (UN-BLOCKED) w/ 8d NAILING @ 6"/12"	Z =	296 plf
7/16" OSB (BLOCKED) w/ 8d NAILING @ 6"/12"	Z =	328 plf
19/32" MIN. OSB (UN-BLOCKED) w/ 10d NAILING @ 6"/12"	Z =	368 plf
19/32" MIN. OSB (BLOCKED) w/ 10d NAILING @ 6"/12"	Z =	412 plf
7/16" OSB (BLOCKED) w/ 8d NAILING @ 6"/12" & 4" o.c. @ PERIMETER	Z =	437 plf
19/32" OSB (BLOCKED) w/ 10d NAILING @ 6"/12" & 4" o.c. @ PERIMETER	Z =	548 plf
19/32" OSB (BLOCKED) w/ 10d NAILING @ 4"/12" & 2 1/2" o.c. @ PERIMETER, DOUBLE FRAMING	Z =	824 plf

NOTE: USP CONNECTORS & FASTEN VALUES ASSUME SPF FRAMING MATERIAL
ANCHOR BOLT VALUES ASSUME DF/SP VALUES

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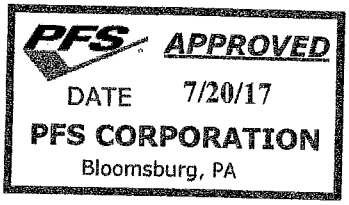


DESIGN UPLIFT LOADS

ROOF & CEILING ASSEMBLY DEAD LOAD =	15 psf
WALL DEAD LOAD (WDL) =	12 psf
FLOOR DEAD LOAD (FDL) =	10 psf
ROOF SPAN (RS)=	27.5 ft
TRUSS SPACING (TOC)=	16 in
STUD SPACING (SOC) =	16 in
FIRST FLOOR HEIGHT (H_1) =	8 ft
SECOND FLOOR HEIGHT (H_2) =	8 ft

UPLIFT CONNECTION LOAD:

PER ASCE 7-05: wup' = 385 plf
wup = wup' - 0.6 * RDL * RS / 4 =
wup = 385 plf - 0.6 * 15 psf * 27.5 ft / 4 = **323** plf

STANDARD TRUSS TO CEILING BAND CONNECTION:

(4) 0.131" x 2.5" COMMON NAIL (ENDNAILED) Z = 4 NAILS x 67 lbs / NAIL
Z = 268 lbs

USE (4) 0.131" x 2.5" COMMON NAIL (ENDNAILED) CEILING BAND TO TRUSS

ADDITIONAL TIE(S) REQUIRED FOR TRUSS TIE DOWN:

P_{up} = wup * TOC - 268 lbs
P_{up} = 323 plf * 16 in / 12 - 268 lbs =
P_{up} = 163 lbs

AND USE (1) SIMPSON H2.5A EACH TRUSS
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 431 lbs

REQUIRED SIDEWALL STUD TIE DOWN LOADING:

2nd FLOOR STUD TO TOP PLATE / CEILING BAND: $P_{2tp} = w_{up} * SOC =$ 323 * 16 / 12 = 430 lbs

2nd FLOOR STUD TO FLOOR BAND: $P_{2fb} = P_{2tp} - 0.6 * WDL * H_2 * SOC =$
P_{2fb} = 430 lbs - 0.6 * 12 psf * 8 ft * 16 in / 12 = 354 lbs

2nd FLOOR BAND TO 1st CEILING BAND: $P_{2fc} = P_{2fb} =$ 354 lbs

1st FLOOR STUD TO CEILING BAND: $P_{1cb} = P_{2fb} - 0.6 * FDL * W_2 / 4 * SOC =$
P_{1cb} = 354 lbs - 0.6 * 10 psf * 27.5 ft / 4 * 16 in / 12 =
P_{1cb} = 299 lbs

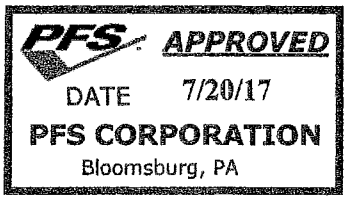
1st FLOOR STUD TO FLOOR BAND: $P_{1fb} = P_{1cb} - 0.6 * WDL * H_1 * SOC =$
P_{1fb} = 299 lbs - 0.6 * 12 psf * 8 ft * 16 in / 12 = 223 lbs

CHECK FASTENERS:

8d NAIL Z = 76.7 lbs
430 lbs / 76.7 lbs / FASTENER = 5.61 FASTENERS
USE (6) 8d NAIL(S) EACH END

16 ga. STAPLE Z = 49.9 lbs
430 lbs / 49.9 lbs / FASTENER = 8.62 FASTENERS
USE (9) 16 ga. STAPLE(S) EACH END

USE A 1.5" x 26 ga. STRAP EACH STUD WITH (6) 8d NAIL(S) EACH END
OR WITH (9) 16 ga. STAPLE(S) EACH END
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 430 lbs



SIDEWALL 1st FLOOR BAND TO SILL PLATE CONNECTION:

SIDEWALL UPLIFT AT SILL PLATE: $w_{sp} = P_{fb} / SOC - 0.6 * FDL * W_1 / 4 =$

$w_{sp} = 223$ lbs * 12 / 16 in - 0.6 * 10 psf * 27.5 ft / 4 =

$w_{sp} =$ 126 plf

CHECK STRAP AT ANCHOR BOLT LOCATIONS:

1/2" ANCHOR BOLT SPACING (BOC) = 53 in

$P_{sp} = w_{sp} * BOC = 126$ plf * 53 = 557 lbs

SIMPSON RSP4(1) PLATE Z = 285 lbs

$\frac{557 \text{ lbs}}{285 \text{ lbs}}$ = 2 PLATES

USE (2) SIMPSON RSP4(1) PLATE AT EACH ANCHOR BOLT LOCATION
TO CONNECT FLOOR BAND TO SILL PLATE
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 557 lbs

CHECK BENDING IN RIMBAND:

DBL. 2x10 SPF #2 RIMBAND DESIGN VALUES:

SECTION MODULUS (S) = 42.78 in^3

ALLOWABLE BENDING (fb) = 875 psi

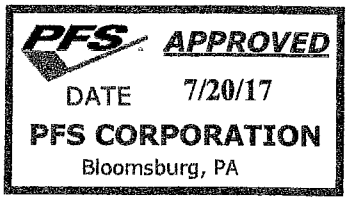
$M_{MAX} = \frac{w_{sp} * BOC^2}{8} =$

$M_{MAX} = \frac{126 \text{ plf} * (53 / 12)^2}{8} =$ 3687 in-lbs

APPLIED fb = $\frac{M_{MAX}}{S} = \frac{3687 \text{ in-lbs}}{42.78 \text{ in}^3} =$ 86 psi

ALLOWABLE BENDING (fb) = 875 psi > APPLIED fb = 86 psi

DBL. 2x10 SPF #2 RIMBAND IS OK



LATERAL LOAD AT ROOF/CEILING DIAPHRAGM

ROOF SPAN = 27.5 ft
ROOF PITCH = 5 /12

WIND PERPENDICULAR TO RIDGE:

181 plf

WIND PARALLEL TO RIDGE:

181 plf

LATERAL LOAD AT FLOOR DIAPHRAGM

WIND PERPENDICULAR TO RIDGE:

228 plf

WIND PARALLEL TO RIDGE:

210 plf

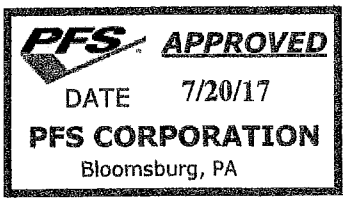
LATERAL FRAMING CONNECTION LOADS FROM WIND:

(FOR ROOF-TO-PLATE, PLATE-TO-PLATE, PLATE-TO-STUD, AND PLATE-TO-FLOOR)

PER ASCE 7-10 WIND PRESSURE (w) = 21 psf

$w_{l\text{-}wall}$ = w * H / 2 =

84 plf



TRUSS MULTIPLIER = 1.33

STUD MULTIPLIER = 1.33

TRUSS TO TOP PLATE CONNECTION:

$P_C = w_{l\text{-}wall} * M_{24}$ = 84 plf * 1.33 = 112 lbs

TRUSS CONNECTION: (1) SIMPSON H2.5A F_2 = 110 lbs

$P_C = P - F_2$ =

P_C = 112 lbs - 110 lbs =

P_C = 2 lbs

OF 0.131" x 2.5" COMMON NAIL (TOENAILED) REQUIRED = $\frac{P_C}{Z} = \frac{2 \text{ lbs}}{83 \text{ lbs}}$ = 1 NAILS

USE (1) 0.131" x 2.5" COMMON NAIL (TOENAILED) PER TRUSS

PLATE TO PLATE CONNECTION:

SPACING OF 0.131" x 2.5" COMMON NAIL (FACE NAILED) = $\frac{Z * 12}{w_{l\text{-}wall}} = \frac{100 \text{ lbs} * 12}{84 \text{ plf}}$ = 14 in O.C. (16" max)

ATTACH WITH 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 14" ON CENTER

PLATE TO STUD CONNECTION:

$P_C = w_{l\text{-}wall} * M_{16}$ = 84 plf * 1.33 = 112 lbs

OF 0.162" x 3.5" COMMON NAIL (ENDNAILED) REQUIRED = $\frac{P_C}{Z} = \frac{112 \text{ lbs}}{128 \text{ lbs}}$ = 2 NAILS

USE (2) 0.162" x 3.5" COMMON NAIL (ENDNAILED) PER STUD

BOTTOM PLATE TO FLOOR CONNECTION:

SPACING OF 0.131" x 2.5" COMMON NAIL (FACE NAILED) = $\frac{Z * 12}{w_{l\text{-}wall}} = \frac{100 \text{ lbs} * 12}{84 \text{ plf}}$ = 14 in O.C. (16" max)

ATTACH WITH 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 14" ON CENTER

TOP PLATE SPLICE LENGTH

STRUCTURE WIDTH (W) = 27.5 ft

STRUCTURE LENGTH (L) = 39 ft

0.162" x 3.5" COMMON NAIL (FACE NAILED) Z = 191 lbs

ROOF DIAPHRAGM LOADING (wl-per) = 181 plf

FLOOR DIAPHRAGM LOADING (Fl-per) = 228 plf

FLOOR DIAPHRAGM LOADING CONTROLS

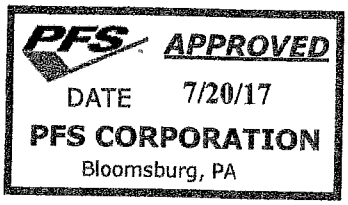
CONTROLLING LOADING: 228 plf

DIAPHRAGM CHORD FORCE = $T = \frac{wl\text{-}per * L^2}{8 * W} = \frac{228 \text{ plf} * 39 \text{ ft}^2}{8 * 27.5 \text{ ft}}$ = 1577 lbs

REQUIRED SPLICE LENGTH (w/ (2) 16d 3" o.c.): $\frac{T * 3" / 12" / ft}{2 * Z} = \frac{1577 \text{ lbs} * 3" / 12" / ft}{2 * 191 \text{ lbs / NAIL}}$ = 2 ft

REQUIRED SPLICE LENGTH (w/ (2) 16d 12" o.c.): $\frac{T * 12" / 12" / ft}{2 * Z} = \frac{1577 \text{ lbs} * 12" / 12" / ft}{2 * 191 \text{ lbs / NAIL}}$ = 5 ft

TOP PLATE SPLICES SHALL BE A MINIMUM OF 2 ft w/ (2) ROWS 16d (0.162" x 3.5" COMMON NAIL (FACE NAILED)) 3" o.c OR A MINIMUM OF 5 ft w/ (2) ROWS 16d (0.162" x 3.5" COMMON NAIL (FACE NAILED)) 12" o.c



ROOF DIAPHRAGM SHEATHING REQUIREMENTS

ROOF SPAN (RS) = 27.5 ft
ROOF LENGTH (RL) = 33 ft
ROOF PITCH = 5 /12
ROOF ANGLE (RA) = 22.6 °
wl_{per} = 181 plf
STANDARD ROOF SHEATHING = 7/16" OSB (UN-BLOCKED) w/ 8d NAILING @ 6"/12"
ROOF SHEATHING SHEAR CAPACITY (v_r) = 296 plf
STANDARD CEILING SHEATHING = 1/2" GWB (UN-BLOCKED) w/ FASTENERS @ 7"/7"
CEILING SHEATHING SHEAR CAPACITY (v_c) = 70 plf

MAX DIAPHRAGM SHEAR (v) = $\frac{L * wl_{per} / 2}{RS}$ = $\frac{33 \text{ ft} * 181 \text{ plf} / 2}{27.5 \text{ ft}}$ = 109 plf

NET DIAPHRAGM SHEAR CAPACITY (v_n) = $v_r + v_c$ = 296 plf + 70 plf = 366 plf

DIAPHRAGM SHEAR CAPACITY REQUIRED = 109 plf < **STANDARD ROOF/CEILING DIAPHRAGM CAPACITY = 366 plf**

STANDARD ROOF/CEILING DIAPHRAGM OK

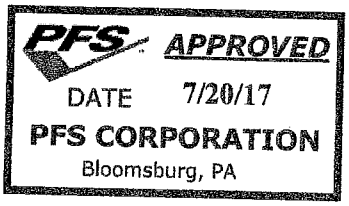
FLOOR DIAPHRAGM SHEATHING REQUIREMENTS

BUILDING WIDTH (W) = 27.5 ft
BUILDING LENGTH (L) = 33 ft
FL_{per} = 228 plf
STANDARD FLOOR SHEATHING = 19/32" MIN. OSB (UN-BLOCKED) w/ 10d NAILING @ 6"/12"
FLOOR DIAPHRAGM SHEAR CAPACITY (v_f) = 368 plf

MAX FLOOR DIAPHRAGM SHEAR (v) = $\frac{L * FL_{per} / 2}{W}$ = $\frac{33 \text{ ft} * 228 \text{ plf} / 2}{27.5 \text{ ft}}$ = 137 plf

DIAPHRAGM SHEAR CAPACITY REQUIRED = 137 plf < **STANDARD ROOF/CEILING DIAPHRAGM CAPACITY = 368 plf**

STANDARD FLOOR DIAPHRAGM OK



SHEATHING SUCTION CONNECTION (PER ASCE 7-05 C-C PRESSURES, pp. 355-358)

TRUSS SPACING (TOC) = 16 in O.C.
STUD SPACING (SOC) = 16 in O.C.
0.131" x 2.5" COMMON NAIL (FACE NAILED) 69 lbs (7/16" SIDE MEMBER; WITHDRAWAL)
a = 3 ft

FOR ROOF ZONE 1 (FIELD):

p = 16.728 psf

TRUSS LOADING = 16.728 psf x 16" o.c. / 12" / ft = 22 plf

22 plf / 69 lbs / FASTENER = 0.4 FASTENERS / ft = 30 in O.C.
MAX ALLOWABLE SPACING: 12 in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.

FOR ROOF ZONE 2 (EDGE):

p = 29.118 psf

TRUSS LOADING = 29.118 psf x 16" o.c. / 12" / ft = 39 plf

39 plf / 69 lbs / FASTENER = 0.6 FASTENERS / ft = 20 in O.C.
MAX ALLOWABLE SPACING: 12 in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.

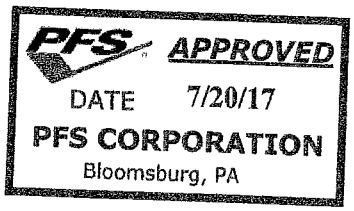
FOR ROOF ZONE 3 (CORNER):

p = 43.056 psf

TRUSS LOADING = 43.056 psf x 16" o.c. / 12" / ft = 57 plf

57 plf / 69 lbs / FASTENER = 0.9 FASTENERS / ft = 13 in O.C.
MAX ALLOWABLE SPACING: 12 in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.



FOR ROOF ZONE 3OH (CORNER OVERHANG):

p = 60.09 psf

TRUSS LOADING = 60.09 psf x 16" o.c. / 12" / ft = 80 plf

80 plf / 69 lbs / FASTENER = 1.2 FASTENERS / ft = 10 in O.C.

MAX ALLOWABLE SPACING: 12 in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 10 in o.c.

FOR WALL ZONE 4 (FIELD):

p = 19.824 psf

STUD LOADING = 19.824 psf x 16" o.c. / 12" / ft = 26 plf

26 plf / 69 lbs / FASTENER = 0.4 FASTENERS / ft = 30 in O.C.

MAX ALLOWABLE SPACING: 12 in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.

FOR WALL ZONE 5 (EDGE):

p = 24.468 psf

STUD LOADING = 24.468 psf x 16" o.c. / 12" / ft = 33 plf

33 plf / 69 lbs / FASTENER = 0.5 FASTENERS / ft = 24 in O.C.

MAX ALLOWABLE SPACING: 12 in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.

SECOND FLOOR ENDWALL #1 SHEATHING LENGTH REQUIREMENTS SITTING

FIRST FLOOR LENGTH (W_1) =	27.5 ft
SECOND FLOOR LENGTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
SHEATHING EDGE 8d NAIL SPACING =	6 in O.C. (8d NAILS OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	436 plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3 ft
FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	7.83 ft
2nd FL. PERCENT FULL HEIGHT SHEATHING=	100 %
2nd FL. MAX. UNRESTRAINED OPENING HEIGHT =	0 ft
SHEAR ADJUSTMENT FACTOR (C_o) =	1 (TABLE 2306.3.7.2, IBC)
2nd FL. NUMBER OF SHEARWALLS (N_{end}) =	2
ADDITIONAL WALL LOAD =	0 lbs

PFS APPROVED
DATE 7/20/17
PFS CORPORATION
Bloomsburg, PA

SHEARWALL REACTION (R_{end2}) = L_2 * $w_{i\text{-}per}$ / N_{end} + ADDITIONAL=

R_{end2} = 33 ft * 181 plf / 2 + 0 lbs = 2987 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{end2} / V = 2987 lbs / 436 plf = 6.85 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (ENDWALL) = L_{sw} / C_O = 6.85 ft / 1 = 6.86 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 6.86 ft < PERFORATED FULL HEIGHT SHEATHING PROVIDED = 7.83 ft

ENDWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

SECOND FLOOR HORIZONTAL FLOOR DIAPHRAGM CONTINUITY:

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (ALONG MATE LINE)
(DEEP BEAM HORIZONTAL SHEAR)

$V_i = \frac{(3 * F_{i\text{-}per} / 4) * L}{2} = \frac{3/4 * 228 \text{ plf} * 33 \text{ ft}}{2} =$ 2822 lbs

1/2" DIA. THRU BOLT = $\frac{V_i}{Z_{1/2\ BOLT}} = \frac{2822 \text{ lbs}}{623 \text{ lbs}} =$ 5 BOLTS

3/8" DIA. X 12" LAG TOE SCREW = $\frac{V_i}{Z_{3/8\ LAG}} = \frac{2822 \text{ lbs}}{208 \text{ lbs}} =$ 14 SCREWS

SPACING = L_2 / # = 33 ft / 14 SCREWS = 28 in

USE A MIN. OF (5) 1/2" DIA.THRU BOLTS
OR USE A MIN. OF (14) 3/8" DIA. X 12" LAG TOE SCREWS (SPACED A MAX. OF 28" o.c.)
TO ATTACH MODULE TO MODULE ALONG MATE LINE

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (AT ENDWALLS)
(CHORD FORCE CONTINUITY)

$T = \frac{F_{i\text{-}per} * W_2^2}{8 * L_2} = \frac{210 \text{ plf} * 27.5 \text{ ft}^2}{8 * 33 \text{ ft}} =$ 602 lbs

CHECK FASTENERS:

8d NAIL Z = 127.2 lbs
602 lbs / 127.2 lbs / FASTENER = 4.73 FASTENERS
USE (5) 8d NAIL(S) EACH END

16 ga. STAPLE Z = 48.6 lbs
602 lbs / 48.6 lbs / FASTENER = 12.39 FASTENERS
USE (13) 16 ga. STAPLE(S) EACH END

USE A 1.5" x 22 ga. STRAP WITH (5) 8d NAIL(S) EACH END
OR WITH (13) 16 ga. STAPLE(S) EACH END
TO ATTACH MODULE TO MODULE AT EACH ENDWALL
OR CONNECTION TO WITHSTAND A TENSILE FORCE OF 602 lbs

SECOND FLOOR ENDWALL #1: UPLIFT DUE TO OVERTURNING

FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	7.83 ft
SHEARWALL ADJUSTMENT FACTOR (C_O) =	1
SHEARWALL REACTION (R_{end2}) =	2987 lbs
WALL HEIGHT (H) =	8 ft

UPLIFT FORCE (U_{E2}) = $\frac{R_{end1} \times H}{\Sigma L_i \times C_O} =$

$U_{E2} = \frac{2987 \text{ lbs} \times 8 \text{ ft}}{7.83 \text{ ft} \times 1} =$ 3052 lbs

PREPARED BY:
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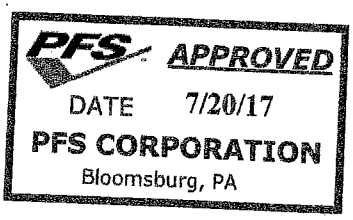
6512 SIX FORKS RD, SUITE 203B
RALEIGH, NC 27615



SECOND FLOOR ENDWALL #2 SHEATHING LENGTH REQUIREMENTS
BEDROOMS #2 & #3

FIRST FLOOR WIDTH (W_1) =	27.5 ft
SECOND FLOOR WIDTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
SHEATHING EDGE 8d NAIL SPACING =	4 in O.C. (8d NAILS OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	590 plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3 ft
FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	11.58 ft
2nd FL. PERCENT FULL HEIGHT SHEATHING=	42 %
2nd FL. MAX. UNRESTRAINED OPENING HEIGHT =	8 ft
SHEAR ADJUSTMENT FACTOR (C_o) =	0.461 (TABLE 2305.3.7.2, IBC)
2nd FL. NUMBER OF SHEARWALLS (N_{end}) =	2
ADDITIONAL WALL LOAD =	0 lbs

SHEARWALL REACTION (R_{end2}) = L_2 * $w_{i\,per}$ / N_{end} + ADDITIONAL=

R_{end2} = 33 ft * 181 plf / 2 + 0 lbs = 2987 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{end2} / V = 2987 lbs / 590 lbs = 5.06 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (ENDWALL) = L_{SW} / C_O = 5.06 ft / 0.461 = 10.99 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 10.99 ft < **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 11.58 ft**

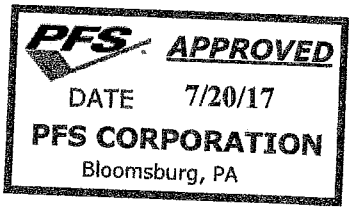
ENDWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

SECOND FLOOR ENDWALL #2: UPLIFT DUE TO OVERTURNING

FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	11.58 ft
SHEARWALL ADJUSTMENT FACTOR (C_O) =	0.461
SHEARWALL REACTION (R_{end2}) =	2987 lbs
WALL HEIGHT (H) =	8 ft

$$\text{UPLIFT FORCE } (U_{E2}) = \frac{R_{end\,i} \times H}{\Sigma L_i \times C_O} =$$

$$U_{E2} = \frac{2987 \text{ lbs} \times 8 \text{ ft}}{11.58 \text{ ft} \times 0.461} = 4477 \text{ lbs}$$



SECOND FLOOR ENDWALL: SHEAR CONNECTIONS

SECOND FLOOR WIDTH (W_2) =	27.5 ft	
SECOND FLOOR LENGTH (L_2) =	33 ft	
$FL_{t\text{-}per}$ =	228 plf	
1/2" ANCHOR BOLT	Z =	1056 lbs
5/8" ANCHOR BOLT	Z =	1488 lbs
0.162" x 3.5" COMMON NAIL (TOENAILED)	Z =	158 lbs
0.162" x 3.5" COMMON NAIL (FACE NAILED)	Z =	191 lbs
(1) SIMPSON LTP4 PLATE	Z =	575 lbs

MAXIMUM SECOND FLOOR ENDWALL SHEAR LOAD = 2987 lbs

TRUSS BOTTOM CHORD TO TOP PLATE CONNECTION:

# TOENAILS PER FOOT =	V / Z / W = 2987 lbs / 158 lbs / 27.5 ft =		0.7 NAILS / ft	
TOENAIL SPACING =	12 / # =	12 / 0.7 =	16 " O.C.	(16" MAX)
# MP4F PLATES PER FOOT =	V / Z / W = 2987 lbs / 575 lbs / 27.5 ft =		0.2 PLATES / ft	
MP4F PLATE SPACING =	12 / # =	12 / 0.2 =	63 " O.C.	(72" MAX)

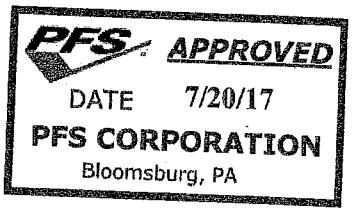
USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 16" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE @ 63" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 2987 lbs

BANDS TO BANDS & BOTTOM / TOP PLATE CONNECTION:

V = MAX ENDWALL SHEAR + L_2 x $FL_{t\text{-}per}$ / 2 =
V = 2987 lbs + 33 ft x 228 plf / 2 = 6749 lbs

# TOENAILS PER FOOT =	V / Z / W = 6749 lbs / 158 lbs / 27.5 ft =		1.6 NAILS / ft	
TOENAIL SPACING =	12 / # =	12 / 1.6 =	7 " O.C.	(16" MAX)
# MP4F PLATES PER FOOT =	V / Z / W = 6749 lbs / 575 lbs / 27.5 ft =		0.4 PLATES / ft	
MP4F PLATE SPACING =	12 / # =	12 / 0.4 =	28 " O.C.	(72" MAX)

USE 0.162" x 3.5" COMMON NAIL (TOENAILED) AT 7" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE @ 28" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 6749 lbs



CHECK SHEATHING TO RIMBAND CONNECTION:

UNIT SHEAR CHECK:

SHEAR FORCE (V) = $\frac{R_{em/2}}{\Sigma L_i X C_o}$ =

SECOND FLOOR ENDWALL #1: $V = \frac{2987 \text{ lbs}}{7.83 \text{ ft} * 1}$ = 382 plf

SECOND FLOOR ENDWALL #2: $V = \frac{2987 \text{ lbs}}{11.58 \text{ ft} * 0.461}$ = 560 plf

MAXIMUM SECOND FLOOR ENDWALL UNIT SHEAR = 560 plf

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

OF 8d NAILS PER FOOT = $\frac{V}{Z} = \frac{560 \text{ plf}}{95 \text{ lbs / NAIL}}$

OF 8d NAILS PER FOOT = 5.9 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 5.9 = 2.03 " O.C.

OF ROWS : 1 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 1 * SPACING 1 * 2.03 o.c. 2 " O.C.

USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 560 plf

UNIT UPLIFT CHECK: (EQUAL TO UNIT SHEAR)

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

OF 8d NAILS PER FOOT = $\frac{V}{Z} = \frac{560 \text{ plf}}{95 \text{ lbs / NAIL}}$

OF 8d NAILS PER FOOT = 5.9 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 5.9 = 2.03 " O.C.

OF ROWS : 1 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 1 * SPACING 1 * 2.03 o.c. 2 " O.C.

USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 560 plf

ALTERNATE SHEATHING CONNECTION FOR UNIT UPLIFT (GLUE):

V = 560 plf

200 psi MINIMUM CONSTRUCTION ADHESIVE Z = 200 psi (FACE)

WIDTH OF GLUE REQUIRED FOR SHEATHING CONNECTION ALONG FLOOR BAND:

WIDTH OF GLUE STRIP REQUIRED = $\frac{V}{Z} = \frac{560 \text{ plf}}{200 \text{ psi} * 12" / \text{ft}}$ = 1 "

FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE
PLUS (1) ROW OF 8d NAILS AT 6" o.c.

FIRST FLOOR ENDWALL #1 SHEATHING LENGTH REQUIREMENTS
FAMILY / DINING

FIRST FLOOR WIDTH (W_1) =	27.5 ft
SECOND FLOOR WIDTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 7/16" OSB INTERIOR (BLOCKED)
SHEATHING EDGE 8d NAIL SPACING =	2 in O.C. (8d NAILS OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	1648 plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3 ft
SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	5.17 ft
1st FL. PERCENT FULL HEIGHT SHEATHING=	100 %
1st FL. MAX. UNRESTRAINED OPENING HEIGHT =	0 ft
SHEAR ADJUSTMENT FACTOR (C_o) =	1 (TABLE 2305.3.7.2, IBC)
TRIBUTARY LENGTH (TL) =	16.5 ft
ADDITIONAL WALL LOAD =	0 lbs

SHEARWALL REACTION (R_{end1}) = TL * FL_{4per} + R_{end2} + ADDITIONAL=

R_{end1} = 16.5 ft * 228 plf + 2987 lbs + 0 lbs = 6749 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{end1} / V = 6749 lbs / 1648 plf = 4.10 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (ENDWALL) = L_{sw} / C_O = 4.1 ft / 1 = 4.10 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 4.1 ft < **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 5.17 ft**

ENDWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

FIRST FLOOR HORIZONTAL FLOOR DIAPHRAGM CONTINUITY:

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (ALONG MATE LINE)
(DEEP BEAM HORIZONTAL SHEAR)

$$V_t = \frac{(3 * F_{4per} / 4) * L_2}{2} = \frac{3/4 * 228 \text{ plf} * 39 \text{ ft}}{2} = 3335 \text{ lbs}$$

1/2" DIA. THRU BOLT = $\frac{V_t}{Z_{1/2\ BOLT}} = \frac{3335 \text{ lbs}}{623 \text{ lbs}}$ = 6 BOLTS

3/8" DIA. X 12" LAG TOE SCREW = $\frac{V_t}{Z_{3/8\ LAG}} = \frac{3335 \text{ lbs}}{208 \text{ lbs}}$ = 17 SCREWS

SPACING = L_2 / # = 39 ft / 17 SCREW = 27 in

USE A MIN. OF (6) 1/2" DIA.THRU BOLTS
OR USE A MIN. OF (17) 3/8" DIA. X 12" LAG TOE SCREWS (SPACED A MAX. OF 27" o.c.)
TO ATTACH MODULE TO MODULE ALONG MATE LINE

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (AT ENDWALLS)
(CHORD FORCE CONTINUITY)

$$T = \frac{3/4 * F_{4per} * W_1^2}{8 * L_1} = \frac{3/4 * 210 \text{ plf} * 27.5 \text{ ft}^2}{8 * 39 \text{ ft}} = 382 \text{ lbs}$$

CHECK FASTENERS:

8d NAIL Z = 76.7 lbs
382 lbs / 76.7 lbs / FASTENER = 4.98 FASTENERS
USE (5) 8d NAIL(S) EACH END

16 ga. STAPLE Z = 49.9 lbs
382 lbs / 49.9 lbs / FASTENER = 7.66 FASTENERS
USE (8) 16 ga. STAPLE(S) EACH END

USE A 1.5" x 26 ga. STRAP WITH (5) 8d NAIL(S) EACH END
OR WITH (8) 16 ga. STAPLE(S) EACH END
TO ATTACH MODULE TO MODULE AT EACH ENDWALL
OR CONNECTION TO WITHSTAND A TENSILE FORCE OF 382 lbs

FIRST FLOOR ENDWALL #1: UPLIFT DUE TO OVERTURNING

SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	5.17 ft
SHEARWALL ADJUSTMENT FACTOR (C_O) =	1
SHEARWALL REACTION (R_{end1}) =	6749 lbs
WALL HEIGHT (H) =	8 ft

UPLIFT FORCE (U_{E1}) = $\frac{R_{end1} \times H}{\Sigma L_i \times C_O}$ =

$U_{E1} = \frac{6749 \text{ lbs} \times 8 \text{ ft}}{5.17 \times 1}$ = 10444 lbs

PFS APPROVED
DATE 7/20/17
PFS CORPORATION
Bloomsburg, PA

PREPARED BY:
BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD, SUITE 203B
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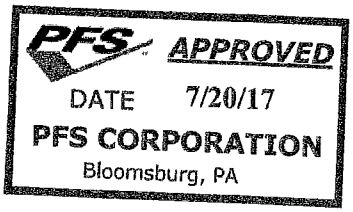


FIRST FLOOR ENDWALL #2 SHEATHING LENGTH REQUIREMENTS
FOYER / MECH. ROOM

FIRST FLOOR WIDTH (W_1) =	27.5 ft
SECOND FLOOR WIDTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 7/16" OSB INTERIOR (BLOCKED)
SHEATHING EDGE 8d NAIL SPACING =	3 in O.C. (8d NAILS OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	1260 plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3 ft
SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	6.42 ft
1st FL. PERCENT FULL HEIGHT SHEATHING=	100 %
1st FL. MAX. UNRESTRAINED OPENING HEIGHT =	0 ft
SHEAR ADJUSTMENT FACTOR (C_o) =	1 (TABLE 2305.3.7.2, IBC)
TRIBUTARY LENGTH (TL) =	19.5 ft
ADDITIONAL WALL LOAD =	0 lbs

SHEARWALL REACTION (R_{end1}) = TL * FL_{per} + R_{end2} + ADDITIONAL=

R_{end1} = 19.5 ft * 228 plf + 2987 lbs + 0 lbs = 7433 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (l_{sw}) = R_{end1} / V = 7433 lbs / 1260 plf = 5.90 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (ENDWALL) = L_{SW} / C_O = 5.9 ft / 1 = 5.90 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 5.9 ft < **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 6.42 ft**

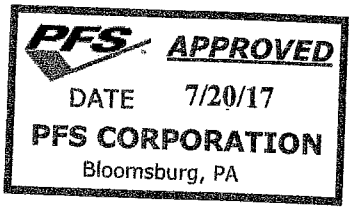
ENDWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

FIRST FLOOR ENDWALL #2: UPLIFT DUE TO OVERTURNING

SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	6.42 ft
SHEARWALL ADJUSTMENT FACTOR (C_O) =	1
SHEARWALL REACTION (R_{end1}) =	7433 lbs
WALL HEIGHT (H) =	8 ft

$$U_{E1} = \frac{R_{end1} \times H}{\Sigma L_i \times C_O} =$$

$$U_{E1} = \frac{7433 \text{ lbs} \times 8 \text{ ft}}{6.42 \times 1} = 9263 \text{ lbs}$$



FIRST FLOOR OFFSET SHEARWALL SHEATHING LENGTH REQUIREMENTS
BEDROOM #1

FIRST FLOOR WIDTH (W_1) =	27.5 ft
SECOND FLOOR WIDTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 7/16" OSB INTERIOR (BLOCKED)
SHEATHING EDGE 8d NAIL SPACING =	6 in O.C. (8d NAILS OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	436 plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3 ft
SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	7.42 ft
1st FL. PERCENT FULL HEIGHT SHEATHING=	54 %
1st FL. MAX. UNRESTRAINED OPENING HEIGHT =	5.35 ft
SHEAR ADJUSTMENT FACTOR (C_o) =	0.684 (TABLE 2305.3.7.2, IBC)
TRIBUTARY LENGTH (TL) =	3 ft
ADDITIONAL WALL LOAD =	0 lbs

SHEARWALL REACTION (R_{end1}) = TL * FL_{1per} + ADDITIONAL=
R_{end1} = 3 ft * 228 plf + 0 lbs = 684 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{end1} / V = 684 lbs / 436 plf = 1.57 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (ENDWALL) = L_{sw} / C_o = 1.57 ft / 0.684 = 2.30 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 2.3 ft < **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 7.42 ft**

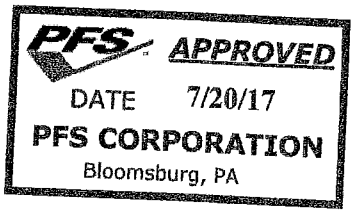
OFFSET SHEARWALL OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

FIRST FLOOR OFFSET SHEARWALL: UPLIFT DUE TO OVERTURNING

SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	7.42 ft
SHEARWALL ADJUSTMENT FACTOR (C_O) =	0.684
SHEARWALL REACTION (R_{end1}) =	684 lbs
WALL HEIGHT (H) =	8 ft

$$U_{Ei} = \frac{R_{end1} \times H}{\Sigma L_i \times C_o} =$$

$$U_{E1} = \frac{684 \text{ lbs} \times 8 \text{ ft}}{7.42 \times 0.684} = 1079 \text{ lbs}$$



FIRST FLOOR ENDWALL: SHEAR CONNECTIONS

EFFECTIVE FIRST FLOOR WIDTH (W_1) =	13.75 ft	
FIRST FLOOR LENGTH (L_1) =	39 ft	
FL_{+per} =	228 plf	
1/2" ANCHOR BOLT	Z =	1056 lbs
5/8" ANCHOR BOLT	Z =	1488 lbs
0.162" x 3.5" COMMON NAIL (TOENAILED)	Z =	158 lbs
(1) SIMPSON LTP4 PLATE	Z =	575 lbs

MAXIMUM FIRST FLOOR ENDWALL SHEAR LOAD = 7433 lbs

RIMBAND TO SILL PLATE CONNECTION:

V = MAX ENDWALL SHEAR + L_1 x (3/4 * FL_{+per}) / 2 =
V = 7433 lbs + 39 ft x (3/4 * 228 plf) / 2 = 10768 lbs

TOENAILS PER FOOT = V / Z / W = 10768 lbs / 158 lbs / 13.75 ft = 5.0 NAILS / ft

TOENAIL SPACING = 12 / # = 12 / 5 = 2 " O.C. (16" MAX)

LTP4 PLATES PER FOOT = V / Z / W = 10768 lbs / 575 lbs / 13.75 ft = 1.4 PLATES / ft

LTP4 PLATE SPACING = 12 / # = 12 / 1.4 = 8 " O.C. (72" MAX)

USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 2" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE @ 8" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 10768 lbs

SILL PLATE TO FOUNDATION CONNECTION:

1/2" ANCHOR BOLTS = V / Z = 10768 lbs / 1056 lbs = 11 BOLTS

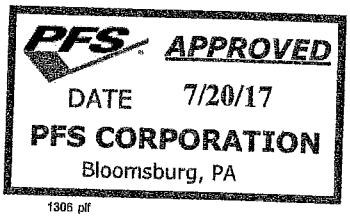
BOLT SPACING = (W - 2) / (N - 1) = (13.75 ft - 2) / (11 - 1) = 14 in

USE 1/2" ANCHOR BOLTS @ 14" O.C
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 10768 lbs (784 plf)

5/8" ANCHOR BOLTS = V / Z = 10768 lbs / 1488 lbs = 8 BOLTS

BOLT SPACING = (W - 2) / (N - 1) = (13.75 ft - 2) / (8 - 1) = 20 in

USE 5/8" ANCHOR BOLTS @ 20" O.C
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 10768 lbs (784 plf)



CHECK SHEATHING TO RIMBAND CONNECTION:

UNIT SHEAR CHECK:

SHEAR FORCE (V) = $\frac{R_{endfl}}{\Sigma L_i X C_o}$ =

FIRST FLOOR ENDWALL #1: $V = \frac{6749 \text{ lbs}}{5.17 \text{ ft} * 1}$ = 1306 plf

FIRST FLOOR ENDWALL #2: $V = \frac{7433 \text{ lbs}}{6.42 \text{ ft} * 1}$ = 1158 plf

FIRST FLOOR OFFSET SHEARWALL: $V = \frac{684 \text{ lbs}}{7.42\text{ft} * 0.684}$ = 135 plf

MAXIMUM FIRST FLOOR ENDWALL UNIT SHEAR = 1306 plf

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

OF 8d NAILS PER FOOT = $\frac{V}{Z} = \frac{1306 \text{ plf}}{95 \text{ lbs / NAIL}}$

OF 8d NAILS PER FOOT = 13.75 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 13.75 = 0.87 " O.C.

OF ROWS : 3 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 3 * SPACING 3 * 0.87 o.c. 2 " O.C.

USE SHEATHING CONNECTION WITH 3 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 1306 plf

UNIT UPLIFT CHECK: (EQUAL TO UNIT SHEAR)

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

OF 8d NAILS PER FOOT = $\frac{V}{Z} = \frac{1306 \text{ plf}}{95 \text{ lbs / NAIL}}$

OF 8d NAILS PER FOOT = 13.75 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 13.75 = 0.87 " O.C.

OF ROWS : 3 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 3 * SPACING 3 * 0.87 o.c. 2 " O.C.

USE SHEATHING CONNECTION WITH 3 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 1306 plf

ALTERNATE SHEATHING CONNECTION FOR UNIT UPLIFT (GLUE):

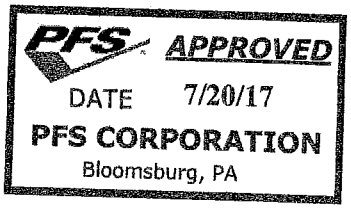
V = 1306 plf

200 psi MINIMUM CONSTRUCTION ADHESIVE Z = 200 psi (FACE)

WIDTH OF GLUE REQUIRED FOR SHEATHING CONNECTION ALONG FLOOR BAND:

WIDTH OF GLUE STRIP REQUIRED = $\frac{V}{Z} = \frac{1306 \text{ plf}}{200 \text{ psi} * 12" / \text{ft}}$ = 1 "

FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE
PLUS (1) ROW OF 8d NAILS AT 6" o.c.



