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**BUILDING INSPECTION DEPARTMENT**

**INFORMATION BOOKLET**

**ILLUSTRATED ZONING**

**AND**

**BUILDING CODES**

**07-15-2014**

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# INFORMATION SHEET

LISTED BELOW ARE PEOPLE FROM THE VARIOUS DEPARTMENTS THAT CAN HELP YOU WITH ANY SPECIFIC PROBLEMS OR QUESTIONS THAT MAY ARISE IN THEIR RESPECTIVE AREAS.

- A. ZONING - PLANNING DEPARTMENT:** Regional Planning Department (385-5240) or Building Department (385-5325)
1. Legal description of property.
  2. Proposed use.
  3. Lot area in square feet.
  4. Building area in square feet.
  5. Building height in feet.
  6. Building setbacks from all property lines.
  7. Number of rooms, units, seats, square footage of occupied space or design occupant load, and number of employees.
  8. Parking plan illustrated on site plan with proposed circulation.
  9. Indicate paved areas on site plan.
  10. Location and size of existing or proposed signs, incidental structures and landscaping (trees, shrubs, fences, etc.)
- B. DRAINAGE – STORM WATER MANAGEMENT - STREETS - SIDEWALKS:** Engineering (385-5444, Ext. 260)
1. Final topography contours (after final grading is completed).
  2. Arrows showing proposed direction of drainage whether or not contours are changed. Connection to public drainage system must be approved by Engineering. Tap to storm sewer pipe system requires a separate permit from Engineering.
  3. Proposed locations for new approaches. Approval & Permit by Engineering Dept.
  4. Locations of existing approaches.
  5. Location of existing walks and streets.
  6. Location of proposed walks, streets, or drives. Location must be approved and a separate permit issued by Engineering Department prior to construction.
  7. Ensure Compliance with CH 40 Ordinance “Storm Water Management” by providing Public Works with Notice of Intent (NOI) Storm Water Pollution Prevent Plan (SWPPP) & Erosion & Sediment Control Plan (ESC).
- C. SEWER SERVICE:** Engineering (385-5444, Ext. 260)
1. Will check to see if sewer is available.
  2. Will determine if lien or assessment charge is applicable.
  3. Will give location of wye or tee if applicable.
- D. WATER SERVICE:** Water Department (385-5480)
1. Show location, size, and type of proposed water line(s).
  2. Show locations and material of existing water line(s).
- E. ELECTRICAL SERVICE AND PLANNING:** Utilities Dept. (385-5444, Ext. 280).
- F. FIRE DEPARTMENT:** Fire Marshal (385-5444, Ext. 228)
1. Complete set of plans - (electrical, mechanical, structural, and floor).
  2. Locate extinguishers.
  3. Sprinkler plan if sprinkler is required.
  4. Show exit signs.
  5. Alarm system plans if alarm is required.
  6. State type of insulation to be used.
- G. CENTRAL DISTRICT HEALTH DEPARTMENT:** (385-5175)
1. Food and beverage establishments must submit plans to Health Department for approval.
    - A. Total ventilation, plumbing, electrical, lighting, and floor.
    - B. Schedule of all wall, ceiling, floor, and surface finishes.
    - C. List and specifications of all equipment (to be NSF or equivalent, installed to NSF parameters).
  2. Potable water wells must be approved. Subdivision agreements must be checked. It may require connection to a public water main if available.
- H. SEPTIC TANKS AND LEACH FIELDS:** Nebraska Department of Environmental Control (402-471-4285)
1. Nebraska Department of Environmental Control must approve and issue permits for septic tanks and leach fields.
  2. Septic tanks can be installed only if sewer service is determined not to be available by Engineering.
  3. Subdivision agreements must be checked.

# INSPECTIONS

**Call 308-385-5325: Please allow 24 hours in advance.**

**FOOTINGS:** When formed and ready to pour.

**FOUNDATION:** When water proofing is complete and ready for backfilling.

**FRAMING:** When all framing, wiring, plumbing, and venting is done and walls are ready for covering.

**PLUMBING:** Open rough-in and final. Same for gas and mechanical work.

**ELECTRICAL:** Open rough-in, service, and final.

**FINAL:** Project is completed and ready for occupancy.

*Sections 32-38 through 32-40 of the Grand Island City Code require that each house or structure display the proper street address on the face of the building when it is completed.*

**CONCRETE:** Sidewalks, curbs, and driveway approaches to be inspected by Street and Alley Division. Phone Number 385-5322.

## **CODES USED BY THE CITY OF GRAND ISLAND**

2012 Edition of International Building Code and International Residential Code with local amendments. (adopted 04/15/14)

2012 Edition of Uniform Plumbing Code with local amendments. (adopted 06/15/14)

2012 Edition of Uniform Mechanical Code with local amendments. (adopted 06/15/14)

2011 Edition of National Electrical Code – State with local amendments. (adopted 3/30/12)

NOTE: CODES ARE SUBJECT TO CHANGE – CHECK WITH APPROPRIATE DEPARTMENTS

### **THE FOLLOWING CODES MAY BE VIEWED ONLINE:**

2012 International Building Code - <http://publicecodes.cyberregs.com/icod/ibc/2012/index.htm>

2012 International Residential Code - <http://publicecodes.cyberregs.com/icod/irc/2012/index.htm>

2009 ICC/ANSI Handicap Accessibility - <http://publicecodes.cyberregs.com/icc/ansi/2009/a117p1/index.htm>

Office Hours: Monday through Friday – 8:00 to 5:00 including noon hour.

Craig Lewis	Building Department Director
Ed Klimek	Plans Examiner
Don Albright	Building Inspector
Steve Manolidis	Building Inspector
Roger Downs	Electrical Inspector
Kurt Griess	Electrical Inspector
David Scoggins	Plumbing Inspector
Russell Shaw	Plumbing Inspector
Karla Collinson	Building Department Secretary

All of the above may be reached by dialing 385-5325

## **WORK REQUIRING A PERMIT**

- All new construction: includes additions, enclosing porches, garages, shingling, and siding.
- Repairs when structural members are involved or which enlarge or change location of openings.
- Interior Remodel - when alterations require removal of walls or wall coverings, or adding new rooms such as basement finishing.
- Installation of fireplaces or other wood burning appliances.
- Decks over 30-inches above grade.
- Patio covers and carports.
- Accessory buildings over 120 square feet.
- Signs.
- Moving or Wrecking buildings.
- Installation of new or replacement water heaters, furnaces, or backflow devices.
- All new electrical installations.
- Minor repairs having a valuation that exceeds \$500 - check with the Building Department.
- Flat concrete work on private property - check with the Building Department.

## **WORK NOT REQUIRING A PERMIT**

- Accessory buildings not exceeding 120 square feet.
- Fences not over 6-feet in height.
- Decks not over 30-inches above grade and not over any basement or story below.
- Painting, papering, or similar finish work.
- Window awning supported by an exterior wall of residential occupancy when not projecting more than 54-inches.
- Replacement of uncovered porches under 60 square feet.
- Installation of storm windows or roof gutters.
- Repairs not exceeding a valuation of \$500 - check with Building Department.
- Replacement of existing kitchen cabinets which do not alter existing plumbing, electrical, or structural elements.

## **WHEN DO I NEED A BUILDING PERMIT?**

### **Grand Island City Code - Chapter 8: Buildings - Section 8-22: Permits Required:**

No person, firm, or corporation shall erect, construct, enlarge, alter, repair, move, improve, remove, convert, or demolish, equip, use, occupy, or maintain any building or structure in the city, or cause the same to be done without first obtaining a separate building permit for each such building or structure from the Building Department.

### **Grand Island City Code - Chapter 15: Electricity - Section 15-14: Permit for Work; Required.**

No electrical wiring work, unless excepted in this section, shall be undertaken prior to the issuance of a permit therefore by the chief building inspector. Such permit shall be issued only to a registered contracting electrician.

No permit shall be required for minor repair work such as repairing flush and snap switches, replacing fuses, changing lamp sockets and receptacles, taping bare wires and joints, and repairing drop cords.

### **Grand Island City Code - Chapter 18: Gas – Section 18-9: UMC – Amendment of Subsection 112.1**

Subsection 112.1 of the Uniform Mechanical Code is hereby amended to include the following: Permits Required. It shall be unlawful for any person, firm or corporation to make any installation, alteration or repair any mechanical system regulated by this Code except as permitted in Subsections 112.2 of this section, or cause the same to be done without first obtaining a permit to do such work from the Grand Island Building Department.

- (A) A permit is required for the installation or replacement of all fuel burning heating equipment, and water heaters together with all chimneys, vents and their connectors.
- (B) A permit is required for the installation, repair, or alteration of all fuel gas piping in or in connection with any building or structure or within the property lines of any premises, other than service pipe.  
A permit is required for the installation or replacement of all warm-air furnaces and heating systems including all chimneys, vents, and their connectors.
- (C) No Commercial Hoods and Kitchen Ventilation equipment shall be installed without a permit.
- (D) A separate permit shall be obtained for each building or structure.  
No person shall allow any other person to do or cause to be done any work under a permit secured by a permittee except persons in his or her employ.
- (E) A permit is required for the repair, replacement, or installation of a gas piping.
- (F) No permit shall be issued to any person to do or cause to be done any work regulated by this Code, except to a person holding a valid unexpired and unrevoked mechanical license as required by this chapter, except when and as otherwise hereinafter provided in this section.
- (G) Any permit by this code may be issued to do any work regulated by this code in a single family dwelling used exclusively for living purposes, including the usual accessory buildings and quarters in connection with such buildings in the event that such person is the bona fide owner of any such dwelling and accessory buildings and quarters, and that the same are currently occupied by said owner, provided, that said owner shall personally purchase all material and shall personally perform all labor in connection therein. This, however, shall exclude all gas piping and venting of fuel combustion appliances.

### **Grand Island City Code - Chapter 26: Plumbing – Section 26-5: UPC - Amendment of Subsection 103.1.1**

Subsection 103.1.1 of the Uniform Plumbing Code is hereby amended to include the following: . Permits Required  
It shall be unlawful for any person, firm or corporation to make any installation, alteration or repair any plumbing system regulated by this Code except as permitted in Subsections 103.1.2 of this section, or cause the same to be done without first obtaining a permit to do such work from the Grand Island Building Department.

- (A) A permit is required for the installation or replacement of all fuel burning and other water heaters, heating potable water, together with all chimneys, vents and their connectors.
- (B) A permit is required for the installation, repair, or alteration of all fuel gas piping in or in connection with any building or structure or within the property lines of any premises, other than service pipe.
- (C) No device shall be installed for the prevention of backflow or back-siphonage, or be removed from use, or relocated, or other device substituted without a permit.  
A permit is required for lawn irrigation systems.
- (D) No water treating or conditioning equipment shall be installed without a permit.
- (E) A permit and inspection are required when repairing, replacing, or installing a sewer lateral, sewer tap, or sewer cap within five (5) feet of the City main, and when repairing or replacing fifty (50) percent or more of the sewer lateral.  
Any repair, replacement, or installation of a new sewer tap shall be done in compliance with the Grand Island City Code, Chapter 30, Articles IV and V.
- (F) A permit is required for the repair, replacement, or installation of a water service. A Plumbing Inspection Fee will be assessed on all water meter installations and replacements.
- (G) A separate permit shall be obtained for each building or structure.  
No person shall allow any other person to do or cause to be done any work under a permit secured by a permittee except persons in his or her employ.

## Required Information for Building Permit Application

Proposed construction projects must first apply for building permits at the City Building Department located at:  
**City Hall, 100 East 1st Street (2<sup>nd</sup> Floor, Suite 5), Grand Island, Nebraska.**

The following information will be necessary to process, review, and approve applications.

**\*\* Please allow a minimum of 10 – 15 working days for residential plan review and 20 days for commercial \*\***

- Job address (include legal description).
- Owner’s name, address and phone number.
- Name of Permit Applicant/ Affiliation to project (ie: owner/contractor/Architect)
- Contractor’s name, address and phone number.
- Description of work being done.
- Electrical, Plumbing and Mechanical Contractors.
- Total estimated value.
- Submit (2) complete sets of construction plans, one to be kept by the Building Department and one to be kept on the construction site. Both sets will be reviewed and marked for any corrections.  
 (3 sets for Commercial projects)      \* **Plans shall be drawn to scale** \*

### **Basic Projects**

### **Advanced Projects**

❖ Do you have a Plot Plan	❖ Do you have stamped Architectural Plans
❖ Do you have a typical wall cross-section	❖ Do you have stamped Structural Plans
❖ Do you have a Floor Plan	❖ Do you have stamped Mechanical Plans
❖ Do you have Elevations	❖ Do you have stamped Electrical Plans
❖ Do you have any mechanical, electrical, or plumbing details (not required on all projects)	❖ Do you have stamped Civil Plans

Requirements for building plans to be designed and stamped by a professional engineer and/or architect are based on the s.f. area and occupancy of the building. If the project is at or greater than the area values below, professional designs services are required. Regardless of project size, professional service will be required if the mechanical system, electrical systems, the structural integrity, or means of egress is adversely impacted. Also, if the occupancy changes or comes into conflict with the occupancy of the existing or adjacent tenant spaces professional service will be required.

