

SIMPLIFIED CONSTRUCTION MANUAL

RURAL and NATIVE DEMONSTRATION PROGRAM

**CANADA MORTGAGE and HOUSING CORPORATION
SOCIÉTÉ CANADIENNE D'HYPOTHEQUES ET DE LOGEMENT**

ACKNOWLEDGEMENTS

THE SIMPLIFIED CONSTRUCTION MANUAL WAS PREPARED BY THE BUILDINGS DIVISION OF ADI LIMITED, ARCHITECTS AND ENGINEERS, UNDER CONTRACT TO CANADA MORTGAGE AND HOUSING CORPORATION, PROJECT IMPLEMENTATION DIVISION. VALUABLE ADVICE WAS PROVIDED BY MANY INDIVIDUALS FROM CMHC WHO HAVE CONSIDERABLE EXPERIENCE WITH RESIDENTIAL CONSTRUCTION PRACTICES FROM MANY REGIONS OF CANADA.

GENERAL

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INTRODUCTION

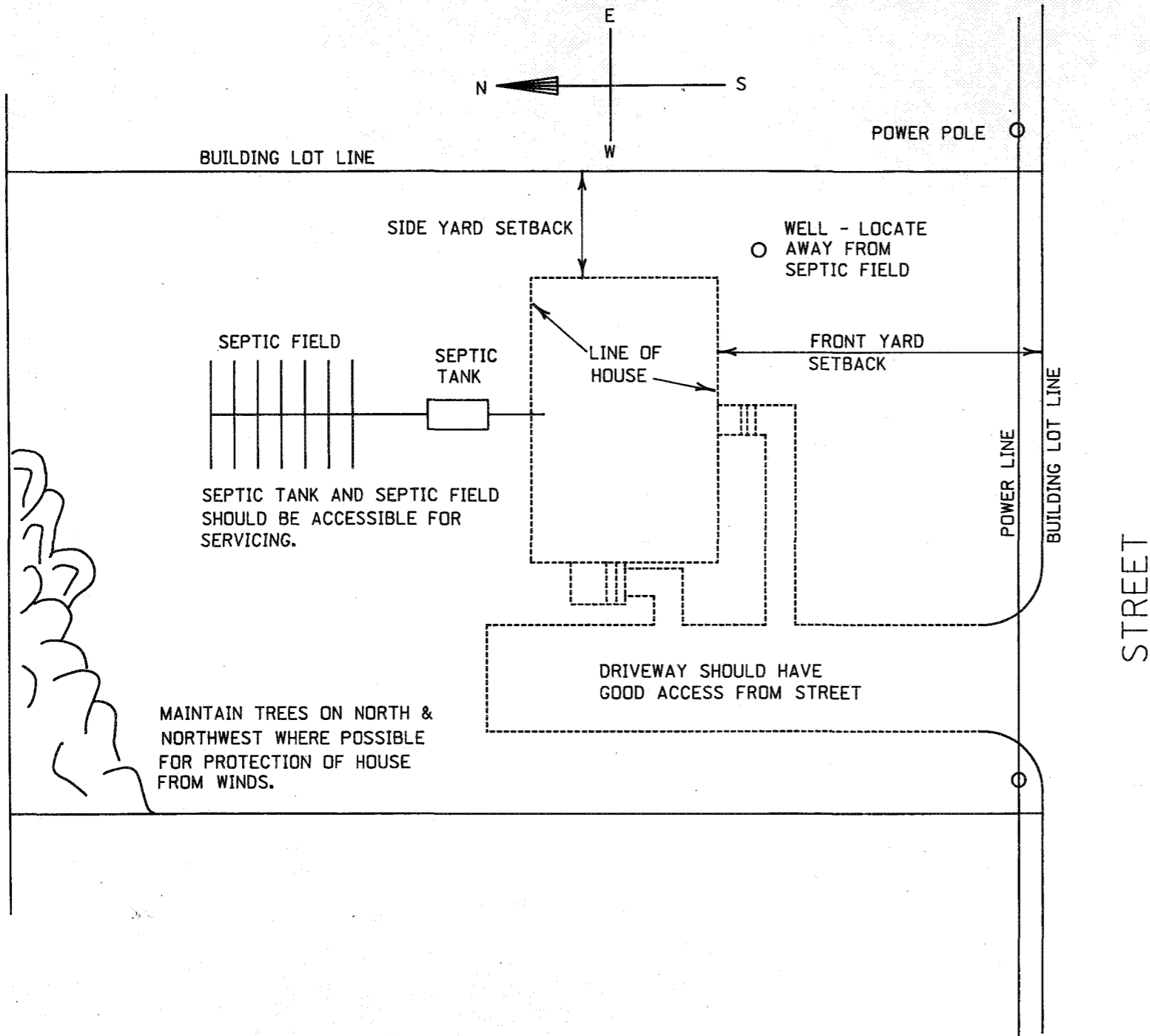
YOU ARE ABOUT TO BEGIN CONSTRUCTION OF YOUR NEW HOME. BEFORE YOU START BUILDING, YOU SHOULD READ THIS MANUAL TO BECOME FAMILIAR WITH THE WORK YOU ARE ABOUT TO UNDERTAKE.

THIS SIMPLIFIED CONSTRUCTION MANUAL WAS PREPARED FOR CMHC'S RURAL AND NATIVE (RNH) DEMONSTRATION PROGRAM AS A GUIDE FOR PEOPLE NOT EXPERIENCED WITH BUILDING HOUSES. THE SECTIONS OF THE MANUAL HAVE BEEN ARRANGED IN THE SUGGESTED SEQUENCE OF CONSTRUCTION WITH STEP-BY-STEP RECOMMENDATIONS FOR EACH PHASE OF WORK. ANY REQUIRED CHANGES FROM THE DETAILS SHOWN, DUE TO VARIATIONS IN LOCAL OR PROVINCIAL BUILDING REGULATIONS, WILL BE BROUGHT TO YOUR ATTENTION THROUGH THE LOCAL CMHC OFFICE.

THE SUCCESS OF YOUR PROJECT DEPENDS ON THE CO-OPERATION OF YOURSELF, YOUR CONSTRUCTION MANAGER AND CMHC. CMHC WILL PROVIDE HOUSE PLANS, BUILDING MATERIALS, SITE SERVICES, CONSTRUCTION SUPERVISION, SPECIALIZED LABOUR AND LAND, WHERE NECESSARY.

A CONSTRUCTION MANAGER, ASSIGNED TO PROJECTS CONSISTING OF 3-7 HOUSES, WILL WORK WITH YOU BY PROVIDING ON-SITE TRAINING AND CONSTRUCTION SUPERVISION. WHERE POSSIBLE, THE CONSTRUCTION MANAGER WILL ARRANGE FOR FAMILIES TO WORK TOGETHER ON THEIR HOUSES TO BENEFIT FROM THE GROUP'S EXPERIENCE AND EXTRA HELP.

YOU, THE HOMEOWNER, ARE RESPONSIBLE FOR BUILDING YOUR HOUSE THROUGH YOUR OWN EFFORTS, WITH THE HELP OF RELATIVES, FRIENDS AND NEIGHBOURS. ALTHOUGH THIS WILL REQUIRE A GREAT DEAL OF TIME AND EFFORT, IT WILL BE A REWARDING EXPERIENCE FOR YOU AND YOUR FAMILY.



NOTES

1. SIDE YARD SETBACK AND FRONT YARD SETBACKS AS REQUIRED BY LOCAL AUTHORITIES.
2. LOCATION OF SEPTIC TANK AND SEPTIC FIELD AS REQUIRED BY LOCAL AUTHORITIES.
3. LOCATE WELL A SAFE DISTANCE FROM THE SEPTIC FIELD.
4. SETTING THE HEIGHT OR ELEVATION OF THE HOUSE IS VERY IMPORTANT AS THE FINISHED GRADE MUST PROVIDE NATURAL DRAINAGE AWAY FROM THE HOUSE.
5. ELEVATION OF FINISHED FLOOR SHOULD BE HIGHER THAN STREET.
6. IT IS SUGGESTED THAT THE LIVINGROOM OR WINDOW SIDE FACE TOWARD THE SOUTH.
7. RUN WEEPING TILE TO DITCH OR DRYWELL.

NOTES

1. THIS PAGE SHOWS COMMON TOOLS NEEDED AT MOST BUILDING SITES. THESE ARE THE BASIC TOOLS YOU MAY WISH TO PURCHASE OR BORROW FOR THE CONSTRUCTION OF YOUR HOME.

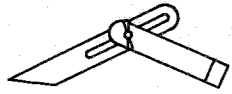
2. THERE ARE MANY VARIETIES OF TOOLS AND MANUFACTURERS FROM WHICH TO CHOOSE. IT PAYS TO SHOP AROUND AND TALK TO TRADESMEN BEFORE PURCHASING TOOLS AND EQUIPMENT.

3. ONCE YOU HAVE PURCHASED YOUR TOOLS YOU WILL WANT TO PROTECT YOUR INVESTMENT BY PROPERLY STORING THEM WHILE NOT IN USE.

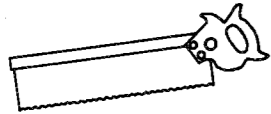
4. PROPER CARE OF TOOLS IS IMPORTANT; CLEAN OFF RUST IMMEDIATELY; KEEP POWER SAW BLADES SHARPENED; KEEP SMALL TOOLS IN A SINGLE TOOL BOX FOR CONVENIENCE; KEEP HAND SAWS, MITRE SAWS, CHISELS AND KNIVES SHARP FOR EASE OF CUTTING.



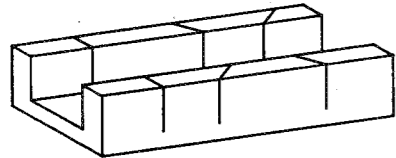
HARD HAT



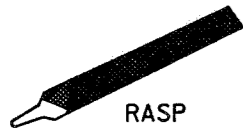
BEVEL



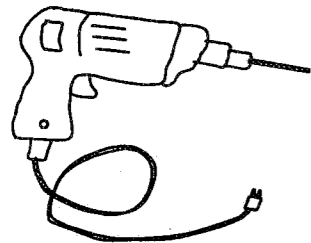
MITRE SAW AND BOX



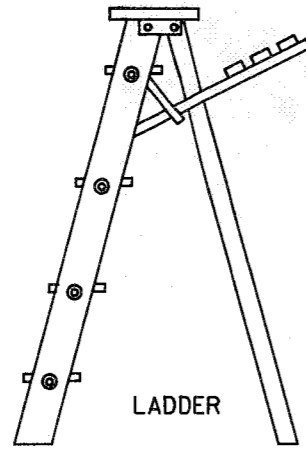
SAFETY GOGGLES



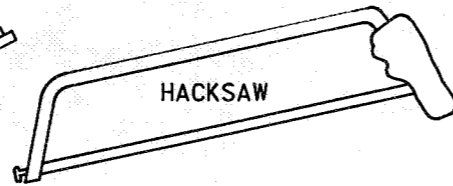
RASP



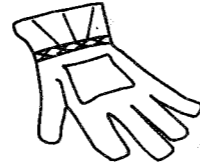
ELECTRIC DRILL



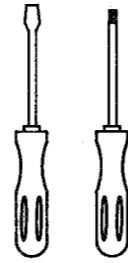
LADDER



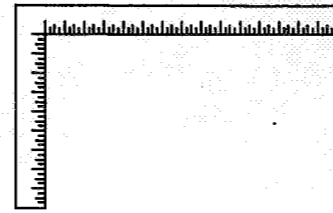
HACKSAW



GLOVES



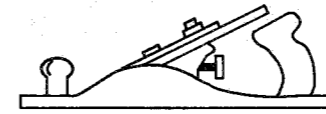
SCREWDRIVERS



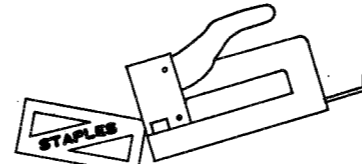
FRAMING SQUARE



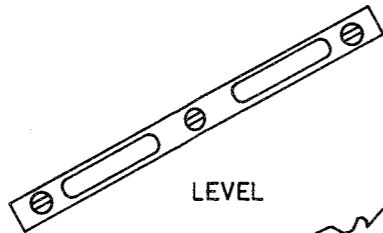
CHALKLINE



PLANE



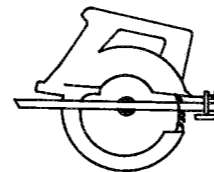
STAPLE GUN



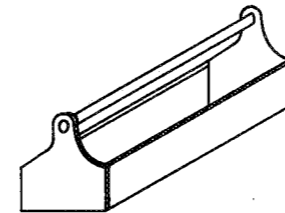
LEVEL



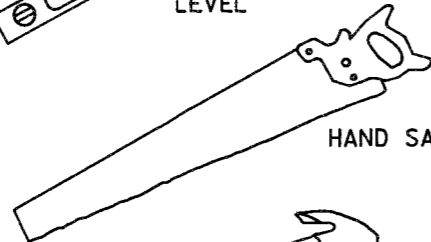
TROWEL



CIRCULAR SAW



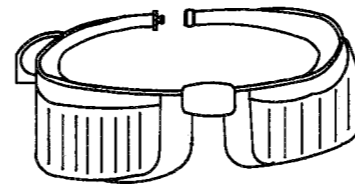
TOOL BOX



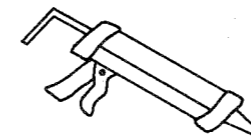
HAND SAW



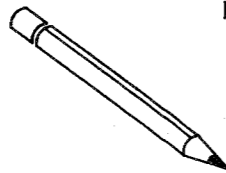
HAMMER



CARPENTERS APRON



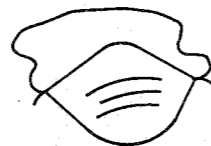
CAULKING GUN



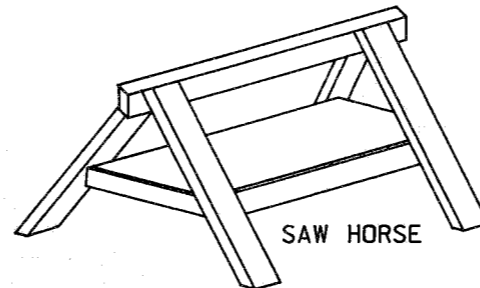
PENCIL



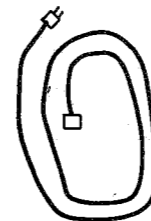
STEEL TOED BOOTS



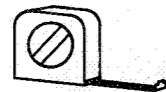
FILTER MASK



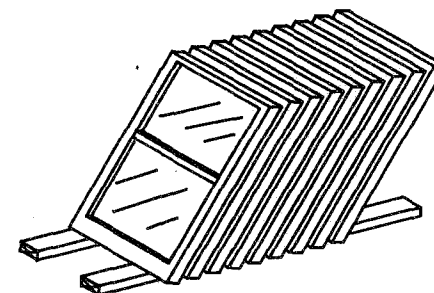
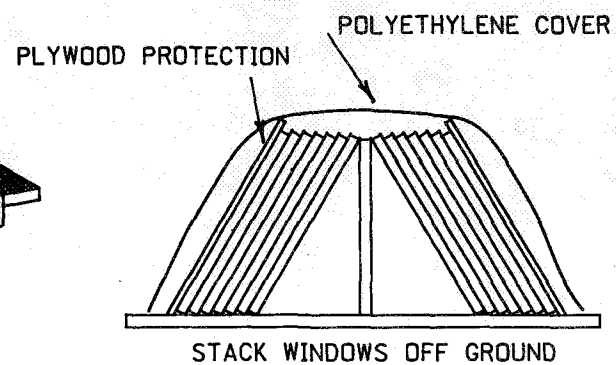
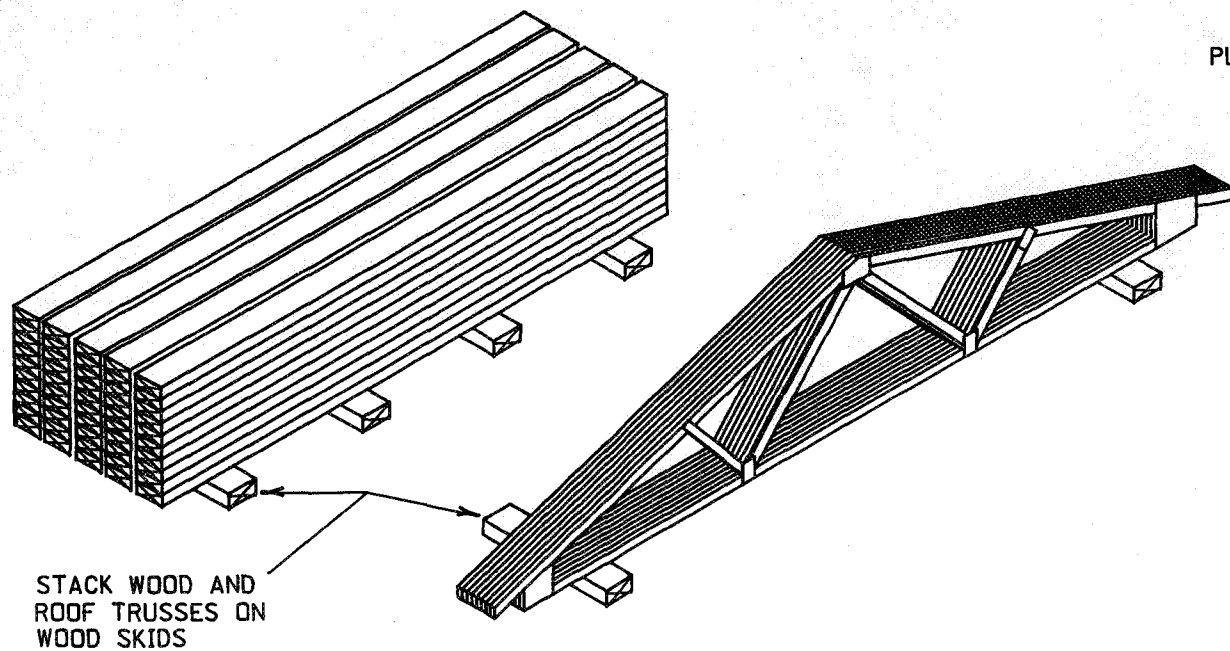
SAW HORSE



EXTENSION CORD



TAPE MEASURE



STACK WOOD AND ROOF TRUSSES ON WOOD SKIDS

WOOD, BEING DURABLE AND RESILIENT, CAN WITHSTAND MUCH ABUSE WITHOUT DAMAGE, BUT LACK OF CARE BEFORE AND DURING CONSTRUCTION CAN AFFECT WOOD PRODUCTS ADVERSLY. WOOD'S TEXTURE, GRAIN, COLOUR AND SHAPE ARE IMPORTANT FEATURES OF A FINISHED STRUCTURE; PROPER STORAGE AND HANDLING CAN ASSURE GOOD QUALITY IS MAINTAINED.

WOOD SHOULD NOT BE DUMPED CASUALLY ON-SITE OR SET DOWN WITH A CRASH. THE MATERIALS WILL BE ALMOST CERTAINLY DAMAGED AND INJURY IS POSSIBLE.

THE BEST WAY TO ENSURE THAT YOUR LUMBER IS NOT DAMAGED IS TO ARRANGE FOR PROPER STORAGE BY PLACING BLOCKING UNDER THE LUMBER AND COVERING WITH PLASTIC SHEET.

WINDOWS ARE A COSTLY ITEM FOR YOUR HOME AND WHEN RECEIVED AT THE SITE THEY SHOULD BE HANDLED VERY CAREFULLY. SELECT A LEVEL AREA AND PLACE ON WOOD SKIDS. IT IS BETTER TO STAND WINDOWS AT SLIGHT ANGLE THAN TO LAY FLAT. AFTER ALL WINDOWS ARE STACKED, PLACE A SHEET OF PLYWOOD OVER THE GLASS AREAS AND WRAP IN POLYETHYLENE TO KEEP DRY.

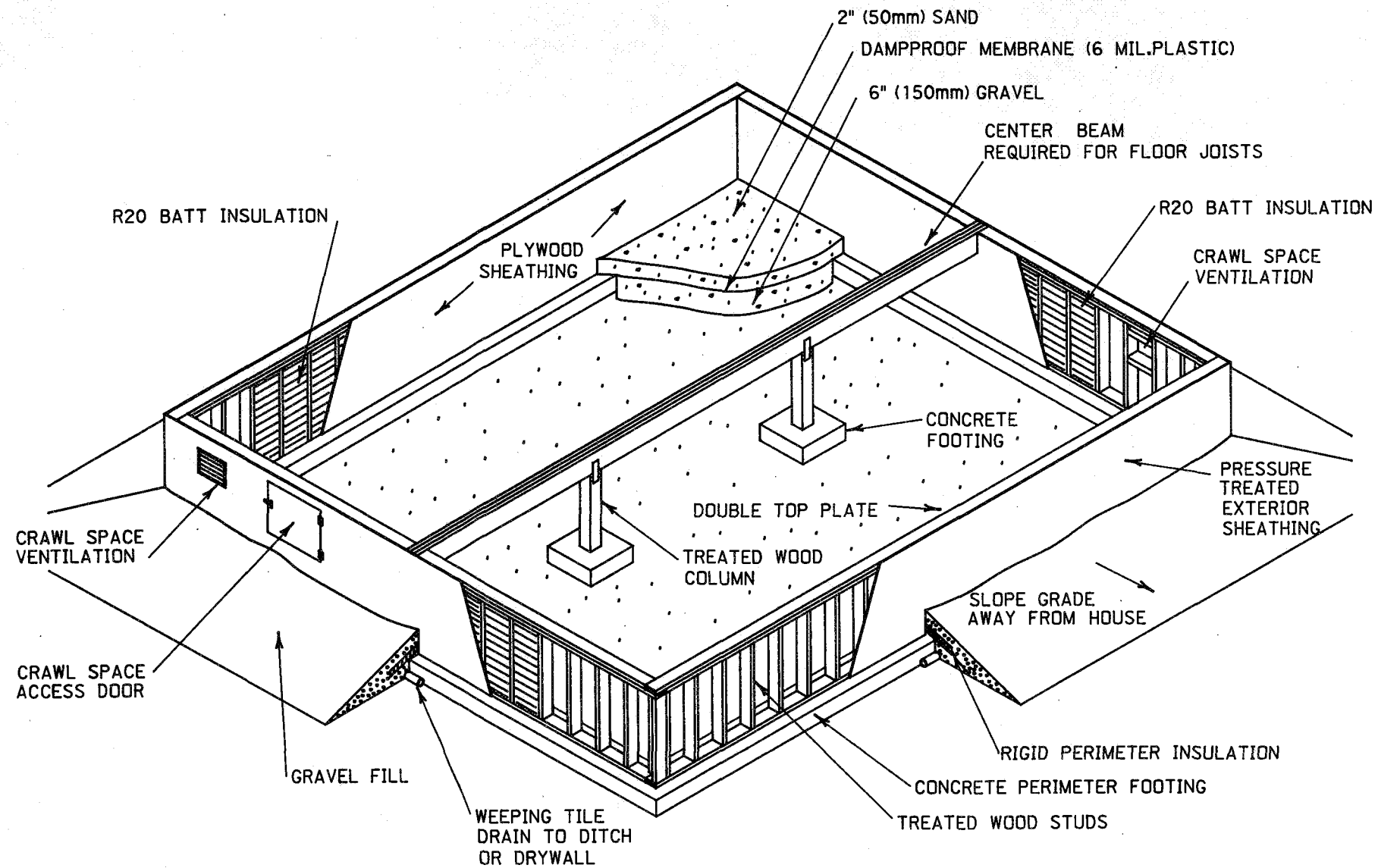
1. STORAGE OF MATERIAL

WHEN A LOAD OF BUILDING MATERIALS ARRIVES AT YOUR SITE THERE ARE CERTAIN PRECAUTIONS YOU SHOULD TAKE TO PROTECT THESE MATERIALS FROM BEING DAMAGED. PRODUCTS SUCH AS PLYWOOD, GYPSUM BOARD, INSULATION, WINDOWS AND DOORS, WOOD SIDING, ELECTRICAL MATERIALS SHOULD BE STORED ON BLOCKING AND COVERED WITH POLYETHYLENE TO KEEP THEM DRY. PAINT, STAIN AND GLUE SHOULD BE KEPT FROM FREEZING AND POLYETHYLENE (VAPOUR BARRIER) SHOULD BE KEPT OUT OF THE SUN TO PREVENT DETERIORATION. FRAMING LUMBER SHOULD BE PILED TIGHTLY TO KEEP FROM TWISTING.

2. INSTALLATION OF MATERIALS

IT IS VERY IMPORTANT THAT PREFABRICATED ITEMS AND MATERIALS BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS. THESE INSTRUCTIONS ARE USUALLY SUPPLIED WITH EACH PRODUCT.

FOUNDATIONS



NOTES

1. WOOD STUDS, WOOD COLUMNS, WOOD PLATES AND EXTERIOR PLYWOOD TO BE PRESSURE TREATED.
2. PRESSURE TREATED LUMBER AND PLYWOOD USED FOR THE FOUNDATION WALLS IS USUALLY GREEN IN COLOUR.
3. RUN WEEPING TILE AROUND PERIMETER OF HOUSE AND OUT TO THE DITCH OR DRYWELL. PLACE WITH HOLES DOWNWARDS.

CONSTRUCTION SEQUENCE

YOU ARE NOW READY TO CONSTRUCT YOUR BUILDING FOUNDATIONS.

LAYOUT THE OUTSIDE CORNERS OF THE FOOTINGS BY PLACING WOOD STAKES AND USING STRING LINES AND MEASURING TAPES AS SHOWN. LAYING OUT THE CORNERS AND CHECKING FOR SQUARENESS WILL REQUIRE TWO PEOPLE.

TO ENSURE A SQUARE CORNER, MEASURE ALONG ONE SIDE AND PUT IN STAKE 2. THEN USING 2 MEASURING TAPES AT THE SAME TIME, MEASURE ALONG THE SECOND SIDE AND THE DIAGONAL. CROSS THE TAPES AT THE DIMENSIONS SHOWN TO LOCATE STAKE 3.

AFTER THE STAKES ARE CHECKED FOR SQUARENESS AND OUTSIDE CORNER DIMENSIONS ARE CORRECT, ERECT BATTER BOARDS A MINIMUM OF 4'-0" (1200mm) TO THE OUTSIDE OF THE CORNER STAKES.

BATTER BOARDS ARE HELPFUL IN RELOCATING THE CORNERS IF THE CORNER STAKES ARE REMOVED IN ORDER TO CONSTRUCT FOOTING FORMWORK.

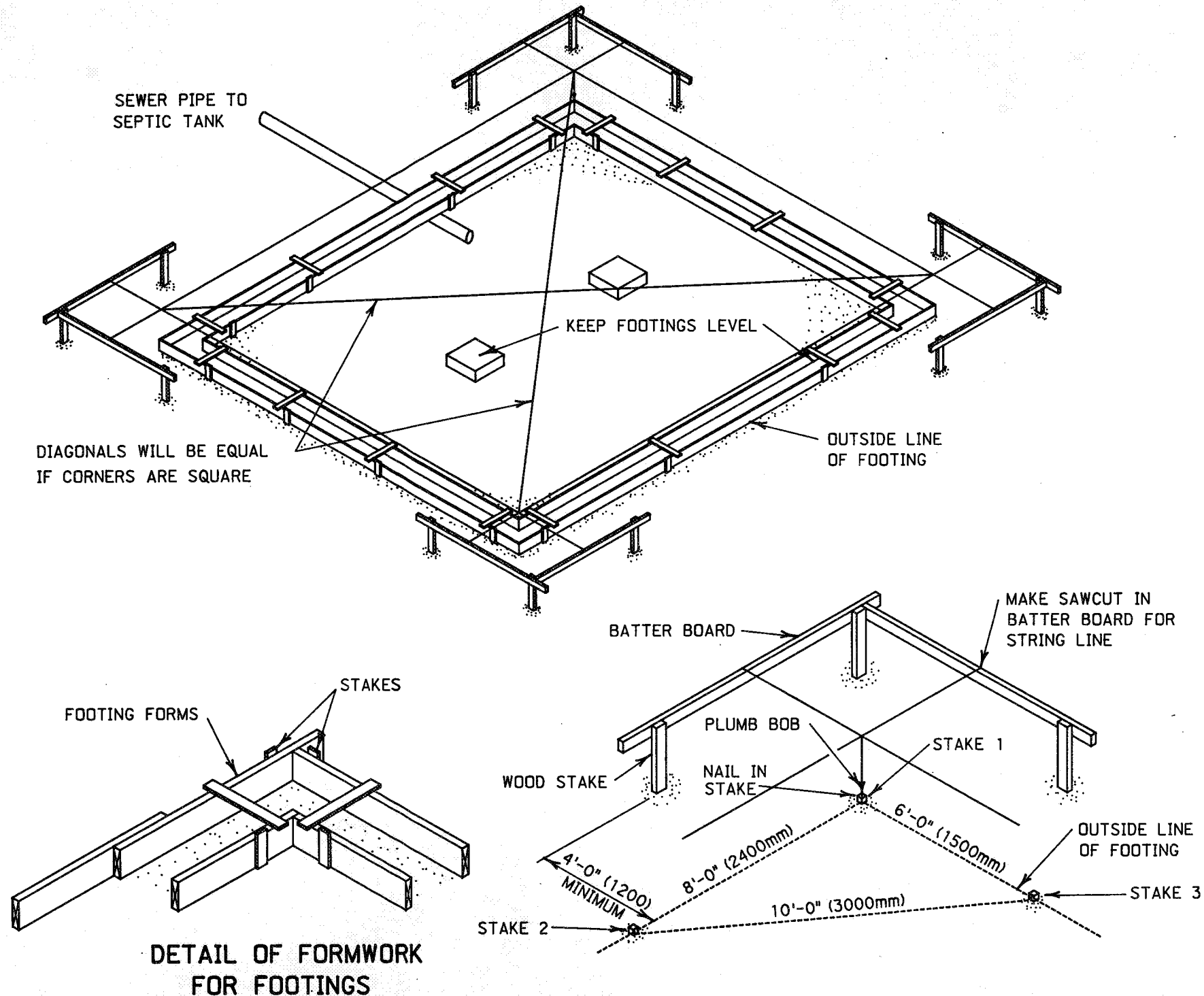
TO MARK BATTER BOARDS PLACE A PLUMB BOB ON THE LINE, IN LINE WITH THE STAKE, AND EXTEND THE STRING TO THE BATTER BOARD AND SET IN A 1/2" (13mm) DEEP SAW CUT.