SECOND FLOOR SIDEWALL #1 SHEATHING LENGTH REQUIREMENTS
BEDROOM #2

FIRST FLOOR WIDTH (W_1) =	27.5 ft
SECOND FLOOR WIDTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
SHEATHING EDGE 8d NAIL SPACING =	6 in O.C. (8d NAILS OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	436 plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3 ft
SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	7.43 ft
2nd FL. PERCENT FULL HEIGHT SHEATHING=	100 %
2nd FL. MAX. UNRESTRAINED OPENING HEIGHT =	0 ft
SHEAR ADJUSTMENT FACTOR (C_o) =	1 (TABLE 2305.3.7.2, IBC)
2nd FL. NUMBER OF SHEARWALLS (N_{side}) =	2
ADDITIONAL WALL LOAD =	0 lbs

SHEARWALL REACTION (R_{side2}) = W_2 * $w_{i\,para}$ / N_{side} + ADDITIONAL =

R_{side2} = 27.5 ft * 181 plf / 2 + 0 lbs = 2489 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{side2} / V = 2489 lbs / 436 plf = 5.71 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (SIDEWALL) = L_{sw} / C_O = 5.71 ft / 1 = 5.71 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 5.71 ft < **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 7.43 ft**

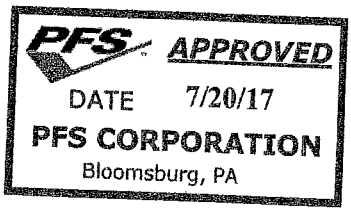
SIDEWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

SECOND FLOOR SIDEWALL #1: UPLIFT DUE TO OVERTURNING

SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	7.43 ft
SHEARWALL ADJUSTMENT FACTOR (C_O) =	1
SHEARWALL REACTION (R_{end1}) =	2489 lbs
WALL HEIGHT (H) =	8 ft

$$U_{E1} = \frac{R_{side1} \times H}{\Sigma L_i \times C_O} =$$

$$U_{E1} = \frac{2489 \text{ lbs} \times 8 \text{ ft}}{7.43 \text{ ft} \times 1} = 2680 \text{ lbs}$$



SECOND FLOOR SIDEWALL #2 SHEATHING LENGTH REQUIREMENTS
SITTING / BEDROOM #3

FIRST FLOOR WIDTH (W_1) =	27.5 ft
SECOND FLOOR WIDTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
SHEATHING EDGE 8d NAIL SPACING =	6 in O.C. (8d NAILS OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	436 plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3 ft
SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	12 ft
2nd FL. PERCENT FULL HEIGHT SHEATHING=	82 %
2nd FL. MAX. UNRESTRAINED OPENING HEIGHT =	3.02 ft
SHEAR ADJUSTMENT FACTOR (C_o) =	0.979 (TABLE 2305.3.7.2, IBC)
2nd FL. NUMBER OF SHEARWALLS (N_{side}) =	2
ADDITIONAL WALL LOAD =	0 lbs

SHEARWALL REACTION (R_{side2}) = W_2 * w_{fpera} / N_{side} + ADDITIONAL=

R_{side2} = 27.5 ft * 181 plf / 2 + 0 lbs = 2489 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{side2} / V = 2489 lbs / 436 plf = 5.71 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (SIDEWALL) = L_{SW} / C_O = 5.71 ft / 0.979 = 5.84 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 5.84 ft < **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 12 ft**

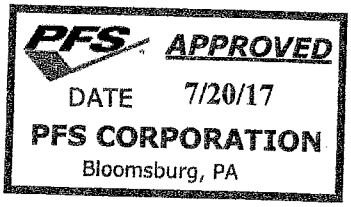
SIDEWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

SECOND FLOOR SIDEWALL #2: UPLIFT DUE TO OVERTURNING

SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	12 ft
SHEARWALL ADJUSTMENT FACTOR (C_O) =	0.979
SHEARWALL REACTION (R_{endf}) =	2489 lbs
WALL HEIGHT (H) =	8 ft

$$\text{UPLIFT FORCE } (U_{E1}) = \frac{R_{side1} \times H}{\Sigma L_i \times C_O} =$$

$$U_{E1} = \frac{2489 \text{ lbs} \times 8 \text{ ft}}{12 \text{ ft} \times 0.979} = 1695 \text{ lbs}$$



SECOND FLOOR SIDEWALL: SHEAR CONNECTIONS

SECOND FLOOR WIDTH (W_2) =	27.5 ft	
EFFECTIVE SECOND FLOOR LENGTH (L_2) =	15.83 ft	
FL_{Lpara} =	210 plf	
1/2" ANCHOR BOLT	Z =	1056 lbs
5/8" ANCHOR BOLT	Z =	1468 lbs
0.162" x 3.5" COMMON NAIL (TOENAILED)	Z =	158 lbs
0.162" x 3.5" COMMON NAIL (FACE NAILED)	Z =	191 lbs
(1) SIMPSON LTP4 PLATE	Z =	575 lbs

MAXIMUM SECOND FLOOR SIDEWALL SHEAR LOAD = 2489 plf

BANDS TO BANDS & BOTTOM / TOP PLATE CONNECTION:

V = MAX SIDEWALL SHEAR + W_2 x FL_{Lpara} / 2 =
V = 2489 lbs + 27.5 ft x 210 plf / 2 = 5377 plf

# TOENAILS PER FOOT =	V / Z / L = 5377 lbs / 158 lbs / 15.83 ft =		2.1 NAILS / ft
TOENAIL SPACING =	12 / # = 12 / 2.1 =	5 " O.C.	(16" MAX)
#MP4F PLATES PER FOOT =	V / Z / W = 5377 lbs / 575 lbs / 15.83 ft =		0.6 PLATES / ft
MP4F PLATE SPACING =	12 / # = 12 / 0.6 =	20 " O.C.	(72" MAX)

USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 5" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE @ 20" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 5377 lbs

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CHECK SHEATHING TO RIMBAND CONNECTION:

UNIT SHEAR CHECK:

SHEAR FORCE (V) = $\frac{R_{side2}}{\Sigma L_i \times C_o}$ =

SECOND FLOOR SIDEWALL #1: V = $\frac{2489 \text{ lbs}}{7.43 \text{ ft} * 1}$ = 335 plf

SECOND FLOOR SIDEWALL #2: V = $\frac{2489 \text{ lbs}}{12 \text{ ft} * 0.979}$ = 212 plf

MAXIMUM SECOND FLOOR SIDEWALL UNIT SHEAR = 335 plf

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

OF 8d NAILS PER FOOT = $\frac{V}{Z}$ = $\frac{335 \text{ plf}}{95 \text{ lbs / NAIL}}$

OF 8d NAILS PER FOOT = 3.53 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 3.53 = 3.39 " O.C.

OF ROWS : 1 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 1 * SPACING 1 * 3.39 o.c. 3 " O.C.

**USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 3" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 335 plf**

UNIT UPLIFT CHECK: (EQUAL TO UNIT SHEAR)

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

OF 8d NAILS PER FOOT = $\frac{V}{Z}$ = $\frac{335 \text{ plf}}{95 \text{ lbs / NAIL}}$

OF 8d NAILS PER FOOT = 3.53 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 3.53 = 3.39 " O.C.

OF ROWS : 1 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 1 * SPACING 1 * 3.39 o.c. 3 " O.C.

**USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 3" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 335 plf**

ALTERNATE SHEATHING CONNECTION FOR UNIT UPLIFT (GLUE):

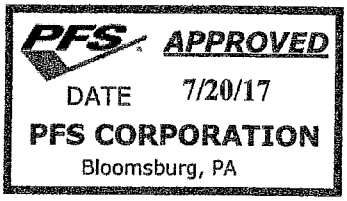
V = 335 plf

200 psi MINIMUM CONSTRUCTION ADHESIVE Z = 200 psi (FACE)

WIDTH OF GLUE REQUIRED FOR SHEATHING CONNECTION ALONG FLOOR BAND:

WIDTH OF GLUE STRIP REQUIRED = $\frac{V}{Z}$ = $\frac{335 \text{ plf}}{200 \text{ psi} * 12" / \text{ft}}$ = 1 "

**FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE
PLUS (1) ROW OF 8d NAILS AT 6" o.c.**



FIRST FLOOR SIDEWALL #1 SHEATHING LENGTH REQUIREMENTS
FAMILY / BEDROOM #1

FIRST FLOOR WIDTH (W_1) =	27.5 ft
SECOND FLOOR WIDTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
SHEATHING EDGE 8d NAIL SPACING =	6 in O.C. (8d NAILS OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	436 plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3 ft
FULL HEIGHT SHEATHING PROVIDED =	21.17 ft
1st FL. PERCENT FULL HEIGHT SHEATHING=	77 %
1st FL. MAX. UNRESTRAINED OPENING HEIGHT =	5.35 ft
SHEAR ADJUSTMENT FACTOR (C_o) =	0.81 (TABLE 2305.3.7.2, IBC)
1st FL. NUMBER OF SHEARWALLS (N_{side}) =	2
ADDITIONAL WALL LOAD =	0 lbs

SHEARWALL REACTION (R_{side1}) = W_1 * FL_{tpara} / N_{side} + R_{side2} + ADDITIONAL =

R_{side1} = 27.5 ft * 210 plf / 2 + 2489 lbs + 0 lbs = 5377 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{side1} / V = 5377 lbs / 436 plf = 12.33 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (SIDEWALL) = L_{SW} / C_O = 12.33 ft / 0.81 = 15.23 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 15.23 ft < **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 21.17 ft**

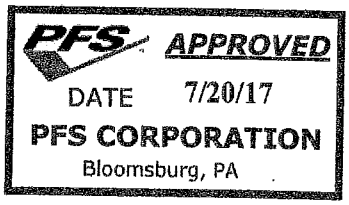
SIDEWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

FIRST FLOOR SIDEWALL #1: UPLIFT DUE TO OVERTURNING

SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	21.17 ft
SHEARWALL ADJUSTMENT FACTOR (C_O) =	0.81
SHEARWALL REACTION (R_{end1}) =	5377 lbs
WALL HEIGHT (H) =	8 ft

$$U_{E1} = \frac{R_{side1} \times H}{\Sigma L_i \times C_O} =$$

$$U_{E1} = \frac{5377 \text{ lbs} \times 8 \text{ ft}}{21.17 \times 0.81} = 2509 \text{ lbs}$$



FIRST FLOOR SIDEWALL #2 SHEATHING LENGTH REQUIREMENTS
DINING / MECH. ROOM

FIRST FLOOR WIDTH (W_1) =	27.5 ft
SECOND FLOOR WIDTH (W_2) =	27.5 ft
FIRST FLOOR LENGTH (L_1) =	39 ft
SECOND FLOOR LENGTH (L_2) =	33 ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
SHEATHING EDGE 8d NAIL SPACING =	6 in O.C. (8d NAILS OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	436 plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3 ft
FULL HEIGHT SHEATHING PROVIDED =	17.25 ft
1st FL. PERCENT FULL HEIGHT SHEATHING=	70 %
1st FL. MAX. UNRESTRAINED OPENING HEIGHT =	5.35 ft
SHEAR ADJUSTMENT FACTOR (C_o) =	0.772 (TABLE 2305.3.7.2, IBC)
1st FL. NUMBER OF SHEARWALLS (N_{side}) =	2
ADDITIONAL WALL LOAD =	0 lbs

SHEARWALL REACTION (R_{side1}) = W_1 * FL_{+para} / N_{side} + R_{side2} + ADDITIONAL =

R_{side1} = 27.5 ft * 210 plf / 2 +2488 lbs + 0 lbs = 5377 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{side1} / V = 5377 lbs / 436 plf = 12.33 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (SIDEWALL) = L_{SW} / C_O = 12.33 ft / 0.772 = 15.98 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 15.98 ft < **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 17.25 ft**

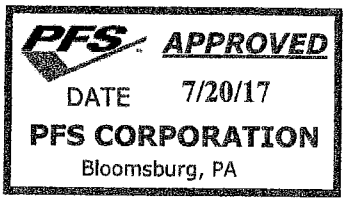
SIDEWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

FIRST FLOOR SIDEWALL #2: UPLIFT DUE TO OVERTURNING

SUM OF FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	17.25 ft
SHEARWALL ADJUSTMENT FACTOR (C_O) =	0.772
SHEARWALL REACTION (R_{end1}) =	5377 lbs
WALL HEIGHT (H) =	8 ft

$$\text{UPLIFT FORCE } (U_{E1}) = \frac{R_{side1} \times H}{\Sigma L_i \times C_O} =$$

$$U_{E1} = \frac{5377 \text{ lbs} \times 8 \text{ ft}}{17.25 \times 0.772} = 3231 \text{ lbs}$$



FIRST FLOOR SIDEWALL : SHEAR CONNECTIONS

FIRST FLOOR WIDTH (W_1) =	27.5 ft	
EFFECTIVE FIRST FLOOR LENGTH (L_1) =	33 ft	
FL_{t-para} =	210 plf	
1/2" ANCHOR BOLT	Z =	1056 lbs
5/8" ANCHOR BOLT	Z =	1488 lbs
0.162" x 3.5" COMMON NAIL (TOENAILED)	Z =	158 lbs
(1) SIMPSON LTP4 PLATE	Z =	575 lbs

MAXIMUM FIRST FLOOR SIDEWALL SHEAR LOAD = 5377 lbs

RIMBAND TO SILL PLATE CONNECTION:

V = MAX SIDEWALL SHEAR + W_1 x (3/4 * FL_{t-para}) / 2 =
V = 5377 lbs + 27.5 ft x (3/4 * 210 plf) / 2 = 7543 lbs

# TOENAILS PER FOOT =	V / Z / L_1 = 7543 lbs / 158 lbs / 33 ft =		1.4 NAILS / ft
TOENAIL SPACING =	12 / # = 12 / 1.4 =	8 " O.C.	(16" MAX)
# MP4F PLATES PER FOOT =	V / Z / W = 7543 lbs / 575 lbs / 33 ft =		0.4 PLATES / ft
MP4F PLATE SPACING =	12 / # = 12 / 0.4 =	30 " O.C.	(72" MAX)

USE 0.162" x 3.5" COMMON NAIL (TOENAILED) @ 8" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE @ 30" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 7543 lbs

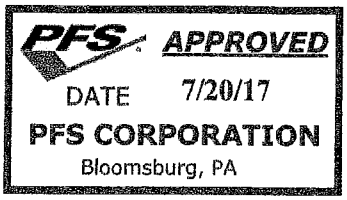
SILL PLATE TO FOUNDATION CONNECTION:

# 1/2" ANCHOR BOLTS =	V / Z = 7543 lbs / 1056 lbs =		8 BOLTS
BOLT SPACING =	(L - 2) / (N - 1) =	(33 ft - 2) / (8 - 1) =	53 in

USE 1/2" ANCHOR BOLTS @ 53" O.C
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 7543 lbs (229 plf)

# 5/8" ANCHOR BOLTS =	V / Z = 7543 lbs / 1488 lbs =		6 BOLTS
BOLT SPACING =	(L - 2) / (N - 1) =	(33 ft - 2) / (6 - 1) =	72 in

USE 5/8" ANCHOR BOLTS @ 72" O.C
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 7543 lbs (229 plf)



CHECK SHEATHING TO RIMBAND CONNECTION:

UNIT SHEAR CHECK:

SHEAR FORCE (V) = $\frac{R_{sidet}}{\Sigma L_i \times C_O}$ =

FIRST FLOOR SIDEWALL #1: $V = \frac{5377 \text{ lbs}}{21.17 \text{ ft} * 0.81}$ = 314 plf

FIRST FLOOR SIDEWALL #2: $V = \frac{5377 \text{ lbs}}{17.25 * 0.772}$ = 404 plf

MAXIMUM FIRST FLOOR SIDEWALL UNIT SHEAR = 404 plf

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

OF 8d NAILS PER FOOT = $\frac{V}{Z} = \frac{404 \text{ plf}}{95 \text{ lbs / NAIL}}$

OF 8d NAILS PER FOOT = 4.26 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 4.26 = 2.81 " O.C.

OF ROWS : 1 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 1 * SPACING 1 * 2.81 o.c. 2 " O.C.

USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 404 plf

UNIT UPLIFT CHECK: (EQUAL TO UNIT SHEAR)

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

OF 8d NAILS PER FOOT = $\frac{V}{Z} = \frac{404 \text{ plf}}{95 \text{ lbs / NAIL}}$

OF 8d NAILS PER FOOT = 4.26 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 4.26 = 2.81 " O.C.

OF ROWS : 1 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 1 * SPACING 1 * 2.81 o.c. 2 " O.C.

USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 404 plf

ALTERNATE SHEATHING CONNECTION FOR UNIT UPLIFT (GLUE):

V = 404 plf

200 psi MINIMUM CONSTRUCTION ADHESIVE Z = 200 psi (FACE)

WIDTH OF GLUE REQUIRED FOR SHEATHING CONNECTION ALONG FLOOR BAND:

WIDTH OF GLUE STRIP REQUIRED = $\frac{V}{Z} = \frac{404 \text{ plf}}{200 \text{ psi} * 12" / \text{ft}}$ = 1 "

FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE
PLUS (1) ROW OF 8d NAILS AT 6" o.c.

SHEARWALL HOLDOWN DESIGN

SHEARWALL UPLIFT FROM EACH FLOORS		
2nd FLOOR SIDEWALL #1	2680	lbs
2nd FLOOR SIDEWALL #2	1695	lbs
2nd FLOOR ENDWALL #1	3052	lbs
2nd FLOOR ENDWALL #2	4477	lbs
1st FLOOR SIDEWALL #1	2509	lbs
1st FLOOR SIDEWALL #2	3231	lbs
1st FLOOR ENDWALL #1	10444	lbs
1st FLOOR ENDWALL #2	9263	lbs
1st FLOOR OFFSET SHEARWALL	1079	lbs

DEAD LOAD	UNIT WEIGHT (PSF)
TRUSS DEAD	15
FLOOR DEAD	10
WALL DEAD	12

STORY HEIGHT	HEIGHT (ft)
1ST FLOOR	8
2nd FLOOR	8
2nd FLOOR	0

MODULAR WIDTH #1 (ft)	13.75
MODULAR WIDTH #2 (ft)	13.75

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SPF #2 VALUE	COMPRESSION CAPACITY (lbs) (Cd = 1.0)	COMPRESSION CAPACITY (lbs) (Cd = 1.15)	COMPRESSION CAPACITY (lbs) (Cd = 1.6)	TENSION CAPACITY (lbs) (Cd = 1.6)
2X4 (8 FT)	2603	2660	2745	5670
2X4 (9 FT)	2115	2153	2203	5670
2X4 (10 FT)	1744	1771	1802	5670
2X6 (8 FT)	7494	8058	9141	7722
2X6 (9 FT)	6629	7005	7668	7722
2X6 (10 FT)	5792	6041	6453	7722

SIMPSON STRAP	CAPACITY		FASTENERS
SIMPSON CS16 COILED STRAP	1705	22	10d NAILS
SIMPSON CS14 COILED STRAP	2490	30	10d NAILS
SIMPSON CMSTC16 COILED STRAP	4585	58	16d SINKER NAILS
SIMPSON CMST14 COILED STRAP	6490	66	16d NAILS
SIMPSON CMST12 COILED STRAP	9215	84	16d NAILS

*** CAPACITY OBTAINED FROM SIMPSON STRONG-TIE 2015-16 WOOD CONSTRUCTION CONNECTIONS CATALOG

16d COMMON NAILS	191 lbs
1/4" LAG SCREWS	225 lbs
3/8" LAG SCREWS	295 lbs
1/2" LAG SCREWS	555 lbs
5/8" LAG SCREWS	789 lbs

** ALL WITH Cd = 1.6 FACTOR

HOLDOWN	CAPACITY (lbs)
SIMPSON PA51	2025
SIMPSON HD5B W/(2) STUDS	3785
SIMPSON STHD14RJ	4210
SIMPSON HDU8-SDS2.5 W/ (2) STUDS	4870
SIMPSON HD7B W/(3) STUDS	6245
SIMPSON HD9B W/(4) STUDS	8430
SIMPSON HD12 W/(4) STUDS W/ 1-1/8" ANCHOR BOLT	12690
SIMPSON HD19 W/(4) STUDS W/ 1-1/4" ANCHOR BOLT	16210

*** CAPACITY OBTAINED FROM SIMPSON STRONG-TIE 2015-16 WOOD CONSTRUCTION CONNECTIONS CATALOG

NET UPLIFT CALCULATIONS (UPLFIT - DEAD LOAD)

2nd FLOOR SIDEWALL #1
SHEARWALL LENGTH 7.43 ft
DEAD LOAD 443.849625 lbs
NET UPLIFT 2236 lbs
STUDS REQUIRED 1 2X6 STUDS

2nd FLOOR SIDEWALL #2
SHEARWALL LENGTH 14.56 ft
DEAD LOAD 869.778 lbs
NET UPLIFT 825 lbs
STUDS REQUIRED 1 2X6 STUDS

2nd FLOOR ENDWALL #1
SHEARWALL LENGTH 7.83 ft
DEAD LOAD 225.504 lbs
NET UPLIFT 2826 lbs
STUDS REQUIRED 1 2X6 STUDS

2nd FLOOR ENDWALL #2
SHEARWALL LENGTH 27.5 ft
DEAD LOAD 792 lbs
NET UPLIFT 3685 lbs
STUDS REQUIRED 1 2X6 STUDS

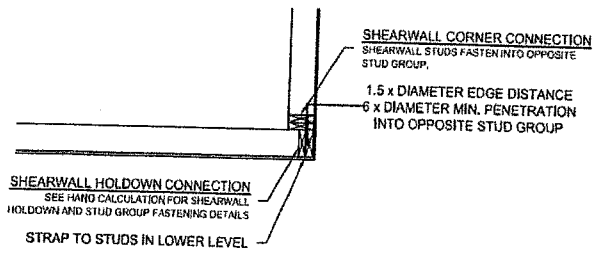
1st FLOOR SIDEWALL #1
SHEARWALL LENGTH 27.53 ft
DEAD LOAD 1360.67025 lbs
NET UPLIFT 1148 lbs
STUDS REQUIRED 2 2X6 STUDS

1st FLOOR SIDEWALL #2
SHEARWALL LENGTH 24.47 ft
DEAD LOAD 1209.42975 lbs
NET UPLIFT 2847 lbs
STUDS REQUIRED 2 2X6 STUDS

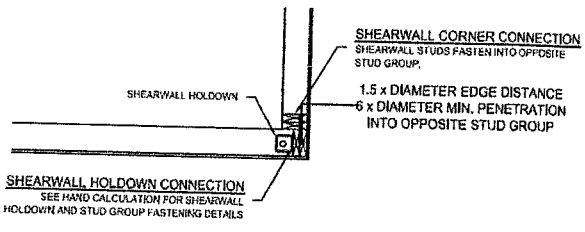
1st FLOOR ENDWALL #1
SHEARWALL LENGTH 5.17 ft
DEAD LOAD 148.896 lbs
NET UPLIFT 13122 lbs
STUDS REQUIRED 3 2X6 STUDS

1st FLOOR ENDWALL #2
SHEARWALL LENGTH 2.42 ft
DEAD LOAD 69.696 lbs
NET UPLIFT 12878 lbs
STUDS REQUIRED 2 2X6 STUDS

1st FLOOR OFFSET SHEARWALL
SHEARWALL LENGTH 13.75 ft
DEAD LOAD 396 lbs
NET UPLIFT 683 lbs
STUDS REQUIRED 2 2X6 STUDS



UPPER STORY HOLDOWN @ CORNER DETAILS



1ST STORY HOLDOWN @ CORNER DETAILS

SECOND FLOOR SHEAR WALL HOLDOWN CONNECTION #1

NET UPLIFT =	3685 lbs	
STUDS REQUIRED =	2 2X6 STUDS	
SIMPSON STRAP =	SIMPSON CMSTC16 COILED STRAP	
STRAP REQUIRED =	1 STRAP	
TOTAL TENSION CAPACITY =	4585 lbs	O.K.
FASTENERS REQUIRED PER STRAP =	47 16d SINKER NAILS	
ROWS OF FASTENERS =	2 ROWS	
16d NAIL SPACING =	9 "O.C.	

USE (1) SIMPSON CMSTC16 COILED STRAP W/(47) 16d SINKER NAILS TOTAL @ EACH STRAP
STUDS ATTACHED TOGETHER W/ 2 ROWS OF 16d COMMON NAILS @ 9" ON CENTER
OR CONNECTION TO WITHSTAND 3685 lbs TENSION

FIRST FLOOR SHEAR WALL HOLDOWN CONNECTION #1

NET UPLIFT =	3685 lbs	
HOLDOWN =	SIMPSON STHD14RJ	
HOLDOWN CAPACITY =	4210 lbs	O.K.
STUDS REQUIRED =	2 2X6 STUDS	
ROWS OF FASTENERS =	2 ROWS	
16d NAIL SPACING =	9 "O.C.	

USE A SIMPSON STHD14RJ
SHEARWALL EDGE STUDS ATTACHED TOGETHER W/ 2 ROWS OF 16d COMMON NAILS @ 9" ON CENTER
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 3685 lbs

FIRST FLOOR SHEAR WALL HOLDOWN CONNECTION #2

NET UPLIFT =	13122 lbs	
HOLDOWN =	SIMPSON HD19 W/(4) STUDS W/ 1-1/4" ANCHOR BOLT	
HOLDOWN CAPACITY =	16210 lbs	O.K.
STUDS REQUIRED =	4 2X6 STUDS	
ROWS OF FASTENERS =	2 ROWS	
16d NAIL SPACING =	2 "O.C.	

USE A SIMPSON HD19 W/(4) STUDS W/ 1-1/4" ANCHOR BOLT
SHEARWALL EDGE STUDS ATTACHED TOGETHER W/ 2 ROWS OF 16d COMMON NAILS @ 2" ON CENTER
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 13122 lbs

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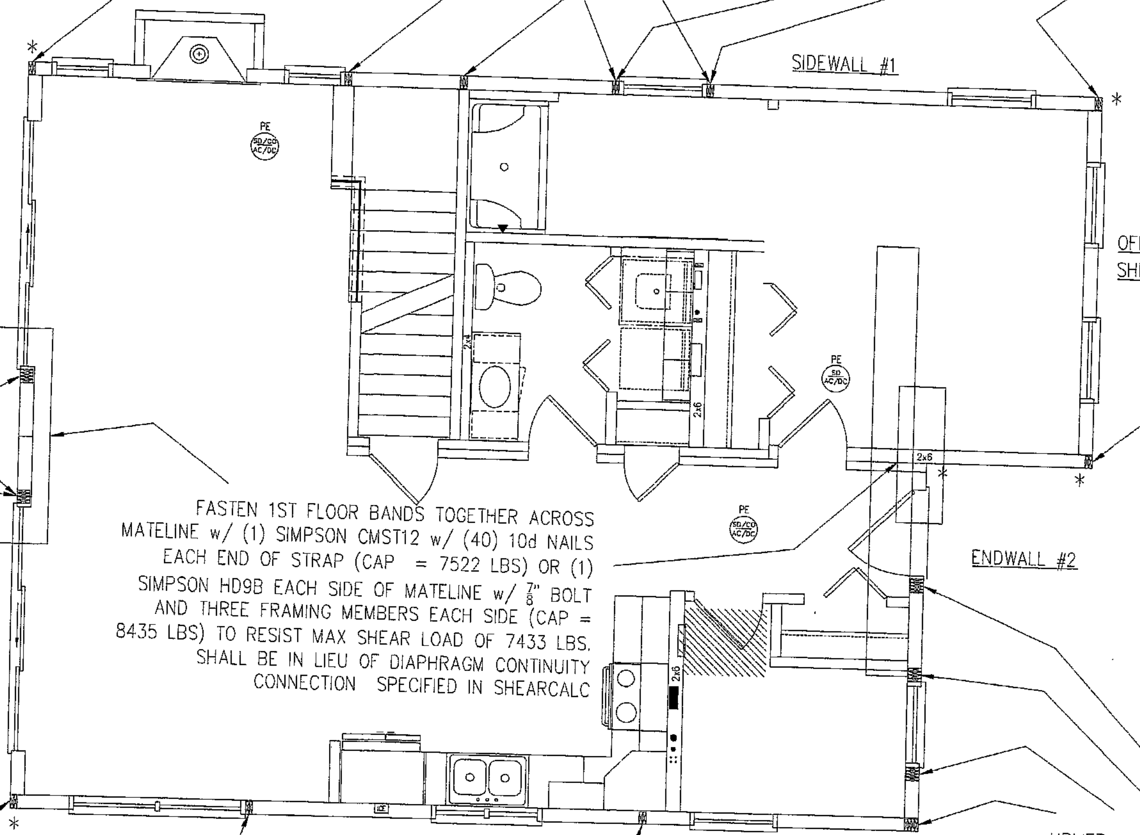
FIRST FLOOR FRAMING PLAN

* NO CORNER CONNECTION BEYOND THE MINIMUM WILL BE REQUIRED IF SHEATHING COVERED ALL THE WAY TO THE CORNER EDGE. OTHERWISE, PROVIDE CONNECTION AS REQUIRED.

* MIN CORNER CONNECTION
(2) ROWS 16d COMMON NAILS @ 16" O.C. OR (6) 1/4" LAG SCREWS



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ICON ★ LEGACY
CUSTOM MODULAR HOMES LLC
Make plans with us.
246 SAND HILL ROAD
SELINSGROVE, PA 17870
PHONE: (570) 374-3280
FAX: (570) 374-1122
WWW.ICONLEGACY.COM

DATE	REVISION	BY
11/15/16	PRELIM	PJF
02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

BUILDER: PLEASANT BAY HOMES
HOMEBUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET — STATE: MA — ZIP: 02559
COUNTY: BARNSTABLE — SNOW LOAD (LBS): 30 — WIND SPEED (MPH): 110
ORDER NO: 6861 — SERIAL NO — SQFT: 1,980 — TYPE: CAPE
FILE NAME: O#6861-2004

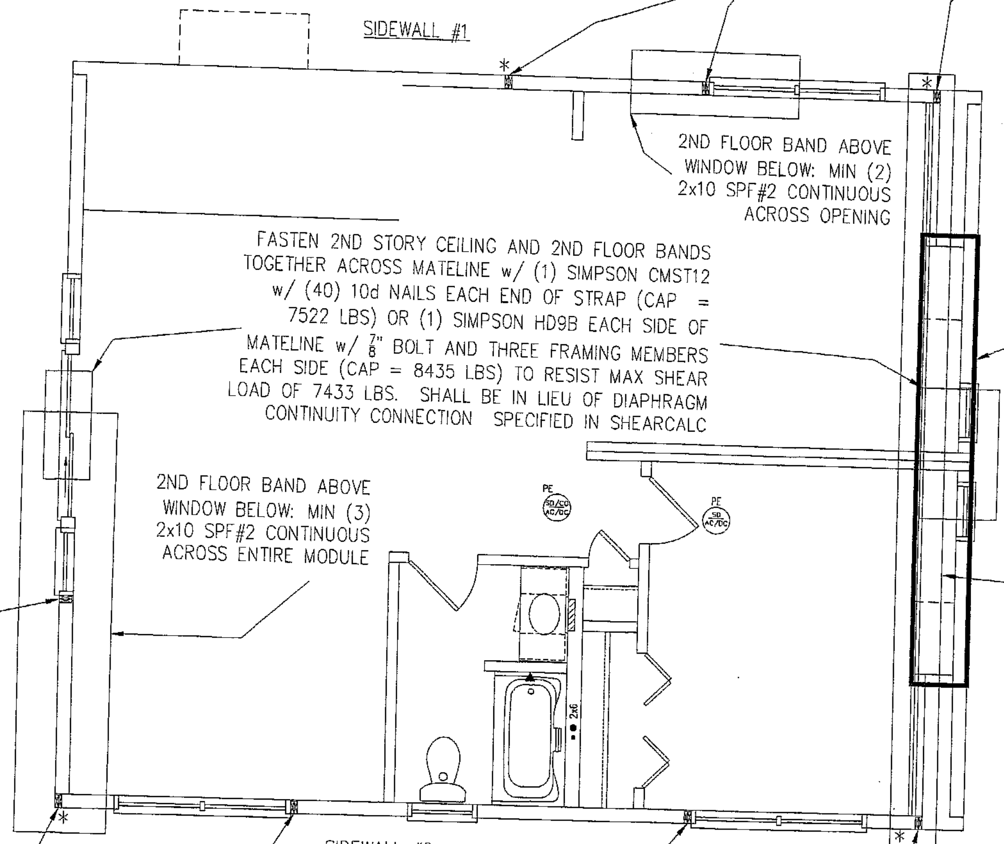
SERIAL #/ ORDER #: O#6861

JLA

SECOND FLOOR FRAMING PLAN

* NO CORNER CONNECTION BEYOND THE MINIMUM WILL BE REQUIRED IF SHEATHING COVERED ALL THE WAY TO THE CORNER EDGE. OTHERWISE, PROVIDE CONNECTION AS REQUIRED.

* MIN CORNER CONNECTION
(2) ROWS 16d COMMON NAILS @ 16" O.C. OR (6) 1/4" LAG SCREWS



UPLIFT = 3685 lbs USE SHEARWALL CORNER CONNECTION #1 (2ND FLOOR STUD TO 2ND FLOOR BAND)

UPLIFT = 3685 lbs USE SHEARWALL CORNER CONNECTION #1

v = 7433 LBS / 15.92' = 467 PLF. SHEATHE 2ND FLOOR AREA SPANNING FROM 2ND STORY ENDWALL #2 TO 1ST STORY ENDWALL #2 w/ 19/32" OSB (BLOCKED) w/ 10d 6"/12" & 4" o.c. AT PERIMETER (CAP = 548 PLF)

2ND FLOOR BAND ABOVE WINDOW BELOW: MIN (2) 2x10 SPF#2 CONTINUOUS ACROSS OPENING

FASTEN 2ND STORY CEILING AND 2ND FLOOR BANDS TOGETHER ACROSS MATELINE w/ (1) SIMPSON CMST12 w/ (40) 10d NAILS EACH END OF STRAP (CAP = 7522 LBS) OR (1) SIMPSON HD9B EACH SIDE OF MATELINE w/ 7/8" BOLT AND THREE FRAMING MEMBERS EACH SIDE (CAP = 8435 LBS) TO RESIST MAX SHEAR LOAD OF 7433 LBS. SHALL BE IN LIEU OF DIAPHRAGM CONTINUITY CONNECTION SPECIFIED IN SHEARCALC

2ND FLOOR BAND ABOVE WINDOW BELOW: MIN (3) 2x10 SPF#2 CONTINUOUS ACROSS ENTIRE MODULE

UPLIFT = 3685 lbs USE SHEARWALL CORNER CONNECTION #1 (2ND FLOOR STUD TO 2ND FLOOR BAND)

UPLIFT = 3685 lbs USE SHEARWALL CORNER CONNECTION #1

ENDWALL #2
FULL-HEIGHT SHEATHING AND SHEAR CONNECTIONS PER SHEARCALC. IN LIEU OF SHEATHING TO 2ND FLOOR BAND CONNECTION USE BOTTOM PLATE TO MIN DOUBLE 2ND FLOOR JOIST (GRAVITY DESIGN BY OTHERS): (2) ROWS 16d (0.162" x 3.5") FACE-NAILS 8" o.c. EACH ROW (CAP = 573 PLF) TO RESIST 560 PLF SHEAR LOAD.

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DATE	REVISION	BY
11/15/16	PRELIM	PJF
02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

BUILDER	PLEASANT BAY HOMES
HOMEBUYER/PROJECT	ELIZABETH GILLIS 2
ADDRESS	10 HARBOR WAY
CITY / STATE / ZIP	POCASSET / MA / 02559
COUNTY / SNOW LOAD (LBS) / WIND SPEED (MPH)	BARNSTABLE / 30 / 110
ORDER NO / SERIAL NO / SQFT / TYPE	6861 / / 1,980 / CAPE
FILE NAME	O#6861-2004
SERIAL #/ ORDER #	O#6861

JLA

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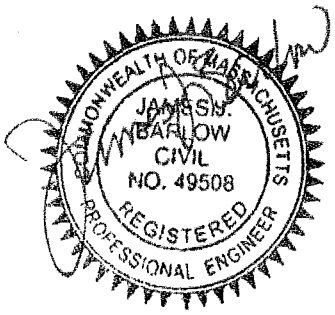
Section 3

HAND CALCULATIONS



07/10/17

Project: BEAM CALCS

Location: 2ND FLOOR BAND-1
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2012 NDS)]
(3) 1.5 IN x 9.25 IN x 11.29 FT
#2 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 27.8%
Controlling Factor: Deflection

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Raleigh, NC 27615

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CAUTIONS
* Laminations are to be fully connected to provide uniform transfer of loads to all members

DEFLECTIONS

	Center
Live Load	-0.29 IN L/460
Dead Load	0.01 in
Total Load	-0.29 IN L/471

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

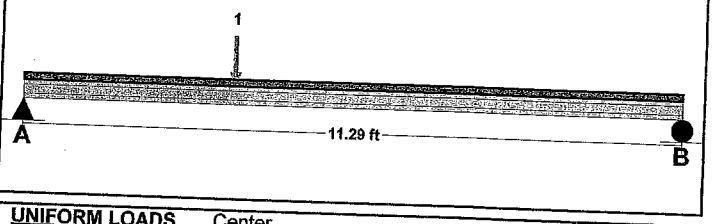
REACTIONS

	A	B
Live Load	-1925 lb	-901 lb
Dead Load	43 lb	43 lb
Total Load	-1882 lb	-858 lb
Uplift (1.5 F.S)	**-1896 lb**	**-873 lb**
Bearing Length	0.02 in	0.02 in

BEAM DATA

	Center
Span Length	11.29 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	11.29 ft
Live Load Duration Factor	1.60
Notch Depth	0.00

LOADING DIAGRAM



UNIFORM LOADS

	Center
Uniform Live Load	0 plf
Uniform Dead Load	0 plf
Beam Self Weight	8 plf
Total Uniform Load	8 plf

POINT LOADS - CENTER SPAN

Load Number	One
Live Load	-2826 lb
Dead Load	0 lb
Location	3.6 ft

MATERIAL PROPERTIES
#2 - Spruce-Pine-Fir

	Base Values	Adjusted
Bending Stress:	Fb = 875 psi	Fb' = 1730 psi
	Cd=1.60 Cl=0.98 CF=1.10 Cr=1.15	
Shear Stress:	Fv = 135 psi	Fv' = 216 psi
	Cd=1.60	
Modulus of Elasticity:	E = 1400 ksi	E' = 1400 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 425 psi	Fc - ⊥' = 425 psi

Controlling Moment: -6813 ft-lb
3.61 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1909 lb
3.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	47.26 in3	64.17 in3
Area (Shear):	13.25 in2	41.63 in2
Moment of Inertia (deflection):	232.26 in4	296.79 in4
Moment:	-6813 ft-lb	9251 ft-lb
Shear:	-1909 lb	5994 lb

NOTES

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Project: BEAM CALCS

Location: 2ND FLOOR BAND-2
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2012 NDS)]
(2) 1.5 IN x 9.25 IN x 3.2 FT
#2 - Spruce-Pine-Fir - Dry Use
Section Adequate By: 204.2%
Controlling Factor: Moment

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CAUTIONS
* Laminations are to be fully connected to provide uniform transfer of loads to all members

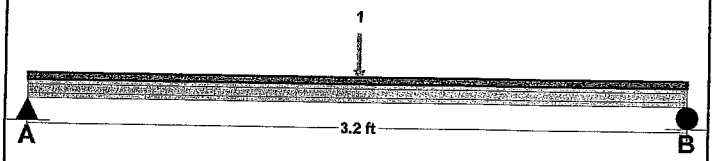
DEFLECTIONS	Center	
Live Load	-0.01	IN L/4033
Dead Load	0.00	in
Total Load	-0.01	IN L/4051

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS	A	B
Live Load	-1118 lb	-1118 lb
Dead Load	8 lb	8 lb
Total Load	-1110 lb	-1110 lb
Uplift (1.5 F.S)	**-1113 lb**	**-1113 lb**
Bearing Length	0.01 in	0.01 in

BEAM DATA	Center	
Span Length	3.2	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	3.2	ft
Live Load Duration Factor	1.60	
Notch Depth	0.00	

LOADING DIAGRAM



UNIFORM LOADS	Center	
Uniform Live Load	0	plf
Uniform Dead Load	0	plf
Beam Self Weight	5	plf
Total Uniform Load	5	plf

POINT LOADS - CENTER SPAN

Load Number	One
Live Load	-2236 lb
Dead Load	0 lb
Location	1.6 ft

MATERIAL PROPERTIES
#2 - Spruce-Pine-Fir

	Base Values		Adjusted	
Bending Stress:	Fb =	875 psi	Fb' =	1521 psi
	Cd=1.60 Cl=0.99 CF=1.10			
Shear Stress:	Fv =	135 psi	Fv' =	216 psi
	Cd=1.60			
Modulus of Elasticity:	E =	1400 ksi	E' =	1400 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	425 psi	Fc - ⊥' =	425 psi

Controlling Moment: -1782 ft-lb
1.6 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -1118 lb
2.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	14.06 in3	42.78 in3
Area (Shear):	7.76 in2	27.75 in2
Moment of Inertia (deflection):	17.66 in4	197.86 in4
Moment:	-1782 ft-lb	5422 ft-lb
Shear:	-1118 lb	3996 lb

NOTES

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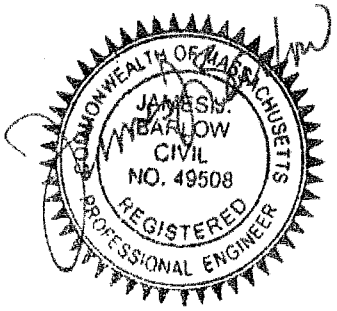
Section 4

ALTERNATE CALCULATIONS



07/10/17

ALTERNATE CONNECTIONS

PROJECT NUMBER: 0278nec2017

PER ESR-1539 (JULY 2016)

TABLE 8

7/16" O.S.B. Sheathing w/ 16, 15 & 14 GA. Staples @ 2" O. C.	ALLOWABLE SHEAR VALUE (PLF)
	324

* Staple must have a 7-16-inch minimum crown width and must be installed with their crown parallel to the long direction of the framing member.
** Framing adjoining panel edge must be 3-inch nominal or wider
*** Shear value assumed fasteners attached along the total length of the framing member specified.

Required Sidewall Stud Tie Down

STUD SPACING 16 inch

1. 2nd Floor Stud to Top Plate
Load =
UNIFORM LOAD 430 lbs
323 plf

7/16" O.S.B. Sheathing w/ 16 GA. Staples @ 2" O. C.

2. 2nd Floor Stud to Floor Band – 2nd Floor Band to 1st Floor Ceiling Band
Load =
UNIFORM LOAD 354 lbs
266 plf

7/16" O.S.B. Sheathing w/ 16 GA. Staples @ 2" O. C.

3. 1st Floor Stud to Ceiling Band
Load =
UNIFORM LOAD 299 lbs
225 plf

7/16" O.S.B. Sheathing w/ 16 GA. Staples @ 2" O. C.

4. 1st Floor Stud to Floor Band
Load =
UNIFORM LOAD 223 lbs
168 plf

7/16" O.S.B. Sheathing w/ 16 GA. Staples @ 2" O. C.

