

TABLE N101.7 (R391.2)		
(2018 EDITION NC PRESIDENTIAL CODE)		
NORTH CAROLINA CLIMATE ZONES, MOISTURE REGIMES, AND WARM-HUMID DESIGNATIONS BY COUNTY		
KEY: A = Moist, B = Dry, C = Marine.		
Absence of moisture designation indicates moisture regime irrelevant. Asterisk (*) indicates warm-humid location.		
4A Alamance	4A Franklin	3A Pamlico
4A Alexander	3A Gaston	3A Pasquotank
5A Alleghany	4A Gates	3A Perimeter
3A Anson	4A Graham	3A Perquimans
5A Ashe	4A Granville	4A Person
5A Avery	3A Greene	3A Pitt

2.3. $F_v = 285 \text{ PSI}$

END.

HANGER SCHEDULE

DOOR SCHEDULE							
MARK	LOCATION	SIZE	MATERIAL/DESCRIPTION	FINISH	FRAME	HARDWARE	NOTES
1+	FRONT PORCH	3'-0" x 6'-8"	EXTERIOR FIBERGLASS, HALF LITE	PAINTED	WOOD, PAINTED	DEADBOLT + LEVER, BLACK	
2+	BACK PORCH	3'-0" x 6'-8"	EXTERIOR FIBERGLASS, FULL LITE	PAINTED	WOOD, PAINTED	DEADBOLT + LEVER, BLACK	
3	UTILITY	3'-0" x 6'-8"	EXTERIOR FIBERGLASS, TWO-PANEL	PAINTED	WOOD, PAINTED	STANDARD LEVER, BLACK	
4	BEDROOM/BATH/HC	2'-8" x 6'-8"	INTERIOR PINE-HUNG HARDWOOD, TWO-PANEL	PAINTED	WOOD, PAINTED	PRIVACY LEVER, BLACK	WIC TO HAVE PASSAGE LEVER
5	CLOSET	3'-0" x 6'-8"	INTERIOR, TWO-PANEL HARDWOOD SLIDING DOOR	PAINTED	WOOD, PAINTED	DUMPHY LEVER, BLACK	
	MECHANICAL	2'-6" x 5'-0"	INTERIOR, HARDWOOD, FLUSH PANEL	PAINTED	WOOD, PAINTED	PASSAGE LEVER, BLACK	

NOTES:

1. * INDICATES TEMPERED
2. GLAZING IN DOORS TO HAVE SHGL = 0.40, U-VALUE = 0.30
3. ALL FINISHES/COLORS TO BE CONFIRMED BY OWNER.
4. MECHANICAL DOOR HEIGHT TO BE DETERMINED IN THE FIELD.

A1.2



A1.2

3/16" = 1'-0"

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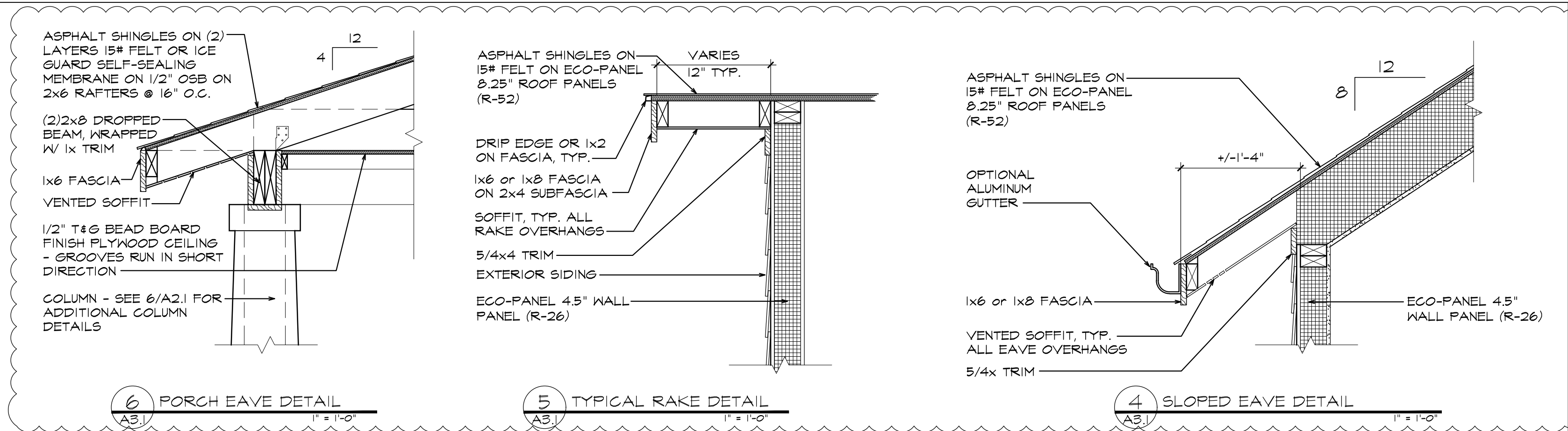
Granite Falls The Howard



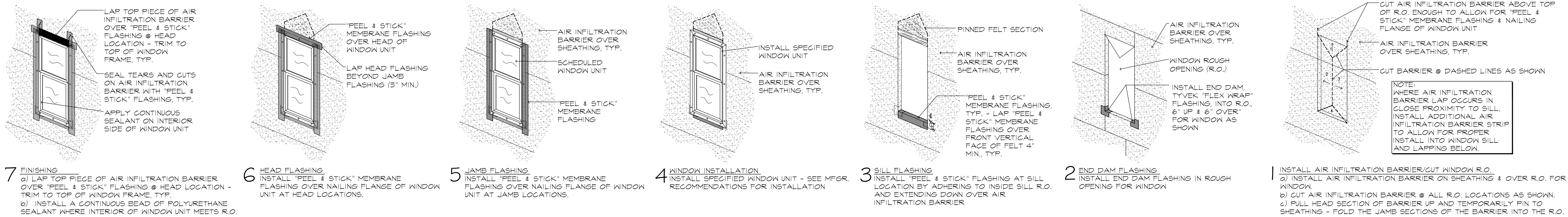
date	10.29.21
drafter	R.L.M.
checked by	C.L.B.
proj. no.	T-20013.
revisions	date
Owner Rev.	05.02.23