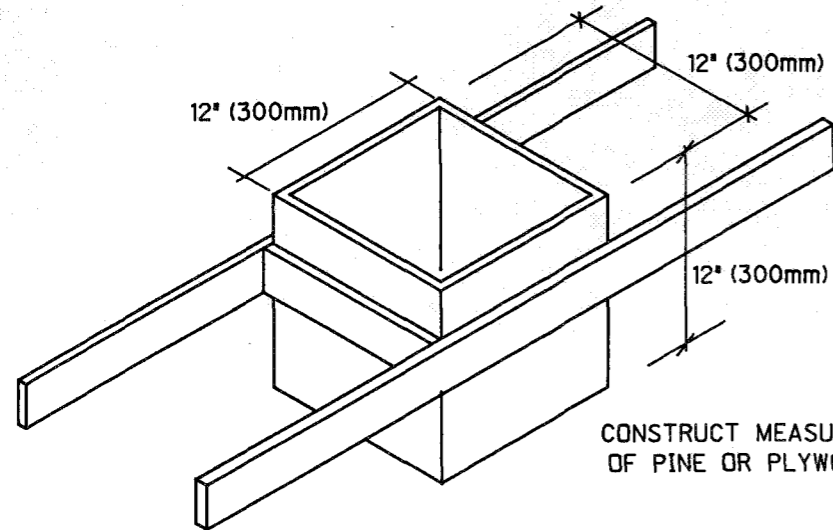
NOTES

1. INTERIOR FOOTINGS TO BE USED FOR CENTER POSTS TO SUPPORT FOR FLOOR FRAMING.

2. SIZE OF FOOTINGS TO BE DETERMINED BY CONSTRUCTION MANAGER DEPENDENT ON SOIL CONDITIONS. NORMALLY PERIMETER FOOTINGS TO BE NO SMALLER THAN 6" x 20" (150 x 500mm)

3. MATERIAL FOR FOOTING FORMS ARE TO BE REUSED FOR FRAMING, THEREFORE WHEN USING JOISTS FOR FORMS OVERLAP RATHER THAN CUT.

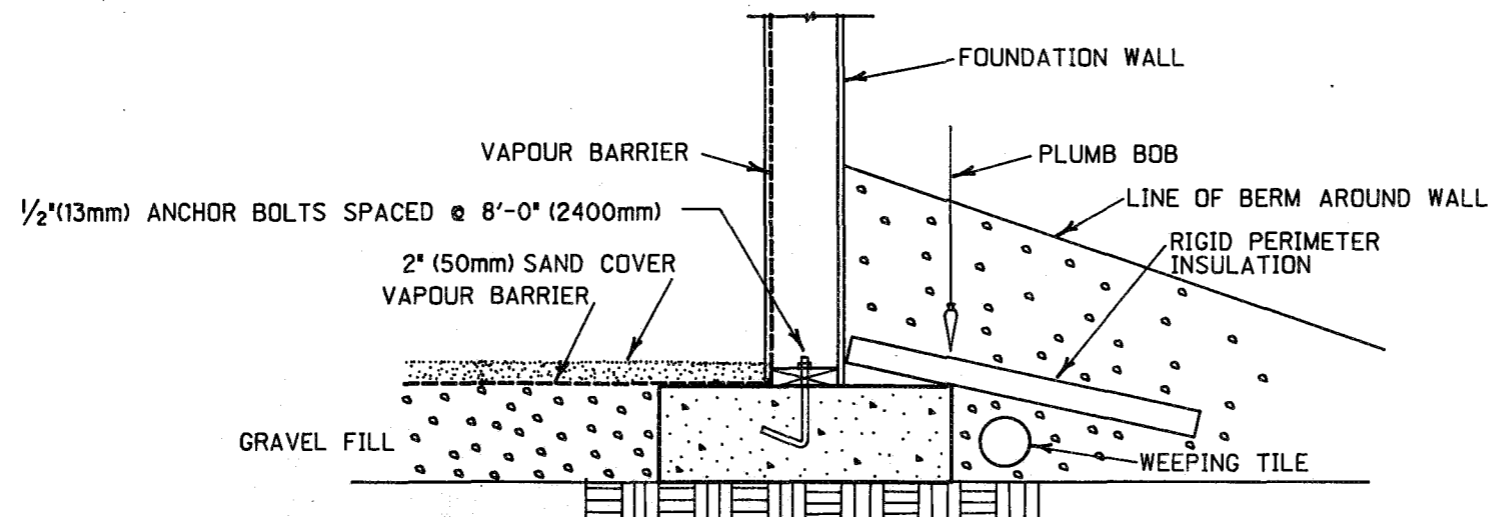




LIFTING AND CARRYING
HANDLES. ALSO USED FOR
DUMPING INTO PORTABLE MIXER.

CONSTRUCT MEASURING BOXES
OF PINE OR PLYWOOD.

ONE CUBIC FOOT MIXING BOX



FOOTING DETAIL

ON SITE CONCRETE MIXING

TO SUCCESSFULLY MIX CONCRETE ON SITE CAREFUL ATTENTION MUST BE TAKEN ENSURE THE PROPER AMOUNT OF CEMENT, SAND, STONE AND WATER GO INTO THE MIX. TO DO THIS USE THE 1 CUBIC FOOT BOX SHOWN TO MEASURE THE MATERIALS AS FOLLOWS FOR EACH BATCH;

- 2 BOXES OF CEMENT
- 2 BOXES OF STONES
- 3 BOXES OF SAND

MIX MATERIALS WELL, ADD WATER AND CONTINUE MIXING WELL BEFORE PLACING IN FORMS. DO NOT ADD TOO MUCH WATER AS THIS WILL REDUCE THE STRENGTH OF THE CONCRETE. ALLOW CONCRETE TO HARDEN OVERNIGHT BEFORE REMOVING FORMS AND CONTINUING CONSTRUCTION. DO NOT ALLOW CONCRETE TO FREEZE FOR AT LEAST 5 DAYS.

PLACE ANCHOR BOLTS AT 8'-0" o.c. (2400mm) AFTER CONCRETE IS PLACED IN FORMS AND IS STILL FRESH. PLACE ANCHOR BOLTS IN CENTRE OF FOOTING MAKING SURE THEY ARE VERTICAL AND THAT THEY EXTEND ABOVE THE CONCRETE AT LEAST 2 1/2" (60mm).

CONSTRUCTION SEQUENCE

CONSTRUCT WALL FRAMING ON THE GROUND CHECK FOR SQUARE AND INSTALL EXTERIOR PLYWOOD.

DRILL HOLES IN BOTTOM PLATE FOR ANCHOR BOLTS, STAND UP THE WALL AND INSTALL THE NUTS & WASHERS.

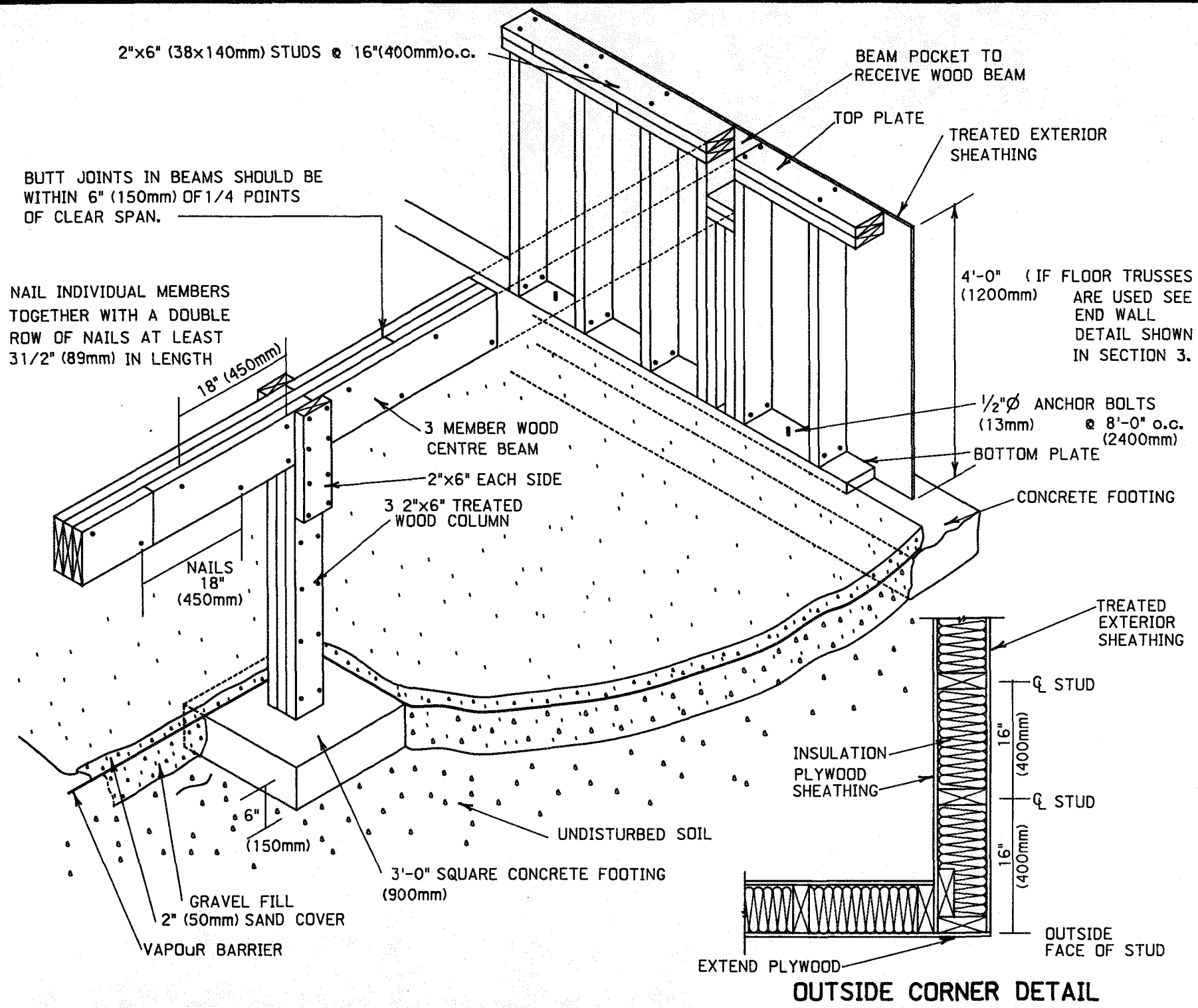
INSTALL INSULATION, VAPOUR BARRIER AND INTERIOR PLYWOOD.

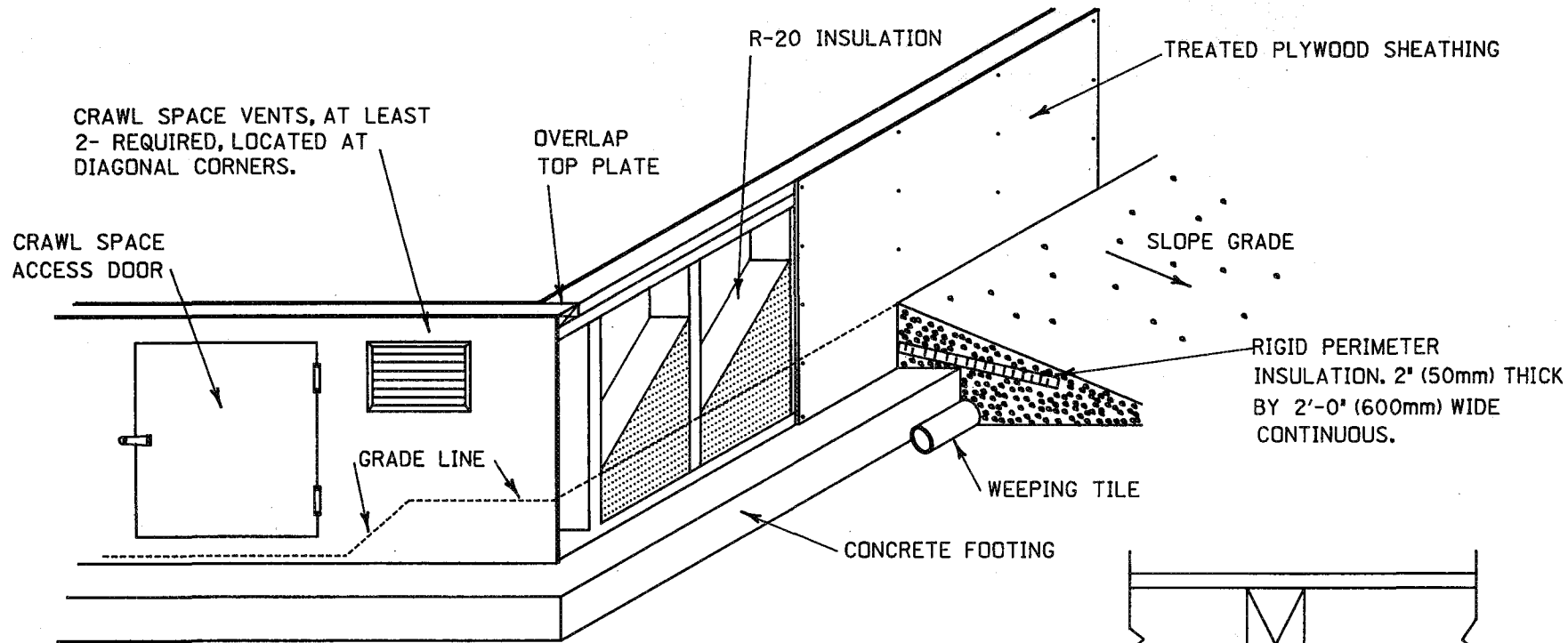
NOTES

1. BUILD PRESSURE TREATED COLUMNS WITH UNCUT ENDS DOWNWARD.

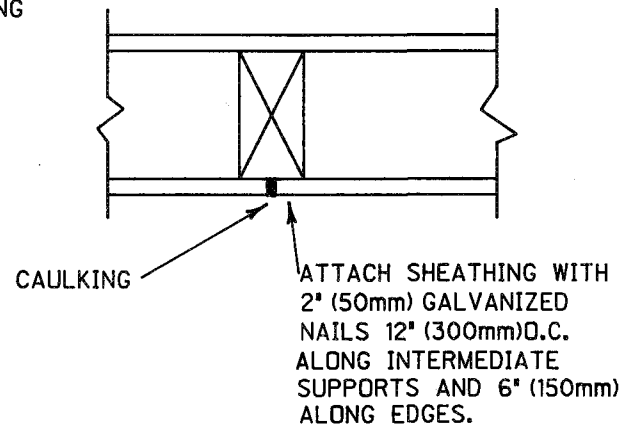
2. TREAT ALL CUT ENDS OF PRESSURE TREATED LUMBER AND PLYWOOD WITH 2 COATS OF BRUSH APPLIED WOOD PRESERVATIVE.

3. BUTT JOINTS IN WOOD BEAMS SHALL BE LOCATED OVER A SUPPORTING POST OR WITHIN 6" (150mm) OF THE QUARTER POINTS IN THE SPAN. ONLY ONE JOINT AT EACH LOCATION.

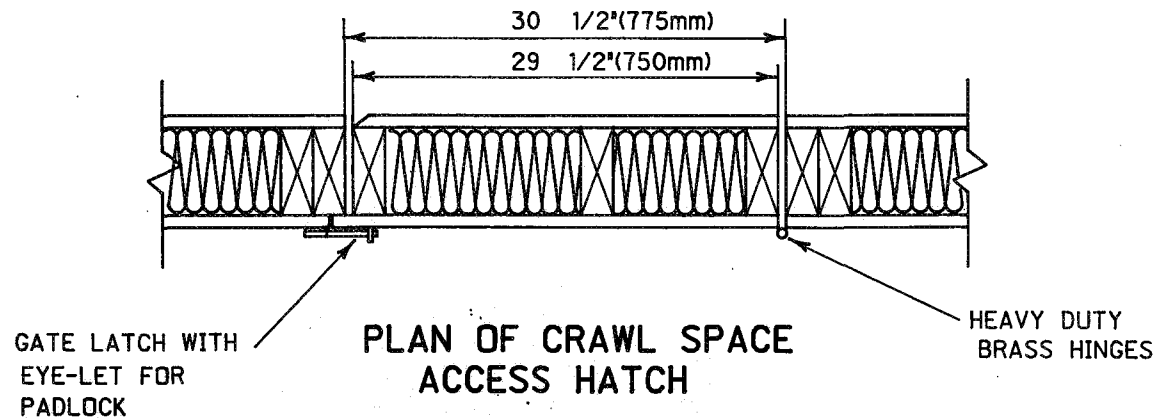




FOUNDATION WALL DETAILS



DETAIL AT EXTERIOR JOINT
IN PLYWOOD SHEATHING



PLAN OF CRAWL SPACE
ACCESS HATCH

CONSTRUCTION SEQUENCE

INSTALL ACCESS DOOR IN END WALL BETWEEN WALL STUD BY LEAVING OUT ONE STUD. INSTALL INSULATION AND VAPOUR BARRIER THE SAME AS FOR THE FOUNDATION WALL.

INSTALL ONE PAIR OF HEAVY DUTY BRASS HINGES AND A GATE LATCH WITH AN EYE-LET FOR A PADLOCK.

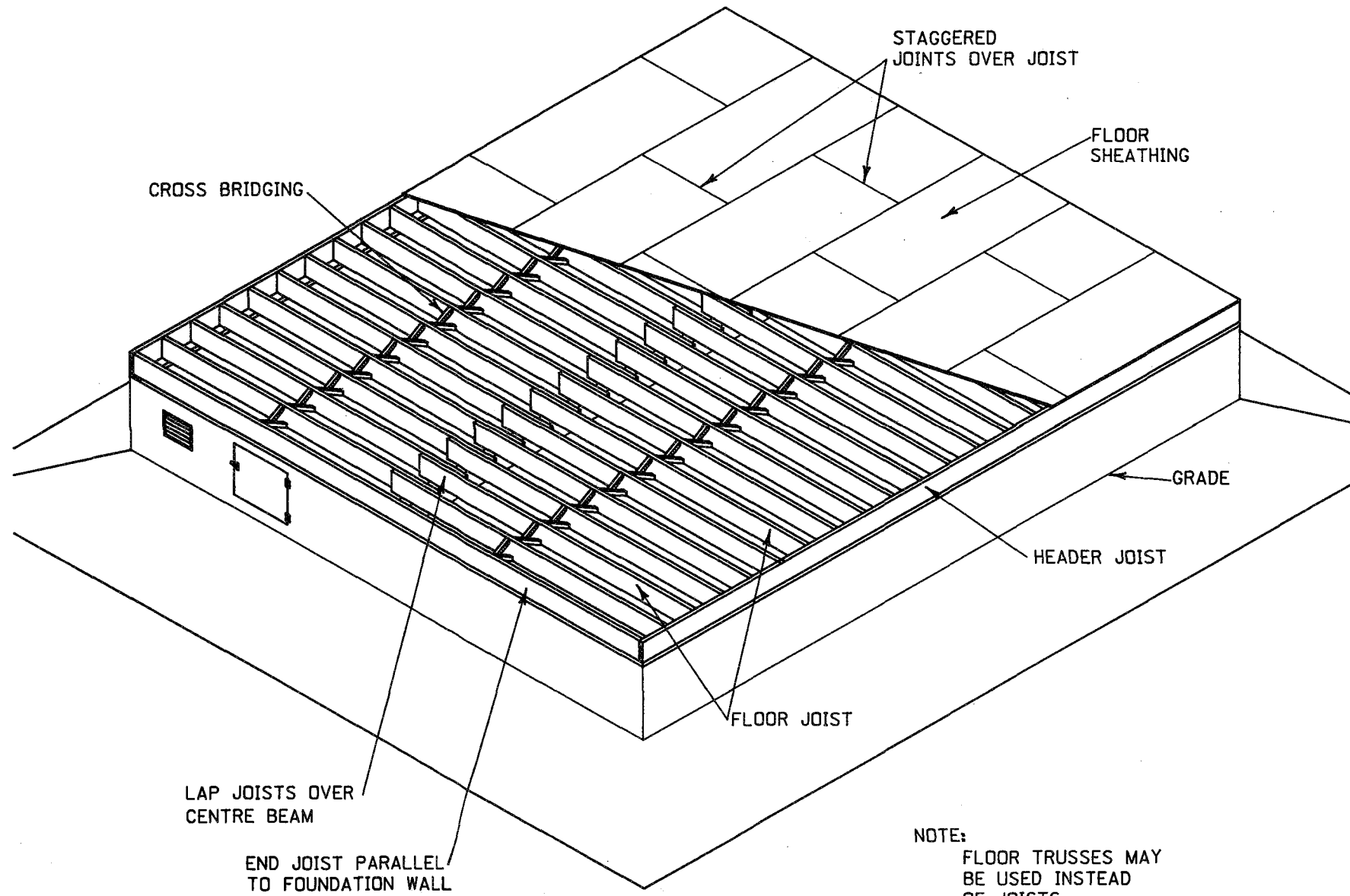
INSTALL CRAWL SPACE VENTS IN DIAGONAL CORNERS, PLACE JUST BELOW THE DOUBLE TOP PLATE.

NOTES

1. INSTALL EXTERIOR SHEATHING LEAVING A SLIGHT SPACE BETWEEN SHEETS.

2. AFTER SHEATHING IS INSTALLED FILL AIR SPACE BETWEEN SHEETS WITH A GOOD EXTERIOR GRADE OF CAULKING.

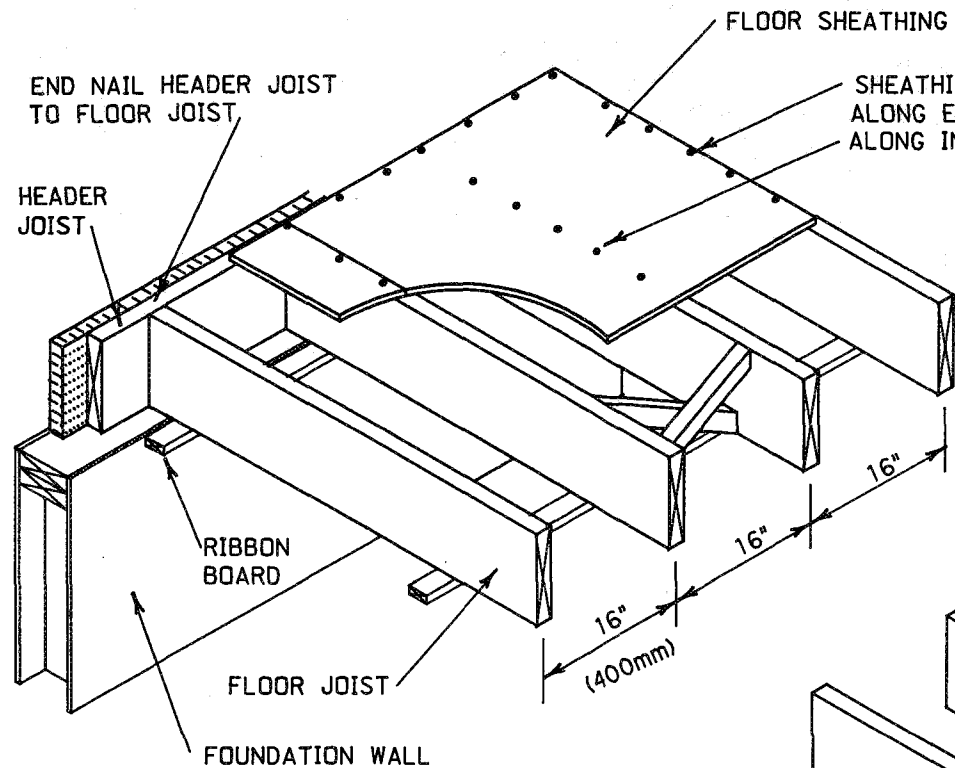
FLOOR CONSTRUCTION



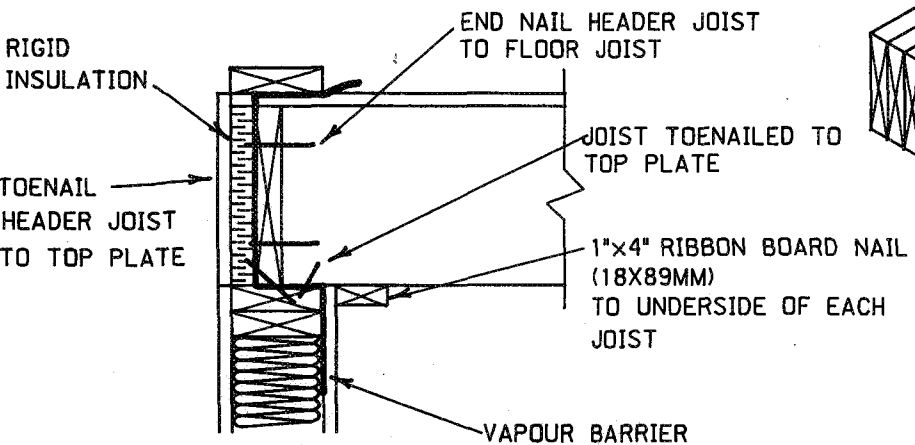
NOTE:
FLOOR TRUSSES MAY
BE USED INSTEAD
OF JOISTS.
(SEE 3-2)

ONCE THE FOOTING AND FOUNDATION WALLS ARE COMPLETE, THE NEXT STEP IS TO CONSTRUCT THE FLOOR FRAMING. THIS CAN BE DONE EITHER USING LUMBER JOISTS SUPPORTED ON A CENTRE BEAM, OR BY USING CLEAR SPAN FLOOR TRUSSES.

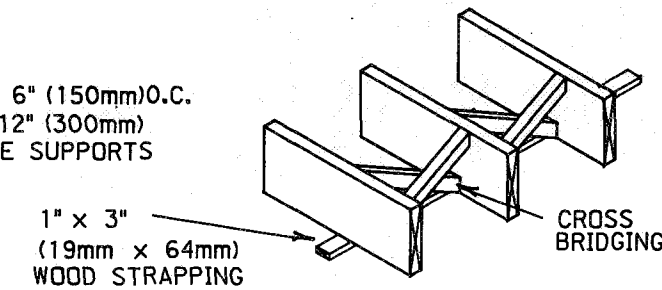
IT IS VERY IMPORTANT THAT THE FLOOR SHEATHING IS NAILED PROPERLY TO THE FLOOR FRAMING TO AVOID A SQUEAKY FLOOR.



DETAIL OF FLOOR JOIST
AT EXTERIOR WALL



DETAIL OF CROSS BRIDGING



DETAIL OF FLOOR JOIST
OVER CENTRE BEAM

NAILING FOR FRAMING		MIN. LENGTH OF NAIL	MIN. NUMBER OF NAILS OR SPACING
FLOOR JOIST TO PLATE - TOENAIL		3 1/4" (82)	2
DOUBLE TOP WALL PLATES		3" (76)	24" o.c. (600)
STUD TO WALL PLATE		2 1/2" (63)	4
TOENAIL OR ENDNAIL		3 1/4" (82)	2
BUILT - UP WOOD BEAM		3 1/2" (89)	18" (450) APART IN EACH ROW.
PLYWOOD TO STUD	3/8" TO 1 3/8" (10) TO 2" (20)	2" (51)	6" (150) o.c. ALONG EDGES AND 12" (300) o.c. ALONG INTERMEDIATE SUPPORTS.