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5. Second Floor Horizontal Floor Diaphragm Continuity
Module to Module (Along Mate Line)
Load = 2822 lbs
3/8" LAG SCREWS = 288 lbs
NUMBER OF SCREWS REQUIRED 10 SCREWS

Use (10) 3/8" lag screws to attach module to module along mate line. (Minimum 1" penetration in last band)

6. First Floor Horizontal Floor Diaphragm Continuity
Module to Module (Along Mate Line)
Load = 3335 lbs
3/8" LAG SCREWS = 288 lbs
NUMBER OF SCREWS REQUIRED 12 SCREWS

Use (12) 3/8" lag screws to attach module to module along mate line. (Minimum 1" penetration in last band)

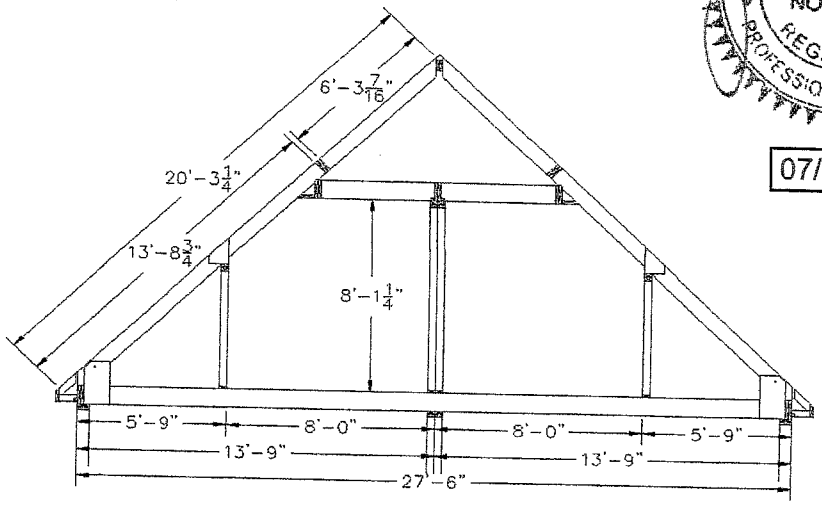
STAPLES PROPERTIES:

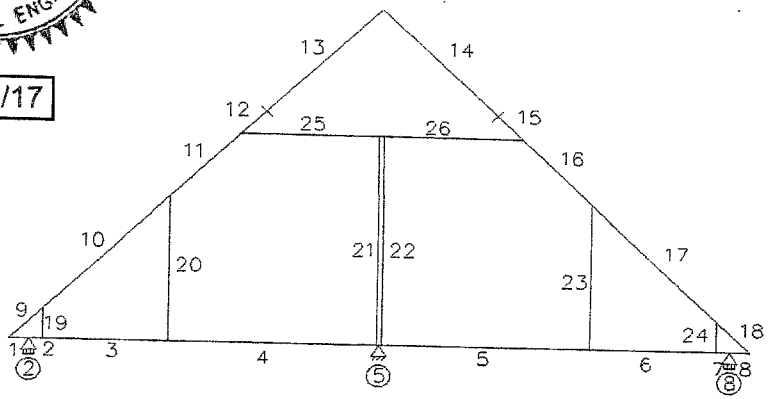
SPECIES GROUP III
LOAD DURATION FACTOR CD 1.6 (WIND DESIGN)
SPECIFIC GRAVITY 0.42

STAPLES	MIN CROWN (INCH)	WIRE DIA. (INCH)	MIN. PENETRATION (INCH)		LATERAL CAPACITY (LBS)		WITHDRAWN CAPACITY (LBS / IN PENETRATION)	
16, 15 & 14 GAGE	7/16	0.063	1		67		20	

TRUSS CALCULATIONS

LEGACY CUSTOM HOMES





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TRUSS NO.: 4BOX-CAPE-27-6
JOB NO.: 170367
PITCH: 12/12
SPAN: 27'-6"
TRUSS CENTERS: 16 in O.C.

GROUND SNOW LOAD:	**30 psf**	**TC DL:**	10 psf
*** BALANCED SNOW LOAD:**	17.76 psf	**BC DL:**	10 psf
UNBALANCED SNOW LOAD:	47.51 psf	**BC LL:**	10 psf WHERE h < 42"
OPPOSITE SIDE UNB. SNOW LOAD:	5.328 psf	**BC LL:**	20 psf WHERE h ≧ 42"
UNBALANCED SNOW LOAD LENGTH:	4.432 ft	**BC LL:**	40 psf BETWEEN KNEEWALLS

APPLIED MWFRS UPLIFT: 33.61 psf WINDWARD AT 110 mph
19.09 psf LEEWARD AT 110 mph

APPLIED C & C UPLIFT: 33.61 psf AT 110 mph

MEMBER INFORMATION:

MEMBER	SIZE & SPECIES
1 - 8	2 x 10 SPF #2
9 - 12 & 15 - 18	2 x 10 SPF #2
13-14	2 x 8 SPF #2
19 - 24	2 x 4 SPF #2
25 - 26	2 x 6 SPF #2

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MAXIMUM SUPPORT REACTIONS (lbs):

	DEAD LOAD	DL + LL + 30 psf GSL	MWFRS 0.6 DL + 110 mph UPLIFT	C & C 0.6 DL + 110 mph UPLIFT
EXTERIOR WALL (2 & 8)	476	1299	-314	-357
MATING WALL (5)	154	648	-99	0

MAXIMUM INTERACTION & DEFLECTION:

	MAXIMUM CSI	MAXIMUM DEFLECTION (in)	l /
BOTTOM CHORD	0.903	0.54	318
TOP CHORD	0.925	1.331	182
WEB	0.415	0.00	*****

NOTES:

1. MATING WALL REACTIONS ARE TOTAL FOR BOTH SIDES.
2. WIND PER ASCE 7-05, 110 mph (Vasd), EXP. C.
3. SNOW PER ASCE 7-05 30 psf GSL, Ct = 1.1, Ce = 1.0
   DRIFTING LENGTH IS LATERAL DISTANCE FROM RIDGE.
4. COMPONENT DESIGN IS BASED ON C & C PRESSURES

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TRUSS CALCULATIONS

LEGACY CUSTOM HOMES

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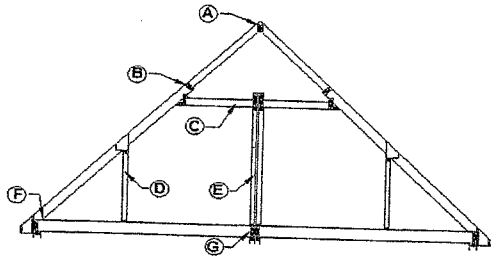
TRUSS CONNECTIONS

PROJECT NUMBER : **170367**
TRUSS NUMBER : **4BOX-CAPE-27-6**
TRUSS PITCH : **12/12**
TRUSS SPAN : **27'-6"**



UPLIFT CONNECTIONS (MWFRS LOADS):

110 mph

EXTERIOR WALL										
UPLIFT (lbs)	CASE	CD	CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
314	WIND	1.6	1 1/2" x 26ga STRAP OK	10 d NAILS 4	16 ga STAPLE 6	1 1/2" x 20 ga STRAP OK	10 d NAILS 3	16 ga STAPLE 6	SIMPSON CS20 STRAP OK	10 d NAILS 3
ALTERNATE: (4) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (3) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD										
MATING WALL			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
UPLIFT (lbs / PER SIDE)	CASE	CD								
50	WIND	1.6	1 1/2" x 26ga STRAP OK	10 d NAILS 2	16 ga STAPLE 2	1 1/2" x 20 ga STRAP OK	10 d NAILS 2	16 ga STAPLE 2	SIMPSON CS20 STRAP OK	10 d NAILS 2
ALTERNATE: (2) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (2) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD										

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TRUSS CALCULATIONS

LEGACY CUSTOM HOMES

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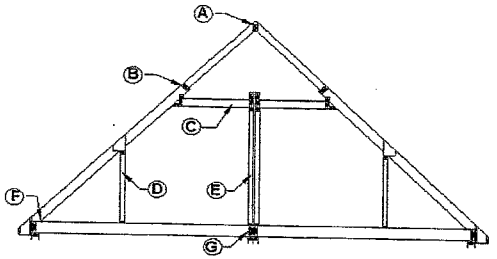
TRUSS CONNECTIONS

PROJECT NUMBER : **170367**
TRUSS NUMBER : **4BOX-CAPE-27-6**
TRUSS PITCH : **12/12**
TRUSS SPAN : **27'-6"**



MAXIMUM OF DL + LL + 30 psf GSL & 0.6 DL + 110 mph WIND

CONDITION "A" - RIDGE:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
122	WIND	1.6	OK	2	3	OK	2	3	OK	2
		ALTERNATE:	USE (2) 8 d NAILS EACH END OF 1 x 4							
SHEAR (lbs)	CASE	CD								
173	SNOW	1.15	USE (2) 16 d NAILS INTO END GRAIN EACH END PLUS USE 10 d NAILS AT 10 in O.C. THROUGH PLATES							
CONDITION "B" - TOP CHORD FLIP:										
TENSION (lbs)	CASE	CD								
84	WIND	1.6	USE (2) 6 d NAILS THROUGH SHEATHING EACH SIDE							
		ALTERNATE:	USE (2) 16 ga STAPLE THROUGH SHEATHING EACH SIDE							
SHEAR (lbs)	CASE	CD								
173	SNOW	1.15	USE (2) 16 d NAILS TOENAILED EACH END PLUS USE 10 d NAILS AT 10 in O.C. THROUGH PLATES							
CONDITION "C" - COLLAR TIE:										
AT RAFTER			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
529	WIND	1.6	NO GOOD	N/A	N/A	OK	4	10	OK	4
SHEAR (lbs)	CASE	CD								
529	WIND	1.6	USE (2) 16 d NAILS THROUGH BAND INTO ENDGRAIN							
		AND	OK FOR SIMPSON H3 TWIST STRAP w/ (8) 8 d NAILS BAND TO RAFTER							
AT MATING WALL			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
529	WIND	1.6	NO GOOD	N/A	N/A	OK	4	10	OK	4
SHEAR (lbs)	CASE	CD								
4	SNOW	1.15	USE (2) 16 d NAILS THROUGH BAND INTO ENDGRAIN							

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TRUSS CALCULATIONS

LEGACY CUSTOM HOMES

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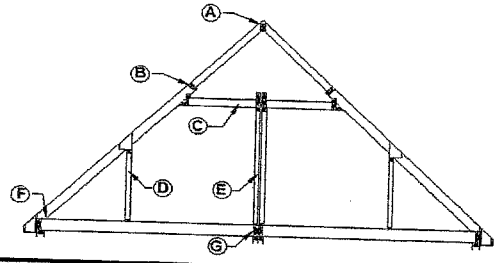
TRUSS CONNECTIONS

PROJECT NUMBER : **170367**
TRUSS NUMBER : **4BOX-CAPE-27-6**
TRUSS PITCH : **12/12**
TRUSS SPAN : **27'-6"**



CONDITION "D" - OUTER KNEE WALLS:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
820	SNOW	1.15	NO GOOD	N/A	N/A	OK	8	16	OK	8
COMPRESSION (lbs)	CASE	CD								
572	SNOW	1.15	USE (5) 16 d NAILS THROUGH CHORD BLOCK							
CONDITION "E" - INNER KNEE WALLS:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
0	SNOW	1.15	OK	2	2	OK	2	2	OK	2
CONDITION "F" - HEEL:										
TOP CHORD (lbs)	**CASE**	**CD**								
972	SNOW	1.15	USE (1) 1/2" BOLT (DOUBLE SHEAR; 3/8" SIDE PLATES)							
		ALTERNATE:	PLUS (3) 6 d NAILS OR (4) 16 ga STAPLES PER GUSSET EACH SIDE							
			USE (1) 3/4" BOLT (DOUBLE SHEAR; 1/2" SIDE PLATES)							
			PLUS NO ADDITIONAL FASTENERS REQUIRED							
BOTTOM CHORD (lbs)	**CASE**	**CD**								
786	SNOW	1.15	USE (8) 6 d NAILS OR (10) 16 ga STAPLES PER GUSSET EACH SIDE							
CONDITION "G" - BOTTOM CHORD AT MATING LINE:										
			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
786	SNOW	1.15	NO GOOD	N/A	N/A	OK	8	15	OK	8
		ALTERNATE:	USE (10) 16 d NAILS THROUGH DECKING EACH SIDE							

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TRUSS CALCULATIONS

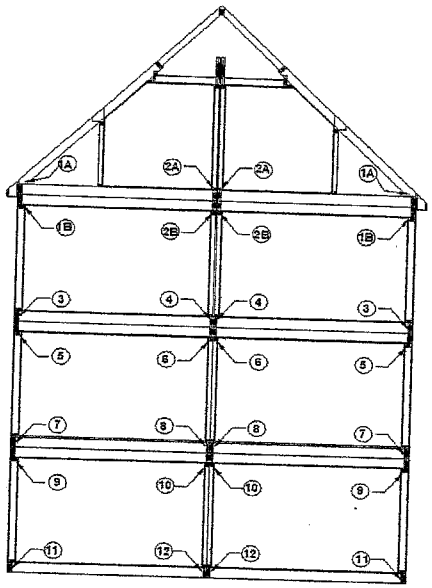
LEGACY CUSTOM HOMES

COMPONENT LOAD SUMMARY

EXTERIOR WALL DEAD LOAD =	12	psf x	10	ft	=	120 plf
MATING WALL DEAD LOAD =	8	psf x	10	ft	=	80 plf
FLOOR DEAD LOAD =	10	psf x	13.75	ft / 2 =		68.75 plf
FLOOR LIVE LOAD =	40	psf x	13.75	ft / 2 =		275 plf
CEILING DEAD LOAD =	5	psf x	13.75	ft / 2 =		34.38 plf

LOCATION 1 = EXT. WALL HEADER & EXT. WALL STUD
LOCATION 2 = M. WALL HEADER & M. WALL STUD
LOCATION 3 = PERIMETER BAND
LOCATION 4 = CENTER GIRDER
LOCATION 5 = EXT. WALL HEADER & EXT. WALL STUD
LOCATION 6 = M. WALL HEADER & M. WALL STUD
LOCATION 7 = PERIMETER BAND
LOCATION 8 = CENTER GIRDER
LOCATION 9 = EXT. WALL HEADER & EXT. WALL STUD
LOCATION 10 = M. WALL HEADER & M. WALL STUD
LOCATION 11 = PERIMETER BAND
LOCATION 12 = CENTER GIRDER
LOCATIONS 3, 4, 7, 8, 11 & 12 MAY BE USED TO GENERATE FOUNDATION LOADS

* CROSS SECTION IS FOR REFERENCE ONLY AND MAY NOT REFLECT ACTUAL TRUSS



TRUSS 4BOX-CAPE-27-6, 12/12 PITCH, 27'-6" WIDTH

30 psf GROUND SNOW

COMPONENT LOADS (lbs/ft)

(MATING WALL LOADS ARE PER SIDE OF LINE)

LOCATION	1A	1B	2A	2B	3	4	5	6	7	8	9	10	11	12
DEAD LOAD	357	391	58	92	546	207	580	241	769	390	803	424	992	573
LIVE LOAD	618	652	428	462	893	703	893	703	1168	978	1168	978	1443	1253
TOTAL LOAD	975	1044	486	555	1439	910	1473	944	1937	1368	1971	1402	2435	1826

C & C UPLIFT

LOCATION	1A	1B	2A	2B	3	4	5	6	7	8	9	10	11	12
UPLIFT (0.6) DEAD LOAD	214	235	35	55	328	124	348	145	461	234	482	254	595	344
110 mph UPLIFT	-268	-33	0	-	-	-	-	-	-	-	-	-	-	-

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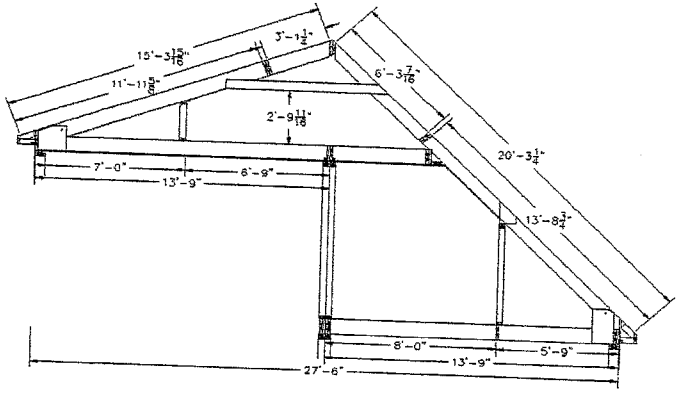
TRUSS CALCULATIONS

LEGACY CUSTOM MODULAR HOMES

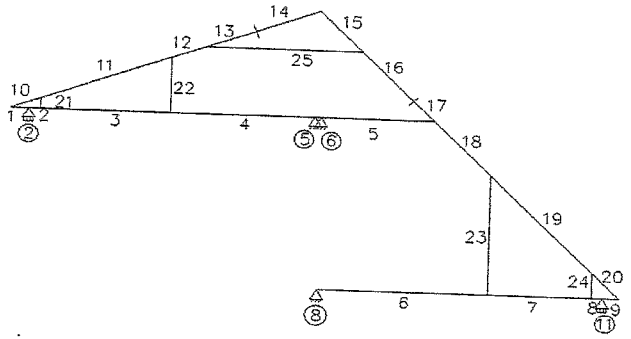


TRUSS NO.: VSHED-27-7
JOB NO.: 170367
HIGH SIDE PITCH: 4.5/12
LOW SIDE PITCH: 12/12
SPAN: 27'-7"

TRUSS CENTERS: 16 in O.C.

HIGH (4.5/12) SIDE

GROUND SNOW LOAD:	**30 psf**
BALANCED SNOW LOAD:	23.1 psf
UNBALANCED SNOW LOAD:	41.289 psf
OPPOSITE SIDE UNB. SNOW LOAD:	6.93 psf
UNBALANCED SNOW LOAD LENGTH:	7.27 ft
APPLIED MWFRS UPLIFT:	32.76 psf WINDWARD AT 110 mph
	22.80 psf LEEWARD AT 110 mph
APPLIED C & C UPLIFT:	46.65 psf AT 110 mph



LOW (12/12) SIDE

*** BALANCED SNOW LOAD:**	17.76 psf
UNBALANCED SNOW LOAD:	47.51 psf
OPPOSITE SIDE UNB. SNOW LOAD:	5.33 psf
UNBALANCED SNOW LOAD LENGTH:	4.43 ft
APPLIED MWFRS UPLIFT:	33.61 psf WINDWARD AT 110 mph
	19.09 psf LEEWARD AT 110 mph
APPLIED C & C UPLIFT:	36.21 psf AT 110 mph

TC DL:	10 psf
BC DL:	10 psf
BC LL:	10 psf WHERE h < 42"
BC LL:	20 psf WHERE h ≥ 42"
LOWER BC LL:	40 psf BETWEEN KNEEWALLS

COMMONWEALTH OF MASSACHUSETTS
JAMES N. BARLOW
CIVIL
NO. 49508
REGISTERED
PROFESSIONAL ENGINEER

07/10/17

MEMBER INFORMATION:

MEMBER	SIZE & SPECIES
1 - 5 & 6 - 9	2 x 10 SPF #2
10 - 13 & 17 - 20	2 x 8 SPF #2
14 - 16	2 x 4 SPF #2
21 - 24	2 x 4 SPF #2
25	2 x 6 SPF #2

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MAXIMUM SUPPORT REACTIONS (lbs):

	DEAD LOAD	DL + LL + 30 psf GSL	MWFRS 0.6 DL + 110 mph UPLIFT	C & C 0.6 DL + 110 mph UPLIFT
HS EXT. WALL VERTICAL (1)	284	645	-263	-440
MATEWALL VERTICAL (5)	154	363	-140	-206
MATEWALL VERTICAL (6)	42	77	0	0
LS MATEWALL. WALL VERTICAL (8)	81	303	0	0
LS EXT. WALL VERTICAL(11)	529	1324	-338	-442

NOTES:
1. RIDGE BEAM REACTIONS ARE TOTAL FOR BOTH SIDES.
2. WIND PER ASCE 7-05, 110 mph (Vult), EXP. C.
3. SNOW PER ASCE 7-05, 30 psf GSL, Ct = 1.1, Ce = 1.0
   DRIFTING LENGTH IS LATERAL DISTANCE FROM RIDGE.
4. COMPONENT DESIGN IS BASED ON C & C PRESSURES
   TRUSS UPLIFT CONNECTIONS ARE BASED ON MWFRS PRESSURES.

MAXIMUM INTERACTION & DEFLECTION:

	HIGH SIDE MAXIMUM CSI	MAXIMUM DEFLECTION (in)	l /	LOW SIDE MAXIMUM CSI	MAXIMUM DEFLECTION (in)	l /
BOTTOM CHORD	0.970	0.385	609	0.404	0.121	1405
TOP CHORD	0.506	0.852	217	0.882	0.296	821
WEB	0.204	0.00	*****	N/A	N/A	N/A

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TRUSS CALCULATIONS

LEGACY CUSTOM MODULAR HOMES

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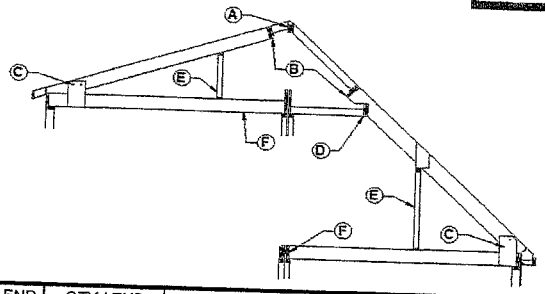
TRUSS CONNECTIONS

PROJECT NUMBER : **170367**
TRUSS NUMBER : **VSHED-27-7**
TRUSS PITCH : **4.5/12 & 12/12**
TRUSS SPAN : **27'-7"**



UPLIFT CONNECTIONS (MWFRS LOADS):

110 mph

HIGH SIDE EXTERIOR WALL			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
UPLIFT (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
263	WIND	1.6	OK	4	5	OK	2	5	OK	2
ALTERNATE: (3) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (2) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD										
LOW SIDE EXTERIOR WALL			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
UPLIFT (lbs / PER SIDE)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
338	WIND	1.6	OK	4	7	OK	3	7	OK	2
ALTERNATE: (4) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (3) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD										
HIGH SIDE MATING WALL			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
UPLIFT (lbs / PER SIDE)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
140	WIND	1.6	OK	2	3	OK	2	3	OK	2
ALTERNATE: (2) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (2) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD										

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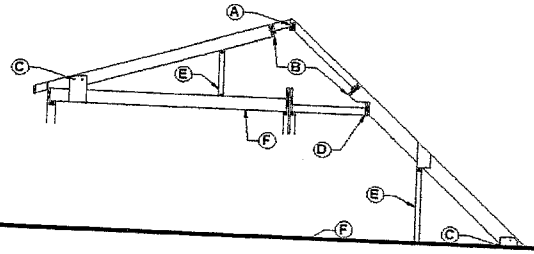
TRUSS CALCULATIONS

LEGACY CUSTOM MODULAR HOMES

TRUSS CONNECTIONS

PROJECT NUMBER : **170367**
TRUSS NUMBER : **VSHED-27-7**
TRUSS PITCH : **4.5/12 & 12/12**
TRUSS SPAN : **27'-7"**



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MAXIMUM OF DL + LL + 30 psf GSL & 0.6 DL + 110 mph WIND

CONDITION "A" - RIDGE:

TENSION (lbs)	CASE	CD	CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
78	WIND	1.6	1 1/2" x 26ga STRAP OK	10 d NAILS 2	16 ga STAPLE 2	1 1/2" x 20 ga STRAP OK	10 d NAILS 2	16 ga STAPLE 2	SIMPSON CS20 STRAP OK	10 d NAILS 2

ALTERNATE: USE (2) 8 d NAILS EACH END OF 1 x 4

SHEAR (lbs)	CASE	CD	
104	SNOW	1.15	USE (2) 16 d NAILS INTO END GRAIN EACH END PLUS USE 10 d NAILS AT 17 in O.C. THROUGH PLATES

CONDITION "B" - TOP CHORD FLIP:

TENSION (lbs)	CASE	CD	
341	WIND	1.6	USE (5) 6 d NAILS THROUGH SHEATHING EACH SIDE
	ALTERNATE:		USE (8) 16 ga STAPLE THROUGH SHEATHING EACH SIDE
SHEAR (lbs)	CASE	CD	
104	SNOW	1.15	USE (2) 16 d NAILS TOENAILED EACH END PLUS USE 10 d NAILS AT 17 in O.C. THROUGH PLATES

CONDITION "C" - HEEL:

TOP CHORD (lbs)	CASE	CD	
992	SNOW	1.15	USE (1) 1/2" BOLT (DOUBLE SHEAR; 3/8" SIDE PLATES)
			PLUS (3) 6 d NAILS OR (4) 16 ga STAPLES PER GUSSET EACH SIDE
	ALTERNATE:		USE (1) 5/8" BOLT (DOUBLE SHEAR; DBL. 3/8" SIDE PLATES)
			PLUS NO ADDITIONAL FASTENERS REQUIRED
BOTTOM CHORD (lbs)	CASE	CD	
781	SNOW	1.15	USE (8) 6 d NAILS OR (10) 16 ga STAPLES PER GUSSET EACH SIDE

CONDITION "D" - COLLAR TIE:

AXIAL (lbs)	CASE	CD	
511	SNOW	1.15	USE (4) 16 d NAILS THROUGH TIE INTO RAFTER

CONDITION "E" - KNEE WALL:

TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
470	WIND	1.6	OK	6	9	OK	4	9	OK	4
COMPRESSION (lbs)	CASE	CD								
597	SNOW	1.15	USE (5) 16 d NAILS THROUGH CHORD BLOCK							

CONDITION "F" - BOTTOM CHORD AT MATING LINE:

SHEAR (lbs)	CASE	CD	SIMPSON A34							
363	SNOW	1.15	OK							
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
781	SNOW	1.15	NO GOOD	N/A	N/A	OK	8	15	OK	5

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TRUSS CALCULATIONS

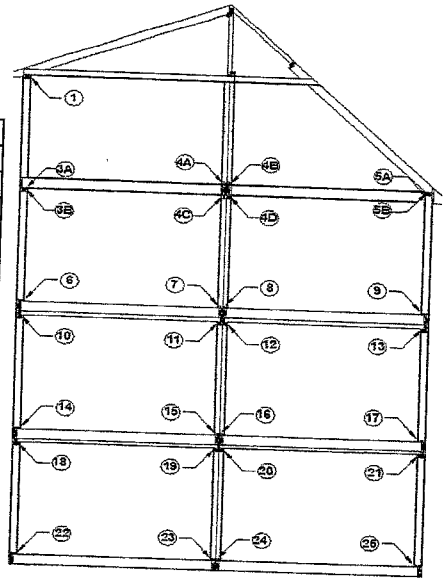
LEGACY CUSTOM MODULAR HOMES

COMPONENT LOAD SUMMARY

EXTERIOR WALL DEAD LOAD =	12	psf x	10	ft	=	120 plf
MATING WALL DEAD LOAD =	8	psf x	10	ft	=	80 plf
FLOOR DEAD LOAD =	10	psf x	13.75	ft / 2 =		69 plf
FLOOR LIVE LOAD =	40	psf x	13.75	ft / 2 =		275 plf
CEILING DEAD LOAD =	5	psf x	13.75	ft / 2 =		34 plf

LOCATION 1 = EXT. WALL HEADER & EXT. WALL STUD	LOCATION 14 = PERIMETER BAND
LOCATION 2 = INTERMEDIATE BEAM (VERTICAL & LATERAL)	LOCATION 15 = CENTER GIRDER
LOCATION 3 = EXT. WALL HEADER & EXT. WALL STUD	LOCATION 16 = CENTER GIRDER
LOCATION 4 = M. WALL HEADER & M. WALL STUD	LOCATION 17 = PERIMETER BAND
LOCATION 5 = EXT. WALL HEADER & EXT. WALL STUD	LOCATION 18 = EXT. WALL HEADER & EXT. WALL STUD
LOCATION 6 = PERIMETER BAND	LOCATION 19 = M. WALL HEADER & M. WALL STUD
LOCATION 7 = CENTER GIRDER	LOCATION 20 = M. WALL HEADER & M. WALL STUD
LOCATION 8 = CENTER GIRDER	LOCATION 21 = EXT. WALL HEADER & EXT. WALL STUD
LOCATION 9 = PERIMETER BAND	LOCATION 22 = PERIMETER BAND
LOCATION 10 = EXT. WALL HEADER & EXT. WALL STUD	LOCATION 23 = CENTER GIRDER
LOCATION 11 = M. WALL HEADER & M. WALL STUD	LOCATION 24 = CENTER GIRDER
LOCATION 12 = M. WALL HEADER & M. WALL STUD	LOCATION 25 = PERIMETER BAND
LOCATION 13 = EXT. WALL HEADER & EXT. WALL STUD	
LOCATIONS 6 - 9, 14 - 17 & 22 - 25 MAY BE USED TO GENERATE FOUNDATION LOADS	

* CROSS SECTION IS FOR REFERENCE ONLY
AND MAY NOT REFLECT ACTUAL TRUSS



TRUSS VSHED-27-7, 4.5/12 PITCH, 27'-7" WIDTH

30 psf GROUND SNOW

COMPONENT LOADS (lbs/ft)

(RIDGE BEAM LOADS ARE TOTAL FOR BOTH SIDES OF LINE, MATING WALL LOADS ARE PER SIDE OF LINE)

LOCATION	1	3A	3B	4A	4B	4C	4D	5A	5B	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
DEAD LOAD	213	436	470	219	172	253	206	61	95	625	368	321	250	659	402	355	284	848	551	504	473	882	585	538	507
LIVE LOAD	271	546	580	329	285	363	319	167	201	821	604	560	442	821	604	560	442	1096	879	835	717	1096	879	835	717
TOTAL LOAD	484	982	1050	548	458	616	526	228	296	1446	972	881	692	1480	1006	915	726	1944	1430	1339	1190	1978	1464	1373	1224

LOCATION	22	23	24	25
DEAD LOAD	1071	734	687	696
LIVE LOAD	1371	1154	1110	992
TOTAL LOAD	2442	1888	1797	1688

C & C UPLIFT

LOCATION	1	3A	3B	4A	4B	4C	4D	5A	5B	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
UPLIFT (0.6) DEAD LOAD	128	262	282	131	103	152	124	37	57	375	221	193	150	395	241	213	170	509	331	302	284	529	351	323	304
110 mph UPLIFT	-330	-196	-176	-9	0	0	0	-332	-312	-83	-	-	-219	-63	-	-	-199	-	-	-	-	-	-	-	-154

LOCATION	22	23	24	25
UPLIFT (0.6) DEAD LOAD	643	440	412	418
110 mph UPLIFT	-	-	-	-40

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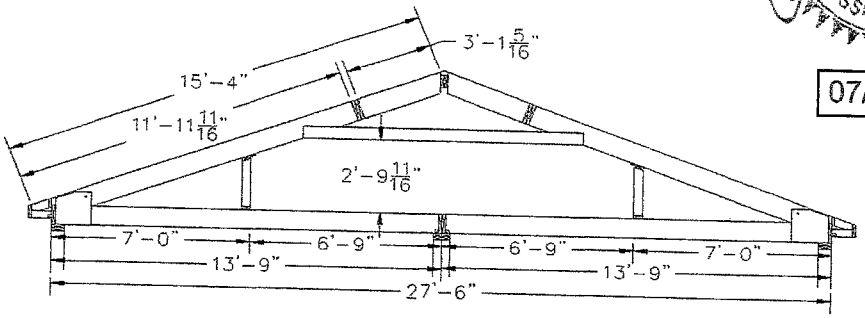
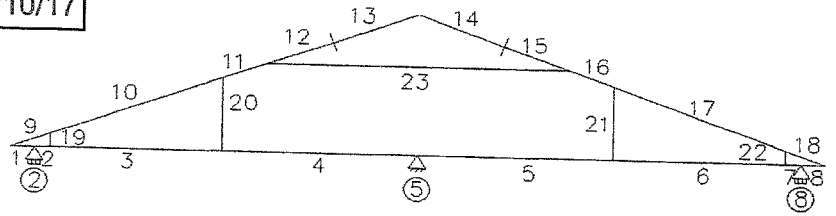
TRUSS CALCULATIONS

LEGACY CUSTOM HOMES





JAMES S. BARLOW CIVIL NO. 49508 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

07/10/17

TRUSS NO.: TR4.5-27-6
JOB NO.: 170367
PITCH: 4.5/12
SPAN: 27'-6"
TRUSS CENTERS: 16 in O.C.

GROUND SNOW LOAD:	**30 psf**	**TC DL:**	10 psf
*** BALANCED SNOW LOAD:**	23.1 psf	**BC DL:**	10 psf
UNBALANCED SNOW LOAD:	41.289 psf	**BC LL:**	10 psf WHERE h < 42"
OPPOSITE SIDE UNB. SNOW LOAD:	6.93 psf	**BC LL:**	10 psf WHERE h ≧ 42"
UNBALANCED SNOW LOAD LENGTH:	7.27 ft	**BC LL:**	20 psf BETWEEN KNEEWALLS

APPLIED MWFRS UPLIFT: 32.77 psf WINDWARD AT 110 mph
22.81 psf LEEWARD AT 110 mph

APPLIED C & C UPLIFT: 32.77 psf AT 110 mph

MEMBER INFORMATION:

MEMBER	SIZE & SPECIES
1 - 8	2 x 10 SPF #2
9 - 12 & 15 - 18	2 x 10 SPF #2
13 & 14	2 x 6 SPF #2
19 - 22	2 x 4 SPF #2
23	2 x 6 SPF #2

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NOTES:
1. MATING WALL REACTIONS ARE TOTAL FOR BOTH SIDES.
2. WIND PER ASCE 7-05, 110 mph, EXP. C.
3. SNOW PER ASCE 7-05, 30 psf GSL, Ct = 1.1, Ce = 1.0
   DRIFTING LENGTH IS LATERAL DISTANCE FROM RIDGE.
4. COMPONENT DESIGN IS BASED ON C & C PRESSURES
   TRUSS UPLIFT CONNECTIONS ARE BASED ON MWFRS PRESSURES.
5. MEMBER 23 IS BRACED AT MIDPOINT

MAXIMUM SUPPORT REACTIONS (lbs):

	DEAD LOAD	DL + LL + 30 psf GSL	MWFRS 0.6 DL + 110 mph UPLIFT	C & C 0.6 DL + 110 mph UPLIFT
EXTERIOR WALL	413	900	-303	-350
MATING WALL	132	458	0	0

MAXIMUM INTERACTION & DEFLECTION:

	MAXIMUM CSI	MAXIMUM DEFLECTION (in)	l /
BOTTOM CHORD	0.584	0.182	948
TOP CHORD	0.212	0.362	510
WEB	0.360	0.00	*****

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TRUSS CALCULATIONS

LEGACY CUSTOM HOMES

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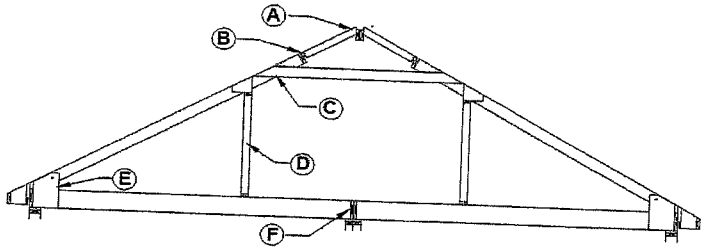
TRUSS CONNECTIONS

PROJECT NUMBER : **170367**
TRUSS NUMBER : **TR4.5-27-6**
TRUSS PITCH : **4.5/12**
TRUSS SPAN : **27'-6"**



UPLIFT CONNECTIONS (MWFRS LOADS):

110 mph

EXTERIOR WALL											
UPLIFT (lbs)	CASE	CD	CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
303	WIND	1.6	1 1/2" x 26ga STRAP OK	10 d NAILS 2	16 ga STAPLE 3	1 1/2" x 20 ga STRAP OK	10 d NAILS 2	16 ga STAPLE 3	SIMPSON CS20 STRAP OK	10 d NAILS 3
ALTERNATE: (4) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (3) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD										
MATING WALL			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
UPLIFT (lbs / PER SIDE)	CASE	CD								
0	WIND	1.6	1 1/2" x 26ga STRAP NO CONN REQ'D	10 d NAILS N/A	16 ga STAPLE N/A	1 1/2" x 20 ga STRAP NO CONN REQ'D	10 d NAILS N/A	16 ga STAPLE N/A	SIMPSON CS20 STRAP NO CONN REQ'D	10 d NAILS N/A
ALTERNATE: NO CONN REQ'D										

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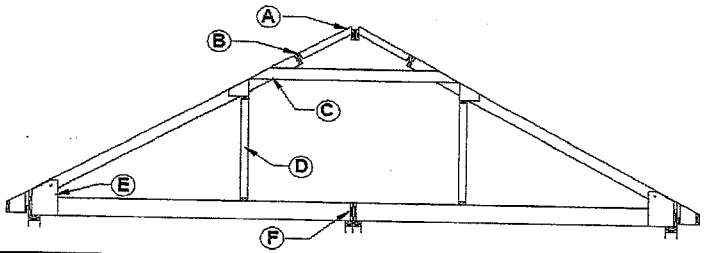
TRUSS CALCULATIONS

LEGACY CUSTOM HOMES

TRUSS CONNECTIONS

PROJECT NUMBER : **170367**
TRUSS NUMBER : **TR4.5-27-6**
TRUSS PITCH : **4.5/12**
TRUSS SPAN : **27'-6"**



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MAXIMUM OF DL + LL + 30 psf GSL & 0.6 DL + 110 mph WIND

CONDITION "A" - RIDGE:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
150	WIND	1.6	OK	2	2	OK	2	2	OK	2
ALTERNATE USE (2) 8 d NAILS EACH END OF 1 x 4										
SHEAR (lbs)	CASE	CD								
105	SNOW	1.15	USE (2) 16 d NAILS INTO END GRAIN EACH END PLUS USE 10 d NAILS AT 17 in O.C. THROUGH PLATES							
CONDITION "B" - TOP CHORD FLIP:										
TENSION (lbs)	CASE	CD								
140	WIND	1.6	USE (2) 6 d NAILS THROUGH SHEATHING EACH SIDE							
ALTERNATE: USE (4) 16 ga STAPLE THROUGH SHEATHING EACH SIDE										
SHEAR (lbs)	CASE	CD								
105	SNOW	1.15	USE (2) 16 d NAILS TOENAILED EACH END PLUS USE 10 d NAILS AT 17 in O.C. THROUGH PLATES							
CONDITION "C" - COLLAR TIE:										
AXIAL (lbs)	CASE	CD								
1099	SNOW	1.15	USE (8) 16 d NAILS EACH END							
CONDITION "D" - KNEE WALLS:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
290	SNOW	1.15	OK	3	3	OK	2	3	OK	3
COMPRESSION (lbs)	CASE	CD								
244	SNOW	1.15	USE (2) 16 d NAILS THROUGH CHORD BLOCK							
CONDITION "E" - HEEL:										
TOP CHORD (lbs)	CASE	CD								
1368	SNOW	1.15	USE (1) 1/2" BOLT (DOUBLE SHEAR; 3/8" SIDE PLATES)							
			PLUS (7) 6 d NAILS OR (8) 16 ga STAPLES PER GUSSET EACH SIDE							
		ALTERNATE:	USE (1) 3/4" BOLT (DOUBLE SHEAR; DBL. 3/8" SIDE PLATES)							
			PLUS NO ADDITIONAL FASTENERS REQUIRED							
BOTTOM CHORD (lbs)	CASE	CD								
1293	SNOW	1.15	USE (12) 6 d NAILS OR (16) 16 ga STAPLES PER GUSSET EACH SIDE							
CONDITION "F" - BOTTOM CHORD AT MATING LINE:										
			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS14 STRAP	10 d NAILS
1293	SNOW	1.15	NO GOOD	N/A	N/A	NO GOOD	N/A	N/A	OK	11
ALTERNATE: USE (10) 16 d NAILS THROUGH DECKING EACH SIDE										

BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

TRUSS CALCULATIONS

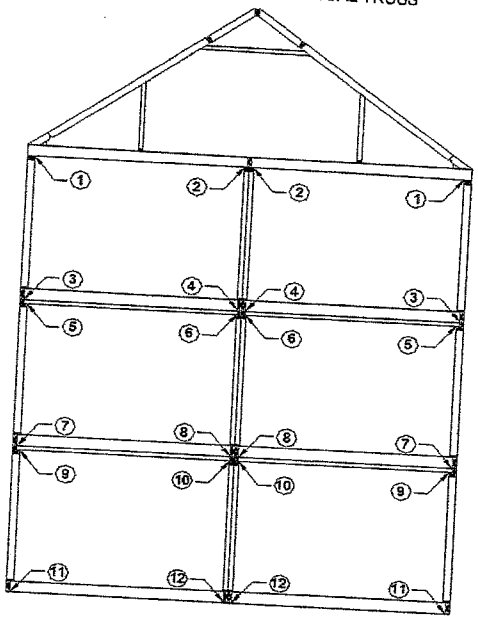
LEGACY CUSTOM HOMES

COMPONENT LOAD SUMMARY

EXTERIOR WALL DEAD LOAD =	12	psf x	10	ft =	120	plf
MATING WALL DEAD LOAD =	8	psf x	10	ft =	80	plf
FLOOR DEAD LOAD =	10	psf x	13.75	ft / 2 =	68.75	plf
FLOOR LIVE LOAD =	40	psf x	13.75	ft / 2 =	275	plf
CEILING DEAD LOAD =	5	psf x	13.75	ft / 2 =	34.38	plf

LOCATION 1 = EXT. WALL HEADER & EXT. WALL STUD
LOCATION 2 = M. WALL HEADER & M. WALL STUD
LOCATION 3 = PERIMETER BAND
LOCATION 4 = CENTER GIRDER
LOCATION 5 = EXT. WALL HEADER & EXT. WALL STUD
LOCATION 6 = M. WALL HEADER & M. WALL STUD
LOCATION 7 = PERIMETER BAND
LOCATION 8 = CENTER GIRDER
LOCATION 9 = EXT. WALL HEADER & EXT. WALL STUD
LOCATION 10 = M. WALL HEADER & M. WALL STUD
LOCATION 11 = PERIMETER BAND
LOCATION 12 = CENTER GIRDER
LOCATIONS 3, 4, 7, 8, 11 & 12 MAY BE USED TO GENERATE FOUNDATION LOADS

* CROSS SECTION IS FOR REFERENCE ONLY AND MAY NOT REFLECT ACTUAL TRUSS



TRUSS TR4.5-27-6, 4.5/12 PITCH, 27'-6" WIDTH

30 psf GROUND SNOW

COMPONENT LOADS (lbs/ft)
(MATING WALL LOADS ARE PER SIDE OF LINE)

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12
DEAD LOAD	310	50	499	199	533	233	722	382	756	416	945	565
LIVE LOAD	365	122	640	397	640	397	915	672	915	672	1190	947
TOTAL LOAD	675	172	1139	596	1173	630	1637	1054	1671	1088	2135	1512

C & C UPLIFT

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12
UPLIFT (0.6) DEAD LOAD	186	30	299	119	320	140	433	229	454	250	567	339
110 mph UPLIFT	-263	0	-150	-	-129	-	-16	-	-	-	-	-

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DATE 7/20/17
PFS CORPORATION
Bloomsburg, PA

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RALEIGH, NC 27615

UNIFORMLY LOADED
BEAM CHARTS

SITTING ROOM BEAM

NOTES:

