HUMBOLDT COUNTY BUILDING & SAFETY DEPARTMENT
CITY OF WINNEMUCCA BUILDING DEPARTMENT

POST FRAME/POLE BUILDINGS (NON-ENGINEERED)
For Private Garages/Barns on Residential Lots Only.

Buildings must meet the following requirements to be designed without engineering. See special provisions that are attached for buildings over 10-foot eave height.

Building Dimensions

Width 40 ft maximum
Length 50 ft maximum
Eave height 14 ft maximum
Total height 20 ft maximum
Note: Lean-to/roof cover/carport Supported off pole building are part of the width & length of the building.

Design Criteria

Wind speed
90 mph fastest mile;105 mph 3-second gust Exposure C
Live roof load – 20 psf
Ground snow load
Less than 5,000 ft elev – 5 lb
Over 5,000 ft elev – 10 lb
Seismic Design Category – D1
2012 International Building Code
2011 National Electric Code

Building Materials

1. Using the charts below fill in the blanks on the worksheet:

_____Eave height
_____Building width
_____Building length
_____Pole size
_____Bay width
_____Header size
_____Trusses (NV engineered)

Shall be submitted at time of permit issuance.

_____Rafter/Purlin size
_____Rafter/Purlin spacing
_____Roof sheathing
_____Roofing material & gage
_____Truss/Rafter attachment to post
_____Girt size
_____Girt spacing
_____Type of siding & gage
_____Corbel attachment to post
_____Slope of roof (to determine maximum height)
_____Burial depth of post

Truss and corbel attachment

Eave Height	Corbel to post	Truss to Post
Max. 14'	8 - 20d nails	½" thru-bolt

Girt spacing, size and orientation

Bay Width - Max. 10' Width. - 2x6 @ 24" o.c. attached to the outside of the posts. (See girt detail)
Bay Width – Over 10' to 12' – 2x6 @ 24" o.c. installed horizontally (flat between posts) with 2x6 blocking between girts. (See girt detail)

Roof purlin spacing and size

Roof Purlin Size and spacing: Minimum 2x6 @ 24" o.c.