CONSTRUCTION SEQUENCE

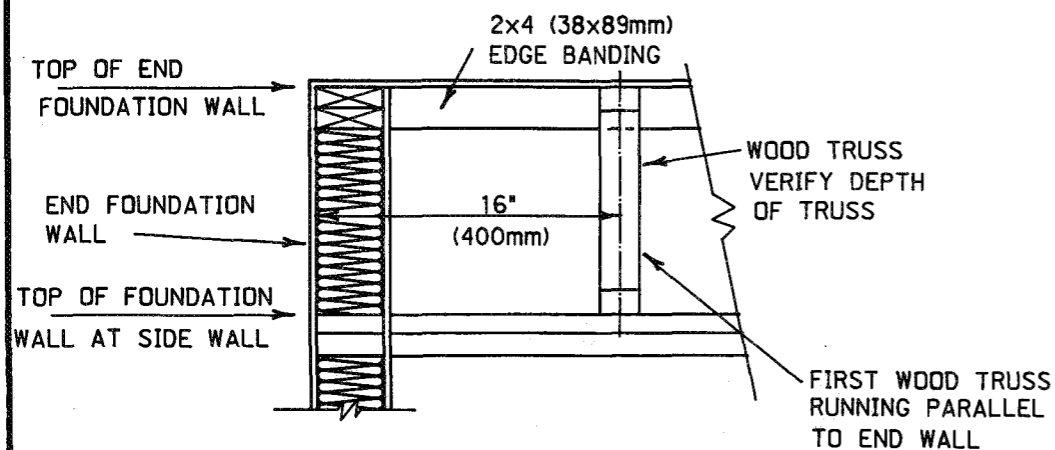
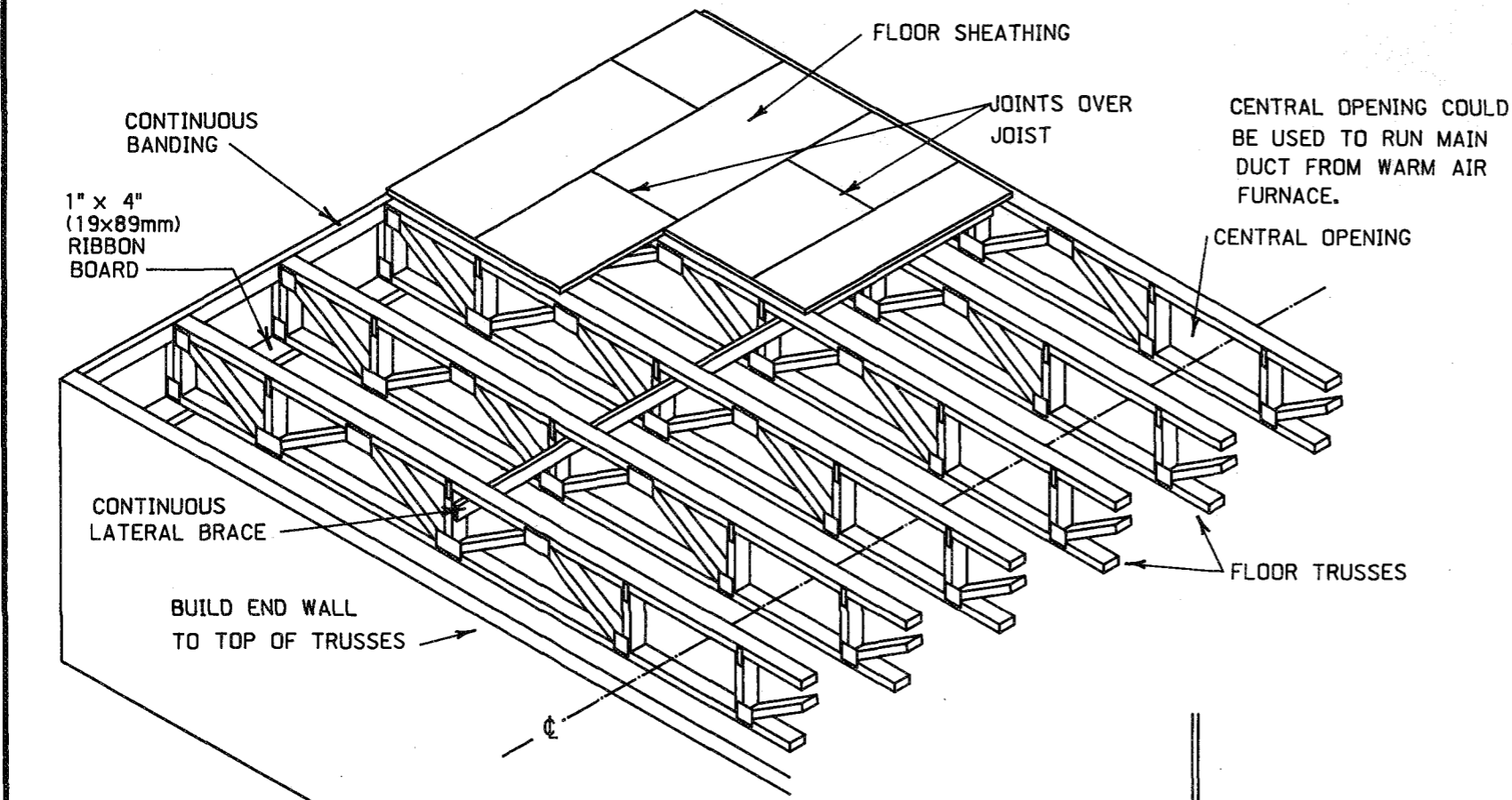
MARK OFF HEADER JOIST AND CENTRE BEAM FOR JOISTS AT 16" O.C. (400mm)

PLACE JOIST AGAINST HEADER JOIST AND END NAIL IN PLACE. OVERLAP FLOOR JOIST AT CENTRE BEAM AND NAIL TOGETHER AND TOENAIL JOIST TO CENTRE BEAM. TOENAIL HEADER JOIST AND EACH FLOOR JOIST TO TOP PLATE.

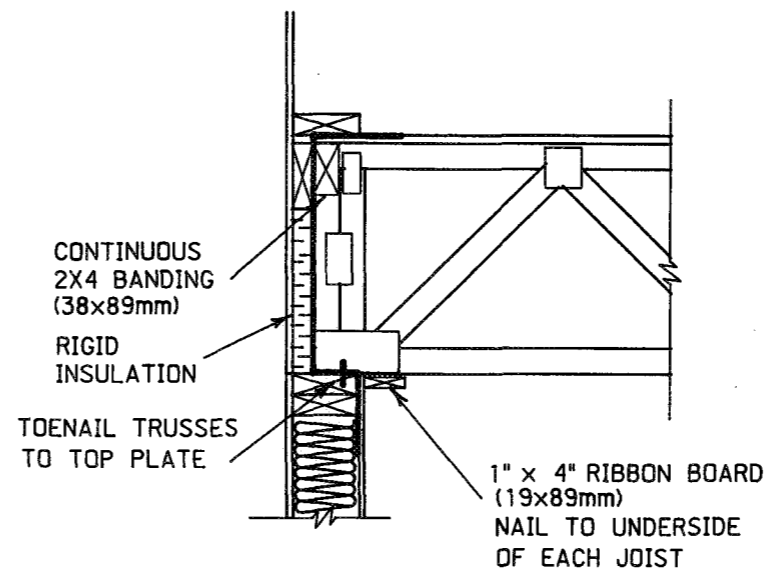
NAIL CONTINUOUS RIBBON BOARD TO UNDERSIDE OF JOISTS TIGHT AGAINST FOUNDATION WALL.

INSTALL 1 1/2" x 1 1/2" (38 X 38)mm BRIDGING OR 1 1/2" (38mm) THICK SOLID BLOCKING SECURELY NAILED BETWEEN JOISTS TOGETHER WITH CONTINUOUS 1x3 (19x64) WOOD STRAPPING NAILED TO BOTTOM OF JOISTS AND FASTENED AT EACH END TO THE WALL TOP PLATE.

PLACE SHEATHING OVER JOIST AND NAIL AS SHOWN. CENTRE EDGES OF SHEET OVER JOIST. STAGGER JOINTS IN SHEATHING.



DETAIL OF END WALL AND FIRST WOOD TRUSS



BOTTOM CHORD BEARING TRUSS

CONSTRUCTION SEQUENCE

MARK OFF TOP OF SIDEWALL PLATE AT 16" o.c. (400mm).

PLACE FLOOR TRUSSES ON SIDE WALL PLATES "FOUNDATION WALL" IN AN UPRIGHT POSITION AT ONE END OF THE HOUSE. FIT THE LATERAL BRACE THROUGH THE TRUSSES AT THE LOCATIONS SHOWN ON THE TRUSS DRAWINGS.

MOVE THE TRUSSES TO THE LOCATIONS MARKED ON THE FOUNDATION WALL AND TOENAIL TO THE TOP PLATE WITH 2-31/4" (82mm) NAILS.

NAIL CONTINUOUS END BRIDGING AND LATERAL BRACING TO THE TRUSSES KEEPING TOP SPACING IN LINE WITH SPACING MARKED ON THE TOP PLATE.

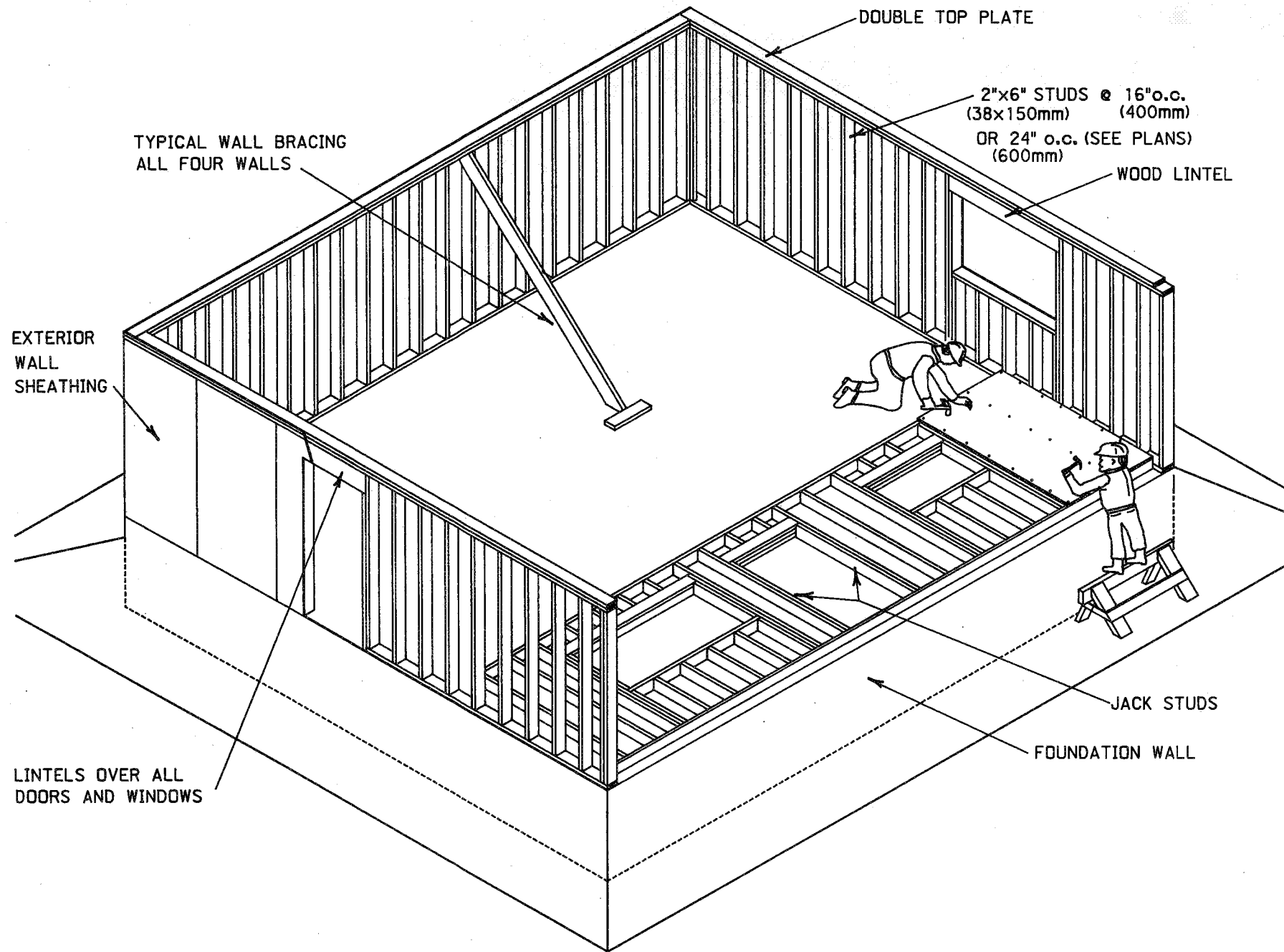
NAIL CONTINUOUS RIBBON BOARD TO UNDERSIDE OF TRUSSES.

PLACE SHEATHING OVER TRUSSES AND NAIL AS SHOWN. CENTRE EDGES OVER TRUSSES AND STAGGER JOINTS IN THE SHEATHING.

NOTES

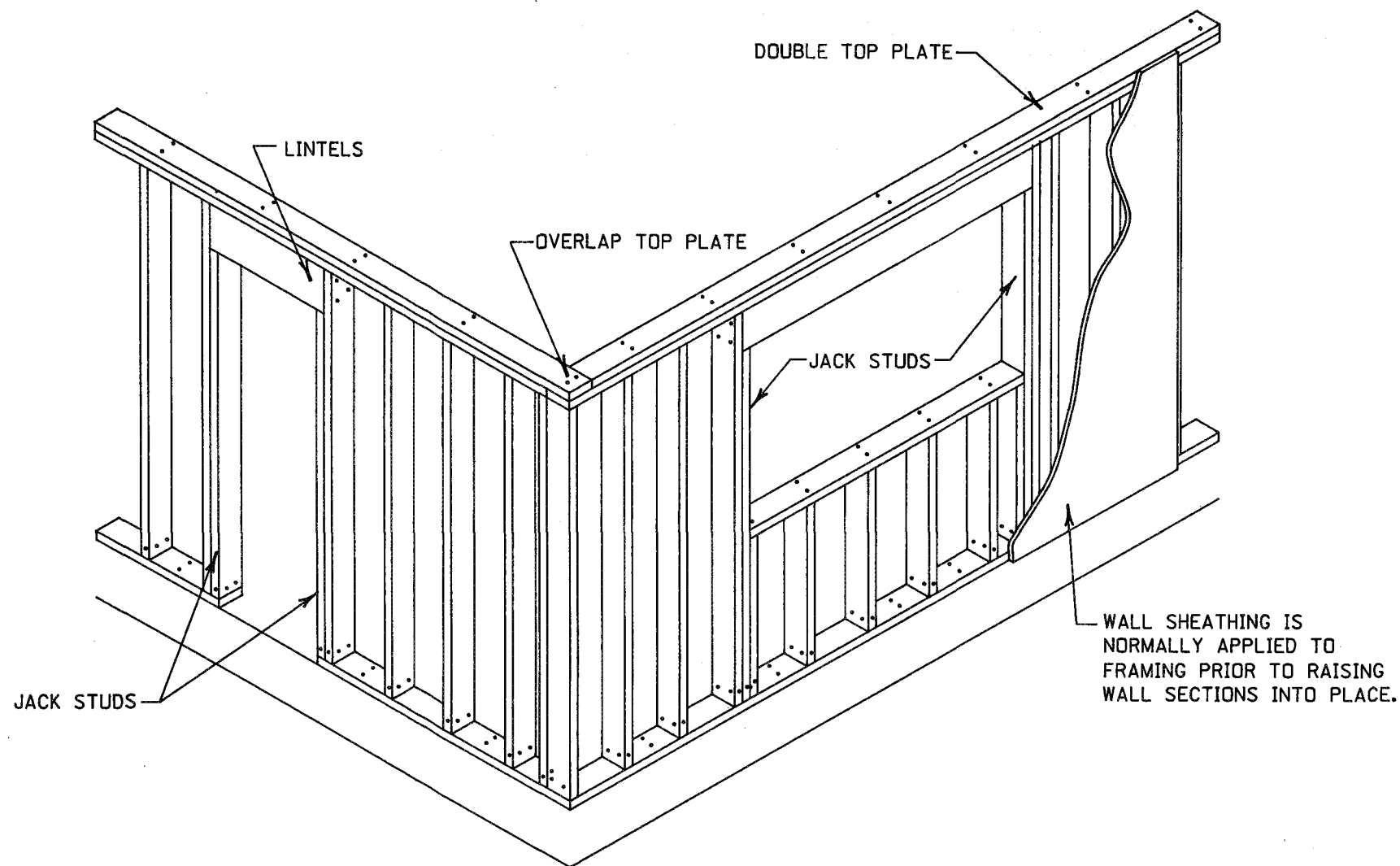
1. TRUSSES TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS.

EXTERIOR WALL FRAMING



FOLLOWING COMPLETION OF THE FLOOR CONSTRUCTION, THE EXTERIOR WALLS ARE NEXT. THE WALLS ARE GENERALLY ASSEMBLED ON THE FLOOR AND ARE THEN RAISED INTO PLACE. RAISING THESE WALLS REQUIRES SEVERAL PEOPLE WORKING TOGETHER AS THE WALLS ARE RATHER HEAVY.

IMPORTANT HERE IS ACCURATE MEASUREMENT FOR THE WINDOW AND DOOR OPENINGS. THESE OPENINGS SHOULD BE 1" WIDER (25mm) AND 1" HIGHER THAN THE ACTUAL WINDOW DOOR UNIT TO ALLOW CLEARANCE FOR ADJUSTMENTS.



CONSTRUCTION SEQUENCE

WITH THE FLOOR SHEATHING NAILED IN PLACE USE THE FLOOR AREA AS A WORK SPACE TO CONSTRUCT THE EXTERIOR WALLS. SELECT GOOD STRAIGHT LUMBER FOR THE TOP AND BOTTOM PLATES AND MARK OFF BOTH PLATES FOR THE WALL STUDS AT THE SAME TIME.

SEPARATE THE TOP AND BOTTOM PLATES AND NAIL ON THE PRE-CUT WALL STUDS.

TOP AND BOTTOM PLATES ARE END NAILED WITH TWO NAILS TO EACH STUD. DOUBLE UP ON STUDS AT OPENINGS, THE JACK STUD IS CUT TO RECEIVE THE LINTELS WHICH ARE PLACED AND END NAILED THROUGH THE OUTER STUDS.

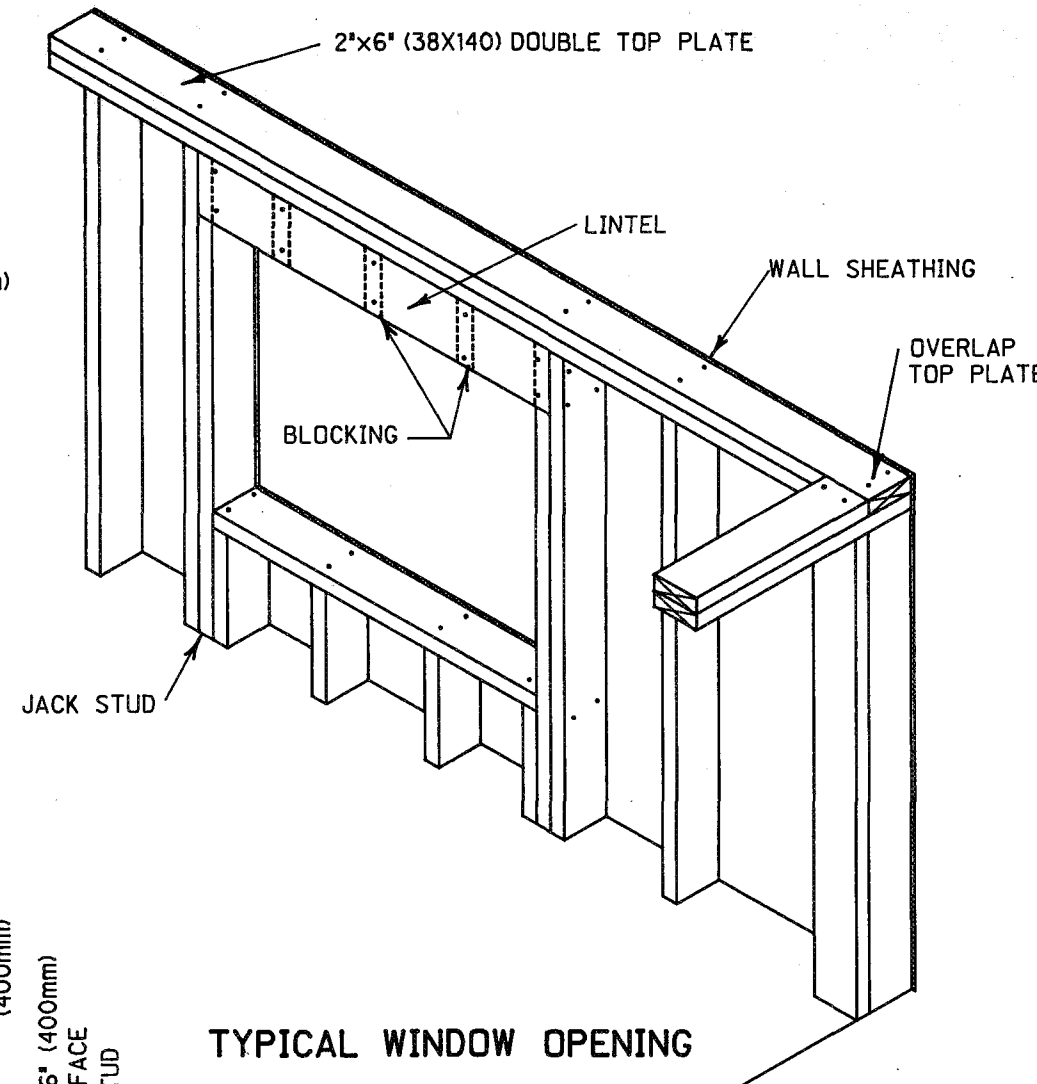
WALL SHEATHING IS USUALLY APPLIED TO THE FRAMING WHILE LAYING ON THE FLOOR TO ELIMINATE THE NEED FOR STAGING.

THE WALL SECTIONS ARE THEN RAISED INTO PLACE. TEMPORARY BRACES ARE ADDED THE BOTTOM PLATES NAILED TO THE FLOOR JOISTS.

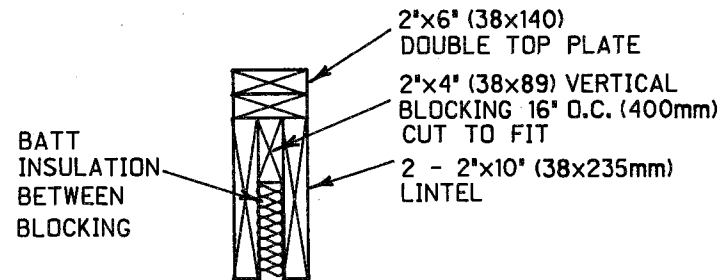
THE SECOND TOP PLATE IS THEN ADDED. ENSURE THE PLATES OVERLAP AT THE CORNERS.

NOTES:

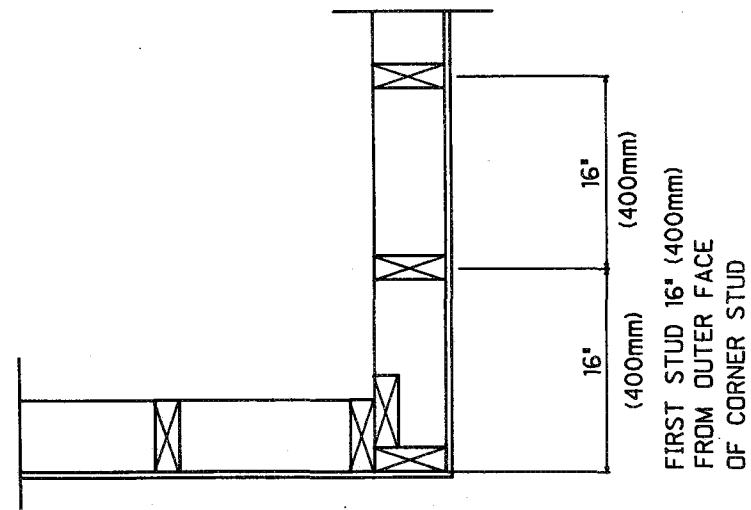
1. FIRST STUD FROM CORNER SHOULD BE MEASURED FROM OUTSIDE OF CORNER STUD SO THAT THE EDGE OF THE PLYWOOD SHEATHING WILL BE CENTERED OVER A STUD.
2. NAILING SCHEDULE FOR FRAMING:
 - FLOOR JOISTS TO PLATE - 2-3 1/2" NAILS TOENAIL (89mm)
 - STUD TO WALL PLATE - 2-3 1/2" NAILS EACH END (89mm)
 - DOUBLE WALL PLATES - 24" O.C. - 3" NAILS (600mm) (76mm)
 - BOTTOM WALL PLATE - 16" O.C. - 3 1/2" NAILS EXTERIOR WALLS (400mm) (89mm)
 - LINTELS TO STUDS - 2-3 1/2" NAILS (89mm)
 - DOUBLE LINTEL TO BLOCKING BETWEEN - 16" O.C. - 3 1/2" NAILS (EACH SIDE) (400mm) (89mm)



TYPICAL WINDOW OPENING



TYPICAL LINTEL

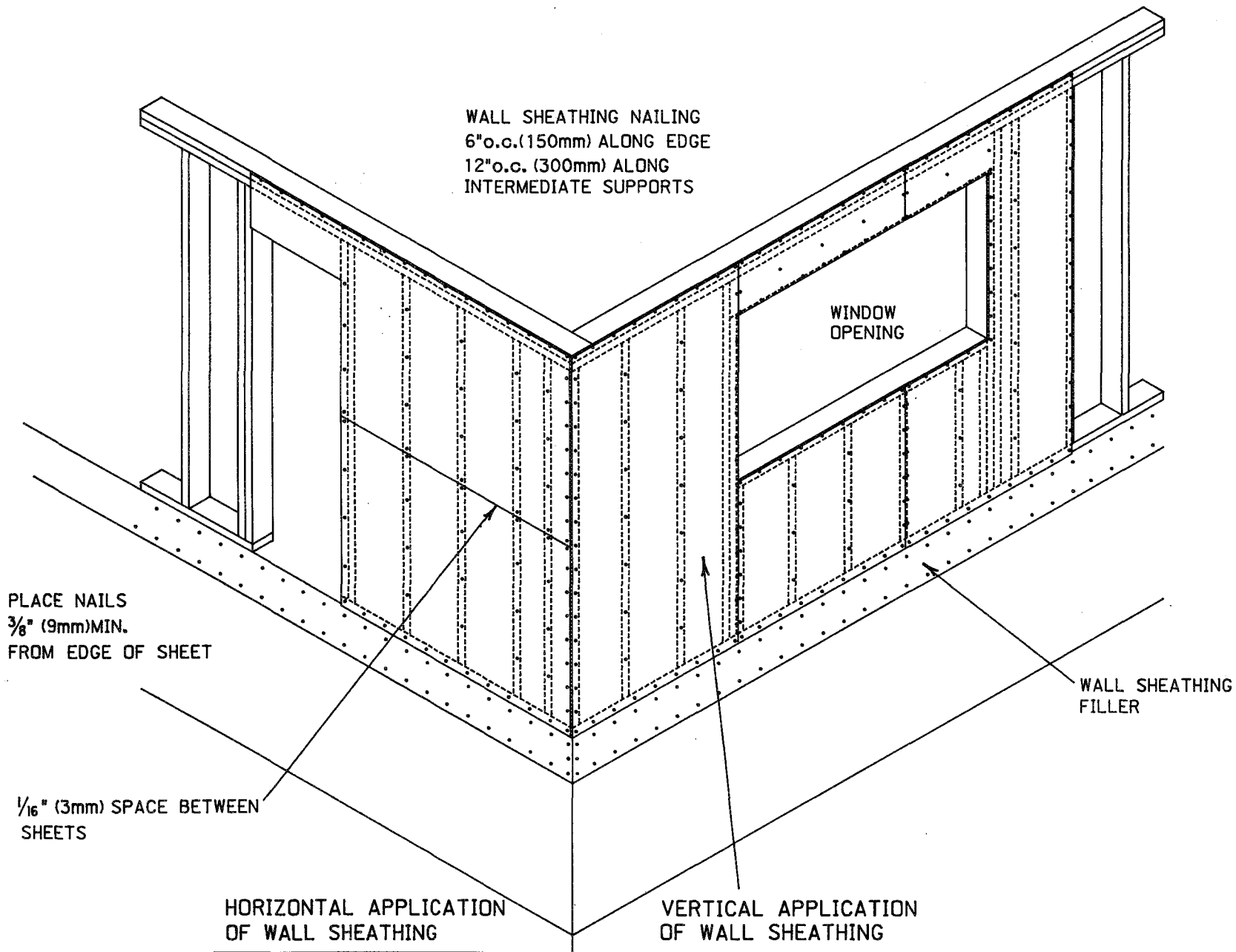


TYPICAL CORNER FRAMING

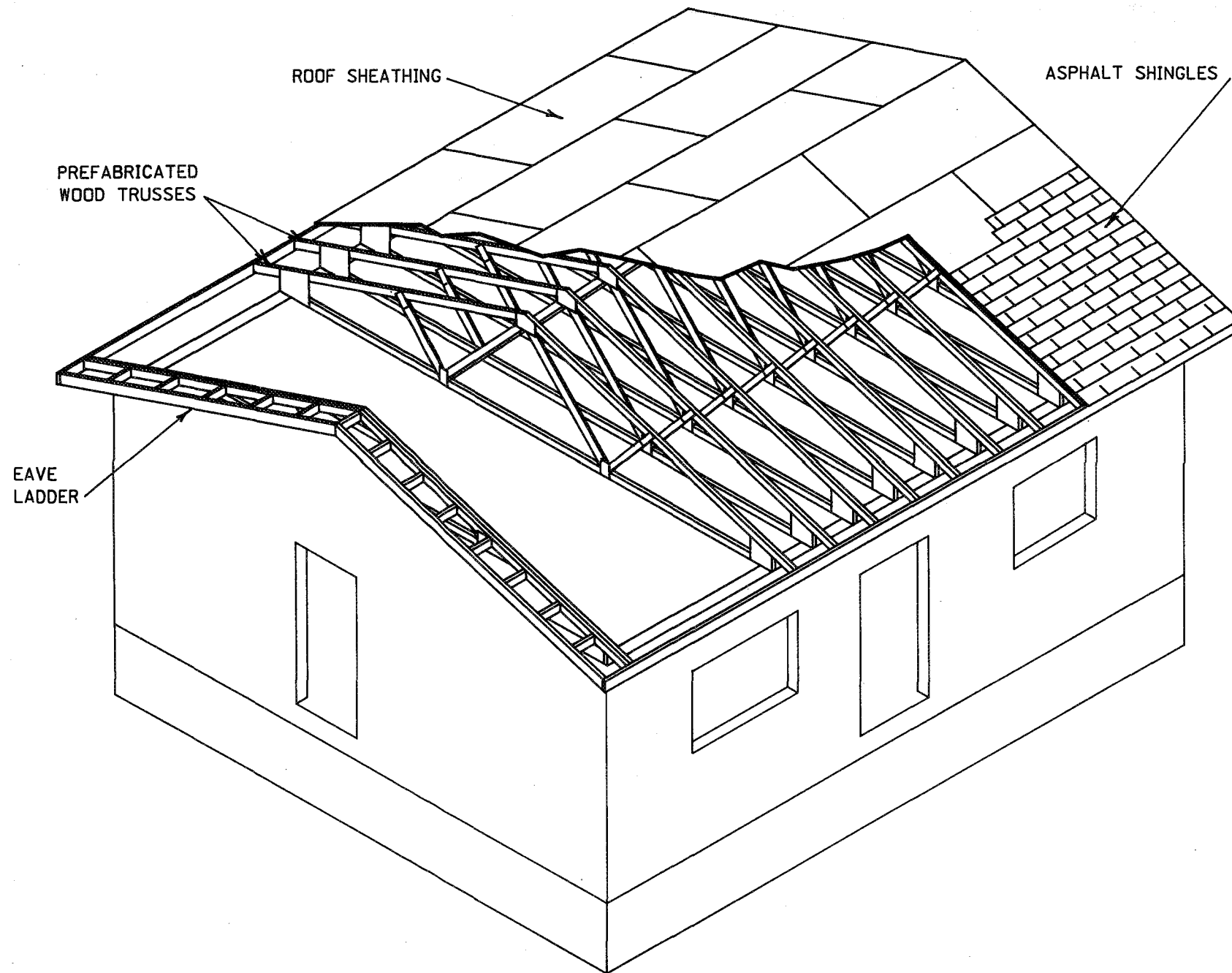
CONSTRUCTION SEQUENCE

INSTALL WALL SHEATHING TO THE STUDS USING EITHER THE VERTICAL OR HORIZONTAL METHOD, WITH GALVANIZED NAILS. ENSURE THAT THE JOINTS OCCUR AT THE STUD.