Roof Framing, Sections, Schedules & Insulation Notes

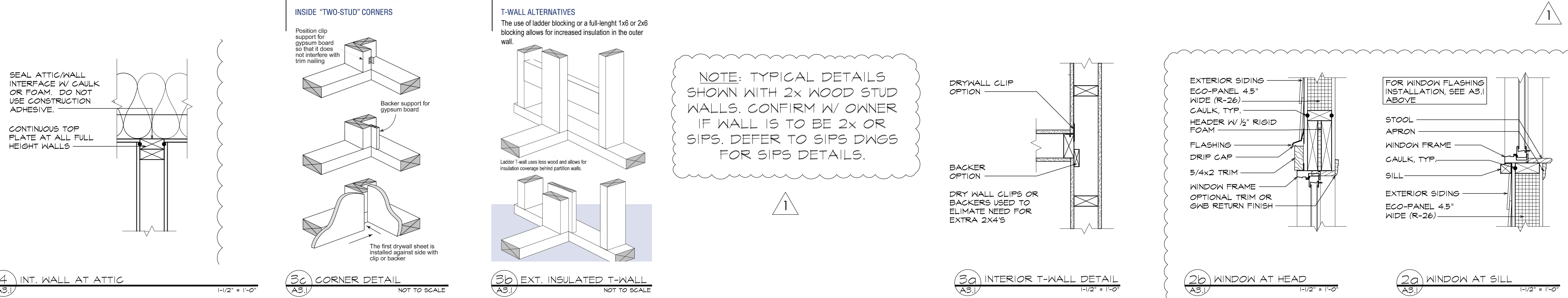
A1.2



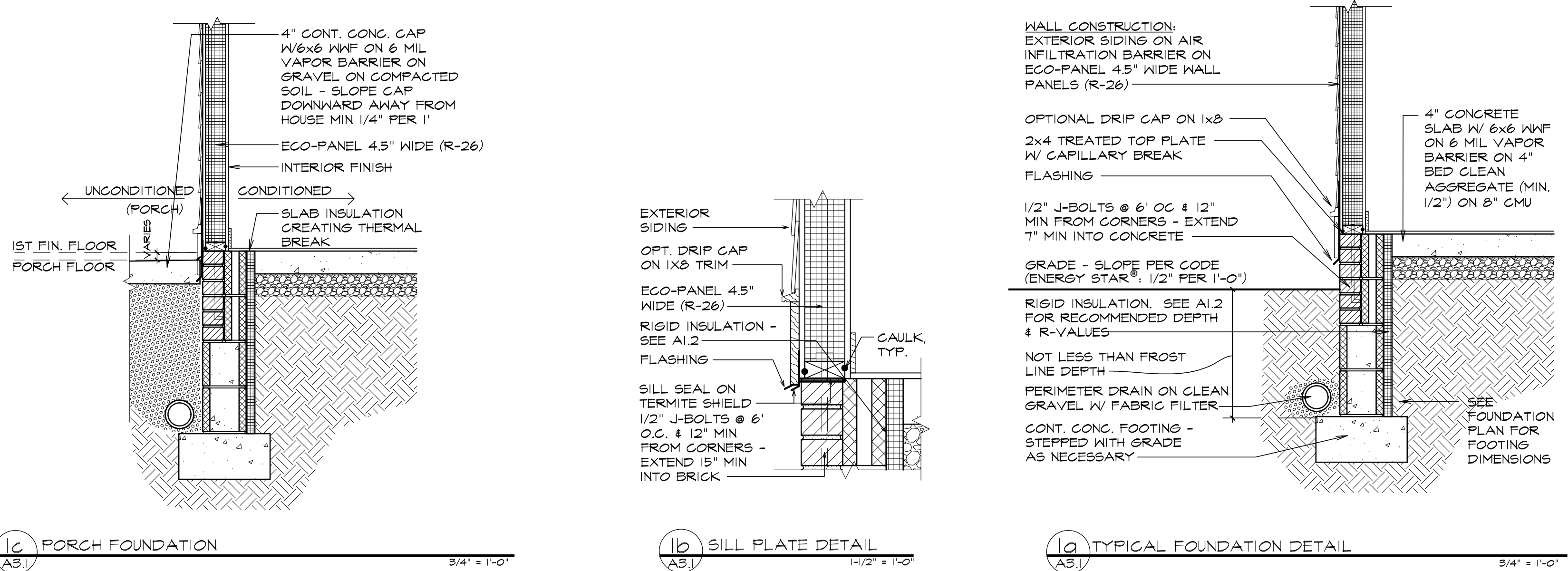
RAKE & EAVE DETAILS



WINDOW INSTALLATION



FRAMING DETAILS



FOUNDATION DETAILS

THIS PLAN IS AUTHORIZED FOR THIS ADDRESS ONLY AND IS NOT TO BE USED FOR ANY ADDITIONAL ADDRESSES WITHOUT THE PURCHASE OF ADDITIONAL LICENSES OR WRITTEN AUTHORIZATION FROM TIGHTLINES:

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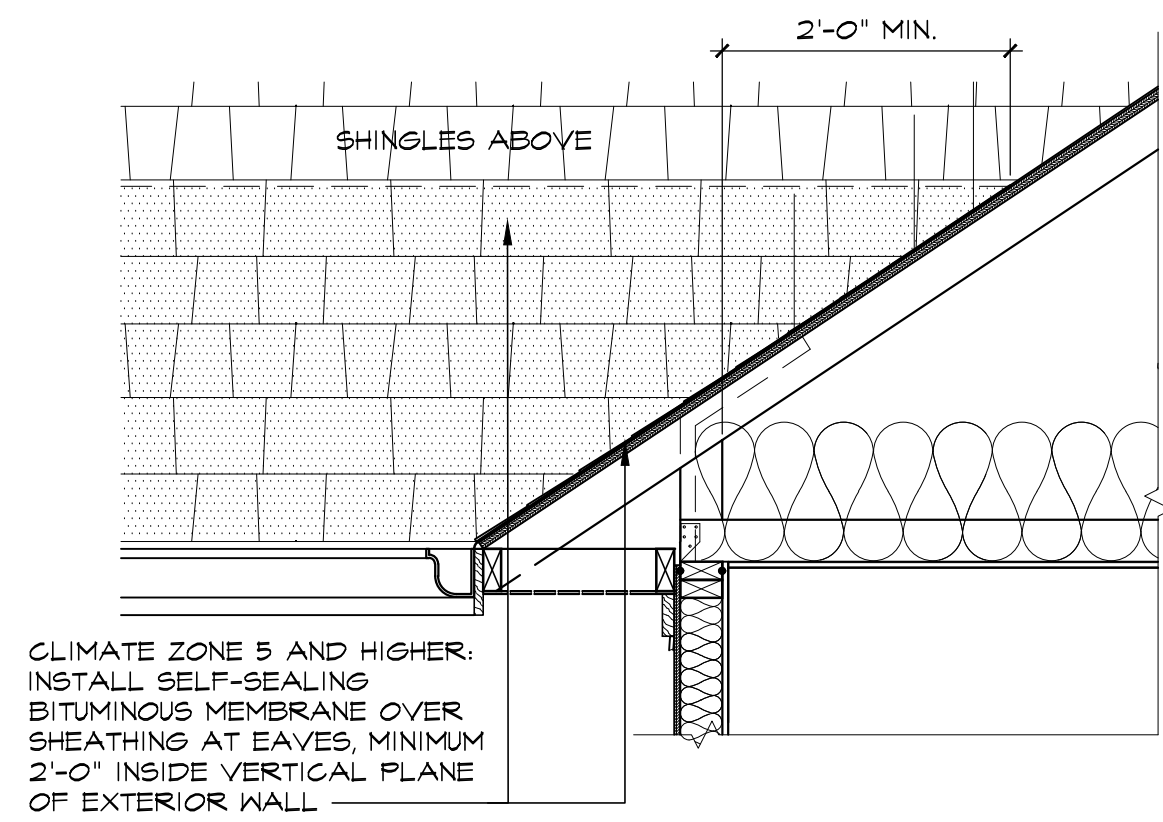
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Construction Details