Header Sizes

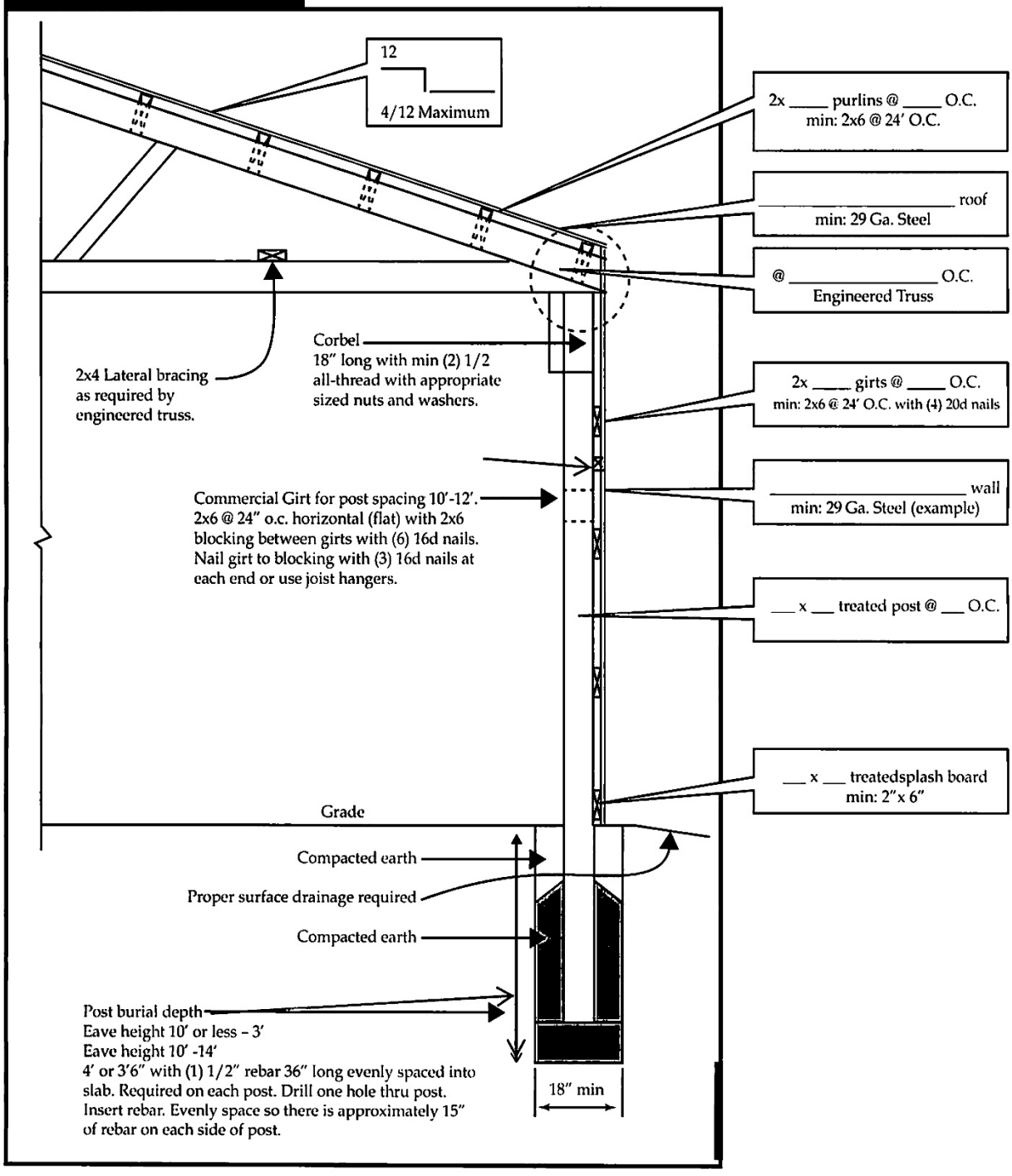
Header sizes – see attached sheet

Burial depth of posts

Eave height to 10' – 3' depth
Eave height over 10' – 4' depth or
3'6" depth with (1) ½" (#4) rebar – 36" long evenly spaced into slab. Required on each post. Drill one hole thru post. Insert the rebar. Evenly space so there is approximately 15" of rebar on each side of post and bend

Pole Barn Construction

End Elevation



2. On a separate page provide a plan showing the size of the building, the location and spacing of all posts, trusses, doors, and windows. Indicate location of electrical subpanel. If you are going to construct the roof with rafters you will be required to submit a roof framing detail. Also, provide a site plan indicating the distances from property lines and other buildings. Check with the Planning Department (623-6393) for their required setbacks from the property line.