A – Assembly -----1,000 square feet  
 B – Business -----3,000 square feet  
 E – Educational -----1,000 square feet  
 F – Factory -----5,000 square feet  
 H – Hazardous  
 H-1, H-2, H-3, H-4 -----2,000 square feet  
 H-5 -----4,000 square feet  
 I – Institutional  
 I-1, Personal Care -----3,000 square feet

I-2, Inpatient Healthcare -----5,000 square feet  
 I-3, Detention -----3,000 square feet  
 I-4, Day Care -----2,000 square feet  
 M – Mercantile -----3,000 square feet  
 R – Residential  
 R-1, R-2, R-4 -----4,000 square feet  
 R-3, Single-family through 4-plex----- 10,000 square feet  
 S – Storage -----5,000 square feet  
 U – Utility-----5,000 square feet

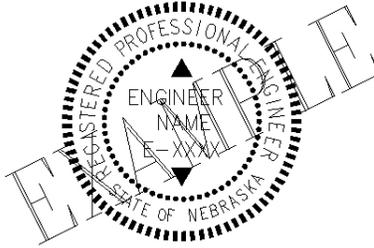
**Permits not requiring drawings** would be those similar to reshingling, siding, and/or minor repair which may be issued at time of application.

**Signage permits** will require drawings which include elevations of each new sign with dimensions & heights and a plot plan showing the location(s) of each sign.

For specific questions please contact the Grand Island Building Dept at 308-385-5325 or visit us online at <http://www.grand-island.com>, ‘Your Government’, ‘Building Department’ for examples of required information.

## **PRE-ENGINEERED BUILDINGS MINIMUM REQUIREMENTS**

1. Pre-engineered buildings over 120 s.f. shall have plans of the structure submitted with the building permit application. The plans shall be developed by a professional engineer licensed with the State of Nebraska and have their professional seal affixed to each sheet of the plans. The seal shall be signed by the engineer across the face of the seal and dated the date it was signed. The date of signature on the professional seal shall not be older than three years of the current date. Below is an example of a professional engineers seal.

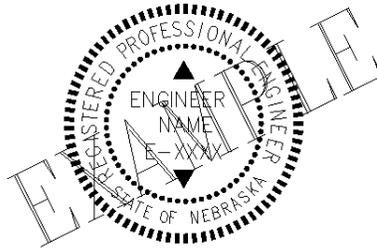


2. The building shall be designed to the following design loads and identified on the submitted plans:
  - a. Basic Wind Speed 90 mph (Residential) 120 mph (Commercial), Exposure C
  - b. Roof Snow Load 30 pounds per square foot. **(not ground snow load)**  
*Must be identified specifically as roof snow load not live load.*
  - c. Seismic Design Category A, Site Class D.
3. The submitted plans shall include the minimum information:
  - a. Footing/anchoring design to be used.
  - b. Site plan showing location of structure dimensioned from property lines and any other buildings located on the property.

Contact the City of Grand Island Building Department for further information at (308) 385-5325.

## PRE-ENGINEERED CARPORTS MINIMUM REQUIREMENTS

1. Pre-engineered carports shall have plans of the structure submitted with the building permit application. The plans shall be developed by a professional engineer licensed with the State of Nebraska and have their professional seal affixed to each sheet of the plans. The seal shall be signed by the engineer across the face of the seal and dated the date it was signed. The date of signature on the professional seal shall not be older than three years of the current date. Below is an example of a professional engineers seal.



2. The carport shall be designed to the following design loads and identified on the submitted plans:
  - a. Basic Wind Speed 90 mph, Exposure C
  - b. Roof Snow Load 30 pounds per square foot. **(not ground snow load)**  
*Must be identified specifically as roof snow load not live load.*
  - c. Seismic Design Category A, Site Class D.
3. The submitted plans shall include the minimum information:
  - a. Footing/anchoring design to be used.
  - b. Site plan showing location of structure dimensioned from property lines and any other buildings located on the property.
4. Carports shall be open on at least two sides.
5. Carport floor surface shall be provided with permanent type, dust-free surface such as asphaltic cement concrete, Portland cement concrete, or paving brick.

Contact the City of Grand Island Building Department for further information at (308) 385-5325.

**City of Grand Island Plan Check Sheet**  
**Residential Plan Submittal Check Sheet**

\*All residential building plans submitted for review shall have a minimum of the following information identified on the plans.

Address \_\_\_\_\_ Owner \_\_\_\_\_

Legal Description \_\_\_\_\_

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> <input type="checkbox"/> Front Yard Established Setback (City Code 36-22, C) _____</li> <li><input type="checkbox"/> <input type="checkbox"/> Front Yard _____</li> <li><input type="checkbox"/> <input type="checkbox"/> Rear Yard _____</li> <li><input type="checkbox"/> <input type="checkbox"/> Side Yard _____ Street Side Yard _____</li> <li><input type="checkbox"/> <input type="checkbox"/> Eaves limited to 1'- 0" in min. sideyard</li> <li><input type="checkbox"/> <input type="checkbox"/> Easements _____</li> <li><input type="checkbox"/> <input type="checkbox"/> Parking Spaces Required _____</li> <li><input type="checkbox"/> <input type="checkbox"/> Sidewalks per Subdivision Agreements (City Code 32-55)</li> <li><input type="checkbox"/> <input type="checkbox"/> Flood Plain Elevation _____ A.S.L.</li> <li><input type="checkbox"/> <input type="checkbox"/> Lowest Floor Elevation _____ A.S.L.</li> <li><input type="checkbox"/> <input type="checkbox"/> Garage Floor Elevation _____ A.S.L.</li> <li><input type="checkbox"/> <input type="checkbox"/> Wall Section</li> <li><input type="checkbox"/> <input type="checkbox"/> Roof Covering (R905) _____</li> <li><input type="checkbox"/> <input type="checkbox"/> Roof Const: <input type="checkbox"/> Trusses <input type="checkbox"/> Rafters, <input type="checkbox"/> 16"o.c <input type="checkbox"/> 24"o.c.</li> <li><input type="checkbox"/> <input type="checkbox"/> Ceiling Joists: Size _____ Spacing _____</li> <li><input type="checkbox"/> <input type="checkbox"/> Wall Framing: <input type="checkbox"/> 2x4 <input type="checkbox"/> 2x6, Spacing <input type="checkbox"/> 16"o.c <input type="checkbox"/> 24"o.c.</li> <li><input type="checkbox"/> <input type="checkbox"/> Floor Joists: Size _____ Spacing _____</li> <li><input type="checkbox"/> <input type="checkbox"/> Wood Sill 6" above grade (redwood, cedar or treated) R317.1</li> <li><input type="checkbox"/> <input type="checkbox"/> Anchor Bolts – 1/2" x 10" x 6' - 0" o.c. Start 1' from each corner min. 2 bolts per wall (IRC R403.1.6)</li> <li><input type="checkbox"/> <input type="checkbox"/> Provide attic access min. opening 22" x 30" (IRC R807)</li> <li><input type="checkbox"/> <input type="checkbox"/> Provide attic ventilation (IRC R806)</li> <li><input type="checkbox"/> <input type="checkbox"/> Stair Section</li> <li><input type="checkbox"/> <input type="checkbox"/> 6' - 8" min. headroom in stairway (IRC R311.7.2)</li> <li><input type="checkbox"/> <input type="checkbox"/> Landing at top and bottom of stair min 36" in direction of travel, not req. if interior stairs and door doesn't swing over stairs (R311.7.6)</li> <li><input type="checkbox"/> <input type="checkbox"/> Handrail height 34" to 38" (IRC R311.7.8.1)</li> <li><input type="checkbox"/> <input type="checkbox"/> Guardrail pattern so as 4" sphere can't pass through (R312)</li> <li><input type="checkbox"/> <input type="checkbox"/> Provide ventilation for interior bathrooms (IRC R303.3)</li> <li><input type="checkbox"/> <input type="checkbox"/> Garage Door end walls 2' min. width or constructed per IRC sec. R602.10.3.3 to min 16" wide.</li> <li><input type="checkbox"/> <input type="checkbox"/> Crawl space ventilation (IRC R408.1)</li> <li><input type="checkbox"/> <input type="checkbox"/> Crawl space access (IRC R408.4)</li> <li><input type="checkbox"/> <input type="checkbox"/> Electrical system shall be grounded by attachment to footing Rebar per NEC 2011 article 250.</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> <input type="checkbox"/> Exits Required (min one 3' wide) (IRC R311.2)</li> <li><input type="checkbox"/> <input type="checkbox"/> 3' Landing required at required exterior doors. (R311.3) other exterior doors if has 3 or more risers (R311.3.1)</li> <li><input type="checkbox"/> <input type="checkbox"/> Emergency Egress Windows: (IRC sec. R310)<br/>1 per sleeping room and 1 per basement<br/>Min. openable area 5.7 sq. ft.<br/>Min. openable height 24 inches<br/>Min. openable width 20 inches<br/>Max. sill height 44 inches</li> <li><input type="checkbox"/> <input type="checkbox"/> Basements in dwelling units shall have at least one operable window approved for emergency egress. (R310.1)</li> <li><input type="checkbox"/> <input type="checkbox"/> Window area min. 5% of floor area in all habitable rooms</li> <li><input type="checkbox"/> <input type="checkbox"/> Basement window area 2% of floor area (City Code 8-11)</li> <li><input type="checkbox"/> <input type="checkbox"/> Foundation Wall/Rebar (City Code 8-13 (3))</li> <li><input type="checkbox"/> <input type="checkbox"/> Damp-proofing (IRC R406.1)</li> <li><input type="checkbox"/> <input type="checkbox"/> Subsurface Drainage (per City Code 8-14)</li> <li><input type="checkbox"/> <input type="checkbox"/> Provide 3" min. pipe thru floor into attic for future soil gas ventilation (per City Code 8-14.</li> <li><input type="checkbox"/> <input type="checkbox"/> Footings continuous min. 36" below grade (City Code 8-13)</li> <li><input type="checkbox"/> <input type="checkbox"/> Rebar in footings (City Code 8-13 (2))</li> <li><input type="checkbox"/> <input type="checkbox"/> 1 hour fire rated wall between two-family dwelling units (IRC R302.3)</li> <li><input type="checkbox"/> <input type="checkbox"/> 2 hour fire rated wall between townhouses (IRC R302.2)</li> <li><input type="checkbox"/> <input type="checkbox"/> Provide a 6 mil vapor retarder under concrete floor slab per (IRC R506.2.3)</li> <li><input type="checkbox"/> <input type="checkbox"/> Solid core door between house and garage (IRC R302.5.1)</li> <li><input type="checkbox"/> <input type="checkbox"/> 1/2" gypsum applied to garage side separating garage from residence and its attic space, 5/8" type X ceiling if habitable space above garage. (R302.6)</li> <li><input type="checkbox"/> <input type="checkbox"/> Install smoke detectors in hallway near bedrooms, in each bedroom, at bottom of basement stairs and at least 1 on each other level. (IRC R314)</li> <li><input type="checkbox"/> <input type="checkbox"/> Provide carbon monoxide alarm outside each sleeping area in dwelling units w/fuel fired appliances and/or with attached garage (IRC 315)</li> <li><input type="checkbox"/> <input type="checkbox"/> Provide termite protection (IRC R318)</li> <li><input type="checkbox"/> <input type="checkbox"/> Provide site address on building legible from street (R319)</li> <li><input type="checkbox"/> <input type="checkbox"/> Provide safety glazing in hazardous locations (R308.4)</li> </ul> |
|---|--|

Properties located in Special Flood Hazard Area require verification of the actual elevation of the lowest floor by a licensed Engineer, Architect, or Surveyor prior to issuing a Certificate of Occupancy.

## Definitions:

**Architectural plans:** shows plot plans, floor plans for each level, roofing plans, wall cross-sections & details, interior & exterior elevations, door/window schedules, interior finish schedule, code data, Fire Rating of Assemblies, general notes, etc.

**Civil Engineered plans:** shows site plans, demolition information, general notes, information concerning existing and/or new topography, utilities, paving, etc. Paving plans should include striping and signage locations with emphasis on A.D.A. requirements.

**Door/Window Schedules:** chart(s) showing doors and/or windows with their sizes, locations, fire-ratings, types of materials in the door and its frame

**Electrical Engineered plans:** shows lighting plans, power distribution plans, fire alarm plans, feeder schedules, panel schedules, mechanical equipment connection schedule, online diagrams for equipment, fixture schedules, general notes, etc. Include symbol legends where appropriate.

