Scope of Work: HVAC Installation for Two-Story Modular Unit (one or all six)

Project Overview

- Installation of **HVAC systems** for two-story modular buildings, each approximately **1,200 square feet**.
- Installation of a Panasonic ERV100 with ducts and vents.
- Systems to include **high-efficiency multi-zone mini-split systems** with **SEER rating exceeding 20,000**.
- Each modular unit to be served by **two outdoor condensers**.
- Each unit to have **four indoor heads**:
    - **Two 7,000 BTU heads** for second-floor bedrooms.
    - **One 9000 BTU head for main bedroom**
    - **One 12,000 BTU heads** for first-floor common areas.

Scope of Work Details

1. System Design & Equipment Specification

- Provide design and load calculations to confirm correct equipment sizing.
- Specify and procure mini-split systems exceeding 20,000 SEER for high energy efficiency.
- Verify compatibility with modular construction and structural limitations.
- Specify insulated line sets, condensate management, and controls.

2. Equipment Delivery & Staging

- Coordinate delivery to project site, ensuring proper staging to minimize delays.
- Protect equipment from weather and damage during storage and installation.

3. Installation of Outdoor Condensers (2 per Unit, 4 Total)

- Set and secure condenser units on appropriate exterior stands.
- Install vibration isolation pads and weatherproofing.
- Connect refrigerant lines, power, and communication wiring.

4. Installation of Indoor Heads (4 per Unit, 8 Total)

- Install indoor wall-mounted heads in designated locations:
    - Two 7,000 BTU heads per unit (bedrooms).

    - One 9000 BTU Head in main bedroom
    - One 12,000 BTU heads per unit (first-floor living spaces).
- Secure wall brackets and ensure level mounting.
- Route and conceal refrigerant lines, condensate lines, and wiring to meet aesthetic and code requirements.

5. Refrigerant Line Installation & Pressure Testing

- Install insulated refrigerant lines between indoor heads and outdoor condensers.
- Pressure test and leak check system per manufacturer guidelines.
- Ensure proper line separation between units to prevent cross-contamination.

6. Electrical Connections

- Provide dedicated electrical circuits for each condenser per unit.
- Coordinate with electrical contractor to install and connect power.
- Install and program control interfaces for each indoor head, including remote controls or wall-mounted thermostats.

7. Condensate Drainage System

- Install gravity drains or pumps as needed to manage condensate from each indoor head.
- Confirm proper drainage and slope to prevent backflow or clogging.

8. System Commissioning & Startup

- Perform full system startup and commissioning.
- Check refrigerant levels, airflow, and equipment performance.
- Ensure all zones are functional and balanced.
- Demonstrate operation and maintenance procedures to project team.

9. Testing & Verification

- Conduct system performance testing to verify SEER compliance and indoor comfort.
- Document equipment settings and performance benchmarks.
- Deliver O&M manuals, warranties, and manufacturer documentation.

10. Closeout & Final Documentation

- Provide as-built documentation, including equipment locations, line set paths, and electrical connections.
- Deliver system warranty information and maintenance schedule.
- Train owner/occupant on system operation and basic maintenance.

ERV Installation Details

1. System Design & Equipment Selection

- Confirm building ventilation requirements based on **occupancy, square footage, and building envelope tightness**.
- Select **appropriate capacity ERV** to meet ventilation needs while maintaining balanced air exchange.
- Design supply and return duct routes for effective distribution across both floors.
- Integrate ERV with HVAC zones for efficient, balanced operation.

2. Equipment Delivery & Staging

- Coordinate delivery and protect ERV equipment from damage and weather exposure.
- Stage ERV unit, ducting, and accessories for installation.

3. ERV Mounting & Installation

- Mount ERV in designated mechanical space (utility closet)
- Securely fasten to structure to minimize vibration and noise.
- Ensure proper clearances for maintenance access.

4. Fresh Air Intake and Exhaust Installation

- Install dedicated **fresh air intake duct**, routed to exterior wall.
- Install **exhaust duct**, routed to exterior, to expel stale indoor air.
- Ensure exterior terminations are weatherproof and protected from pests.

5. Supply and Return Ducting

- **Supply Duct:** Distribute fresh air to key living spaces, such as living rooms, bedrooms, and common areas.
- **Return Duct:** Draw stale air from bathrooms, kitchens, or laundry areas to maximize removal of moisture and pollutants.

10. Testing & Commissioning

- Verify balanced airflow between supply and return.
- Test fresh air intake and exhaust flow rates.
- Confirm controls, timers, and sensors are fully functional.
- Demonstrate system operation to project team.

11. Documentation & Closeout

- Provide as-built diagrams showing duct layout, system settings, and control locations.
- Deliver operation & maintenance manuals.

- Train owners/operators on proper operation and filter replacement.

IMPORTANT NOTE :
PER 780 CMR: STATE BOARD OF BUILDING REGULATIONS AND STANDARDS SECTION 110.R3.8.1.1 OWNER'S AGENT. A CSL, DULY LICENSED IN ACCORDANCE WITH 780 CMR 110.R5, SHALL , IN ACCORDANCE WITH 780 CMR 1.00: SCOPE AND ADMINISTRATION, BE HIRED BY AND ACT AS THE AGENT FOR THE OWNER FOR THE PURPOSE OF APPLYING FOR AND OBTAINING ANY AND ALL PERMITS REQUIRED FOR THE FIELD INSTALLATION OF ALL PRODUCT. THE CSL SHALL BE RESPONSIBLE FOR THE CONSTRUCTION OF THE FOUNDATION SYSTEM, THE ATTACHMENT TO THE FOUNDATION, AND THE COMPLETION OF THE PRODUCT, AND ALL PERTINENT SITE WORK REQUIRED BY SECTION 105 OF 780 CMR AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE OFFICE AND THE BUILDING OFFICIAL BEFORE THE PLACEMENT AND CONNECTION OF SUCH UNITS SHALL BEGIN.

ALL ON-SITE CONNECTIONS TO BE VERIFIED BY THE CONSTRUCTION SUPERVISOR

THERE ARE NO LOT LINE FIRE SEPERATION REQUIREMENTS

THIS BUILDING IS PREPPED FOR ON-SITE SOLAR PANELS

THIS SITE IS LOCATED IN A STRETCH CODE COMMUNITY

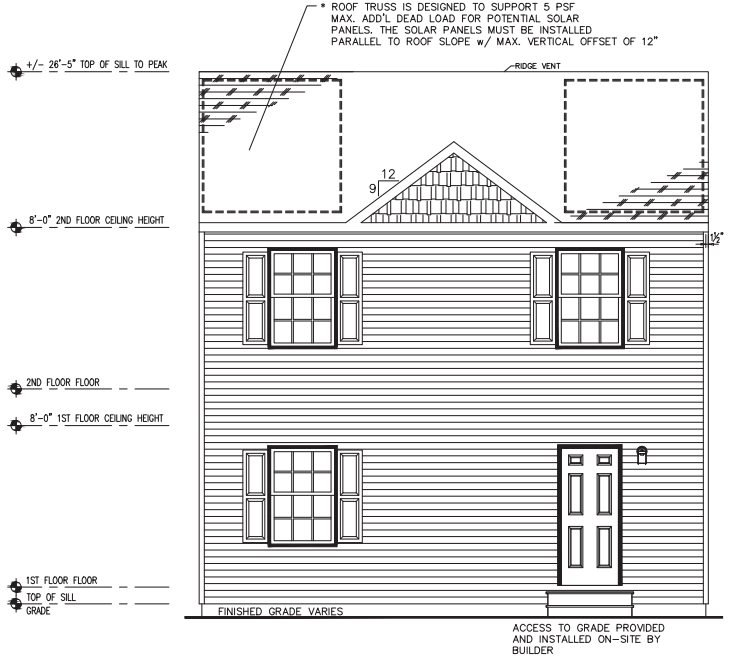
THIS HOME HAS BEEN DESIGNED SPECIFICALLY FOR:

HABITAT

LOT 13 NORTH PLAIN ROAD
PITTSFIELD,MA 01201
BERKSHIRE COUNTY

BUILDER:

BERKSHIRE COUNTY MODULARS



FRONT ELEVATION

NOTES:

1. ITEMS SHOWN ON THE EXTERIOR ELEVATION DRAWINGS ARE FOR ILLUSTRATIVE PURPOSES ONLY
2. GRILLS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY (SEE WINDOW MANUFACTURER CATALOG FOR ACTUAL GRILL PATTERN)

DRAWING INDEX:

SITE CONDITIONS:

GROUND SNOW LOAD:	50 PSF
WIND SPEED:	115 VULT MPH
EXPOSURE:	B
SEISMIC CATEGORY:	B
USE GROUP:	SINGLE FAMILY
CONSTRUCTION TYPE:	VB WOOD FRAME UNPROTECTED

SQUARE FOOTAGE:

FIRST FLOOR:	600 SQ. FT.
SECOND FLOOR:	600 SQ. FT.
BONUS ROOM:	- SQ. FT.
GARAGE:	- SQ. FT.
TOTAL:	1,200 SQ. FT.
OVERALL SIZE	24'-0" x 25'-0"
MODEL:	TWO STORY

BUILDER / OWNER SIGNATURES:

ACCEPTED BY: DATE:

TITLE:

Champion Factory 041
Champion Modular, Inc.
10642 S. Susquehanna Trail
Liverpool, PA 17045
CHAMPION MODULAR

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
06/23/2024

APPROVERS SEAL

PFS CORPORATION
Approval Limited to Factory Built Portion Only
State: Massachusetts
Signature: Harold Roup
Title: Staff Plan Reviewer
Date: 4/24/24

