

ANNEX “A”

CONSTRUCTION STANDARDS AND OTHER REGULATORY REQUIREMENTS

THE NATIONAL BUILDING CODE OF CANADA (Section 9) APPLIES IN KAHNAWÀ:KE AS AMENDED FROM TIME TO TIME BY THIS ANNEX “A”

In a continuing effort to ensure new homeowners have quality homes constructed within the Mohawk Territory of Kahnawà:ke that are up to today's current construction norms, components of the National Building Code of Canada (Section 9) and the Quebec Building Code have been selected by the MCK Housing Department to ensure acceptably higher standards are implemented rather than the minimum requirements.

In 2015 significant improvements have been made to the National Building Code pertaining to the building envelope and improving energy efficiency. It is essential to observe the changes as they are designed to better equip the home for this climate therefore it is necessary to obtain the complete sets of working drawings that are up to current code standards and follow them to maintain the optimum energy efficiency. Improving energy efficiency will help the home achieve long life span as well as make the home more comfortable. Energy efficient homes are easier to heat and cool for the homeowners as they live in the home year after year. Initial costs for constructing an energy efficient home is more expensive but does pay for itself over a short period.

It will also enable the Housing Program Inspector to carry out the inspection process by ensuring that agreed upon Plans and Building Contract specifications and details are met and adhered to as well as quality building practices and standards are carried out.

FOUNDATION

(Delivery Ticket to be provided for each pour of concrete)

- Footing to be constructed using 20 mpa without air or 3000 psi.
- 3 longitudinal rebar (1/2" dia) are required in the footing. Lateral rebars (1/2" dia) of 2' lengths are placed @ 24" o.c. in opposite direction. 2 rows of vertical L-shape rebar (1/2" dia) to be tied to the longitudinal rebars in footing.
- Installation of a proper keyway in the footing is required to avoid water seepage between the footing and foundation walls. Keyway should be formed prior to concreting by using such as a piece of wood. Size of keyway should be 1-1/2" wide X 1-1/2" deep (NOT SCRATCHED OUT).
- French drain to be perforated plastic pipes with filter sleeve to be installed around entire perimeter of the footing, covered with 3/4" clean crushed gravel, emptying into basement sump pit. (Must not be pumped into the Centralized Sewer System).
- Foundation wall assembly includes concrete walls to be constructed using minimum 25 mpa (3,626 psi) with air, but 30 mpa (4,350 psi) with air is being recommended. It should be 8" thick. Minimum 2 rows of longitudinal rebar (1/2" dia) are properly tied and overlapped at top and bottom perimeter. 2 rows of diagonal rebar (1/2" dia) to be placed on both sides of each window opening and properly tied at top and bottom.

Exterior wall, damp-proofing material (tar) below grade or waterproof membrane which is optional, cement finish (parging) above grade, which is optional.

Interior wall, asphalt paper layer, 2x4 stud framing @ 24" o.c., 3" insulation panels, vapour barrier, 1/2" gypsum board. (R -17).

- (R5) Concrete for floor slab to be minimum 25 mpa (3,626 psi) with air, but 30 mpa (4,350 psi) with air is being recommended. It should be 4" thick minimum, include a 6"x6" wire meshes over 6 mil polyethylene vapor barrier over 2" rigid foam insulation placed at 36" around the perimeter over 0-3/4" (12" thick) compacted gravel.
- Flooring for finished basement above the slab 1/2" plywood on top of 1"x3" nailer placed at 16" o.c.
- 2X4 embedded nailer (treated wood) on top of concrete wall. Anchor bolts and sill seal is required before placing floor.
- Ensure that the sump pit is installed a minimum of six feet (6') away from the electrical entrance box.
- Seal sump pit with plywood/Styrofoam cover.
- The sump pump must be installed with a permanent hook up exiting to the exterior of the house.