**Elevations:** shows all exterior views of the new structure.

**Fire-Protection plans:** show fire sprinkler plans, pressure and flow rate data, schedules including: sprinkler head types, valve types, backflow information, etc. Fire alarm information if not provided in Electrical plans. This set of plans may or may not be required by the Local and/or state Fire Marshal.

**Fire-Resistant Rating:** The period of time a building element, component or assembly maintains the ability to confine a fire, continues to perform a given structural function or both.

**Floor Plan:** shows dimensions & uses of each room, location of smoke detectors, size & placement of egress items, etc.

**Interior Finishes:** Chart of materials being used on the floor, walls and ceiling for each room.

**Mechanical Engineered plans:** shows domestic water, sanitary waste & vent, storm sewer, HVAC duct & equipment plans, hydronic piping plans, schematics & details, equipment and fixture schedules, general notes, etc. Include symbol legends where appropriate.

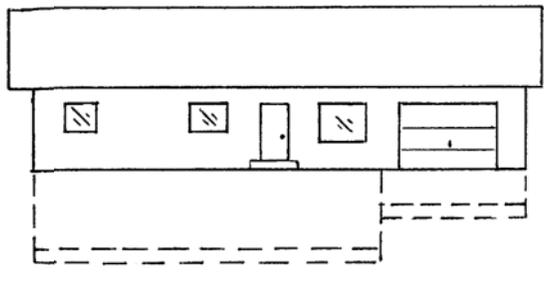
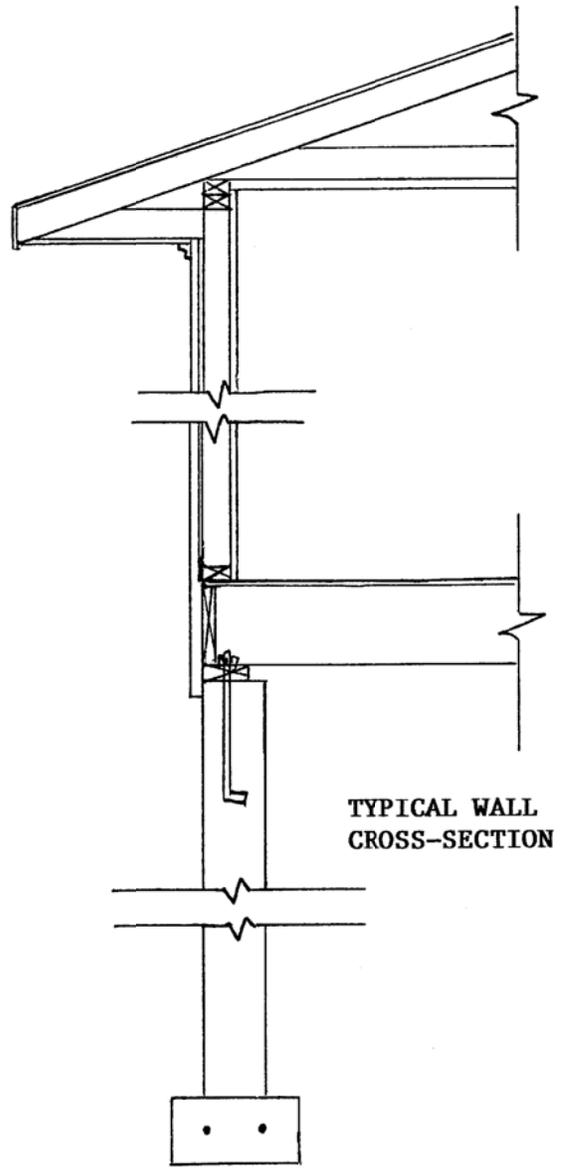
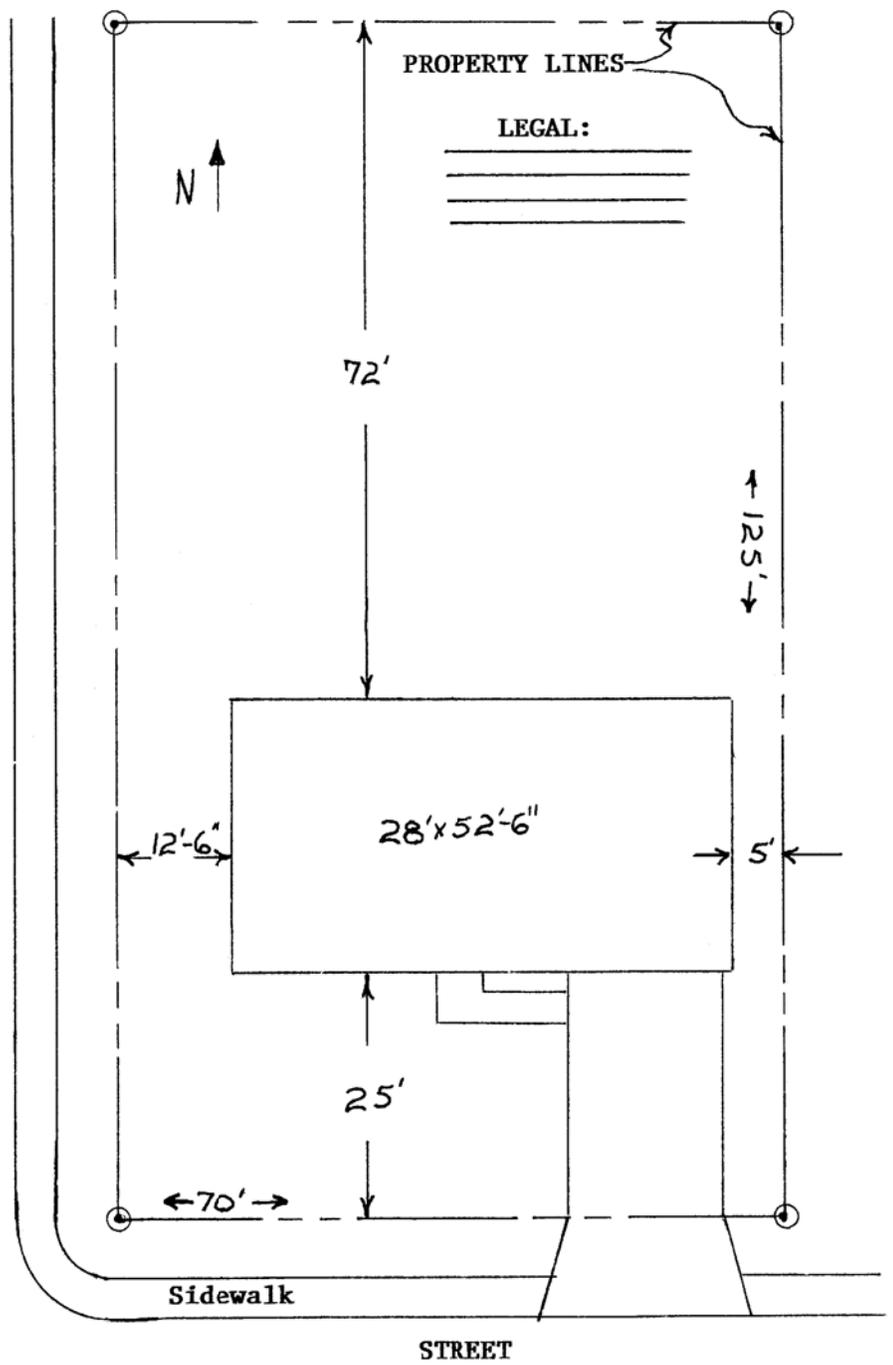
**Mechanical, electrical, plumbing details:** shows details not standard in a typical installations process for residential construction.

**Plot Plan:** shows locations of all property lines with dimensions, identifying addresses, streets, alleys, easements and locations of all buildings on property with size and distance from property lines.

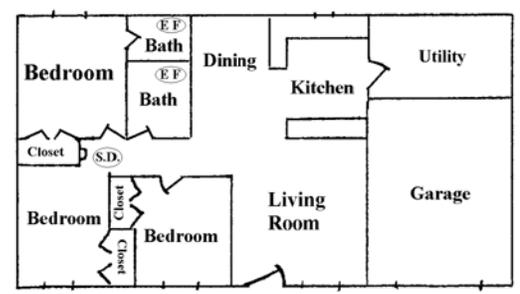
**Structural plans:** shows footing & foundation plans, floor framing for each level, roof framing, foundation details, wall cross-sections & details, general notes, etc.

**Typical wall cross-section:** show size of footings and foundation to finish grade, sill plate, anchors, size & spacing of floor joists, studs, type & design spacing roof system, ventilation, etc.

# Plot Plan Example



# FLOOR PLAN EXAMPLE



# **Building Details and Typical Sections**

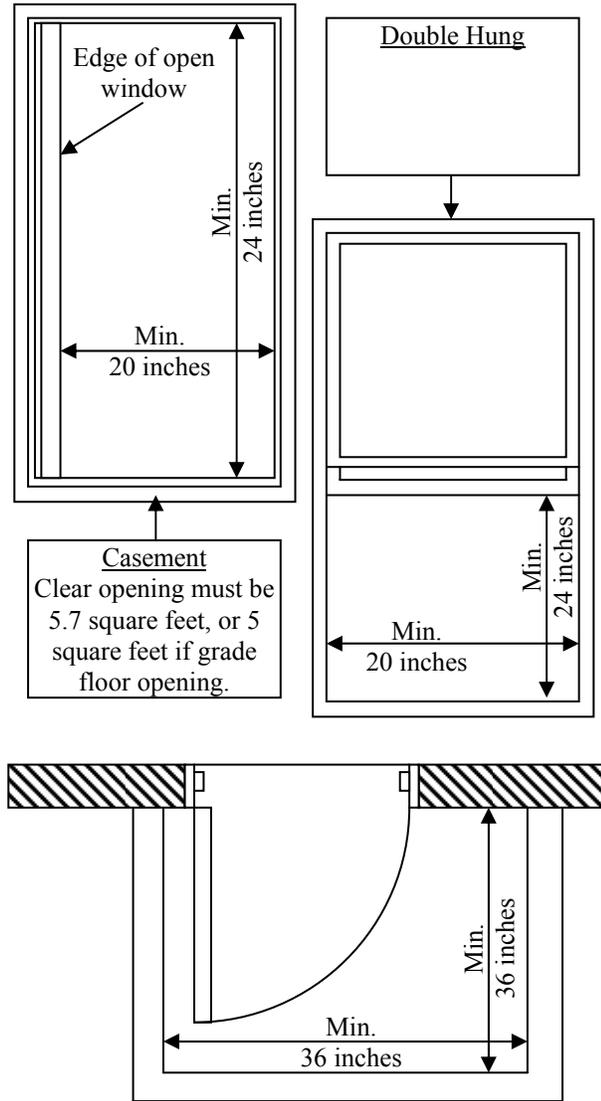
Building Codes and Requirements,  
Guidelines and Regulations