General Notes

- Buildings having over a 10' eave height shall be required to comply with the attached special provisions.
- Post and ground girts must be pressure treated
- Post must be a minimum of 6 x 6
- Post should not be surrounded by concrete unless approved by the manufacturer of the posts
- Post shall be placed in undisturbed soil. If fill is installed post shall be placed 3 feet below any fill.
- Holes for posts shall not be over excavated. Use an auger to drill holes. Digging holes with a backhoe is an over excavation and is not an approved method. Compact around holes by filling in 6" lifts, adding small amount of water and tamping.
- Roof trusses are required to be stamped by a Nevada engineer
- End wall trusses are required or if using a rafter/header it shall be sized per the header table attached.
- Truss loads which will occur over a header/opening shall be indicated on plans. Header shall be sized for the load.
- Truss engineering shall be submitted to this office prior to inspection.
- Review truss design for specific bracing requirements.
- All structural members shall have positive connections made at all points of load. These connectors shall be provided at post and beam (header) connections, rafter (purlins) and truss connections.
- Nailing shall comply with IBC requirements.
- Roofing materials shall comply with IBC requirements
- Siding:
    - Veneers of metal shall be fabricated from approved corrosion-resistant materials or shall be protected front & back with porcelain enamel, or otherwise be treated to render the metal resistant to corrosion. Such veneers shall not be less than 0.0149-inch nominal thickness sheet steel mounted on wood or metal furring strips or approved sheathing on the wood construction. If other types of siding are installed engineering may be required. IBC Section 1405.11
    - Metal siding shall be attached to pressure treated ground girt so a minimum of 4 to 6 inches is maintained from the bottom of the siding to the soil/finished grade.
    - Exterior metal veneer shall be securely attached to the supporting masonry or framing members with corrosion-resistant fastenings, metal ties or by other approved devices or methods. The spacing of fasteners or ties shall not exceed 24 inches either vertically or horizontally, but where units exceed 4 square feet in area there shall be not less than four attachments per units. The metal attachments shall have a cross-sectional area not less than provided by W 1.7 wire. Such attachments and their support shall be capable of resisting a horizontal force in accordance with the wind loads specified in Section 1609, but in no case less than 20 psf. IBC Section 1405.11.1
    - Metal supports for exterior metal veneer shall be protected by painting, galvanizing or by other equivalent coating or treatment. Joints and edges exposed to the weather shall be caulked with approved durable waterproofing material or by other approved means to prevent penetration of moisture. IBC Section
      1405.11.2
    - Wood Siding – Shall be attached to pressure treated ground girt so minimum of 6" is maintained from grade to bottom of siding. Siding shall be nailed per manufacturer's min. requirements.
    - Stucco – Weep screed shall be min. 4" from grade

- Metal roof panels – The installation of metal roof panels shall comply with the following.
  - Deck requirements – Metal roof panel roof coverings shall be applied to a solid or closely fitted deck, except where the roof covering is specifically designed to be applied to spaced supports. IBC Section 1507.4.1
  - The minimum slope for standing seam roof systems shall be one-quarter unit vertical in 12 units horizontal (2% slope). IBC Section 1507.4.2
  - Material standards – Metal-sheet roof covering systems that incorporate supporting structural members shall be designed in accordance with Chapter 22. Metal-sheet roof coverings installed over structural decking shall comply with Table 1507.4.3. IBC Section 1507.4.3
  - Attachment – Metal roof fastened directly to steel framing shall be attached by approved manufacturer's fasteners. In the absence of manufacturer recommendations, all the following fasteners shall be used.
    - Galvanized fasteners shall be used for galvanized roofs.
    - 300 series stainless-steel fasteners shall be used for copper roofs.
    - Stainless steel fasteners are acceptable for all types of metal roofs.
- A minimum of 5% grade shall be provided away from the building.
- Lean-to/roof cover/carport supported off a pole building are considered part of the width or length of the building.
- Ledger installed to support a lean-to/roof cover/carport shall be attached to an appropriate sized header using lag bolts 24" o.c.

<u>Doors</u>

- A man door shall be provided in addition to the garage doors. The exit doorway shall be of a size as to permit the installation of a door not less 3 feet in width and not less than 6'8" in height. The exit door shall be capable of opening so that the clear width of the exit doors shall be capable of opening so that the clear width of the exit doors is not less than 32". IBC Section 1008.1.1

<u>Electrical</u>

- Owner shall verify service size is adequate for an additional electric load. Only one service permitted on a residential lot.
- Submit number of fixtures including switches, lights, and outlets.
- This office recommends an owner not familiar with electrical installation of the NEC obtain a simple wiring booklet, which is written to comply with the 2011 National Electric Code. This type of book will contain more specific information regarding wiring methods, wiring sizes, supports, sub panels, overcurrent protection, connections, fixtures, working space, safety precautions, grounding, branch circuits, etc. There are various requirements that cannot be covered in a handout.
- All garage outlets shall be GFI (ground fault circuit interrupter) protected. See NEC Code for specific exceptions.
- Exterior outlets shall have weather tight covers, which will remain weather tight when a plug is inserted. (Bubble covers are required). NEC 406.9(2)(b)
- All exposed wiring shall be securely stapled or protected.
- If installing romex wiring (nonmetallic sheathed cable) wiring shall be protected from damage
- Provide individual ground rod and ground wire when more than (1) circuit is provided in garage. If a four-wire system is run from the service a ground rod is <u>not</u> required. (NEC 250.24)
- A disconnecting means and overcurrent protection shall be provided per NEC. Overcurrent protection requires the breaker to be rated for the amperage of the wire. #12 wire/20 amp breaker, #10 wire/30 amp breaker. See NEC for further information.
- Ground wire and neutral wires shall be separated/isolated as per NEC 250-32(B)(1).
- Feeder wires for the garage shall not be serviced from the manufactured/mobile home unless approved by Manufactured Housing Division.
- Schedule 80 (PVC) rigid nonmetallic electric conduit is required to protect above ground conductors. NEC Art. 230.50
- All wiring used underground shall be listed for wet location or underground use when installed in conduit. NEC 300.5(B)