MODIFICATIONS

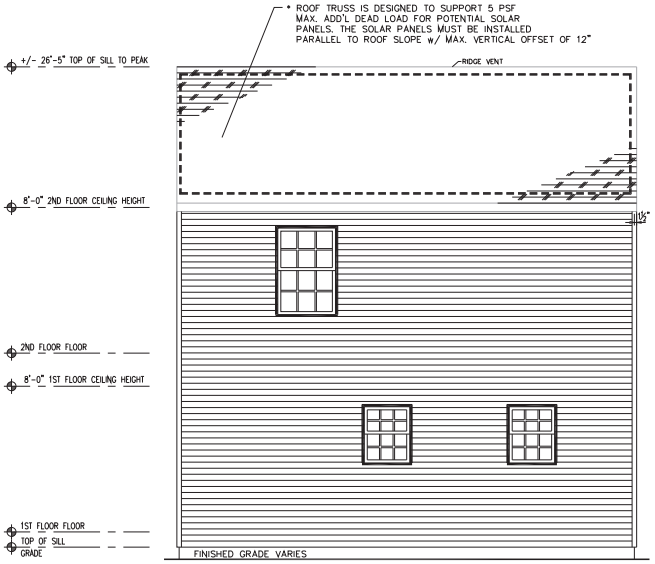
PD2	6/29/23MAB
PD3	1/16/24BAM
FN	3/12/24MAB

PROJECT: 45054 TWO STORY

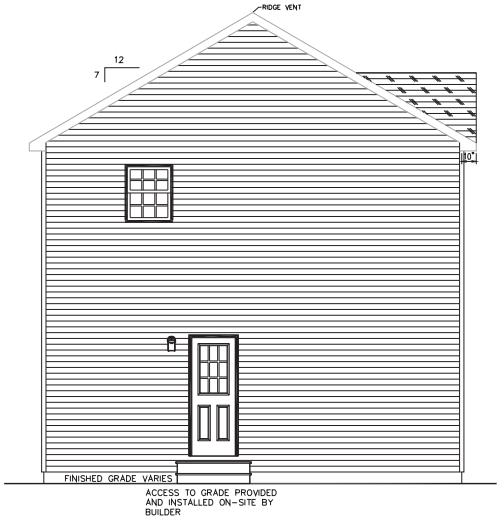
TITLE: COVER SHEET

DRAWN BY: BM
DATE: 06-15-23
SCALE:
FILENAME: 45054 FN
PD

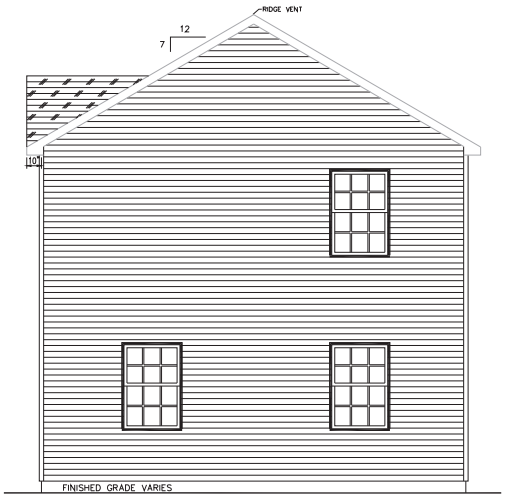
SHEET: COVER



REAR ELEVATION



LEFT ELEVATION



RIGHT ELEVATION

NOTES:

1. ITEMS SHOWN ON THE EXTERIOR ELEVATION DRAWINGS ARE FOR ILLUSTRATIVE PURPOSES ONLY

BUILDER / OWNER SIGNATURES:

ACCEPTED BY: DATE:

TITLE:

CHAMPION FACTORY 041
CHAMPION MODULAR, INC.
10642 S. SUSQUEHANNA TRAIL
LIVERPOOL, PA 17045

CHAMPION MODULAR

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

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COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
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REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

MODIFICATIONS

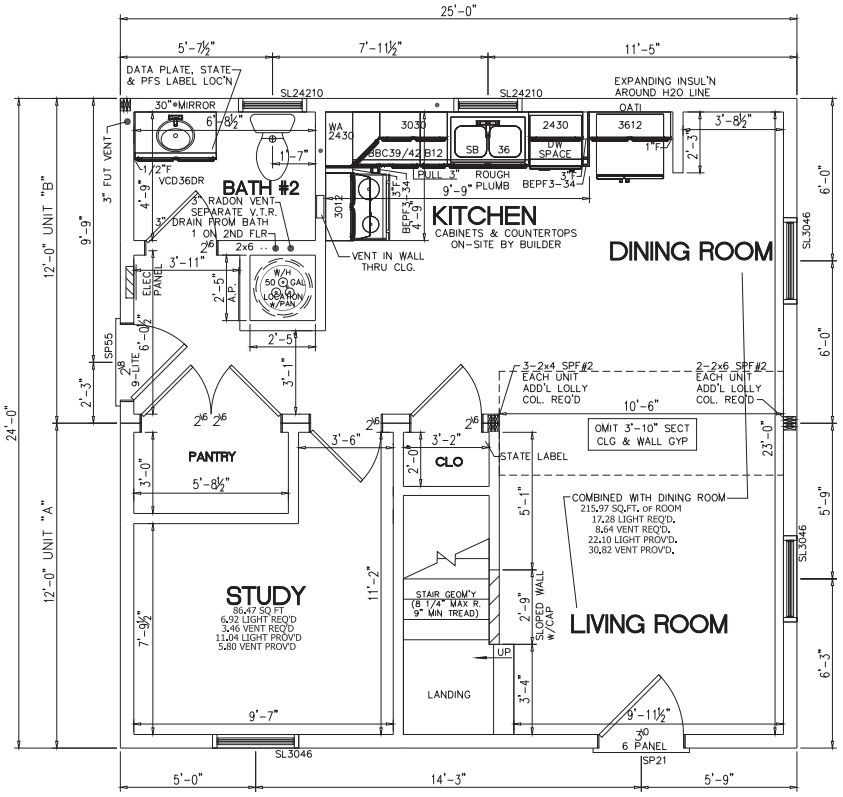
PROJECT: 45054 TWO STORY

TITLE: ELEVATIONS

DRAWN BY: BM
DATE: 06-15-23
SCALE:
FILENAME: 45054 FN
PD

SHEET: ELEVATIONS

NO DOOR/WINDOW HEADERS, EXCEPT AS NOTED
DOUBLE 2x12 SPF#2 CEILING PERIMETER CANNOT BE SPLICED OVER OPENINGS
OPENINGS WILL HAVE A SINGLE PLY HEADER
(1ST LEVEL OF 2-STORY....UNIT A & B)



NOTES:
1. 2x6 EXT WALLS @ 16" O.C./2x4 MARR WALLS @ 16" O.C. (EXCEPT AS NOTED)
2. 8'-0" CLG HT.
3. 2x10 SPF#2 FLOOR JOISTS @ 16" O.C.
4. ROOF SYSTEM TO BE 16" O.C.
5. SILVERLINE 3000 SERIES DOUBLE HUNG WINDOWS
6. BASED ON 115 VULT MPH WIND LOAD & EXPOSURE "B"
7. SITE LOCATION: PITTSFIELD, MA; BERKSHIRE COUNTY; 50 PSF GROUND SNOW LOAD
8. CLG. GIRDER OVER LR-DR TO BE: 2-1/2"x11 1/4"x15'-4"&18' M.L. (PER MODULE)
9.
10. RANGE HOOD AND BATH FANS ARE VENTED TO EXTERIOR.
11. BUILDER SHALL SUPPLY AND INSTALL WHOLE HOUSE VENTILATION w/ A MAX OF 1 SONE. THIS INSTALLATION SHALL BE INSPECTED AND APPROVED BY THE LOCAL JURISDICTION. THE FACTORY TO SUPPLY AND AN ENERGY STAR BATH FAN WITH TIMER
12. BUILDER SHALL SUPPLY AND INSTALL A DUCT TIGHTNESS AND BLOWER DOOR TEST, ALL TESTING MUST BE DONE BY A MASS QUALIFIED PROFESSIONAL

*** A 48-HOUR NOTICE, PRIOR TO THE SET, MUST BE GIVEN TO THE LOCAL BUILDING AUTHORITY, BY THE CSL OF RECORD FOR THIS PROJECT. IF ANY SITE CONNECTIONS ARE CONCEALED PRIOR TO INSPECTION, THE BUILDING OFFICIAL CAN REQUEST REMOVAL OF ELEMENTS THAT CONCEAL THESE CONNECTIONS TO PROVIDE ACCESS.

