EUREKA TOWNSHIP

Residential New Home Construction

PERMIT INSTRUCTIONS

Requirements for New Construction:

- ☐ Signature from Town Board on completed Building Permit Application, including contractor license number.
- ☐ Application fees as set forth in Eureka Township Ordinance 7.
- ☐ Proof of ownership: Parcel ID will be verified by the Town Clerk; conflicts must be resolved with a proper deed.
- ☐ Building Plans (Cross Section, Elevations, Floor Plan) - 2 copies.
- ☐ Heat Loss, Combustion Air & Make-up Calculations – 2 copies.
- ☐ Energy Certificate – 2 copies.
- ☐ Driveway Permit (Required for access to State, County or Township Roads); Plumbing Permit; Mechanical Permit.
- ☐ Survey / Detailed Site Plans – 2 copies.
- ☐ Erosion and Sediment Control Plans.
- ☐ Complete Septic Design.
- ☐ New Home Checklist.

Required Building Inspections:
Applicant must contact the Eureka Township Building Inspector for all required inspections.

General Requirements:
Single-family residential structures, including manufactured homes, are governed by Eureka Township Ordinance 3 and the Minnesota State Building Code. You can view the Eureka Zoning Ordinance and applicable state building codes from the Eureka Township website at http://eurekatownship-mn.us.

Call the State Electrical Inspector to schedule all electrical inspections at (651) 284-5064.

After final inspection is approved, the building inspector will issue a Certificate of Occupancy. The building cannot be occupied until this certificate is issued.

Note: The Inspector may issue an order to remove materials to prove compliance with the Minnesota State Building Code and manufacturer's installation requirements.

If a re-inspection is required to verify compliance with the code, a re-inspection fee will apply and the permit holders or their representative must meet the inspector at the site to provide access.

- ➢ All materials and the installation of all materials must comply with the Minnesota State Plumbing Code and the manufacturer's installation specifications for each period.

Residential New Home Construction Checklist

(MUST be included when applying for permit)

Address:_____ **PIN#**_____

All materials and the installation of all materials must comply with the Minnesota State Building Code and the manufacturer's installation specifications for each product.

SUBMISSION CHECKLIST (Incomplete applications will not be accepted)

- ☐ Completed and Signed Building Permit Application (Include all License/Bond Numbers, contact phone numbers and email addresses).
- ☐ Completed and Signed copy of this Checklist.
- ☐ 2 sets of Structural Building Plans (floor plans and elevations).
- ☐ 2 sets of Site Plans illustrating building dimensions, lot lines and setbacks.
- ☐ New Construction Energy Code Compliance Certificate.
- ☐ Worksheet E-1 "Residential Combustion Air Calculation Method" (attached).
- ☐ Table 501.3.1 form "Procedure to Determine Makeup Air Quantity for Exhaust Equipment" (attached).
- ☐ New Construction Energy Code Lighting Schedule (attached and allowed to be a deferred submittal).

Note: Additional information may be required by the Plans examiner.

Check all items below that will be included in the construction of the home.

Note: All items checked below may need to be installed and completed before a Certificate of Occupancy can be issued. If any of the items are not checked, but are added to the plan after the building permit ahs been issued, an additional permit will be required.

- ☐ Finished Basement
- ☐ Deck
- ☐ Gas Fireplace: Quantity _____
- ☐ Masonry/Wood Fireplace: Quantity _____
- ☐ In-Floor Heat – hydronic
- ☐ Geothermal System
- ☐ Other: _____
- ☐ Retaining Wall (if over 48" in height, include structural engineer sealed design
- ☐ Complete Septic System Design

FOUNDATION INFORMATION:				
Foundation Type	☐ Masonry	☐ Poured Wall	☐ ICF	☐ Wood
Foundation Thickness	☐ 8-inch	☐ 10-inch	☐ 12-inch	☐ Other
ICF Only	☐ 5.5-inch	☐ 7.5-inch	☐ 9.5-inch	☐ Other
Design Criteria	☐ Conventional	☐ Engineered	☐ IRC Tables	