- Inform the Building Department if an upgraded service will be necessary. Normally one service is permitted on a residential lot.
- Contact NV Energy for their requirements at (800)962-4166

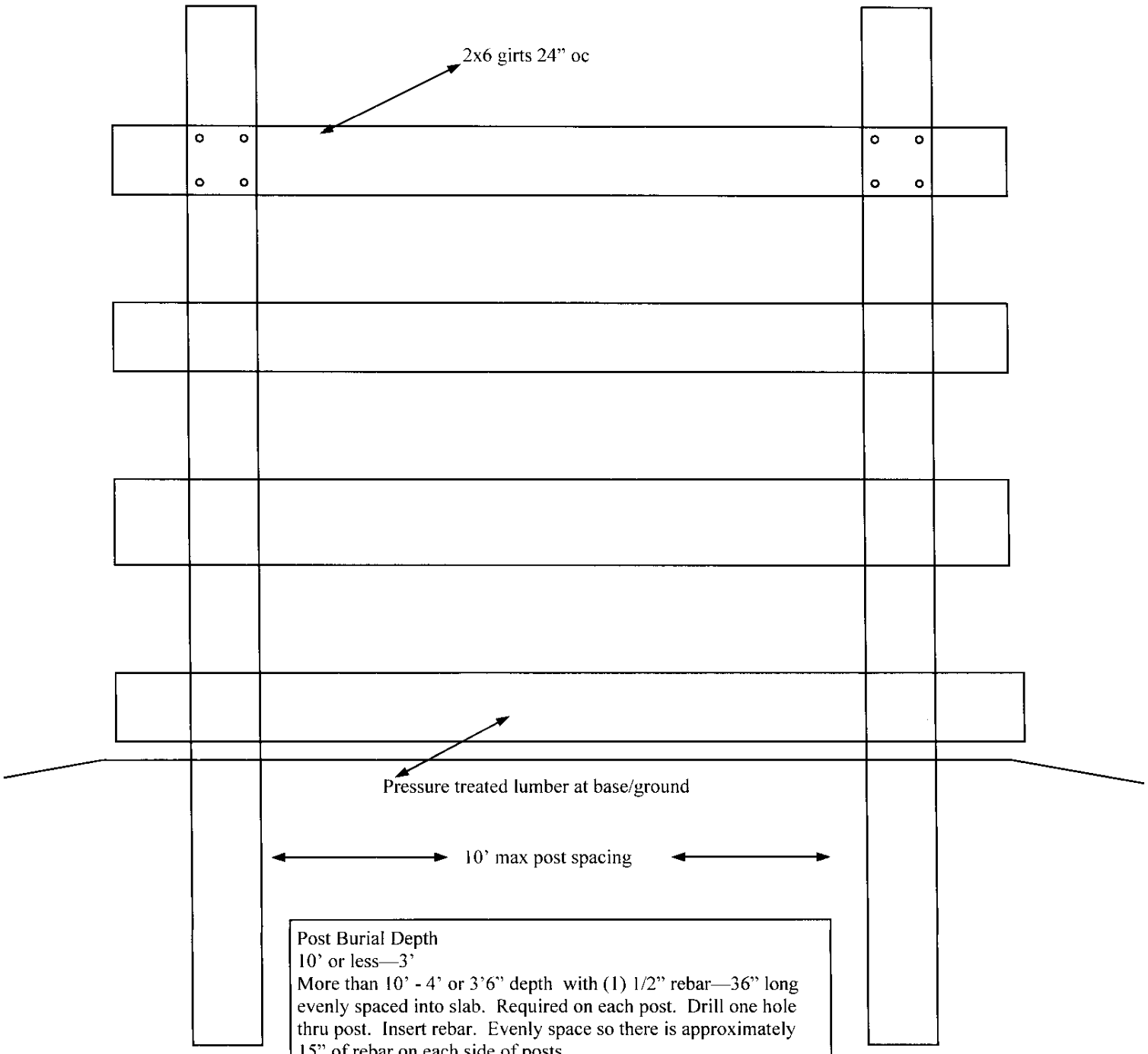
Plumbing