# EGRESS WINDOW REQUIREMENTS

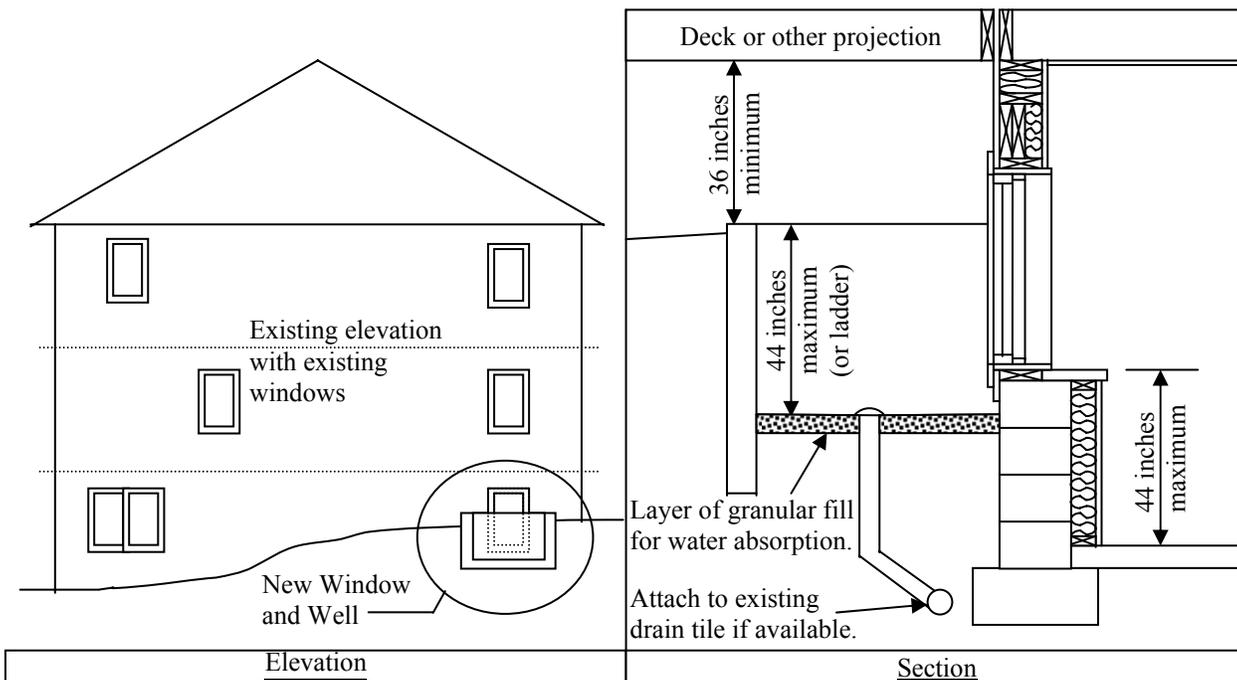
Section R310 IRC and 1029 IBC

## BUILDING CODE REQUIREMENTS:

- Basements and every sleeping room shall have at least one operable emergency and rescue opening. The required emergency and rescue opening in the bedrooms located in the basement, satisfies the requirement of the basement having an emergency and rescue opening.
- The bottom sill of egress windows shall be no more than 44 inches above the finished floor height.
- Egress windows shall have a clear opening, measured when the operable part of the window is completely open, of 5.7 square feet and meeting the following minimum dimensions.
  - Minimum clear opening width = 20 inches.
  - Minimum clear opening height = 24 inches.
- Egress windows shall be operational from the inside of the room without the use of keys or special knowledge.
- Below grade egress windows shall be installed with an egress window well meeting the following minimum dimensions.
  - Minimum horizontal dimension of 36 inches by 36 inches and allow the window to be fully opened.
  - Ladders or steps shall be required for window wells deeper than 44 inches and are allowed to project a maximum of 6 inches into the required area of the well.
  - Ladders shall be permanently fixed and have a minimum interior width of 12 inches, project at least 3 inches from the wall of the well, and have rungs spaced no more than 18 inches vertically for the full height of the well.
  - Window wells are allowed to be covered with covers or screens, provided that the net clear opening height and width of the cover or screen, when open, meets that of the egress window itself as stated earlier. Such covers or screens shall be releasable or removable from the inside without the use of a key, tool, special knowledge, or force greater than that which is required for normal operation of the egress window.
  - Egress windows may be placed under decks or other projections, provided the window can be fully opened, and provides a path not less than 36 inches in height to a yard or court.



\* The window well shall allow the window be opened fully.



# EMERGENCY EXITS

Sections R310 of the 2012 International Residential Code, §1029 of the 2012 International Building Code and §8-11 of the City Code is hereby amended to read as follows:

## R310.1 Emergency Escape and Rescue Required

*Basements*, habitable attics and every sleeping room shall have at least one operable emergency escape and rescue opening. Where *basements* contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches (1118 mm) above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a *yard* or court that opens to a public way.

**Exception:** *Basements* used only to house mechanical *equipment* and not exceeding total floor area of 200 square feet (18.58 m<sup>2</sup>).

**R310.1.1 Minimum opening area.** All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.530 m<sup>2</sup>).

**Exception:** *Grade* floor openings shall have a minimum net clear opening of 5 square feet (0.465 m<sup>2</sup>).

**R310.1.2 Minimum opening height.** The minimum net clear opening height shall be 24 inches (610 mm).

**R310.1.3 Minimum opening width.** The minimum net clear opening width shall be 20 inches (508 mm).

**R310.1.4 Operational constraints.** Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys, tools or special knowledge.

**R310.2 Window wells.** The minimum horizontal area of the window well shall be 9 square feet (0.9 m<sup>2</sup>), with a minimum horizontal projection and width of 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

**Exception:** The ladder or steps required by Section R310.2.1 shall be permitted to encroach a maximum of 6 inches (152 mm) into the required dimensions of the window well.

**R310.2.1 Ladder and steps.** Window wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with a permanently affixed ladder or steps usable with the window in the fully open position. Ladders or steps required by this section shall not be required to comply with Sections R311.7 and R311.8. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the window well.

EXCEPTION: Basements used exclusively for the service of buildings and which do not exceed 300 sq. feet.

In existing single family residential occupancies other than apartments, a sleeping room may be added in an existing basement if the following conditions are met:

1. The sleeping room must have an openable window.
2. Smoke detectors have been installed in the sleeping room, the furnace room, and in the exitway of the basement.

# REROOFING

**2012 International Residential Code is hereby adopted and certain sections read as follows.**

*(ice shield requirement deleted effective 05/01/08)*

## **R907.1 General**

Materials and methods of application used for re-covering or replacing an existing roof covering shall comply with the requirements of Chapter 9.

**Exceptions:** Reroofing shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal (2-percent slope) in Section R905 for roofs that provide positive roof drainage.

## **R907.2 Structural and Construction Loads**

The structural roof components shall be capable of supporting the roof covering system and the material and equipment loads that will be encountered during installation of the roof covering system.

## **R907.3 Recovering versus replacement**

New roof coverings shall not be installed without first removing all existing layers of roof coverings where any of the following conditions exist:

1. Where the existing roof or roof covering is water-soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.

### **Exceptions:**

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
2. Installation of metal panel, metal shingle and concrete and clay tile roof coverings over existing wood shake roofs shall be permitted when the application is in accordance with Section R907.4.
3. The application of new protective coating over existing spray polyurethane foam roofing systems shall be permitted without tear-off of existing roof coverings.
4. Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section R905.

## **R907.4 Roof recovering**

Where the application of a new roof covering over wood shingle or shake roofs creates a combustible concealed space, the entire existing surface shall be covered with gypsum board, mineral fiber, glass fiber or other approved materials securely fastened in place.

## **R907.5 Reinstallation of materials.**

Existing slate, clay or cement tile shall be permitted for reinstallation, except that damaged, cracked or broken slate or tile shall not be reinstalled. Any existing flashings, edgings, outlets, vents or similar devices that are a part of the assembly shall be replaced when rusted, damaged or deteriorated. Aggregate surfacing materials shall not be reinstalled.

## **R907.6 Flashings**

Flashings shall be reconstructed in accordance with approved manufacturer's installation instructions. Metal flashing to which bituminous materials are to be adhered shall be primed prior to installation.

# ATTIC VENTILATION

2012 IRC

## R806.1 VENTILATION REQUIRED

ENCLOSED ATTICS AND ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS SHALL HAVE CROSS VENTILATION FOR EACH SEPARATE SPACE BY VENTILATING OPENINGS PROTECTED AGAINST THE ENTRANCE OF RAIN OR SNOW. VENTILATION OPENINGS SHALL HAVE A LEAST DIMENSION OF 1/16 INCH MINIMUM AND 1/4 INCH MAXIMUM. VENTILATION OPENINGS HAVING A LEAST DIMENSION LARGER THAN 1/4 INCH SHALL BE PROVIDED WITH CORROSION-RESISTANT WIRE CLOTH SCREENING, HARDWARE CLOTH, OR SIMILAR MATERIAL WITH OPENINGS HAVING A LEAST DIMENSION OF 1/16 INCH MINIMUM AND 1/4 INCH MAXIMUM. OPENINGS IN ROOF FRAMING MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF SECTION R802.7. REQUIRED VENTILATION OPENINGS SHALL OPEN DIRECTLY TO THE OUTSIDE AIR.

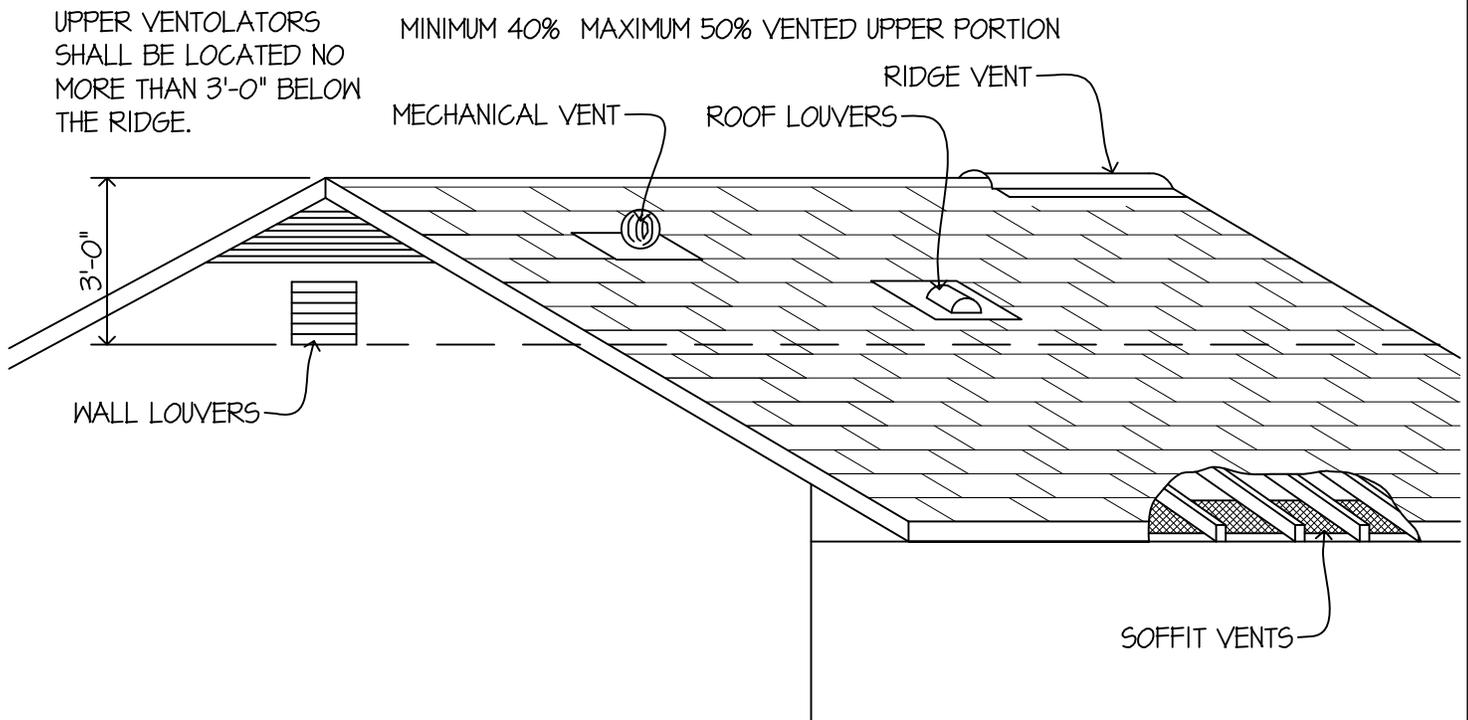
EXCEPTION: ATTIC VENTILATION SHALL NOT BE REQUIRED WHEN DETERMINED NOT NECESSARY BY THE CODE OFFICIAL DUE TO ATMOSPHERIC OR CLIMATIC CONDITIONS.

## R806.2 MINIMUM VENT AREA

THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE.