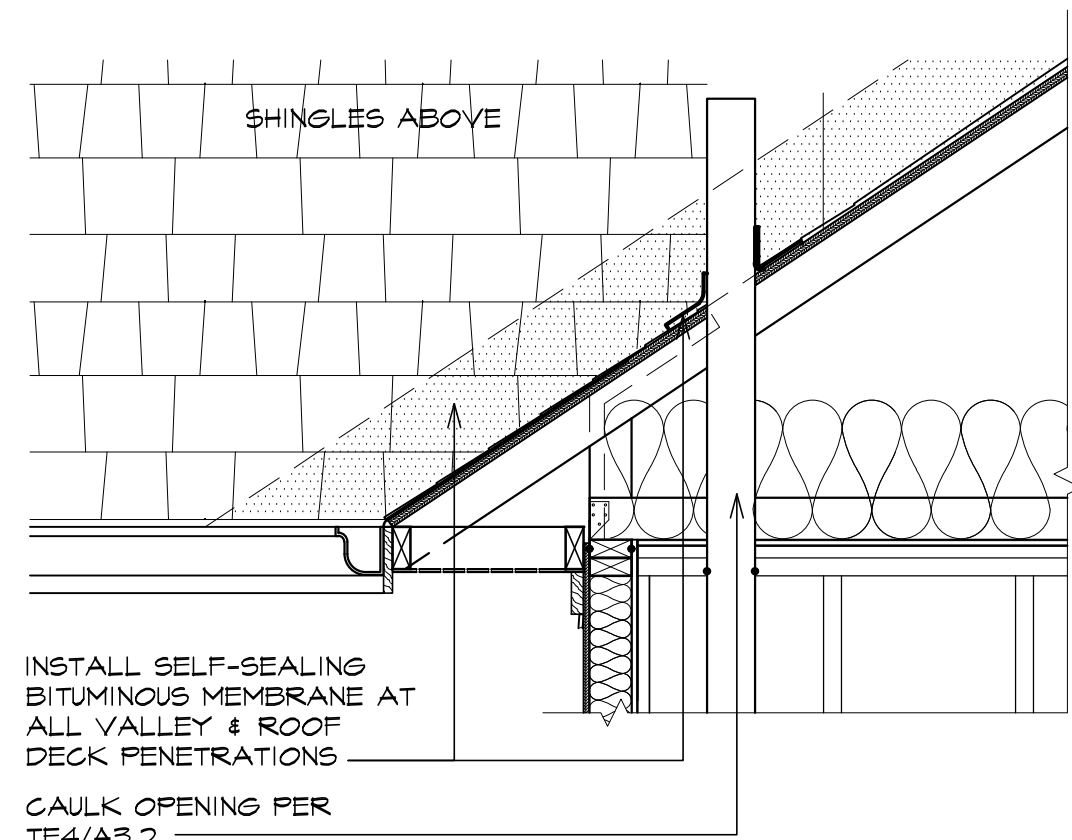


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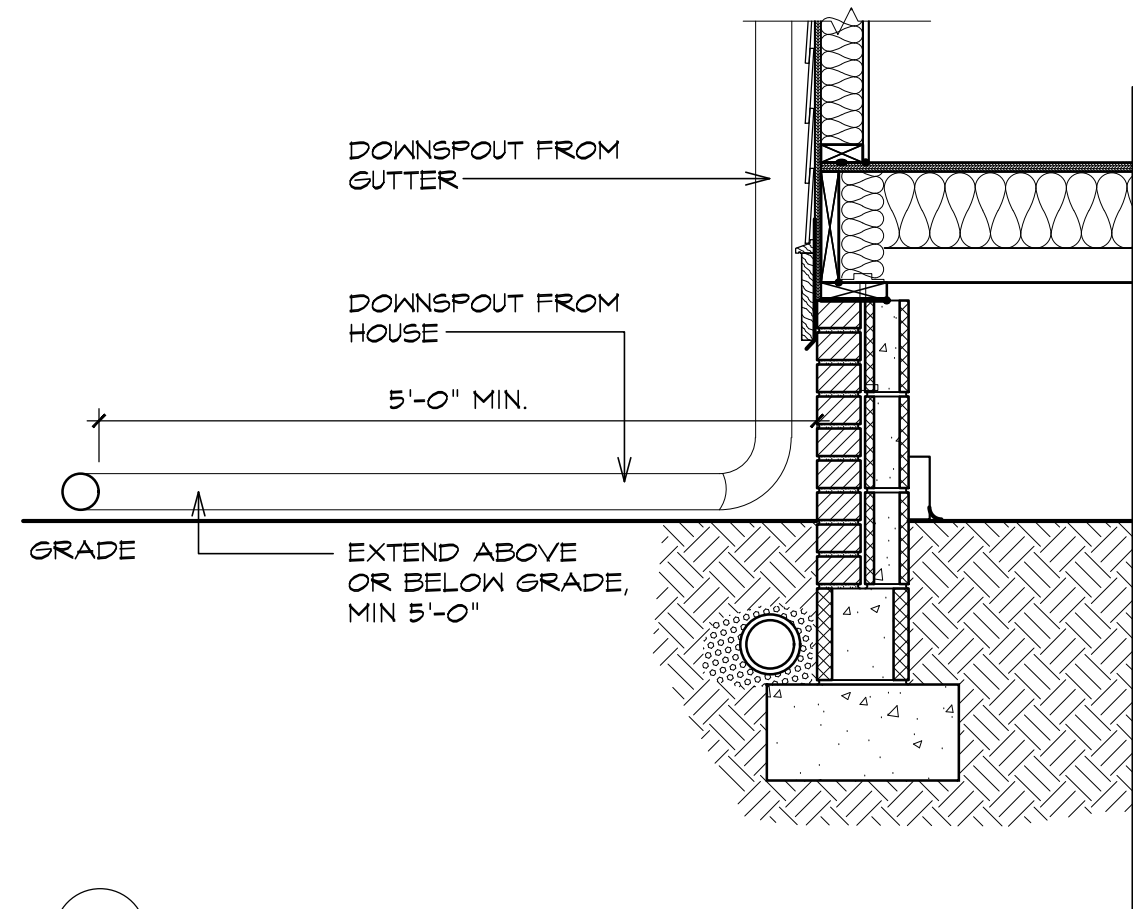
Foundation, Wall & Roof Framing Details
A3.1



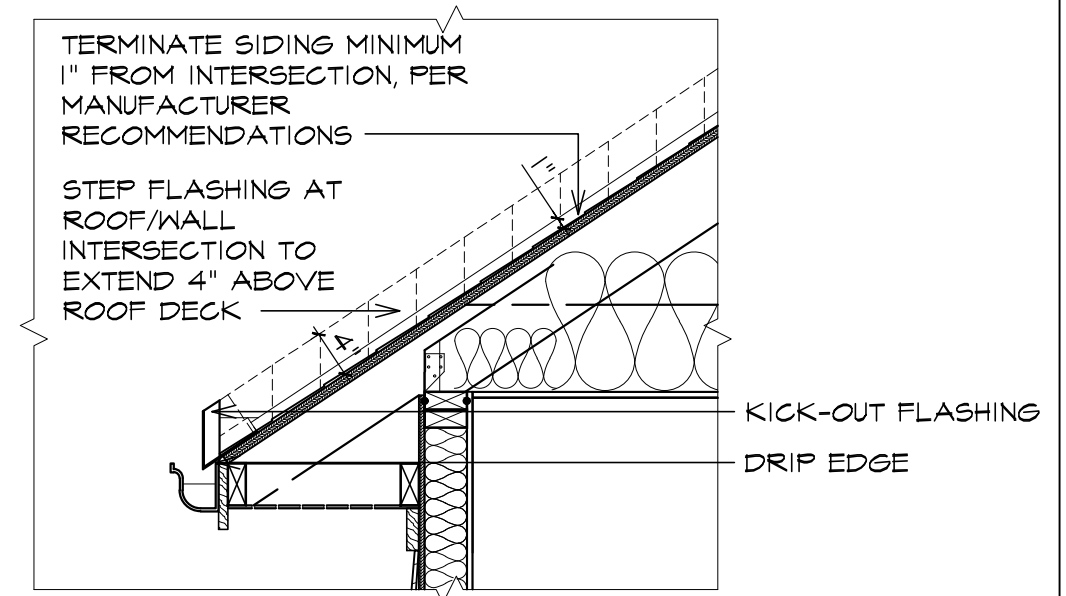
WM 4 BITUMINOUS MEMBRANE AT EAVES
A3.2 *SEE A3.1 FOR TYPICAL RAKE & EAVE DETAILS* 3/4" = 1'-0"