ONCE THE WALLS HAVE BEEN RAISED AND NAILED IN PLACE, INSTALL A STRIP OF SHEATHING OVER THE RIGID INSULATION AT THE FLOOR LEVEL.

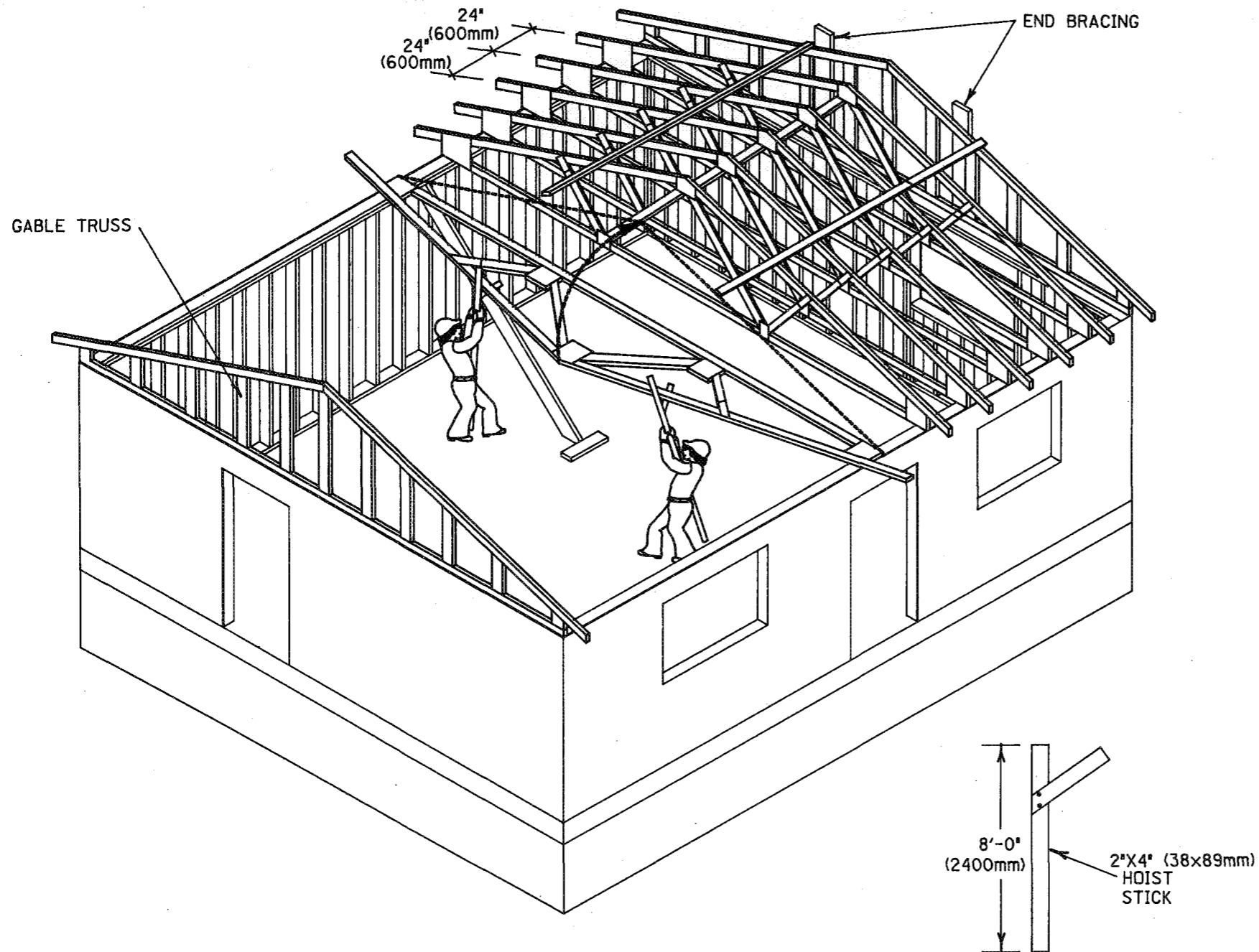


ROOF FRAMING



WITH THE EXTERIOR WALLS RAISED IN PLACE, PLUMBED, BRACED AND SHEATHING APPLIED THE NEXT STEP IS TO HOIST THE PREFABRICATED ROOF TRUSSES IN PLACE.

ROOF TRUSSES ARE NORMALLY PREFABRICATED AND SHIPPED IN BUNDLES. EAVE LADDERS ARE ALSO NORMALLY PREFABRICATED AND INCLUDED WITH TRUSSES.



CONSTRUCTION SEQUENCE

MARK OFF EXTERIOR WALL TOP PLATE AT 2'-0" o.c. (600mm) TO RECEIVE ROOF TRUSSES. YOU WILL NEED HELP IN RAISING THE ROOF TRUSSES OVER THE EXTERIOR WALLS. PLACE TRUSSES ON THE EXTERIOR WALL WITH THE ROOF PEAK FACING DOWNWARD AND THEN RAISE INTO PLACE, NAIL AND BRACE.

WITH ALL ROOF TRUSSES STACKED AT ONE END OF THE HOUSE AND THE PEAK FACING DOWNWARD, SLIDE ONE TRUSS TOWARD THE OPPOSITE END OF THE HOUSE AND BEGIN RAISING IN PLACE. USING A HOIST STICK AND TWO MEN, TURN THE TRUSS UP INTO PLACE.

YOU WILL ALSO NEED TWO MEN ON LADDERS OR STAGING TO SECURE THE TRUSSES AS THEY ARE RAISED. BRACE THE GABLE TRUSS TO THE END WALL, BY NAILING 2- 2x4 (38x89mm) TO THE WALL AND THE GABLE TRUSS.

PLACE THE TRUSSES ON THE EXTERIOR WALL AT THE SPACING PREVIOUSLY MARKED AND TOENAIL IN PLACE. LINE UP THE TRUSS HEEL WITH THE OUTSIDE FACE OF THE STUD WALL. THE TWO MEN ON LADDERS OR STAGING WILL ALSO CHECK PROPER SPACING AND VERTICAL ALIGNMENT AND INSTALL TEMPORARY BRACING ACROSS THE TRUSSES. THIS TEMPORARY BRACING WILL REMAIN IN PLACE UNTIL THE ROOF SHEATHING IS INSTALLED.

INSTALL WALL SHEATHING OF THE GABLE TRUSS SIMILAR TO WALL SHEATHING.

CONSTRUCTION SEQUENCE

FOLLOWING ERECTION OF THE ROOF TRUSSES:

YOUR HOUSE PLANS WILL SHOW THE WIDTH OF THE SOFFIT OVERHANG AND THE PREFABRICATED WOOD TRUSSES WILL PROVIDE FOR THIS WIDTH.

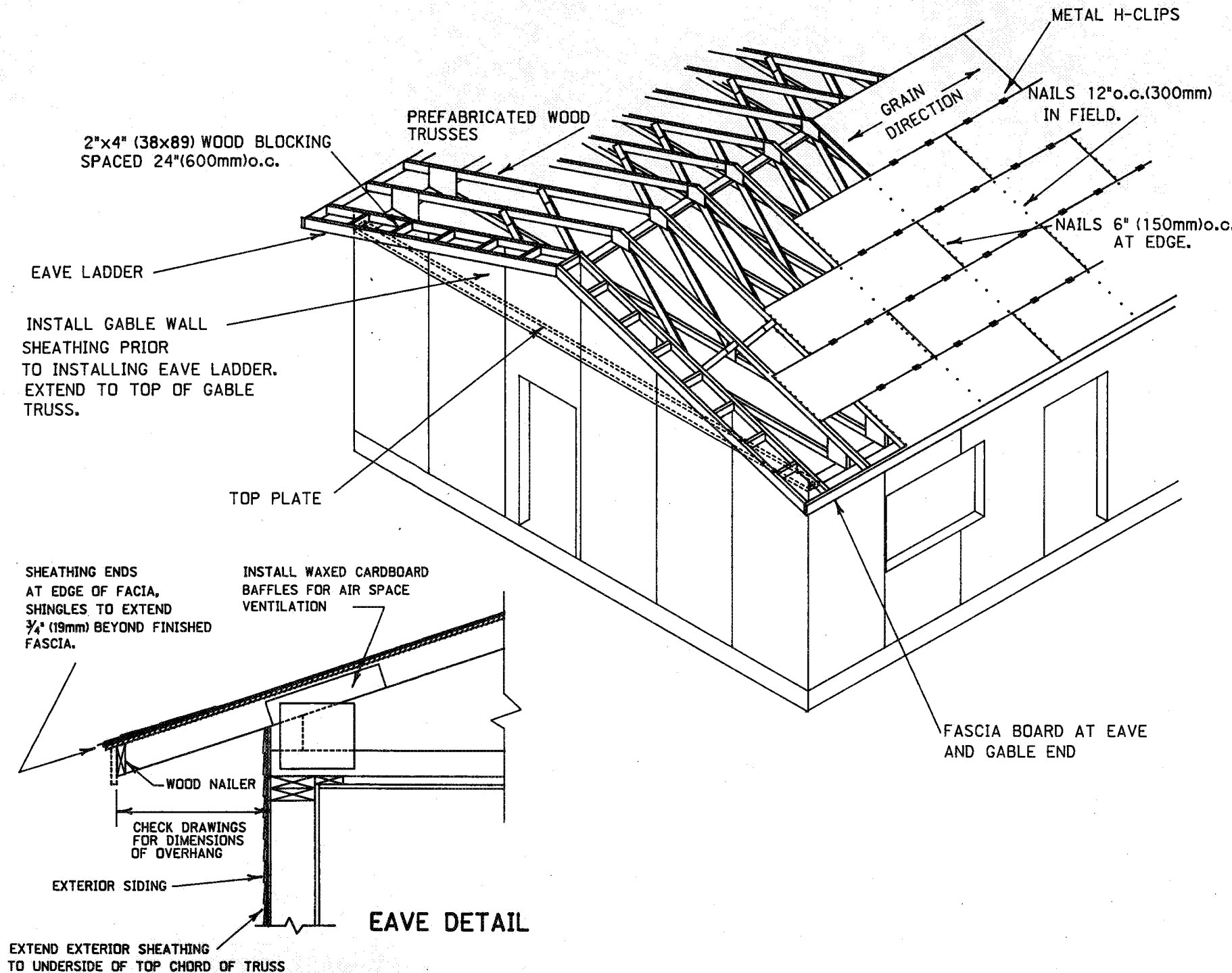
A STRING LINE SHOULD BE EXTENDED ALONG THE OUTSIDE EDGE OF THE TRUSSES TO MAKE SURE THEY WERE INSTALLED TRUE TO LINE. IF NECESSARY ADJUST BY CUTTING TO MAKE THE ENDS LINE UP.

INSTALL A WOOD NAILER ALONG THE EAVE AND NAIL TO THE END OF EACH TRUSS. THIS NAILER WILL KEEP THE END OF THE TRUSS EXTENSION FROM TWISTING AND WILL PROVIDE A NAILER FOR THE WOOD FASCIA BOARD.

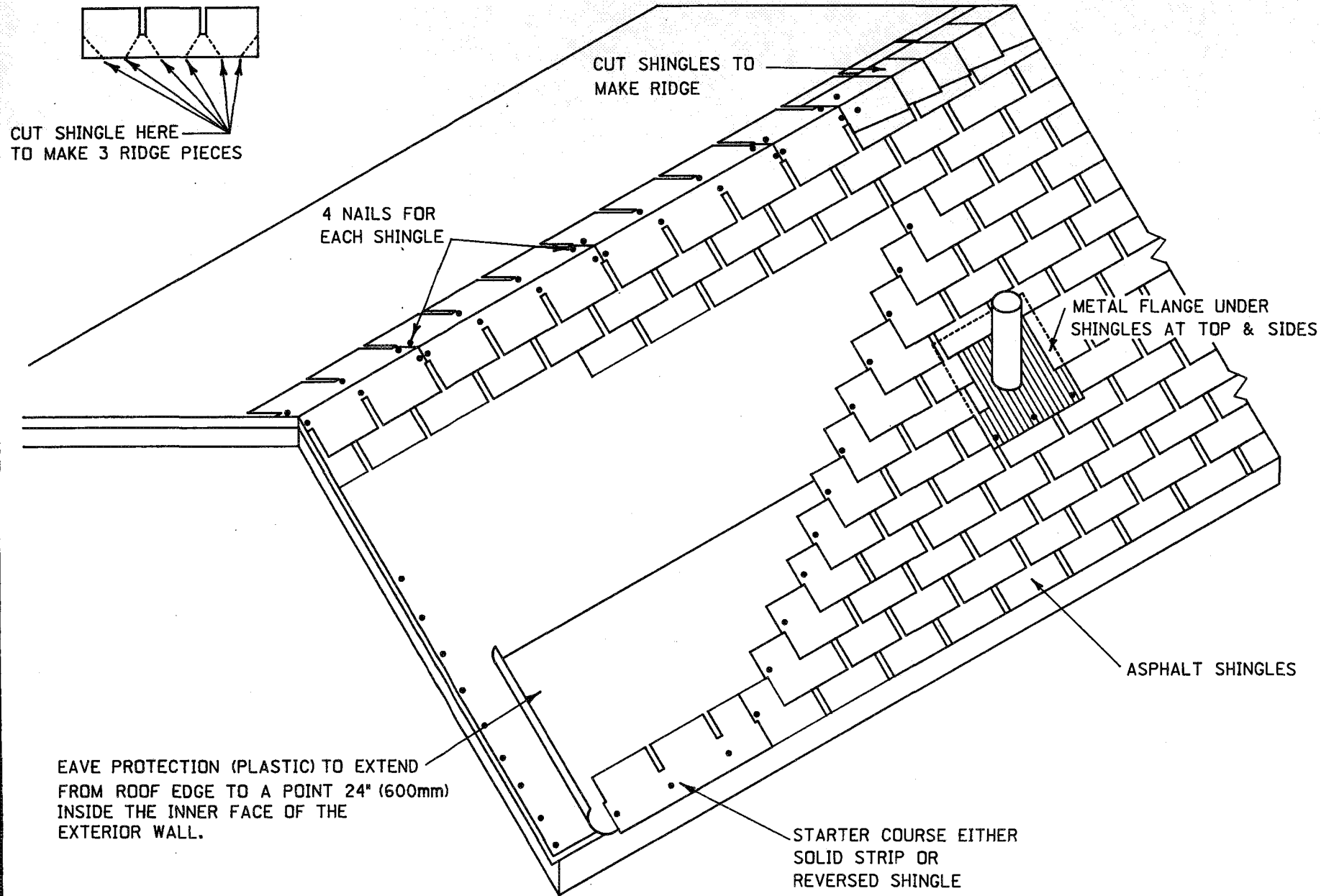
INSTALL PREFABRICATED EAVE LADDER TO GABLE TO GABLE FRAMING WITH 2- 3 1/4" (82mm) NAILS AT 24" (600mm) O.C.

APPLY THE ROOF SHEATHING. PLACE THE FIRST SHEET SO THAT THE EDGE IS CENTRED OVER A TRUSS AND PROJECT REMAINDER TO COVER THE EAVE LADDER. MAKE SURE THE SHEET IS FLUSH WITH THE FASCIA BOARD AT THE EAVE AND ALONG THE RAKE. COMPLETE THE FIRST FULL LENGTH ROW OF ROOF SHEATHING BEFORE MOVING UP THE ROOF.

INSTALL H-CLIPS AT MID POINTS BETWEEN THE TRUSSES TO REDUCE DEFLECTION OF SHEATHING. REPEAT THIS PROCEDURE TO THE ROOF PEAK. UPPER MOST SHEET MUST BE CUT TO FIT AT THE PEAK.



EAVE DETAIL



APPLICATION OF ASPHALT SHINGLES

CONSTRUCTION SEQUENCE

NOW THAT THE ROOF SHEATHING IS INSTALLED YOU ARE NOW READY TO APPLY ASPHALT SHINGLES.

INSTALL EAVE PROTECTION PARALLEL WITH EAVES WITH A MINIMUM EDGE LAP OF 2" (50mm), MINIMUM END LAP 4" (100mm). OVERLAP EAVE PROTECTION BY 4" (100mm).

INSTALL STARTER STRIP ALONG EAVE EXTENDING 3/4" (20mm) BEYOND ROOF SHEATHING. NAIL BOTTOM EDGE AT 12" (300mm) CENTRES.

INSTALL FIRST ROW OF SHINGLES DIRECTLY OVER THE STARTER STRIP WITH JOINTS STAGGERED. LAYOUT STRING LINES AND APPLY SHINGLES IN ACCORDANCE WITH MANUFACTURERS PRINTED INSTRUCTIONS.

NAIL EACH SHINGLE WITH FOUR ROOFING NAILS PLACED 1/2" (13mm) ABOVE THE CUTOUTS AND 15/8" (40mm) IN FROM EACH END.

INSTALL FLASHINGS FOR VENT PIPING AND CHIMNEY AS THE WORK PROCEEDS.

PREPARE INSTALL RIDGE CAP PIECES USING SHINGLES CUT INTO THREE SECTIONS AND PLACED SIDEWAYS OVER THE ROOF PEAK. FASTEN WITH 2-ROOF NAILS OVERLAP EACH LAYER SO THAT ONLY THE FINISH LAYER SHOWS.

STICK DOWN THE TABS OF EACH RIDGE CAP SHINGLE.

EXTERIOR DOORS ,
WINDOWS AND FINISHES

CONSTRUCTION SEQUENCE

MOST MANUFACTURERS MAKE COMPLETE WINDOW UNITS WITH SASH, GLAZING, WEATHERSTRIPPING, AND EXTERIOR TRIM. MANY UNITS ARE NOW PREFINISHED AT THE FACTORY.

PRIOR TO PLACING THE WINDOW UNIT IN THE ROUGH OPENING, WRAP A STRIP OF AIR / VAPOUR BARRIER AROUND THE WINDOW FRAME, OVERLAP AND SEAL WITH CAULKING.

USE WEDGES OR SHIMS TO LEVEL THE UNIT IN THE OPENING. WHEN IN POSITION NAIL THE WINDOW UNIT THROUGH THE EXTERIOR TRIM TO THE WALL FRAMING. DO NOT INSTALL WEDGES AT THE TOP OF THE WINDOW FRAME.

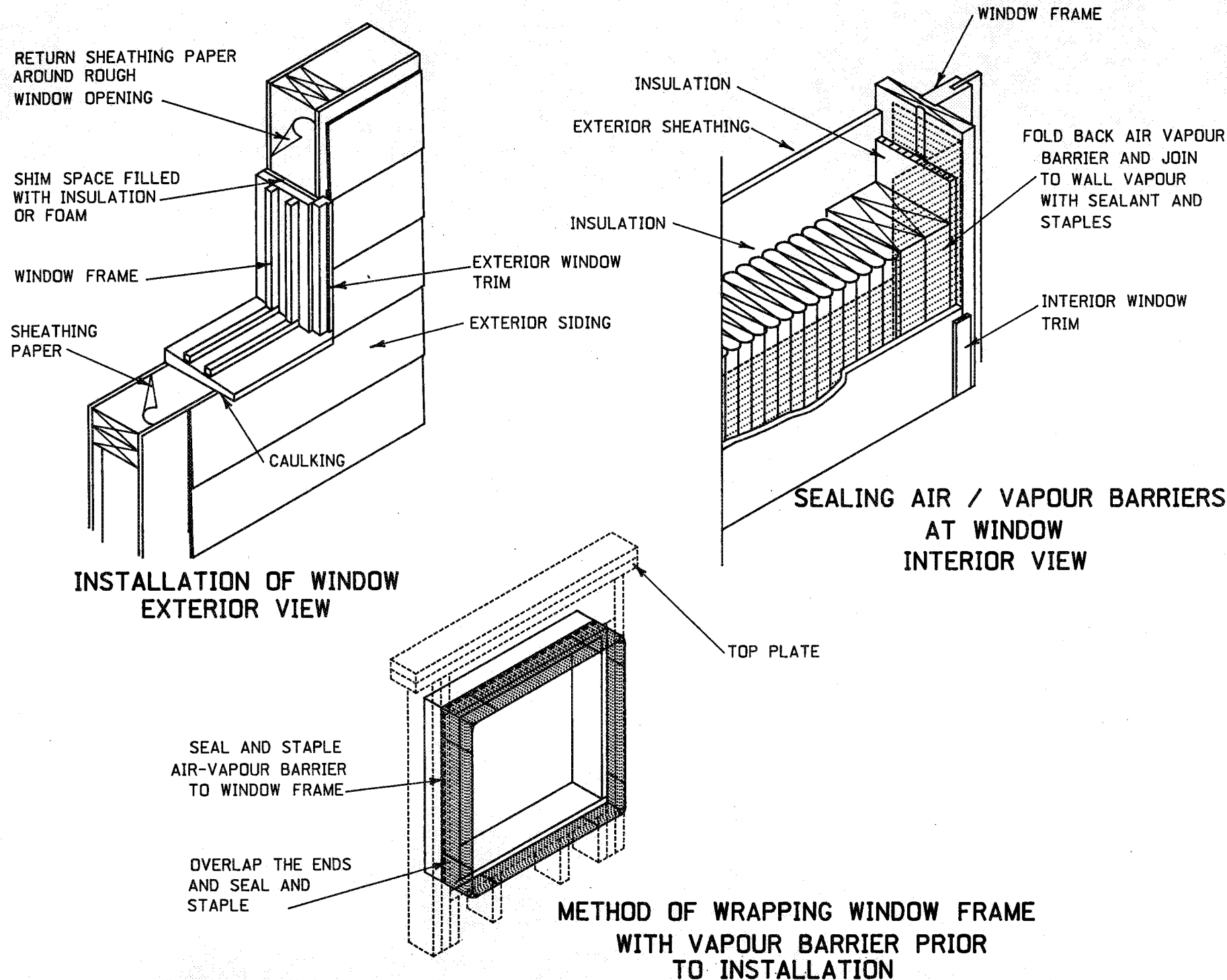
ONCE THE WINDOW IS IN PLACE INSULATION OR FOAM SHOULD BE PLACED IN THE GAP BETWEEN THE ROUGH OPENING AND THE WINDOW FRAME.

THE WINDOW AND WALL AIR/VAPOUR BARRIERS ARE THEN JOINED WITH SEALANT AND STAPLED. SPECIAL ATTENTION SHOULD BE PAID TO THE SEALING OF THE AIR/VAPOUR BARRIER FOLDS AT THE WINDOW CORNERS.

EXTERIOR DOOR FRAMES ARE INSTALLED AND SEALED SIMILAR TO WINDOW FRAMES.

NOTES

1. THE ABOVE METHOD OF ANCHORING WINDOW FRAMES AND DOOR FRAMES IS COMMON FOR MOST MANUFACTURER'S UNITS, HOWEVER READ MANUFACTURER'S PRINTED INSTALLATIONS BEFORE INSTALLING.



CONSTRUCTION SEQUENCE

MEASURE DOWN FROM THE EAVES TO THE BOTTOM OF THE FIRST COURSE AT THE FOUNDATION WALL AT ALL FOUR CORNERS, TO DETERMINE THE NUMBER OF BOARD SPACES.

TAKE THE LONGEST DISTANCE AND MARK THAT DISTANCE TO EACH CORNER BY DRIVING A NAIL. RUN A CHALKLINE HORIZONTALLY AROUND THE HOUSE FROM NAIL TO NAIL.

INSTALL EXTERNAL AND INTERNAL CORNER BOARDS.

NAIL ON THE STARTER STRIP USING THE CHALKLINE AS A LEVEL REFERENCE. NAIL THE SIDING OVER THE STARTER STRIP PLACING THE NAILS 1/2" (13mm) FROM THE TOP EDGE. DO NOT COUNTERSINK NAILHEADS. START NAILING AT ONE END OF THE SIDING STRIP AND PROCEED ALONG THE STRIP TO PREVENT RIBBLING. ENSURE THE SIDING IS FLAT AGAINST THE WALL. TO ALLOW FOR EXPANSION LEAVE 3/16" (5mm) GAP BETWEEN THE ENDS OF EACH STRIP OF SIDING AND AROUND WINDOWS AND DOORS.