*** ALL CONNECTIONS DONE ON-SITE MUST BE INSPECTED BY THE CONSTRUCTION SUPERVISOR

---MECHANICALLY FASTEN THE CEILING DRYWALL---

••• WINDOWS INSTALLED WITHIN 24" OF THE FINISHED FLOOR, THE BUILDER WILL INSTALL WINDOW GUARDS IN ACCORDANCE WITH IRC (2015 IRC, R312.2)

* ALL TUB/SHOWER COMPARTMENTS TO CONFORM TO "248 CMR 10.10(7)(c) *

MASSACHUSETTS

MA FUEL / GAS / PLUMBING CODE (248 CMR)
MA SINGLE AND TWO-FAMILY DWELLING CODE (780 CMR) 9TH EDITION
2015 INTERNATIONAL MECHANICAL CODE WITH MA AMENDMENTS
2021 INTERNATIONAL ENERGY CONS. CODE WITH MA STRETCH CODE AMENDMENTS
2023 NATIONAL ELECTRICAL CODE w/ MA AMENDMENTS

BUILDER / OWNER SIGNATURES:

ACCEPTED BY: DATE:

TITLE:

CHAMPION FACTORY 041
CHAMPION MODULAR, INC.
10642 S. SUSQUEHANNA TRAIL
LIVERPOOL, PA 17045

BRAND: excel HOMES

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CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

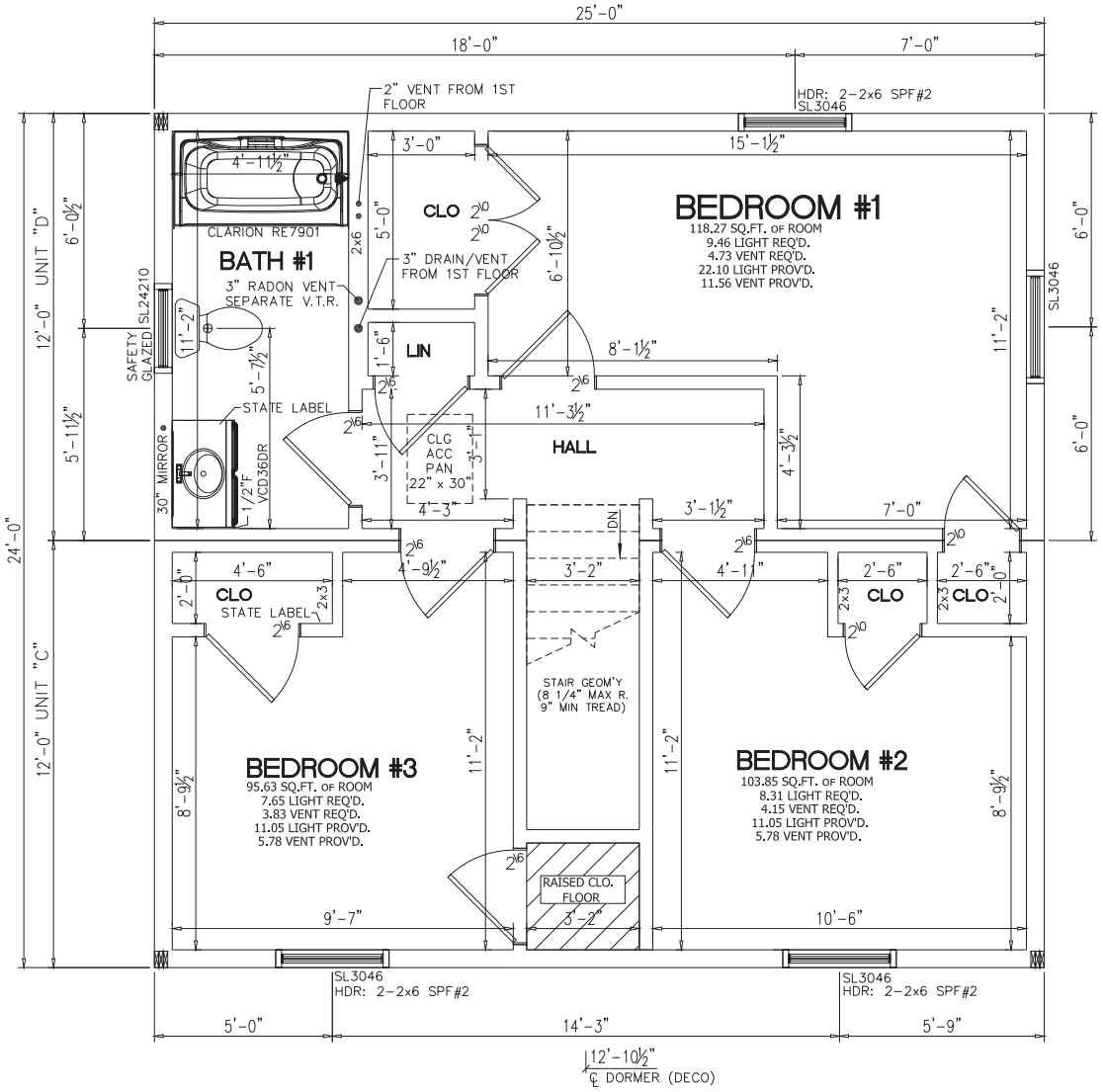
MODIFICATIONS

PROJECT: 45054 TWO STORY

TITLE: FIRST FLOOR FLOOR PLAN

DRAWN BY: BM
DATE: 06-15-23
SCALE: 3/16" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: 1ST FLR



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4. ROOF SYSTEM TO BE 16" O.C.
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CUSTOMER/PROJECT: HABITAT

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4/24/24
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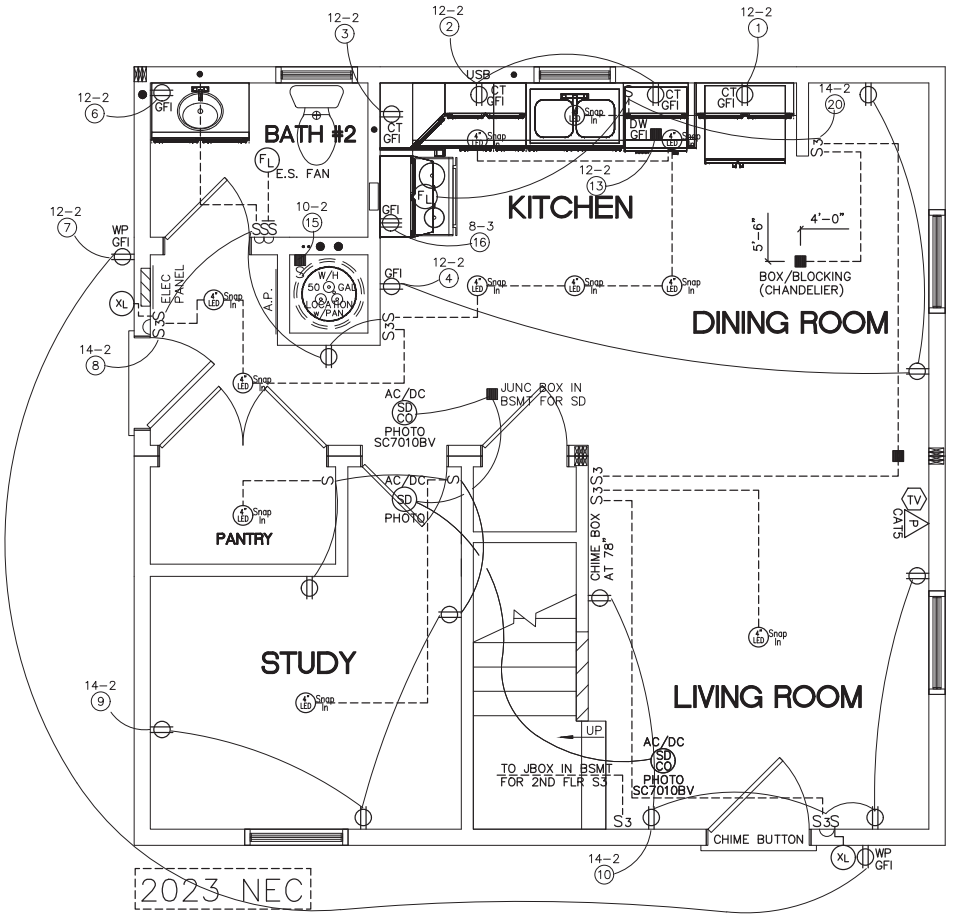
MODIFICATIONS

PROJECT: 45054 TWO STORY

TITLE: SECOND FLOOR FLOOR PLAN

DRAWN BY: BM
DATE: 06-15-23
SCALE: 3/16" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: 2ND FLR



THE BUILDER IS RESONSIBLE TO PROVIDE/INSTALL AN "HRV" OR "ERV" SYSTEM PER THE REQUIRED CODE REQUIREMENTS

THE BUILDER IS RESONSIBLE TO PROVIDE/INSTALL AN EV CAR CHARGER PER THE REQUIRED CODE REQUIREMENTS

-- ALL INTERIOR LIGHTS REQUIRE A DIMMER, OCCUPANCY SENSOR OR ANOTHER CONTROLED DEVICE INSTALLED OR BUILT INTO THE FIXTURE (EXCEPT BATHS, HALLS AND EXTERIOR LIGHTS)

-- ALL PERMANENTLY INSTALLED LIGHTING FIXTURES (EXCLUDING KITCHEN APPLIANCES) SHALL CONTAIN ONLY HIGH-EFFICANCY LIGHTING SOURCES.

-- EXTERIOR LIGHTING CONTROLS - FOR PERMANENTLY EXTERIOR LIGHTING THAT EXCEEDS 30 WATTS (TOTAL COMBINED)
A) LIGHTING CONTROL BY MANUAL ON/OFF SWITCH THAT PERMITS AUTO SHUTOFF ACTIONS
B) LIGHTING SHALL AUTO-OFF IN DAY LIGHT
C) OVERRIDE CONTROLS SHALL NOT BE PRESET TO CHANGE FOR 24 HOURS MAXIMUM

INSULATED STAPLES REQUIRED TO SUPPORT ALL WIRING
600 SQ. FT. SMOKE DETECTORS REQUIRED EVERY 1000 SQ. FT.