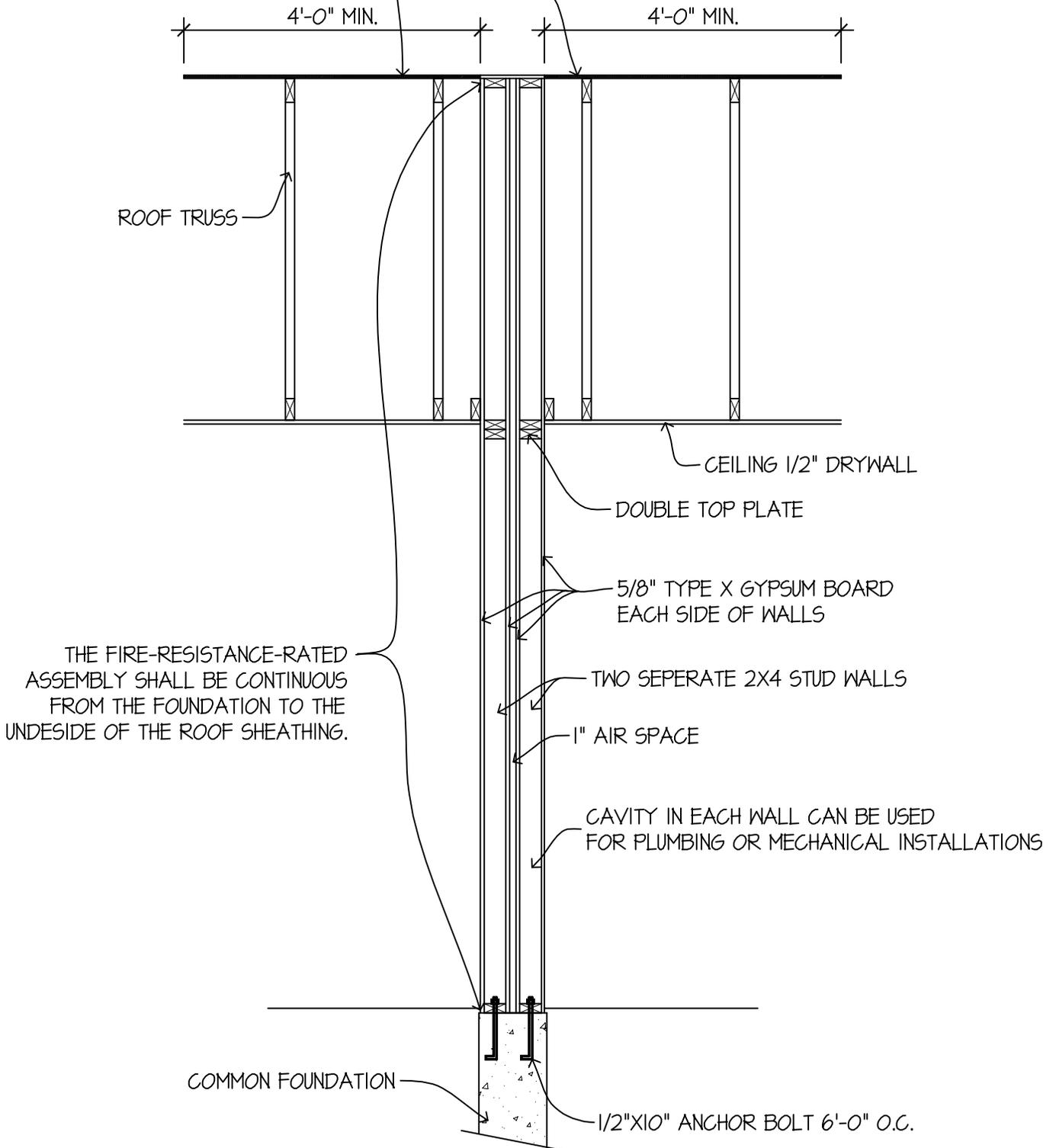
EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED ONE OR MORE OF THE FOLLOWING CONDITIONS ARE MET:

1. IN CLIMATE ZONES 6, 7 AND 8, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
2. AT LEAST 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NO MORE THAN 3 FEET BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.



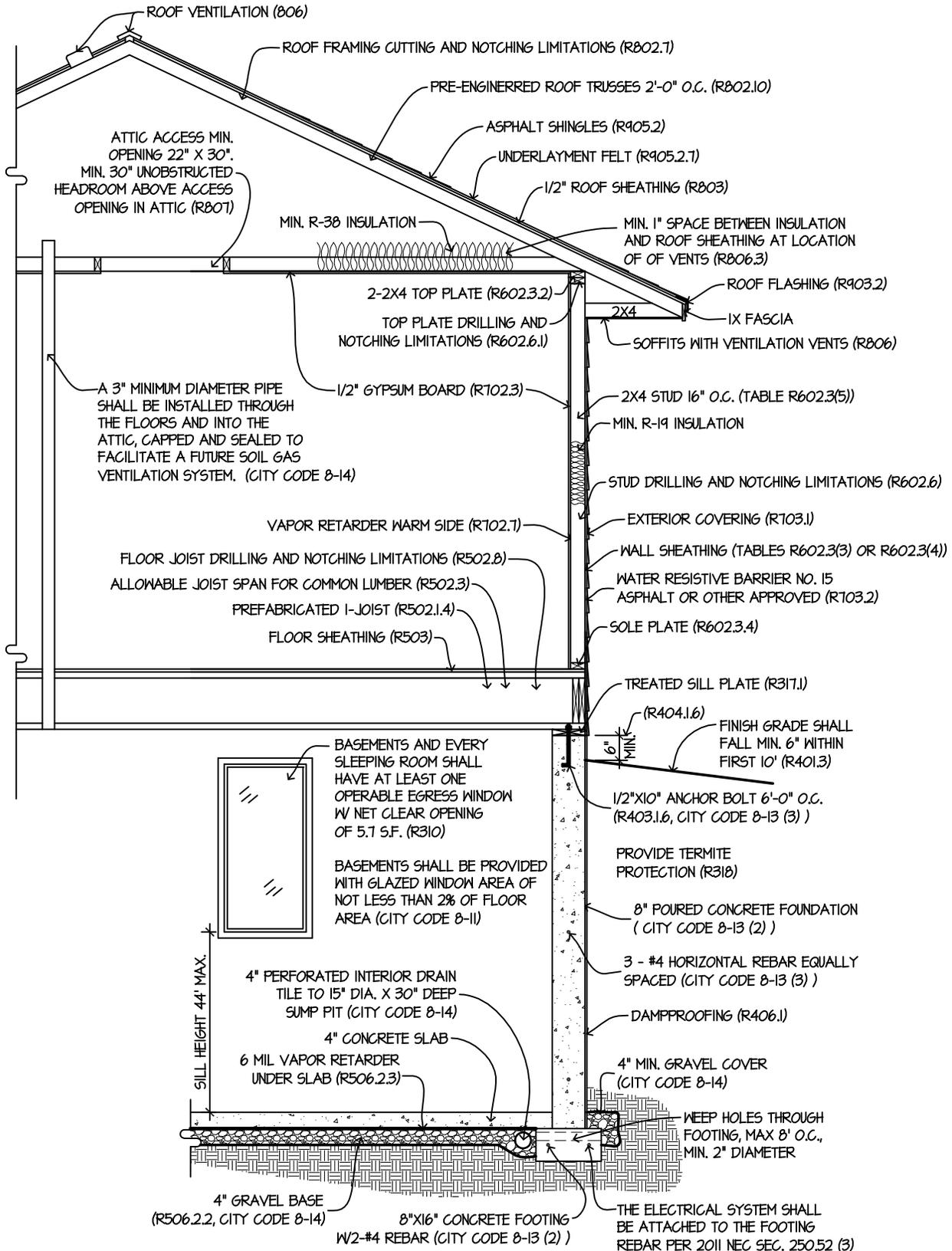
COMPLIMENTS OF BUILDING INSPECTIONS DEPARTMENT CITY OF GRAND ISLAND

MIN. CLASS C ROOF COVERING, AND ROOF DECK SHEATHED WITH NONCOMBUSTIBLE MATERIAL OR APPROVED FIRE-RETARDANT-TREATED WOOD FOR A DISTANCE OF 4 FEET ON EACH SIDE OF WALLS, OR ONE LAYER OF 5/8" TYPE X GYPSUM BOARD INSTALLED DIRECTLY BENEATH THE ROOF SHEATHING, SUPPORTED BY A MIN. OF NOMINAL 2" LEADGERS ATTACHED TO THE SIDES OF THE ROOF FRAMING.



**2 HR DWELLING UNIT SEPERATION FOR PROPERTY LINE AND TOWNHOMES**  
**TRUSSES PARALLEL TO RATED WALL**

ALL CODE SECTIONS INDICATED REFERENCE THE 2012 INTERNATIONAL RESIDENTIAL CODE (IRC) AND CITY OF GRAND ISLAND CODE

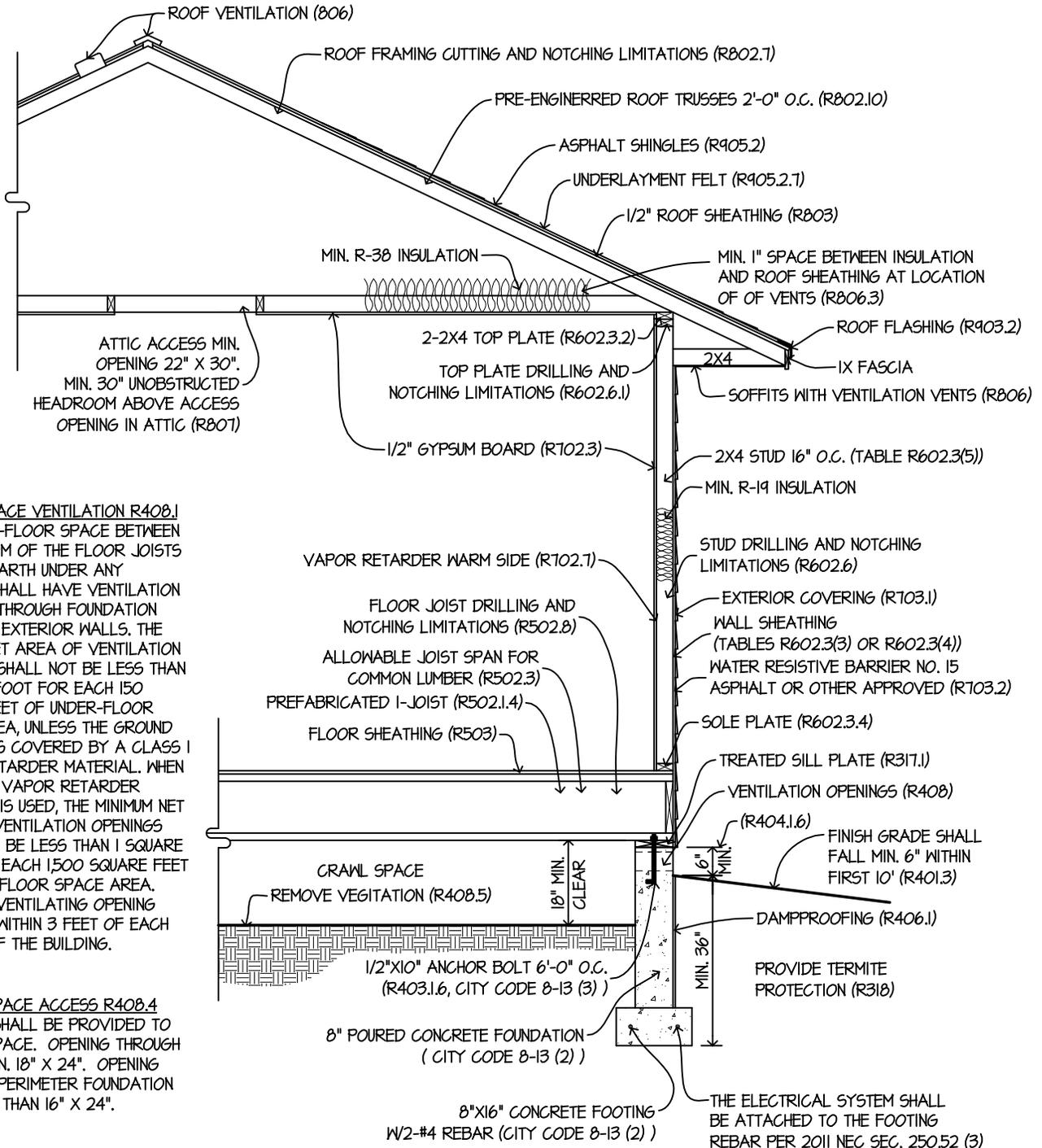


## TYPICAL RESIDENTIAL WALL SECTION

\*\* BASEMENTS LOCATED IN SPECIAL FLOOD HAZARD AREAS REQUIRE FLOODPROOF CONSTRUCTION DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEBRASKA. (CITY CODE 36-114)

TYPICAL WALL SECTION COMPLIMENTS OF BUILDING INSPECTIONS DEPARTMENT CITY OF GRAND ISLAND

ALL CODE SECTIONS INDICATED REFERENCE THE 2012 INTERNATIONAL RESIDENTIAL CODE (IRC) AND CITY OF GRAND ISLAND CODE



**CRAWL SPACE VENTILATION R408.1**  
 THE UNDER-FLOOR SPACE BETWEEN THE BOTTOM OF THE FLOOR JOISTS AND THE EARTH UNDER ANY BUILDING SHALL HAVE VENTILATION OPENINGS THROUGH FOUNDATION WALLS OR EXTERIOR WALLS. THE MINIMUM NET AREA OF VENTILATION OPENINGS SHALL NOT BE LESS THAN 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF UNDER-FLOOR SPACE AREA, UNLESS THE GROUND SURFACE IS COVERED BY A CLASS I VAPOR RETARDER MATERIAL. WHEN A CLASS I VAPOR RETARDER MATERIAL IS USED, THE MINIMUM NET AREA OF VENTILATION OPENINGS SHALL NOT BE LESS THAN 1 SQUARE FOOT FOR EACH 1,500 SQUARE FEET OF UNDER-FLOOR SPACE AREA. ONE SUCH VENTILATING OPENING SHALL BE WITHIN 3 FEET OF EACH CORNER OF THE BUILDING.