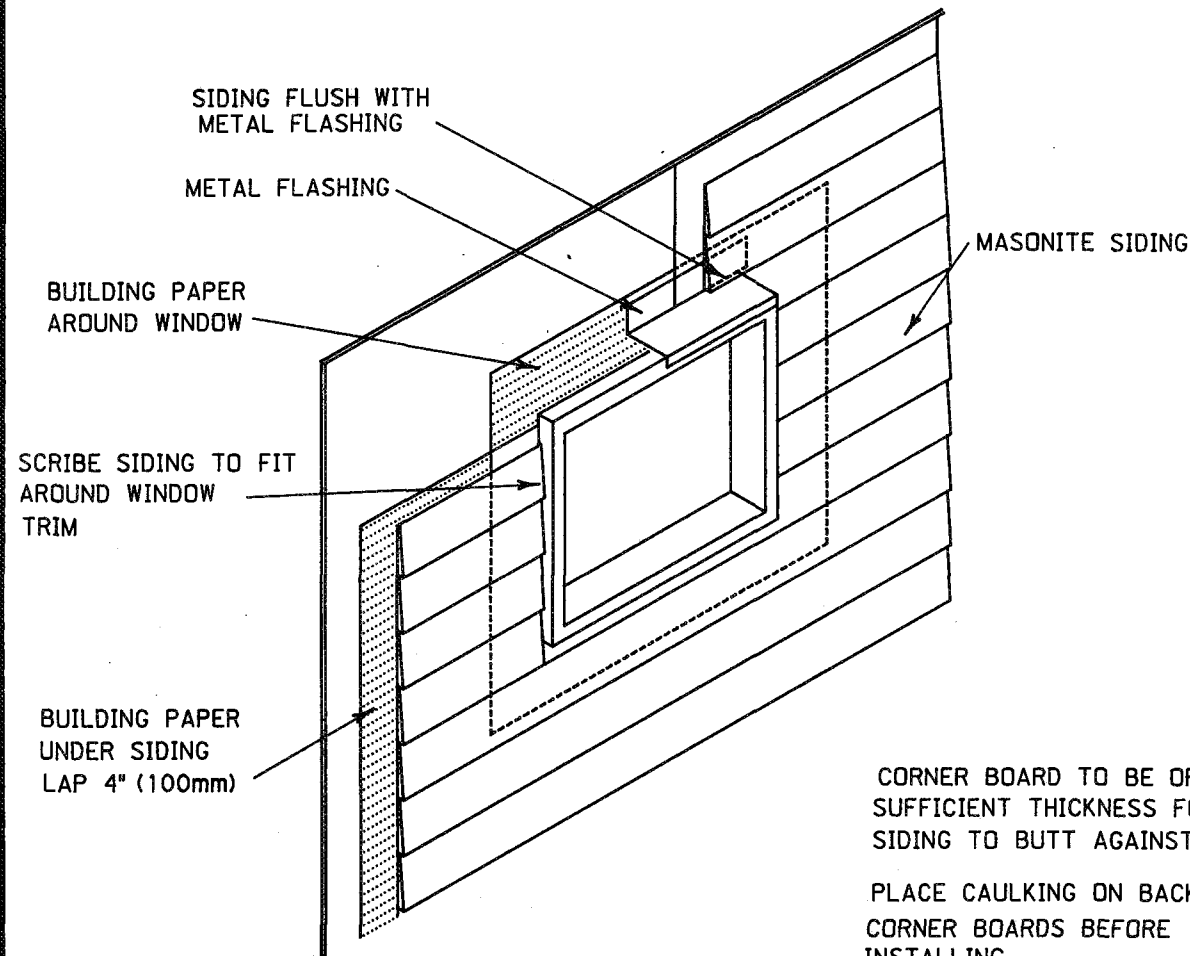
INSTALL METAL FLASHINGS OVER DOORS AND WINDOWS.

WHERE POSSIBLE, THE BOTTOM OF THE BOARD THAT IS PLACED OVER THE TOP OF THE WINDOW SHOULD COINCIDE WITH THE TOP OF THE WINDOW FLASHING.

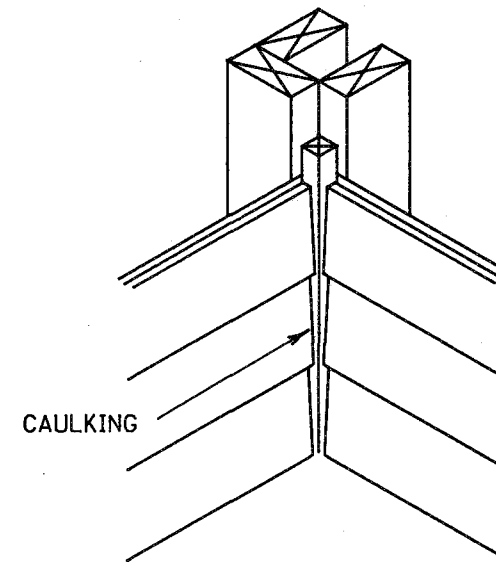
FINISH BY CAULKING AROUND THE WINDOWS, DOORS, TRIM, EXTERNAL AND INTERNAL CORNERS.

NOTES

1. IF VINYL OR HARDBOARD SIDING IS USED, INTERNAL AND EXTERNAL CORNERS AND ACCESSORIES WILL BE PROVIDED WITH THE SIDING. INSTALL THE SIDING IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

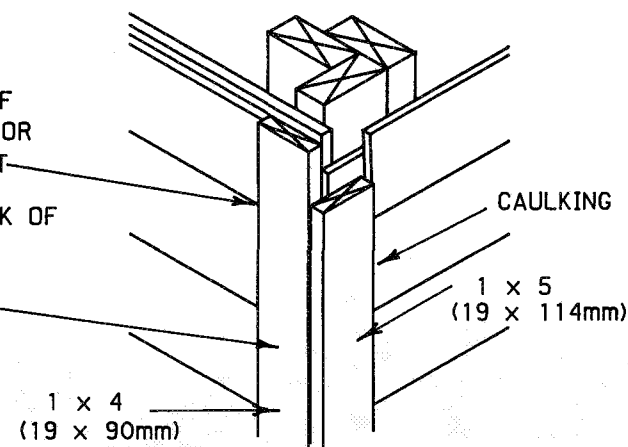


TYPICAL EXTERIOR SIDING AROUND WINDOWS



INTERNAL CORNER
WITH 2"x2" CORNER
(50x50mm)

CORNER BOARD TO BE OF SUFFICIENT THICKNESS FOR SIDING TO BUTT AGAINST
PLACE CAULKING ON BACK OF CORNER BOARDS BEFORE INSTALLING



EXTERIOR CORNER
WITH CORNER BOARDS

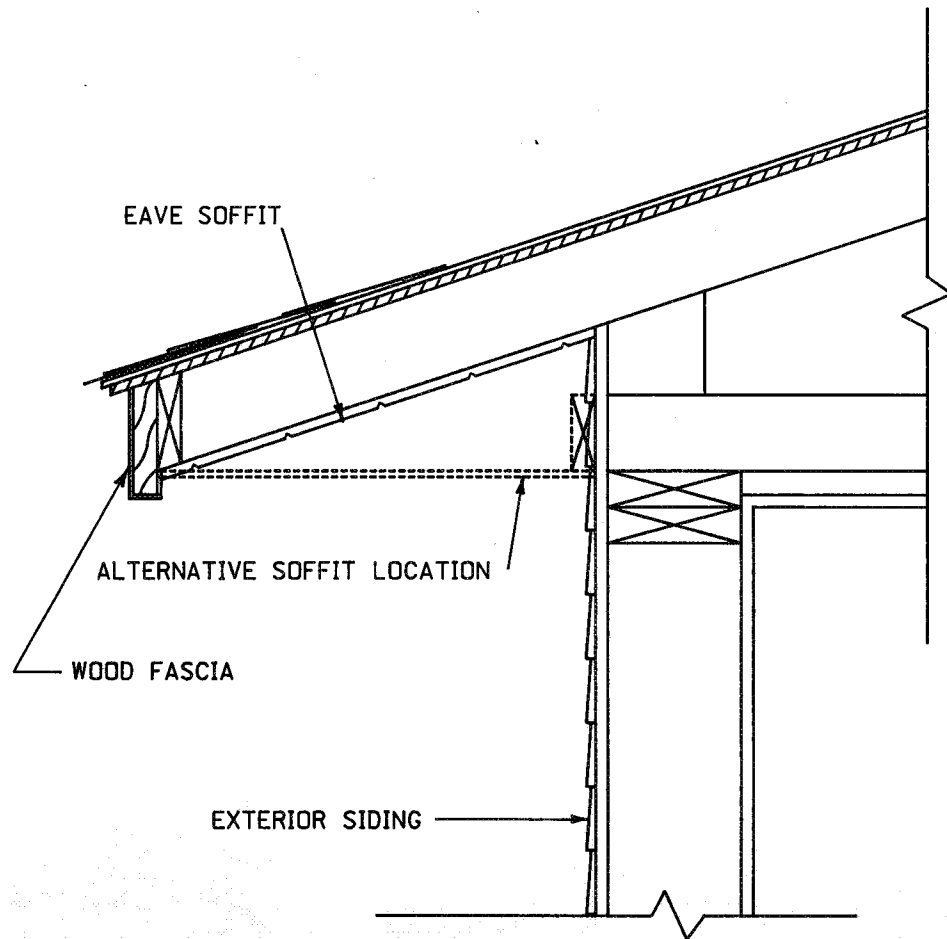
CONSTRUCTION SEQUENCE

THE SOFFIT MAY BE FINISHED BY INSTALLING CONTINUOUS PERFORATED ALUMINUM OR VINYL OR PAINTED PLYWOOD DIRECTLY TO THE BOTTOM OF THE ROOF TRUSS EXTENSION.

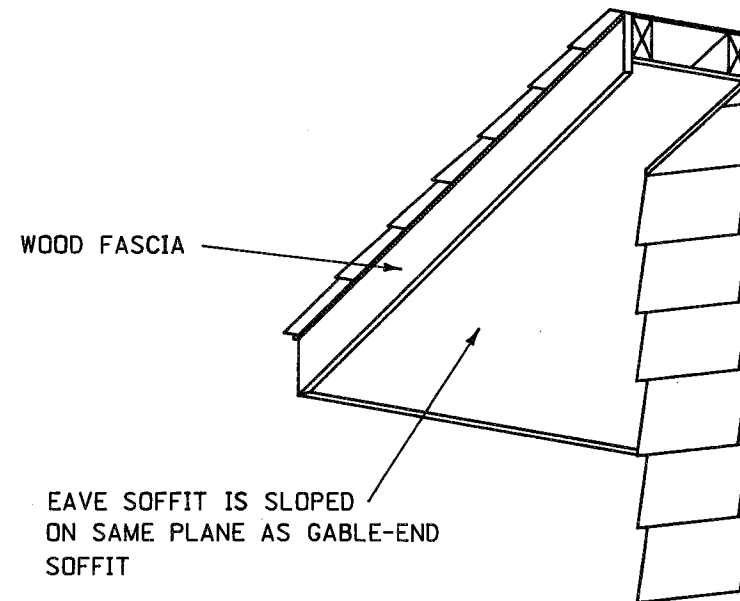
THE EAVE SOFFIT WILL CONTINUE UP THE GABLE-END ON THE SAME SLOPE. AS THE GABLE-END SOFFIT, THE GABLE END SOFFIT DOES NOT NEED TO BE PERFORATED.

THE ALTERNATIVE METHOD OF ENCLOSING THE SOFFIT IS BY PLACING A CONTINUOUS WOOD NAILER ALONG THE HOUSE IN LINE WITH THE BOTTOM OF THE PROJECTED WOOD TRUSS. THE SOFFIT IS THEN APPLIED HORIZONTALLY.

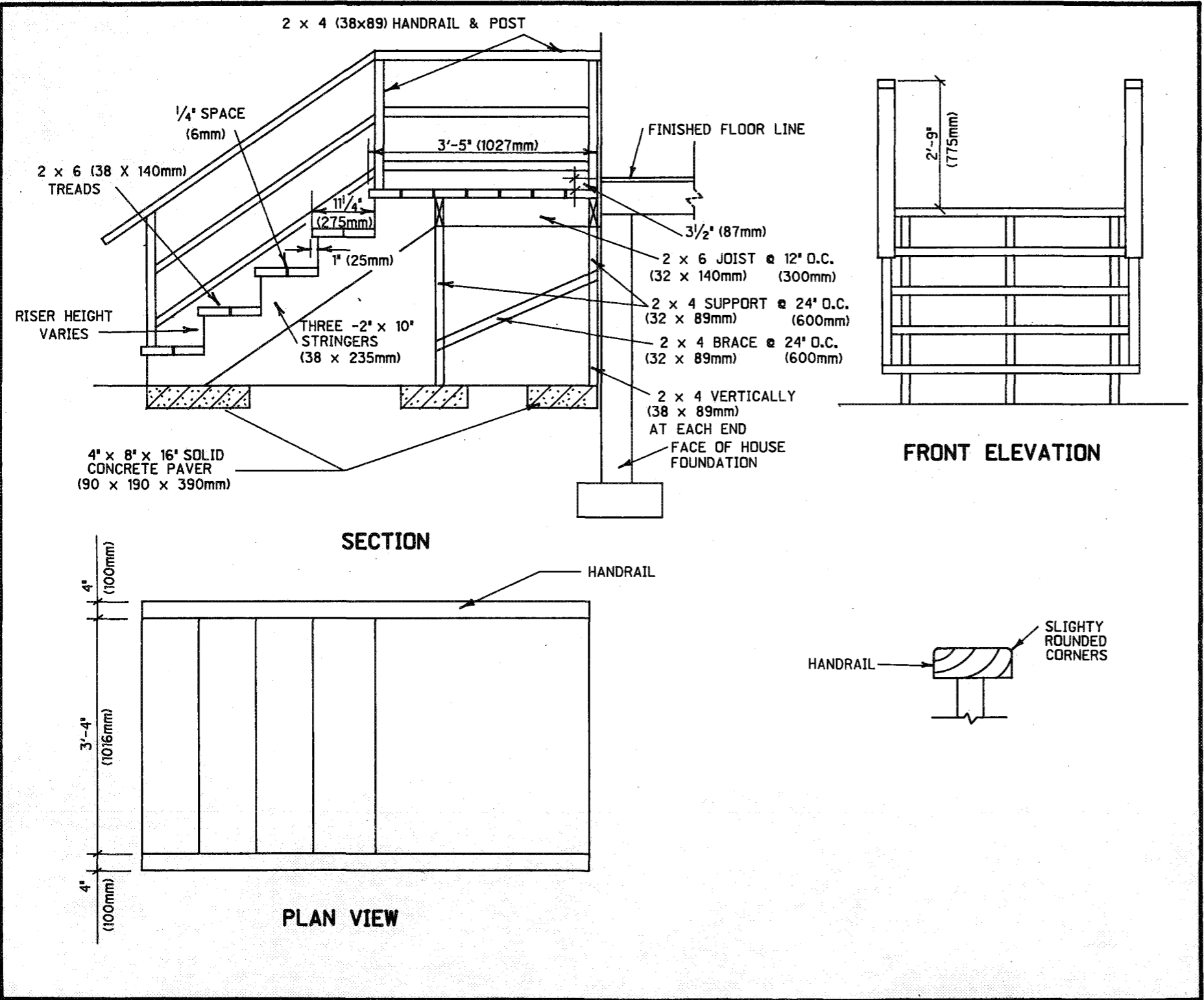
THE WOOD FASCIA CAN BE FINISHED BY APPLYING SHELLAC TO ALL KNOTS, APPLYING ONE PRIMER COAT AND TWO FINISH COATS OF LATEX OR ALKYD PAINT, OR THE FASCIA BOARD MAY BE COVERED WITH AN ALUMINUM OR VINYL CLADDING FORMED TO SUIT THE FASCIA PROFILE.



FASCIA AND SOFFIT DETAIL



EAVE AND GABLE-END INTERSECTION



CONSTRUCTION SEQUENCE

PLACE AND LEVEL THE SOLID CONCRETE PAVERS UNDER THE STRINGERS AND LANDING.

SET THE LANDING LEVEL 3" (75mm) TO 4" (100) BELOW THE FLOOR LEVEL AND MEASURE THE HEIGHT TO THE LANDING ABOVE THE CONCRETE PAVER.

DETERMINE THE NUMBER OF RISERS NEEDED, EACH RISER SHOULD BE THE SAME HEIGHT. THE RECOMMENDED HEIGHT FOR RISERS VARIES FROM 6 1/2" (165mm) TO 8" (200mm).

CONSTRUCT THE LANDING FRAMING AND SUPPORTS.

SELECT 3 STRAIGHT PIECES OF 2 x 10 (38x238mm) AND STEP OFF THE RISER / TREAD DIMENSIONS WITH A FRAMING SQUARE AND CUT OUT THE STRINGERS. PLACE THE STRINGERS ON THE CONCRETE PAVER SUPORTS AND NAIL TO THE LANDING FRAMING.

NAIL THE 2 X 6 (38 X 140mm) TREADS AND LANDING FLOOR TO THE FRAMING AND STRINGERS.

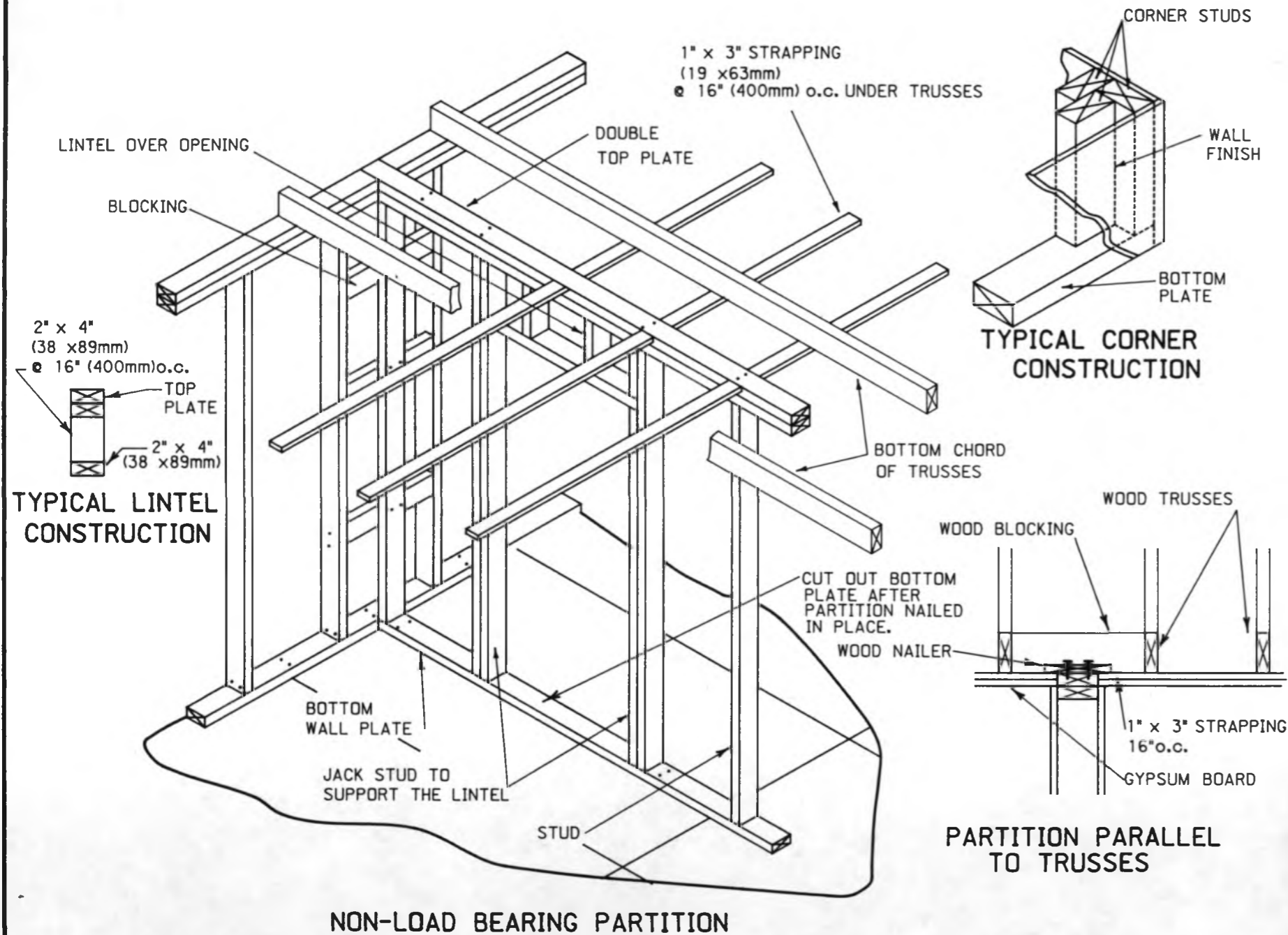
ASSEMBLE THE HANDRAIL AND POST AND NAIL TO THE TREADS AND LANDING.

THE COMPLETE STAIR ASSEMBLY SHOULD BE TREATED WITH WOOD PRESERVATIVE.

NOTES

1. USE 3 1/2" (89mm) GALVANIZED COMMON NAILS FOR ALL FRAMING.

INTERIOR CONSTRUCTION



CONSTRUCTION SEQUENCE

INTERIOR NON-LOAD BEARING PARTITIONS ARE NORMALLY CONSTRUCTED SIMILAR TO EXTERIOR WALLS, THAT IS THEY ARE CONSTRUCTED ON THE SUBFLOOR AND RAISED INTO PLACE.

THE TOP AND BOTTOM PLATES ARE NAILED TO EACH STUD WITH TWO NAILS.

ONCE THE ASSEMBLED SECTIONS ARE RAISED AND PLUMBED, THEY ARE NAILED TOGETHER AT CORNERS AND INTERSECTIONS. A SECOND TOP PLATE, WITH JOINTS LOCATED AT LEAST ONE STUD SPACE AWAY FROM THE JOINTS IN FIRST TOP THE PLATE, IS ADDED.

WHERE PARTITIONS RUN PARALLEL TO ROOF TRUSSES, PROVIDE WOOD BLOCKING BETWEEN TRUSSES, NORMALLY 4'-0" (1200mm) o.c. INSTALL WOOD NAILERS TO TOP OF PARTITION FOR NAILING STRAPPING.

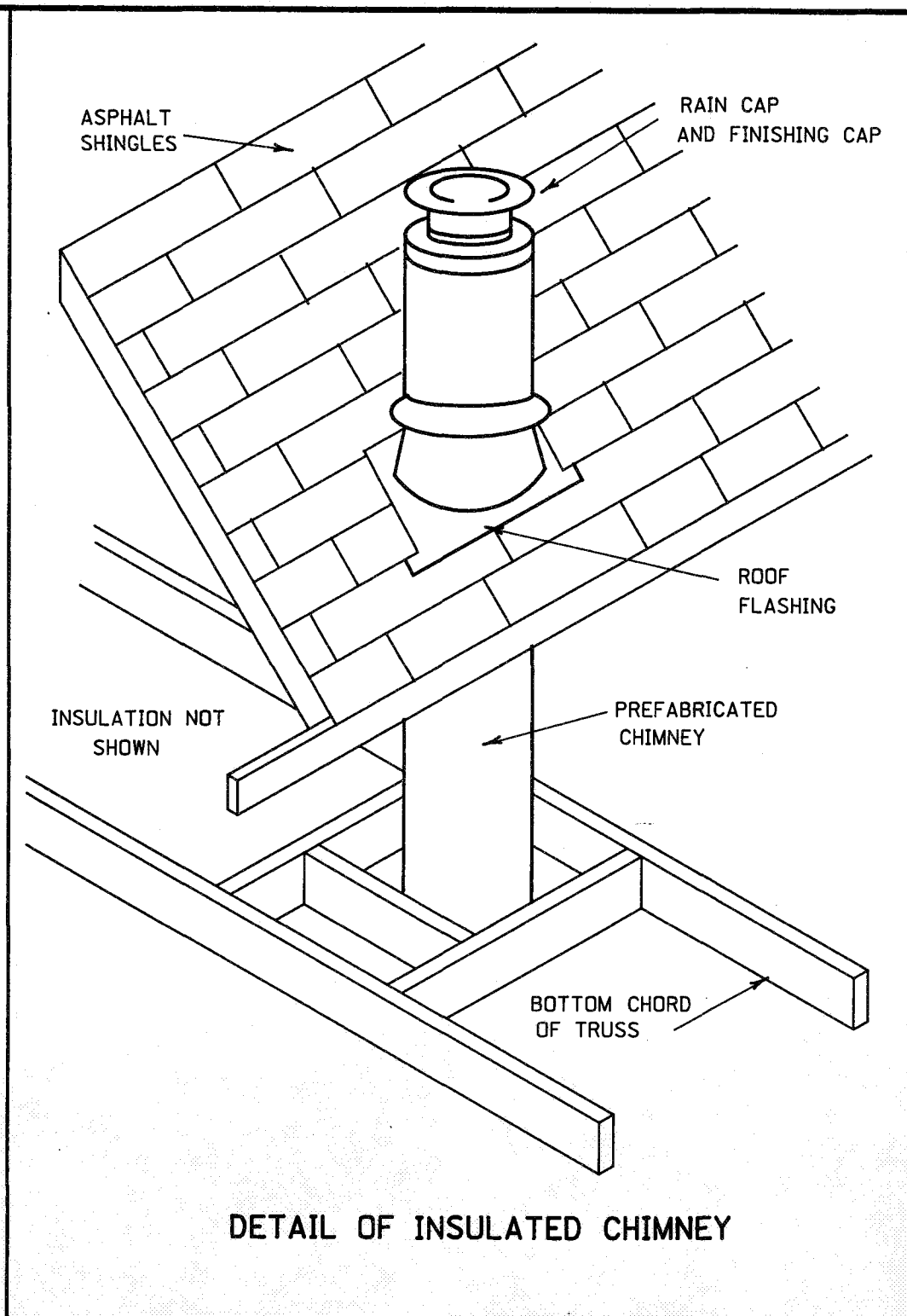
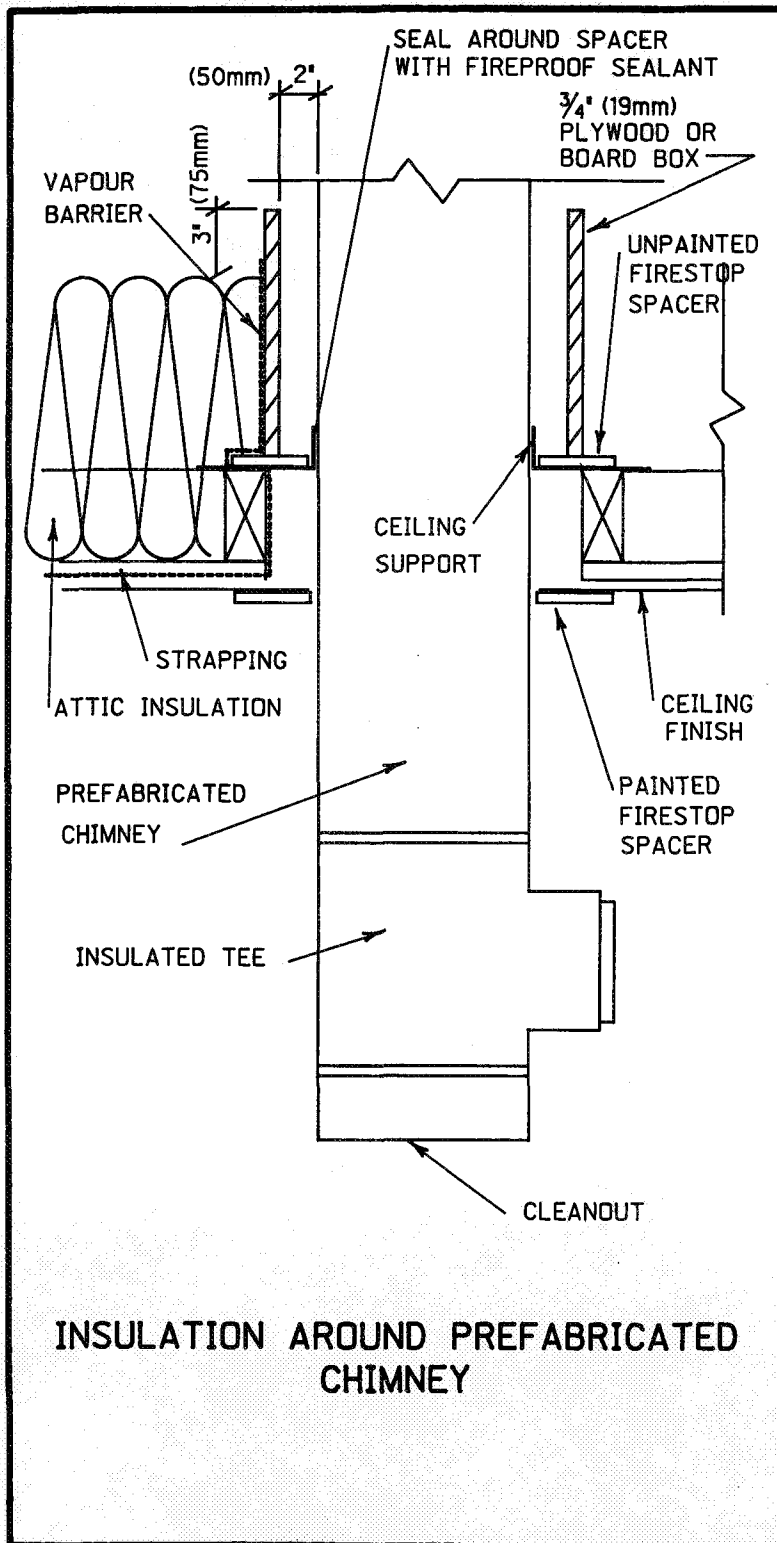
CONSTRUCTION SEQUENCE

PLAN TO LOCATE PREFABRICATED CHIMNEY BETWEEN TWO ROOF TRUSSES IF POSSIBLE. FRAME BETWEEN TRUSSES IS TO PROVIDE SUPPORT AROUND THE CHIMNEY OPENING FOR THE ROOF AND CEILING. PROVIDE 2" (50mm) CLEARANCE AROUND CHIMNEY.

CONSTRUCT A BOX OF 3/4" (19mm) PLYWOOD OR BOARDS AND PLACE ON TOP OF ROOF TRUSSES. PROVIDE 2" (50mm) CLEARANCE AROUND CHIMNEY. THIS BOX IS TO KEEP THE INSULATION AWAY FROM THE CHIMNEY.