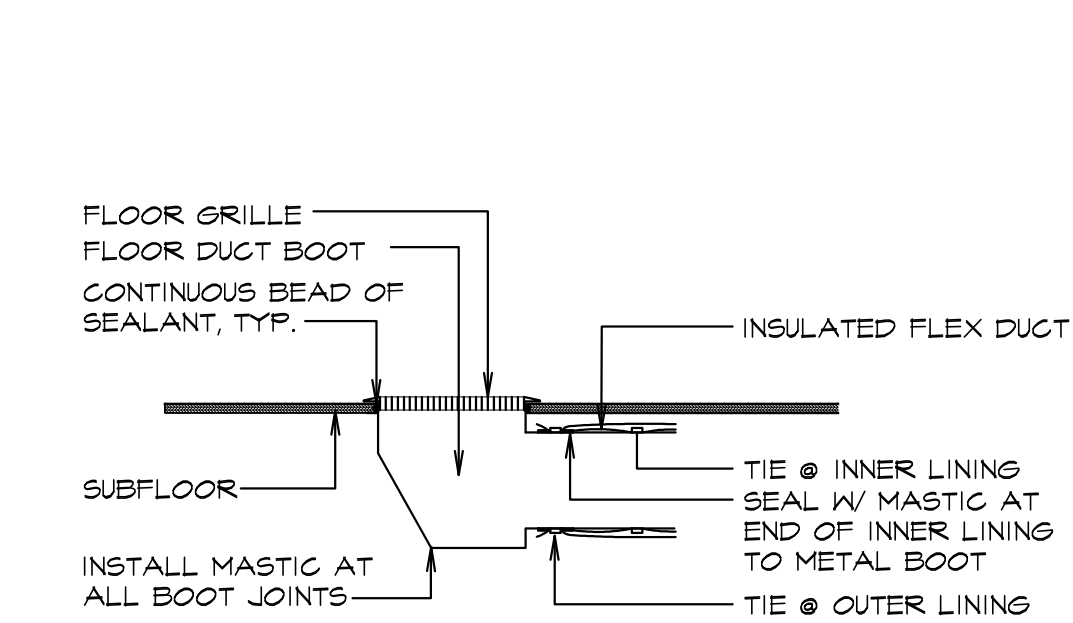
WM 3 ROOF DECK PENETRATIONS
A3.2 *SEE A3.1 FOR TYPICAL RAKE & EAVE DETAILS* 3/4" = 1'-0"



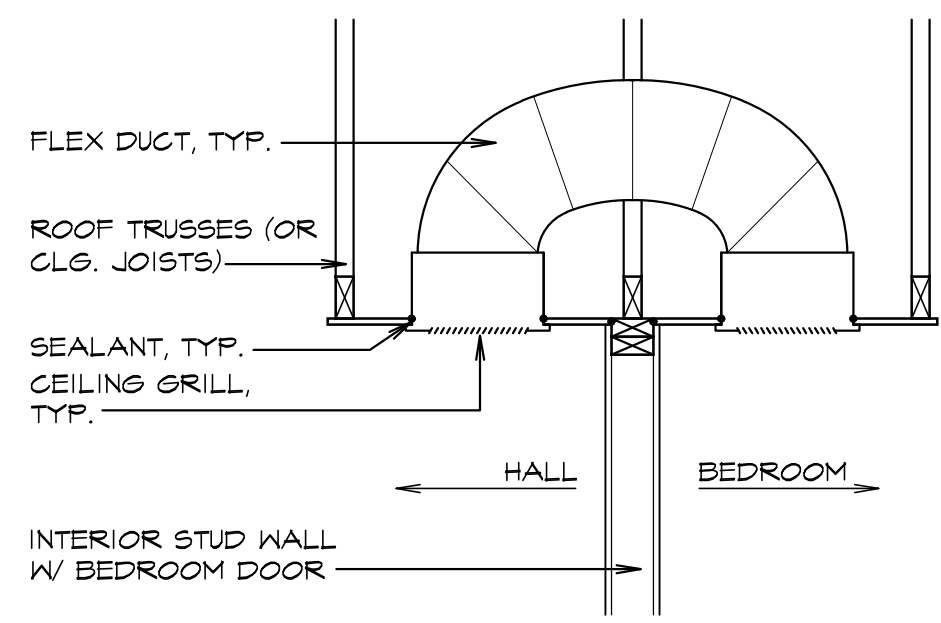
WM 2 GUTTERS & DOWNSPOUTS
A3.2 *SEE A3.1 FOR TYPICAL FOUNDATION DETAILS* 3/4" = 1'-0"



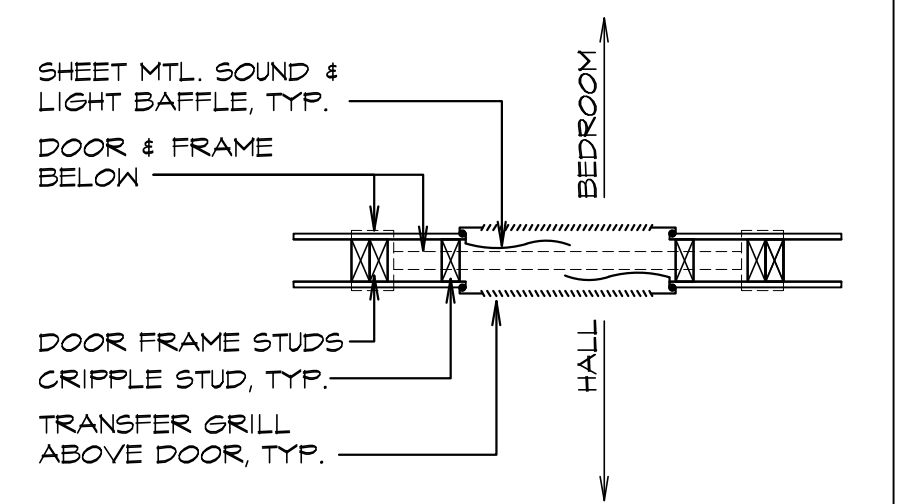
WM 1 KICK-OUT FLASHING AT ROOF/WALL INTERSECTION
A3.2 *SEE A3.1 FOR TYPICAL RAKE & EAVE DETAILS* 3/4" = 1'-0"



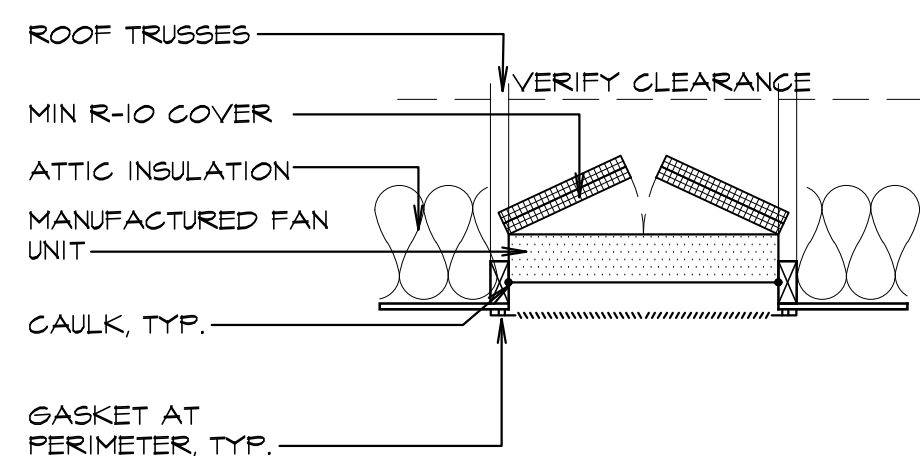
HC 1 TYPICAL DUCT BOOT SEAL
A3.2 3/4" = 1'-0"



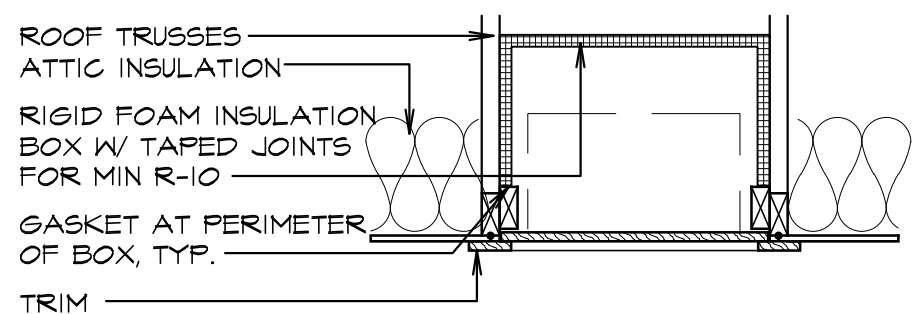
HC 2 BEDROOM PRESSURE BALANCE: JUMPER DUCT
A3.2 3/4" = 1'-0"