* THIS PLAN MAY HAVE ADDITIONAL APPLIANCES/FIXTURES ADDED TO THE ELECTRICAL SCHEMATIC AND/OR PANEL BOX PROVIDING THE LOADING DOESN'T EXCEED THE MAXIMUM ALLOWED BY STATE & LOCAL CODES.
* E-CUTOFF SWITCH ON-SITE BY OTHERS PER ALL STATE & LOCAL CODES.
* ALL BRANCH CIRCUITS SUPPLYING 15 & 20 AMPERE OUTLETS IN LIVING SPACES ARE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER IN ACCORDANCE WITH SECTION 210.12 2023 NEC.
* PER 406.12 OF 2023 NEC ALL 125 -VOLT, 15 AND 20 AMP RECEPTS INSTALLED IN AREAS SPECIFIED BY 210.52, SHALL BE LISTED TAMPER RESISTANT TYPE.
* 50# LIGHT BOXES REQUIRED
* 70# PADDLE FAN BOXES REQUIRED
* SURGE PROTECTION:
THE BUILDER IS RESPONSIBLE FOR SURGE PROTECTION FOR THE ENTIRE HOUSE PER THE 2023 NEC, SECTION 230.67
* EMERGENCY DISCONNECT:
THE BUILDER IS RESPONSIBLE FOR SETTING UP AN EMERGENCY DISCONNECT PER THE 2023 NEC, SECTION 230.85

BUILDER / OWNER SIGNATURES:

ACCEPTED BY: DATE:

TITLE:

Champion Factory 041
Champion Modular, Inc.
10642 S. Susquehanna Trail
Liverpool, PA 17045

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL
COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL
PFS Corporation
Northeast Region
APPROVED
H Raup - 3
4/24/24
Approval limited to Factory Built Portion

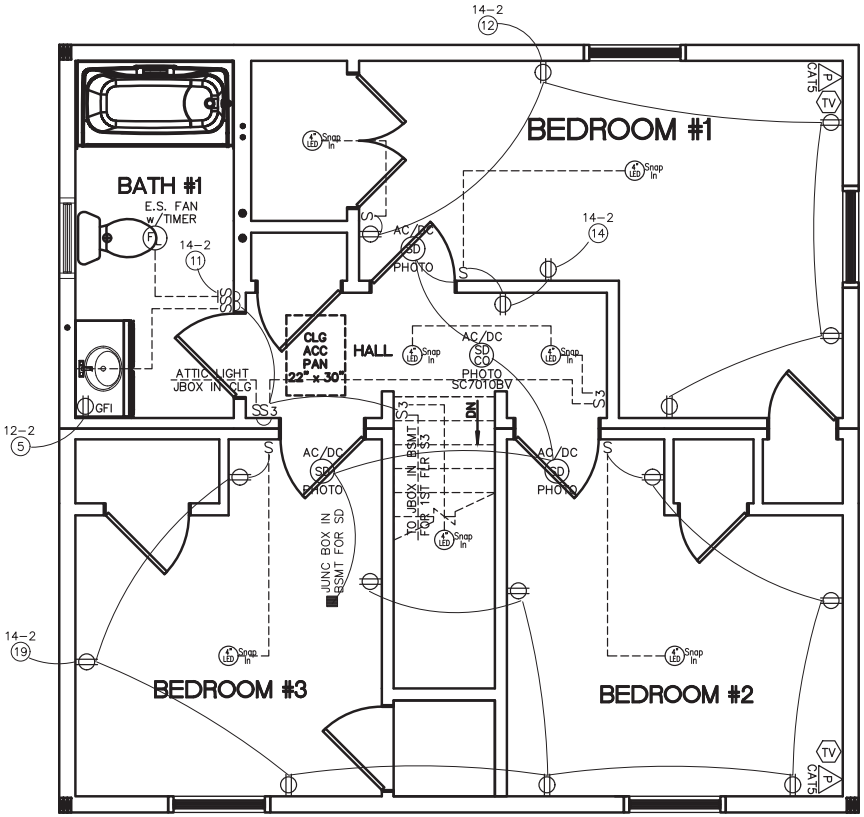
MODIFICATIONS

PROJECT: 45054 TWO STORY

TITLE: FIRST FLOOR ELECTRICAL PLAN

DRAWN BY: BM
DATE: 06-15-23
SCALE: 3/16" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: 1ST ELEC



2023 NEC

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600 SQ. FT. SMOKE DETECTORS REQUIRED EVERY 1000 SQ. FT.

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  THE BUILDER IS RESPONSIBLE FOR SETTING UP AN EMERGENCY DISCONNECT PER THE 2023 NEC, SECTION 230.85

THE BUILDER IS RESONSIBLE TO PROVIDE/INSTALL AN "HRV" OR "ERV" SYSTEM PER THE REQUIRED CODE REQUIREMENTS

THE BUILDER IS RESPONSIBLE TO PROVIDE/INSTALL AN EV CAR CHARGER PER THE REQUIRED CODE REQUIREMENTS

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-- EXTERIOR LIGHTING CONTROLS - FOR PERMANENTLY EXTERIOR LIGHTING THAT EXCEEDS 30 WATTS (TOTAL COMBINED)
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B) LIGHTING SHALL AUTO-OFF IN DAY LIGHT
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BUILDER / OWNER SIGNATURES:	
ACCEPTED BY:	DATE:
TITLE:	

Champion Factory 041
Champion Modular, Inc.
10642 S. Susquehanna Trail
Liverpool, PA 17045

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

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COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL
PFS Corporation
Northeast Region
APPROVED
H Raup - 3
4/24/24
Approval limited to Factory Built Portion

MODIFICATIONS

PROJECT: 45054 TWO STORY

TITLE: SECOND FLOOR FLOOR PLAN

DRAWN BY: BM
DATE: 06-15-23
SCALE: 3/16" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: 2ND ELEC

CIRCUIT SCHEDULE (200 AMP PANEL)

*WIRE WITH GROUND ALL CIRCUITS

CRT. NUM.	PANEL NUM.	BRK	WIRE	LOCATION	VOLT	CRT. NUM.	PANEL NUM.	BRK	WIRE	LOCATION	VOLT
1	1	20A	12-2	REFER	110	8	2	15A	14-2	GENERAL LIGHTS & REC	110
2	3	20A	12-2	APPLIANCE-KIT.	110	9	4	15A	14-2	GENERAL LIGHTS & REC	110
3	5	20A	12-2	APPLIANCE-KIT.	110	10	6	15A	14-2	GENERAL LIGHTS & REC	110
4	7	20A	12-2	APPLIANCE	110	11	8	15A	14-2	GENERAL LIGHTS & REC	110
5	9	20A	12-2	BATH #1	110	12	10	15A	14-2	GENERAL LIGHTS & REC	110
6	11	20A	12-2	BATH #2	110	14	12	15A	14-2	GENERAL LIGHTS & REC	110
7	13	20A	12-2	EXTERIOR REC	110	19	14	15A	14-2	GENERAL LIGHTS & REC	110
13	15	20A	12-2	DISHWASHER	110	20	16	15A	14-2	GENERAL LIGHTS & REC	110
15	17	30A	10-2	WATER HEATER	220		18				
	19						20				
16	21	40A	8-3	RANGE	220		22				
	23						24				
	25						26				
	27						28				
	29						30				
	31						32				
	33						34				
	35			EV READY			36				
–	37			RESERVE FOR SOLAR			38			RESERVED SPACE	
–	39			RESERVE FOR ERV/HRV			40			RESERVED SPACE	

THE EV, SOLAR AND ERV/HRV CIRCUITS
AND BREAKERS ARE ON-SITE BY THE BUILDER

BUILDER / OWNER SIGNATURES:

ACCEPTED BY: DATE:

TITLE:

CHAMPION FACTORY 041
CHAMPION MODULAR, INC.
10642 S. SUSQUEHANNA TRAIL
LIVERPOOL, PA 17045

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL:

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

MODIFICATIONS

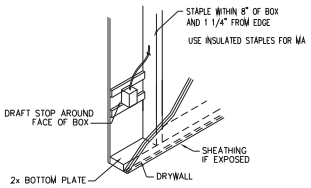
PROJECT: 45054 TWO STORY

TITLE: ELECTRIC INFO

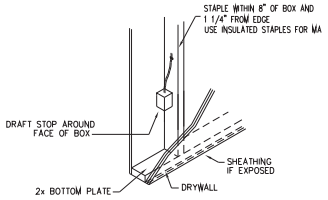
DRAWN BY: BM
DATE: 06-15-23
SCALE: 1/8" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: PANEL

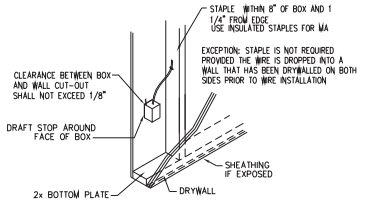
EXCEPTION: STAPLE IS NOT REQUIRED PROVIDED THE WIRE IS DROPPED INTO A WALL THAT HAS BEEN DRYWALLED ON BOTH SIDES PRIOR TO THE INSTALLATION OF A RECEPTACLE APPROVED FOR CLOSED CONSTRUCTION INSTALLATION



ELECTRICAL BOX MOUNTED BETWEEN WOOD STRIPS

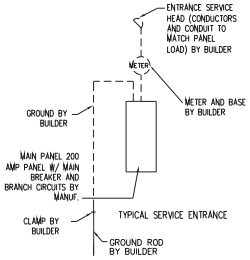


ELECTRICAL BOX MOUNTED TO STUD

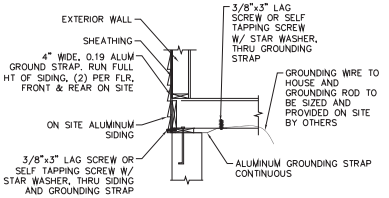


SGL GANG UL LISTED ELECTRICAL BOX WITH "W" WING BRACKETS

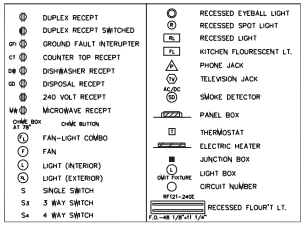
BOXES IN FIRE SEPARATION ASSEMBLIES SHALL NOT BE IN THE SAME STUD CAVITY BETWEEN DWELLING UNITS. BOXES IN SEPARATIONS ARE LISTED FOR THAT USE.