NOTES

1. THE PREFABRICATED CHIMNEY SHOULD BE LISTED BY UNDERWRITERS LABORATORIES OF CANADA (ULC) AS SUITABLE FOR USE WITH SOLID FUEL FIRED APPLIANCES.
2. INSTALL CHIMNEY ACCORDING TO MANUFACTURER'S INSTRUCTIONS.



CONSTRUCTION SEQUENCE

1. INSTALL CEILING BATT INSULATION FROM BELOW PRIOR TO INSTALLING STRAPPING AND VAPOUR BARRIER.

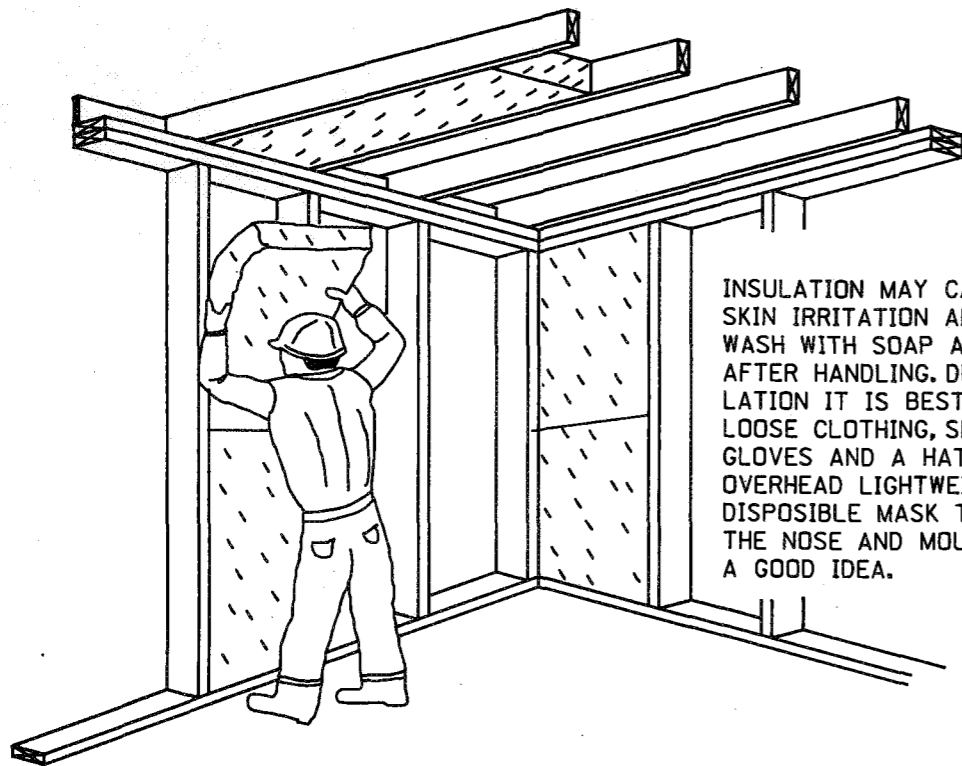
PLACE CEILING BATTS SNUGLY BETWEEN BOTTOM CHORDS OF TRUSSES MAKING SURE ALL VOIDS AND SPACES ARE FILLED. CEILING STRAPPING SHOULD FOLLOW CLOSE BEHIND THE INSTALLATION OF BATTS TO HOLD THEM IN PLACE.

INSTALL AIR/VAPOUR BARRIERS OVER THE STRAPPING. OVERLAP SIDE AND END JOINTS AND SEAL WITH SEALANT. PATCH ANY TEARS IN VAPOUR BARRIER WITH TAPE, STAPLE AIR/VAPOUR BARRIER TO FRAMING MEMBERS AT 6" (150) SPACING. EXTEND DOWN WALLS AND PARTITIONS 6" (150).

PLACE BATT INSULATION BETWEEN EXTERIOR WALL STUDS AND PRESS FIRMLY AGAINST THE EXTERIOR WALL SHEATHING. FIT INSULATION AROUND AND BEHIND ELECTRICAL BOXES, REGISTERS, BLOCKING ETC.

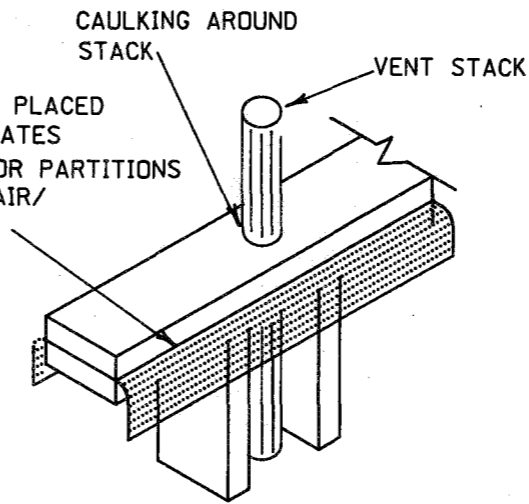
NOTES

1. ELECTRICAL AND PLUMBING ROUGH-IN SHOULD BE COMPLETED BEFORE INSULATION IS INSTALLED.



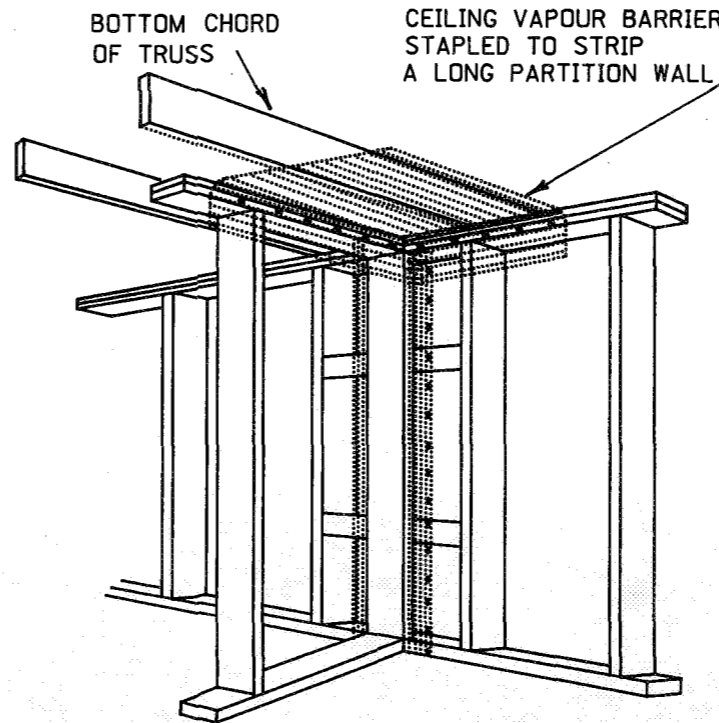
INSTALLING BATT INSULATION IN EXTERIOR WALLS

VAPOUR / BARRIER IS PLACED BETWEEN TWO TOP PLATES WHEN FRAMING INTERIOR PARTITIONS SEALING TO CEILING AIR/VAPOUR BARRIER

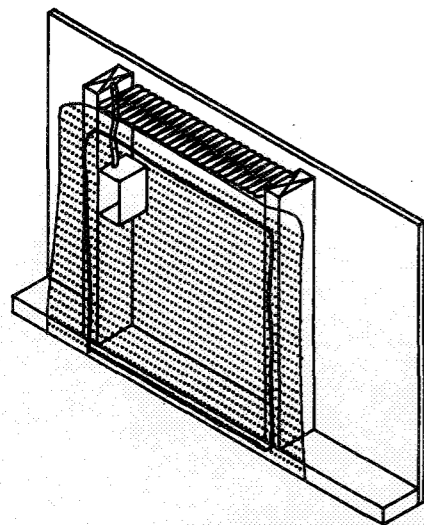


AIR VAPOUR BARRIER AT TOP OF INTERIOR WALL PARTITION

INSULATION MAY CAUSE TEMPORARY SKIN IRRITATION AFTER CONTACT. WASH WITH SOAP AND COOL WATER AFTER HANDLING. DURING INSTALLATION IT IS BEST TO WEAR LOOSE CLOTHING, SNUG WORK GLOVES AND A HAT. WHEN WORKING OVERHEAD LIGHTWEIGHT GOGGLES AND A DISPOSABLE MASK THAT FITS OVER THE NOSE AND MOUTH ARE ALSO A GOOD IDEA.



AIR VAPOUR BARRIER DETAIL WHERE PARTITION WALL JOINS EXTERIOR WALL AND CEILING



SEALING AIR/VAPOUR BARRIER AROUND ELECTRICAL RECEPTACLES IN EXTERIOR WALL

PLACE A PIECE OF VAPOUR BARRIER AROUND THE BOX, ATTACH TO THE ADJACENT STUDS AND THE BOTTOM PLATE. APPLY SEALANT AROUND CABLE AND EDGE OF VAPOUR BARRIER.

CONSTRUCTION SEQUENCE

INSTALL GYPSUM BOARD PERPENDICULAR TO FRAMING. LOCATE END JOINTS OVER SUPPORTING MEMBERS, ARRANGE END JOINTS TO OCCUR ON DIFFERENT STUDS ON OPPOSITE SIDES OF A PARTITION.

START FASTENING IN CENTRE OF GYPSUM BOARD AND WORK TOWARD THE ENDS AND EDGES. HOLD BOARD FIRMLY AGAINST THE FRAMING MEMBERS WHILE INSTALLING.

PERIMETER FASTENERS SHOULD NOT BE LESS THAN 3/8" (10mm) NOR MORE THAN 1/2" (13mm) FROM EDGES AND ENDS AND OPPOSITE THE FASTENERS ON THE ADJACENT BOARDS.

DRYWALL SCREWS ARE THE PREFERRED FASTENER- ESPECIALLY FOR CEILING INSTALLATION, HOWEVER BLUE-RINGED DRYWALL NAILS ARE ACCEPTABLE. DRIVE SCREWS WITH A SCREW GUN AND COUNTERSINK HEADS SLIGHTLY BELOW SURFACE OF THE BOARD.

FLOATING CORNERS SHOULD BE USED AT WALL / CEILING JUNCTIONS. FOR 1/2" (13mm) GYPSUM BOARD, INSTALL FASTENERS 12" (300mm) TO 16" (400mm) FROM EDGE OF THE BOARD FOR FLOATING CORNERS.

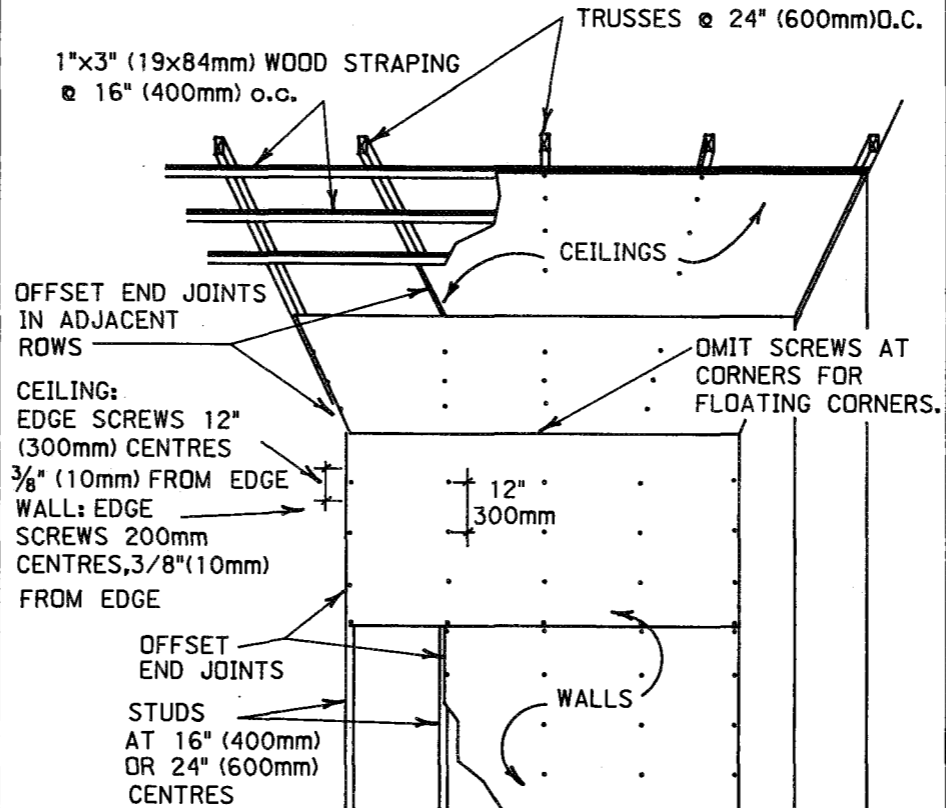
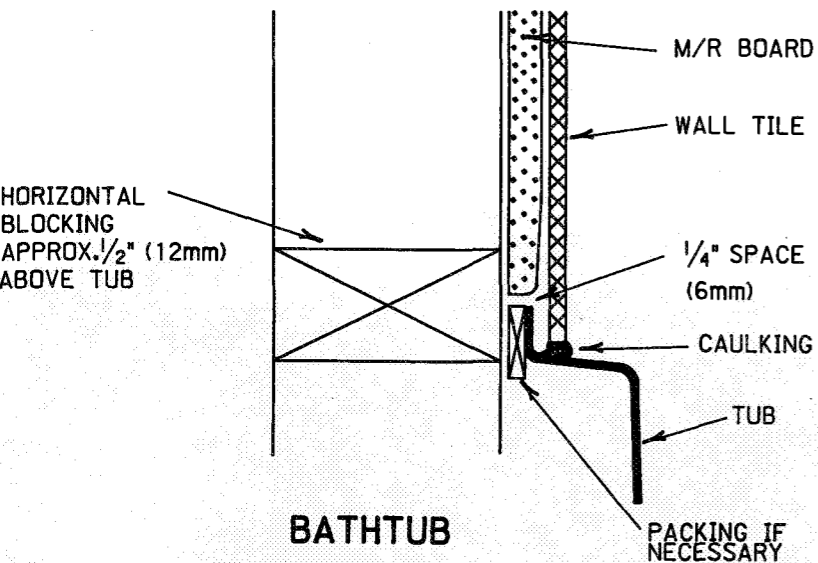
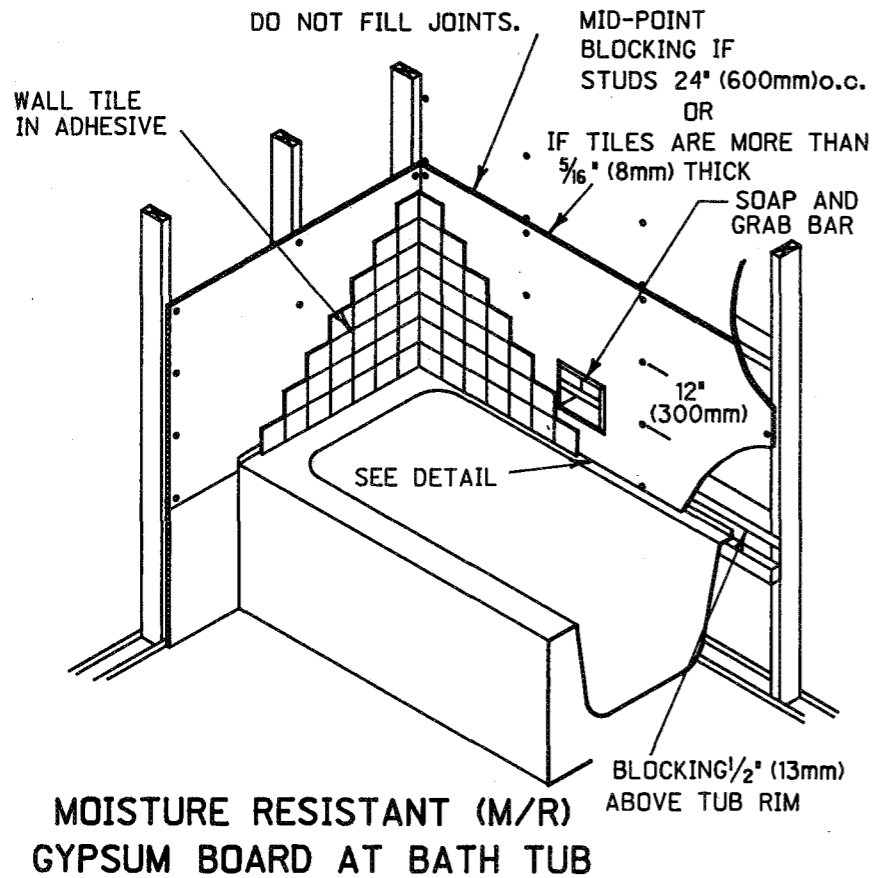
INSTALL METAL CORNER BEADS ON ALL EXTERNAL CORNERS.

USE MOISTURE RESISTANT GYPSUM BOARD AROUND THE BATH TUB.

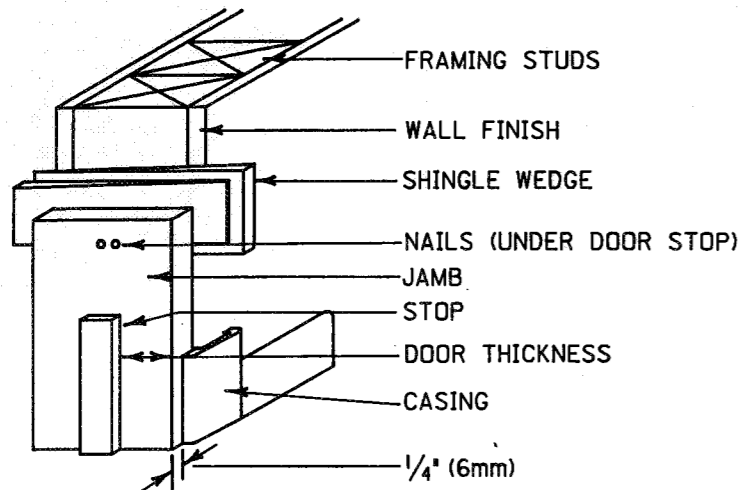
JOINT TAPING AND FILLING, AND SPOTTING OVER FASTENER HEADS TO BE DONE ACCORDING TO DIRECTIONS ON THE CONTAINER.

APPLY THREE COATS, ALLOW TO DRY BETWEEN EACH COAT, AND SAND.

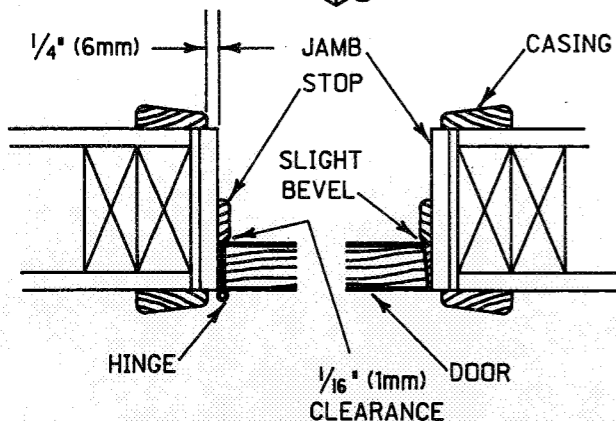
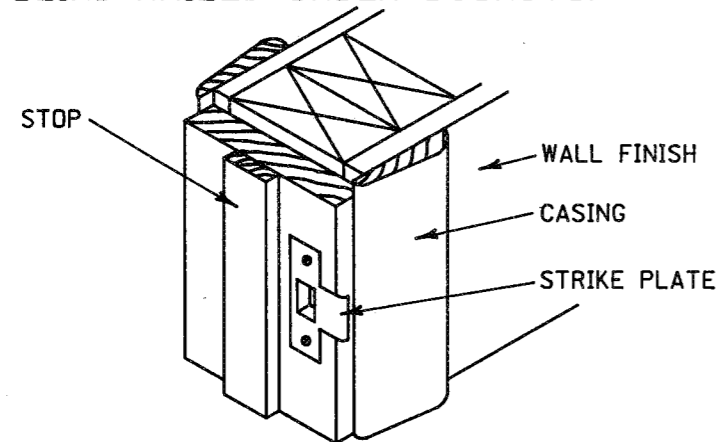
THE FINISHED WORK SHOULD BE SMOOTH, SEAMLESS, TRUE AND FLUSH WITH SQUARE NEAT CORNERS.



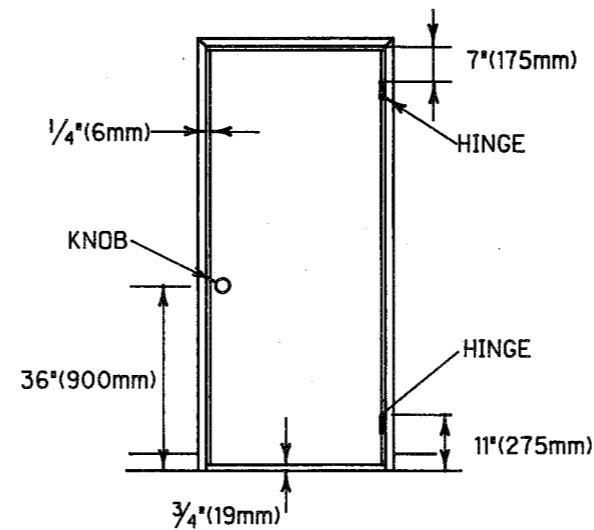
GYPSUM BOARD APPLICATION



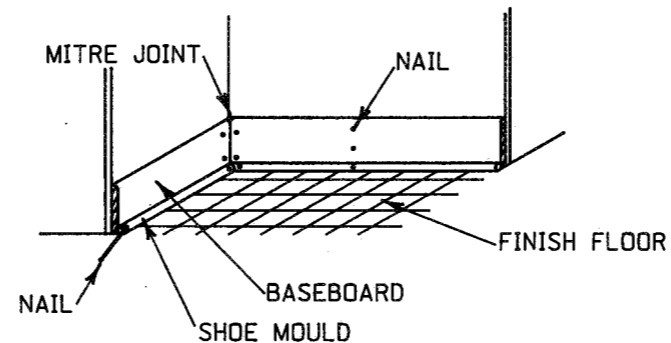
DOOR FRAME AND TRIM SHOWING FRAME BLIND-NAILED UNDER DOORSTOP



TYPICAL STRIKE PLATE AND STOP



SUGGESTED DOOR CLEARANCES AND LOCATION OF HARDWARE



BASE MOULDING, TWO PIECE

NOTES:
1. WOOD TRIM AND CASING TO BE FINISHED NATURAL SHOULD BE HAND SELECTED FOR GRAIN AND COLOR TO MATCH ADJACENT PIECES.

CONSTRUCTION SEQUENCE

SETTING DOOR FRAMES, INSTALLING DOORS, HARDWARE AND TRIM WILL REQUIRE A HIGH DEGREE OF SKILL AND EXPERIENCE. IT IS ADVISABLE TO HAVE YOUR CONSTRUCTION MANAGER START YOU OFF AT EACH STAGE OF THIS FINISH WORK.

DOOR FRAMES WILL BE SINGLE BOARDS CUT AND MARKED TO SUIT VARIOUS DOOR WIDTHS. ASSEMBLE FRAMES TO SUIT DOOR SIZE AND SET IN ROUGH OPENING. YOUR ROUGH OPENING SHOULD HAVE PROVIDED FOR THE FRAME WITH ALLOWANCE FOR WEDGES. PLACE WEDGES NEAR THE TOP AND BOTTOM, BEHIND HINGES AND STRIKE PLATE. CUT OFF EXCESS SHINGLE EXTENSION AND INSTALL CASING. MITRE CASING AT TOP BY CUTTING AT 45 DEG. IN A MITRE BOX.

MARK OFF HINGES ON THE DOOR AND CUT OUT TO DEPTH OF HINGE USING A CHISEL OR ROUTER. DRILL HOLES TO RECEIVE CYLINDRICAL LOCKS AND STRIKE PLATE.

SET DOOR IN PLACE WITH A SHIM AT BOTTOM FOR CLEARANCE AND MARK OFF HINGES AT JAMB. CUT OUT TO DEPTH OF HINGE AND INSTALL HINGES. HANG DOOR AND INSTALL CYLINDRICAL LOCKS AND STRIKE. INSTALL DOOR STOP AFTER DOOR IS HUNG.

INTERIOR WINDOW CASING IS INSTALLED SIMILAR TO DOOR CASING.

INSTALL BASEBOARD IN THE LONGEST PRACTICAL LENGTHS WITHOUT JOINTS. COPE INSIDE CORNERS AND MITER OUTSIDE CORNERS. TO MAKE A COPED JOINT INSTALL ONE PIECE OF BASEBOARD WITH A SQUARE EDGE AGAINST THE WALL. COPE THE SECOND PIECE BY CUTTING THE END AT 45° AND THEN CUTTING ALONG THE 45° CUT LINE WITH A COPING SAW.

AFTER FLOORING IS INSTALLED PLACE A SHOE MOULD AROUND PERIMETER OF EACH ROOM.

MECHANICAL
AND
ELECTRICAL

WORK IN THIS SECTION IS USUALLY DONE BY QUALIFIED TRADES PEOPLE. THE FOLLOWING INFORMATION IS PROVIDED AS A BASIC GUIDE ONLY FOR THE HOME OWNER WHO WISHES TO ASSIST WITH THIS WORK, AND FOR MAINTAINING THE SYSTEMS AFTER CONSTRUCTION IS COMPLETED.

CONSTRUCTION SEQUENCE

ROUGH-IN PLUMBING IS INSTALLED BEFORE INSULATION, VAPOUR BARRIER AND INTERIOR FINISHES.

A. DRAINAGE PIPING AND VENTS

MEASURE, CUT AND ASSEMBLE DRAIN PIPING FOR PLUMBING FIXTURES IN SECTIONS BEFORE APPLYING JOINT SOLVENT.

CLEAN ALL FITTINGS AND PIPE ENDS AND APPLY SOLVENT TO BOTH SURFACES AT THE CONNECTION POINTS, ASSEMBLE AND ENSURE PROPER ALIGNMENT BEFORE SOLVENT HAS TIME TO SET.

SLOPE ALL HORIZONTAL DRAIN LINES IN DIRECTION OF FLOW. SIZE AND SLOPE OF PIPING AS PER PLUMBING CODE.

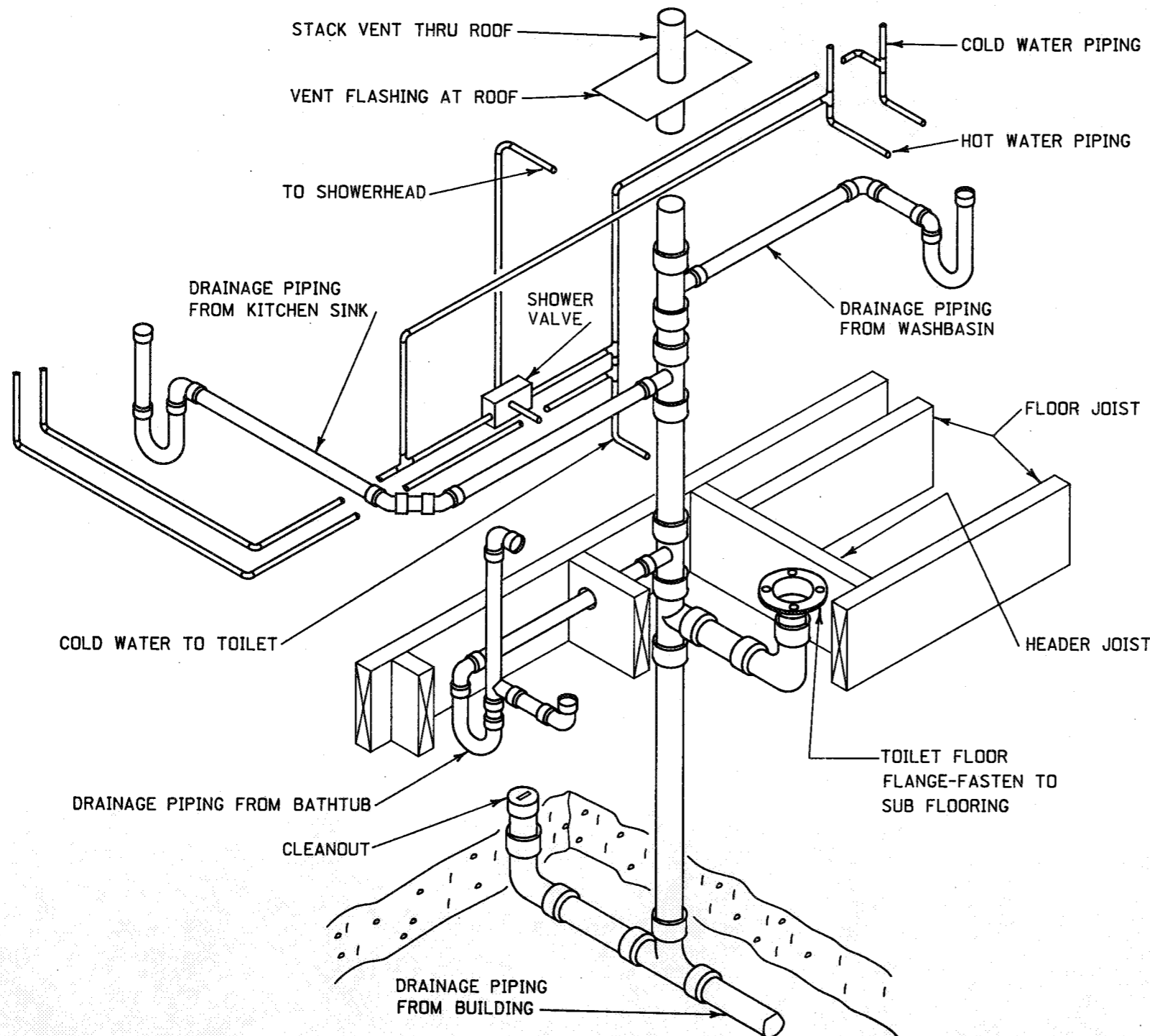
B. WATER PIPING

FOR COPPER PIPING, THOROUGHLY CLEAN INSIDE OF FITTINGS AND OUTSIDE OF PIPE END WITH STEEL WOOL OR EMERY CLOTH. APPLY PASTE, ASSEMBLE PIPING IN SECTIONS AND SOLDER EACH JOINT.