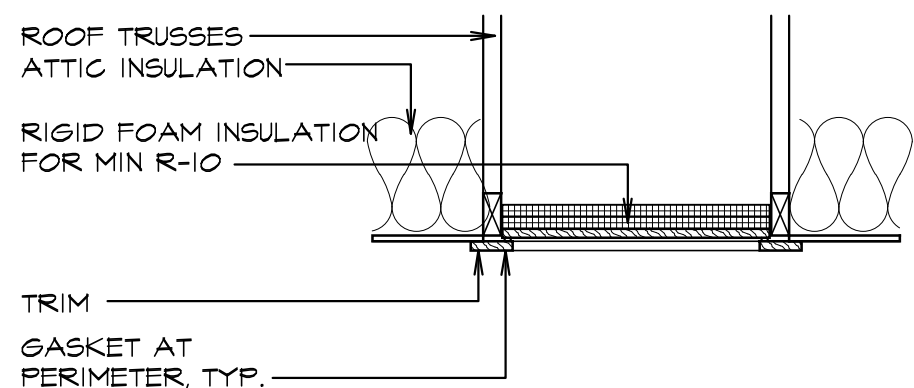
HC 1 BEDROOM PRESSURE BALANCE: TRANSFER GRILL
A3.2 3/4" = 1'-0"



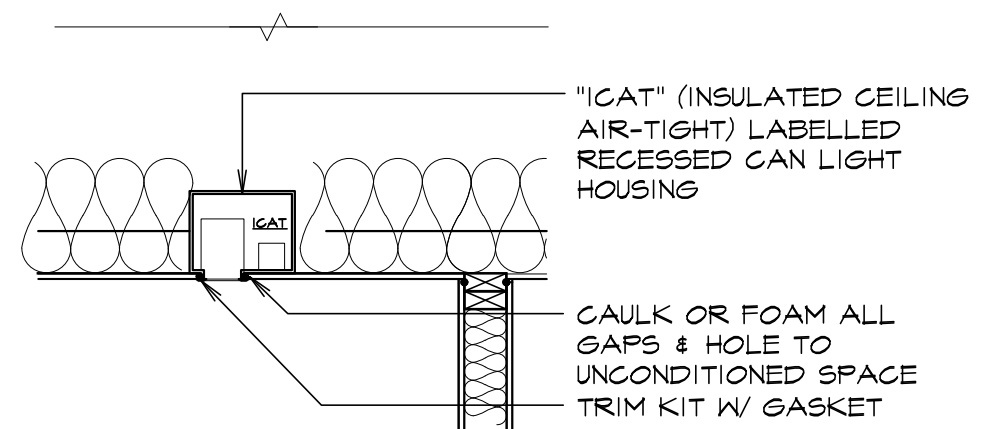
TE 9 TYPICAL WHOLE HOUSE FANS
A3.2 3/4" = 1'-0"



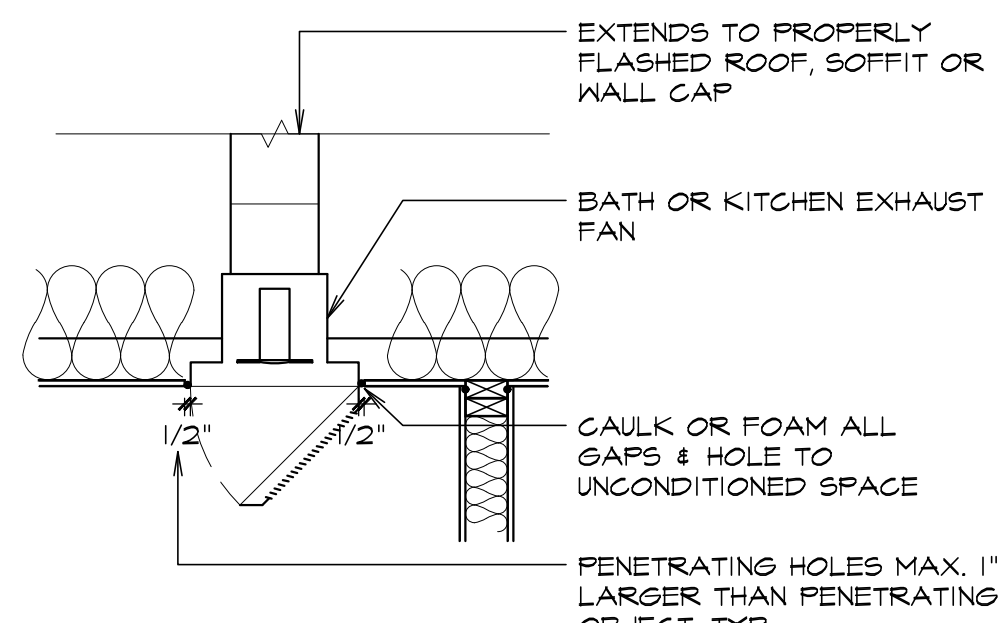
TE 8 TYPICAL ATTIC PULL-DOWN STAIRS
A3.2 3/4" = 1'-0"



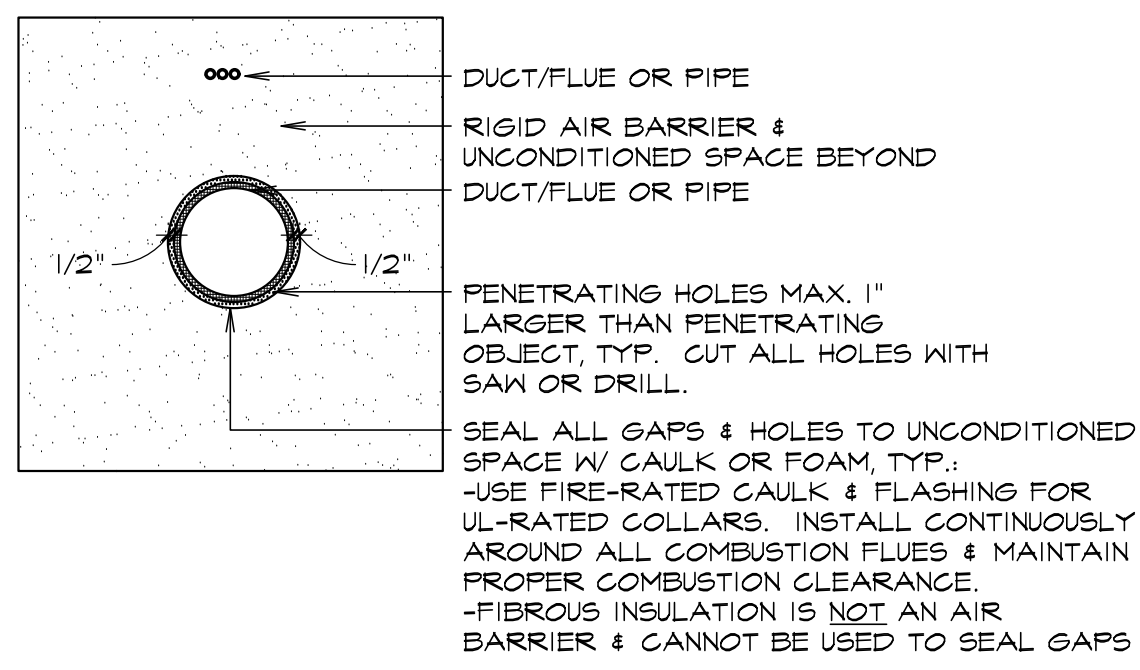
TE 7 TYPICAL ATTIC ACCESS PANEL
A3.2 3/4" = 1'-0"