**CRAWL SPACE ACCESS R408.4**  
 ACCESS SHALL BE PROVIDED TO CRAWL SPACE. OPENING THROUGH FLOOR MIN. 18" X 24". OPENING THROUGH PERIMETER FOUNDATION NOT LESS THAN 16" X 24".

**TYPICAL WALL SECTION WITH CRAWL SPACE**

### R408.3 UNVENTED CRAWL SPACE

VENTILATION OPENINGS IN UNDER-FLOOR SPACES SPECIFIED IN SECTIONS R408.1 AND SHALL NOT BE REQUIRED WHERE:

1. EXPOSED EARTH IS COVERED WITH A CONTINUOUS CLASS I VAPOR RETARDER. JOINTS OF THE VAPOR RETARDER SHALL OVERLAP BY 6 INCHES AND SHALL BE SEALED OR TAPED. THE EDGES OF THE VAPOR RETARDER SHALL EXTEND AT LEAST 6 INCHES UP THE STEM WALL AND SHALL BE ATTACHED AND SEALED TO THE STEM WALL OR INSULATION; AND
2. ONE OF THE FOLLOWING IS PROVIDED FOR THE UNDER-FLOOR SPACE:

2.1. CONTINUOUSLY OPERATED MECHANICAL EXHAUST VENTILATION AT A RATE EQUAL TO 1 CUBIC FOOT PER MINUTE FOR EACH 50 SQUARE FEET OF CRAWLSPACE FLOOR AREA, INCLUDING AN AIR PATHWAY TO THE COMMON AREA (SUCH AS A DUCT OR TRANSFER GRILLE), AND PERIMETER WALLS INSULATED IN ACCORDANCE WITH OF THIS CODE;

2.2. CONDITIONED AIR SUPPLY SIZED TO DELIVER AT A RATE EQUAL TO 1 CUBIC FOOT PER MINUTE FOR EACH 50 SQUARE FEET OF UNDER-FLOOR AREA, INCLUDING A RETURN AIR PATHWAY TO THE COMMON AREA (SUCH AS A DUCT OR TRANSFER GRILLE), AND PERIMETER WALLS INSULATED IN ACCORDANCE WITH SECTION N1102.2 OF THIS CODE;

2.3. PLENUM IN EXISTING STRUCTURES COMPLYING WITH SECTION M1601.5, IF UNDER-FLOOR SPACE IS USED AS A PLENUM.

### R408.1 VENTILATION

THE UNDER-FLOOR SPACE BETWEEN THE BOTTOM OF THE FLOOR JOISTS AND THE EARTH UNDER ANY BUILDING (EXCEPT SPACE OCCUPIED BY A BASEMENT) SHALL HAVE VENTILATION OPENINGS THROUGH FOUNDATION WALLS OR EXTERIOR WALLS. THE MINIMUM NET AREA OF VENTILATION OPENINGS SHALL NOT BE LESS THAN 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF UNDER-FLOOR SPACE AREA, UNLESS THE GROUND SURFACE IS COVERED BY A CLASS I VAPOR RETARDER MATERIAL. WHEN A CLASS I VAPOR RETARDER MATERIAL IS USED, THE MINIMUM NET AREA OF VENTILATION OPENINGS SHALL NOT BE LESS THAN 1 SQUARE FOOT FOR EACH 1,500 SQUARE FEET OF UNDER-FLOOR SPACE AREA. ONE SUCH VENTILATING OPENING SHALL BE WITHIN 3 FEET OF EACH CORNER OF THE BUILDING.

### R408.2 OPENINGS FOR UNDER-FLOOR VENTILATION

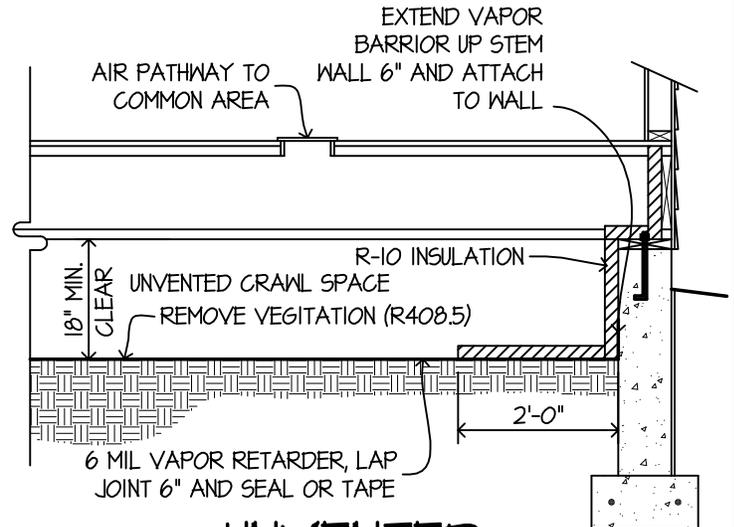
THE MINIMUM NET AREA OF VENTILATION OPENINGS SHALL NOT BE LESS THAN 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF UNDER-FLOOR AREA. ONE VENTILATION OPENING SHALL BE WITHIN 3 FEET OF EACH CORNER OF THE BUILDING. VENTILATION OPENINGS SHALL BE COVERED FOR THEIR HEIGHT AND WIDTH WITH ANY OF THE FOLLOWING MATERIALS PROVIDED THAT THE LEAST DIMENSION OF THE COVERING SHALL NOT EXCEED 1/4 INCH:

1. PERFORATED SHEET METAL PLATES NOT LESS THAN 0.070 INCH THICK.
2. EXPANDED SHEET METAL PLATES NOT LESS THAN 0.047 INCH THICK.
3. CAST-IRON GRILL OR GRATING.
4. EXTRUDED LOAD-BEARING BRICK VENTS.
5. HARDWARE CLOTH OF 0.035 INCH WIRE OR HEAVIER.
6. CORROSION-RESISTANT WIRE MESH, WITH THE LEAST DIMENSION BEING 1/8 INCH THICK.

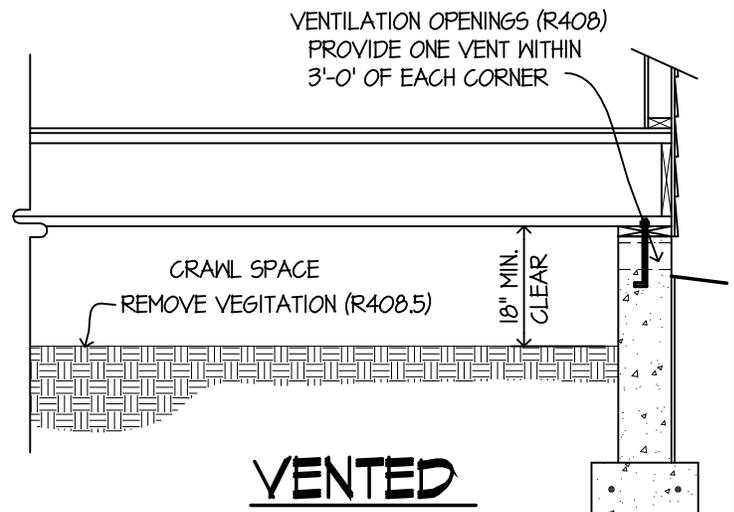
EXCEPTION: THE TOTAL AREA OF VENTILATION OPENINGS SHALL BE PERMITTED TO BE REDUCED TO 1/1,500 OF THE UNDER-FLOOR AREA WHERE THE GROUND SURFACE IS COVERED WITH AN APPROVED CLASS I VAPOR RETARDER MATERIAL AND THE REQUIRED OPENINGS ARE PLACED TO PROVIDE CROSS VENTILATION OF THE SPACE. THE INSTALLATION OF OPERABLE LOUVERS SHALL NOT BE PROHIBITED.

COMPLIMENTS OF BUILDING INSPECTIONS DEPARTMENT CITY OF GRAND ISLAND

ALL CODE SECTIONS INDICATED REFERENCE THE 2012 INTERNATIONAL RESIDENTIAL CODE (IRC) AND CITY OF GRAND ISLAND CODE



## UNVENTED CRAWL SPACE

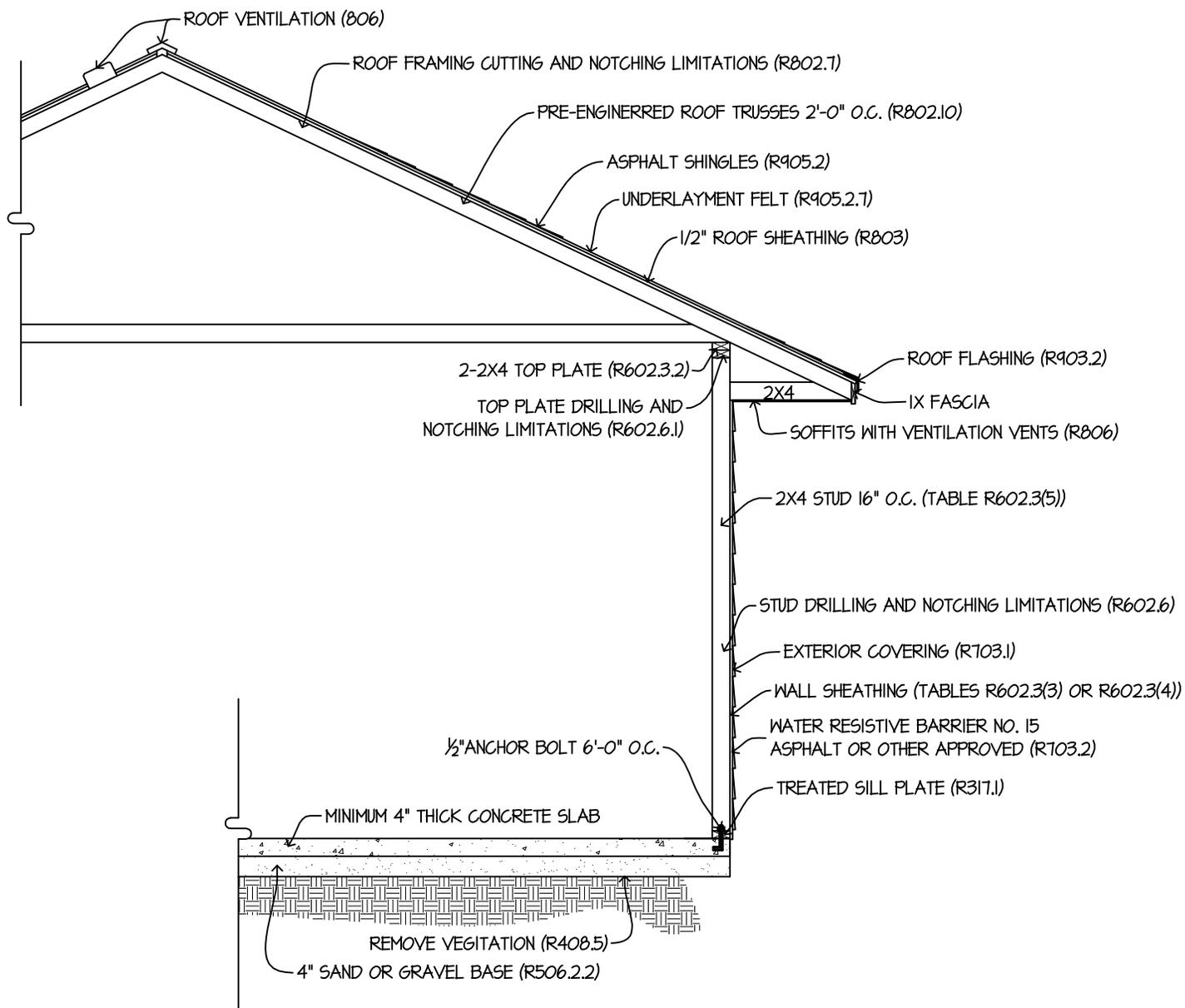


## VENTED CRAWL SPACE

CRAWL SPACE ACCESS R408.4  
ACCESS SHALL BE PROVIDED TO CRAWL SPACE. OPENING THROUGH FLOOR MIN. 18" X 24". OPENING THROUGH PERIMETER FOUNDATION NOT LESS THAN 16" X 24".