ANCHOR PIPING TO WOOD FRAMING TO AVOID RATTLING OF THE PIPING.

NOTES

1. TO AVOID FREEZING, DO NOT INSTALL PIPING IN EXTERIOR WALLS.
2. FOR DRAINAGE USE ABS-DWY PIPE AND FITTINGS.
3. FOR COLD AND HOT WATER USE COPPER TYPE M.
4. INSTALL HEADER JOISTS AROUND TOILET AND BATHTUB DRAINAGE PIPING AS REQUIRED.



NOTES

1. FIG. (A) DRILL HOLES FOR PIPING THROUGH JOIST LEAVING AT LEAST 2" (50mm) OF WOOD ABOVE AND BELOW THE HOLE. DO NOT NOTCH THE BOTTOM OF A JOIST.

2. FIG. (B) REINFORCING NOT REQUIRED IF REMAINING PORTION IS AT LEAST 1 1/2" (40mm) FOR A 2 x 4 (38x89mm) STUD.

3. FIG. (C) REINFORCING NOT REQUIRED IF REMAINING PORTION IS AT LEAST 2/3 DEPTH OF STUD.

4. FIG. (D) HOLES MAY BE DRILLED PROVIDED THE REMAINING PORTION IS AT LEAST 1 1/2" (40mm) FOR NON LOAD BEARING WALLS AND AT LEAST 2/3 STUD DEPTH FOR LOAD BEARING WALLS.

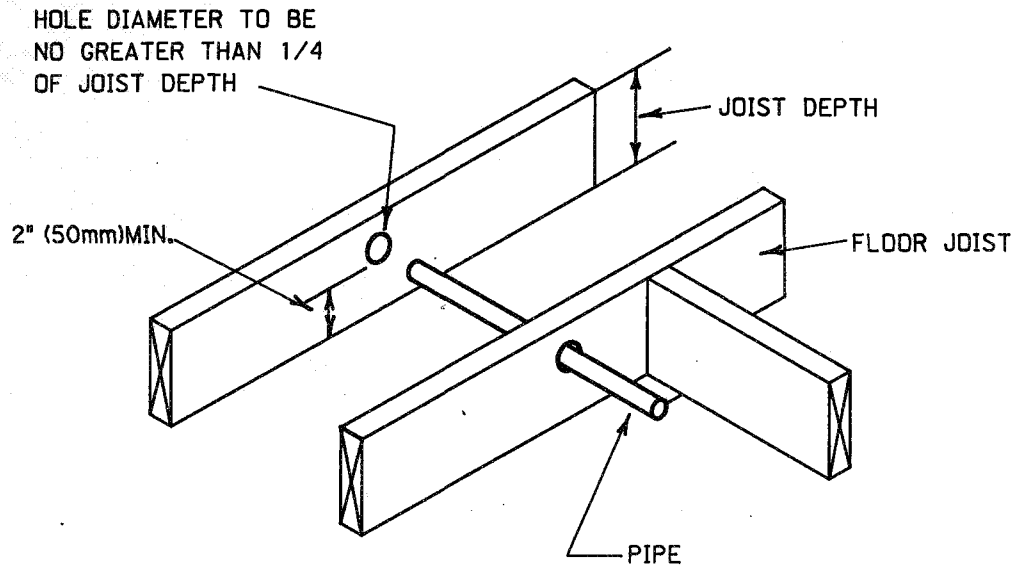


FIG. (A)

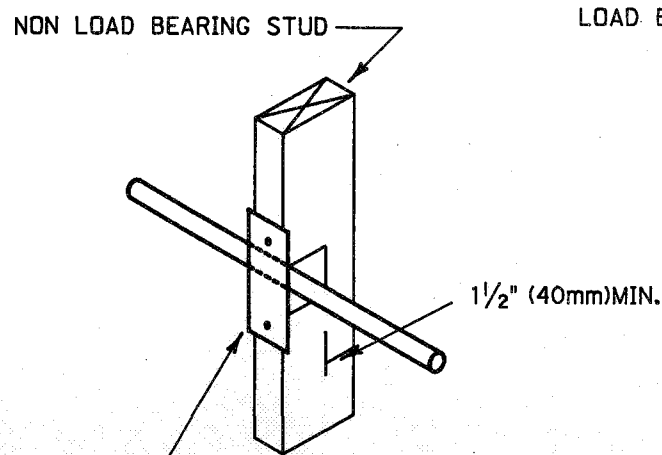


FIG. (B)

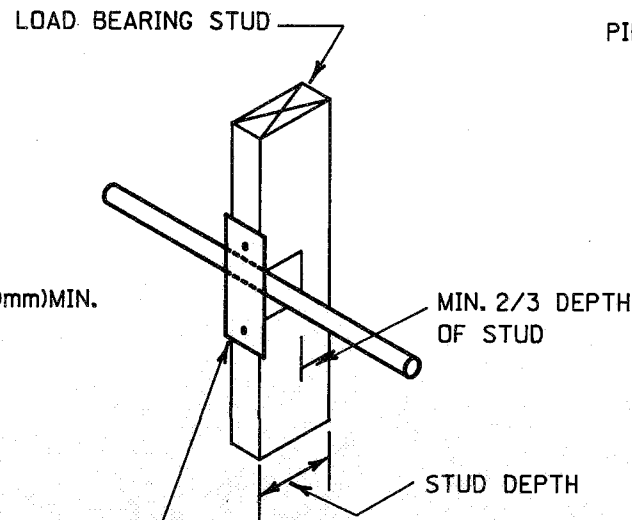


FIG. (C)

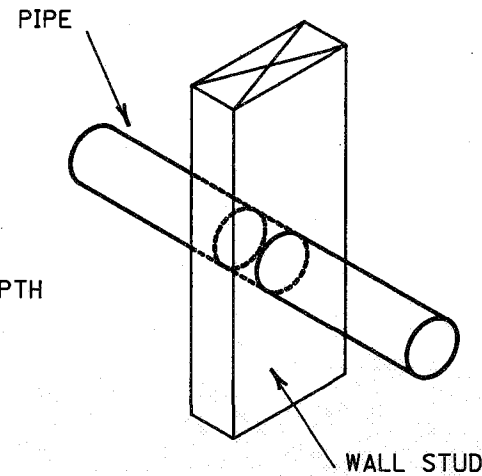
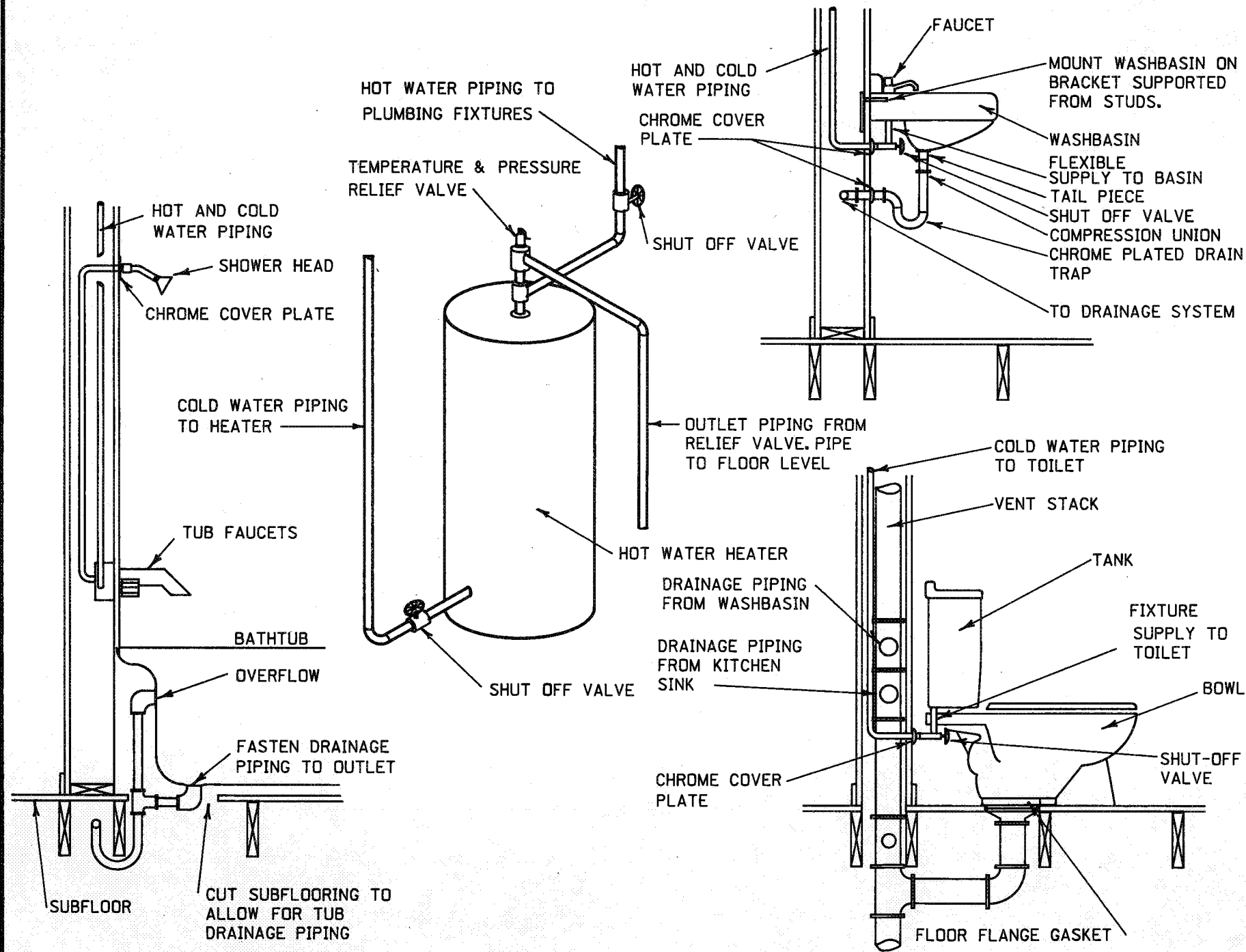


FIG. (D)

16 GAUGE (1.52mm) GALVANIZED STEEL PLATE 2" (50mm) WIDE x 4" (100mm) LONGER THAN THE NOTCH HEIGHT.



CONSTRUCTION SEQUENCE

A. BEFORE THE INTERIOR WALL FINISH IS INSTALLED:

PLACE THE BATHTUB LEVEL AGAINST WALL AND MAKE CONNECTIONS FOR HOT AND COLD WATER, DRAIN AND OVERFLOW. REMOVE THE CARTRIDGES FROM THE TAPS BEFORE SOLDERING THE PIPE CONNECTIONS.

INSTALL BASIN MOUNTING BRACKETS.

B. AFTER WALL FINISH IS INSTALLED:

REINSTALL TAPS, SPOUT, SHOWERHEAD AND COVERPLATES AND CAULK AROUND TUB.

INSTALL BASIN ON BRACKET AND INSTALL DRAIN AND WATER PIPING FROM ROUGHED IN LINES TO THE BASIN, ENSURE THAT VALVE ASSEMBLIES ARE REMOVED PRIOR TO SOLDERING AND THEN REINSTALLED.

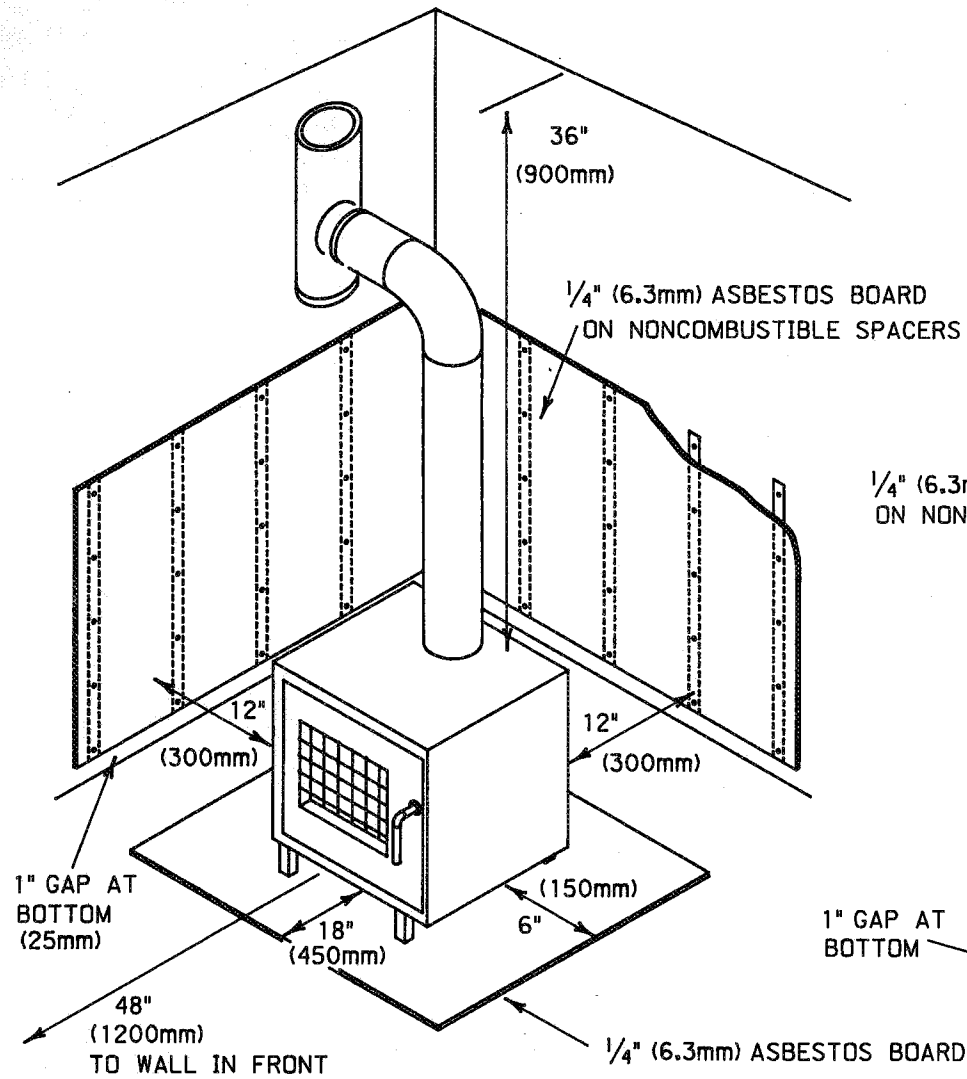
ASSEMBLE THE TOILET BOWL AND TANK AND INSTALL FLAPPER VALVE, OVERFLOW AND FLUSH HANDLE. PLACE WAX SEAL OVER FLOOR FLANGE AND FASTEN DOWN THE TOILET USING 2 FLANGE BOLTS. MAKE THE COLD WATER CONNECTIONS.

NOTES

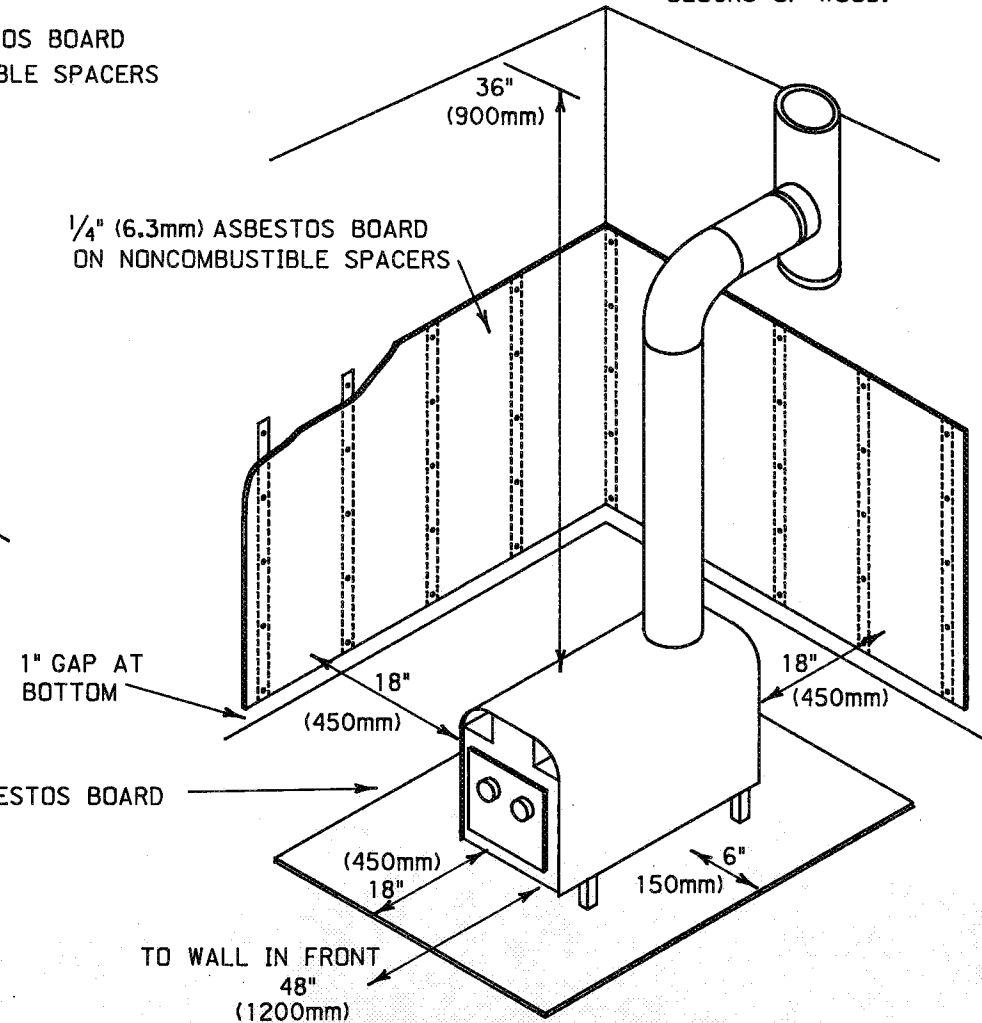
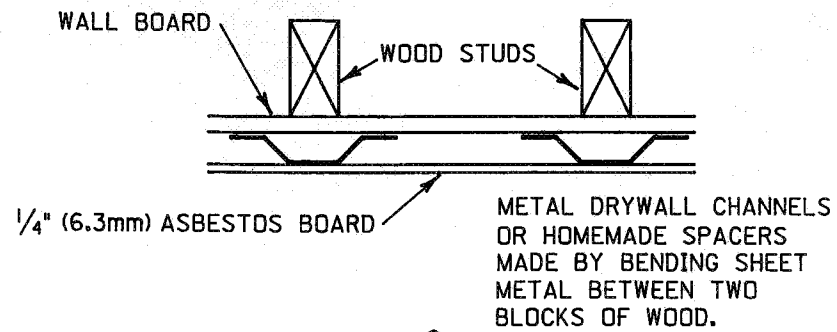
1. WHEN RADIANT STOVES WITHOUT LEGS ARE USED, A COMBUSTABLE FLOOR SHOULD BE PROTECTED BY TWO COURSES OF 4" (100mm) THICK HOLLOW MASONRY BLOCKS ARRANGED SO THAT THE HOLLOW CORES IN THE COURSES ARE AT RIGHT ANGLES TO EACH OTHER AND WILL PERMIT THE CIRCULATION OF AIR THROUGH THEM.

2. IF A MORE DECORATIVE FINISH IS DESIRED, CLAY TILES CAN BE PLACED ON TOP OF THE ASBESTOS AND IN THIS CASE, THERE IS NO NEED FOR THE ADDITIONAL LAYING OF METAL SHEETS.

3. CLEARANCES SHOWN ARE MINIMUM CLEARANCES.



CLEARANCES REQUIRED
AROUND CIRCULATING STOVES
WITH PROTECTIVE BARRIER
ON SPACER AROUND STOVE



CLEARANCES REQUIRED
AROUND RADIANT STOVES
WITH PROTECTIVE BARRIER
ON SPACER AROUND STOVE

CONSTRUCTION SEQUENCE

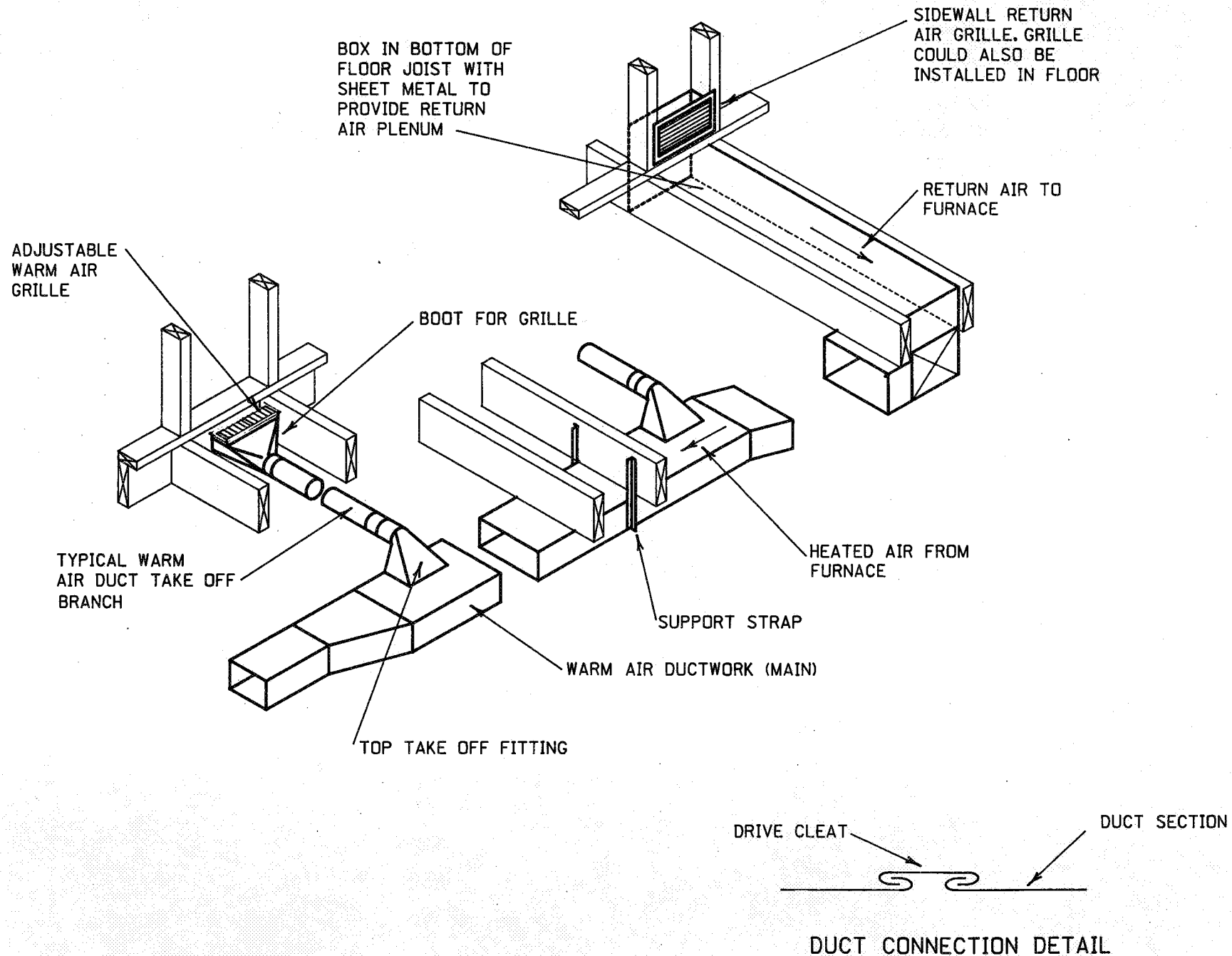
INSTALL FURNACE. ENSURE THAT ALL CODES AND MANUFACTURER'S RECOMMENDATIONS ARE FOLLOWED.

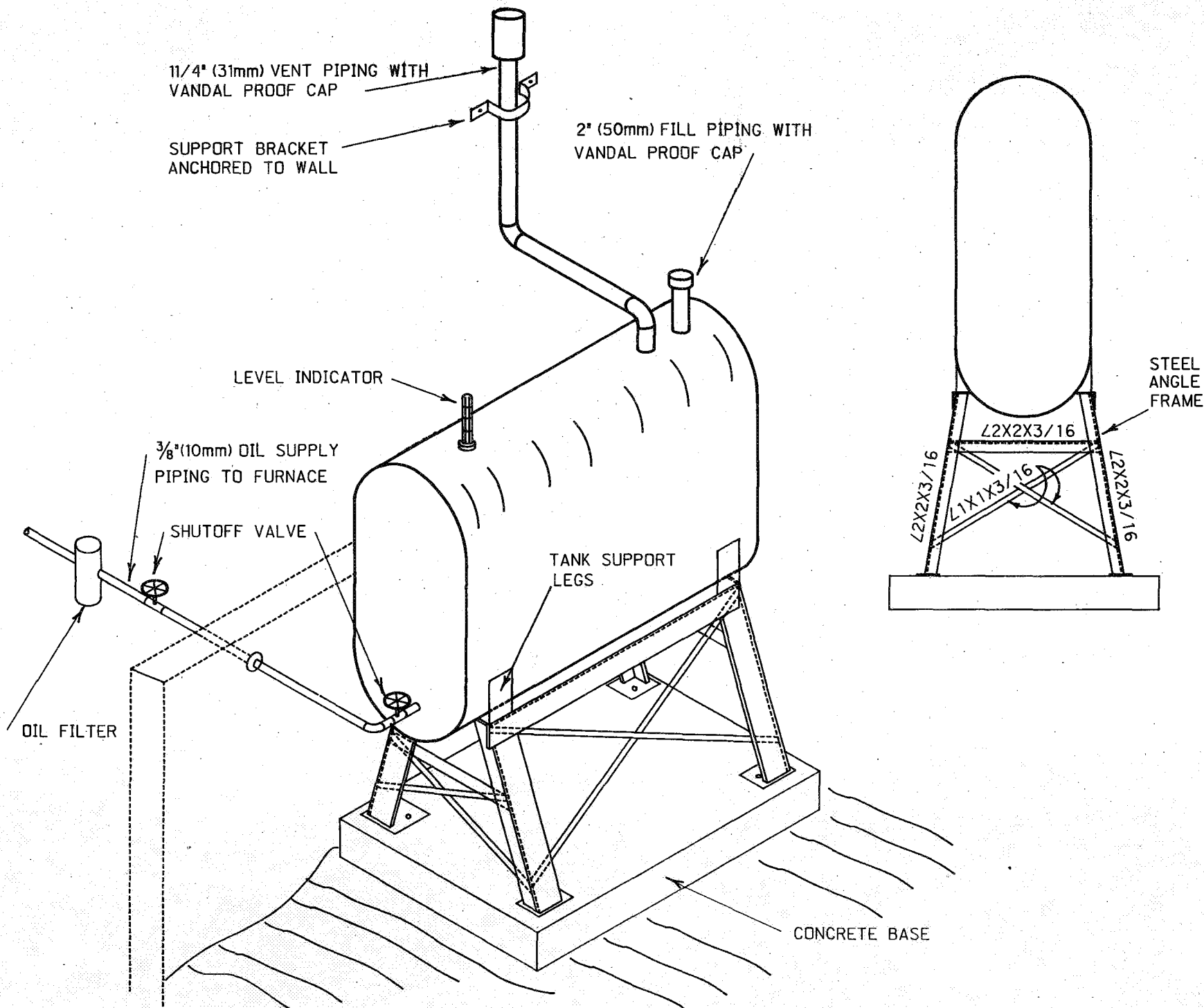
ASSEMBLE MAIN SECTIONS OF DUCTWORK USING DRIVE CLEATS, SUPPORT FROM FLOOR JOISTS AS REQUIRED. SEAL JOINTS WITH DUCT TAPE. CUT HOLES AND INSTALL TAKE OFF FITTINGS USING SHEET METAL SCREWS. CUT HOLES IN SUBFLOORING AND INSTALL BOOTS FOR GRILLES. CONNECT BRANCH DUCTS FROM BOOT TO TAKE OFF FITTING USING SHEET METAL SCREWS AT THE JOINTS. SEAL JOINTS WITH DUCT TAPE.

INSTALL GRILLES AFTER FLOORING HAS BEEN LAID.