1. LOADS ARE UNIFORM ALONG BEAM LENGTH.
2. DEFLECTION LIMITS: L/240
3. BEAMS ARE ASSUMED TO BE LATERALLY BRACED.
4. MULTIPLE PLIES ARE TO BE FASTENED PER MANFACTURER / CODE REQUIREMENTS.
5. DESIGNER TO ACCOUNT FOR REQUIRED BEARING AREA & SUPPORT STUDS.
6. SPANS ARE LIMITED BY THE MAXIMUM SPAN DUE TO BENDING, DEFLECTION, OR SHEAR.
7. SPLITS LIMITED TO 3/4 x DEPTH IN SOLID SAWN LUMBER.
8. DURATION FACTOR (Cd) = 1.15 & REPETITIVE FACTOR (Cr) = 1.0.
9. "-" DENOTES SPAN GREATER THAN 30'-0".
10. SINGLE MEMBER LVL'S GREATER THAN 14" DEEP ARE NOT TO BE USED EXCEPT FOR MATING WALL LOCATIONS WHERE ONE EACH SIDE ARE FASTENED TOGETHER TO FORM A DOUBLE MEMBER

UNIFORMLY LOADED BEAM (l/240)
SPAN CALCULATION

MEMBER	LOAD (plf)	QUANTITY	MAXIMUM SPAN	LIMITED BY	REQ'D BEARING (in^2)	QUANTITY	MAXIMUM SPAN	LIMITED BY	REQ'D BEARING (in^2)	QUANTITY	MAXIMUM SPAN	LIMITED BY	REQ'D BEARING (in^2)	QUANTITY	MAXIMUM SPAN	LIMITED BY	REQ'D BEARING (in^2)
2 x 4 SPF #2	250	1	3'-6"	Lb	1.033	2	4'-11"	Lb	1.46	3	5'-10"	Ld	1.72	4	6'-5"	Ld	1.893
2 x 6 SPF #2	250	1	5'-1"	Lb	1.508	2	7'-3"	Lb	2.133	3	8'-10"	Lb	2.612	4	10'-1"	Ld	2.975
2 x 8 SPF #2	250	1	6'-6"	Lb	1.913	2	9'-2"	Lb	2.706	3	11'-3"	Lb	3.314	4	13'-0"	Lb	3.826
2 x 10 SPF #2	250	1	7'-11"	Lb	2.337	2	11'-2"	Lb	3.305	3	13'-9"	Lb	4.048	4	15'-10"	Lb	4.674
2 x 12 SPF #2	250	1	9'-2"	Lb	2.71	2	13'-0"	Lb	3.833	3	15'-11"	Lb	4.694	4	18'-5"	Lb	5.42
1.5 x 5.5 LVL	250	1	7'-2"	Ld	1.019	2	9'-0"	Ld	1.284	3	10'-4"	Ld	1.47	4	11'-4"	Ld	1.618
1.5 x 7.25 LVL	250	1	9'-5"	Ld	1.344	2	11'-11"	Ld	1.693	3	13'-7"	Ld	1.938	4	15'-0"	Ld	2.133
1.5 x 9.25 LVL	250	1	12'-0"	Ld	1.715	2	15'-2"	Ld	2.16	3	17'-4"	Ld	2.473	4	19'-1"	Ld	2.722
1.5 x 11.25 LVL	250	1	14'-8"	Ld	2.085	2	18'-5"	Ld	2.627	3	21'-2"	Ld	3.008	4	23'-3"	Ld	3.31
1.5 x 12 LVL	250	1	15'-7"	Ld	2.224	2	19'-8"	Ld	2.803	3	22'-7"	Ld	3.208	4	24'-10"	Ld	3.531
1.5 x 14 LVL	250	1	18'-3"	Ld	2.595	2	23'-0"	Ld	3.27	3	26'-4"	Ld	3.743	4	29'-0"	Ld	4.119
1.5 x 16 LVL	250	1	20'-10"	Ld	2.966	2	26'-3"	Ld	3.737	-	-	-	-	-	-	-	-
1.5 x 18 LVL	250	1	23'-5"	Ld	3.337	2	29'-7"	Ld	4.204	-	-	-	-	-	-	-	-
1.5 x 20 LVL	250	1	26'-1"	Ld	3.707	-	-	-	-	-	-	-	-	-	-	-	-
1.5 x 24 LVL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 x 4 SPF #2	300	1	3'-2"	Lb	1.131	2	4'-6"	Lb	1.6	3	5'-6"	Ld	1.943	4	6'-0"	Ld	2.138
2 x 6 SPF #2	300	1	4'-8"	Lb	1.652	2	6'-7"	Lb	2.336	3	8'-1"	Lb	2.861	4	9'-4"	Lb	3.304
2 x 8 SPF #2	300	1	5'-11"	Lb	2.096	2	8'-4"	Lb	2.964	3	10'-3"	Lb	3.63	4	11'-10"	Lb	4.192
2 x 10 SPF #2	300	1	7'-3"	Lb	2.56	2	10'-3"	Lb	3.621	3	12'-6"	Lb	4.434	4	14'-6"	Lb	5.12
2 x 12 SPF #2	300	1	8'-4"	Lb	2.969	2	11'-10"	Lb	4.198	3	14'-6"	Lb	5.142	4	16'-9"	Lb	5.938
1.5 x 5.5 LVL	300	1	6'-9"	Ld	1.151	2	8'-6"	Ld	1.45	3	9'-8"	Ld	1.66	4	10'-8"	Ld	1.828
1.5 x 7.25 LVL	300	1	8'-10"	Ld	1.518	2	11'-2"	Ld	1.912	3	12'-10"	Ld	2.189	4	14'-1"	Ld	2.409
1.5 x 9.25 LVL	300	1	11'-4"	Ld	1.936	2	14'-3"	Ld	2.439	3	16'-4"	Ld	2.793	4	18'-0"	Ld	3.074
1.5 x 11.25 LVL	300	1	13'-9"	Ld	2.355	2	17'-4"	Ld	2.967	3	19'-11"	Ld	3.396	4	21'-11"	Ld	3.738
1.5 x 12 LVL	300	1	14'-8"	Ld	2.512	2	18'-6"	Ld	3.165	3	21'-3"	Ld	3.623	4	23'-4"	Ld	3.987
1.5 x 14 LVL	300	1	17'-2"	Ld	2.93	2	21'-7"	Ld	3.692	3	24'-9"	Ld	4.226	4	27'-3"	Ld	4.652
1.5 x 16 LVL	300	1	19'-7"	Lb	3.34	2	24'-9"	Ld	4.22	3	28'-4"	Ld	4.83	-	-	-	-
1.5 x 18 LVL	300	1	21'-11"	Lb	3.742	2	27'-10"	Ld	4.747	-	-	-	-	-	-	-	-
1.5 x 20 LVL	300	1	24'-3"	Lb	4.144	-	-	-	-	-	-	-	-	-	-	-	-
1.5 x 24 LVL	300	1	29'-0"	Lb	4.944	-	-	-	-	-	-	-	-	-	-	-	-

PFS APPROVED
DATE 7/20/17
PFS CORPORATION
Bloomsburg, PA

Name: **Elizabeth Gillis Warden**

Address: 10 Harbor Way

Map **45**

Parcel **19**

Zoning Bylaw - Section 2450

Lot Size	**7,832**
% used to determine GFA requirements	24%
Maximum GFA =	**1880**
% used to determine lot coverage requirements	25%
Maximum Lot Coverage	**1958**
Building Height (see definition)	**27**

Max Gross Flr Area	
First Floor	990
Second Flr	806
Lower Level Area*	-
Porch	
Basement 50% above grade	
Other Attic over 6'6"	
Sheds	
Total GFA:	**1796**

Lot Coverage (Footprint)	
Dwellings	990
Garage	
Deck/Porch	343
Sheds	
Storage Container	
Gazebo	
Swimming pool	
Total Lot Coverage:	**1333**

Nonconforming Lot Size square feet	**Maximum Gross Floor Area To Lot Area**	**Maximum Lot Coverage**	**Maximum Building Height**
Less than 6,001	25%	25%	25 feet
6,001 to 7,000	25%	25%	26 feet
7,001 to 8,000	24%	25%	27 feet
8,001 to 9,000	24%	25%	28 feet
9,001 to 10,000	23%	25%	29 feet
10,001 to 11,000	23%	25%	30 feet
11,001 to 12,000	22%	24%	31 feet
12,001 to 13,000	22%	23%	32 feet
13,001 to 14,000	21%	22%	33 feet
14,001 to 15,000	21%	21%	34 feet
15,001 or more	20%	20%	35 feet

***Lower level area is less than 6' 6" from floor to ceiling. No interior fixed stairs.**

Okay
Jennifer Copeland
10.16.17

Maximum Gross Floor Area (GFA):
The sum of **all** horizontal floors areas for **all** residential structures on the same lot, including garages, barns, sheds, covered porches. Measurements taken from exterior face of exterior walls. *Does not include 1-story garages w/ a max. of 480 s.f.), porches less than 200 s.f., decks, cellars/basements w/ walls more than 50% below grade & areas less than 6'6" floor to ceiling, providing no roof penetrations (dormers, skylights) & not accessed by fixed stairs.

Maximum Lot Coverage:
Includes all structures: dwellings, garages, porches, decks, sheds, gazebos, storage containers over 75 s.f. swimming pools over 4000

10 Harbor Way

10.16.17

A 48 HOUR NOTIFICATION IS REQUIRED PRIOR TO THE SET. THE CSL ON RECORD WILL RELAY THIS TO THE LOCAL BUILDING AUTHORITY. IF ANY CONNECTIONS HAVE BEEN CONCEALED PRIOR TO INSPECTION, THE BUILDING OFFICIAL MAY REQUEST HAVING THE REMOVAL OF ELEMENTS THAT CONCEAL THE CONNECTIONS TO PROVIDE ACCESS. THIS WOULD NOT CONSTITUTE "DESTRUCTIVE DISASSEMBLY". ALL CONNECTIONS ON SITE MUST BE INSPECTED BY THE LOCAL AUTHORITY.

BUILDER TO INSTALL & SUPPLY WHOLE HOUSE VENTILATION & TO BE APPROVED & INSPECTED ON-SITE BY LOCAL BUILDING OFFICAL

DUCT TIGHTNESS AND BLOWER DOOR TESTING DONE ON-SITE BY BUILDERS' HERS RATER

ALL CEILING GYP MUST BE MECHANICALLY FASTENED

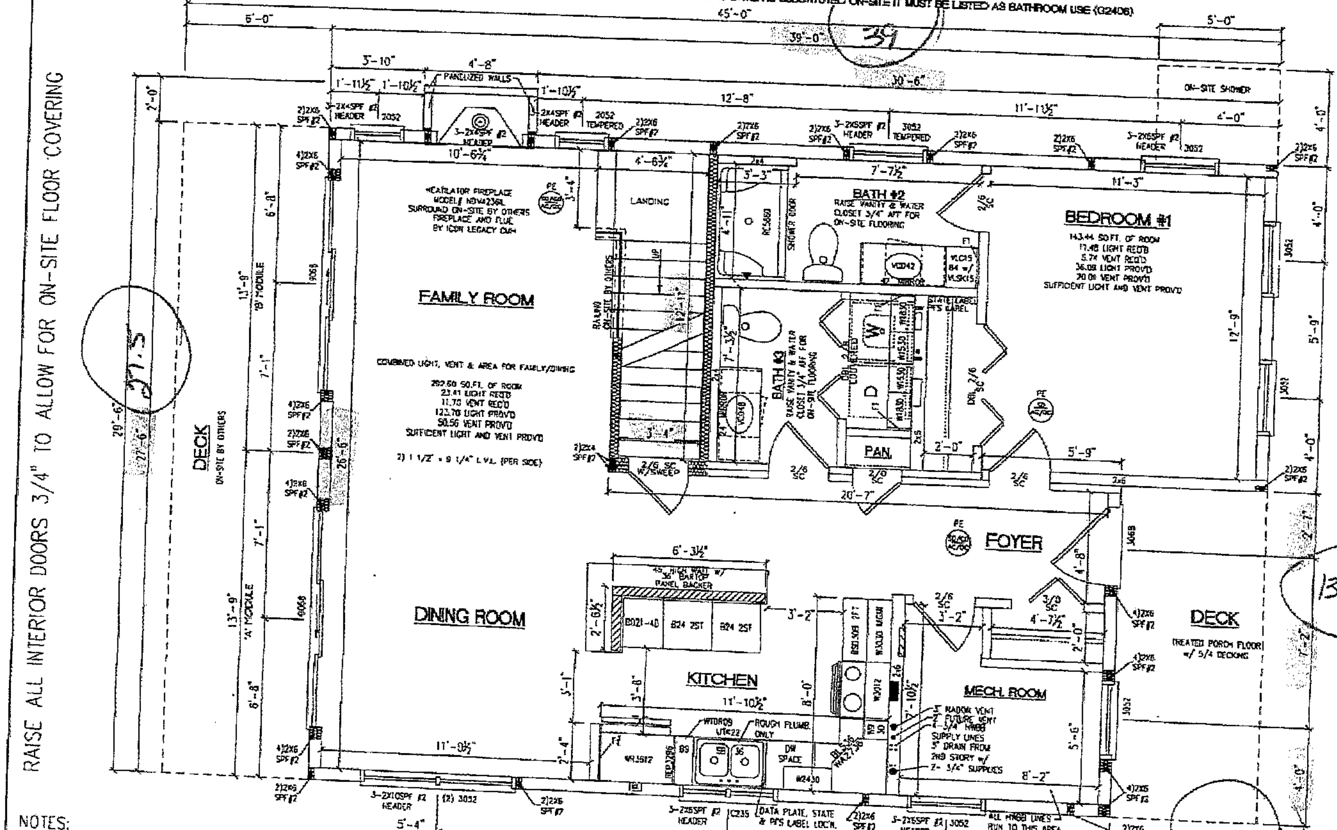
THIS HOUSE IS NOT LOCATED IN A FLOOD ZONE

DRYER SHOWN TO BE ELECTRIC. IF A GAS DRYER IS SUBSTITUTED ON-SITE IT MUST BE LISTED AS BATHROOM USE (G2406)

SITE ADDRESS
10 HARBOR WAY
POCASSET, MA 02559

BUILDER:
256 PLEASANT BAY ROAD
HARWICH, MA 02645

RAISE ALL INTERIOR DOORS 3/4" TO ALLOW FOR ON-SITE FLOOR COVERING



NOTES:
1. 2X6 EXTERIOR WALLS @ 16 O.C.
2. 2X4 MARRIAGE WALLS @ 16 O.C.
3. 8'-0" CEILING HEIGHT 1ST & 2ND FLOORS
4. ANDERSEN 400 TILT WASH DOUBLE HUNG WINDOWS
5. 48,000 TOTAL BTU HEAT LOSS
6. RAFTERS:
- 12/12 STORAGE RAFTER @ 16 O.C.
- 5/12 NON-STORAGE RAFTER @ 16 O.C.

MA STATE BUILDING CODE -(780 CMR) 8TH EDITION
MA FUEL/GAS/PLUMBING (248 CMR)
2009 INTERNATIONAL MECHANICAL CODE W/ MA AMENDMENTS
2017 NATIONAL ELECTRICAL CODE W/ MA AMENDMENTS
2015 INTERNATIONAL ENERGY CONS. CODE W/ MA AMENDMENTS

PFS Corporation Northeast Region APPROVED

DATE	REVISION	BY
11/15/16	PRELIM	PIF
02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

ICON ★ LEGACY
CUSTOM MODULAR HOMES LLC

246 SAND HILL ROAD
SELINSGROVE, PA 17870
PHONE: (570) 374-3280
FAX: (570) 374-1122
WWW.ICONLEGACY.COM

PLEASANT BAY HOMES
ELIZABETH GILLIS 2
10 HARBOR WAY
POCASSET MA 02559
BARNSTABLE 30 110
6861 1,980 CAPE
O#6861

1ST STORY FLOOR PLAN

O#6861

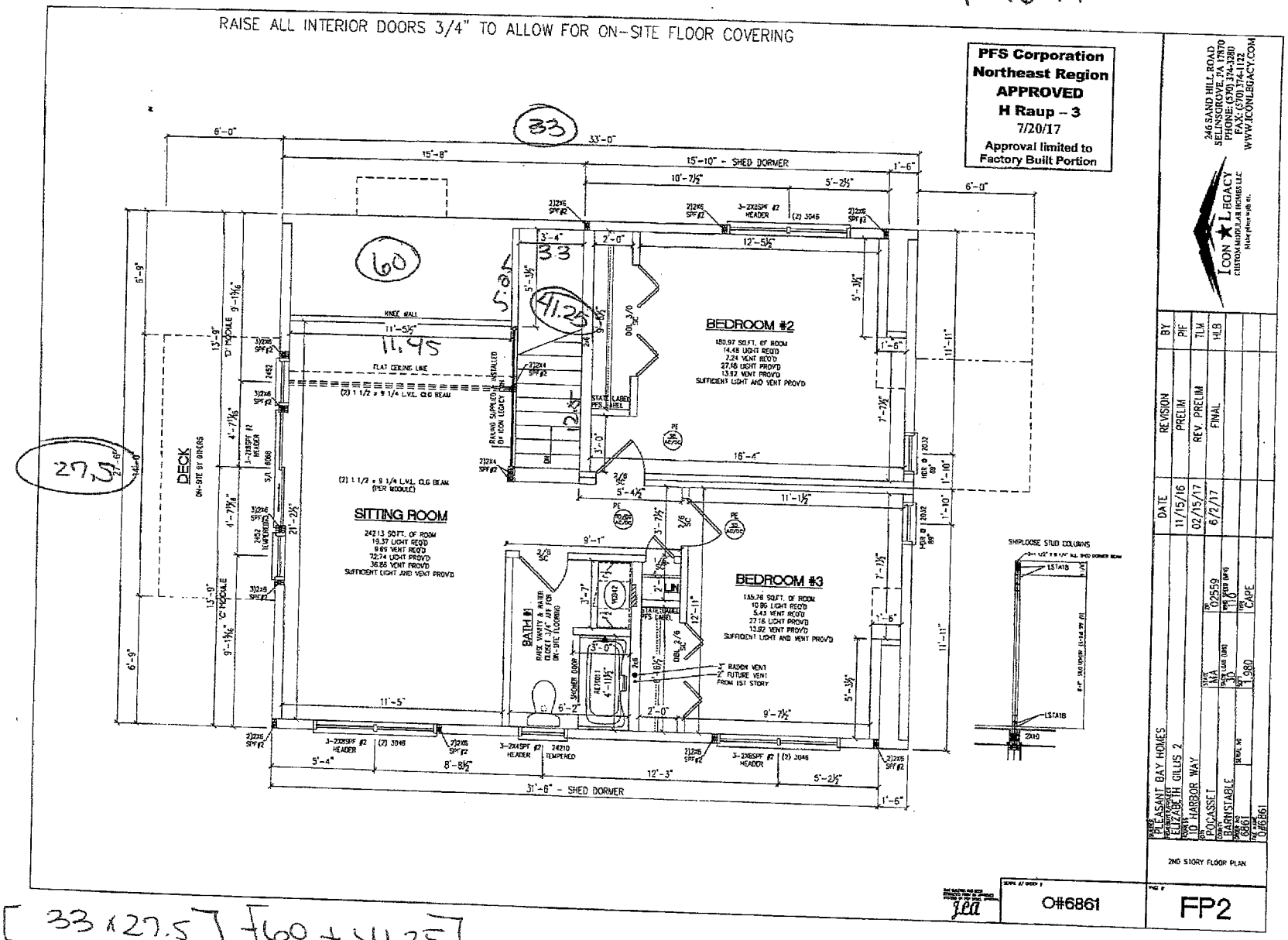
FP1

[27.5x39] - [6x13.75] =
1,072.5 - 82.5 = 990.

39x13.75 = 536
3.75 x 33 = 454
990

10 Harbor Way

10.16.17



Area [33 x 27.5] + [60 + 41.25] = 806.25

907.5 101.25

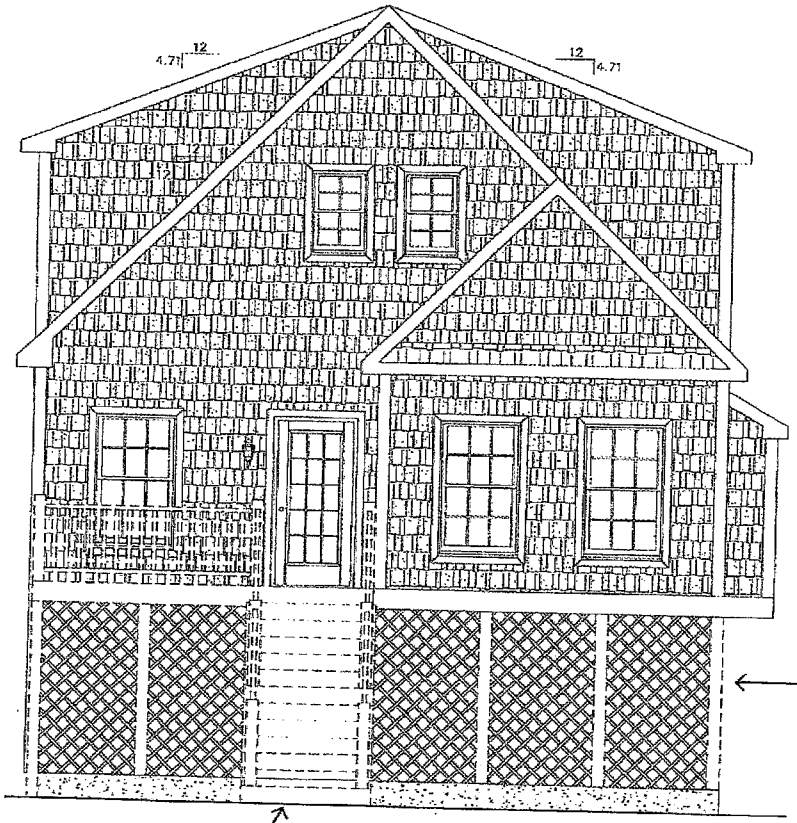
10 Harbor Way
10.16.17

OMIT SIDING

ROOF PEAK MAXIMUM ELEVATION 44.0

TOP OF FOUNDATION ELEVATION = 17.4

AVERAGE GRADE ELEVATION = 12.0



REFER TO PLANS BY OTHERS FOR FOR FOUNDATION DESIGN

REFER TO SITE AND FOUNDATION PLANS FOR PROPOSED STAIR LOCATIONS

ACCESS TO GRADE ON-SITE BY OTHERS

DECKS ON-SITE BY OTHERS

FRONT ELEVATION
NOT TO SCALE

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
7/20/17
Approval limited to Factory Built Portion

246 SAND HILL ROAD
SELINSGROVE, PA 17870
PHONE: (570) 374-3280
FAX: (570) 374-1122
WWW.ICONLEGACY.COM
ICON LEGACY
CUSTOM MODULAR HOMES LLC

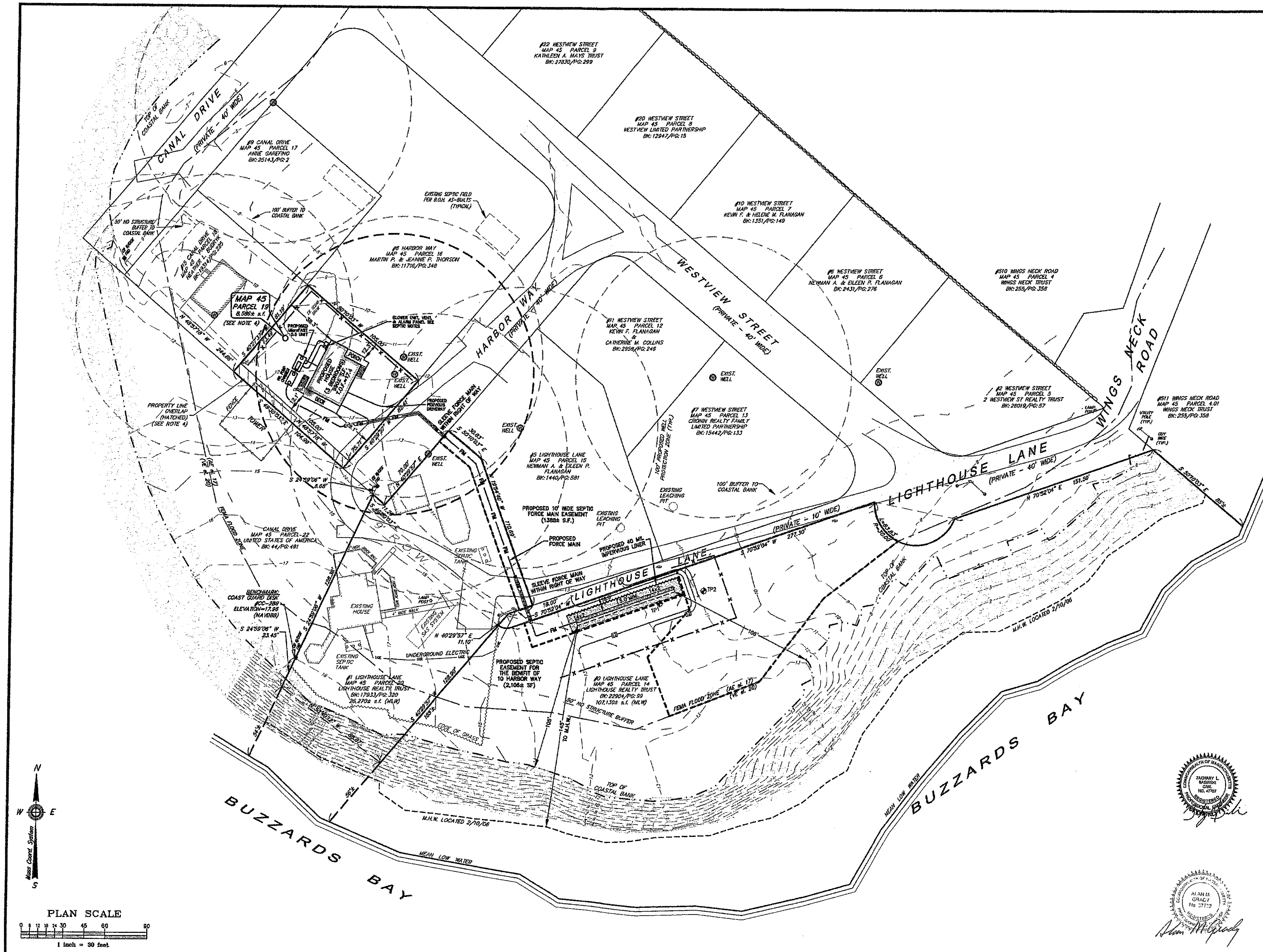
BY	REVISION	DATE
PIF	PRELIM	11/15/16
TLM	REV. PRELIM	02/15/17
HLB	FINAL	6/2/17

PLEASANT BAY HOMES
ELIZABETH GILLIS 2
10 HARBOR WAY
BARNSTABLE
MA
02559
CAPE
1,980

FRONT ELEVATION

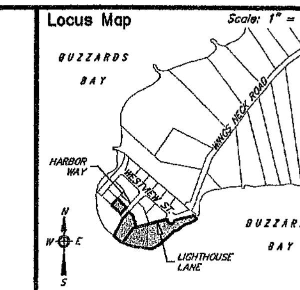
O#6861

EV1



Locus Map

Scale: 1" = 600'



Benchmark

COAST GUARD DISK #CC-289
ELEVATION = 17.96 (NAVD88)

Owners

LOCUS: #10 HARBOR WAY
MAP 45 PARCEL 19

OWNER: ELIZABETH GILLIS WARDEN
#34 MARISOL
NEWPORT COAST, CA 92657

DEED REF: Bk: 20251, Pg: 125

PLAN REF: Pl. Bk: 115, Pg: 95 (LOT 13)

LOCUS: #1 LIGHTHOUSE LANE
MAP 45 PARCEL 20

OWNER: THE LIGHTHOUSE REALTY TRUST
c/o CHRISTINA STEVENS
22 RED GATE LANE
SOUTHBORO, MA. 01772

DEED REF: Bk: 17933, Pg: 320

LOCUS: #0 LIGHTHOUSE LANE
MAP 45 PARCEL 14

OWNER: THE LIGHTHOUSE REALTY TRUST
c/o CHRISTINA STEVENS
22 RED GATE LANE
SOUTHBORO, MA. 01772

DEED REF: Bk: 22904, Pg: 99

PLAN REF: Pl. Bk: 597, Pg: 29 (PARCEL 14)

Notes

1. LOCI FALL WITHIN A SPECIAL FLOOD HAZARD ZONE AE17 AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C0491J dated 07/16/2014.
2. LOCI DO NOT FALL WITHIN THE NATURAL HERITAGE and ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE and PRIORITY HABITATS OF RARE SPECIES.
3. PROVIDE REQUIRED FLOOD VENTS IN ACCORDANCE WITH MASSACHUSETTS BUILDING CODE & NFIP REQUIREMENTS.
4. LOT AREA PER RECORD PLAN (8,586 s.f.), EFFECTIVE LOT AREA (7,632 s.f.) EXCLUDING IDENTIFIED PROPERTY LINE OVERLAP AREA.

VARIANCE REQUEST

TO ALLOW 104.8 FEET FROM S.A.S. TO COASTAL BANK
A 45.2 FOOT VARIANCE FROM 150 FEET REQUIRED.

ZONING SUMMARY
REFER TO BYLAW SECTION 2450

	REQUIRED	PROPOSED
LOT AREA:	80,000	7,832± S.F.(d)
FRONT YARD:	20'	29.1'
SIDE YARD:	12'	12.1'
REAR YARD:	12'	43.8'
LOT COVERAGE:	25%(a)	17.0% (1,333± S.F.)
GROSS FLR AREA:	24%(a)	23.0% (1,806± S.F.)(c)
BUILDING HEIGHT:	27' (a)	32' (b)

Notes:
(a) SEE TABLE 2456 FOR NON-CONFORMING LOTS IN BOURNE ZONING BY LAWS.
(b) BUILDING HEIGHT UP TO 5' EXTRA PER ZONING BY-LAW SECTION 6 2500(g).
(c) HEIGHT BASED ON AN EXISTING AVERAGE GRADE CALCULATION OF 12.0.
(d) EFFECTIVE LOT AREA OF #10 HARBOR WAY (SEE NOTE 4 ABOVE)

Prepared By:

BRACKEN ENGINEERING INC.

49 HERRING POND ROAD
BUZZARDS BAY, MA 02532
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19 OLD SOUTH ROAD
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COMMONWEALTH OF MASSACHUSETTS
ZACHARY L. BASINSKI
CIVIL
NO. 47707
REGISTERED PROFESSIONAL ENGINEER

ALAN M. GRADY
No. 37722
REGISTERED

PROPOSED SITE PLAN
IN BOURNE, MASSACHUSETTS

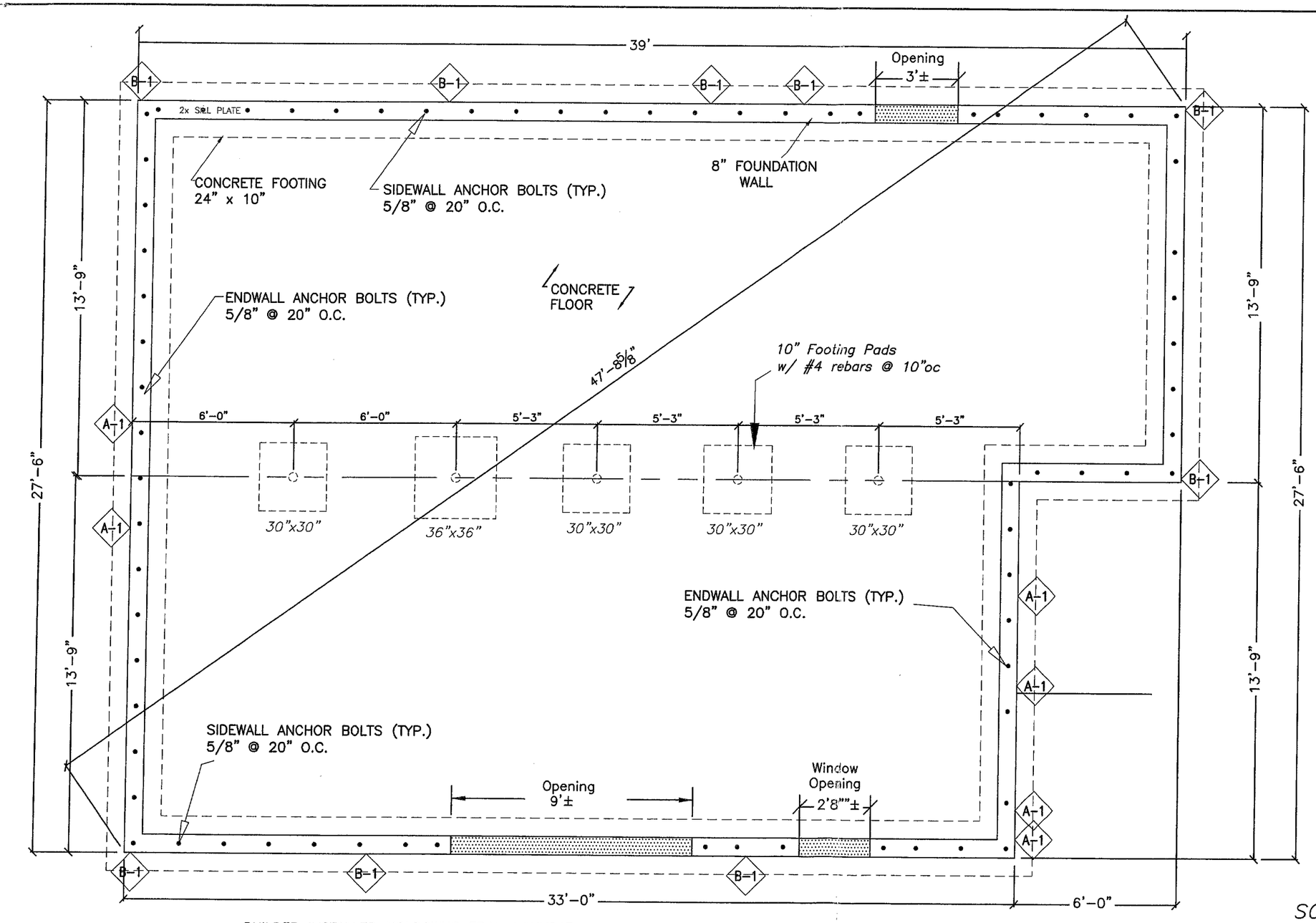
Prepared For:

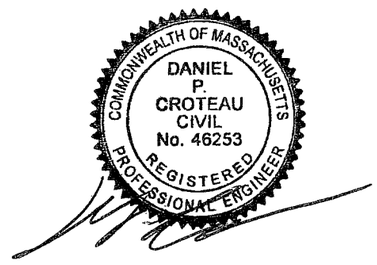
ELIZABETH GILLIS WARDEN & LIGHTHOUSE REALTY TRUST

#10 HARBOR WAY – MAP 45 PARCEL 19
#1 LIGHTHOUSE LANE – MAP 45 PARCEL 20
#0 LIGHTHOUSE LANE – MAP 45 PARCEL 14

No.	Date	Revision Description	By
3	04/25/17	REVISED WELL AND SEPTIC LOCATIONS	BEI
2	10/25/16	REVISED PROPOSED HOUSE	BEI
1	2/23/16	REVISED EASEMENT – ELIMINATE PROPOSED WALL	BEI

Date:	Drawn:	Checked:	Sheet:
NOVEMBER 30, 2015	RMM/ERC/DLH	DFB/AMG	1 of 2





A-1 BUILDER INSTALLED HOLDOWNS FROM FOUNDATION TO STUDS, USE SIMPSON HD19 W/1 1/4"ø ANCHOR OR EQUAL TIED TO (4) 2 X 6 WALL STUDS FASTENED TOGETHER W/ (2) ROWS OF 16d COMMON NAILS @ 2" O.C.

B-1 BUILDER INSTALLED HOLDOWNS FROM FOUNDATION TO STUDS USE SIMPSON STHD14RJ OR EQUAL TIED TO (2) 2 X 6 WALL STUDS FASTENED TOGETHER W/ (2) ROWS OF 16d COMMON NAILS @ 6" O.C.

*For Holdown Location Dimensions, Use Icon Legacy Custom Modular, Inc. Shearwall Layout Plan To Match built-up Stud Locations.

**Door & Window Opening Sizes and Locations To Be Verified By General Contractor. No Openings Are To Be Located Within 12" of Holdowns.

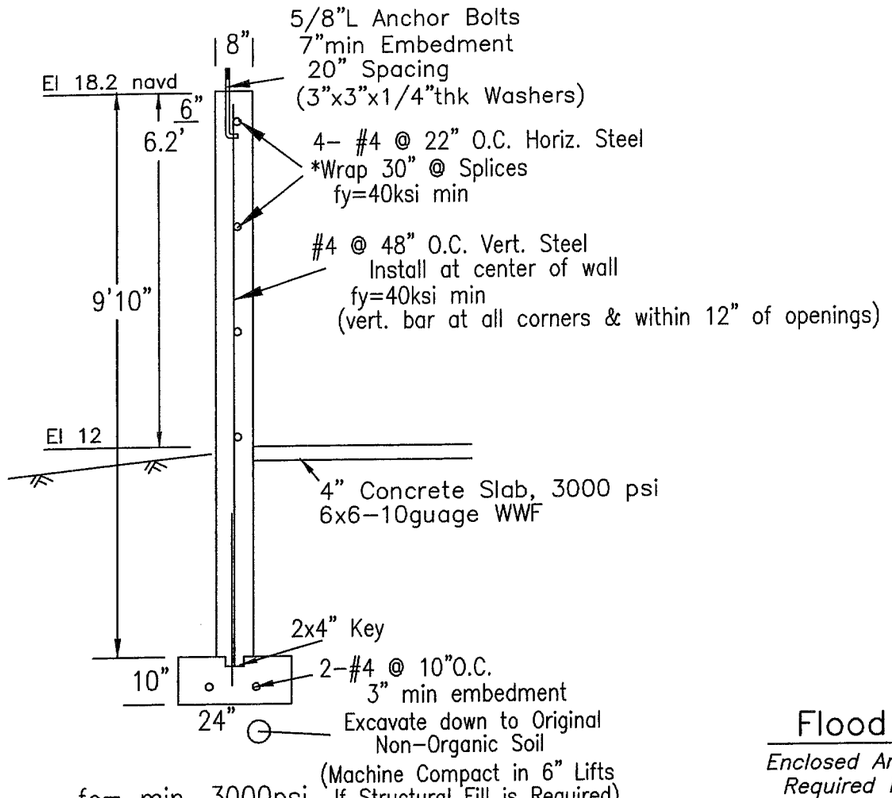
SCALE: 1/4"=1'

0 4 8 12

MORAN ENGINEERING ASSOC.,LLC
508-432-2878 941 MAIN STREET (RTE 28), HARWICH, MA

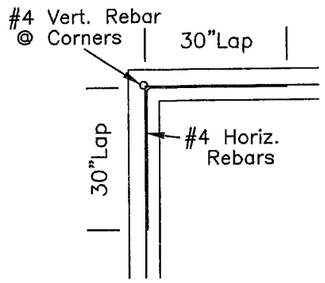
FOUNDATION PLAN – 10 HARBOR WAY, BOURNE, MA

PROJECT: 19-282 | DATE: 1/9/20



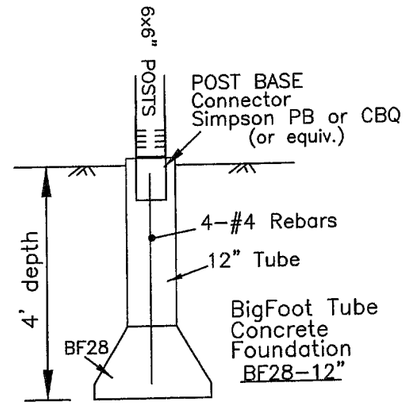
Poured Concrete Foundation Wall

NTS

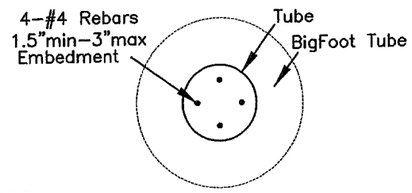


Foundation Wall Corner Section

NTS



Deck & Porch Foundation DETAIL NTS



Rebar DETAIL Porch Tubes

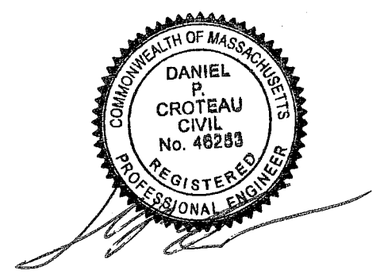
NTS

Flood Venting Capacity

Enclosed Area Below 100yr Flood Elevation = 990 SF
Required Flood Openings = 1 Square Inch for each Square Foot of Enclosed Area
Proposed Flood Openings = 108" x 60" + 36" x 60" = 8,640 Square Inches

Notes

1.) Anchor Bolts: 5/8"L Bolts @ 20"spacing (see detail)
& 6-12" from end of sill plates, 7"min concrete embedment
Washers: 3"x3"x1/4"thk plate washers
2.) Foundation Footings: 24"X10" reinforced poured concrete, fc=2500psi min
Column Footings: 10" w/3-#4 rebar at 10"spacing both directions.
3.) Foundation Walls: 8"thick reinforced poured concrete, fc=3000psi min.
Install vert. & continuous horiz. rebars as shown. Lap splice length: 30".
4.) SIMPSON Strong Tie-Holdowns: HD 19 & STHD14RJ to be Installed per manufacturer specs. Locations to match built-up stud locations per Icon Legacy Custom Modular Homes LLC, Shearwall Plan.
5.) Foundation Slab: 3"thick Poured Concrete, fc=3000psi, 6x6-10guage WWF.
6.) Window & Door locations to be verified by general contractor.

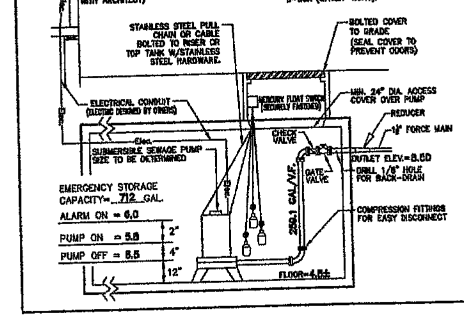


MORAN ENGINEERING ASSOC.,LLC
508-432-2878 941 MAIN STREET (RTE 28), HARWICH, MA

FOUNDATION PLAN - 10 HARBOR WAY, BOURNE, MA

PROJECT: 19-282 | *DATE: 1/9/20*

1,000 GALLON PUMP CHAMBER

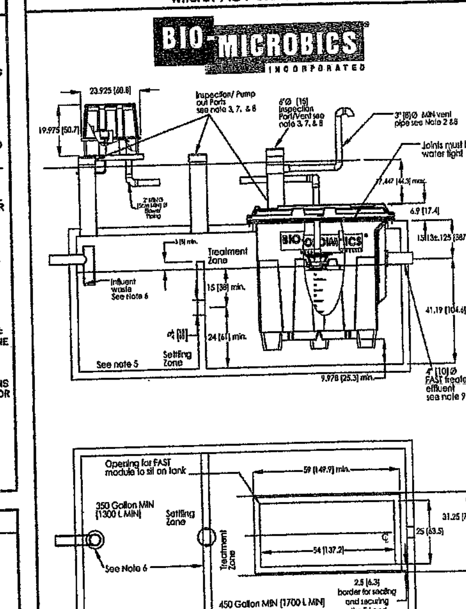


NOTES:
1.) GATE VALVE TO BE ACCESSIBLE FOR ADJUSTMENT AS SHOWN.
2.) ALARM TO BE POWERED BY A CIRCUIT SEPERATE FROM THE PUMP.
3.) JUNCTION BOX TO BE PLACED IN D-BOX (WATER-TIGHT).