- Locate your septic system before planning the garage construction. A minimum of 8 feet is required to the nearest portion of the septic tank.

Mechanical/Heating

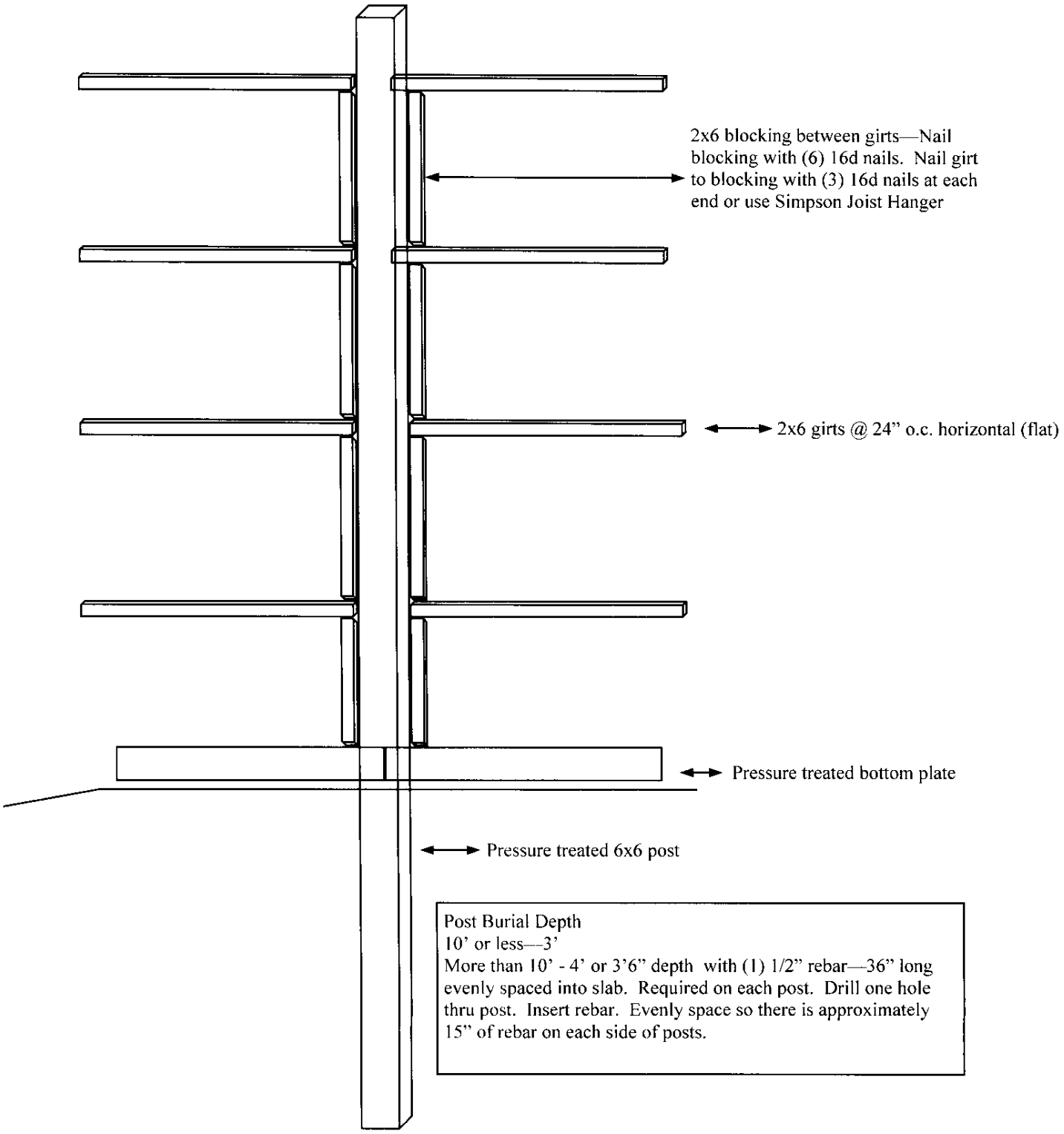
- Permits are required for wood stoves and gas/electric appliances and shall comply with UMC requirements.