Maximum Foundation Wall Height: 4' 5' 6' 7' 8' 9' 10' Other:
Vertical Reinforcement Size and Spacing: _____reinforcing _____inches o.c. Horizontal Reinforcement Size and Spacing: _____reinforcing _____inches o.c.
Waterproofing/Damp-proofing (product type): Above grade:_____ Below grade:_____
Foundation Drainage System Type:

Applicant's Printed Name:_____

Applicant's Signature:_____ Date:_____

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Worksheet E.1.
Residential Combustion Air Calculation

Residential Combustion Air Calculation Method
(for Furnace, Boiler, and/or Water Heater in the Same Space)

Step 1: Complete vented combustion appliance information
Furnace/Boiler: _____Draft Hood _____Fan Assisted _____Direct Vent Input: _____Btu/hr.
(Not fan Assisted) & Power Vent
Water Heater: _____Draft Hood _____Fan Assisted _____Direct Vent Input: _____Btu/hr.
(Not fan Assisted)

Step 2: Calculate the volume of the Combustion Appliance Space (CAS) containing combustion appliances. The CAS includes all spaces connected to one another by code compliant openings.
CAS Volume:_____ft^3

Step 3: Determine air Changes per Hour (ACH)
Default ACH values have been incorporated into Table E-1 for use with Method 4b (KAIR Method). If the year of construction or ACH is not known, use method 4a (Standard Method).

Step 4: Determine Required Volume for Combustion Air
4a. Standard Method:
Total BTU/hr. input of all combustion appliances (*Do Not count direct vent appliances*): Input: ____Btu/hr.
Use Standard Method column in Table E-1 to find Total Required Volume (TRV): TRV:_____ft^3
If CAS Volume (from step 2) is ***greater than*** TRV then no outdoor openings are needed.
If CAS Volume (from step 2) is ***less than*** TRV then go to S**tep 5**.
4b. Known Air Infiltration Rate (KAIR) Method:
Total Btu/hr input of all fan-assisted and power vent appliances
(*Do Not count direct vent appliances*): Input: _____But/hr.
Use Fan-Assisted Appliances column in Table E-1 to find
Required Volume Fan Assisted Rate (RVFA) RVFA:_____ft^3
Total Btu/hr. input of all non-fan-assisted appliances: Input: _____Btu/hr.
Use Non-Fan-Assisted column in Table E-1 to find
Required Volume Non-Fan-Assisted (RVNFA) RVNFA: _____ft^3
Total Required Volume (TRV) = RVFA + RVNFA TRV=_____+_____=_____ft^3
If CAS Volume (from step 2) is ***greater than*** TRV then no outdoor openings are needed.
If CAS Volume (from step 2) is ***less than*** TRV then go to **Step 5**.

Step 5: Calculate the ratio of available interior volume to the total required volume.
Ratio = CAS Volume (from step 2) divided by TRV (from Step 4) Ratio: _____/_____=_____

Step 6: Calculate Reduction Factor (RF)
RF = 1 *minus* Ratio RF=1-_____=_____

Step 7: Calculate single outdoor opening as if all combustion air is from outside.
Total Btu/hr. input of all Combustion Appliances in the same CAS (*Except direct vent*) Input: _____Btu/hr.
Combustion Air Opening Area (CAOA)
Total Btu/hr. *divided* by 3,000 Btu/hr. per in^2 CAOA = _____/3000 Btu/hr. per in^2 = _____in^2

Table 501.3.1
Procedure to Determine Makeup Air Quantity for Exhaust Equipment in Dwellings
Use the Appropriate Column to Estimate House Infiltration