PROPOSED SEPTIC NOTES

1. ALL CONSTRUCTION METHODS AND MATERIALS TO CONFORM TO TITLE V AND THE TOWN OF BOURNE BOARD OF HEALTH REGULATIONS.
2. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
3. NO FIELD MODIFICATION TO THE SYSTEM SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE DESIGN ENGINEER AND BOARD OF HEALTH.
4. ALL JOINTS AND COVERS TO BE WATERTIGHT.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES.
6. A CERTIFICATE OF COMPLIANCE MUST BE OBTAINED PRIOR TO BACKFILLING SYSTEM.
7. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF SOIL OR SITE CONDITIONS DIFFER FROM THOSE SHOWN.
8. THE DESIGN IS INTENDED TO MEET TITLE V AND OTHER APPLICABLE REQUIREMENTS. THIS PLAN DOES NOT GUARANTEE THAT THE SYSTEM WILL BE INSTALLED AS DESIGNED, NOR DOES THIS PLAN GUARANTEE THE OPERATION OF THE SYSTEM.
9. THIS SYSTEM IS NOT DESIGNED NOR INTENDED FOR USE WITH A GARBAGE GRINDER.
10. REFER TO THE REQUIRED OPERATION & MAINTENANCE PLANS, TO BE SUPPLIED BY THE MANUFACTURER FOR REQUIRED MAINTENANCE PROCEDURES OF THE MICROFAST SYSTEM.
11. THE SEPTIC SYSTEM IS TO BE STAKED OUT BY A PROFESSIONAL LAND SURVEYOR PRIOR TO CONSTRUCTION.
12. THE RECORD PROPERTY OWNER IS TO FILE A NOTICE OF DEED RESTRICTION AT THE BARNSTABLE COUNTY REGISTRY OF DEEDS PRIOR TO THE INSTALLATION OF THE SYSTEM, INDICATING THE USE OF AN INNOVATIVE/ALTERNATIVE SEPTIC SYSTEM ON THE PROPERTY.
13. HOMEOWNER IS TO ESTABLISH AN OPERATION & MAINTENANCE PLAN WITH A COMPANY CERTIFIED SYSTEM OPERATOR FOR THE MICROFAST. ALL SYSTEM TESTING, MONITORING & REPORTING IS TO BE CONDUCTED IN ACCORDANCE TO THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) GENERAL USE PERMIT.
14. CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM PANELS WITH THE ARCHITECT, HOMEOWNER & SYSTEM MANUFACTURER PRIOR TO INSTALLATION.
15. ALL PANELS, ALARMS, AND BLOWER UNITS ARE TO BE INSTALLED ABOVE FLOOD ZONE ELEVATION 17.4.
16. THE SYSTEM OWNER SHALL BE RESPONSIBLE TO PUMP THE SEPTIC TANK AT LEAST ONCE EVERY THREE YEARS.
17. PROPOSED SEPTIC FORCEMAIN EASEMENT (1,388± s.f.) TO BE ESTABLISHED ON #1 LIGHTHOUSE LANE FOR THE BENEFIT OF #10 HARBOR WAY.
18. PROPOSED NITROGEN LOADING AGGREGATE EASEMENT (12,227± s.f.) AND DEED RESTRICTIONS TO BE ESTABLISHED ON #0 LIGHTHOUSE LANE FOR THE BENEFIT OF #10 HARBOR WAY.
19. APPROVAL OF NITROGEN LOADING AGGREGATE PLAN IN ACCORDANCE WITH §216 OF 310 CMR 15.00 (TITLE 5) IS REQUIRED.

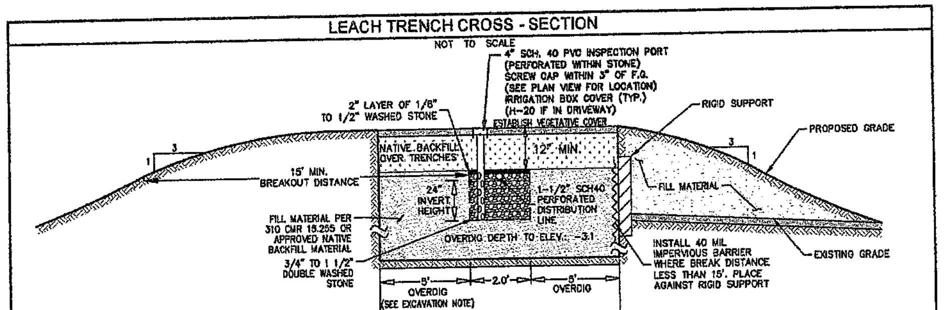
MicroFAST 0.5 UNIT



MicroFAST Notes:
1. Blower piping to FAST® may not exceed 100FT [30.5m] total length and use a maximum of 4 elbows. For distances greater than 100FT [30.5m] – consult factory. Blower must be located above flood/standing water levels on a concrete base 24" X 18" X 2" [61X45.7X5cm] minimum.
2. Vent to be located above finish grade or higher to avoid infiltration. Cap with vent grate w/at least 7.1 sq in. [45.8 sq. cm] open surface area. Secure with stainless steel screws or Run vent to desired location and cover opening with vent grate w/at least 7.1sq in. [45.8 sq. cm] of open surface area. Secure with stainless steel screws. Vent piping must not allow excess moisture build up or back pressure.
3. All appurtenances to FAST® (e.g. tank pump outs, etc.) must conform to all country, state, province, and local plumbing and electrical codes. The blower control system is provided by Bio-Microbics, Inc.
4. Either the influent pipe tee shall be fitted with a pipe cap or the baffle separating the two zones shall be extended to the top of the tank. If choosing to use the pipe cap, then the baffle shall be at least 3"[8cm] higher than the water level as shown on the drawing.
5. All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access.
6. Tank, anchors, piping, conduit, blower housing pad and vents are provided by others.
7. All piping and ancillary equipment installed after FAST® must not impede or restrict free flow of effluent.
8. No more than 4 FT [1.2 m] of fill may be placed over unit lid. Unit may stand inside tank MicroFAST® 1.0 with feet. Refer to installation manual for more details.

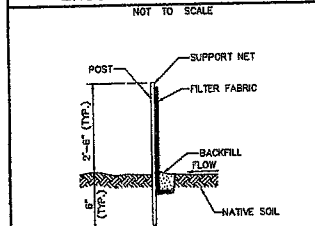
LEACH TRENCH CROSS - SECTION

NOT TO SCALE



EROSION CONTROL DETAIL

NOT TO SCALE



SILTATION FENCE

DESIGN CALCULATIONS

SOIL TEXTURAL CLASS:	CLASS I
PERC. RATE:	<5 MINUTES/INCH
NO. OF BEDROOMS:	3
DESIGN FLOW REQUIRED:	330 GPD
SEPTIC TANK REQUIRED:	1,500 GALLONS
SEPTIC TANK PROVIDED:	1,500 GALLONS

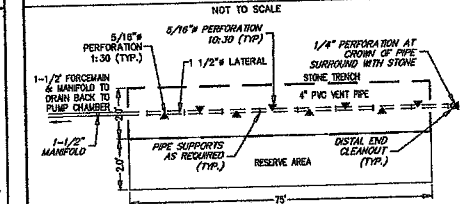
LEACHING SYSTEM:
(1) PROPOSED 2'W x 75'L x 2'D LEACHING TRENCH

EFFECTIVE LEACHING:
PROPOSED TRENCH 1 x 75 L.F. x 6 S.F./L.F. = 450 S.F.
LOADING RATE = 0.74 GPD/SF
FLOW PROVIDED: 333 GPD > 330 GPD REQUIRED

MAXIMUM NITROGEN LOADING OF 660 GPD PER 40,000 S.F. (0.0165 GPD/S.F.) PROVIDED WITH THE USE OF A MICROFAST 0.5 I/A TREATMENT UNIT IN ACCORDANCE WITH DEP GENERAL USE APPROVAL X232831. (12,227 + 7,832)=20,059 S.F. 20,059 S.F. x 0.0165 GPD/S.F. = 330 GPD

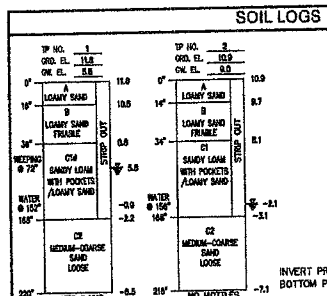
PLAN VIEW

NOT TO SCALE



NOTES:
1. MINIMUM PRESSURE OF 2.5' PER TABLE 1, APPENDIX C OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION TITLE V PRESSURE DISTRIBUTION DESIGN GUIDANCE, DATED 1/18/1996.

SOIL LOGS



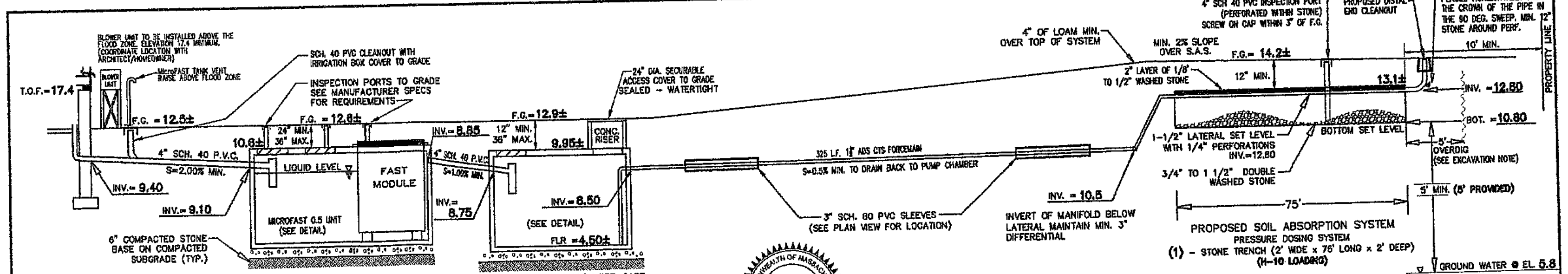
DATE PERFORMED:	MARCH 24, 2005
SOIL EVALUATOR:	DONALD F. BRACKEN, JR., P.E.
WITNESSED BY:	HEATHER GALLANT
PERC. RATE:	< 5 MPI
SOIL CLASS:	CLASS I
MAX. GROUND WATER ELEV.:	5.8
METHOD OF DETERMINATION:	WEEPING TP 1

(SEE SOIL REPORT FOR MORE DETAILED DESCRIPTION)

INVERT PRIMARY:	12.80	INVERT RESERVE:	12.80
BOTTOM PRIMARY:	10.80	BOTTOM RESERVE:	10.80

EXCAVATION NOTE

THE SYSTEM WILL REQUIRE THE EXCAVATION OF UNSUITABLE SOIL WITHIN 5' OF THE SOIL ABSORPTION SYSTEM DOWN TO THE C2 SAND LAYER, APPROXIMATELY 168" DEPTH MINIMUM (DEEPER EXCAVATION MAY BE REQUIRED). THE EXCAVATION SHALL BE INSPECTED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION. SOIL IS TO BE REPLACED WITH SAND CONFORMING TO 310 CMR SECTION 15.255, CONSTRUCTION IN FILL.



PROPOSED 1,500 GALLON BIO-MICROBICS MicroFAST 0.5 DE-NITRIFICATION UNIT
H-20 LOADING
TANK TO BE EMBOSSED WITH ASTM STANDARD C 1227-93 SEAL

MicroFAST 0.5 TANK BUOYANCY CALCULATIONS:
(ADDITIONAL ANTI-FLOATATION MEANS REQUIRED, ENGINEER TO COORDINATE WITH CONTRACTOR)

PROPOSED 1,000 GALLON PRE-CAST PUMP CHAMBER-WATERTIGHT (MONOLITHIC)
H-20 LOADING

1,000 GALLON PUMP CHAMBER BUOYANCY CALCULATIONS:
(ADDITIONAL ANTI-FLOATATION MEANS REQUIRED, ENGINEER TO COORDINATE WITH CONTRACTOR)

PROPOSED SOIL ABSORPTION SYSTEM
PRESSURE DOSING SYSTEM
(1) - STONE TRENCH (2' WIDE x 75' LONG x 2' DEEP)
(H-10 LOADING)

NOTES
(1) ALL SYSTEM COMPONENTS TO BE MARKED WITH MAGNETIC MARKING TAPE.
(2) ALL SYSTEM COMPONENTS TO BE WITHIN 36" OF FINISHED GRADE.
(3) ALL PLUMBING WITHIN 10' OF BUILDINGS TO BE PERFORMED BY A LICENSED PLUMBER.
(4) ALL ACCESS HATCHES AND INSPECTION PORTS TO BE MADE WATER-TIGHT TO PREVENT INTRUSION OF FLOOD WATERS.

SYSTEM PROFILE
NOT TO SCALE

Prepared By:
BRACKEN ENGINEERING INC.
49 HERRING POND ROAD
BUZZARDS BAY, MA 02532
(tel) 508.833.0070
(fax) 508.833.2282
19 OLD SOUTH ROAD
NANTUCKET, MA 02554
(tel) 508.325.0044
www.brackeneng.com

PROPOSED SITE PLAN
IN BOURNE, MASSACHUSETTS

Prepared For:
ELIZABETH GILLIS WARDEN & LIGHTHOUSE REALTY TRUST
#10 HARBOR WAY – MAP 45 PARCEL 19
#1 LIGHTHOUSE LANE – MAP 45 PARCEL 20
#0 LIGHTHOUSE LANE – MAP 45 PARCEL 14

No.	Date	Revision Description	By
3	04/25/17	REVISED WELL AND SEPTIC LOCATIONS	BEI
2	10/25/16	REVISED PROPOSED HOUSE	BEI
1	2/23/16	REVISED EASEMENT – ELIMINATE PROPOSED WALL	BEI

Date:	Drawn:	Checked:	Sheet:
NOVEMBER 30, 2015	RMM/ERC/DLH	DFB/AMG	2 of 2

DRAWING INDEX

SHEET#	DESCRIPTION
CV	COVER SHEET
EV1	FRONT ELEVATION
EV2	REAR ELEVATION
EV3	LEFT ELEVATION
EV4	RIGHT ELEVATION
FP1	1ST STORY FLOOR PLAN
FP2	2ND STORY FLOOR PLAN
SW1	1ST STORY SHEAR WALL PLAN
SW2	2ND STORY SHEAR WALL PLAN
EL1	1ST STORY ELECTRICAL PLAN
EL2	2ND STORY ELECTRICAL PLAN
ELC	ELECTRICAL LOAD CALCS
CS	CIRCUIT SCHEDULE
FND	FOUNDATION PLAN
TR1	12/12 RAFTER
TR2	12/12 RAFTER CONNECTIONS
TR3	4.5/12 SHED RAFTER
TR4	4.5/12 SHED RAFTER CONNECTIONS
TR5	4.5/12 RAFTER
TR6	4.5/12 RAFTER CONNECTIONS
TR7	12/12 RAFTER
TR8	S/L HEADER DETAIL
SE1	12/12 CROSS SECTION
SE2	4.5/12 SHED CROSS SECTION
SE3	4.5/12 CROSS SECTION
SE4	HIGH WIND SECTION
SE5	HIGH WIND FASTENING
DWS	DOOR AND WINDOW SCHEDULE
PL1	PLUMBING DETAILS
PL2	PLUMBING DETAILS
PL3	PLUMBING NOTES
HL1	1ST STORY HEATLOSS
HL2	2ND STORY HEATLOSS
	RES CHECK
	HIGH WIND CALCS
	RAFTER CALCS

CLASSIFICATION

OCCUPANT LOAD:	SINGLE FAMILY
USE GROUP:	R-3
CONSTRUCTION TYPE:	VB WOOD FRAME UNPROTECTED

DESIGN LOADS

ROOF LIVE LOAD:	30 PSF GSL
ROOF DEAD LOAD:	10 PSF
CEILING DEAD LOAD:	10 PSF
CEILING LIVE LOAD:	20 PSF (STORAGE) / 30 PSF (HABITABLE)
FLOOR LIVE LOAD:	40 PSF
FLOOR DEAD LOAD:	10 PSF
HORIZONTAL WIND LOAD:	110 MPH @ 3 SEC GUST
EXPOSURE:	C
GROUND SNOW LOAD:	30 PSF
SEISMIC CATEGORY:	B

APPLICABLE CODES

MA 1&2 FAMILY DWELLING CODE -(780 CMR) 8TH EDITION
MA FUEL/GAS/PLUMBING (248 CMR)
2009 INTERNATIONAL MECHANICAL CODE W/ MA AMENDMENTS
2017 NATIONAL ELECTRICAL CODE W/ MA AMENDMENTS
2015 INTERNATIONAL ENERGY CONS. CODE W/ MA AMENDMENTS

INSULATION VALUES

ROOF TO EXTERIOR:	R-38
EXTERIOR WALLS TO EXTERIOR:	R-21 HIGH DENSITY
FLOOR TO BASEMENT OR CRAWL SPACE:	R-30 (ON-SITE)

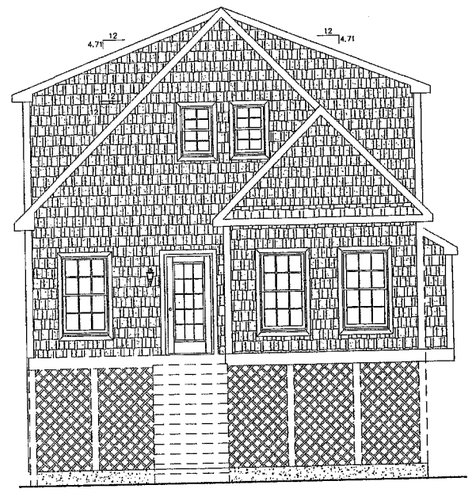
THESE DRAWINGS ARE DESIGNED TO BE USED FOR THE CONSTRUCTION OF FACTORY BUILT HOUSING UNITS. THESE UNITS ARE DESIGNED IN ACCORDANCE WITH THE APPROVED SYSTEMS PACKAGE AND THE APPLICABLE STATE BUILDING CODES AS LISTED ABOVE ON THIS PAGE.

A 48 HOUR NOTIFICATION IS REQUIRED PRIOR TO THE SET. THE CSL ON RECORD WILL RELAY THIS TO THE LOCAL BUILDING AUTHORITY. IF ANY CONNECTIONS HAVE BEEN CONCEALED PRIOR TO INSPECTION, THE BUILDING OFFICIAL MAY REQUEST HAVING THE REMOVAL OF ELEMENTS THAT CONCEAL THE CONNECTIONS TO PROVIDE ACCESS. THIS WOULD NOT CONSTITUTE "DESTRUCTIVE DISSASSEMBLY". ALL CONNECTIONS ON SITE MUST BE INSPECTED BY THE LOCAL AUTHORITY.

ICON ★ LEGACY
Custom Modular Homes, LLC

Icon - Legacy Custom Modular Homes, LLC
246 SAND HILL ROAD
SELINSGROVE, PA 17870
PHONE 570-374-3280
FAX 570-374-1122
WWW.ICONLEGACY.COM

O#6861 FOUR BOX CAPE



ACCESS TO GRADE ON-SITE BY OTHERS

FRONT ELEVATION

R.A. AND P.E. STAMP

PFS CORPORATION
Approval Limited to Factory Built Portion Only

State:	**Massachusetts**
Signature:	*Harold Raup*
Title:	**Staff Plan Reviewer**
Date:	**7/20/17**

THIS BUILDING WAS BUILT EXTRACTED FROM AN APPROVED SYSTEMS OR PEER MODEL APPROVAL
JLA

SERIAL #/ ORDER #
O#6861

246 SAND HILL ROAD
SELINSGROVE, PA 17870
PHONE: (570) 374-3280
FAX: (570) 374-1122
WWW.ICONLEGACY.COM
ICON ★ LEGACY
CUSTOM MODULAR HOMES LLC
Make plans with us.

REVISION	DATE	BY
PRELIM	11/15/16	PIF
REV. PRELIM	02/15/17	TLM
FINAL	6/2/17	HLB

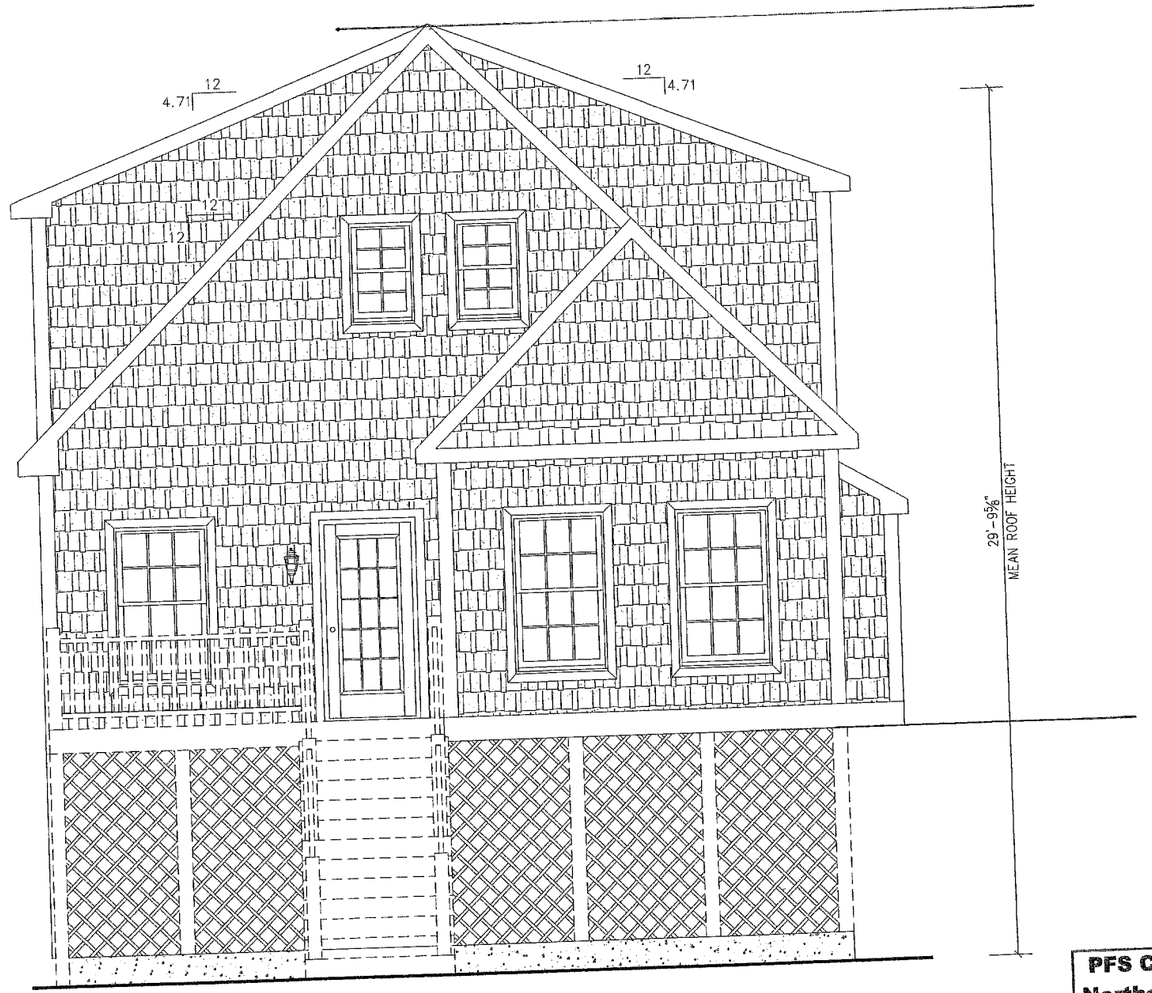
BUILDER: PLEASANT BAY HOMES
HOMEBUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
COUNTY: BARNSTABLE
JOB #: 6861
FILE NAME: O#6861

STATE: MA
SNOW LOAD (LBS): 30
SQFT: 1,980
ZIP: 02559
WIND SPEED (MPH): 110
TYPE: CAPE
SERIAL NO:

COVER PAGE

PAGE #: CV

OMIT SIDING



ACCESS TO GRADE ON-SITE BY OTHERS

FRONT ELEVATION

DECKS ON-SITE BY OTHERS

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
7/20/17
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THIS BUILDING HAS BEEN CONSTRUCTED FROM AN APPROVED SYSTEMS OR PCD MODEL APPROVAL

SERIAL #/ ORDER #: O#6861

PAGE #: EV1

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SELINSGROVE, PA 17870
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FAX: (570) 374-1122
WWW.ICONLEGACY.COM

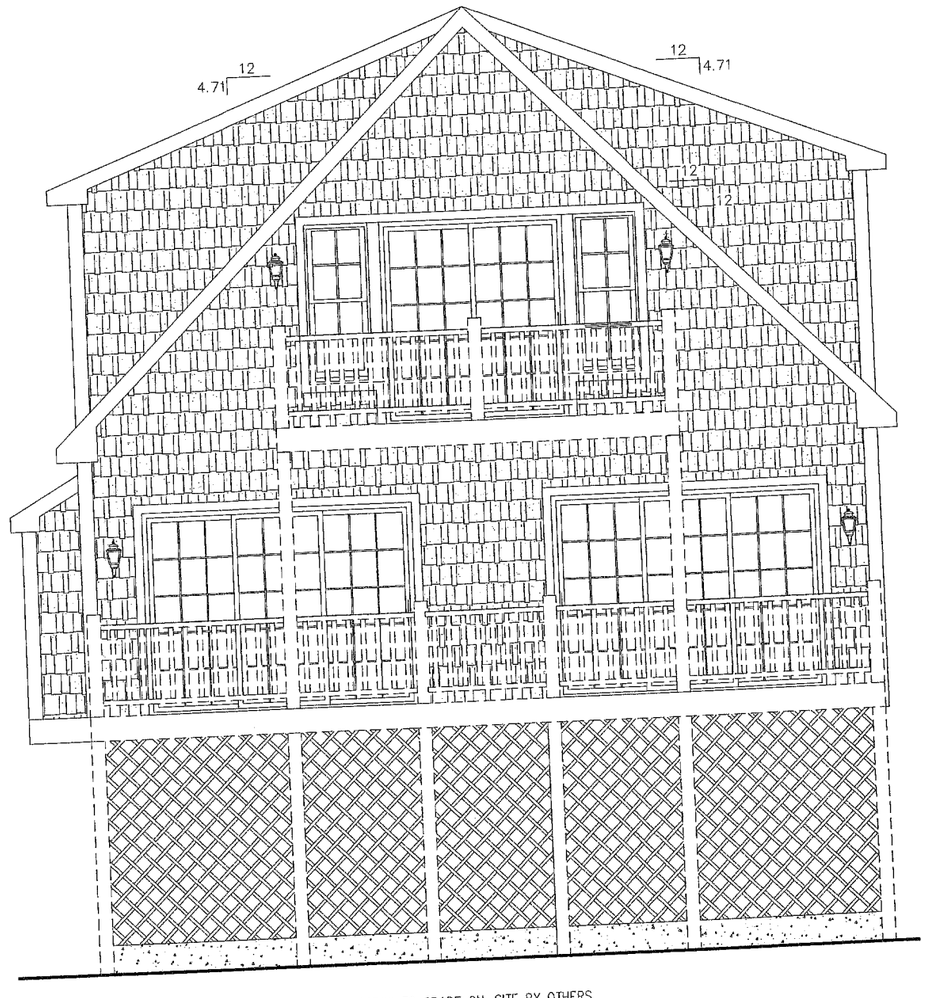
ICON ★ LEGACY
CUSTOM MODULAR HOMES LLC
Make plans with us.

REVISION	DATE	BY
PRELIM	11/15/16	PIF
REV. PRELIM	02/15/17	TLM
FINAL	6/2/17	HLB

BUILDER: PLEASANT BAY HOMES
HOMEBUILDER PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
ORDER NO.: 6861
SQFT: 1,980
TYPE: CAPE
FILE NAME: O#6861
SERIAL NO:

FRONT ELEVATION

OMIT SIDING



ACCESS TO GRADE ON-SITE BY OTHERS

REAR ELEVATION

DECKS ON-SITE BY OTHERS

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
7/20/17
Approval limited to Factory Built Portion

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SELINSGROVE, PA 17870
PHONE: (570) 374-3280
FAX: (570) 374-1122
WWW.ICONLEGACY.COM

ICON ★ LEGACY
CUSTOM MODULAR HOMES LLC
Make plans with us.

DATE	REVISION	BY
11/15/16	PRELIM	PIF
02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

BUILDER: PLEASANT BAY HOMES
HOMEOWNER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
COUNTY: BARNSTABLE
ORDER NO: 6861
P.E. INITIALS: O#6861
STATE: MA
SNOW LOAD (LBS): 30
SERIAL NO:
ZIP: 02559
WIND SPEED (MPH): 110
TYPE: CAPE
SQFT: 1,980

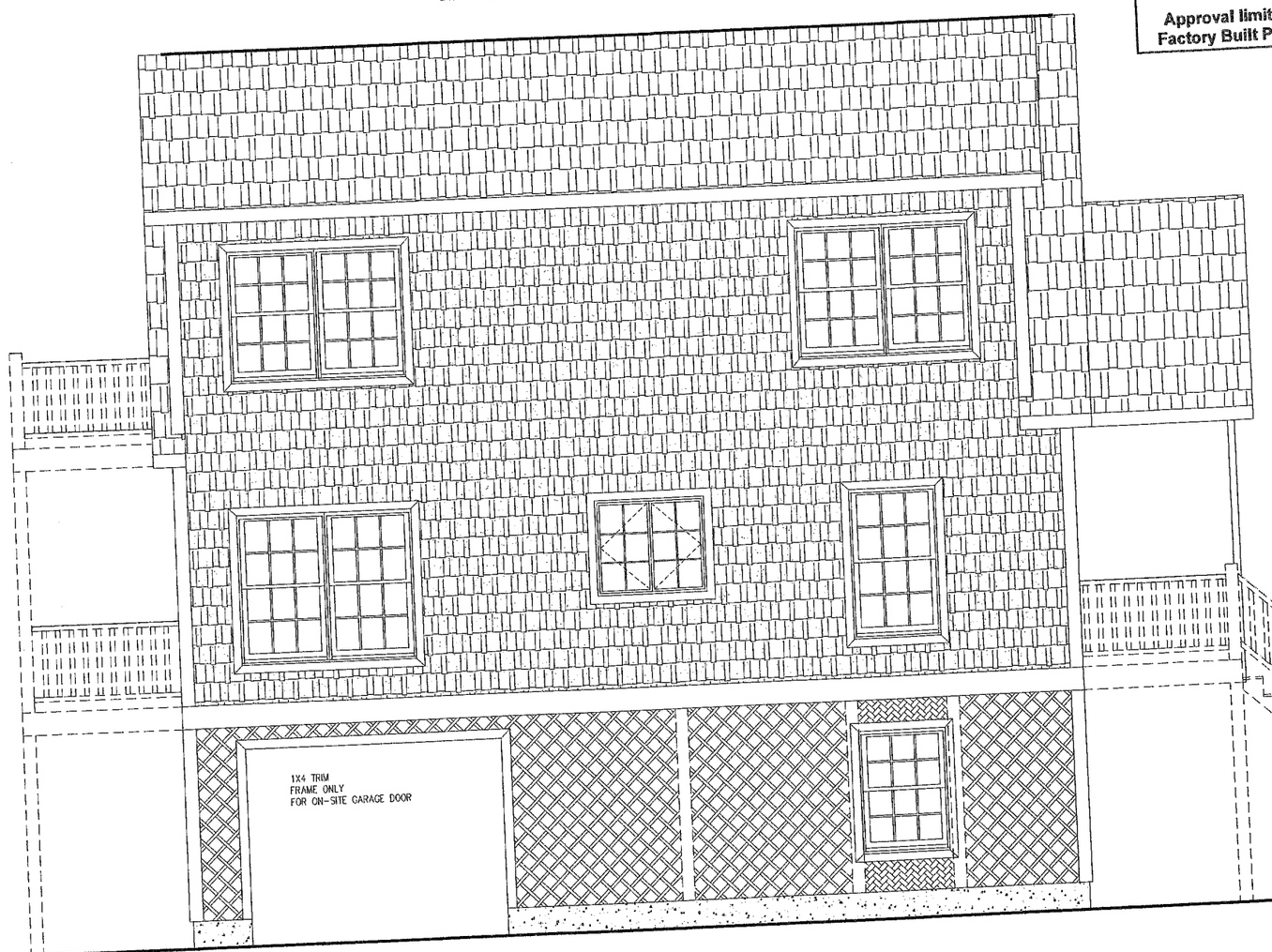
REAR ELEVATION

THIS DRAWING HAS BEEN EXTRACTED FROM AN APPROVED SYSTEMS OR PCH MODEL APPROVAL
jea

SERIAL #/ ORDER #: O#6861

PAGE #: EV2

OMIT SIDING



ACCESS TO GRADE ON-SITE BY OTHERS

LEFT SIDE ELEVATION

DECKS ON-SITE BY OTHERS

PFS Corporation
Northeast Region
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H Raup – 3
7/20/17
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DATE	REVISION	BY
11/15/16	PRELIM	PIF
02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

BUILDER: PLEASANT BAY HOMES
HOMEBUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 110 HARBOR WAY
CITY: POCASSET
COUNTY: BARNSTABLE
ORDER NO: 6861
FILE NAME: O#6861
STATE: MA
ZIP: 02559
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
PSF: 1,980
TYPE: CAPE
SERIAL NO:

LEFT ELEVATION

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jla

SERIAL # / ORDER #: O#6861

PAGE #: EV3

ACCESS TO GRADE ON-SITE BY OTHERS

RIGHT SIDE ELEVATION

DECKS ON-SITE BY OTHERS

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SERIAL # / ORDER # O#6861

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DATE	REVISION	BY
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6/2/17	FINAL	HLB

BUILDER: PLEASANT BAY HOMES
HOMEBUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET — STATE: MA — ZIP: 02559
COUNTY: BARNSTABLE — SNOW LOAD (LBS): 30 — WIND SPEED (MPH): 110
SERIAL NO — SQFT: 1,980 — TYPE: CAPE
ORDER NO: 6861
FILE NAME: O#6861

RIGHT ELEVATION

PAGE #: EV4

A 48 HOUR NOTIFICATION IS REQUIRED PRIOR TO THE SET. THE CSL ON RECORD WILL RELAY THIS TO THE LOCAL BUILDING AUTHORITY. IF ANY CONNECTIONS HAVE BEEN CONCEALED PRIOR TO INSPECTION, THE BUILDING OFFICIAL MAY REQUEST HAVING THE REMOVAL OF ELEMENTS THAT CONCEAL THE CONNECTIONS TO PROVIDE ACCESS. THIS WOULD NOT CONSTITUTE "DESTRUCTIVE DISSASSEMBLY". ALL CONNECTIONS ON SITE MUST BE INSPECTED BY THE LOCAL AUTHORITY.

BUILDER TO INSTALL & SUPPLY WHOLE HOUSE VENTILATION & TO BE APPROVED & INSPECTED ON-SITE BY LOCAL BUILDING OFFICAL

DUCT TIGHTNESS AND BLOWER DOOR TESTING DONE ON-SITE BY BUILDERS' HERS RATER

ALL CEILING GYP MUST BE MECHANICALLY FASTENED

THIS HOUSE IS NOT LOCATED IN A FLOOD ZONE

DRYER SHOWN TO BE ELECTRIC. IF A GAS DRYER IS SUBSTITUTED ON-SITE IT MUST BE LISTED AS BATHROOM USE (G2406)

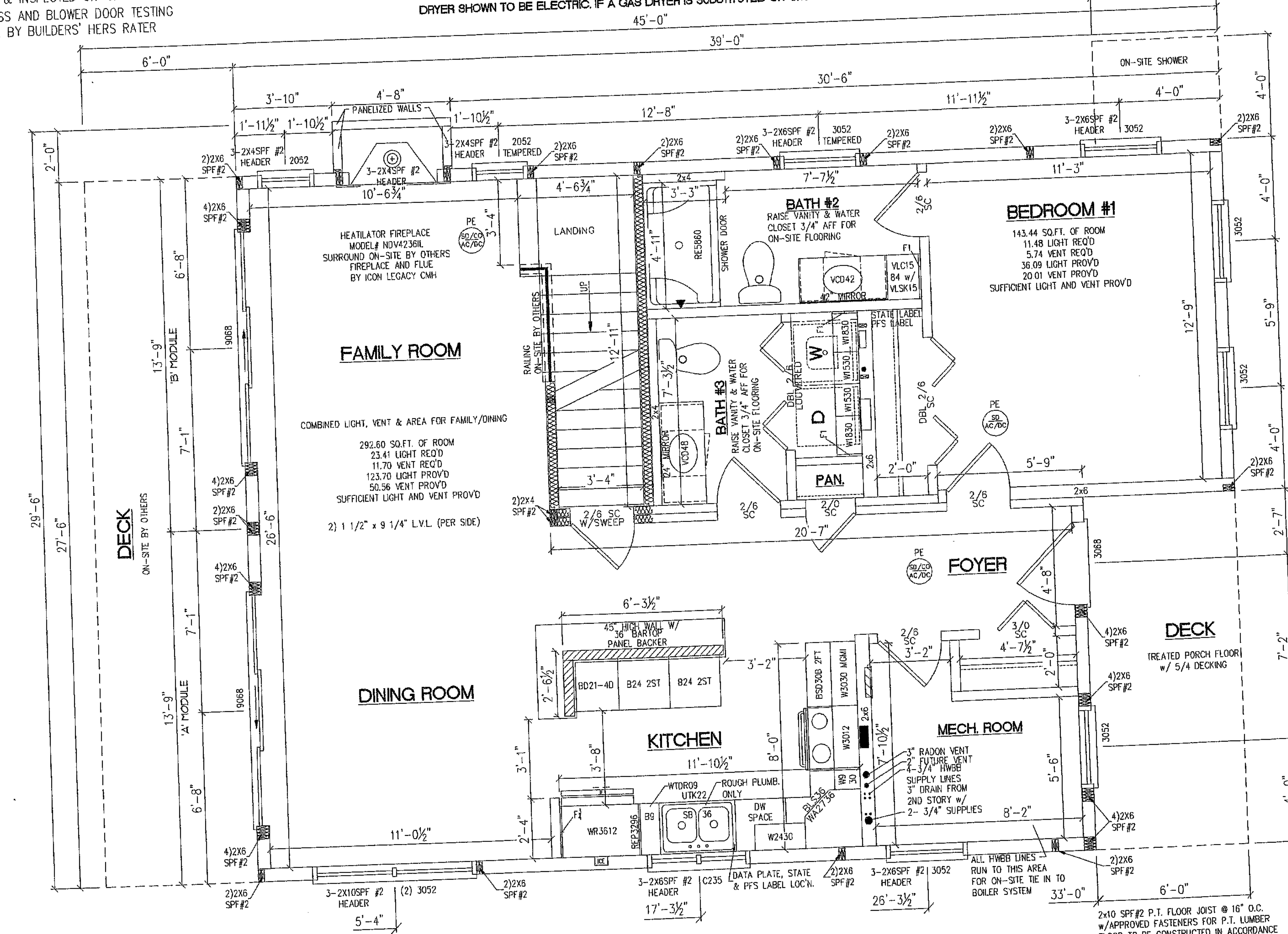
*TEMPERATURE CONTROL VALVE TO BE INSTALLED TO ALL TUBS AND SHOWERS

*BUILDER IS RESPONSIBLE TO COMPLY WITH R612.2 (WINDOW SILLS) OF THE 2015 IRC (DONE ON-SITE IF APPLICABLE)
- WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72 INCHES ABOVE THE FINISHED GRADE OR SURFACE BELOW
- WHERE THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24 INCHES ABOVE THE FINISHED FLOOR OF THE ROOM IN WHICH THE WINDOW IS LOCATED
- OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4 INCH DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 24 INCHES OF THE FINISHED FLOOR

SITE ADDRESS
10 HARBOR WAY
POCASSET, MA 02559

BUILDER:
256 PLEASANT BAY ROAD
HARWICH, MA 02645

RAISE ALL INTERIOR DOORS 3/4" TO ALLOW FOR ON-SITE FLOOR COVERING



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NOTES:
1. 2X6 EXTERIOR WALLS @ 16 O.C.
2. 2X4 MARRIAGE WALLS @ 16 O.C.
3. 8'-0" CEILING HEIGHT 1ST & 2ND FLOORS
4. ANDERSEN 400 TILT WASH DOUBLE HUNG WINDOWS
5. 48,000 TOTAL BTU HEAT LOSS
6. RAFTERS:
   - 12/12 STORAGE RAFTER @ 16 O.C.
   - 5/12 NON-STORAGE RAFTER @ 16 O.C.