- Main beam:
 - Main beam pocket should be prepared properly by using the appropriate material under the main beam (ie: sill seal, felt paper, treated wood) to protect the main beam from concrete moisture.
 - Main beam pocket should maintain a ½" air space around the main beam.
 - 4 ply 2X10 built up wood or steel girder.
 - In cases where span is longer than 10', a pre-engineered laminated wood beam will be used for the entire distance.
 - I beams (all engineered products must be installed exactly to manufacturer's specifications ie: Strength must not be compromised by cutting through flanges, etc.).
- Basement steel support columns (ie: jack posts) to span 10' only. Jack posts should be sitting on concrete footings/pads at 24"X24"X10" and should be set on a protective moisture barrier (ie: sill seal).

EXTERIOR WALLS (R24.5)

- Exterior finish (siding), 1x3 nailers @ 16" o.c. air barrier (taped), 1.5" SONOCLIMATE panels (R-4)\, 2X6 wall framing, @ 16" o.c. mineral wool R-20, vapour barrier, 1x3 nailer @ 16" o.c. ½" gypsum board (R-0.45).
- Exterior wall finishing to be 20 year minimum lifespan:
 - Vinyl siding;
 - Color Lok siding;
 - OSB/Aspenite;
 - Smart siding;
 - Brick and/or stone.

INSULATION

- CMHC approved or better.
- Attic insulation to be R-40 minimum (pink insulation or blown in cellulous with vapor barrier taped at joints)
- Wall insulation to be R-24 minimum (pink insulation covered with vapor barrier taped at joints)

INTERIOR WALLS/CEILING

- Interior wall studs to be 2X4 on 16" o/c.
- Ceiling laths to be 1X3 on 16" o/c.
- Finished walls and ceiling to be fireproof material (1/2" gyproc). Bathroom to be water proof 1/2" gyproc or equivalent.
- Walls and ceiling to receive 3 coats plaster and sanded.
- Walls and ceiling to receive one coat primer and two finished coats of paint.

ROOF (R41)

Must be protected with appropriate application of roofing material which includes metal flashing for all valleys, pipes (perforations) and seams are to be installed according to manufacturer's recommendation or best building/construction practices.

Roof to be installed to shed rain effectively and prevent potential formation of ice dam.

Proper roof overhang is specified for construction in this climate specifically and will be observed.

- Roofs truss design will be in accordance with manufacturer's specifications, exactly and according to the set of working drawings provided for construction of that particular home and not changed by a carpenter/contractor or without the approval from the Housing Department.
- Application of finishing materials for shingled roof will be according to the specifications and installation methodology provided by the manufacturer that are specifically designed to be built in this climate (region) i.e. slope/pitch. For example: 5/8" plywood, 3' RUBBERIZED membrane front and back beginning at the inside face of the top plate, and including the overhang, 15lb. black paper for the remainder, then minimum 25 years shingles (maintain a minimum of ½" uniform shingle overhang).
- Application of finishing materials for a Metal roof will be according to the manufacturer's specifications and the working drawings that are specifically designed to be built in this climate (region) i.e. slope/pitch. For example: 5/8" plywood, minimum 1X3 horizontal laths, metal roofing material including snow guards to be installed at appropriate locations of the roof.
- Use of ridge vent, passive turbine and/or gable end vent for balanced ventilation for the attic space using 1:300 ratio.
- Access trap door to the attic area is to be located in an area of easy accessibility. Trap door should be insulated using R-40 or rigid insulation glued with mineral wool on top.
- In order to avoid roof truss uplift, no screws should be used in gyproc on the center line of the trusses (ie: hallways).
- Rain gutters and downspouts to be installed to extend 10' sloping away from the house.

WINDOWS & EXTERIOR DOORS

- Windows to be energy efficient with Low E argon gas.
- Doors to be 4 seasons steel insulated or wood/aluminum doors.