Wall Girt Detail for Buildings with 10' or Less Bay Width



Post Burial Depth
10' or less—3'
More than 10' - 4' or 3'6" depth with (1) 1/2" rebar—36" long evenly spaced into slab. Required on each post. Drill one hole thru post. Insert rebar. Evenly space so there is approximately 15" of rebar on each side of posts.

Wall Girt Detail for Buildings Over 10' Bay Width (Max. 12' Bay Width)



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HUMBOLDT COUNTY BUILDING DEPARTMENT
CITY OF WINNEMUCCA BUILDING DEPARTMENT
HEADER SCHEDULE

LOAD BEARING EXTERIOR HEADERS-ROOF & CEILING ONLY (IRC TABLE R502.5(1))

BUILDING WIDTH						
	20’		**28’**		**36’**	
Size	Span	# of Jack Studs	Span	# of Jack Studs	Span	# of Jack Studs
2-2x4	3’6”	1	3’2”	1	2’10”	1
2-2x6	5’5”	1	4’8”	1	4’2”	1
2-2x8	6’10”	1	5’11”	2	5’4”	2
2-2x10	8’5”	2	7’3”	2	6’6”	2
2-2x12	9’9”	2	8’5”	2	7’6”	2
2-2x8	8’4”	1	7’5”	2	6’8”	2
3-2x10	10’6”	1	9’1”	2	8’2”	2
3-2x12	12’2”	2	10’7”	2	9’5”	2
4-2x8	9’2”	1	8’4”	1	7’8”	1
4-2x10	11’8”	1	10’6”	1	9’5”	2
4-2x12	14’1’	1	12’2”	2	10’11”	2

LOAD BEARING INTERIOR HEADERS-ROOF & CEILING ONLY (IRC TABLE R502.2(2))

BUILDING WIDTH						
	20’		**28’**		**36’**	
Size	Span	# of Jack Studs	Span	# of Jack Studs	Span	# of Jack Studs
2-2x4	3’1”	1	2’8”	1	2’5”	1
2-2x6	4’6”	1	3’11”	1	3’6”	1
2-2x8	5’9”	1	5’0”	2	4’5”	2
2-2x10	7’0”	2	6’1”	2	5’5”	2
2-2x12	8’1”	2	7’0”	2	6’3”	2
3-2x8	7’2”	1	7’7”	2	6’9”	2
3-2x10	8’9”	1	7’7”	2	6’9”	2
3-2x12	10’2”	2	8’10”	2	7’10”	2
4-2x8	9’0”	1	7’8”	1	6’9”	1
4-2x10	10’1”	1	8’9”	1	7’10”	2
4-2x12	11’9”	1	10’2”	2	9’1”	2

SPANS FOR MIN. #2 GRADE SINGLE HEADER SUPPORTING ROOF & CEILING ONLY (IRC TABLE R602.7.1)

BUILDING WIDTH			
	20’	**28’**	**36’**
2x8	5’3”	4’6”	4’0”
2x10	6’8”	5’8”	5’1”
2x12	8’1”	6’11”	7’2”

See IRC or header handout for single header construction