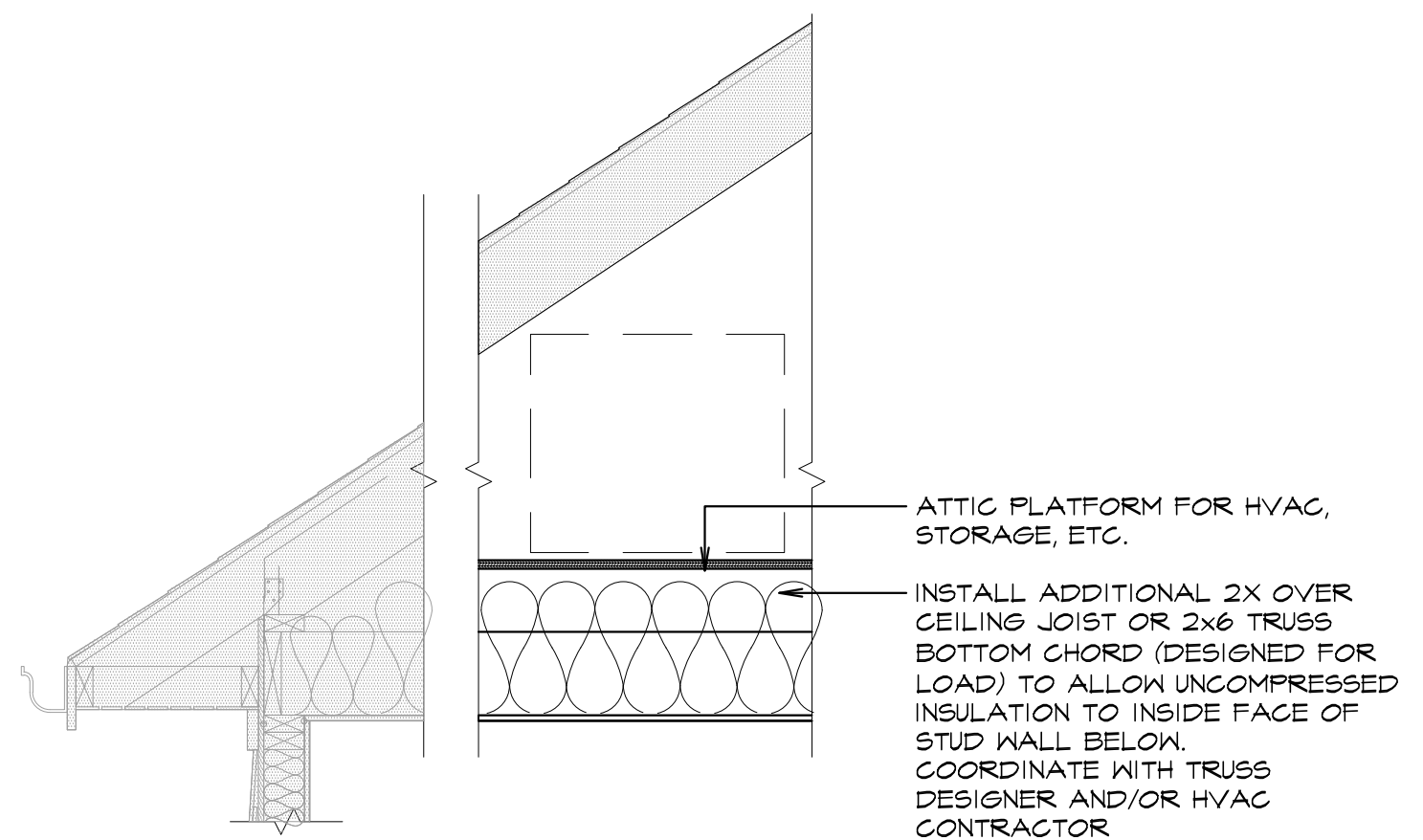
TE 6 TYPICAL ICAT RECESSED LIGHTING FIXTURES
A3.2 3/4" = 1'-0"



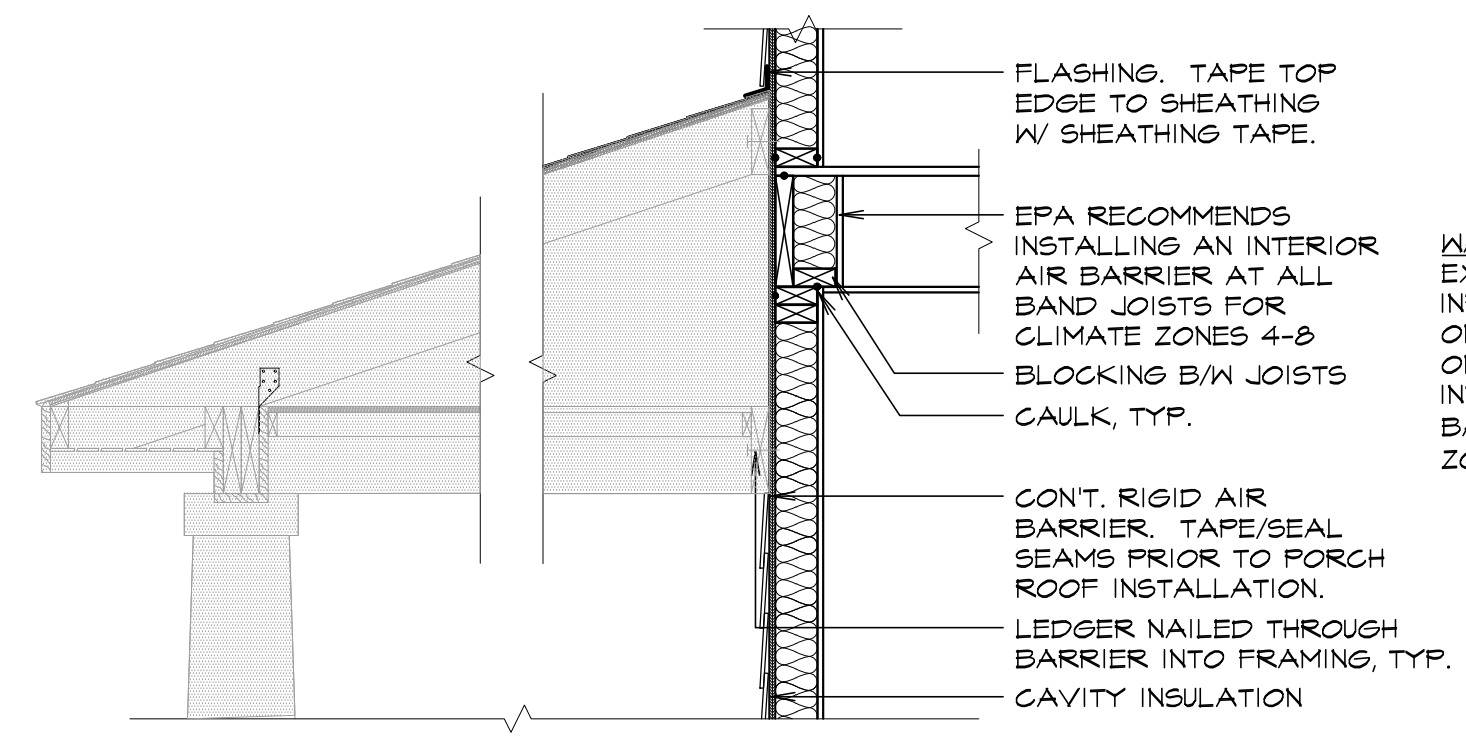
TE 5 TYPICAL BATH & KITCHEN EXHAUST FANS
A3.2 3/4" = 1'-0"