PLUMBING

- All plumbing to be CMHC approved and/or National Building Code – Section 9.
- Plumbing to be according to Blue Prints/house plans.
- Main water valve to be “ball lever type” shut off.
- Sewer exit pipe to include metal check valve at end of line for centralized systems only (NOT APPLICABLE IN RURAL AREAS).
- Well and septic disposal system installations must conform to the MCK’s “Water and Sanitation Quality Regulations”. The Contractor is responsible to connect the sewer pipe from homes located in the rural areas of Kahnawake to the pipe going into the septic tank. This connection must be made with a water tight adapter between the two pipes.
- Plumber must not compromise the strength of the floor structure (ie: must not cut through the flange)

ELECTRICAL

- Canadian Electric Code and/or National Building Code – Section 9.
- Electrical to be according to Blue Prints/house plans.
- At least one smoke detector located in main hallway near bedrooms and must be electrically connected.
- G.F.C.I. (Ground Fault Circuit Interrupter) to be included in the bathroom(s) and kitchen areas near sinks.
- Electrician must clearly identify in permanent ink what each breaker controls in the panel.
- Electrician must not compromise the strength of the floor structure (ie: must not cut through the flange).

HEATING/COOLING SYSTEM

- Choice of electric or furnace/heat pump. Must meet C.S.A. and/or National Building Code – Section 9.
- Air conditioning – optional.
- Chimney should be insulated stainless steel chimney flue with rain cap (pre-fabricated for fireplaces, fuel fired furnace and wood stove installed by Certified Company). Details of the equipment should be provided to Housing Department prior to installation.

VENTILATION

- An Air Exchanger with heat recovery ventilator (HRV) must be installed to avoid excess moisture problems. Drainage pipe should drain into the sump pit cover and properly sealed or into the nearest plumbing drain.
- Bathroom vent fans are required and must be installed exiting the gable end of the home when 12’ or less. If distance is 12’ or more, the vent should exit through the roof and NOT the Soffits. The type of vent should be appropriate for the type of roof being installed.
- Bathroom exhaust fan should be sized to approximately 2 CFM per the square footage of the bathroom. Example: If the bathroom dimensions are 8’X5’ or 40 sq. ft., the vent fan should be for a 80 CFM. Sound level of the fan should be less than -1.5 sones.
- Bathroom exhaust fan should operate from its own light switch.
- Clothes dryer exhaust system must be aluminum and venting to the exterior.

KITCHEN CABINETS

- Includes standard cabinets with counter top with kitchen sink and formed taps.

FLOORING

- Choice of finished floor covering.
- If choosing ceramic floor tiles, it is recommend that screws be properly secured at every 4” and staggered at edges in order to eliminate any movement which could result in cracking.
- Appropriate floor transitions required where necessary.

PORCHES

- All exterior entrance ways must have an appropriate porch constructed for safety reasons (ex. Front, back and/or side). Safety provisions will be provided as to eliminate possibility of children climbing falling or becoming otherwise trapped, to provide adequate protection, it is recommended that a distance between all vertical balusters not exceed 4" o.c.
- All porches should have properly built steps and hand railings. Height of hand railings to be appropriate as well as strong enough to provide the adequate amount of support and guidance to arrest falls and be of a material that is continuous and graspable. Handrails are to be attached appropriately as to provide strength for the user.
- Concrete step risers should be 7" - 7-3/4" and threads should be 10" – 12".