MA STATE BUILDING CODE -(780 CMR) 8TH EDITION
MA FUEL/GAS/PLUMBING (248 CMR)
2009 INTERNATIONAL MECHANICAL CODE W/ MA AMENDMENTS
2017 NATIONAL ELECTRICAL CODE W/ MA AMENDMENTS
2015 INTERNATIONAL ENERGY CONS. CODE W/ MA AMENDMENTS

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BUILDER	PLEASANT BAY HOMES
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ZIP	02559
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STATE	MA
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COUNTY	BARNSTABLE
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1ST STORY FLOOR PLAN

PAGE #: FP1

RAISE ALL INTERIOR DOORS 3/4" TO ALLOW FOR ON-SITE FLOOR COVERING

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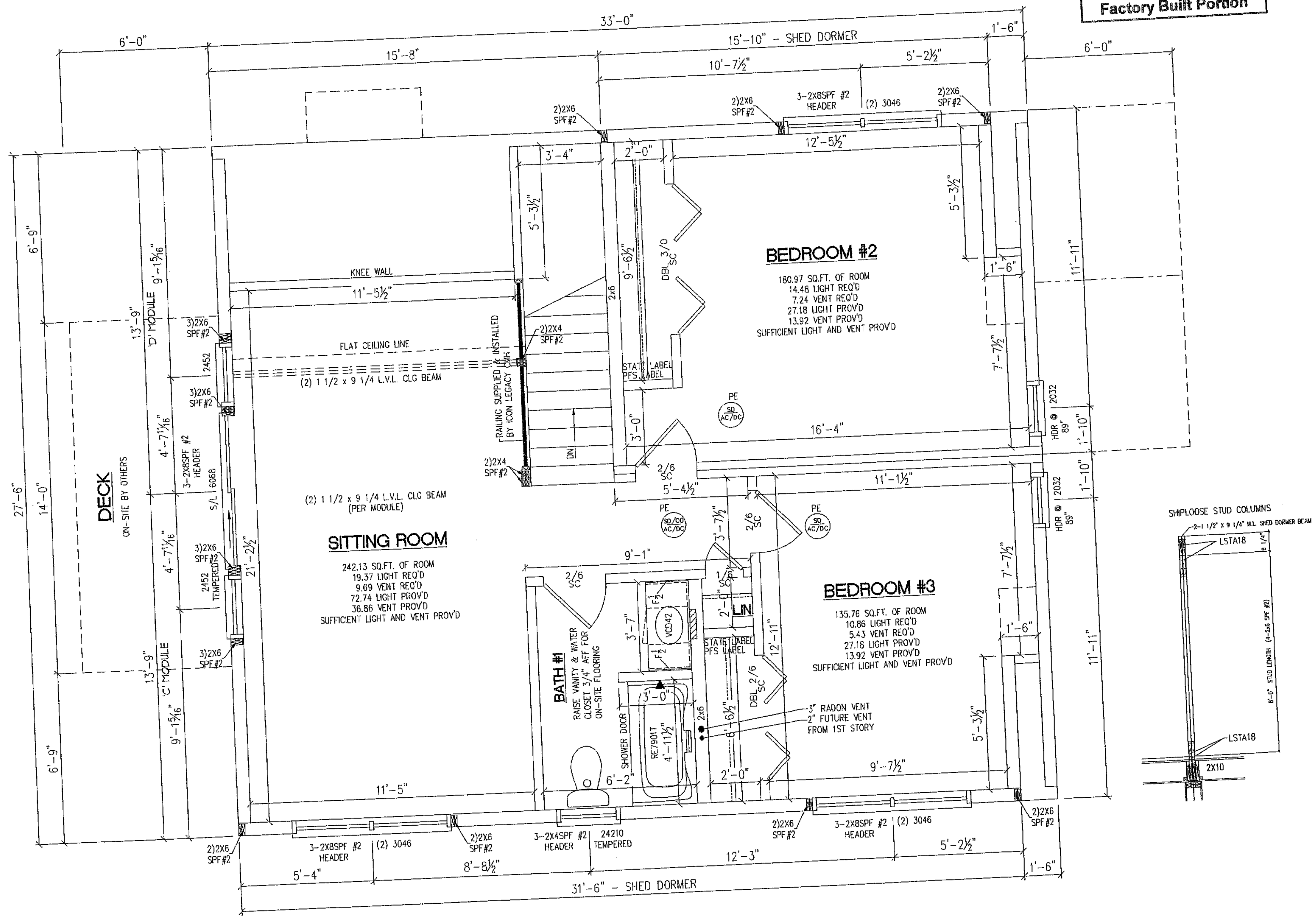

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FILE NAME	O#6861

2ND STORY FLOOR PLAN

SERIAL #/ ORDER #: O#6861

PAGE #: FP2

1ST LEVEL ENDWALL #1 (FAMILY / DINING)

6 7/8"
7/16" O. S. B. SHEATHING — 7/16" O. S. B. SHEATHING
2 X 6 (SPF #1/#2) WALL — 1/2" DRYWALL
EXTERIOR — INTERIOR

(1) 7/16" O. S. B. EXTERIOR (BLOCKED) w/ 7/16" O. S. B. INTERIOR. FASTEN O. S. B. WITH 8d NAILS @ 2" O. C. 1/2" GYPSUM ON INTERIOR. FASTEN GYPSUM W/ 5d NAILS @ 7" O.C. EDGE / 10" INTERMEDIATE. FRAMING AT PANEL EDGES TO BE 3" NOMINAL OR WIDER AND NAILS SHALL BE STAGGERED.

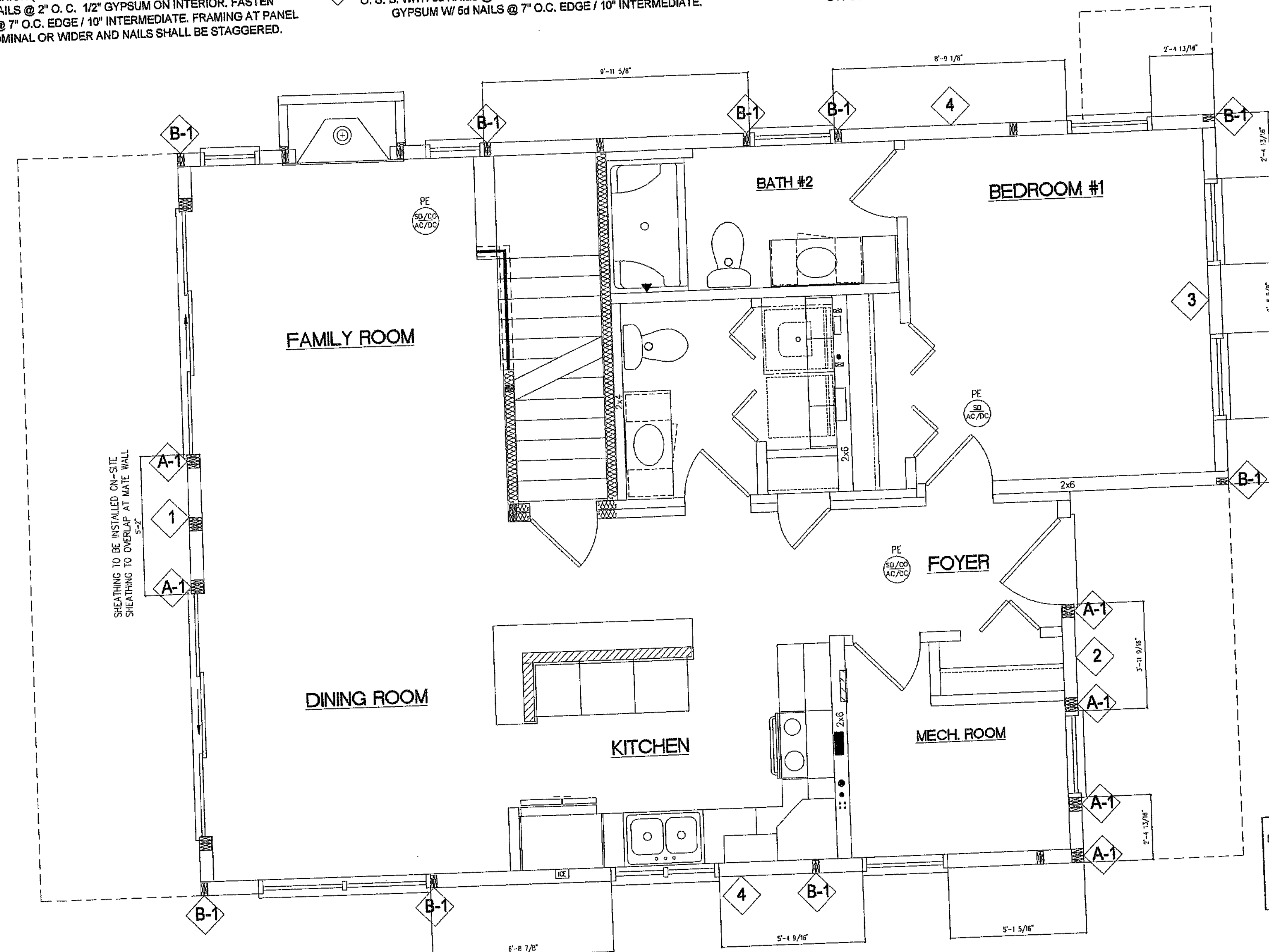
1ST LEVEL ENDWALL #2 (FOYER / MECH. ROOM)

6 7/8"
7/16" O. S. B. SHEATHING — 7/16" O. S. B. SHEATHING
2 X 6 (SPF #1/#2) WALL — 1/2" DRYWALL
EXTERIOR — INTERIOR

(2) 7/16" O. S. B. EXTERIOR (BLOCKED) w/ 7/16" O. S. B. INTERIOR. FASTEN O. S. B. WITH 8d NAILS @ 3" O. C. 1/2" GYPSUM ON INTERIOR. FASTEN GYPSUM W/ 5d NAILS @ 7" O.C. EDGE / 10" INTERMEDIATE.

6 7/8"
7/16" O. S. B. SHEATHING — 7/16" O. S. B. SHEATHING
2 X 6 (SPF #1/#2) WALL — 1/2" DRYWALL
EXTERIOR — INTERIOR

(3) 7/16" O. S. B. EXTERIOR (BLOCKED) w/ 7/16" O. S. B. INTERIOR. FASTEN O. S. B. WITH 8d NAILS @ 6" O. C. 1/2" GYPSUM ON INTERIOR. FASTEN GYPSUM W/ 5d NAILS @ 7" O.C. EDGE / 10" INTERMEDIATE.



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1ST LEVEL SIDEWALL #1 / #2

6 7/16"
7/16" O. S. B. SHEATHING — 1/2" DRYWALL
2 X 6 (SPF #1/#2) WALL
EXTERIOR — INTERIOR

(4) 7/16" O. S. B. EXTERIOR (BLOCKED) w/ 1/2" GYPSUM INTERIOR. FASTEN O. S. B. WITH 8d NAILS @ 6" O. C. OR 16 GA. STAPLES @ 3" O. C. PER ESR-1539 (JULY 2016). FASTEN GYPSUM W/ 5d NAILS @ 7" O.C. EDGE / 10" INTERMEDIATE.

(A-1) BUILDER INSTALLED HOLD DOWN FROM FOUNDATION TO STUDS > 13122 LBS. [SUGGESTED SIMPSON HD19 W/ 1 1/4" Ø ANCHOR OR EQUAL] MIN. (4) 2 X 6 WALL STUDS FASTEN TOGETHER W/ (2) ROWS OF 16d COMMON NAILS @ 2" O.C.

(B-1) BUILDER INSTALLED HOLD DOWN FROM FOUNDATION TO STUDS > 3685 LBS. [SUGGESTED SIMPSON STHD14RJ OR EQUAL] MIN. (2) 2 X 6 WALL STUDS FASTEN TOGETHER W/ (2) ROWS OF 16d COMMON NAILS @ 9" O.C.

NOTE: NO CORNER CONNECTION WILL BE REQUIRED IF SHEATHING COVERED ALL THE WAY TO THE CORNER EDGE. OTHERWISE, PROVIDE CONNECTION AS REQUIRED. MIN. CORNER STUD CONNECTION: (2) ROWS OF 16d COMMON NAILS @ 16" O. C. OR (6) 1/4" DIA. LAG SCREWS EQUALLY SPACED

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SERIAL #/ ORDER #
O#6861

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DATE	REVISION	BY
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02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

BUILDER: PLEASANT BAY HOMES
HOMEBUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
COUNTY: BARNSTABLE
ORDER NO: 6861
FILE NAME: O#6861
STATE: MA
ZIP: 02559
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
SQFT: 1,980
TYPE: CAPE
SERIAL NO:

1ST STORY SHEAR WALLS

PAGE #
SW1

2ND LEVEL ENDWALL #1 & SIDEWALL #1 / #2

$6\frac{7}{16}$"
7/16" O. S. B. SHEATHING
2 X 6 (SPF #1/#2) WALL
1/2" DRYWALL
EXTERIOR
INTERIOR

(5) 7/16" O. S. B. EXTERIOR (BLOCKED) w/ 1/2" GYPSUM INTERIOR. FASTEN O. S. B. WITH 8d NAILS @ 6" O. C. OR 16 GA. STAPLES @ 3" O. C. PER ESR-1539 (JULY 2016). FASTEN GYPSUM W/ 5d NAILS @ 7" O.C. EDGE / 10" INTERMEDIATE.

2ND LEVEL ENDWALL (BEDROOM #2 / #3)

$6\frac{7}{16}$"
7/16" O. S. B. SHEATHING
2 X 6 (SPF #1/#2) WALL
1/2" DRYWALL
EXTERIOR
INTERIOR

(6) 7/16" O. S. B. EXTERIOR (BLOCKED) w/ 1/2" GYPSUM INTERIOR. FASTEN O. S. B. WITH 8d NAILS @ 4" O. C. FASTEN GYPSUM W/ 5d NAILS @ 7" O.C. EDGE / 10" INTERMEDIATE.

(A-2) SIMPSON CMSTC16 STRAP W/ (24) 16d SINKER NAILS EACH END OF STRAP (OR EQUAL CONN. 3685 LBS.) 2ND LEVEL STUDS TO 1ST LEVEL STUDS MIN. (2) 2 X 6 WALL STUDS FASTEN TOGETHER W/ (2) ROWS OF 16d COMMON NAILS @ 9" O. C.

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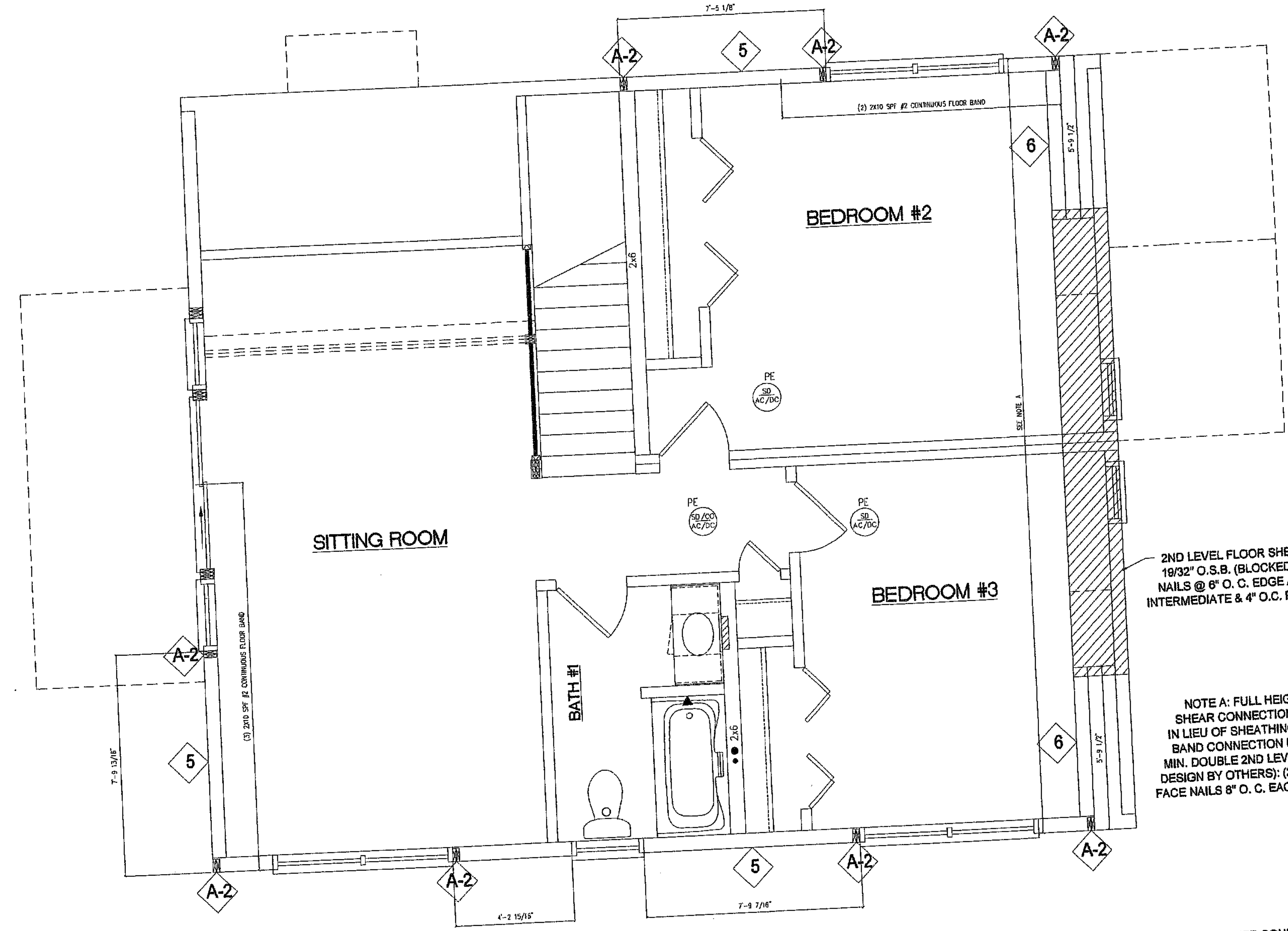

2ND LEVEL FLOOR SHEATHING 19/32" O.S.B. (BLOCKED) W/ 10d NAILS @ 6" O. C. EDGE / 12" O. C. INTERMEDIATE & 4" O.C. PERIMETER

NOTE A: FULL HEIGHT SHEATHING AND SHEAR CONNECTIONS PER SHEAR CALCS. IN LIEU OF SHEATHING TO 2ND LEVEL FLOOR BAND CONNECTION USE BOTTOM PLATE TO MIN. DOUBLE 2ND LEVL FLOOR JOIST (GRAVITY DESIGN BY OTHERS): (2) ROWS 16d (0.162" X 3.5") FACE NAILS 8" O. C. EACH ROW TO RESIST 560 PLF

NOTE: NO CORNER CONNECTION WILL BE REQUIRED IF SHEATHING COVERED ALL THE WAY TO THE CORNER EDGE. OTHERWISE, PROVIDE CONNECTION AS REQUIRED. MIN. CORNER STUD CONNECTION: (2) ROWS OF 16d COMMON NAILS @ 16" O. C. OR (6) 1/4" DIA. LAG SCREWS EQUALLY SPACED

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BUILDER	PLEASANT BAY HOMES
HOMEBUYER/PROJECT	ELIZABETH GILLIS 2
ADDRESS	10 HARBOR WAY
CITY	POCASSET
STATE	MA
ZIP	02559
COUNTY	BARNSTABLE
SNOW LOAD (LBS)	30
WIND SPEED (MPH)	110
ORDER NO	6861
SQFT	1,980
TYPE	CAPE
SERIAL NO	
FILE NAME	O#6861

2ND STORY SHEAR WALLS

PAGE #: SW2

ALL BRANCH CIRCUITS SUPPLYING 15 AND 20 AMPERE OUTLETS ARE TO BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER IN ACCORDANCE WITH THE 2017 NEC

ALL 125-VOLT, 15-20 AMPERE RECEPTS INSTALLED IN AREAS SPECIFIED BY 210.52 SHALL BE LISTED TAMPER-RESISTANT TYPE.

50# LIGHT BOXES REQUIRED

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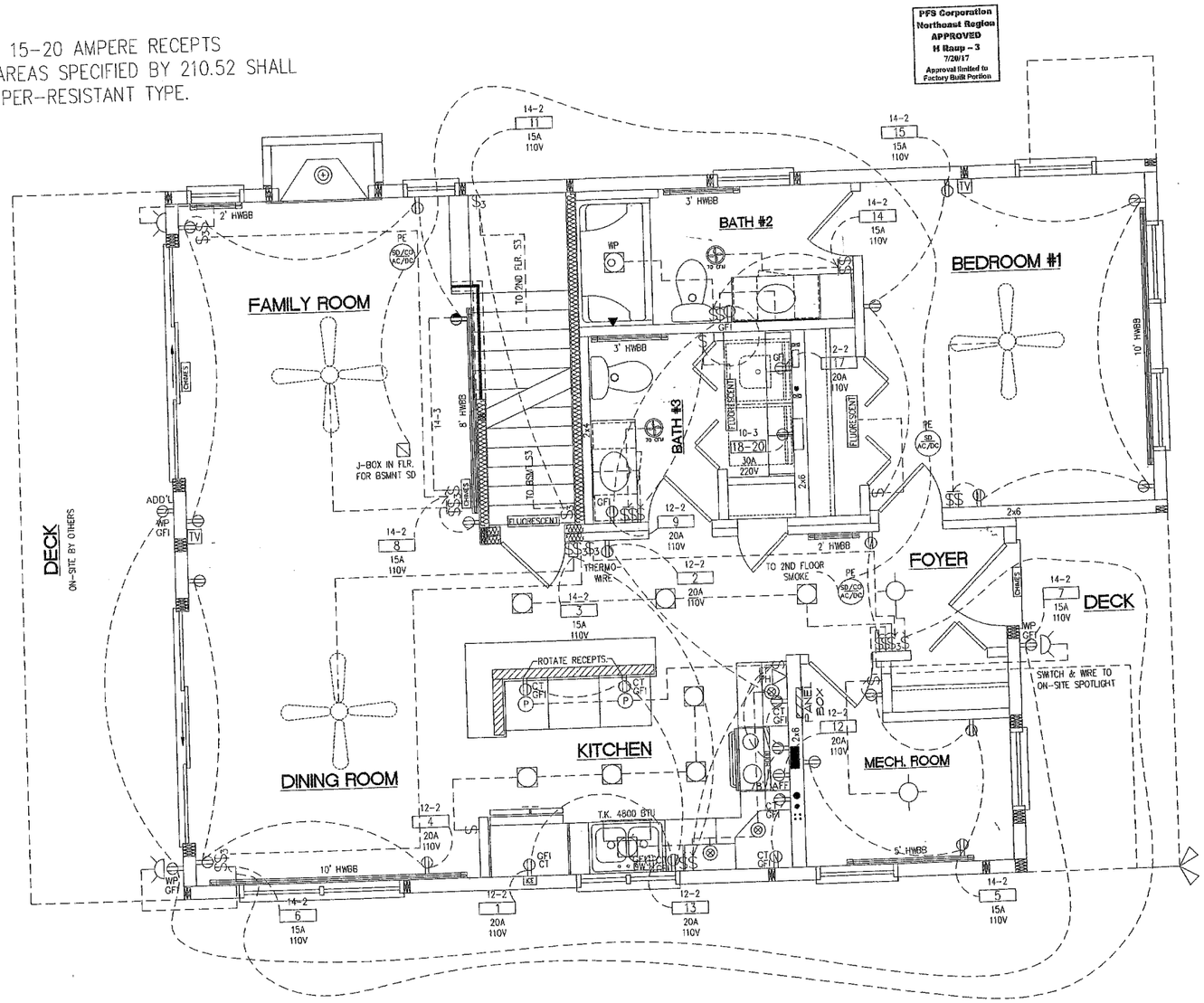

NOTES:
1. INSULATED STAPLES ARE REQUIRED TO SUPPORT ALL WIRING
2. 990 SQ. FT. PER FLOOR (SMOKE DETECTORS REQUIRED EVERY 1,200 SQ. FT.
3. SMOKE DETECTOR TYPE: PHOTOELECTRIC
4. SMOKE DETECTOR MUST BE INTERCONNECTED BETWEEN FLOORS.

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REVISION	DATE	BY
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REV. PRELIM	02/15/17	TLM
FINAL	6/2/17	HLB

BUILDER: PLEASANT BAY HOMES
HOMESITE/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
COUNTY: BARNSTABLE
DRAWING NO: 6861
FILE NAME: O#6861

		ZIP	02559
STATE	MA	WIND SPEED (MPH)	110
SNOW LOAD (LBS)	30	TYPE	CAPE
SQFT	1,980		
		SERIAL NO	

1ST STORY ELECTRICAL PLAN

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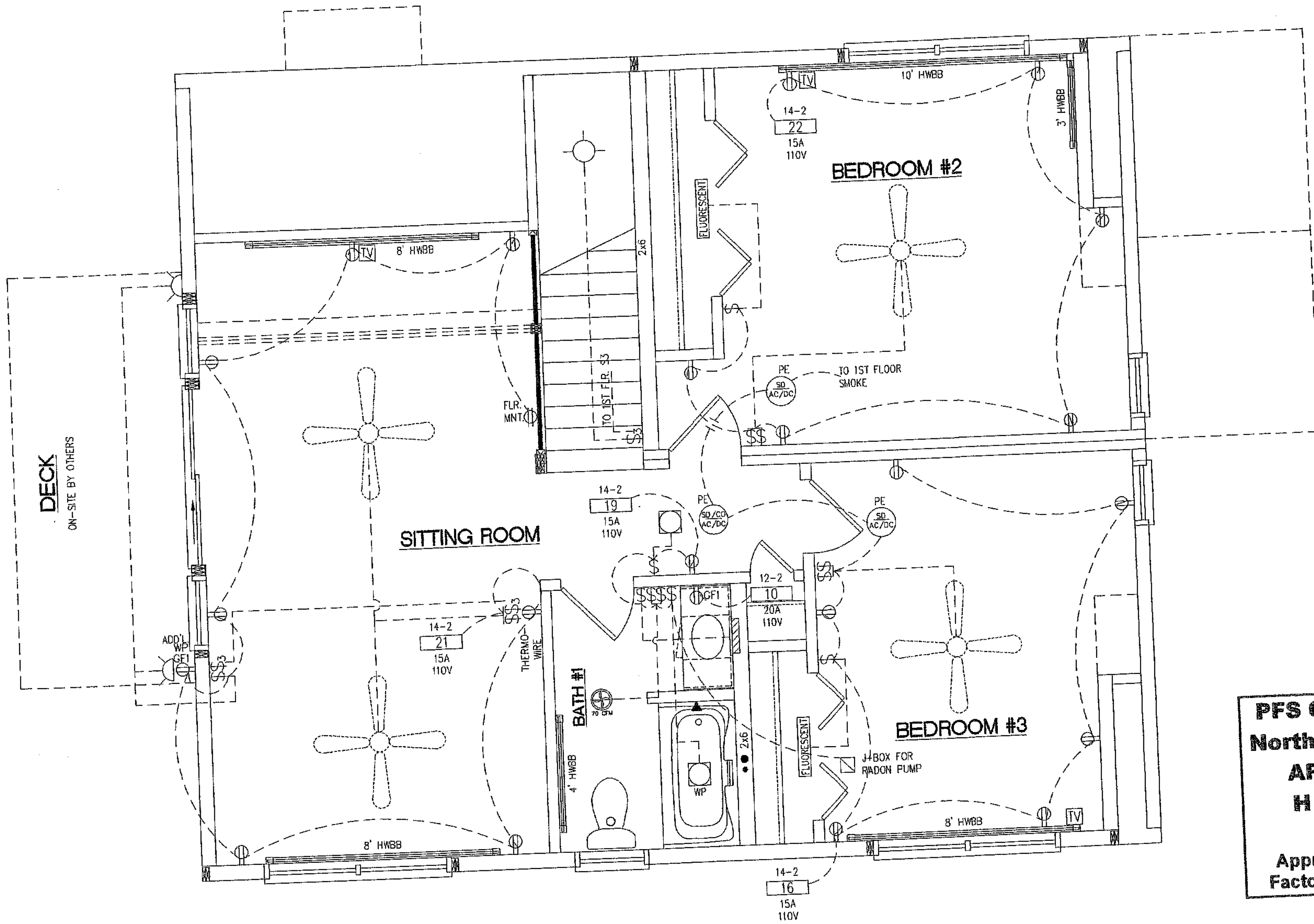
SERIAL # / ORDER #: O#6861

PAGE #: EL1

50# LIGHT BOXES REQUIRED

ALL BRANCH CIRCUITS SUPPLYING 15 AND 20 AMPERE OUTLETS ARE TO BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER IN ACCORDANCE WITH THE 2017 NEC

ALL 125-VOLT, 15-20 AMPERE RECEPTS INSTALLED IN AREAS SPECIFIED BY 210.52 SHALL BE LISTED TAMPER-RESISTANT TYPE.



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NOTES:
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ORDER NO	6861
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SERIAL NO	
STATE	MA
SNOW LOAD (LBS)	30
SQFT	1,980
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WIND SPEED (MPH)	110
TYPE	CAPE

2ND STORY ELECTRICAL PLAN

SERIAL #/ ORDER #: O#6861

PAGE #: EL2

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ELECTRICAL LOAD CALCULATION FOR ON#6861-MA

HOUSE SQFT: 0

AIR CONDITIONING AND HEAT

AIR CONDITIONING:	0 WATTS	0 WATTS
CENTRAL ELECTRIC SPACING HEATING:	0 WATTS (X 0.65)	0 WATTS
LESS THAN FOUR SEPARATELY CONTROLLED ELECTRIC SPACE HEATING UNITS:	0 WATTS (X 0.65)	0 WATTS
FOUR OR MORE SEPARATELY CONTROLLED ELECTRIC SPACE HEATING UNITS:	0 WATTS (X 0.45)	0 WATTS

*NOTE: USE THE LARGER OF THE AIR CONDITIONING OR THE DIVERSIFIED DEMAND OF THE HEATING LOAD.

OTHER LOADS		WATTS OR VOLT-AMPS	CIRCUIT AMPACITY	WIRE SIZE
GENERAL LIGHTING:	(0 x 3)	0	15A	14-2
SMALL APPLIANCES:	(4 X 1,500)	6,000	20A	10-3
RANGE:		11,400	50A	8-3
DISHWASHER:		1,200	20A	12-2
GARBAGE DISPOSAL:		750	15A	14-2
WASHER:		1,500	20A	12-2
DRYER:		5,800	30A	10-3
FURNACE:		0	N/A	N/A
WATER HEATER:		5,500	30A	10-3
		32,150		

FIRST 10kW OF OTHER LOADS @ 100%:		=	10,000
REMAINDER OF OTHER LOADS @ 40%:	(22,150 x 0.40)	=	8,860
AIR CONDITIONING OR HEAT FROM ABOVE:		=	0
TOTAL CALCULATED LOAD::		=	18,860
REQUIRED SERVICE SIZE:	(18,860 / 240)	=	79 AMPS
INSTALLED PANEL SIZE:		=	200 AMPS

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ELECTRICAL LOAD CALC

SERIAL # / ORDER #: O#6861

PAGE #: ELC

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CIRCUIT SCHEDULE

*WIRE WITH GROUND ALL CIRCUITS

CRT	BRK	WIRE	LOCATION	VOLT	CRT	BRK	WIRE	LOCATION	VOLT
1	20A	12-2	SMALL APPLIANCE	110	2	20A	12-2	SMALL APPLIANCE	110
3	15A	14-2	GENERAL LIGHTING	110	4	20A	12-2	DINING ROOM	110
5	15A	14-2	MECH. ROOM	110	6	15A	14-2	GENERAL LIGHTING	110
7	15A	14-2	WP GFI EXTERIOR RECEPTS	110	8	15A	14-2	LIVING ROOM	110
9	20A	12-2	SMALL APPLIANCE	110	10	20A	12-2	BATH GFI	110
11	15A	14-2	GENERAL LIGHTING	110	12	20A	12-2	MICROWAVE	110
13	20A	12-2	DISHWSAHER	110	14	15A	14-2	GENERAL LIGHTING	110
15	15A	14-2	BEDROOM#1	110	16	15A	14-2	BEDROOM#3	110
17	20A	12-2	WASHER	110	18	30A	10-3	DRYER	220
19	15A	14-2	GENERAL LIGHTING	110	20				
21	15A	14-2	SITTING ROOM	110	22	15A	14-2	BEDROOM#2	110
23					24				
25					26				
27					28				
29					30				
31					32				
33					34				
35					36				
37					38				
39					40				

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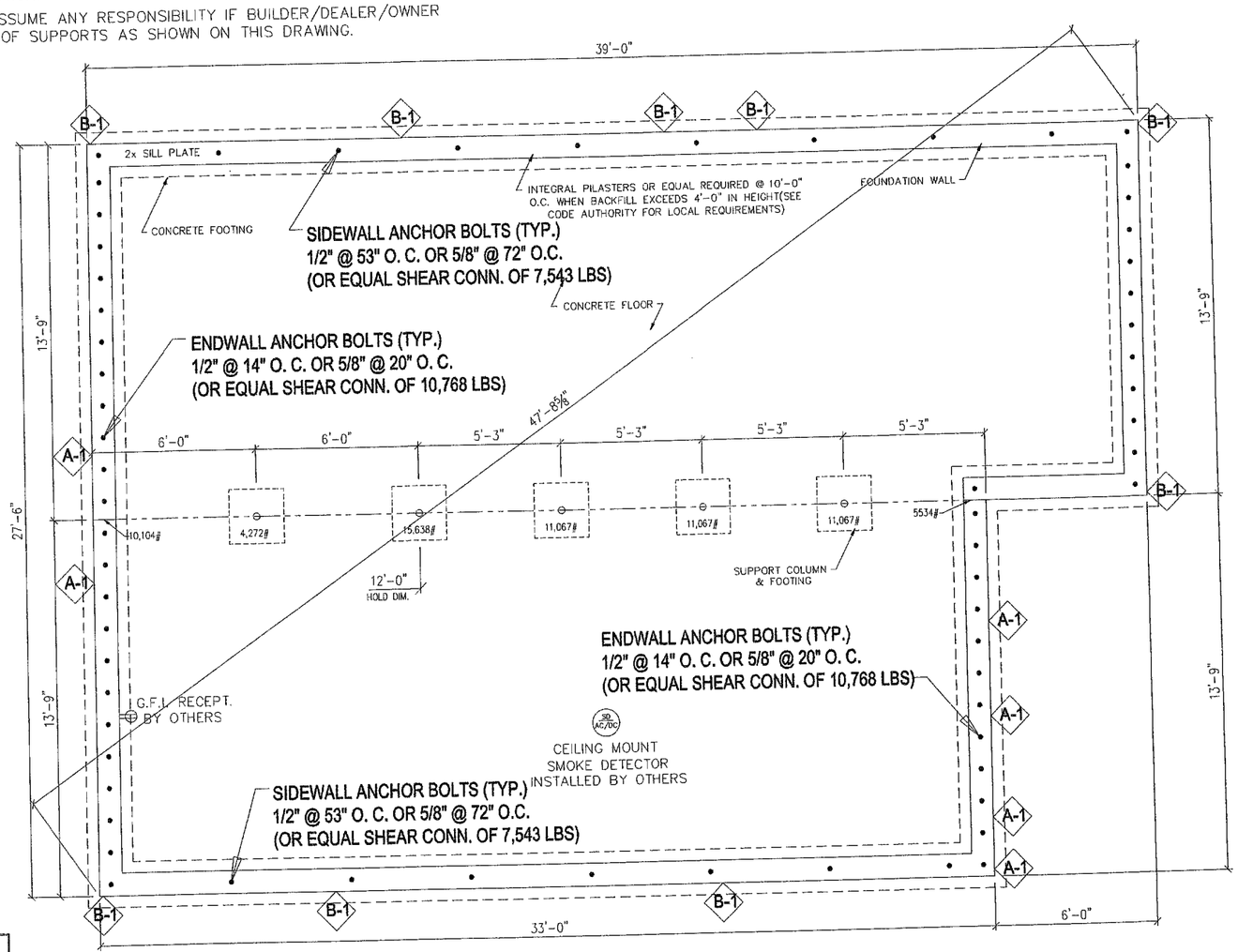
COUNTY: BARNSTABLE
SNOW LOAD (LBS):
WIND SPEED (MPH):
ORDER NO: 6861
PLAN NO: O#6861
SERIAL NO:
SQFT:
TYPE:

CIRCUIT SCHEDULE

THIS FOUNDATION PLAN IS FOR DIMENSIONS ONLY. FOUNDATION WALLS, FOOTINGS, COLUMNS, PIERS, AND SLAB TO BE DESIGNED BY OTHERS TO MEET STATE AND/OR LOCAL CODES USING EXISTING SOIL ANALYSIS. MANUFACTURER. ASSUMES NO RESPONSIBILITY FOR ERRORS IN THE CONSTRUCTION OF THE FOUNDATION. ANY AND ALL DIMENSIONS ARE TO BE CHECKED AND VERIFIED (AGAINST THE FLOOR PLAN "BUILDER COPY") BY BUILDER/DEALER PRIOR TO FOUNDATION CONSTRUCTION. THE BUILDER/DEALER MUST CONTACT MANUFACTURER. WITH ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.

MANUFACTURER. WILL NOT ASSUME ANY RESPONSIBILITY IF BUILDER/DEALER/OWNER EXCEEDS MAXIMUM SPACING OF SUPPORTS AS SHOWN ON THIS DRAWING.

THE FOUNDATION TO BE DESIGNED AND SEALED BY MA PE OR RA AND MUST BE DESIGNED TO THE LOADS PROVIDED, INCLUDING HOLD DOWNS AND ALL FLOOD PLAIN REQUIREMENTS. FOUNDATION TO BE INSPECTED AND APPROVED BY LOCAL BUILDING INSPECTOR



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A-1 BUILDER INSTALLED HOLD DOWN FROM FOUNDATION TO STUDS > 13122 LBS. [SUGGESTED SIMPSON HD19 W/ 1 1/4" Ø ANCHOR OR EQUAL] MIN. (4) 2 X 6 WALL STUDS FASTEN TOGETHER W/ (2) ROWS OF 16d COMMON NAILS @ 2" O.C.

B-1 BUILDER INSTALLED HOLD DOWN FROM FOUNDATION TO STUDS > 3685 LBS. [SUGGESTED SIMPSON STHD14RJ OR EQUAL] MIN. (2) 2 X 6 WALL STUDS FASTEN TOGETHER W/ (2) ROWS OF 16d COMMON NAILS @ 9" O.C.

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jla

SERIAL #/ ORDER #: O#6861

PAGE #: FND

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REVISION	BY	DATE
PRELIM	PIF	11/15/16
REV. PRELIM	TLM	02/15/17
FINAL	HLB	6/2/17

BUILDER: PLEASANT BAY HOMES
HOMEBUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
TYPE: CAPE
BUILDER NO: 6861
SERIAL NO:
SQFT: 1,980
FILE NAME: O#6861

FOUNDATION PLAN

PFS Corporation
Northeast Region
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7/20/17
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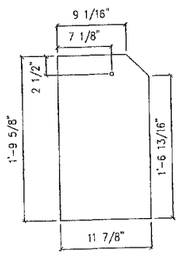
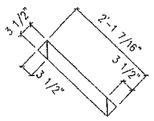
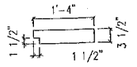


GUSSET PLATE





18" OVERHANG

CHORD BLOCK

12/12 - 27'-6" WIDE - 30#GSL - 16" O.C.
STORAGE RAFTER

THIS TRUSS DESIGN MAY BE USED FOR LESSER SPANS PROVIDED
NO MEMBER HAS A GREATER LENGTH AND ALL CONNECTIONS ARE AS SPECIFIED.