	One or multiple power vent or direct vent appliances or no combustion appliances[A]	One or multiple fan-assisted appliances and power vent or direct vent appliances[B]	One atmospherically vented gas or oil appliance or one solid fuel appliance[C]	Multiple atmospherically vented gas or oil appliances or solid fuel appliances[D]
1a. Pressure factor (cfm/sf)	0.15	0.09	0.06	0.03
1b. Conditioned floor area (sf) including unfinished basements				
Estimated House Infiltration (cfm): [1a x 1b]				
2a. Exhaust Capacity – continuous exhaust only ventilation systems (cfm): not applicable to balanced ventilation systems such as HRV				
2b. Clothes dryer	135	135	135	135
2c. 80% of largest exhaust rating (cfm): not applicable if recirculating system or if powered makeup air is electrically interlocked and matched to exhaust				
2d. 80% of next largest exhaust rating (cfm): not applicable if recirculating system or if powered makeup air is electrically interlocked and matched to exhaust	Not Applicable			
Total Exhaust Capacity (cfm): [2a+2b+2c+2d]				
3a. Makeup Air Requirement – Total Exhaust Capacity (from above)				
3b. Estimated House Infiltration (from above)				
Makeup Air Quantity (cfm): [3a – 3b] (If value is negative, no makeup air is needed)				

A Use this column if there are other than fan-assisted or atmospherically vented gas or oil appliances or if there are no combustion appliances.

B Use this column if there is one fan-assisted appliance per venting system. Other than atmospherically vented appliances may also be included.

C Use this column if there is one atmospherically vented (other than fan-assisted) gas or oil appliance per venting system or one solid fuel appliance.

D Use this column if there are multiple atmospherically vented gas or oil appliances using a common vent or if there are atmospherically vented gas or oil appliances and solid fuel appliances.

Table 501.3.2

Makeup Air Opening Sizing for New and Existing Dwellings

	One or multiple power vent or direct vent appliances or no combustion appliances[A]	One or multiple fan-assisted appliances and power vent or direct vent appliances[B]	One atmospherically vented gas or oil appliance or one solid fuel appliance[C]	Multiple atmospherically vented gas or oil appliances or solid fuel appliances[D]	Passive makeup air opening duct diameter[E, F, G]
Type of opening or system	(cfm)	(cfm)	(cfm)	(cfm)	(inches)
Passive Opening	1-36	1-22	1-15	1-9	3
Passive Opening	33-66	23-41	16-28	10-17	4
Passive Opening	67-109	42-66	29-46	18-28	5
Passive Opening	110-163	67-100	47-69	29-42	6
Passive Opening	164-232	101-143	70-99	43-61	7
Passive Opening	233-317	144-195	100-135	62-83	8
Passive Opening with Motorized Damper	318-419	196-258	136-179	84-110	9
Passive Opening with Motorized Damper	420-539	259-332	180-230	111-142	10
Passive Opening with Motorized Damper	540-679	333-419	231-290	143-179	11
Powered Makeup Air[H]	>679	>419	>290	>179	Not Applicable

A Use this column if there are other than fan-assisted or atmospherically vented gas or oil appliances or if there are no combustion appliances.

B Use this column if there is one fan-assisted appliance per venting system. Other than atmospherically vented appliances may also be included.

C Use this column if there is one atmospherically vented (other than fan-assisted) gas or oil appliance per venting system or one solid fuel appliance.

D Use this column if there are multiple atmospherically vented gas or oil appliances using a common vent or if there are atmospherically vented gas or oil appliances and solid fuel appliance(s).

E An equivalent length of feet or round smooth metal duct is assumed. Subtract 40 feet for the exterior hood and 10 feet for each 90-degree elbow to determine the remaining length of straight duct allowable.

F If flexible duct is used, increase the duct diameter by one inch. Flexible duct shall be stretched with minimal sags.

G Barometric dampers are prohibited in passive makeup air openings when any atmospherically vented appliance is installed.

H Powered makeup air shall be electrically interlocked with the largest exhaust system.

New Construction Energy Code – Lighting Schedule Per section R103 of the 2015 Minnesota Energy Code, MR 1322: Lighting fixture schedule with wattage and control information	Date Posted	**EUREKA TOWNSHIP**
Mailing Address of the Dwelling or Dwelling Unit	City	
Name of the Residential Contractor	MN License Number	

Room Name	Number of Bulbs	Wattage	Type of Bulb: (Insert X in box)				Type of Switch: (Insert X in box)				Notes
			Incandescent	CFL	LED	Other	Standard	3 Way	Dimmer	Other	