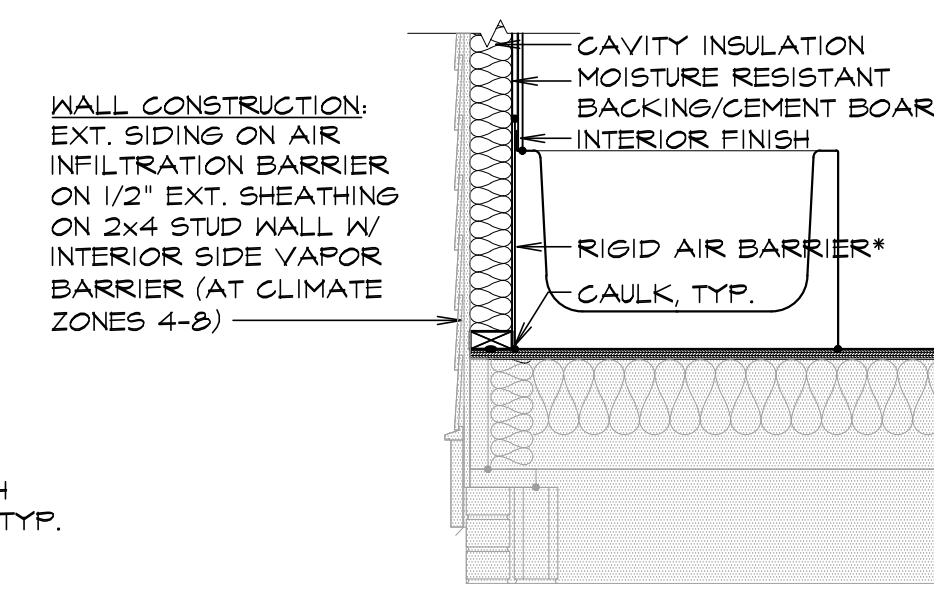
TE 4 TYPICAL PENETRATIONS TO UNCONDITIONED SPACE
A3.2 3/4" = 1'-0"



TE 3 TYPICAL INSULATION AT ATTIC PLATFORM
A3.2 3/4" = 1'-0"



TE 2 TYPICAL WALL ADJOINING PORCH ROOF
A3.2 3/4" = 1'-0"



TE 1 TYPICAL TUB/SHOWER AT EXTERIOR WALL
A3.2 *RIGID AIR BARRIER MAY BE GYPSUM BOARD, PLYWOOD, OSB, OR RIGID FOAM BOARD 3/4" = 1'-0"

WATER MANAGEMENT

HVAC QUALITY

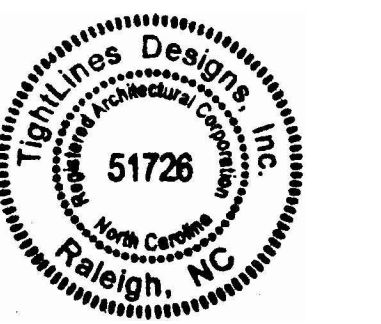
THERMAL ENCLOSURE

THIS PAGE CONTAINS ILLUSTRATED DETAILS THAT ARE REQUIRED FOR ENERGY STAR® CERTIFICATION AND ARE RECOMMENDED FOR THE CONSTRUCTION OF ANY TIGHTLINES HOUSE. THIS SHEET IS NOT A COMPREHENSIVE CHECKLIST FOR ANY CERTIFICATION PROCESS.

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ENERGY STAR®
Details



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ENERGY STAR®
Details

A3.2

Green Opportunities

Green Opportunities is a collection of ideas for achieving more sustainable construction habits and a greener home. *The italic text elaborates about the intent and its relationship to TightLines Designs.* We highly recommend participation in a green certification program to ensure that your home conserves energy, natural resources, and maintains optimal indoor air quality. Take a look at the resources below to get started finding a certification program that is right for you.

Green Certification Programs

Program	Intent	Website
National Association of Home Builders LEED for Homes	National Rating System for Energy, Resources, & Indoor Air Quality National Rating System for Energy, Resources, & Indoor Air Quality	http://www.nahbgreen.org/Guidelines/ansistandard.aspx http://www.greenhomeguide.org/
Enterprise Green Communities	Framework for developers to pursue green building in affordable multi- and single-family developments	http://www.greencommunitiesonline.org/
Earthcraft	Southeast Rating System for Energy, Resources, & Indoor Air Quality	http://www.earthcrafthouse.com/
Greenbuilt North Carolina	Statewide Rating System for Energy, Resources, & Indoor Air Quality	http://www.greenbuilt.org/

LOCATION

Site Selection	- Built above 100-year floodplain - Not built on habitat for threatened or endangered species - Not built within 100 ft of water, including wetlands - Not built on land that was public parkland prior to acquisition - Not built on land with prime soils, unique soils, or soils of state significance	<i>Selecting an appropriate site is the first step in building a green home. The intent is to minimize the home's impact on the environment and to preserve significant species, open space, soil, or community amenities.</i>
Preferred Locations	- Edge Development - Infill - Previously Developed - Greyfield/Brownfield Site	
Infrastructure	Existing Infrastructure	<i>Minimize site disturbance on- and off-site.</i>
Community Resources/Transit	Community Resources/Transit	<i>Reduce the use of fossil fuels by building near shopping centers, parks/greenways, and mass transit systems.</i>

SUSTAINABLE SITES

Site Stewardship		
Erosion Controls During Construction	- Stockpile and protect topsoil from erosion - Control the path and velocity of runoff with silt fencing or equivalent - Protect sewer inlets, streams, and lakes with straw bales, silt fencing, etc. - Provide swales to divert surface water from hillsides - Use tiers, erosion blankets, compost blankets, etc. on sloped areas	<i>Preventing erosion aids in maintaining soil quality and prevents soil runoff that pollutes lakes and streams.</i>
Minimize Disturbed Area of Site	- Develop tree/plant preservation plan with "no-disturbance" zones - Rehabilitate lot; undo soil compaction and remove invasive plants - Maximize number of units per acre or build on smaller lot	

Landscaping		
Basic Landscaping Design	- Use drought tolerant turf - Do not use turf in densely shaded areas - Do not use turf in areas with slope of 25% - Add mulch or soil amendments as appropriate - Till compacted soil to at least 6 inches	<i>Using water responsibly includes limiting the use of potable water for irrigation. This can be done by selecting drought- tolerant plants, limiting turf, and mulching.</i>
Limit Conventional Turf		
Drought-Tolerant Plants		
Reduce Overall Irrigation Demand		
Group plants with similar water needs (hydrozoning)		

Reduce Local Heat Island Effects		
Reduce Local Heat Island Effects	- Locate trees/plantings to provide shade for hardscapes - Install light colored hardscapes - Do not use turf in areas with slope of 25%	<i>The heat island effect occurs when areas experience unnaturally elevated temperatures that are caused by increased heat retention in man-made materials such as dark roofs or asphalt. Heat islands affect human comfort and wildlife patterns. Heat islands can be avoided by selecting light colored building materials or shading heat retaining materials.</i>

Storm Water Management		
Maximize Permeable Area of Lot	- Vegetative landscape - Permeable paving - Impermeable surfaces directed to infiltration features	<i>Runoff from hard surfaces washes pollutants directly into water systems that are used to yield food or drinking water to residents. Also, it is important that soils retain rainwater to naturally irrigate landscapes.</i>
Permanent Erosion Control Options	- For portions of lot on steep slope, use terracing and retaining walls - Plant trees, shrubs or groundcover	
Management of Runoff From Roof	- Install permanent storm water controls to manage runoff from the home - Install vegetated roof	

Nontoxic Pest Control		
Pest Control Alternatives	- Keep all wood at least 12" above soil - Seal external cracks, joints etc. with caulking and install pest-proof screens - Include no wood-to-concrete connections, or separate connections with dividers - Install landscaping so mature plants are 24" from home	