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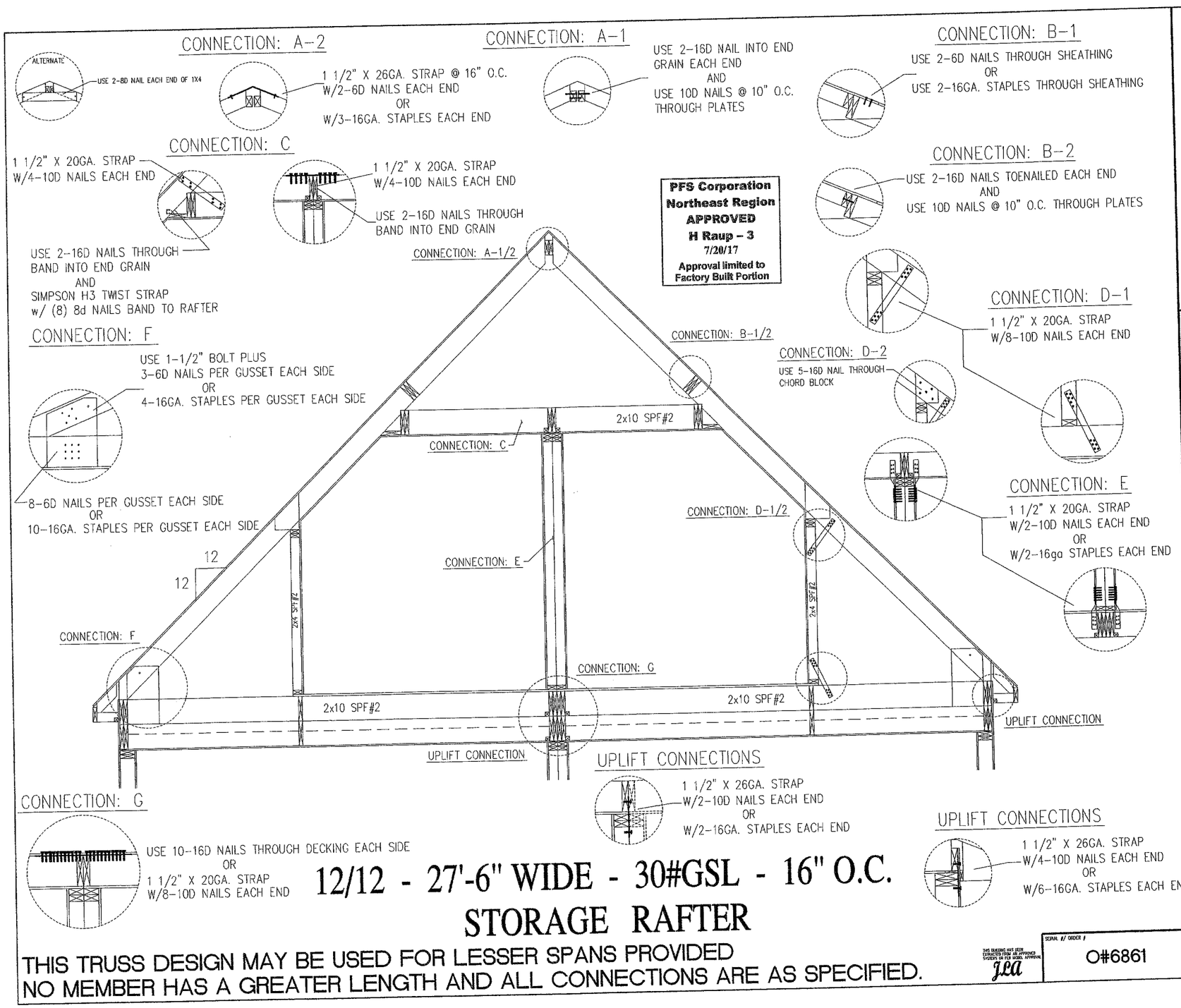
REVISION	BY	DATE
PRELIM	PJF	11/15/16
REV. PRELIM	TLM	02/15/17
FINAL	HLB	6/2/17

BUILDER: PLEASANT BAY HOMES
HOMEOWNER: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
ORDER NO: 6661
SERIAL NO:
SQFT: 1,980
TYPE: CAPE
FILE NAME: O#6861

12/12 RAFTER

SERIAL #/ ORDER #: O#6861

PAGE #: TR1



12/12 - 27'-6" WIDE - 30#GSL - 16" O.C.
STORAGE RAFTER

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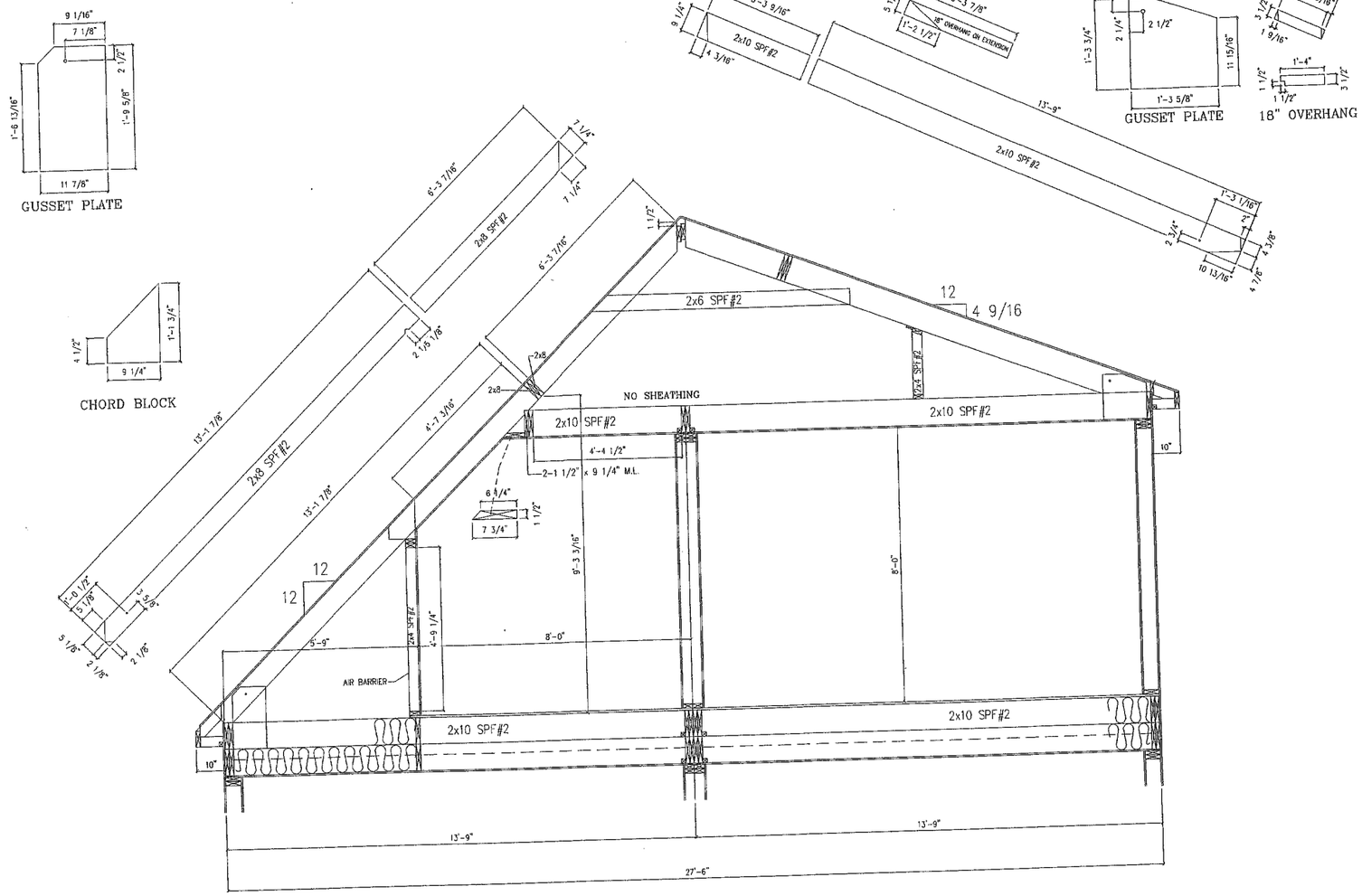
FINAL	6/2/17	HLB

BUILDER: PLEASANT BAY HOMES
HOMEBUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
ORDER NO: 6861
SERIAL NO:
TYPE: CAPE
SQFT: 1,980
FILE NAME: O#6861

12/12 RAFTER CONNECTIONS

SERIAL #/ ORDER #: O#6861

PAGE #: TR2



4.5/12 SHED - 27'-6" WIDE - 30#GSL - 16" O.C.
STORAGE RAFTER

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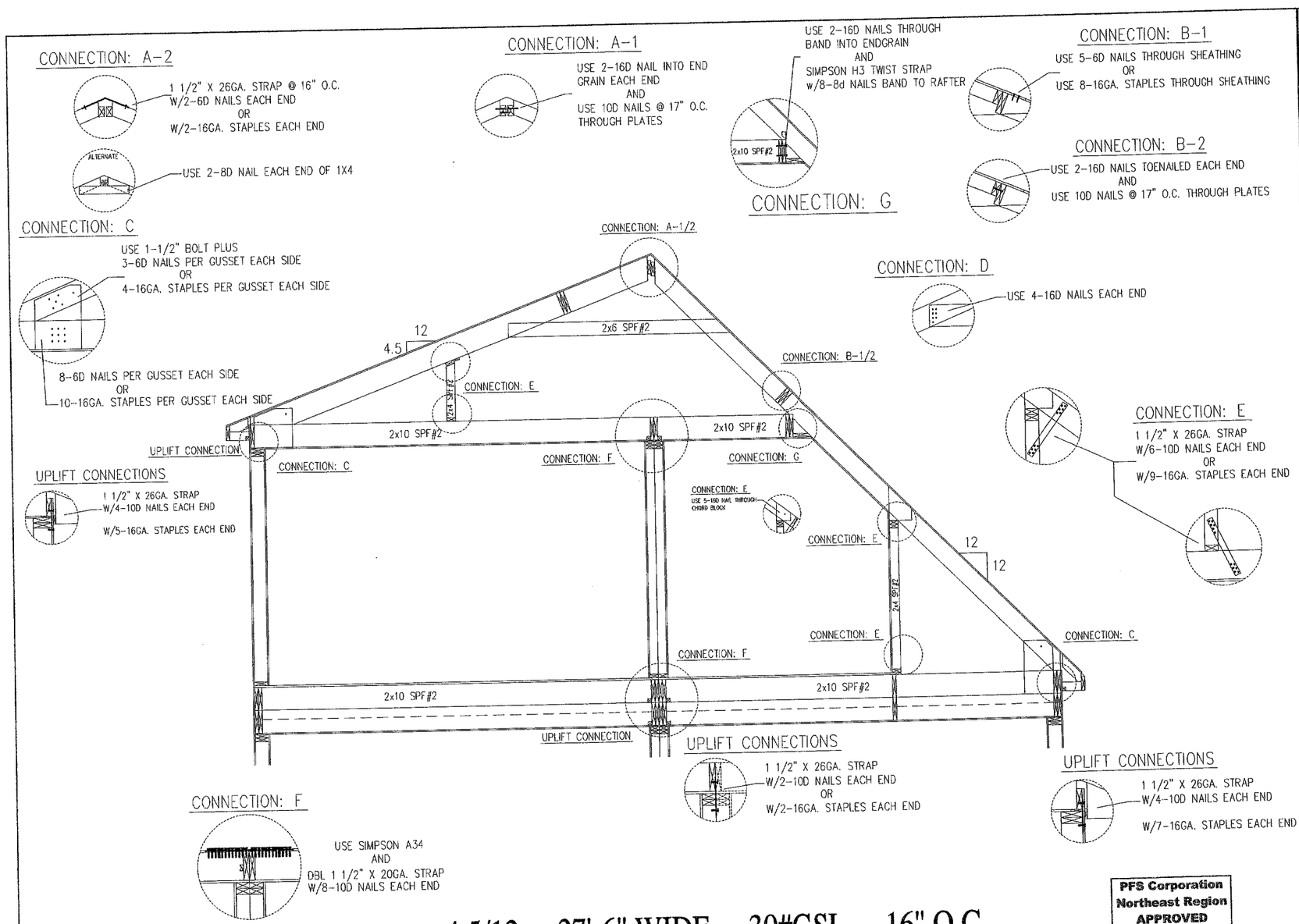
BUILDER: PLEASANT BAY HOMES
HOMEOWNER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
ORDER NO: 6861
SERIAL NO:
TYPE: CAPE
SQFT: 1,980
PO #/LOT #: O#6861

4.5/12 SHED RAFTER

SERIAL # / ORDER #: O#6861

PAGE #: TR3



4.5/12 - 27'-6" WIDE - 30#GSL - 16" O.C.
NON-STORAGE RAFTER

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SERIAL # / ORDER #
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PAGE #:
TR4

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BY	REVISION	DATE
PIF	PRELIM	11/15/16
TLM	REV. PRELIM	02/15/17
HLB	FINAL	6/2/17

BUILDER: PLEASANT BAY HOMES
HOMEBUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
ORDER NO: 6861
SERIAL NO:
SQFT: 1,980
TYPE: CAPE
FILE NAME: O#6861

4.5/12 SHED RAFTER CONNECTIONS

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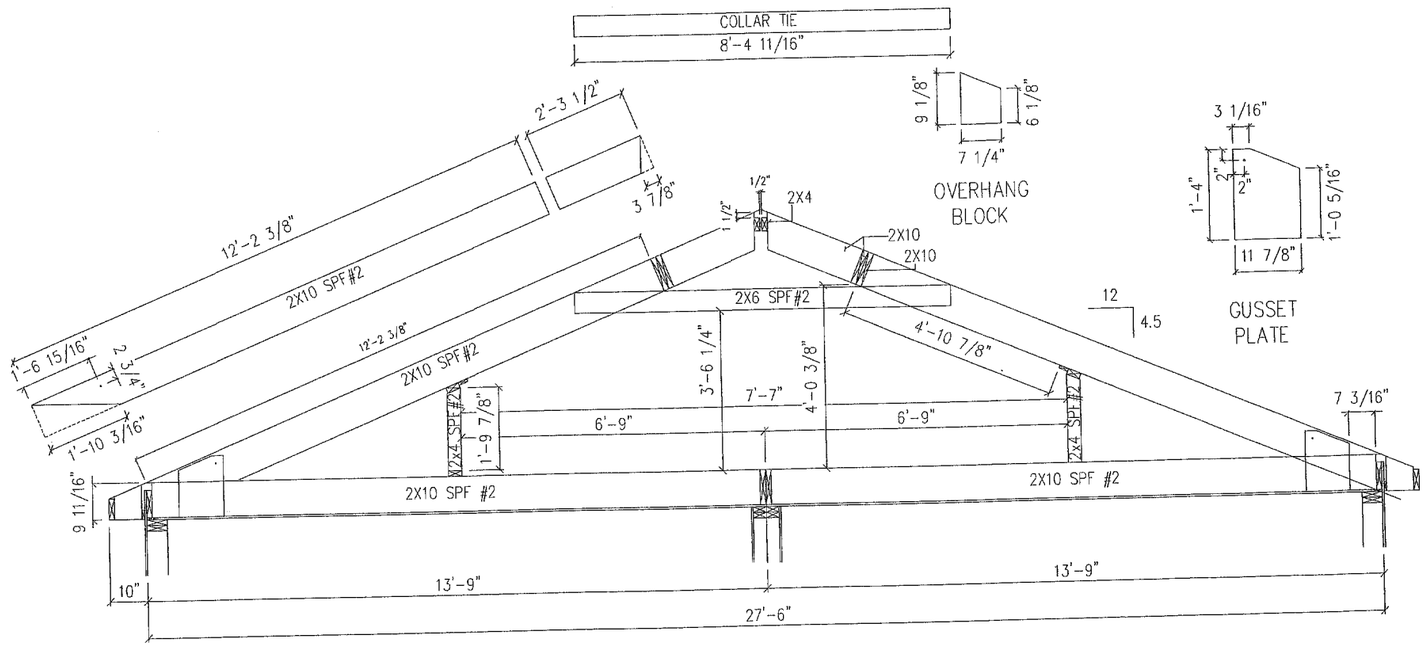

4.5/12 - 27'-6" WIDE - 30#GSL - 16" O.C.
NON-STORAGE RAFTER

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SERIAL #/ ORDER #: O#6861

PAGE #: TR5

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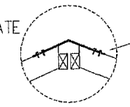
REVISION	DATE	BY
PRELIM	11/15/16	PIF
REV. PRELIM	02/15/17	TLM
FINAL	6/2/17	HLB

BUILDER: PLEASANT BAY HOMES
HOUSE/ENTRY/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
ORDER NO: 6861
SQFT: 1,980
TYPE: CAPE
SERIAL NO:
FILE NAME: O#6861

4.5/12 RAFTER

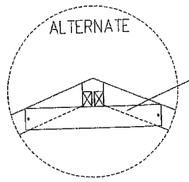
CONNECTION: A-2

ALTERNATE



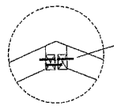
1 1/2" X 26GA. STRAP @ 16" O.C.
W/2-6D NAILS EACH END
OR
W/2-16GA. STAPLES EACH END

ALTERNATE



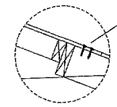
USE 2-8D NAIL EACH END OF 1X4

CONNECTION: A-1



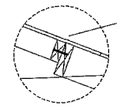
USE 2-16D NAIL INTO END GRAIN EACH END
AND
USE 10D NAILS @ 17" O.C. THROUGH PLATES

CONNECTION: B-1



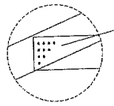
USE 2-6D NAILS THROUGH SHEATHING
OR
USE 4-16GA. STAPLES THROUGH SHEATHING

CONNECTION: B-2



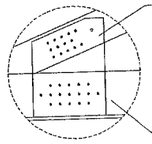
USE 2-16D NAILS TOENAILED EACH END
AND
USE 10D NAILS @ 17" O.C. THROUGH PLATES

CONNECTION: C



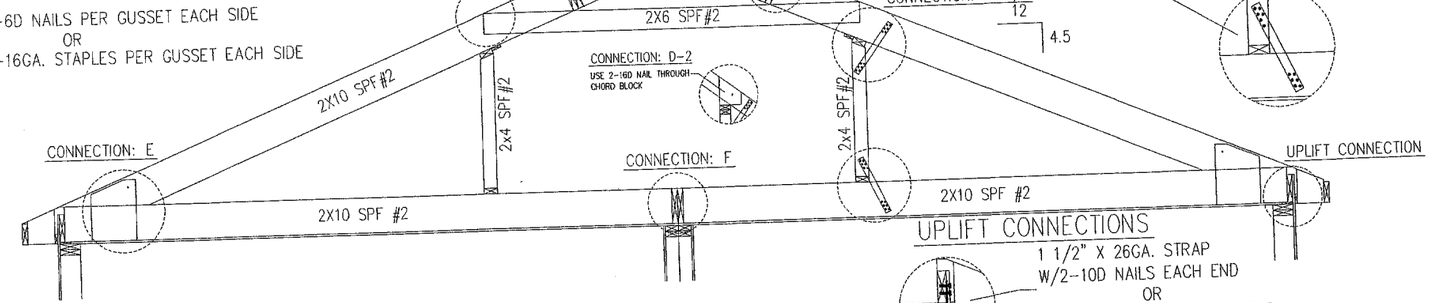
USE 8-16D NAILS EACH END

CONNECTION: E

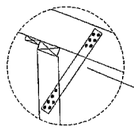


USE 1 1/2" BOLT PLUS
7-6D NAILS PER GUSSET EACH SIDE
OR
8-16GA. STAPLES PER GUSSET EACH SIDE

12-6D NAILS PER GUSSET EACH SIDE
OR
16-16GA. STAPLES PER GUSSET EACH SIDE

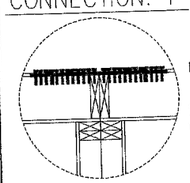


CONNECTION: D



1 1/2" X 26GA. STRAP
W/3-10D NAILS EACH END
OR
W/3-16GA. STAPLES EACH END

CONNECTION: F



USE 10-16D NAILS THROUGH DECKING EACH SIDE
OR
SIMPSON CS14 STRAP
W/11-10D NAILS EACH END

UPLIFT CONNECTIONS

1 1/2" X 26GA. STRAP
W/2--10D NAILS EACH END
OR
W/3-16GA. STAPLES EACH END

4.5/12 - 27'-6" WIDE - 30#GSL - 16" O.C.
NON-STORAGE RAFTER

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Northeast Region
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SERIAL # / ORDER #
O#6861

PAGE #
TR6

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02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

BUILDER: PLEASANT BAY HOMES
HOMEOWNER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
COUNTY: BARNSTABLE
ORDER NO: 6861
PLAN NO: O#6861
SERIAL NO
ZIP: 02559
STATE: MA
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
TYPE: CAPE
SQFT: 1,980

4.5/12 RAFTER CONNECTIONS

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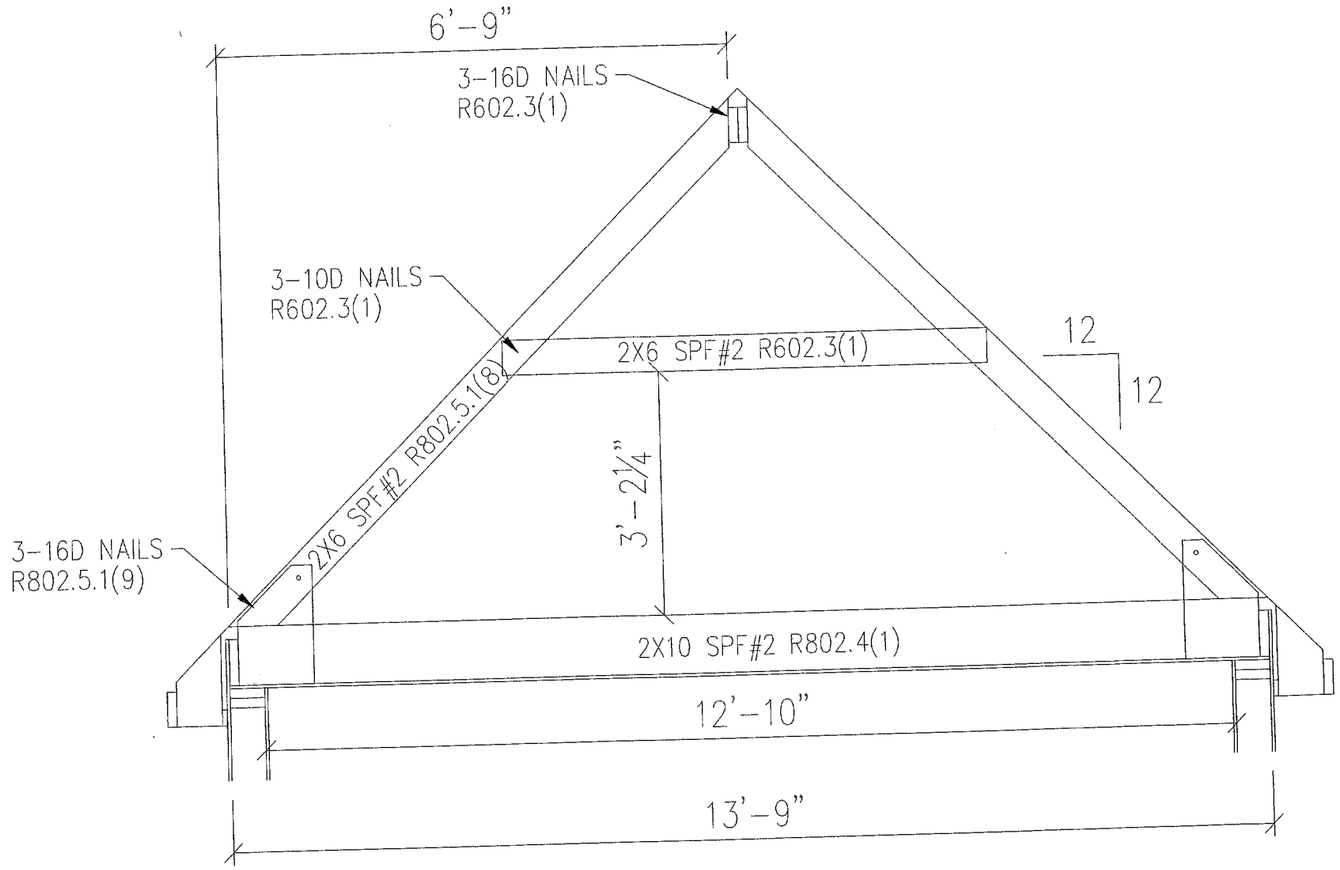

13'-9" WIDE - 12/12 - 30# SNOW

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REV. PRELIM	TLM	02/15/17
FINAL	HLB	6/2/17

BUILDER: PLEASANT BAY HOMES
HOMEBUILDER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
TYPE: CAPE
LOT NO: 6861
SERIAL NO:
SQFT: 1,980
FILE NAME: O#6861

12/12 RAFTER

SERIAL # / ORDER #: O#6861

PAGE #: TR7

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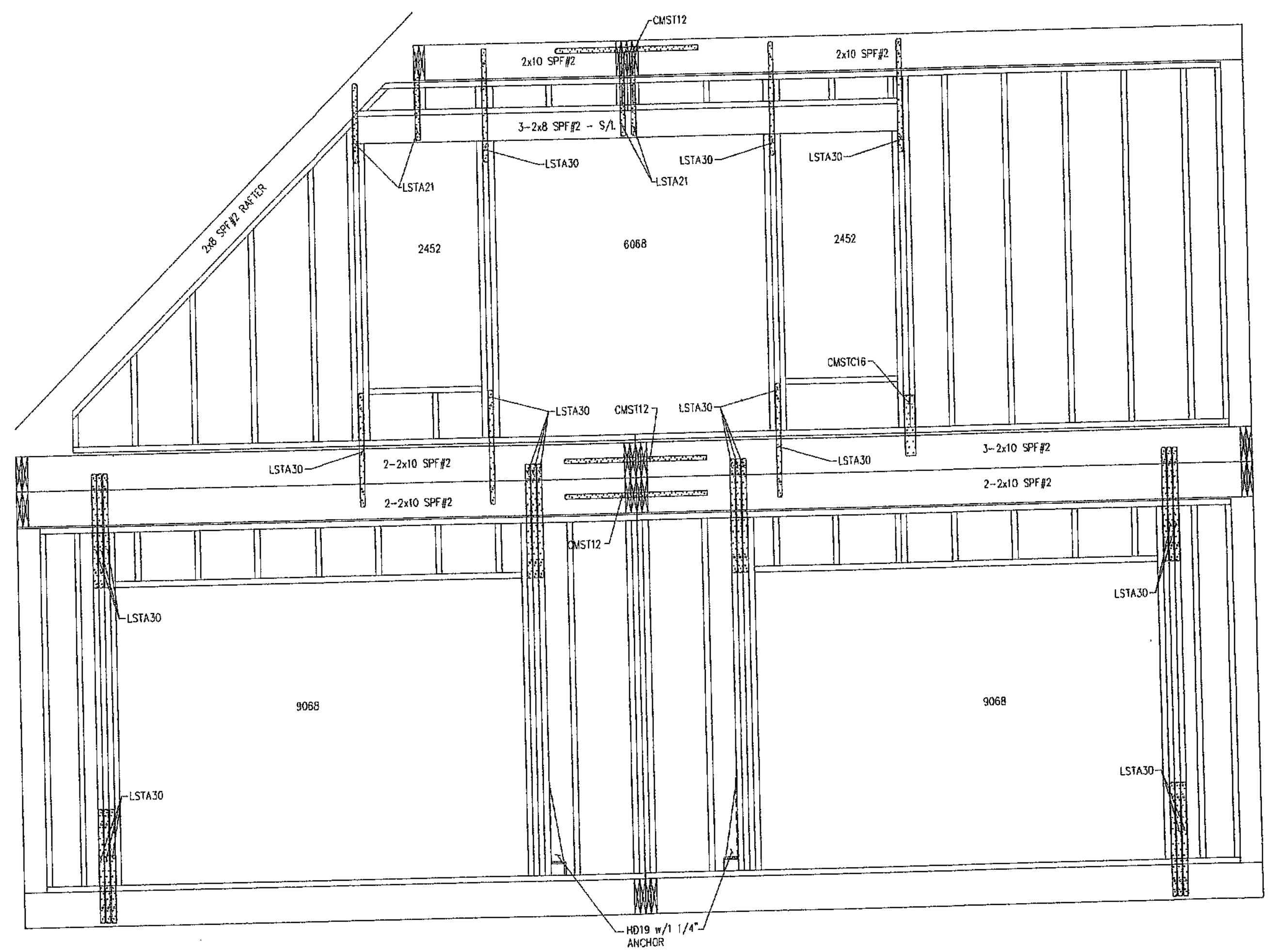

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6/2/17	FINAL	HLB

BUILDER	PLEASANT BAY HOMES
OWNER/PROJECT	ELIZABETH GILLIS 2
ADDRESS	10 HARBOR WAY
CITY	POCASSET
STATE	MA
ZIP	02559
COUNTY	BARNSTABLE
SNOW LOAD (LBS)	30
WIND SPEED (MPH)	110
ORDER NO	6861
SERIAL NO	
SQFT	1,980
TYPE	CAPE
FILE NAME	O#6861

JLA

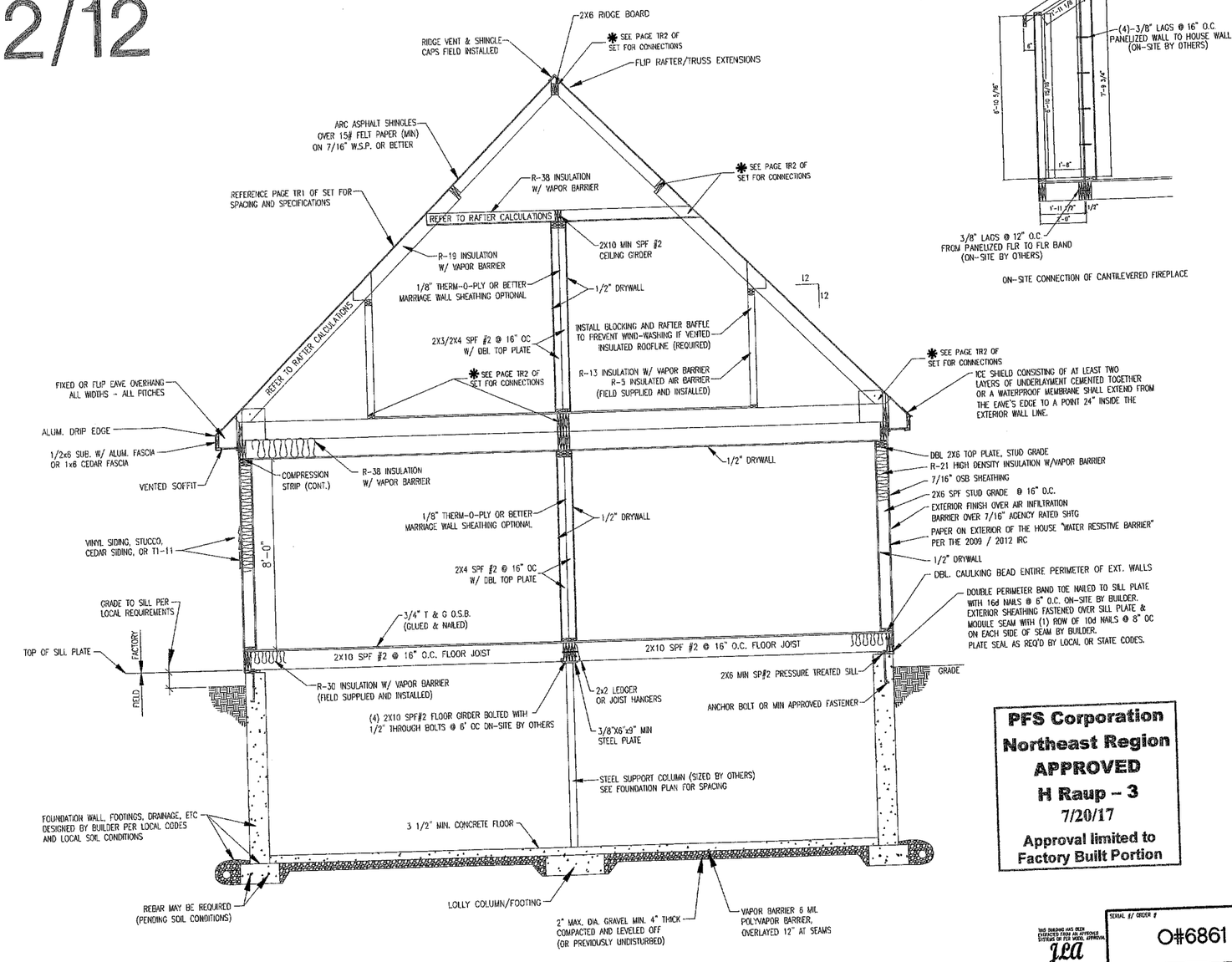
SERIAL #/ ORDER #
O#6861

PAGE #
TR8

SEE PAGES FP1, FP2, SW1, SW2, TR1 - TR8 FOR ON-SITE CONNECTIONS

12/12

✱ ON-SITE CONNECTION REQUIRED



ON-SITE CONNECTION OF CANTILEVERED FIREPLACE

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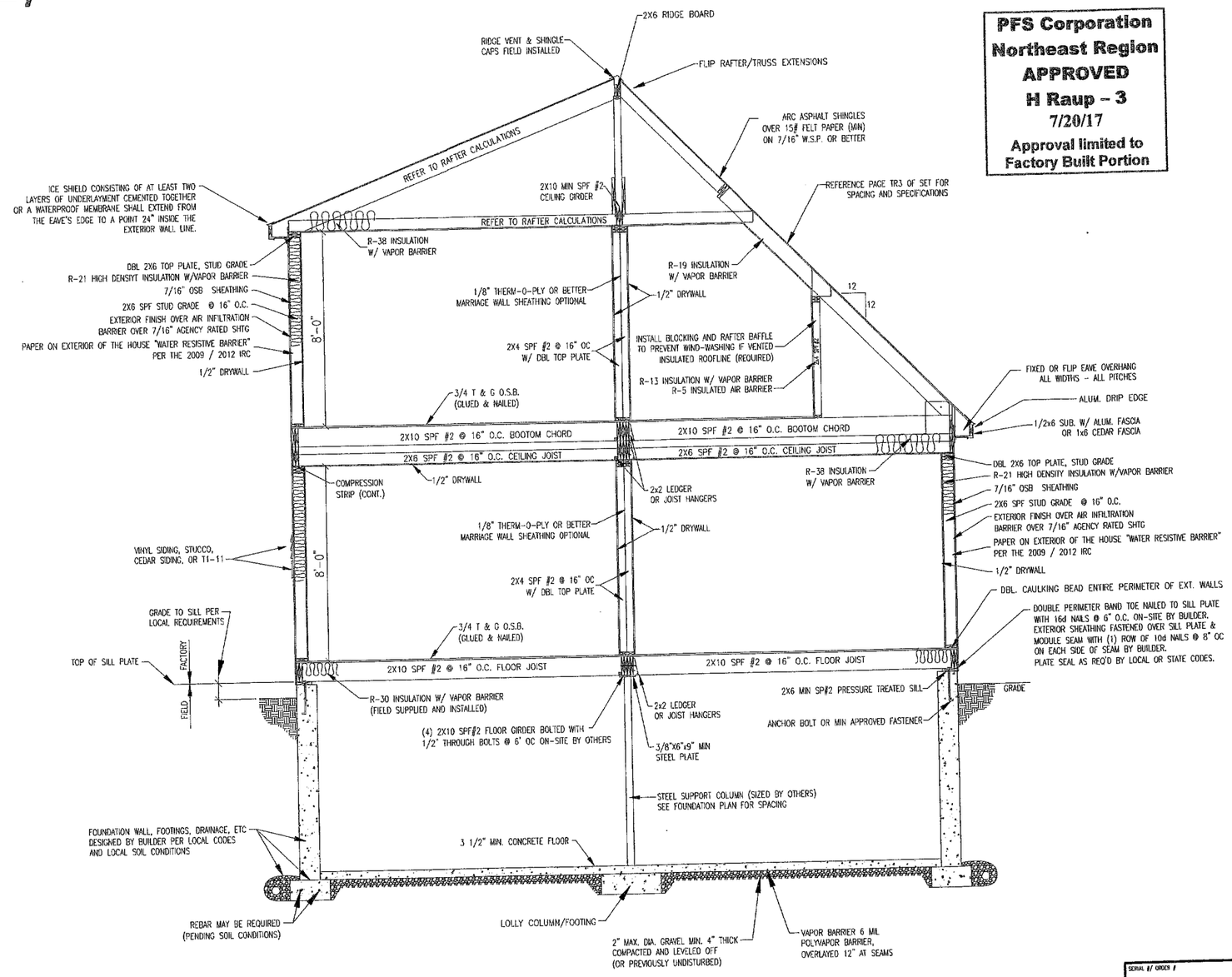
FINAL	6/2/17	HLB

BUILDER: PLEASANT BAY HOMES
HOMEBUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
COUNTY: BARNSTABLE
BUILDER NO: 6861
FILE NAME: O#6861

ZIP: 02559
STATE: MA
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
TYPE: CAPE
SQFT: 1,980
SERIAL NO:

CROSS SECTION / DETAIL #1

12/12



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BUILDER: PLEASANT BAY HOMES
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ORDER NO: 6861
FILE NAME: O#6861
STATE: MA
ZIP: 02559
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
EXP: CAPE
SQFT: 1,980
SERIAL NO:

CROSS SECTION / DETAIL #2

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SERIAL # / ORDER #: O#6861

PAGE #: SE2

4.5/12

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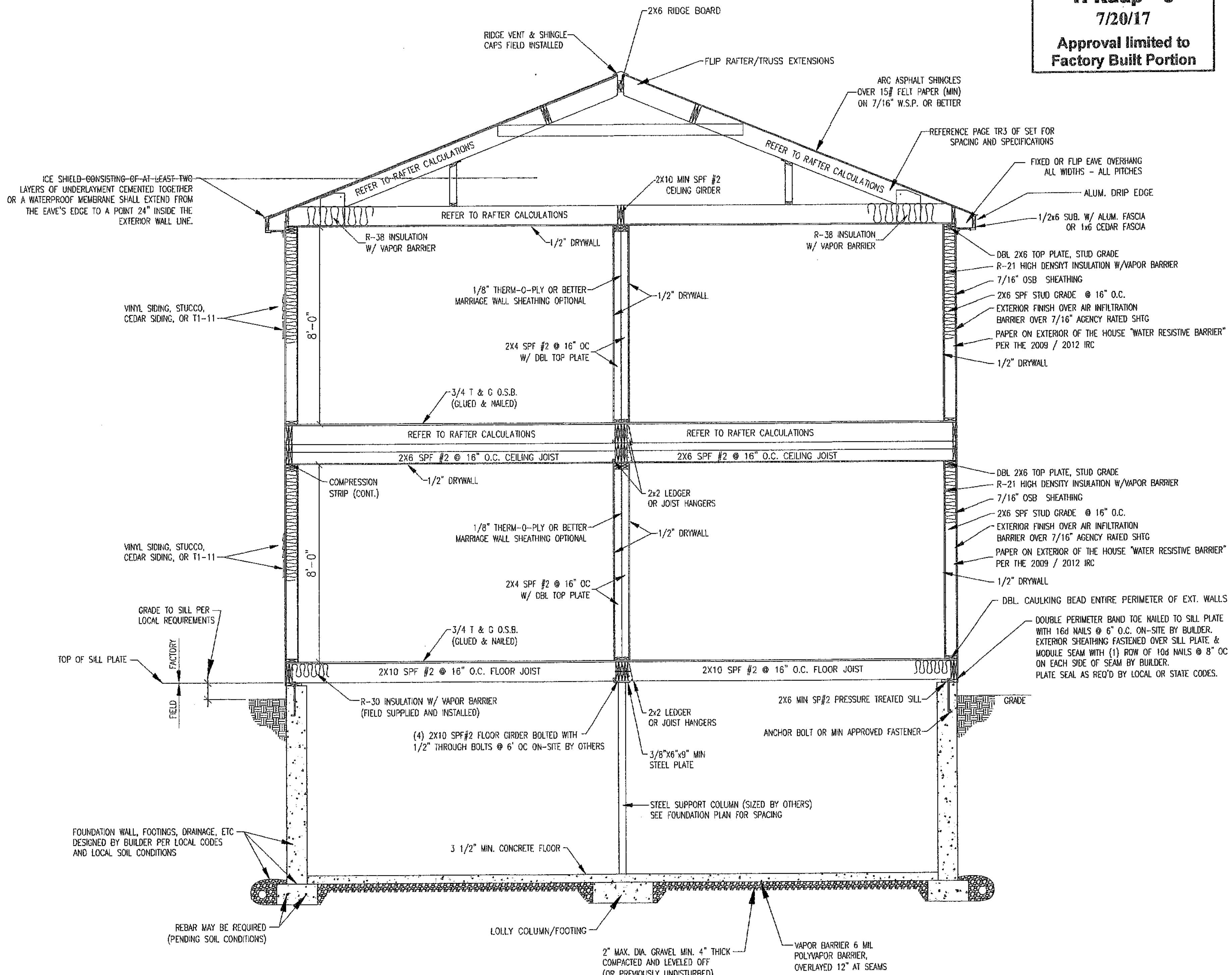

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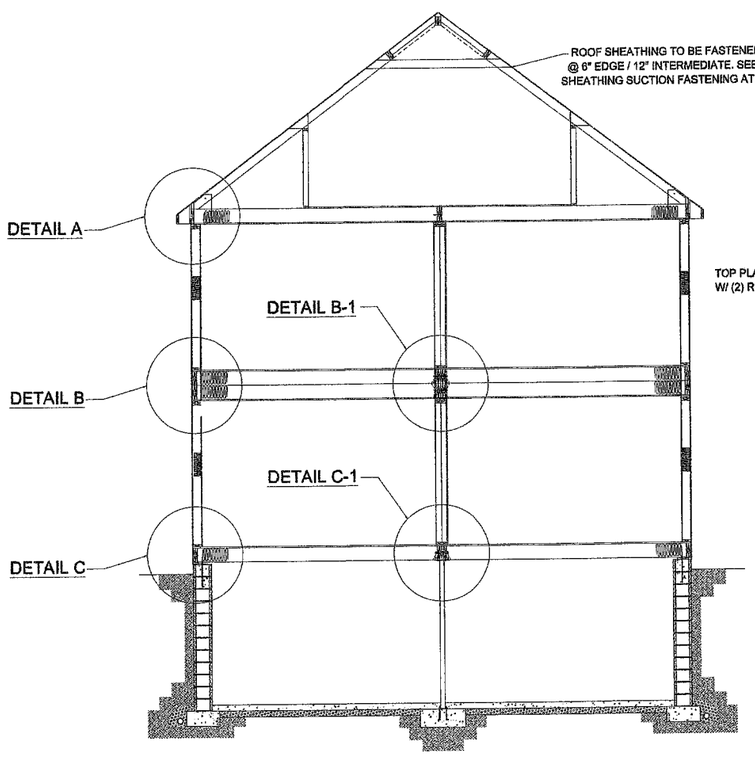
DATE	REVISION	BY
11/15/16	PRELIM	PIF
02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

BUILDER: PLEASANT BAY HOMES
HOMEBUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET | ZIP: 02559
COUNTY: BARNSTABLE | STATE: MA | SNOW LOAD (LBS): 30 | WIND SPEED (MPH): 110 | TYPE: CAPE
ORDER NO: 6861 | SQFT: 1,980 | SERIAL NO:
FILE NAME: O#6861

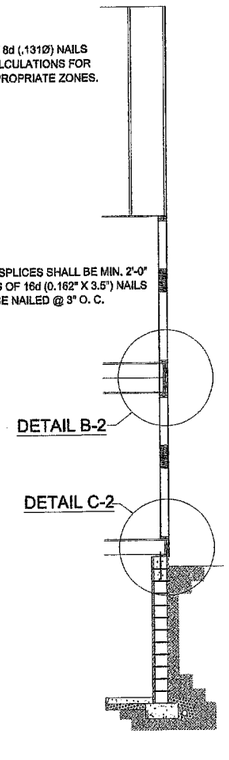
CROSS SECTION / DETAIL #3

PAGE #: SE3

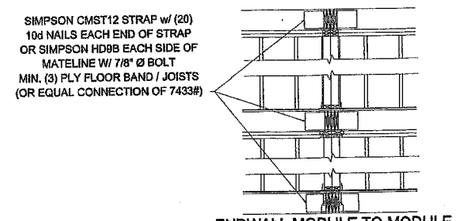
NOTE: (6) NAILS PER SHINGLE



SECTION DOWN
SIDEWALL



SECTION DOWN
ENDWALL



ENDWALL MODULE TO MODULE

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FINAL	6/2/17	HLB

BUILDER: PLEASANT BAY HOMES
HOUSE/BUYER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 110 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
ORDER NO: 6861
SQFT: 1,980
TYPE: CAPE
SERIAL NO:
FILE NAME: O#6861

HIGH WIND SECTION

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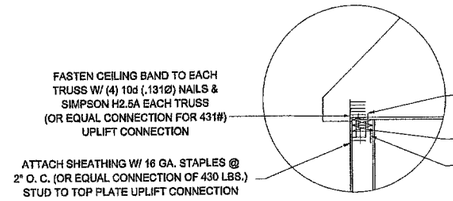
SERIAL #/ ORDER #: O#6861

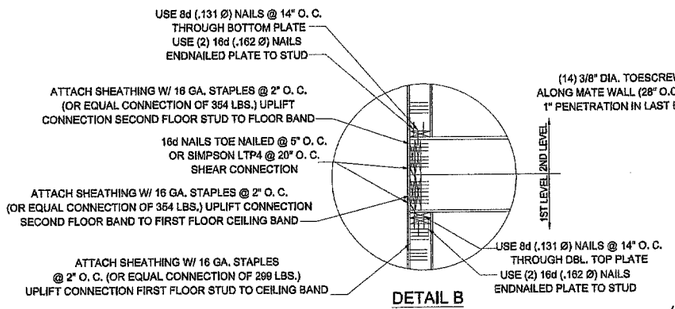
PAGE #: SE4



DETAIL A

(TRUSS CONNECTIONS)

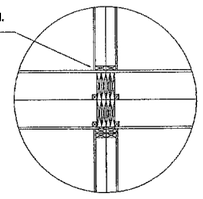
ENDWALL - FASTEN TRUSS BOTTOM CHORD TO TOP PLATE W/ 16d (0.162Ø) NAILS @ 16" O. C. OR SIMPSON LTP4 PLATES @ 83" O. C.



DETAIL B

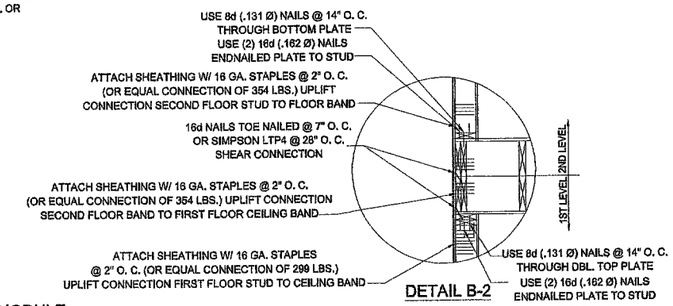
(SECOND LEVEL SIDEWALL CONNECTIONS)

FASTEN SHEATHING TO RIMBAND W/ (1) ROW OF 8d (.131Ø) NAILS @ 3" O. C.