INTERIOR STAIRS

- Staircase to basement must have a vertical headroom clearance of 6'8" minimum.
- Wooden step risers should be 7" – 7-3/4" and threads to be 9" cut out minimum.
- Interior graspable hand railing(s) are required for safety precautions.
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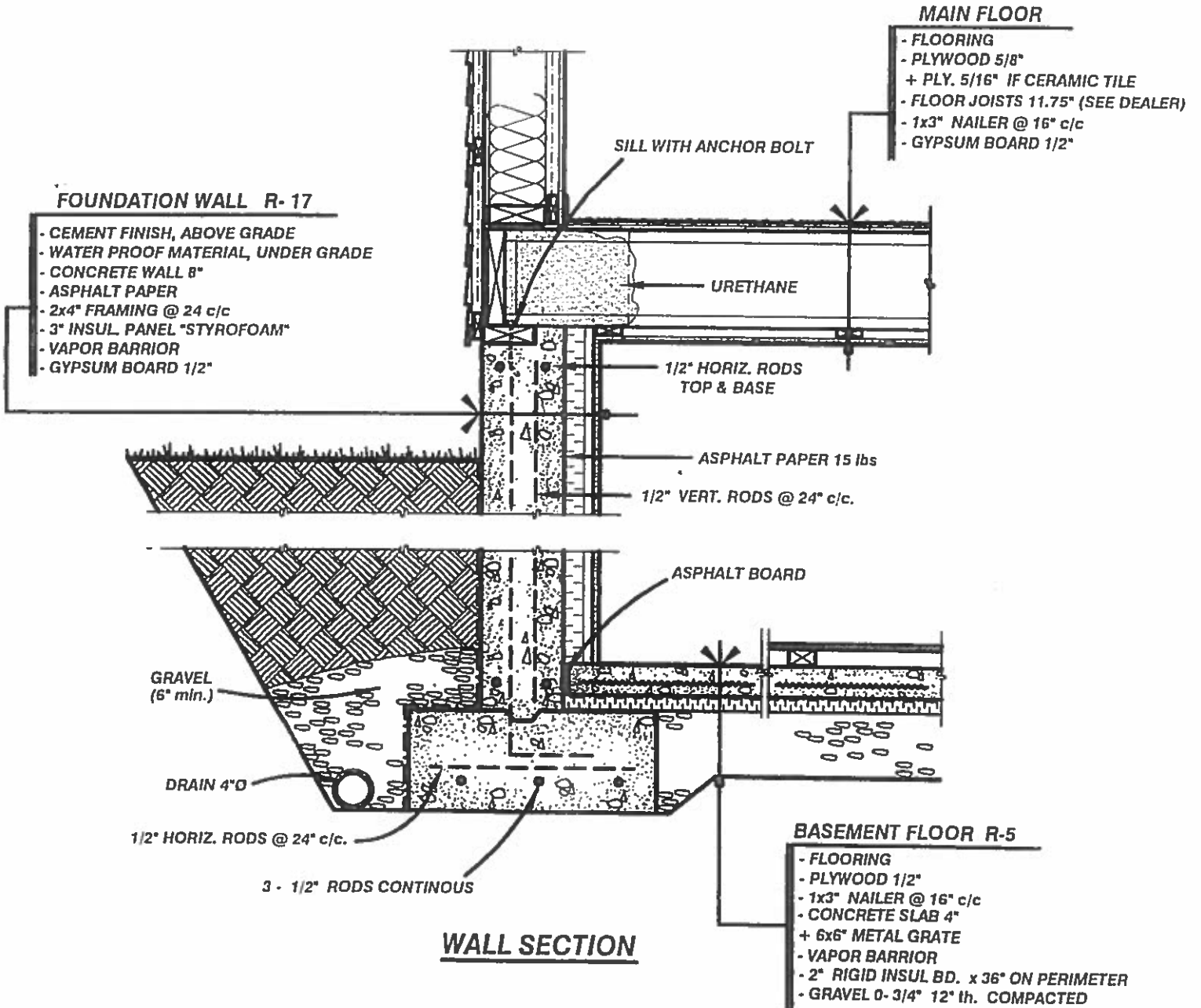
MISCELLANEOUS

- New Housing Inspection (Pre-Construction) must be carried out by Technical Services.
- Soil test is recommended in any areas recently landfilled at homeowner's expense.
- Additional backfill material if required is the homeowner's responsibility. Contractor is only responsible for backfilling with the available earth on site.