WATER EFFICIENCY

Water Reuse		
Rainwater Harvesting System		<i>Rain barrels are a simple and inexpensive way to collect rainwater from your home's roof for irrigation use.</i>
Graywater Reuse System		<i>For example: flushing your toilet or irrigating your lawn with bathtub, lavatory, or laundry water.</i>
Use of Municipal Recycled Water System		<i>For example: using non-potable water for car washing or irrigation.</i>

Irrigation System		
High-Efficiency Irrigation System	- Irrigation system designed by EPA Water Sense certified professional - Irrigation system with head-to-head coverage - Install central shut-off valve - Install sub-meter for the irrigation system - Use drip irrigation for planting beds - Create separate zones for each type of bedding - Install timer or controller for each watering zone - Install pressure-regulating devices - High-efficiency nozzles with distribution uniformity of at least 0.70 - Check valves in heads - Install moisture sensor or rain delay controller	<i>If irrigation is desired, installing an efficient system is the responsible solution.</i>
Reduce Overall Irrigation Demand		
Indoor Water Use		
High-Efficiency Fixtures and Fittings	- Average flow rate of lavatory faucets is ≤ 2.0 gpm - Average flow rate for all showers is ≤ 2.0 gpm per stall - Average flow rate for all toilets is ≤ 1.3 gpf; or toilets are dual flush or toilets must meet the EPA Water Sense specification	<i>Availability of drinking water is becoming a growing concern for communities across the United States. Do your part to reduce wasteful water use and ensure ample resources for future generations.</i>

ENERGY & ATMOSPHERE

Optimize Energy Performance		
Performance of ENERGY STAR® for Homes		<i>See sheet A3.2 for ENERGY STAR® Details.</i>
Exceptional Energy Performance		<i>Contact a Certified Energy Rater to learn more about the opportunities to increase energy performance. Often energy performance is an excellent investment due to a short pay-back period. Find a Certified Energy Rater at http://www.resnet.us/</i>

Water Heating		
Efficient Hot Water Distribution System options	- Structured plumbing system - Central manifold distribution system - Compact design of conventional system	

Pipe Insulation		
Residential Refrigerant Management		
Refrigerant Charge Test		
Appropriate HVAC Refrigerant Options	- Use no refrigerants - Use non-HCFC refrigerants - Use refrigerants that complies with global warming potential equation	

MATERIALS & RESOURCES

Material Efficient Framing		
Framing Efficiency Options	- Precut framing packages - Open-web floor trusses - Structural insulated panel walls - Structural insulated panel roof - Structural insulated panel floors - Stud spacing greater than 16" on center - Ceiling joist spacing greater than 16" on center - Floor joist spacing greater than 16" on center - Roof rafter spacing greater than 16" on center - Size headers for loads; ladder blocking; drywall clips; 2-stud corners	<i>Framing Efficiency refers to efficient use of materials and the ability to insulate properly to allow for energy efficiency within the home.</i> <i>TightLines Designs feature open web floor trusses (2-story homes) and roof trusses (all homes excluding 1.5-story). See sheet A3.1 for ladder blocking, drywall clips, and 2-stud corner diagrams.</i>
Off-site Fabrication Options	- Panelized construction - Modular, prefabricated construction	

Environmentally Preferable Products		
Wood Products	- Use non-tropical wood - Use reclaimed wood - FSC (Forest Stewardship Council) Certified Tropical Wood	
Environmentally Preferable Products	- Low emission - Produced locally	

Waste Management		
Construction Waste Management Planning	- Determine where waste can be diverted for reuse or recycling - Identify vendor that can sort and divert waste from landfill	
Construction Waste Reduction	Document amount of waste diverted from landfill	
Designated cutting area		<i>Having a designated cutting area discourages wasteful practices. Example: if blocking is needed, blocking can be gathered from the scraps in the cutting area, rather than cutting a long board into small pieces.</i>
On-site recycling		<i>On-site recycling for plastic and aluminum drink bottles keeps the project green throughout the construction phase.</i>

INDOOR ENVIRONMENTAL QUALITY

ENERGY STAR with Indoor Air Plus		
ENERGY STAR with Indoor Air Plus		<i>Simple steps to ensure healthy indoor air can make a tremendous difference in the health of your family. Visit http://epa.gov/indoorairplus/ for more information.</i>
Combustion Venting	- No unvented combustion appliances - Carbon monoxide monitors on each floor - No fireplace installed - Space, water heating equipment designed with closed combustion, power-vented exhaust, or located in open-air facility	<i>Properly venting and monitoring combustion devices ensures the safety of homeowners from fire and carbon monoxide poisoning.</i>

Moisture Control		
Moisture Load Control Options	- Additional dehumidification system - Central HVAC system equipped with additional dehumidification mode	

Outdoor Air Ventilation	Outdoor Air Ventilation	<i>Provide additional fresh air into the home with enhanced outdoor air ventilation.</i>
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Local Exhaust	- Basic Local Exhaust - Bathroom and kitchen exhaust meets ASHRAE Std. 62.2 air flow requirement - Fans and ducts designed and installed to ASHRAE Std. 62.2 - Air exhausted to outdoors - ENERGY STAR labeled bathroom exhaust fans	<i>Amply exhausting damp kitchen and bath air from the home prevents the opportunity for mold and mildew growth.</i>
Enhanced Local Exhaust Options	- Occupancy sensor - Automatic humidstat controller - Automatic timer tied to switch - Continuously operating exhaust fan	

Distribution of Space Heating and Cooling		
Room-by-Room Load Calculations		
Return Air Flow/Room-by-Room Controls Options		
Forced Air Systems	- Return air opening of 1 sq. inch per cfm of supply - Limited pressure differential between closed room and adjacent spaces	
Nonducted HVAC Systems	Flow control valves on every radiator	
Third Party Performance Test/Multiple Zones		
Forced Air Systems	Have supply air flow rates in each room tested and confirmed	
Nonducted HVAC Systems	Install at least two distinct zones with independent thermostat control	

Air Filtering		
Higher Quality Air Filters		<i>A simple option to remove dust and pollutants from indoor air.</i>

Contaminant Control		
Indoor Contaminant Control during Construction		<i>Prevent dust from settling in ductwork.</i>
Indoor Contaminant Control	- Design and install permanent walk-off mats at each entry - Design shoe removal and storage space near primary entryway - Install central vacuum system with exhaust to outdoors	
Pre-occupancy Flush		

Radon Protection		
Radon-Resistant Construction		
Radon Testing		
Garage Pollutant Protection		
No HVAC in Garage		
Minimize Pollutants from Garage	- Seal all penetrations and connecting floor and ceiling joist bays - Paint walls and ceilings of shared walls, including garage - Weather-strip all doors leading into home - Carbon monoxide detectors in rooms that share a door with garage - Seal all penetrations and cracks at the base of walls	
Exhaust Fan in Garage	- Fan runs continuously - Fan designed with automatic timer control	
Detached Garage or No Garage		<i>With a TightLines Design, you can often receive green certification points for not having a garage.</i>

AWARENESS & EDUCATION

Education of the Homeowner or Tenant		
Basic Operations Training	- Operations and training manual - One-hour walkthrough with occupant(s)	
Public Awareness	- Open House - Website about features and benefits of green homes - Newspaper article on the project - Display signage on exterior of home designating green accolades	

THIS PAGE CONTAINS A LIST OF SUGGESTIONS THAT TIGHTLINES DESIGNS BELIEVES WILL BE BENEFICIAL IN THE CONSTRUCTION OF A TIGHTLINES HOUSE. THIS IS NOT INTENDED AS A SPECIFICATION SHEET, NOR IS IT A COMPREHENSIVE CHECK LIST FOR ANY CERTIFICATION PROCESS.

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Green Opportunities



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"Green" Opportunities

G1