DETAIL B-1

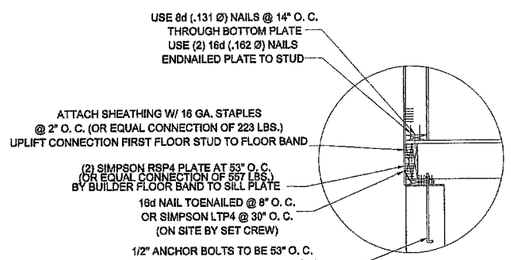
(SECOND LEVEL MODULE TO MODULE CONNECTION ALONG MATEWALL)



DETAIL B-2

(SECOND LEVEL ENDWALL CONNECTIONS)

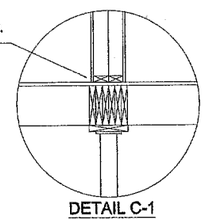
FASTEN SHEATHING TO RIMBAND W/ (1) ROW OF 8d (.131Ø) NAILS @ 2" O. C.



DETAIL C

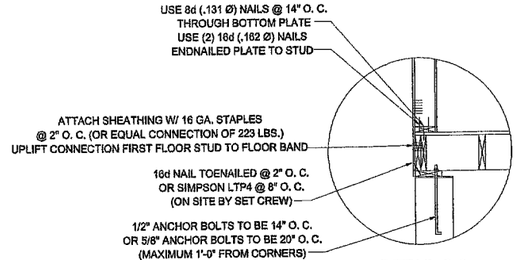
(FIRST LEVEL SIDEWALL CONNECTIONS)

FASTEN SHEATHING TO RIMBAND W/ (1) ROW OF 8d (.131Ø) NAILS @ 2" O. C.



DETAIL C-1

(MODULE TO MODULE CONNECTION ALONG MATEWALL)



DETAIL C-2

(FIRST LEVEL ENDWALL CONNECTIONS)

FASTEN SHEATHING TO RIMBAND W/ (3) ROWS OF 8d (.131Ø) NAILS @ 2" O. C.

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DATE	REVISION	BY
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02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

BUILDER: PLEASANT BAY HOMES
PURCHASER: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
TYPE: CAPE
ORDER NO: 6861
SERIAL NO:
SQFT: 1,980
JLC NAME: O#6861

HIGH WIND FASTENING

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SERIAL #/ ORDER #: O#6861

PAGE #: SE5

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DOOR AND WINDOW SCHEDULE

WINDOWS DESCRIPTION	ROUGH OPENING	AREA	LIGHT	CLEAR OPENING WIDTH (EACH)	CLEAR OPENING HEIGHT (EACH)	VENT	U-FACTOR	QTY	TOTAL AREA
ANDERSEN 400 SERIES CASEMENT C235	48 1/2" X 41 3/8"	13.94	13.6	18.290	36.000	9.20	0.31	1	13.94
ANDERSEN 400 SERIES TILT-WASH DOUBLE HUNG TW2032	26 1/8" X 40 7/8"	7.42	4.2	21.875	16.250	2.48	0.31	2	14.84
ANDERSEN 400 SERIES TILT-WASH DOUBLE HUNG TW2052	26 1/8" X 64 7/8"	11.77	7.4	21.875	28.250	4.31	0.31	2	23.54
ANDERSEN 400 SERIES TILT-WASH DOUBLE HUNG TW24210	30 1/8" X 36 7/8"	7.71	4.5	25.875	14.250	2.58	0.31	1	7.71
ANDERSEN 400 SERIES TILT-WASH DOUBLE HUNG TW2452	30 1/8" X 64 7/8"	13.57	8.9	25.875	28.250	5.10	0.31	2	27.14
ANDERSEN 400 SERIES TILT-WASH DOUBLE HUNG TW3046-2	75 7/8" X 56 7/8"	29.97	20.6	33.875	24.250	11.46	0.31	3	89.91
ANDERSEN 400 SERIES TILT-WASH DOUBLE HUNG TW3052	38 1/8" X 64 7/8"	17.18	12.0	33.875	28.250	6.67	0.31	6	103.08
ANDERSEN 400 SERIES TILT-WASH DOUBLE HUNG TW3052-2	75 7/8" X 64 7/8"	34.18	24.1	33.875	28.250	13.34	0.31	1	34.18
							TOTAL AREA:		314.34

EXTERIOR DOORS DESCRIPTION	ROUGH OPENING	AREA	LIGHT	CLEAR OPENING WIDTH (EACH)	CLEAR OPENING HEIGHT (EACH)	VENT	U-FACTOR	QTY	TOTAL AREA
PLASTPRO 3068 (< 50% GLASS)	38 1/2" X 82 1/8"	21.96	0.0	0.000	0.000	20.00	0.17	1	21.96
PLY GEM PRO SERIES CLASSIC SLIDING PATIO DOOR 9068	108" X 80"	60.00	42.5	27.125	75.750	14.30	0.25	2	120.00
PLY GEM PRO SERIES CLASSIC SLIDING PATIO DOOR CLSPDR6068	72" X 80"	40.00	30.8	29.031	75.772	15.28	0.25	1	40.00
							TOTAL AREA:		181.96

DWS BUILDING HAS BEEN ERECTED FROM AN APPROVED SYSTEMS OR PER MODEL APPROVAL
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SERIAL #/ ORDER #
O#6861

PAGE #
DWS

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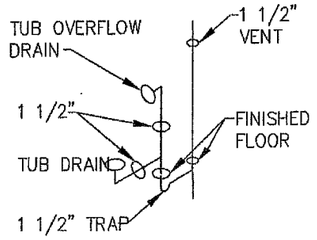
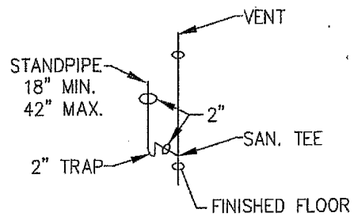
6/2/17	FINAL	HLB

BUILDER: PLEASANT BAY HOMES
HOUSE TYPE/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 10 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
WIND SPEED (MPH): 110
SNOW LOAD (LBS): 30
TYPE: CAPE
ORDER NO.: 6861
SERIAL NO:
SQFT: 1,980
FILE NAME: O#6861

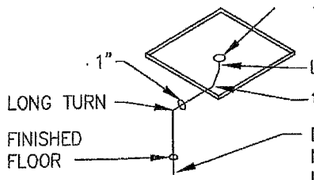
DOOR & WINDOW SCHEDULE



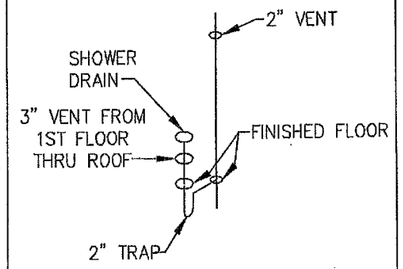
TUB/SHOWER



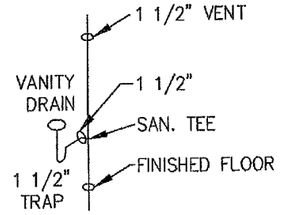
CLOTHES WASHER



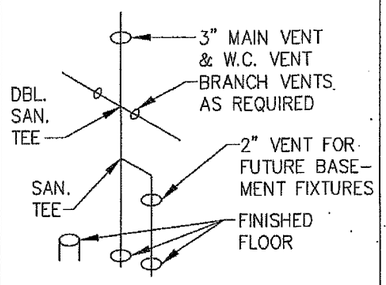
WASHER/WATER HEATER PAN USED WHEN CRAWL SPACE OR USED WHEN EITHER IS INSTALLED ON 2ND FLOOR



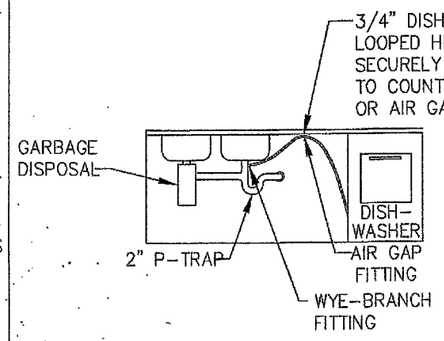
SHOWER



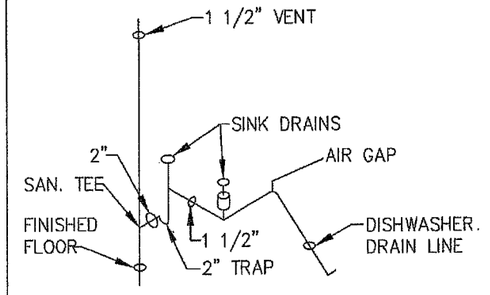
BATHROOM VANITY



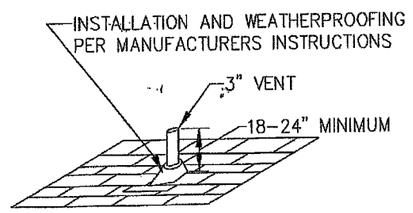
WATER CLOSET AND MAIN VENT



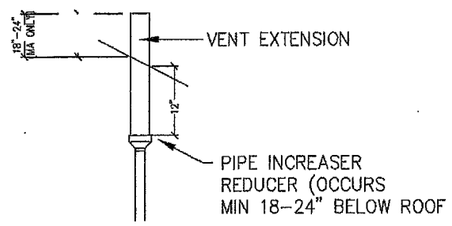
KITCHEN SINK/DISHWASHER/DISPOSAL



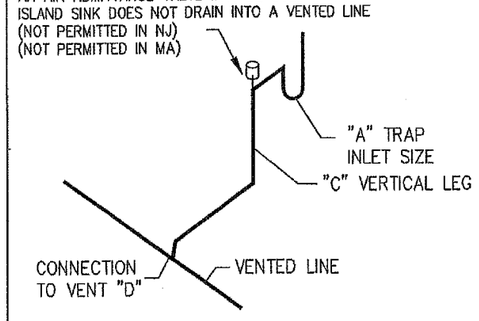
KITCHEN SINK/DISHWASHER DETAIL



VENT THRU ROOF DETAIL



FROST CLOSURE



THE VENT PIPE FROM A FIXTURE DRAIN, EXCEPT WATER CLOSETS AND SIMILAR SIPHONIC FIXTURES, SHALL NOT CONNECT BELOW THE TOP WEIR OF THE TRAP. THE VENT PIPE MAY BE CONNECTED AT A LOWER ELEVATION IF THE FOLLOWING ARE MET:

1. THE VERTICAL SECTION OF THE DRAIN PIPE SHALL BE AT LEAST ONE PIPE SIZE LARGER THAN THE TRAP INLET SIZE.
2. THE HORIZONTAL PIPE CONNECTED TO THE TRAP OUTLET SHALL BE AT LEAST TWO PIPE DIAMETERS LONG.
3. THE DEVELOPED LENGTH OF THE TRAP ARM SHALL NOT EXCEED THE VALUES STATED IN THE APPLICABLE PLUMBING CODES.

"A" – TRAP SIZE PER ALL APPLICABLE PLUMBING CODES
"B" – TRAP ARM LENGTHS:
1 1/4" TRAP – 3'-6"
1 1/2" TRAP – 5'-0"
3" TRAP – 10'-0"
4" TRAP – 12'-0"
"C" – SIZE IS ONE SIZE LARGE THAN TRAP SIZE
"D" – DISTANCE FROM CROWN WEIR AND VENT CONNECTION ACCORDING TO MAX. DISTANCE OF VENT FROM FIXTURE TRAP

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CUSTOMER/PROJECT: SYSTEMS DRAWINGS
BUILDER:

REV#	DATE	REVISIONS	BY
1	12/16/08	CODE UPDATES	BJH
2	11/4/2010	REVISED SYSTEMS	SLW
3	1/14/2011	MA CODE UP-DATE	SLW
4	5/10/2011	Code up-date RI, VA, NJ,	SW

DRAWN BY: GLENCO/TH | DATE: 03/14/08 | SCALE: NTS | CHECKED BY:

FILE:
SQ.FT.:
STATE:
TYPE:
MODEL:
DRAWING: PLUMBING DETAILS
SHEET: PL1

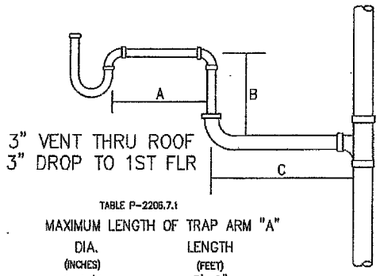


TABLE P-2205.7.1

MAXIMUM LENGTH OF TRAP ARM "A"

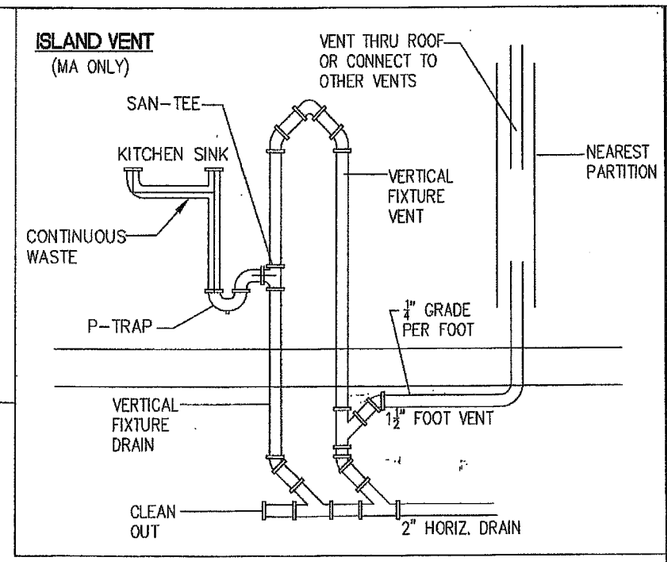
DIA. (INCHES)	LENGTH (FEET)
1-1/4	3'-6"
1-1/2	5'
2	8
3	10'
4	14'

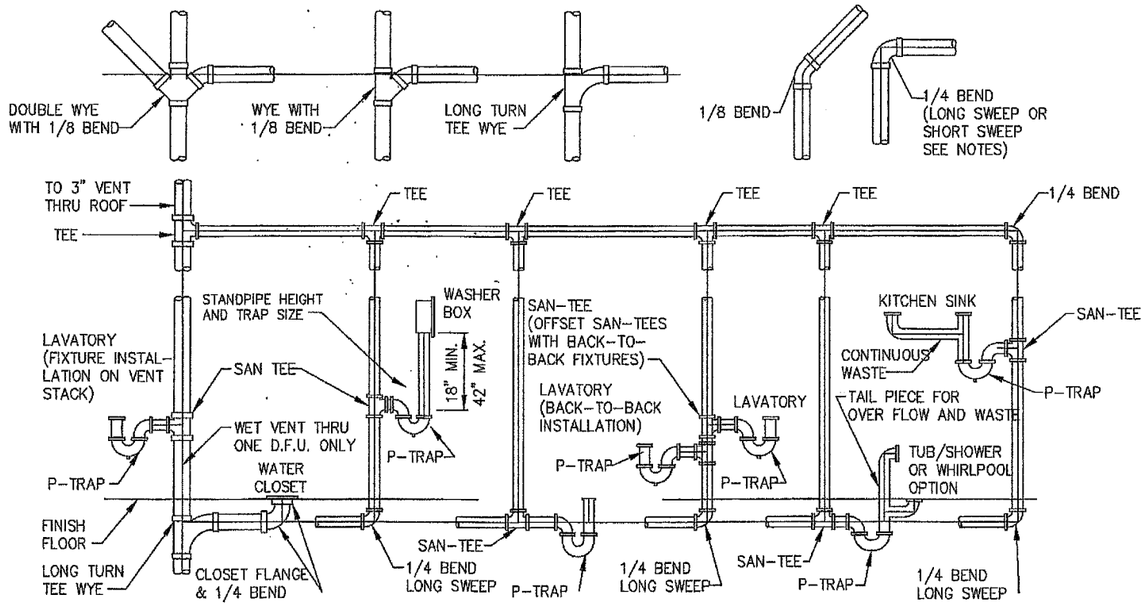
ALLOWABLE FALL IN TRAP ARM: THE TOTAL FALL IN TRAP ARM DUE TO PIPE SLOPE SHALL NOT EXCEED ONE PIPE DIAMETER, NOR SHALL THE VENT PIPE CONNECTION TO A FIXTURE DRAIN, EXCEPT FOR WATER CLOSETS AND SIMILAR FIXTURES, BE BELOW THE WEIR OF THE TRAP.

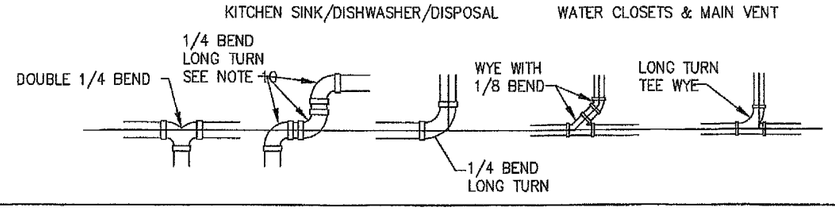
VERTICAL LEG FOR WASTE FIXTURE DRAINS: A VERTICAL LEG ("B" IN DIAGRAM) MAY BE INSTALLED IN THE TRAP ARM OF A WASTE-FIXTURE DRAIN IN LIEU OF THE USUAL TRAP ARM TO VENT CONNECTION. TYPICAL INSTALLATIONS INCLUDE ISLAND SINKS AND FIXTURES NOT ADJACENT TO A WALL. VERTICAL LEG TRAP ARM INSTALLATIONS SHALL MEET THE FOLLOWING CRITERIA:

1. MINIMUM TRAP DIAMETER SHALL MEET CODES
2. THE DIAMETER OF SECTION "A" SHALL BE EQUAL TO THE DIAMETER OF THE TRAP.
3. THE LENGTH OF SECTION "A" SHALL BE NOT LESS THAN 8" AND IN ACCORDANCE WITH TABLE P-2206.7.1.
4. THE DIAMETER OF SECTION "B" SHALL BE ONE PIPE SIZE LARGER THAN THE DIAMETER OF SECTION :A".
5. THE LENGTH OF SECTION "B" SHALL BE NOT MORE THAN 36 INCHES
6. THE DIAMETER OF SECTION "C" SHALL BE ONE PIPE SIZE LARGER THAN THE DIAMETER OF SECTION "B".
7. THEIR IS NO RESTRICTION ON THE LENGTH OF SECTION "C".
8. BENDS SHALL BE THE DIAMETER OF THE LARGEST CONNECTED SECTION.

NOT PERMITTED IN MASSACHUSETTS







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Custom Modular Homes, LLC

CUSTOMER/PROJECT: SYSTEMS DRAWINGS

BUILDER:

REV#	DATE	REVISIONS	BY
1	12/14/09	CODE UPDATES	BJH
2	12/10/10	REVISED SYSTEMS	SLW
3	1/14/2011	MA CODE UP-DATE.	SLW
4	7/16/2013	Code up-date RI, VA, NH.	SW

DRAWN BY: GLENCO/TH | DATE: 03/14/08 | SCALE: NTS | CHECKED BY:

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FILE:

SQ.FT.:

STATE:

TYPE:

MODEL:

DRAWING: PLUMBING DETAILS

SHEET: PL2

PLUMBING NOTES:

1. ALL PLUMBING CONSTRUCTION AND MATERIAL BELOW THE MODULAR FLOOR AND BETWEEN FLOORS IS THE RESPONSIBILITY OF THE BUILDER/CONSTRACTOR AND IS TO BE DONE IN ACCORDANCE W/STATE AND LOCAL CODES.
2. CONCEALED PIPING IN UNHEATED AREAS, INCLUDING OUTSIDE WALLS, SHALL BE PROTECTED AGAINST FREEZING IN PLANT. PIPING SHALL BE KEPT OUT OF UNHEATED AREAS WHERE POSSIBLE.
3. ALL WASTE AND VENT LINES IN MODULES ARE ABS OR PVC PIPE. ALL SUPPLY LINES IN MODULES ARE COPPER, PEX, OR CPVC.
4. PITCH ON HORIZONTAL WASTE LINES IS $\frac{1}{8}$" PER FOOT FOR GREATER THAN 3" DIAMETER PIPE, $\frac{1}{4}$" PER FOOT FOR 3" DIAMETER PIPE OR LESS.
5. WASTE LINES: INSTALL WYE WITH CLEANOUT PRIOR TO EXITING WALL FOR CONNECTION TO DISPOSAL SYSTEM. 4" MINIMUM WASTE LINE TO SEPTIC (BY BUILDER IN FIELD).
6. WASHER SHALL HAVE MINIMUM 2" TRAP.
7. REMOVABLE TRAPS UNDER ALL SINKS TO PROVIDE CLEANOUT ACCESS.
8. GARBAGE DISPOSAL MUST HAVE SEPARATE TRAP. DISHWASHER CANNOT DISCHARGE INTO GARBAGE DISPOSAL.
9. KITCHEN SINK SHALL HAVE 2" DRAIN WHEN A GARBAGE DISPOSAL OR DISHWASHER ARE CONNECTED.
10. HORIZONTAL TO HORIZONTAL AND VERTICAL TO HORIZONTAL DRAIN CHANGES IN DIRECTION SHALL BE 45° WYES, LONG SWEEP 90° ELBOWS, LONG SEEP TY'S, 6TH, 8TH, OR 16TH BENDS, APPROVED COMBINATIONS OF THESE OR EQUIVALENT LONG SWEEP FITTINGS. SHORT SWEEPS ARE PERMITTED IN SINGLE BRANCH HORIZONTAL TO VERTICAL CHANGES IN DIRECTION ON 3" PIPE AND LARGER.
11. ALL HORIZONTAL VENT BRANCH PIPING SHALL BE LOCATED A MINIMUM OF 6" ABOVE THE FLOOD LEVEL OF THE HIGHEST FIXTURE IN THAT BRANCH.
12. PVC-DWV PIPE SUPPORTS: AT BRANCHES, CHANGES IN DIRECTION, AND AT THE BASE, EACH FLOOR AND MID STORY (VERTICAL) MAXIMUM EVERY 4'-0" AT THE END OF BRANCHES, AND CHANGE OF DIRECTIONS OR ELEVATION,
13. PIPE PENETRATING FIRE RATED ASSEMBLIES INCLUDING FLOOR/CEILING SHALL BE FIRE STOPPED WHERE REQUIRED BY ALL CODES WITH MATERIAL EQUIVALENT TO CONSTRUCTION THROUGH WHICH IT PENENTRATES AND BE SUITABLE TO PIPE MATERIAL, OR USE METAL PIPE FROM A MINIMUM OF ABOVE THE FIRE RATED ASSEMBLY AND DOWN.
14. FIRE STOPPING SHALL BE PROVIDED AND VERIFIED BEFORE IT IS COVERED OR CONCEALED IN THE CONSTRUCTION PROCESS.
15. ANY STRUCTURAL MEMBER SUBJECT TO HOLE DRILLING, CUTTING, OR NOTHCING SHALL BE LEFT IN A SAFE STRUCTURAL CONDITION BY BEING REINFORCED, REPAIRED, OR REPLACED IN ACCORDANCE WITH THE STRUCTURAL REQUIREMENTS OF THE CODE.
16. FIELD INSTALLED (ON-SITE) PIPING SHALL BE APPROVED BY THE LOCAL BUILDING CODE ENFORCEMENT OFFICER. PIPING SHALL BE FIELD TESTED FOR LEAKS.
17. BATH TUBS, INCLUDING GARDEN TUBS, HYDRO-MASSAGE, AND HOT TUBS SHALL HAVE A 1 $\frac{1}{2}$" MIN OVERFLOW.
18. JOINTS AROUND PLUMBING FIXTURES SHALL BE MADE WATERPROOF AT FLOORS, WALLS, & COUNTERTOPS.
19. EACH FIXTURE SHALL BE INDIVIDUALLY DIRECT OR WET VENTED.
20. EACH DWELLING UNIT SHALL HAVE ONE MAIN 3" STACK FROM BUILDING DRAIN.
21. ALL VENTS THROUGH ROOF TO BE 3" MIN DIAMETER AND SHALL TERMINATE 18'-24" ABOVE THE ROOF.
22. BASEMENT MODELS SHALL BE PROVIDED IN FACTORY WITH A 2" VENT TO BASEMENT STUBBED BELOW THE FIRST FLOOR, THEN CAPPED AND LABELED. BASEMENT VENT MAY BE DELETED WHEN CLOTHES WASHER IS ON THE FIRST OR SECOND FLOOR.
23. ALL TRAP ARMS MUST BE SUPPORTED WITH $\frac{3}{4}$" MINIMUM BEARING.(MA ONLY)
24. ALL PLASTIC PIPE MUST BE SUPPORTED AT INTERVALS IN ACCORDANCE WITH APPLICABLE PLUMBING CODES.
25. TRAPS SHALL BE PLACED AS CLOSE AS POSSIBLE TO FIXTURE OUTLET. MAXIMUM VERTICAL DROP FROM FIXTURE OUTLET TO TRAP WEIR IS 24".
26. INACCESSIBLE TRAPS SHALL NOT HAVE UNIONS, CLEANOUTS OR SLIPJOINTS. ACCESSIBLE TRAPS SHALL BE REMOVABLE WITH UNION IN TRAP SEAL OR HAVE CLEANOUT OPENING SIZED THE SAME AS THE TRAP.
27. MAXIMUM DISTANCE OF FIXTURE TRAP WEIR TO VENT SHALL BE IN ACCORDANCE WITH ALL APPLICABLE PLUMBING CODES.
28. PLASTIC PIPING SHALL BE PROTECTED WITH $\frac{1}{16}$" STEEL PLATE WHEN PIPE PASSES THROUGH WOOD MEMBERS LESS THAN 1 $\frac{1}{4}$" FROM EDGE OF MEMBER.
29. FIRST FLOOR FIXTURES SHALL CONNECT INTO HORIZONTAL BUILDING DRAIN MORE THAN 10 PIPE DIAMETERS DOWNSTREAM OF STACK BASE AND NOT CONNECT INTO SECOND FLOOR DRAIN STACK.
30. POTABLE WATER SYSTEM SHALL BE DISINFECTED ON SITE BY BUILDER IN ACCORDANCE WITH APPLICABLE STATE PLUMBING CODES.
31. ISLAND FIXTURE VENTING SHALL NOT BE PERMITTED FOR FIXTURES OTHER THAN SINKS AND LAVATURES.. (SEE ISLAND DETAILS).
32. ANTI-SIPHONING DEVICE, VACUUM BREAKDERS, AND AIR GAPS: FOR WATER DISTRICTUION SYSTEMS "PROTECTION OF POTABLE WATER SUPPLY".
    - 32.1. WATER HEATER LOCATED AT OR ON LIVING SPACE LEVEL MUST HAVE AN ANTI-SIPHONING DEVICE INSTALLED.
    - 32.2. CLOTHES WASHER MUST HAVE AN ANTI-SIPHONING DEVICE INSTALLED (IF NOT BUILT INTO THE APPLIANCE).
33. WATER HAMMER ARRESTORS SHALL BE INSTALLED WHERE QUICK CLOSING VALVES ARE UTLIZED. (I.E. WASHING MACHINES AND DISHWASHERS).
34. PIPE INSTALLED DOWNSTREAM OF THE POINT OF POINT OF DELIVERY SHALL NOT EXTEND THROUGH ANY TOWNHOUSE UNIT OTHER THAN THE UNIT SERVED BY SUCH PIPING.

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CUSTOMER/PROJECT: SYSTEMS DRAWINGS

BUILDER:

REV#	DATE	REVISIONS	BY
1	12/14/09	CODE UPDATES	B.M
2	12/10/10	REVISED SYSTEMS	SLW
3	1/24/2011	MA CODE UP-DATE	SLW
4	5/10/2011	Code up-date RI, VA, NJ	SW

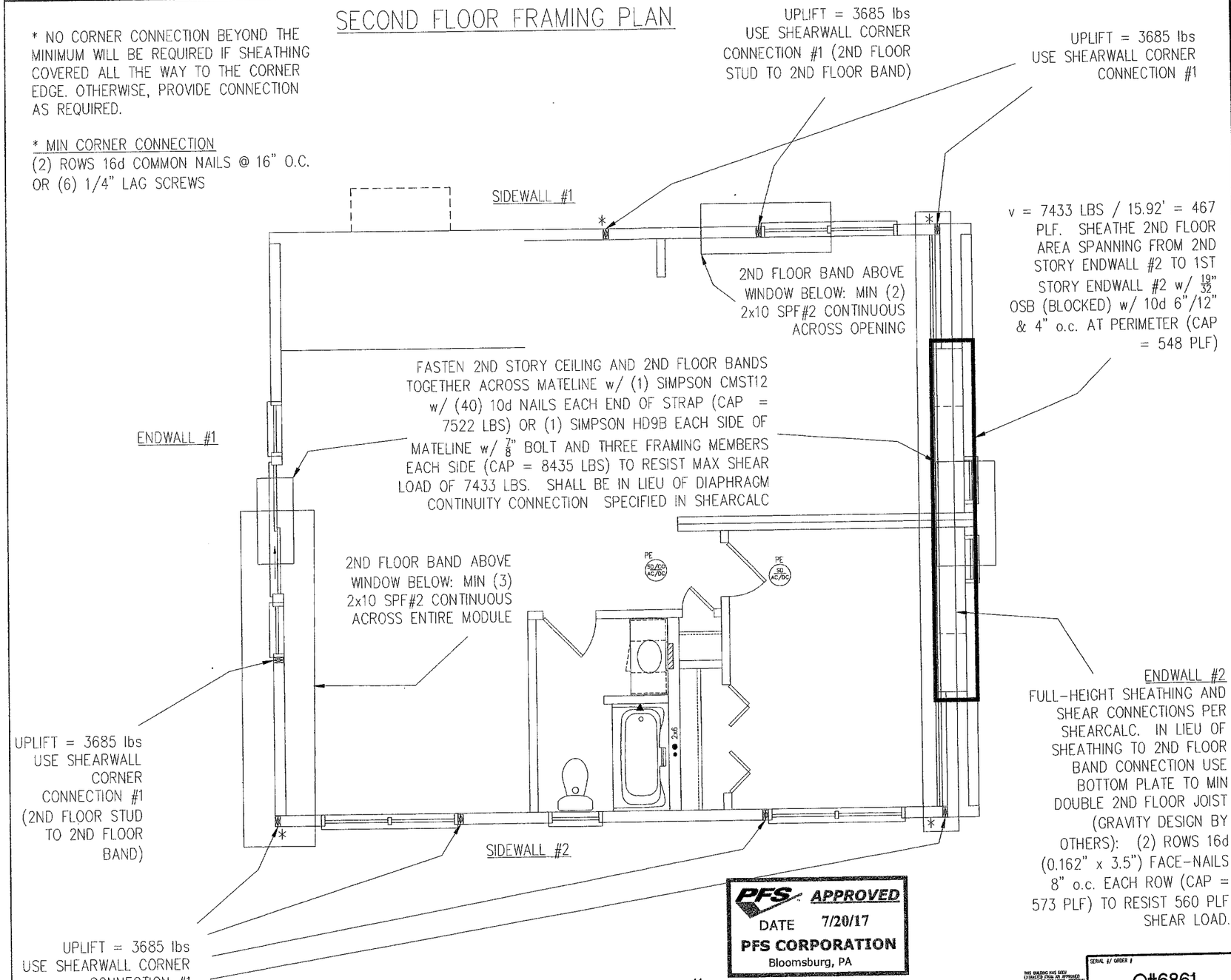
DRAWN BY: GLENCO/TH | DATE: 03/14/08 | SCALE: NTS | CHECKED BY:

FILE:
SQ.FT.:
STATE:
TYPE:
MODEL:
DRAWING: PLUMBING NOTES
SHEET: PL3

SECOND FLOOR FRAMING PLAN

* NO CORNER CONNECTION BEYOND THE MINIMUM WILL BE REQUIRED IF SHEATHING COVERED ALL THE WAY TO THE CORNER EDGE. OTHERWISE, PROVIDE CONNECTION AS REQUIRED.

* MIN CORNER CONNECTION
(2) ROWS 16d COMMON NAILS @ 16" O.C.
OR (6) 1/4" LAG SCREWS



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DATE 7/20/17
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Bloomsburg, PA

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REVISION	DATE	BY
PRELIM	11/15/16	PJF
REV. PRELIM	02/15/17	TLM
FINAL	6/2/17	HLB

BUILDER: PLEASANT BAY HOMES
HOMEOWNER/PROJECT: ELIZABETH GILLIS 2
ADDRESS: 110 HARBOR WAY
CITY: POCASSET
STATE: MA
ZIP: 02559
COUNTY: BARNSTABLE
SNOW LOAD (LBS): 30
WIND SPEED (MPH): 110
ORDER NO: 6861
SERIAL NO:
SQFT: 1,980
TYPE: CAPE
FILE NAME: O#6861-2004

THIS BUILDING WAS BUILT/ERECTED FROM AN APPROVED SYSTEMS OR PCS MODEL APPROVAL
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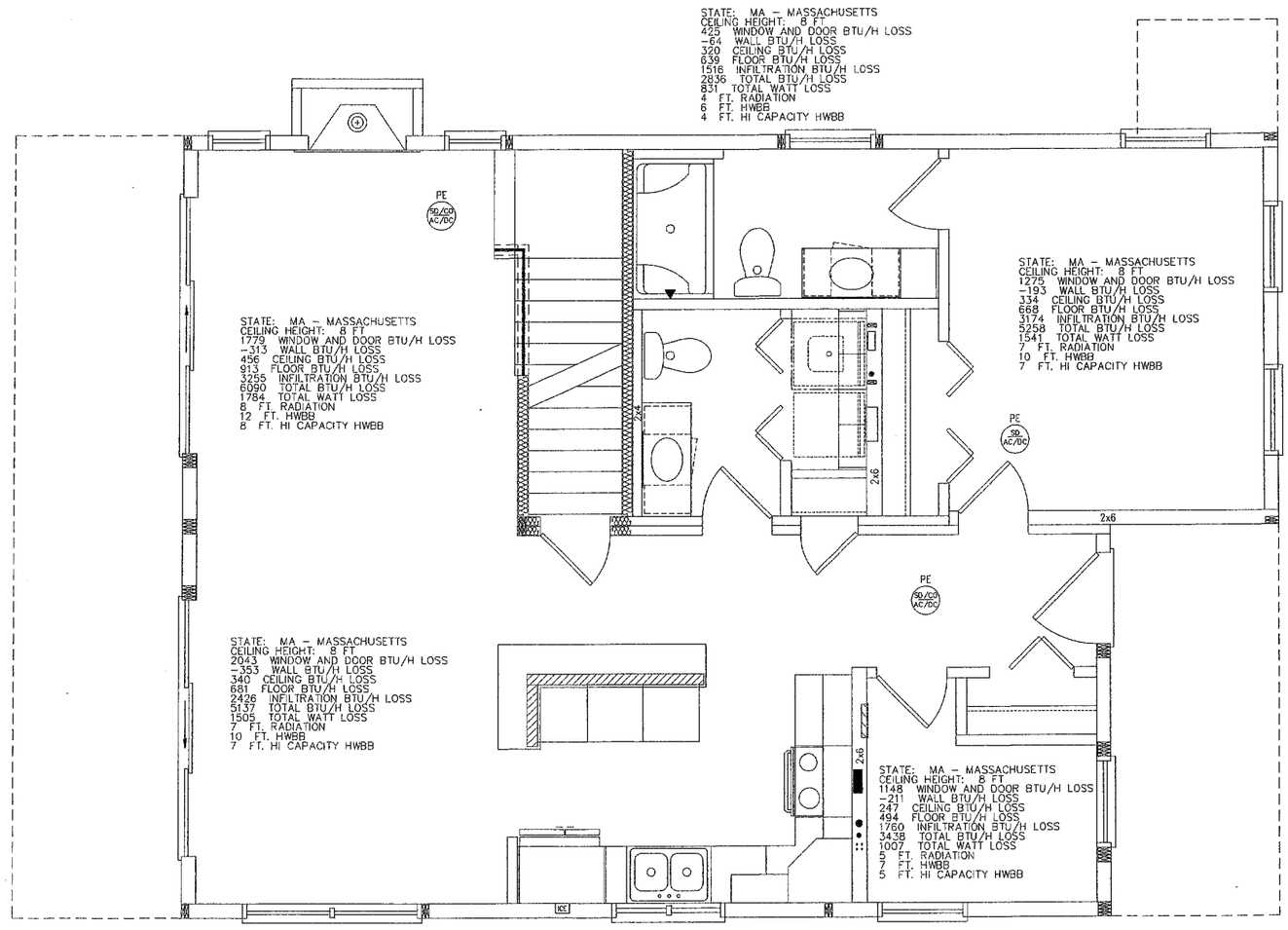
SERIAL # / ORDER #: O#6861

PAGE #:



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SERIAL # / ORDER #: O#6861

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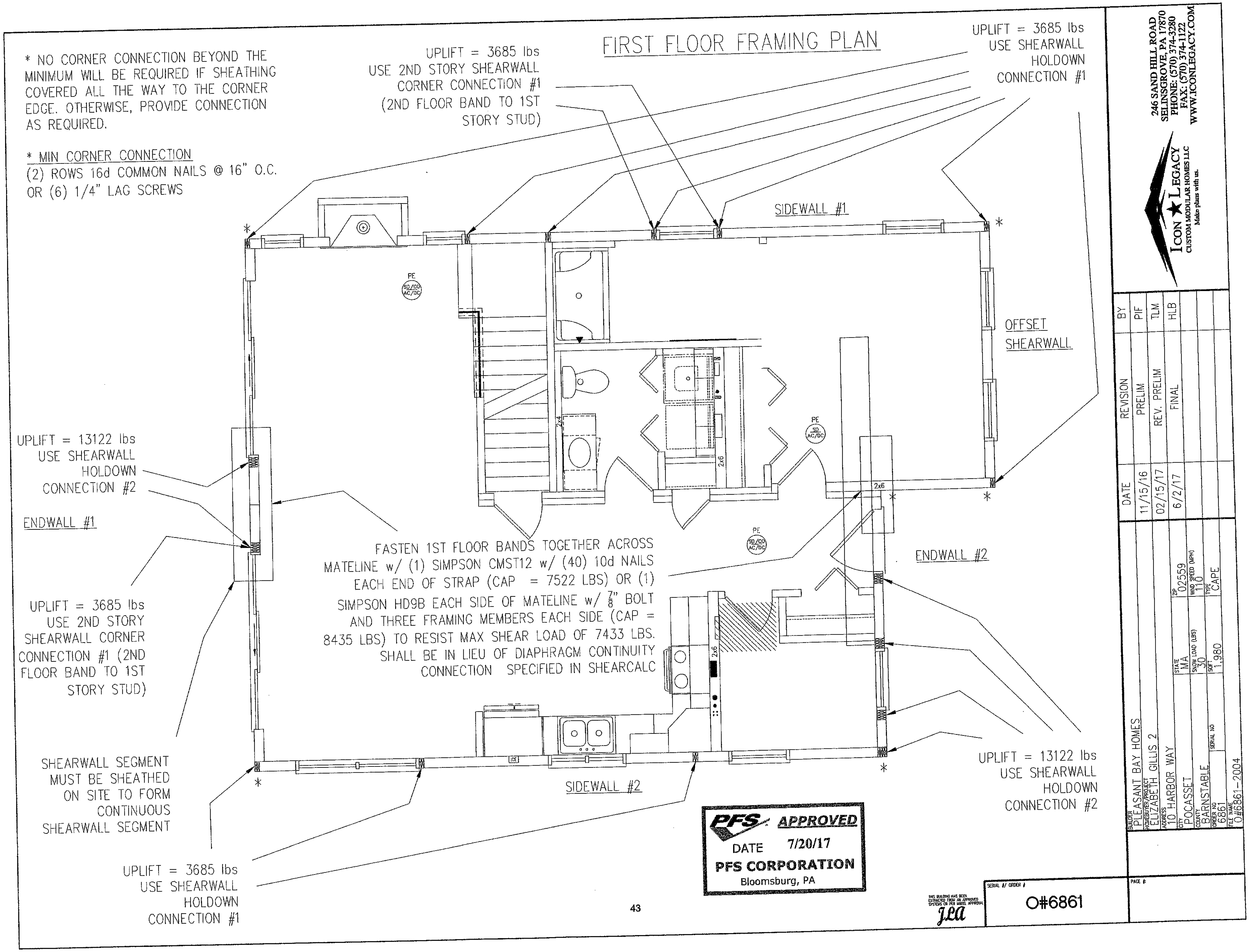
SERIAL NO:
SQFT: 1,980
TYPE: CAPE
FILE NAME: O#6861

1ST STORY HEAT LOSS



FIRST FLOOR FRAMING PLAN
* NO CORNER CONNECTION BEYOND THE MINIMUM WILL BE REQUIRED IF SHEATHING COVERED ALL THE WAY TO THE CORNER EDGE. OTHERWISE, PROVIDE CONNECTION AS REQUIRED.
* MIN CORNER CONNECTION
(2) ROWS 16d COMMON NAILS @ 16" O.C. OR (6) 1/4" LAG SCREWS
UPLIFT = 3685 lbs USE 2ND STORY SHEARWALL CORNER CONNECTION #1 (2ND FLOOR BAND TO 1ST STORY STUD)
UPLIFT = 3685 lbs USE SHEARWALL HOLDOWN CONNECTION #1
SIDEWALL #1
OFFSET SHEARWALL
UPLIFT = 13122 lbs USE SHEARWALL HOLDOWN CONNECTION #2
ENDWALL #1
FASTEN 1ST FLOOR BANDS TOGETHER ACROSS MATELINE w/ (1) SIMPSON CMST12 w/ (40) 10d NAILS EACH END OF STRAP (CAP = 7522 LBS) OR (1) SIMPSON HD9B EACH SIDE OF MATELINE w/ 7/8" BOLT AND THREE FRAMING MEMBERS EACH SIDE (CAP = 8435 LBS) TO RESIST MAX SHEAR LOAD OF 7433 LBS. SHALL BE IN LIEU OF DIAPHRAGM CONTINUITY CONNECTION SPECIFIED IN SHEARCALC
ENDWALL #2
UPLIFT = 3685 lbs USE 2ND STORY SHEARWALL CORNER CONNECTION #1 (2ND FLOOR BAND TO 1ST STORY STUD)
SHEARWALL SEGMENT MUST BE SHEATHED ON SITE TO FORM CONTINUOUS SHEARWALL SEGMENT
SIDEWALL #2
UPLIFT = 13122 lbs USE SHEARWALL HOLDOWN CONNECTION #2
UPLIFT = 3685 lbs USE SHEARWALL HOLDOWN CONNECTION #1
PFS APPROVED
DATE 7/20/17
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