Gall

New Standard for Foundation

- 3" INSUL. PANEL "STYROFOAM" ON FOUNDATION WALL
- 2" INSUL. PANEL "STYROFOAM" x 36" wide ON ALL THE PERIMETER UNDERNEIT THE SLAB (EVEN THE GARAGE SLAB)
- NO SAND NEEDED BUT THE 0- 3/4" GRAVEL MUST BE AT LEAST 12" thick AND COMPACTED



Exterior Wall w/ Slab Construction

VENT. 1/300

EXTERIOR WALL R-24.5

- CANEXEL SIDING
- 1x3" NAILER @ 16" c/c
- AIR BARRIER
- SONOCLIMAT PANEL R-4 1 1/4"
- 2x6" FRAMING @ 16" c/c
- MINERAL WOOL R-20
- VAPOR BARRIER
- 1x3" NAILER @ 16" c/c
- GYPSUM BOARD 1/2"

FOUNDATION WALL

- CEMENT FINISH, ABOVE GRADE
- WATER PROOF MATERIAL, UNDER GRADE
- CONCRETE WALL 8"
- RIGID INSUL. PANEL 2"

FLOOR R-5

- FLOORING
- CONCRETE SLAB 6"
- + 6x6" METAL GRATE
- VAPOR BARRIER
- 1" RIGID INSULATION
- SAND
- COMPACTED GRAVEL 0-3/4" 12"

SILL WITH ANCHOR BOLT

1/2" HORIZ. RODS
TOP & BASE

1/2" VERT. RODS @ 24" c/c.

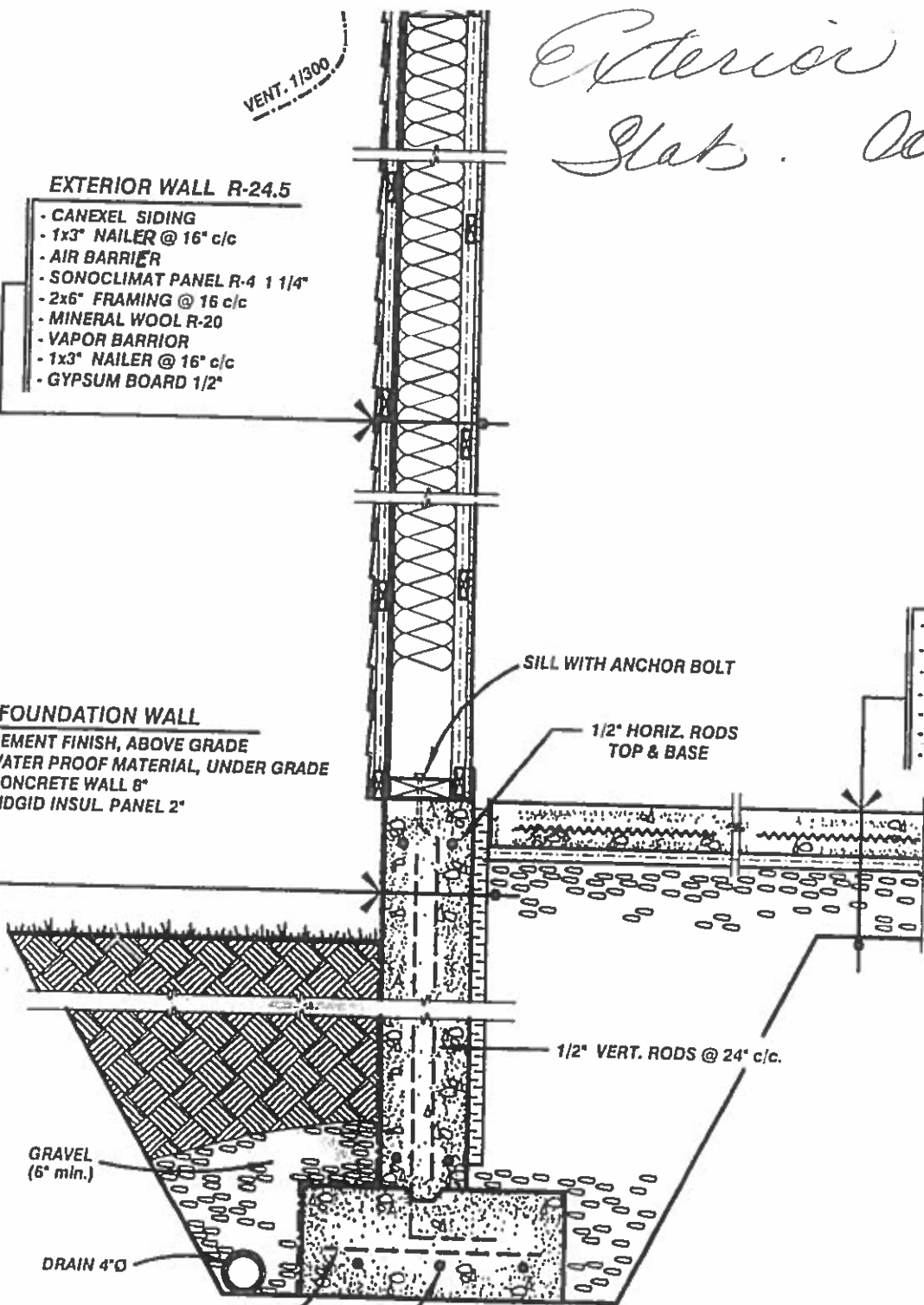
GRAVEL
(6" min.)