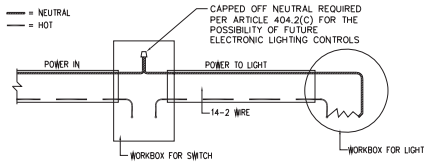


TYPICAL SERVICE ENTRANCE

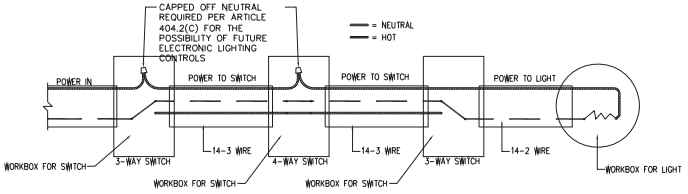


ALUMINUM SIDING GROUNDING DETAIL

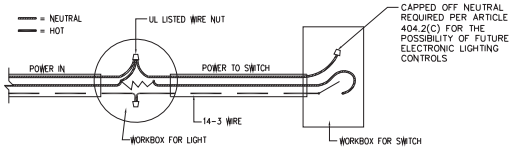




POWER TO SINGLE POLE SWITCH TO LIGHT



POWER TO 3-WAY SWITCH TO 4-WAY SWITCH TO 3-WAY SWITCH TO LIGHT



POWER TO LIGHT TO SINGLE POLE SWITCH

SWITCHES SHALL BE INSTALLED AND CONNECTED PER NEC ARTICLE 404.2

BUILDER / OWNER SIGNATURES:	
ACCEPTED BY:	DATE:
TITLE:	

CHAMPION FACTORY 041
CHAMPION MODULAR, INC.
10642 S. SUSQUEHANNA TRAIL
LIVERPOOL, PA 17045
CHAMPION MODULAR

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

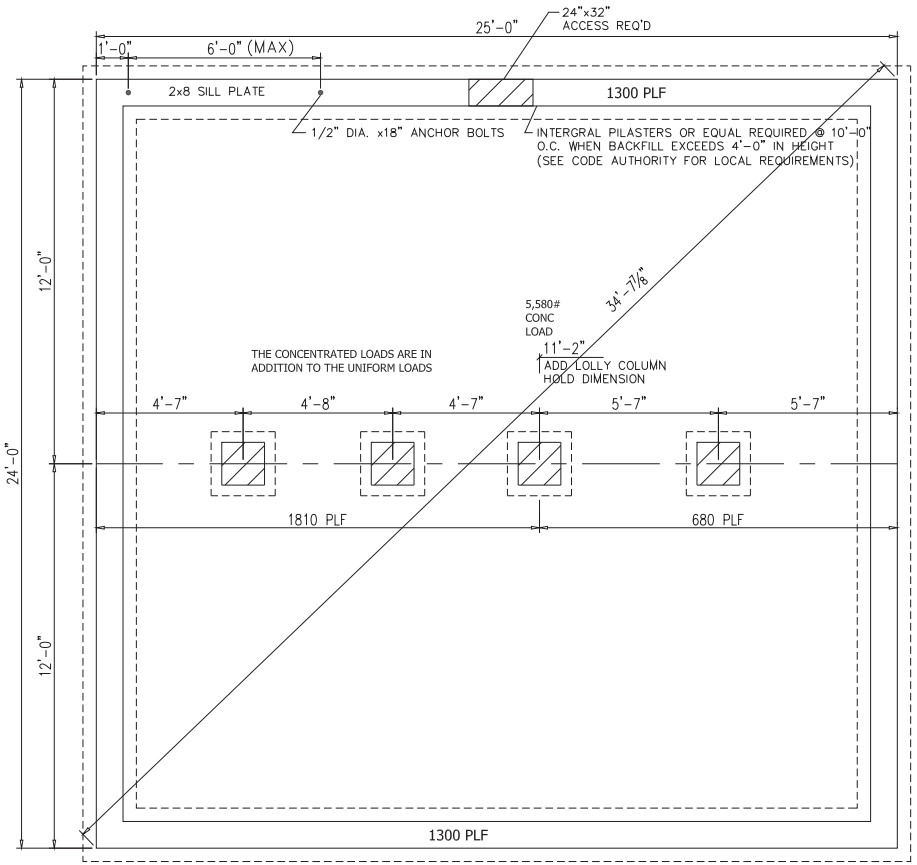
MODIFICATIONS

PROJECT: 45054 TWO STORY

TITLE: ELECTRIC INFO

DRAWN BY: BM
DATE: 06-15-23
SCALE: 1/8" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: ELEC. INFO



NOTES:

1) THIS FOUNDATION DRAWING AND NOTES ARE FOR REVIEW ONLY. ACTUAL FOUNDATION DESIGN SHALL BE DESIGNED FOR YOUR SPECIFIC SITE AS REQUIRED PER LOCAL CODE.
2) ALL CONSTRUCTION AND MATERIALS BELOW THE BOTTOM OF THE FLOOR JOISTS IS THE RESPONSIBILITY OF CHAMPION MODULAR' BUILDER. FOUNDATION WALL, FOOTER, LOLLY COLUMNS & PADS ARE ALL TO BE DETERMINED ON-SITE IN ACCORDANCE WITH LOCAL CODES & CONDITIONS
3) REINFORCED MASONRY UNIT REQUIRED AT CENTER BEARING LOCATIONS.
4) LOLLY COLUMNS ARE TO BE SPACED ACCORDING TO SPAN SCHEDULE BASED ON TYPE OF HOUSE, LOCAL SNOW LOAD & WIDTH OF UNIT. ADD'L COLUMNS MAY BE REQ'D & ARE NOTED ON FLOOR PLAN. LOLLY COLUMN SPACING IS BASED ON MIN. 1/2"x6"x12" STEEL PLATE BETWEEN COLUMN & CENTER BEAM.
5) FOUNDATION IS TO BE CONSTRUCTED IN ACCORDANCE w/ALL APPLICABLE CODES.
6) FOUNDATION SIZES REFLECT WOOD TO WOOD DIMENSIONS OF MODULAR UNITS, ALLOWING SHEATHING AND SIDING TO OVERHANG THE FOUNDATION. IF STYROFOAM IS USED FOUNDATION MAY BE INCREASED IN LENGTH AND WIDTH TO ACCOMODATE.
7) PERIMETER FLOOR JOISTS TO BE ATTACHED TO SILL PLATE w/16d NAILS AT 16" O.C.
8) INSTALLATION OF WASHER, DRYER AND/OR WATER HEATER IN BASEMENT PER STATE AND LOCAL CODES IS THE RESPONSIBILITY OF MODULAR MANUFACTURERS, BUILDER.
9) SMOKE DETECTORS IN BASEMENT SHALL BE THE RESPONSIBILITY OF THE BUILDER TO PROVIDE AND INSTALL. (COIL WIRE IN BSMT BY MODULAR MANUFACTURER, INC)
10) CRAWL SPACE FOUNDATION REQUIRES A MINIMUM 18"x24" ACCESS OPENING, INSECT & RODENT PROOF CROSS VENTS WITHIN 3' OF CORNERS AND PROVIDE 1/150 OF FLOOR AREA WITH VENTILATION.
11) SEE MODULAR MANUFACTURERS' SUBMISSION SET PAGE FOR ADDITIONAL NOTES AND DETAILS.
12) GFCI RECPT AND LIGHTS FOR BASEMENT AND CRAWLSPACES PER ALL STATE AND LOCAL CODES
13) "BACKFILLING AND TAMPING TO BE DONE PER LOCAL REQUIREMENTS"

THE BUILDER'S RA/PE IS TO DESIGN THE FOUNDATION TO THE LISTED LOADS. THE FOUNDATION MUST BE INSPECTED & APPROVED BY THE LOCAL BUILDING OFFICIAL.

FOUNDATION SHALL BE DESIGNED BY A DESIGN PROFESSIONAL WITH KNOWLEDGE OF LOCAL SOILS CONDITIONS. THIS PLAN IS MEANT ONLY TO COMMUNICATE THE DIMENSIONAL AND LOADING INFORMATION TO THE DESIGN PROFESSIONAL SO THE FOUNDATION DESIGN IS COORDINATED WITH THE REQUIREMENTS OF THE MODULAR BUILDING.

BUILDER / OWNER SIGNATURES:	
ACCEPTED BY:	DATE:
TITLE:	