TYPICAL SHED WALL SECTION COMPLIMENTS OF BUILDING INSPECTIONS DEPARTMENT CITY OF GRAND ISLAND

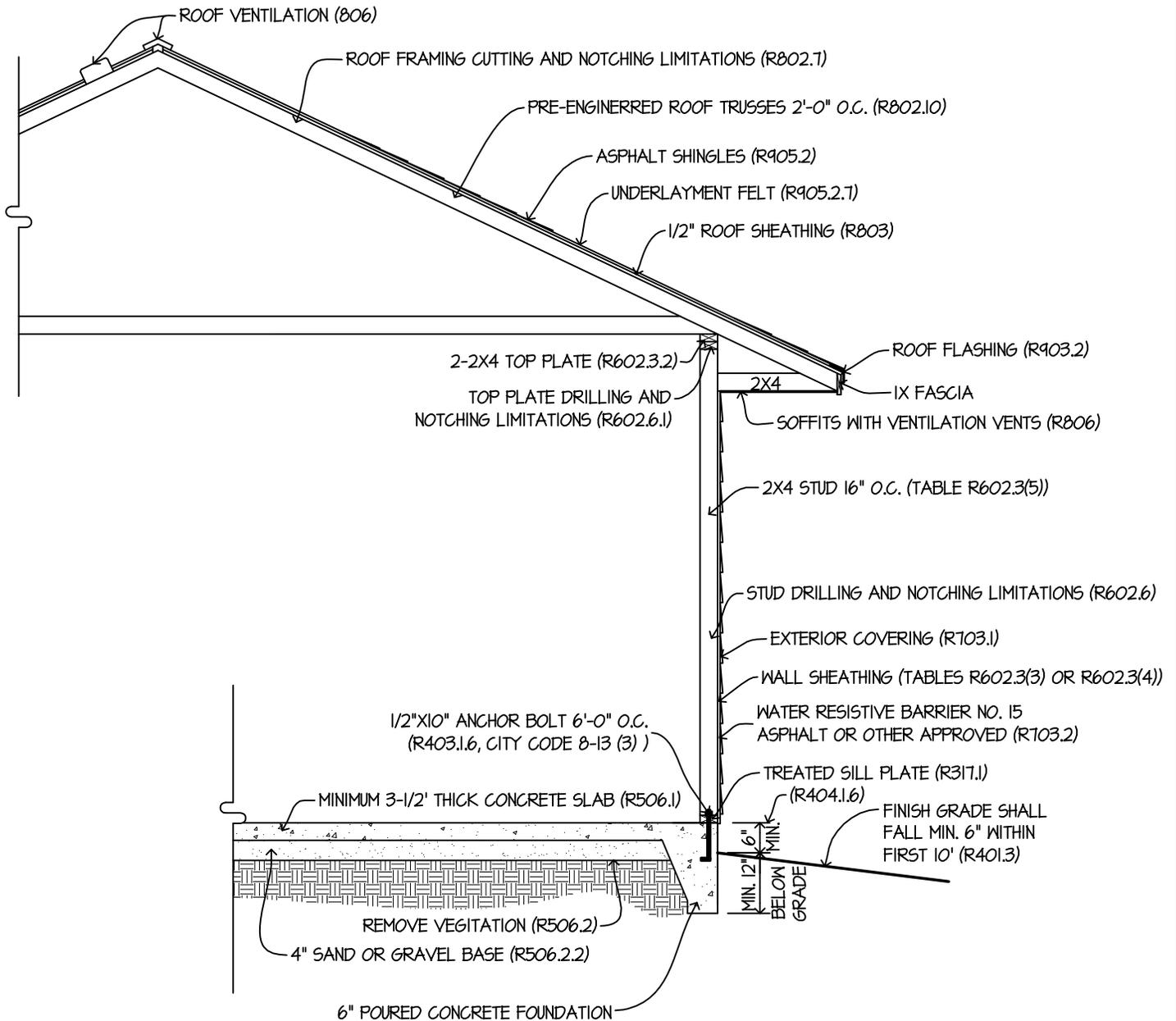
ALL CODE SECTIONS INDICATED REFERENCE THE 2012 INTERNATIONAL RESIDENTIAL CODE (IRC) AND CITY OF GRAND ISLAND CODE



**TYPICAL WALL SECTION FOR SHED  
LESS THAN 200 S.F.**

TYPICAL GARAGE/SHED WALL SECTION COMPLIMENTS OF  
BUILDING INSPECTIONS DEPARTMENT CITY OF GRAND ISLAND

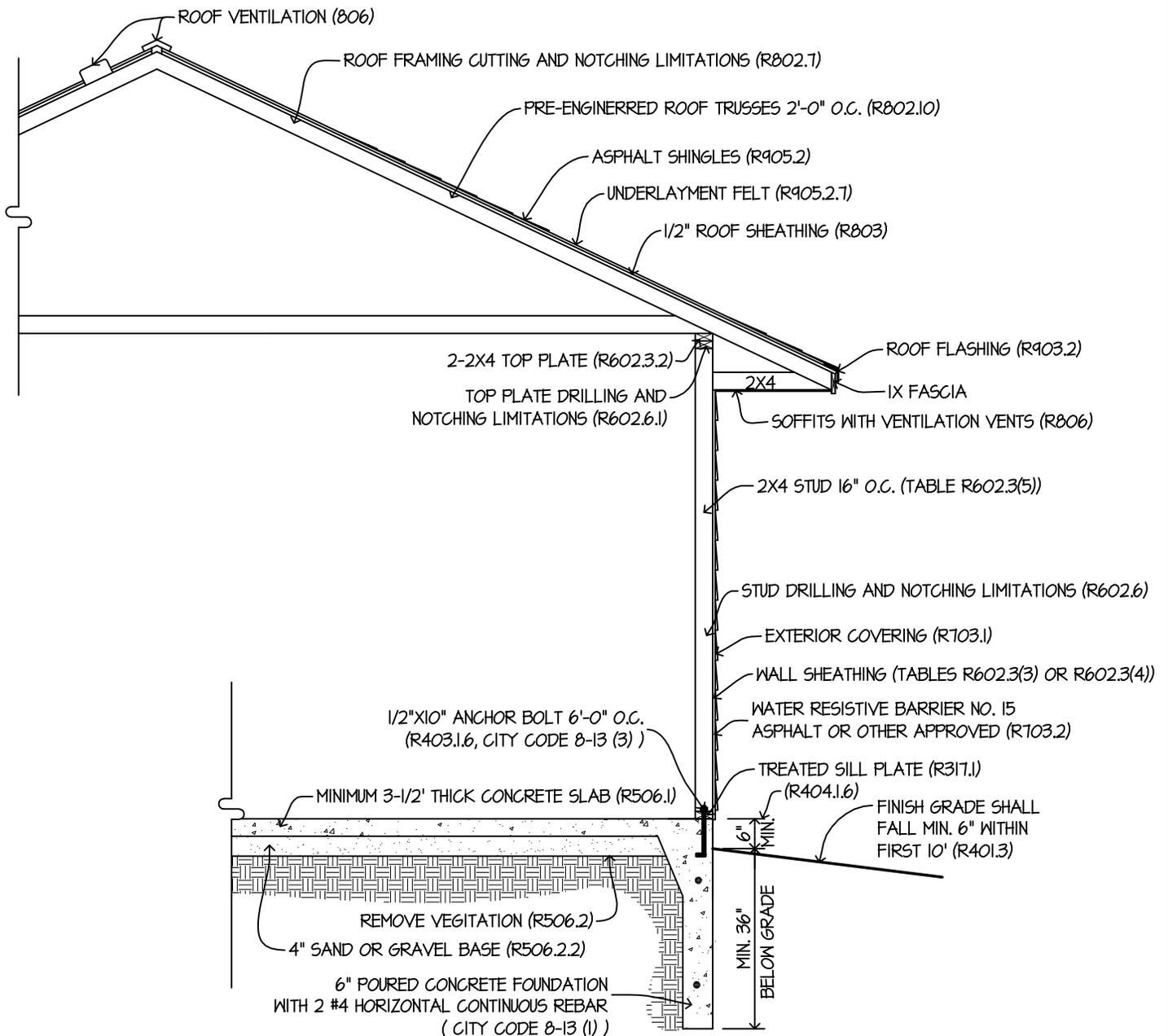
ALL CODE SECTIONS INDICATED REFERENCE THE 2012  
INTERNATIONAL RESIDENTIAL CODE (IRC) AND CITY OF GRAND  
ISLAND CODE



**TYPICAL WALL SECTION FOR GARAGE/SHED**  
**200 S.F. TO 625 S.F.**

TYPICAL GARAGE WALL SECTION COMPLIMENTS OF BUILDING INSPECTIONS DEPARTMENT CITY OF GRAND ISLAND

ALL CODE SECTIONS INDICATED REFERENCE THE 2012 INTERNATIONAL RESIDENTIAL CODE (IRC) AND CITY OF GRAND ISLAND CODE

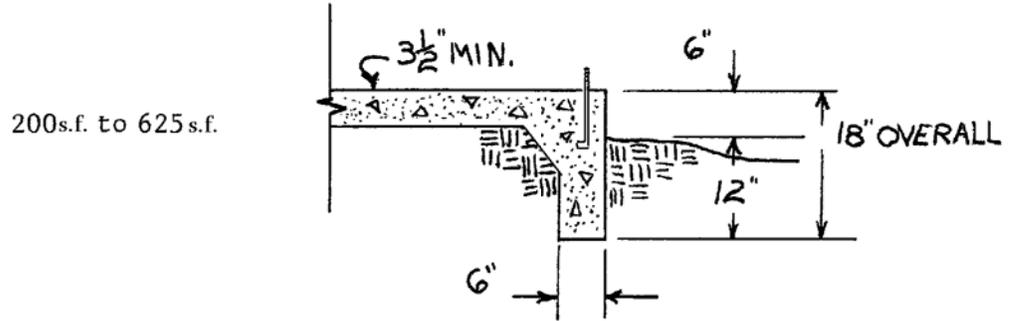


**TYPICAL WALL SECTION FOR GARAGE  
GREATER THAN 625 S.F.**

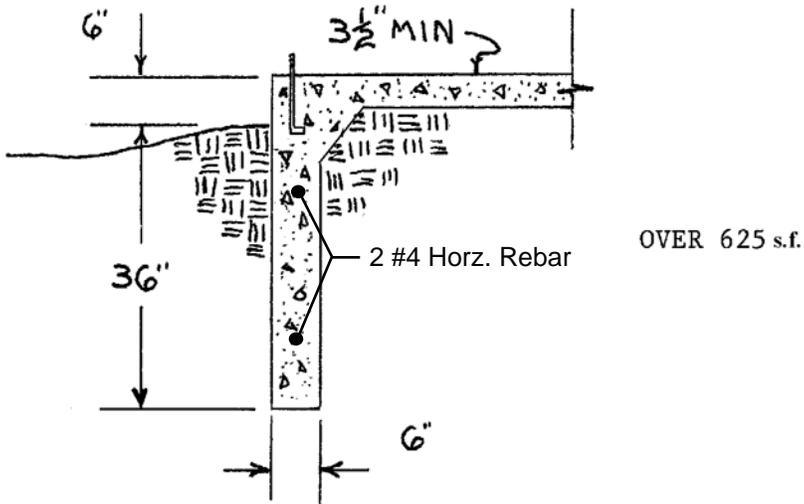
FOUNDATION REQUIREMENTS FOR DETACHED GARAGES AND SHEDS

Buildings from zero (0) to 120 square feet-no permit required but must comply to zoning.

(less than 200 s.f. use 4" min slab, no footing required)



ANCHOR BOLTS  
1/2" x 10" x 6'-0" O.C.