DRAIN 4"Ø

1/2" HORIZ. RODS @ 24" c/c.

3 - 1/2" RODS CONTINUOUS

WALL SECTION



Asphalt Shingle Roof

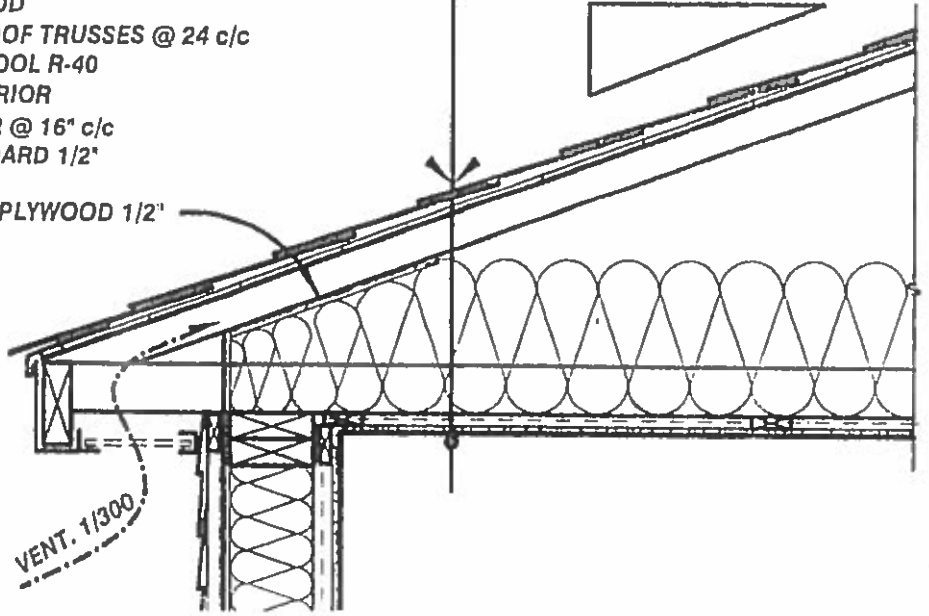
ROOF R-41

- ASPHALT SHINGLES ROOFING
- ASPHALT PAPER 15 lbs
- 36" MEMBRANE ON RIDGES
- 5/8" PLYWOOD
- PREFAB. ROOF TRUSSES @ 24 c/c
- MINERAL WOOL R-40
- VAPOR BARRIER
- 1x3" NAILER @ 16" c/c
- GYPSUM BOARD 1/2"

SEE ELEVATIONS

PLYWOOD 1/2"

VENT. 1/300



ROOF R-41

- METALLIC ROOFING
- 5/8" PLYWOOD
- PREFAB. ROOF TRUSSES @ 24 c/c
- MINERAL WOOL R-40
- VAPOR BARRIER
- 1x3" NAILER @ 16" c/c
- GYPSUM BOARD 1/2"

Metal roof

SEE ELEVATIONS



PLYWOOD 1/2"