CHAMPION FACTORY 041
CHAMPION MODULAR, INC.
10642 S. SUSQUEHANNA TRAIL
LIVERPOOL, PA 17045
CHAMPION MODULAR

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

MODIFICATIONS

PROJECT: 45054 TWO STORY

TITLE: FOUNDATION PLAN

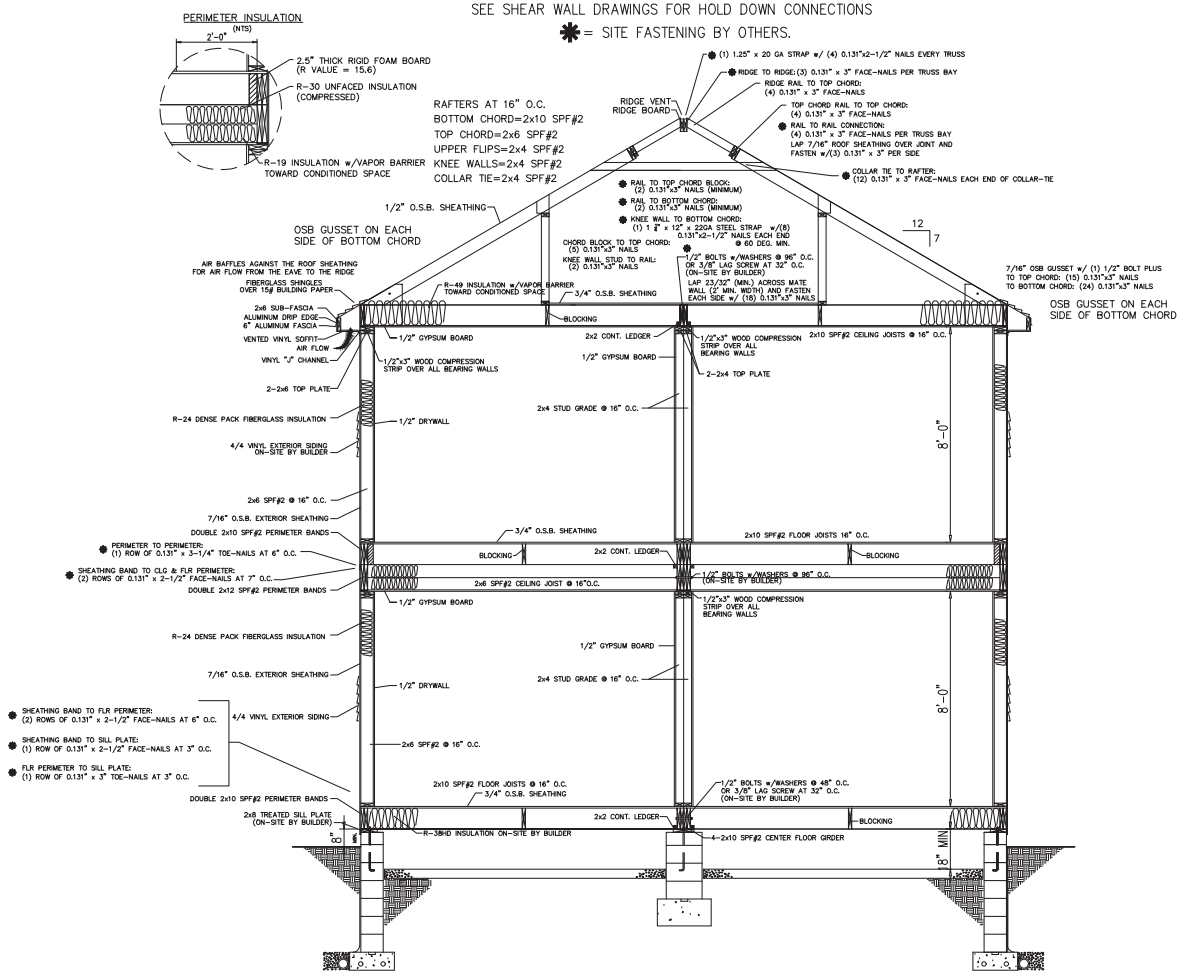
DRAWN BY: BM
DATE: 06-15-23
SCALE: 3/16" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: FOUNDATION

ON–SITE FASTENING REQUIREMENTS

SEE SHEAR WALL DRAWINGS FOR HOLD DOWN CONNECTIONS

✱ = SITE FASTENING BY OTHERS.



A WEATHER PROTECTIVE BARRIER THAT MEETS THE REQUIREMENTS OF ASTM D226 WILL BE INSTALLED UNDER THE VINYL SIDING

*** A 48–HOUR NOTICE, PRIOR TO THE SET, MUST BE GIVEN TO THE LOCAL BUILDING AUTHORITY, BY THE CSL OF RECORD FOR THIS PROJECT. IF ANY SITE CONNECTIONS ARE CONCEALED PRIOR TO INSPECTION, THE BUILDING OFFICIAL CAN REQUEST REMOVAL OF ELEMENTS THAT CONCEAL THESE CONNECTIONS TO PROVIDE ACCESS.

*** ALL CONNECTIONS DONE ON–SITE MUST BE INSPECTED BY THE CONSTRUCTION SUPERVISOR

BUILDER / OWNER SIGNATURES:	
ACCEPTED BY:	DATE:
TITLE:	

Champion Factory 041
Champion Modular, Inc.
10642 S. Susquehanna Trail
Liverpool, PA 17045

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MC

CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVALS

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

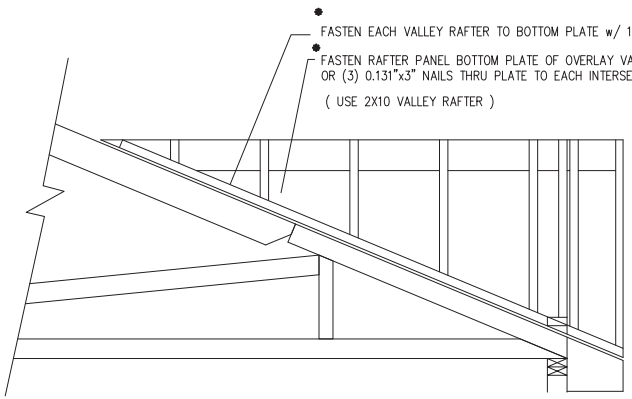
MODIFICATIONS

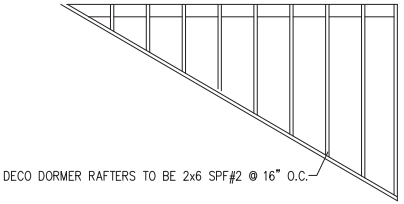
PROJECT: 45054 TWO STORY

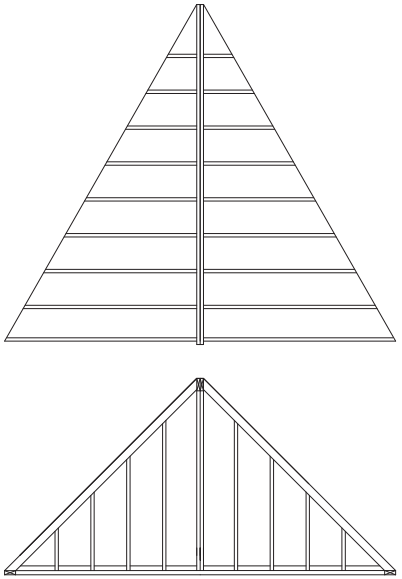
TITLE: SECTIONS

DRAWN BY: BM
DATE: 06-15-23
SCALE: 1/8" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: SECTION







DECO DORMER FASTENING DETAIL

✱= SITE FASTENING BY OTHERS.

BUILDER / OWNER SIGNATURES:	
ACCEPTED BY:	DATE:
TITLE:	

CHAMPION FACTORY 041
CHAMPION MODULAR, INC.
10642 S. SUSQUEHANNA TRAIL
LIVERPOOL, PA 17045

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

MODIFICATIONS

PROJECT: 45054 TWO STORY

TITLE: SECTIONS

DRAWN BY: BM
DATE: 06-15-23
SCALE: 1/8" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: SECTION (2)

45054 WINDOW / DOOR SCHEDULE

MANUF. CODE	ROUGH OPENING	MANUF.	TYPE	REMARKS	"U"	AREA	SQ. FT. LIGHT	SQ. FT. VENT
SL24210	30 1/4"x37 1/4"	SILVERLINE	SH	–	.26	7.59	5.31	2.41
SL3046	38 1/4"x57 1/4"	SILVERLINE	DH	EGRESS	.26	15.1	11.04	5.80
36" 6 PANEL	38 3/4"x82 3/4"	JELDWEN		EGRESS	.16	22.3	–	19.26
32" 9-LITE	34 3/4"x82 3/4"	JELDWEN		EGRESS	.30	20	5.1	17.33

BUILDER / OWNER SIGNATURES:

ACCEPTED BY: DATE:

TITLE:

CHAMPION FACTORY 041
CHAMPION MODULAR, INC.
10642 S. SUSQUEHANNA TRAIL
LIVERPOOL, PA 17045

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

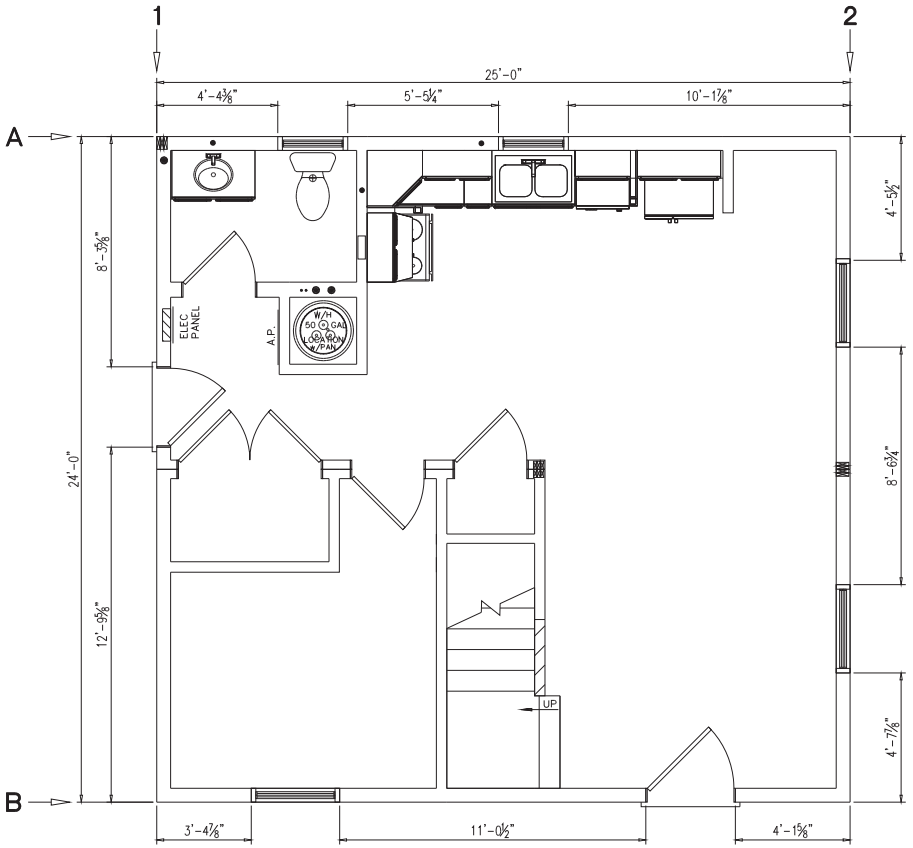
MODIFICATIONS

PROJECT: 45054 TWO STORY

TITLE: WINDOW & DOOR SCHEDULE

DRAWN BY: BM
DATE: 06-15-23
SCALE: 1/8" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: WIN-DOOR