NOTES

1. DIFFERENT TYPES OF FURNACES CAN BE USED DEPENDING UPON LOCAL CONDITIONS. DUCTWORK WILL BE SIMILAR FOR ALL HOT AIR FURNACES. YOUR FURNACE WILL BE PROVIDED WITH THE BUILDING MATERIAL FOR YOUR HOME.
2. PROVIDE POWER WIRING TO FURNACE & EMERGENCY SWITCH BOX LOCATED BY ACCESS DOOR.
3. PROVIDE CONTROL WIRING FROM FURNACE CONTROL BOX TO THERMOSTAT. LOCATE THERMOSTAT ON AN INTERIOR WALL OF THE LIVING SPACE AT APPROX. 4'-0" (1200mm) ABOVE FLOOR LEVEL.





CONSTRUCTION SEQUENCE

LOCATE TANK ON BASE AND ANCHOR TO FRAME.

ATTACH LEVEL INDICATOR AND INSTALL VENT AND FILL PIPING USING TEFLON TAPE ON ALL JOINTS. EXTEND VENT PIPING AT LEAST 7'-4" (2200mm) ABOVE GROUND LEVEL.

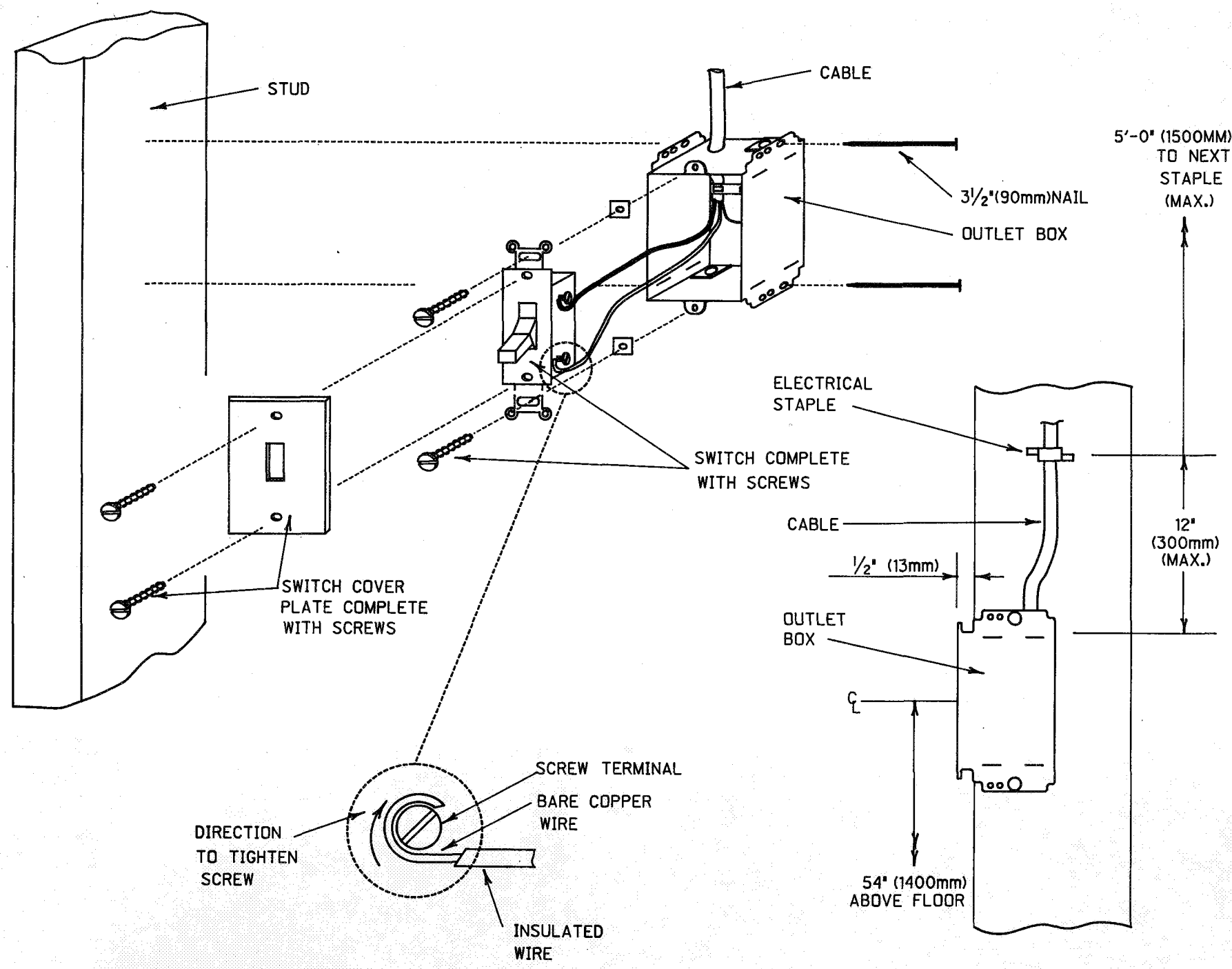
MEASURE, CUT AND PREPARE ALL JOINTS FOR SOLDERING IN A MANNER SIMILAR TO THAT USED FOR WATER PIPING (DWG. 8-1.1) PROVIDE CAULKING AROUND PIPE WHERE IT PASSES THROUGH THE FOUNDATION WALL.

REMOVE VALVE ASSEMBLIES AND SOLDER VALVE BODIES INTO THE PIPING. REINSTALL THE VALVE ASSEMBLIES.

SOLDER FITTINGS INTO THE PIPING FOR THE FILTER ASSEMBLY. CONNECT FILTER TO FITTINGS WITH A WRENCH.

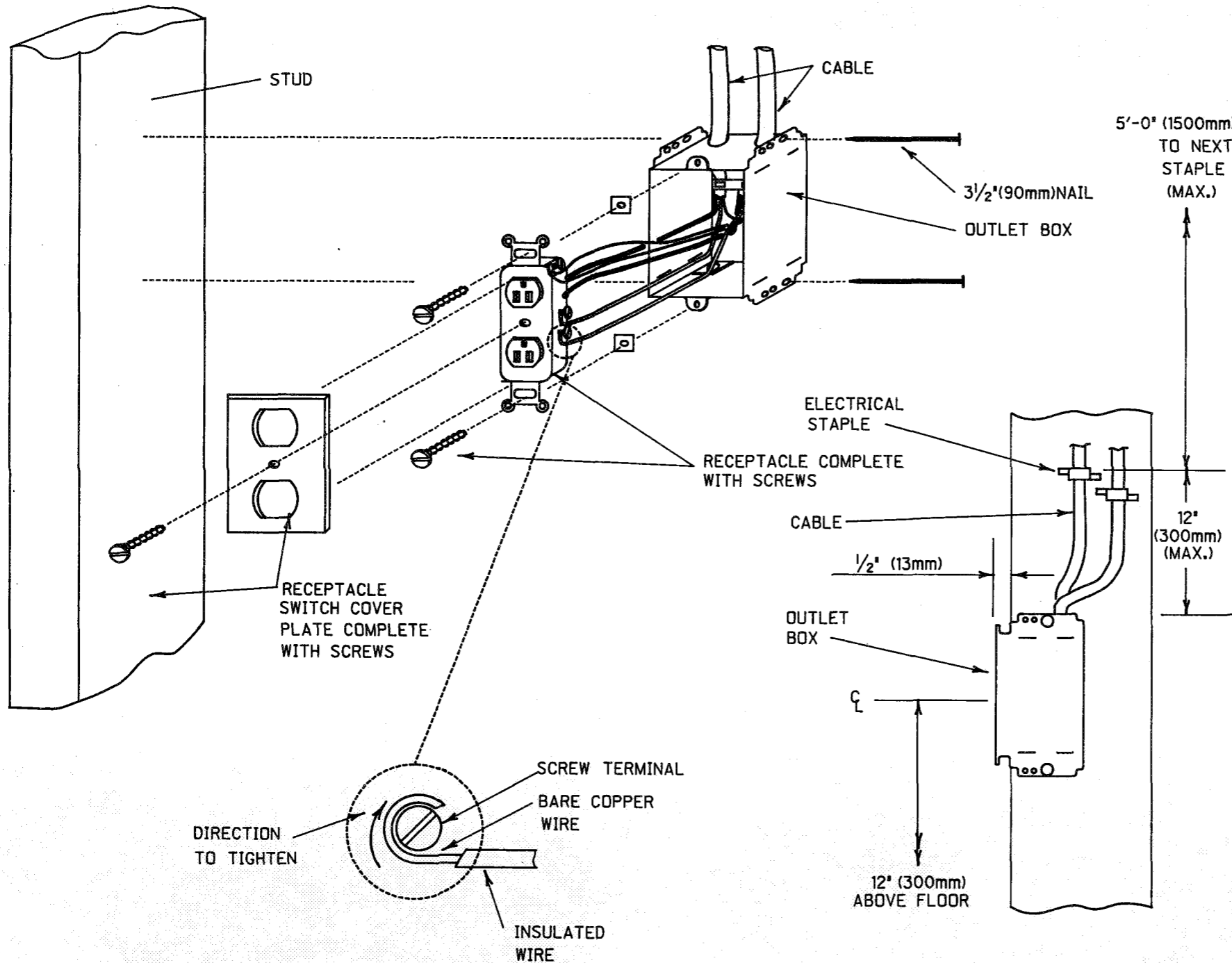
NOTES

1. TANK SUPPORT STAND DESIGNED FOR A 250 GAL (1135L) TANK.
2. FUEL PIPING MATERIAL
GALVANIZED STEEL FOR FILL AND VENT PIPING.
TYPE K COPPER FOR OIL SUPPLY PIPING TO FURNACE.
VALVES RATED FOR OIL SERVICE.



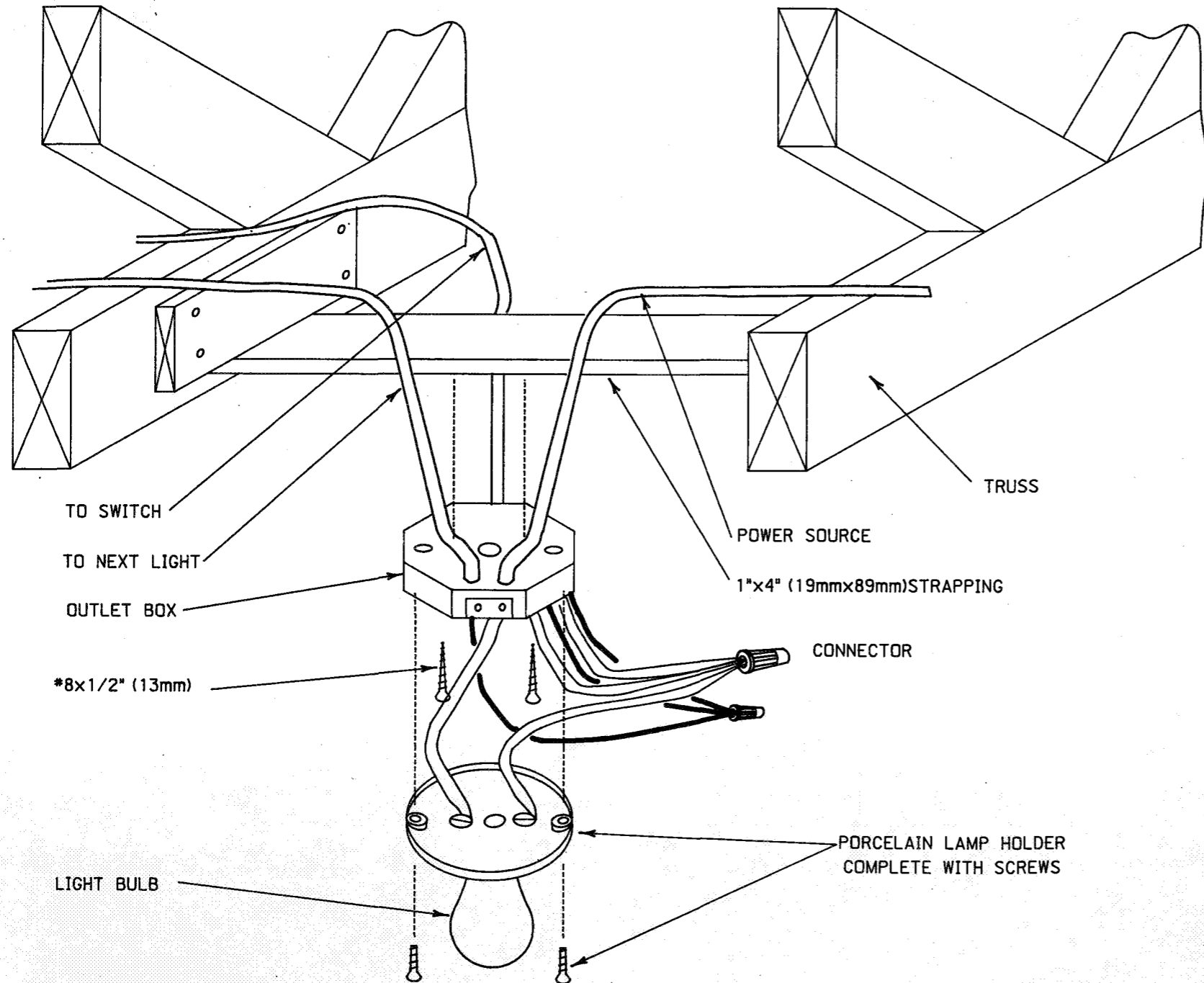
NOTES:

1. MOUNT OUTLET BOXES TO STUDS USING TWO-3 1/2" (90mm) NAILS.
2. STRIP BACK CABLE INSULATION APPROXIMATELY 8" (200mm). REMOVE KNOCKOUT ON OUTLET BOX WITH SCREWDRIVER AND RUN STRIPPED CABLE INTO THE BOX. TIGHTEN CABLE CLAMP SECURELY MAKING SURE THAT THE CABLE IS CLAMPED OVER THE INSULATION AND NOT THE WIRES.
3. SECURE CABLES TO STUDS, JOISTS AND TRUSSES WITH ELECTRICAL STAPLES BEFORE WALLS ARE FINISHED. LEAVE THE INSTALLATION OF LIGHT SWITCHES FOR YOUR ELECTRICIAN.
4. ONCE WALLS ARE FINISHED MOUNT SWITCH TO THE OUTLET BOX WITH THE WIRES PACKED NEATLY. ATTACH COVER PLATE TO SWITCH.



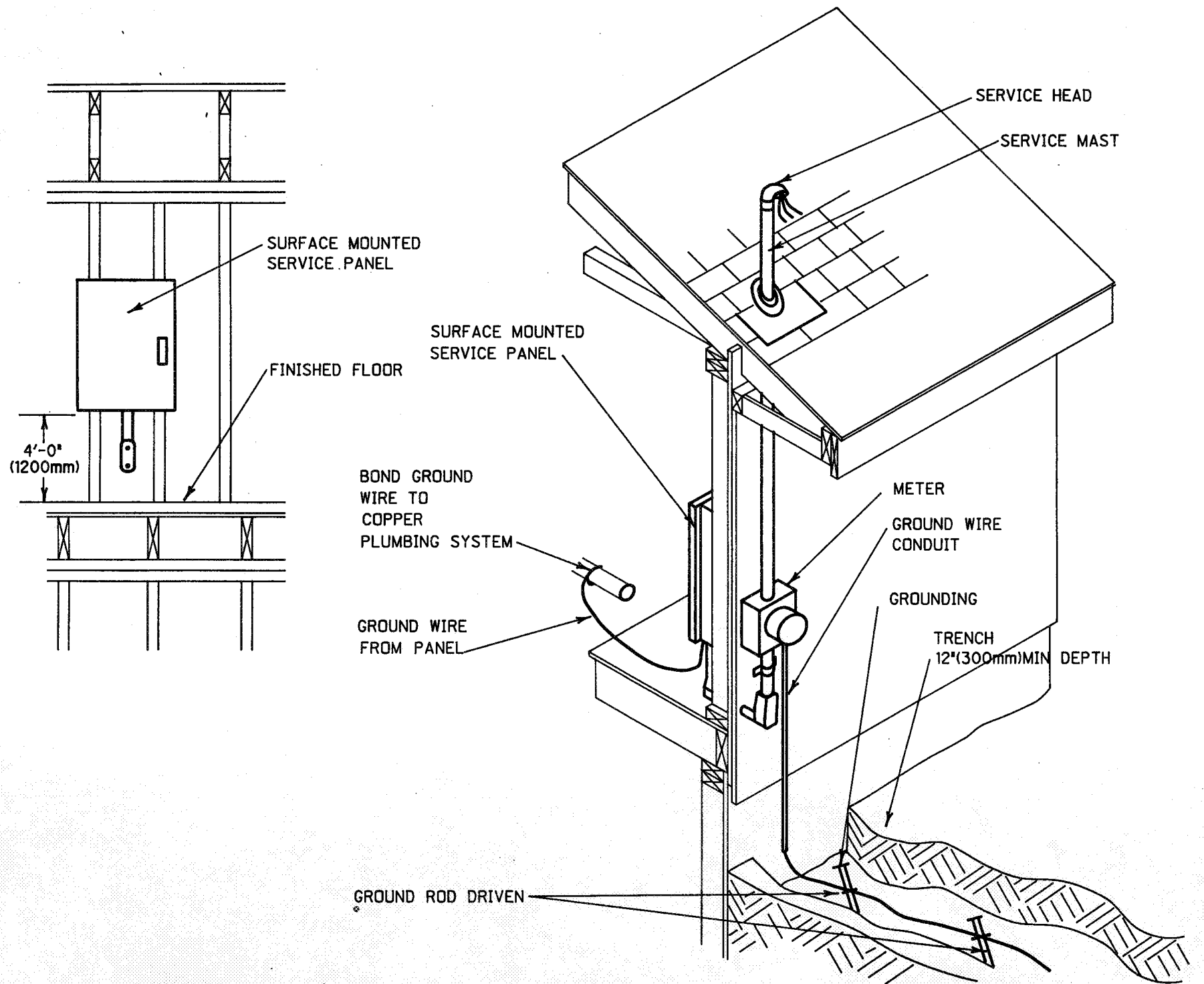
NOTES:

1. MOUNT OUTLET BOXES TO STUDS USING TWO-3/2" (90mm) NAILS.
2. STRIP BACK CABLE INSULATION APPROXIMATELY 8" (200mm). REMOVE KNOCKOUT ON OUTLET BOX WITH SCREWDRIVER AND RUN STRIPPED CABLE INTO THE BOX. TIGHTEN CABLE CLAMP SECURELY MAKING SURE THAT THE CABLE IS CLAMPED OVER THE INSULATION AND NOT THE WIRES.
3. SECURE CABLES TO STUDS, JOISTS AND TRUSSES WITH ELECTRICAL STAPLES BEFORE WALLS ARE FINISHED. LEAVE THE INSTALLATION OF RECEPTACLES FOR YOUR ELECTRICIAN.
4. ONCE WALLS ARE FINISHED MOUNT RECEPTACLE TO THE OUTLET BOX WITH THE WIRES PACKED NEATLY. ATTACH COVER PLATE TO SWITCH.



NOTES:

1. MOUNT OCTAGONAL BOX TO STRAPPING LOCATED 1/4" (30mm) ABOVE THE BOTTOM OF TRUSS WITH SCREWS. OCTAGONAL BOX TO BE FLUSH WITH FINISHED CEILING.
2. STRIP BACK CABLE INSULATION APPROXIMATELY 8" (200mm). REMOVE KNOCKOUT ON OCTAGONAL BOX WITH SCREWDRIVER AND RUN STRIPPED CABLE INTO THE BOX. TIGHTEN CABLE CLAMP SECURELY MAKING SURE THAT THE CABLE IS CLAMPED OVER THE INSULATION AND NOT THE WIRES.
3. SECURE CABLES TO STUDS, JOISTS AND TRUSSES WITH ELECTRICAL STAPLES BEFORE WALLS ARE FINISHED. LEAVE THE INSTALLATION OF LIGHT FIXTURE FOR YOUR ELECTRICIAN.
4. ONCE CEILING IS FINISHED MOUNT PORCELAIN LAMP HOLDER TO THE OCTAGONAL BOX WITH SCREWS.



CONSTRUCTION SEQUENCE

MAST AND METER TO BE MOUNTED ONCE SIDING IS PLACED.

PANEL TO BE MOUNTED ONCE INTERIOR WALL FINISH IS PLACED.

CONSTRUCTION SEQUENCE

ALL WORK TO BE DONE BY YOUR ELECTRICIAN.

ALL WORK TO BE DONE PER LOCAL CODES AND BYLAWS.

HOME CARE ,
MAINTENANCE
AND
LANDSCAPING

CONGRATULATIONS, YOU ARE NOW THE OWNER OF A NEW HOME. IT HAS TAKEN YOU MANY HOURS OF HARD WORK TO BUILD YOUR NEW HOME. NOW IT IS VERY IMPORTANT THAT YOU CARE FOR YOUR HOME PROPERLY TO MAINTAIN THE APPEARANCE AND QUALITY.

CMHC HAS PREPARED A HOME CARE MANUAL UNDER THE RURAL AND NATIVE (RNH) DEMONSTRATION PROGRAM. THIS MANUAL CONTAINS USEFUL INFORMATION FOR MAINTENANCE AND REPAIR OF YOUR HOME.

NOW THAT THE CONSTRUCTION IS COMPLETED, YOU SHOULD BE AWARE THAT MANY ITEMS AROUND YOUR HOME WILL REQUIRE ROUTINE MAINTENANCE, REPAIRS AND EVENTUALLY REPLACEMENT. SOME OF THE MAJOR ITEMS ARE LISTED IN THE SCHEDULE OF NORMAL MAINTENANCE BELOW.

IN ADDITION TO THESE ITEMS, THINGS SUCH AS CLEANING THE CHIMNEY, OPENING, AND CLOSING THE CRAWL SPACE VENTS, CLEANING THE EAVESTROUGHING AND WASHING THE WINDOWS SHOULD BE DONE EACH YEAR. ITEMS SUCH AS LIGHT BULBS, WATER TAPS, CAULKING AND PAINTING WILL NEED PERIODIC REPAIR OR REPLACEMENT. THE METHOD OF REPAIR AND REPLACEMENT FOR MANY OF THESE MINOR ITEMS CAN BE FOUND IN THE "HOME CARE MANUAL" AVAILABLE THROUGH CMHC.

REGULAR MAINTENANCE SCHEDULE

WOOD SIDING AND TRIM	- PAINT EVERY 3 TO 5 YEARS
SEPTIC TANK	- CLEANOUT EVERY 3 YEARS
	- REPLACE AFTER 10-15 YEARS
ROOF SHINGLES	- REPLACE AFTER 15-20 YEARS
WATER PUMP	- REPAIR / SERVICE AS REQUIRED
HOT WATER TANK	- REPLACE 5-10 YEARS

NOTES

1. CLEAN UP

STACK OR STORE ALL LEFT OVER BUILDING MATERIALS THAT MAY BE VALUABLE FOR FUTURE USE. PICK UP AND REMOVE ALL DEBRIS FROM THE SITE.

2. SITE GRADING

ROUGH GRADE THE SITE TO SMOOTH EVEN CONTOURS TO PROVIDE SLOPE AWAY FROM THE HOUSE FOR SURFACE DRAINAGE. FEATHER OUT TO MEET EXISTING GRADES.

CONSTRUCTION SEQUENCE

LANDSCAPING WILL IMPROVE THE APPEARANCE OF YOUR NEW HOUSE AND PROPERTY AND ADD SIGNIFICANTLY TO THEIR VALUE.

STEPS YOU CAN TAKE TO IMPROVE YOUR PROPERTY MAY INCLUDE:

TOPSOIL THE AREAS AROUND THE HOUSE AND EXTEND OUT TO MEET EXISTING GRADES.

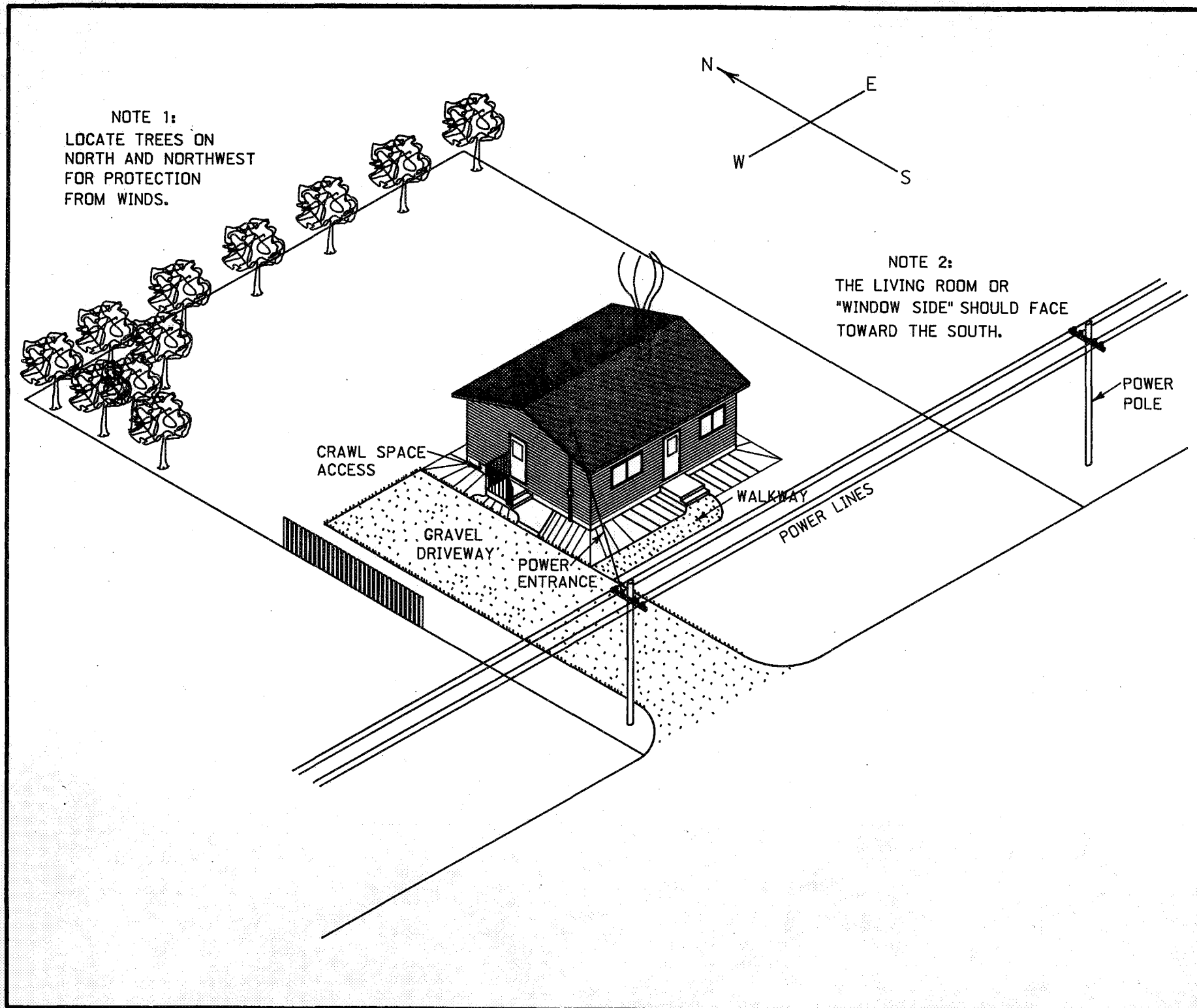
SPREAD THE TOPSOIL DURING DRY WEATHER. RAKE THE TOPSOIL TO ELIMINATE ROUGH OR LOW AREAS AND MAKE SURE TOPSOIL IS AT LEAST 3" (75mm) THICK.

APPLY COMMERCIAL GRADE FERTILIZER OVER AREA TO BE SEEDED. MIX THOROUGHLY INTO UPPER 2" (50mm) OF TOPSOIL.

SELECTION OF SEED WILL DEPEND ON WHETHER THE SITE IS OPEN OR SHADY. DISCUSS THE PROPER SEED MIXTURE FOR YOUR SITE WITH YOUR LOCAL MERCHANT. SEED SHOULD BE APPLIED AT THE RATE OF 5 LBS. PER 1000 SQ. FT. (1.45 KG. PER m²). LIGHTLY RAKE THE SEED INTO THE SOIL TO A MINIMUM DEPTH OF 1/4" (6mm). ROLL THE AREA IMMEDIATELY AFTERWARD WITH A LIGHT TURF ROLLER AND WATER REGULARLY IN DRY WEATHER.

FOR YOUR DRIVEWAY AND WALKWAY ONE OF THE BETTER MATERIALS WOULD BE CLEAN CRUSHED ROCK. SPREAD THE GRAVEL EVENLY TO PROVIDE A MINIMUM THICKNESS OF 6" (150mm) ON DRIVEWAYS AND 4" (100mm) ON WALKWAYS.

TO FURTHER ENHANCE YOUR PROPERTY YOU MAY WISH TO PLANT FLOWERS, TREES AND SHRUBS OR ERECT A FENCE.



CONSTRUCTION NOTES

A large grid of graph paper, consisting of approximately 25 columns and 25 rows of small squares, intended for taking construction notes. The grid is empty and occupies the majority of the page below the header.