2015 IRC

CS-WSP 6d COMMON (0.113" x 2") NAILS @ 6" O.C. SPACING (PANEL EDGES) AND 12" O.C. (INTERMEDIATE SUPPORTS) or 16 GAUGE x 1 3/4" STAPLES @ 3" O.C. SPACING (PANEL EDGES) AND 6" O.C. (INTERMEDIATE SUPPORTS)

GB NAILS OR SCREWS @ 7" O.C. AT PANEL EDGES INCLUDING TOP AND BOTTOM PLATES; FOR ALL BRACED WALL PANEL LOCATIONS FOR EXTERIOR SHEATHING NAIL OR SCREW SIZE, SEE TABLE R602.3(1); FOR INTERIOR GYPSUM BOARD NAIL OR SCREW SIZE, SEE TABLE R702.3.5

EXTERIOR WALL LINE	TOTAL WALL LINE LENGTH	BRACED WALL SPACING	BRACED WALL METHOD	TABULATED MIN. BRACED WALL TOTAL Table R602.10.3(1)	WIND EXPOSURE FACTOR Table R602.10.3(2)	RIDGE TO EAVE HEIGHT FACTOR Table R602.10.3(2)	WALL HEIGHT FACTOR Table R602.10.3(2)	BRACED WALL LINE QUANTITY FACTOR Table R602.10.3(2)	ADJUSTED MIN. BRACED WALL LENGTH REQ'D	BRACED WALL LENGTH PROV'D	
A	25'	24'	CS-WSP	7.5' (<=115 VULT)	1.0 ("B")	0.93 (7'-6")	0.90 (8'-0")	1.0 (2)	6.24'	19.96'	PASSES
B	25'	24'	CS-WSP	7.5'	1.0	0.93	0.90	1.0	6.24'	18.58'	PASSES
1	24'	25'	CS-WSP	7.75'	1.0	0.93	0.90	1.0	6.45'	21.10'	PASSES
2	24'	25'	CS-WSP	7.75'	1.0	0.93	0.90	1.0	6.45'	17.68'	PASSES

BUILDER / OWNER SIGNATURES:

ACCEPTED BY: DATE:

TITLE:

CHAMPION FACTORY 041
CHAMPION MODULAR, INC.
10642 S. SUSQUEHANNA TRAIL
LIVERPOOL, PA 17045
CHAMPION MODULAR

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

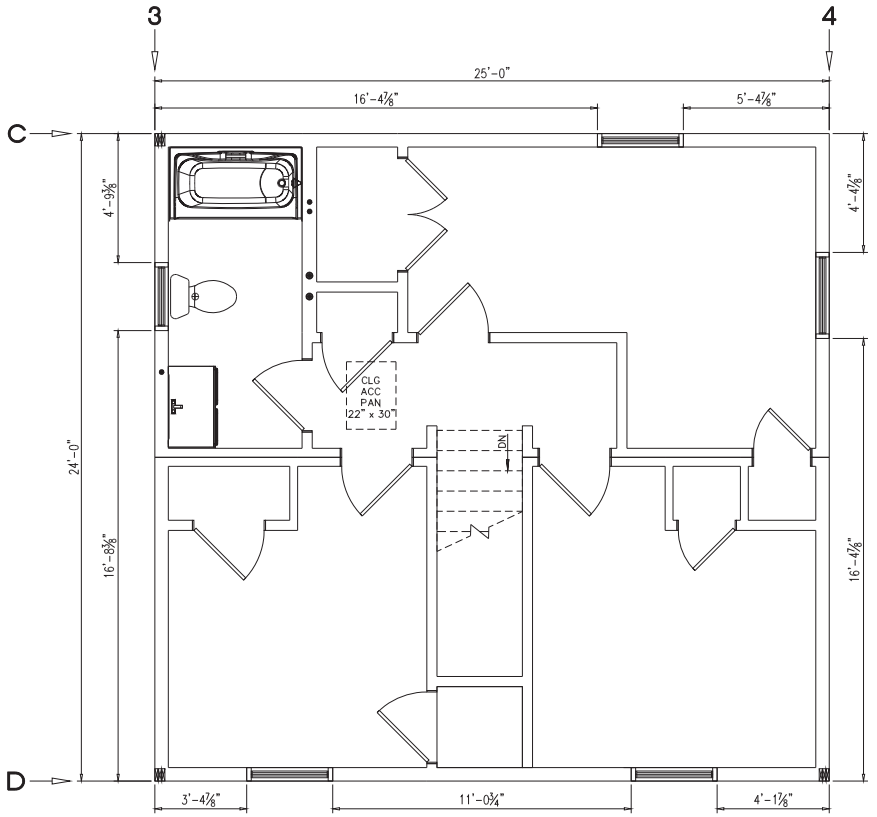
MODIFICATIONS

PROJECT: 45054 TWO STORY

TITLE: FIRST FLOOR SHEARWALL PLAN

DRAWN BY: BM
DATE: 06-15-23
SCALE: 3/16" = 1'-0"
FILENAME: 45054 FN
PD

SHEET: 1ST SHEAR



2015 IRC

CS-WSP 6d COMMON (0.113" x 2") NAILS @ 6" O.C. SPACING (PANEL EDGES) AND 12" O.C. (INTERMEDIATE SUPPORTS) or 16 GAUGE x 1 3/4" STAPLES @ 3" O.C. SPACING (PANEL EDGES) AND 6" O.C. (INTERMEDIATE SUPPORTS)

GB NAILS OR SCREWS @ 7" O.C. AT PANEL EDGES INCLUDING TOP AND BOTTOM PLATES; FOR ALL BRACED WALL PANEL LOCATIONS FOR EXTERIOR SHEATHING NAIL OR SCREW SIZE, SEE TABLE R602.3(1); FOR INTERIOR GYPSUM BOARD NAIL OR SCREW SIZE, SEE TABLE R702.3.5

EXTERIOR WALL LINE	TOTAL WALL LINE LENGTH	BRACED WALL SPACING	BRACED WALL METHOD	TABULATED MIN. BRACED WALL TOTAL Table R602.10.3(1)	WIND EXPOSURE FACTOR Table R602.10.3(2)	RIDGE TO EAVE HEIGHT FACTOR Table R602.10.3(2)	WALL HEIGHT FACTOR Table R602.10.3(2)	BRACED WALL LINE QUANTITY FACTOR Table R602.10.3(2)	ADJUSTED MIN. BRACED WALL LENGTH REQ'D	BRACED WALL LENGTH PROV'D	
C	25'	24'	CS-WSP	3.90' (<=115 VULT)	1.0 ("B")	0.85 (7'-6")	0.90 (8'-0")	1.0 (2)	2.98	21.81'	PASSES
D	25'	24'	CS-WSP	3.90'	1.0	0.85	0.90	1.0	2.98	18.62'	PASSES
3	24'	25'	CS-WSP	4.00'	1.0	0.85	0.90	1.0	3.06	21.48'	PASSES
4	24'	25'	CS-WSP	4.00'	1.0	0.85	0.90	1.0	3.06	20.81'	PASSES

BUILDER / OWNER SIGNATURES:

ACCEPTED BY: DATE:

TITLE:

CHAMPION FACTORY 041
CHAMPION MODULAR, INC.
10642 S. SUSQUEHANNA TRAIL
LIVERPOOL, PA 17045

BRAND: excel HOMES

BUILDER: BERKSHIRE COUNTY MOD

CUSTOMER/PROJECT: HABITAT

ENGINEER'S / ARCHITECT'S SEAL

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

APPROVERS SEAL

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

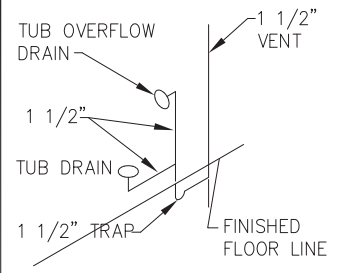
MODIFICATIONS

PROJECT: 45054 TWO STORY

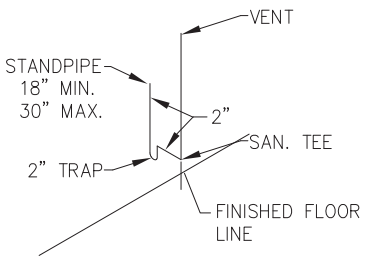
TITLE: SECOND FLOOR SHEARWALL PLAN

DRAWN BY: BM
DATE: 06-15-23
SCALE: 3/16" = 1'-0"
FILENAME: 45054 FN
PD

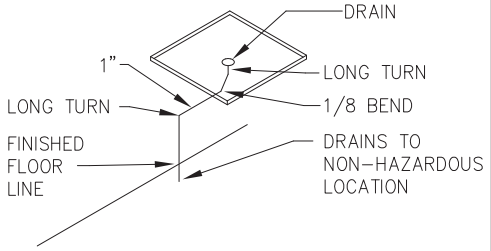
SHEET: 2ND SHEAR



TUB/SHOWER

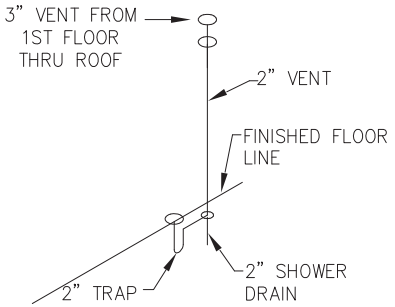


CLOTHES WASHER

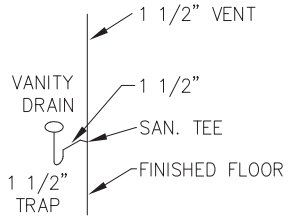


WASHER/WATER HEATER PAN

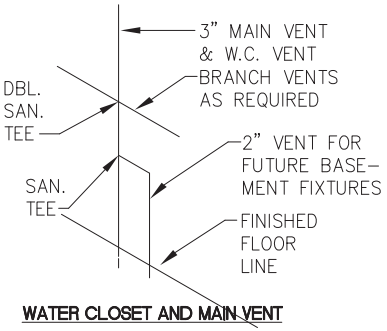
WASHER PAN REQUIRED ONLY WHEN WASHER IS LOCATED ON 2ND STORY



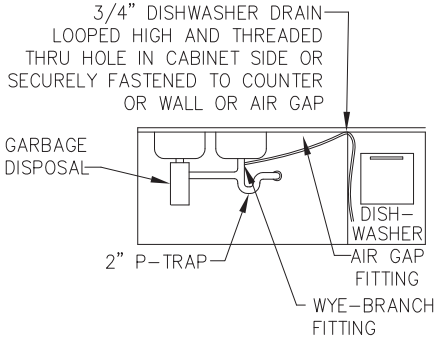
SHOWER



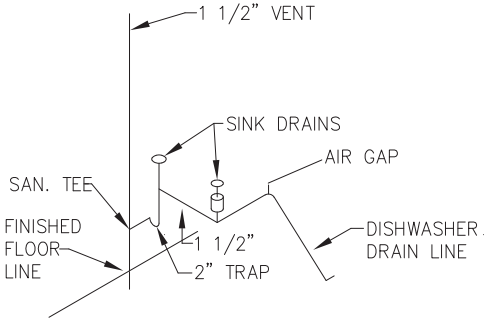
BATHROOM VANITY



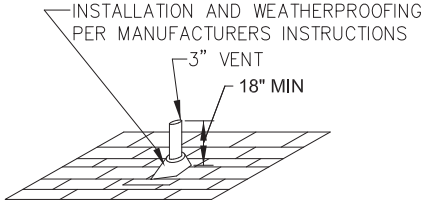
WATER CLOSET AND MAIN VENT



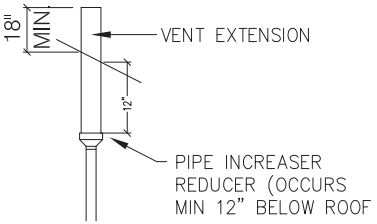
KITCHEN SINK/DISHWASHER/DISPOSAL



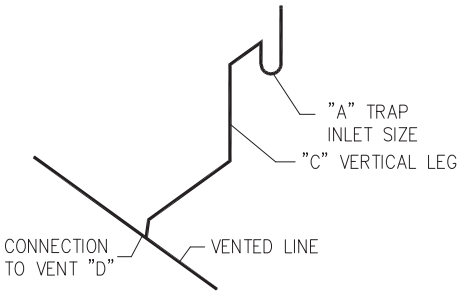
KITCHEN SINK/DISHWASHER DETAIL



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 2015 IPC & 2015 IRC.
"B" – TRAP ARM LENGTHS:
1 1/2" TRAP – 5'–0"
2" TRAP – 6'–0"
3" TRAP – 8'–0"
4" TRAP – 10'–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

PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
Approval limited to Factory Built Portion

STATE APPROVAL STAMP

COMMONWEALTH OF MASSACHUSETTS
STEVEN C. DAME
No. 54590
REGISTERED PROFESSIONAL ENGINEER
04/23/2024

P.E. SEAL

CHAMPION
HOME BUILDERS, INC.
755 WEST BIG BEAVER RD, SUITE 1000
TROY, MI 48084

CUSTOMER/PROJECT: SYSTEMS DRAWINGS
BUILDER:

REV#	DATE	REVISIONS	BY
1	06/19/15	REMOVED AIR JOINT VALVE FROM WATER SINK DETAIL	GLENCO
2	08/03/16	REVISED CODE REFERENCES	GLENCO
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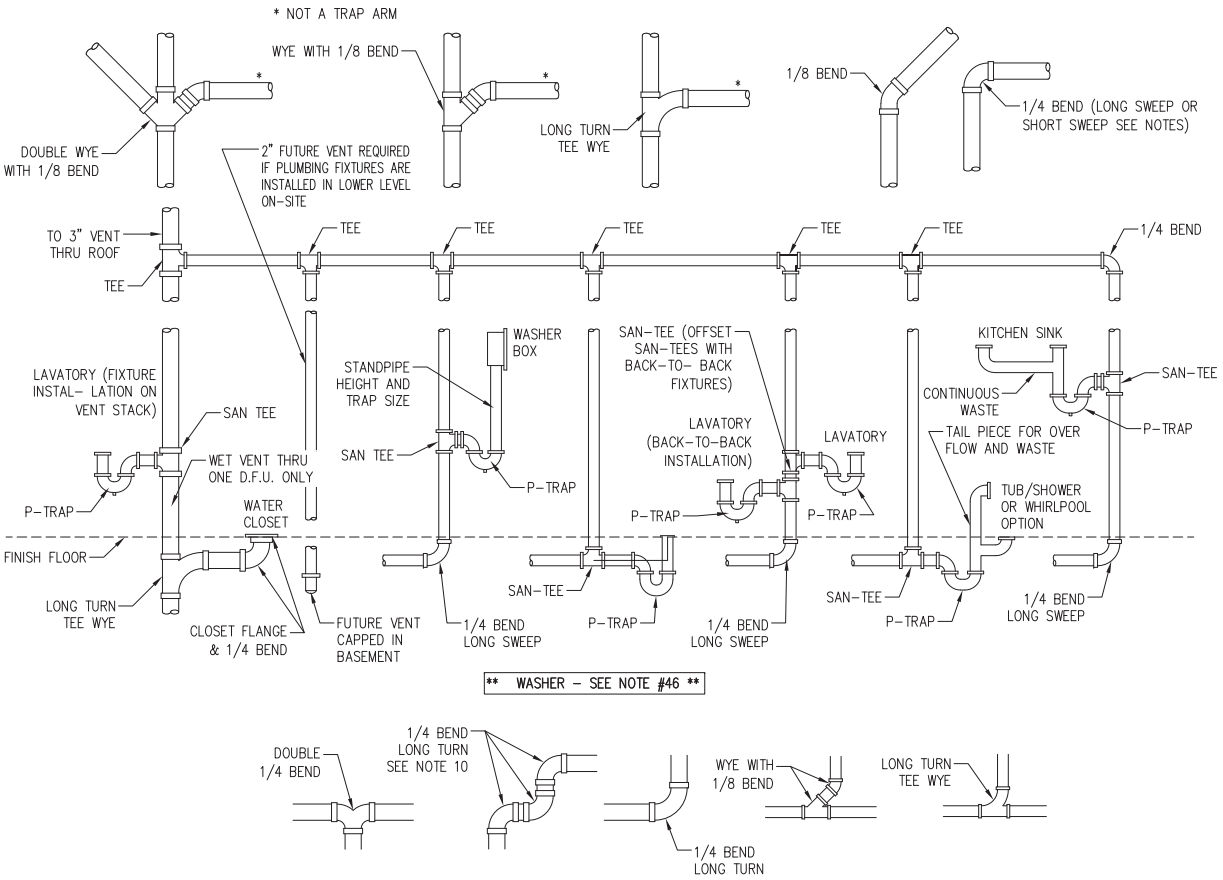
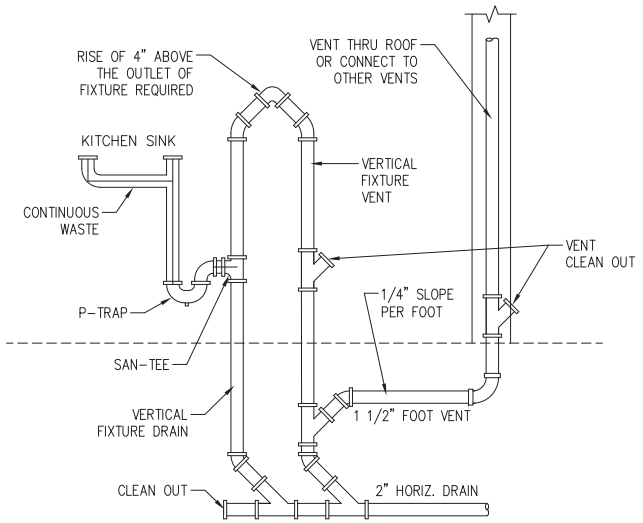
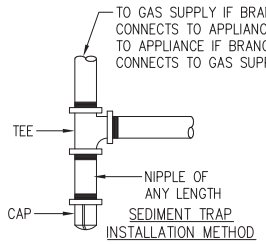
DRAWN BY: GLENCO
DATE: 11/11/09
SCALE: N.T.S.
CHECKED BY: .

FILE:
SQ.FT.:
STATE:
TYPE:
MODEL:
DRAWING: PLUMBING DETAILS
SHEET:







PFS Corporation
Northeast Region
APPROVED
H Raup – 3
4/24/24
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STATE APPROVAL STAMP

P.E. SEAL

CHAMPION
HOME BUILDERS, INC.
755 WEST BIG BEAVER RD, SUITE 1000
TROY, MI 48084

CUSTOMER/PROJECT: SYSTEMS DRAWINGS
BUILDER:

REV#	DATE	REVISIONS	BY
1	04/28/14	ADD CLEANOUT TO ISLAND VENT	GLENCO
2	06/19/15	REMOVED FLOATING TEXT	GLENCO
3	08/03/16	REVISED CODE REFERENCES	GLENCO
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DRAWN BY: GLENCO
DATE: 11/11/09
SCALE: N.T.S.
CHECKED BY: .

FILE:
SQ.FT.:
STATE:
TYPE:
MODEL:
DRAWING: PLUMBING DETAILS
SHEET: 11G