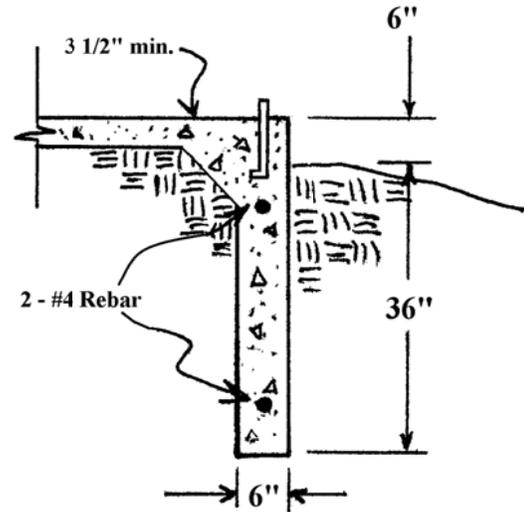


Driveways: 5" depth

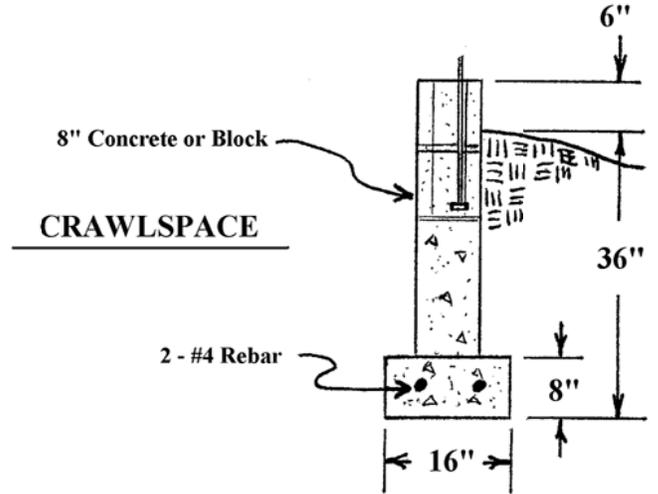
MINIMUM FOOTING AND FOUNDATION REQUIREMENTS

FOR RESIDENTIAL CONSTRUCTION

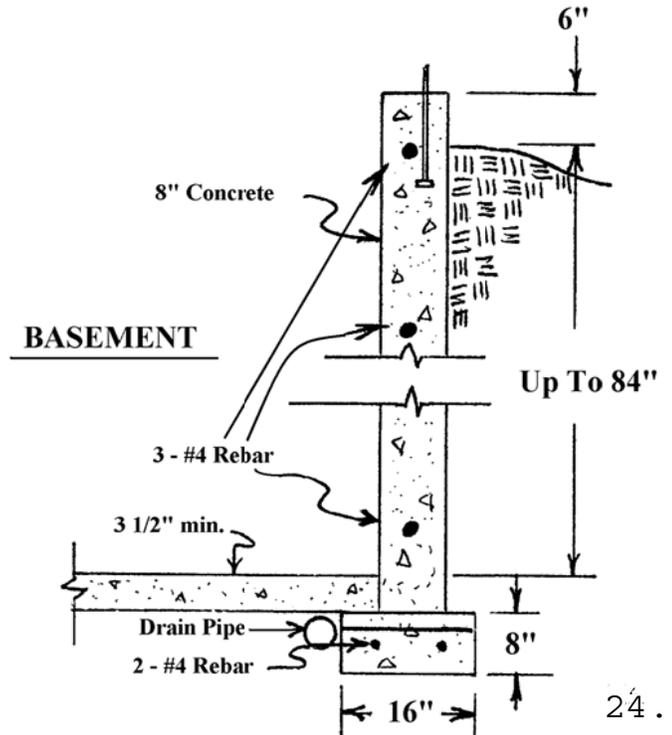
The minimum footing foundation requirement, balanced fill, for a one-story residence shall be six (6) inches in width by thirty-six (36) inches below grade, with two #4 horizontal rebar continuous.



The minimum footing foundation requirement, unbalanced fill, for a one- or two-story frame residence shall be sixteen (16) inches in width by eight (8) inches deep, with two No. 4 rebar and a minimum eight (8) inch wall of block or concrete.



8" solid concrete - 60" to 84" unbalanced fill with three (3) No. 4 rebar horizontal strands equally spaced.

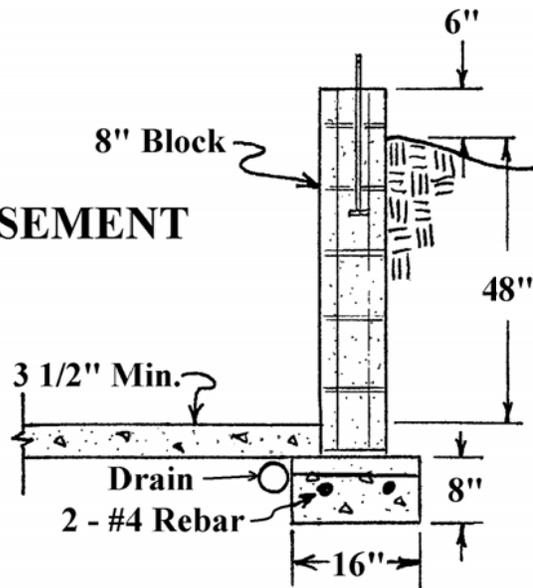


MINIMUM FOOTING AND FOUNDATION REQUIREMENTS

FOR RESIDENTIAL CONSTRUCTION - BLOCK

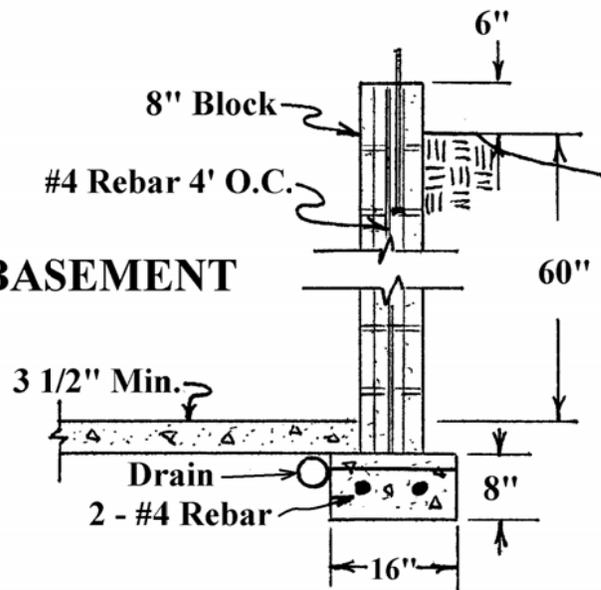
8" block - up to 48" unbalanced fill -  
no additional reinforcement requirements.

**BASEMENT**



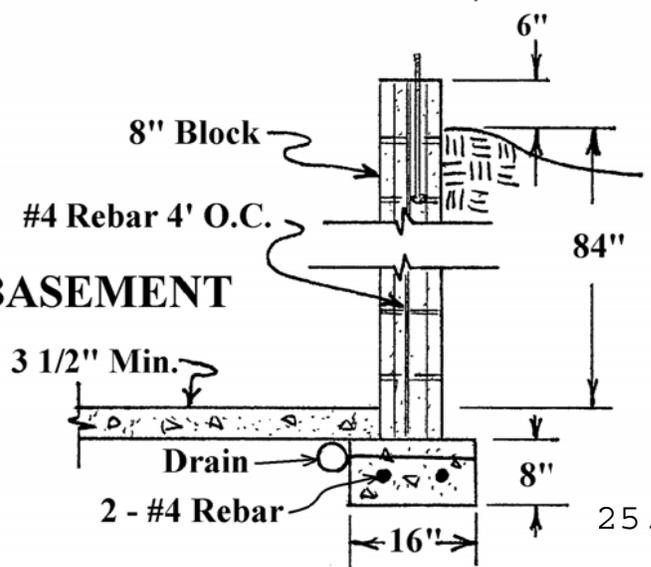
8" block - from 48" to 60" unbalanced  
fill - one #4 rebar verticle, 4' on  
center to grade height.

**BASEMENT**



8" block - from 60" to 84" unbalanced  
fill - one #4 rebar verticle, 4' on  
center to top of foundation.

**BASEMENT**



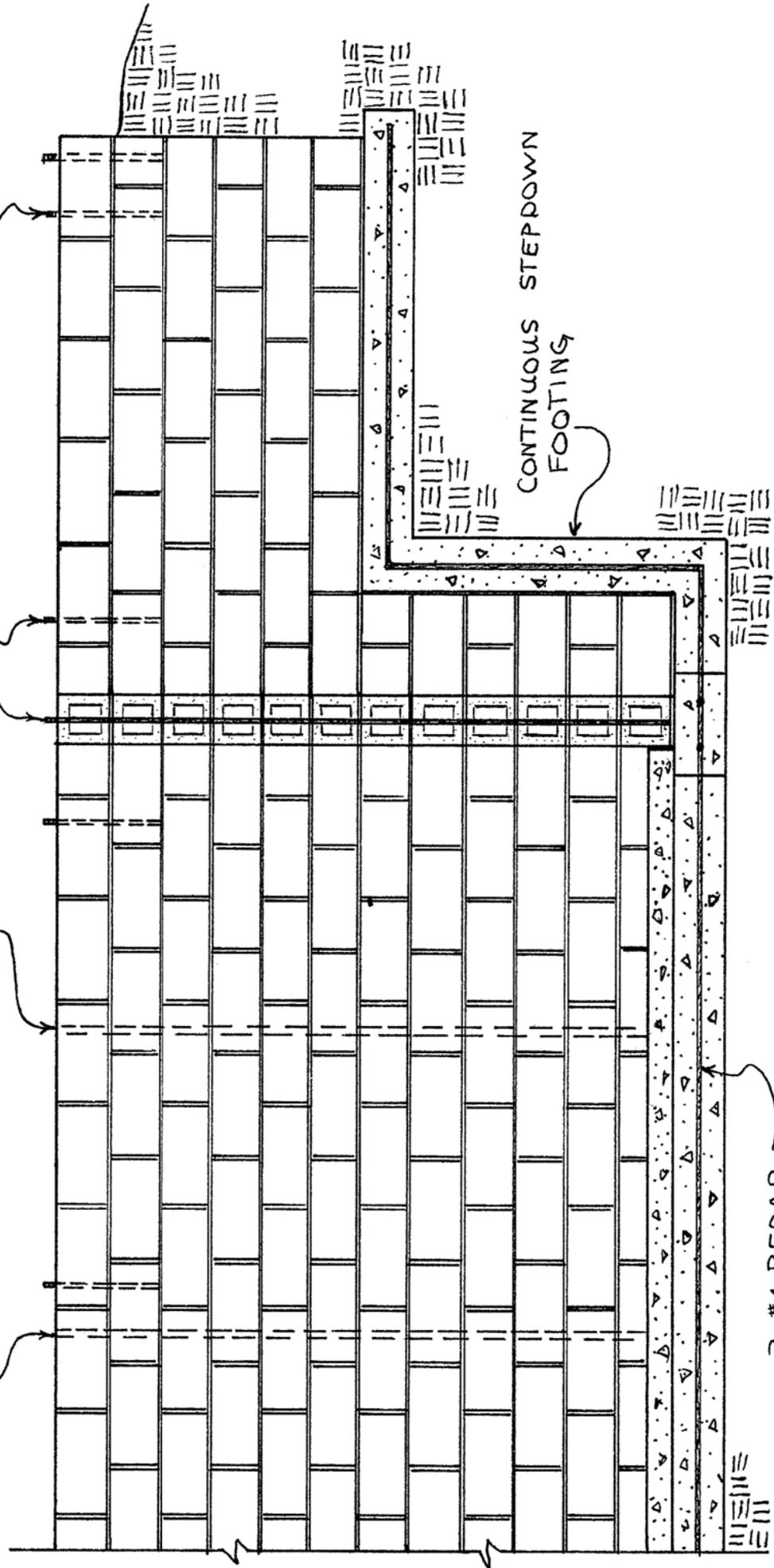
NOTE: FOOTINGS TO BE CONTINUOUS UNDER GARAGE DOOR OPENING.

SLUSH WITH MORTAR  
1-#4 VERTICAL REBAR 4'-0" O.C.  
TO TOP OF FOUNDATION.

1/2" x 15" ANCHOR BOLTS

CONTINUOUS STEPPED  
FOOTING

2-#4 REBAR

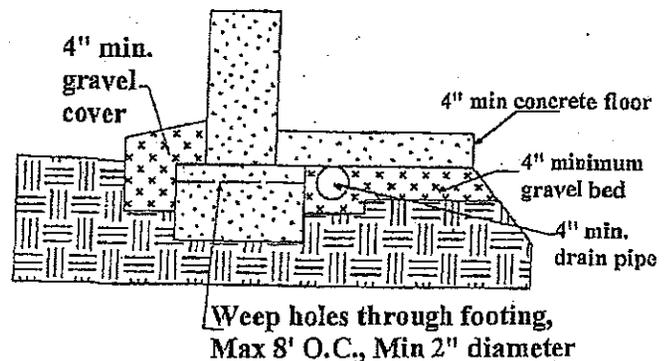
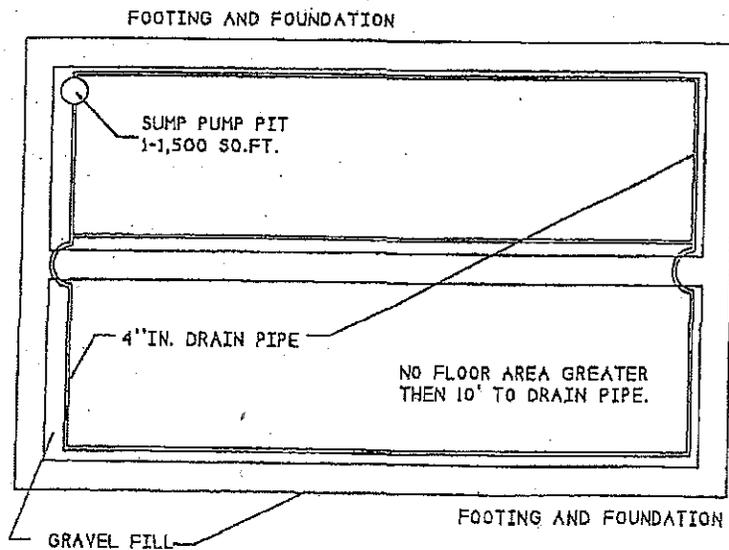


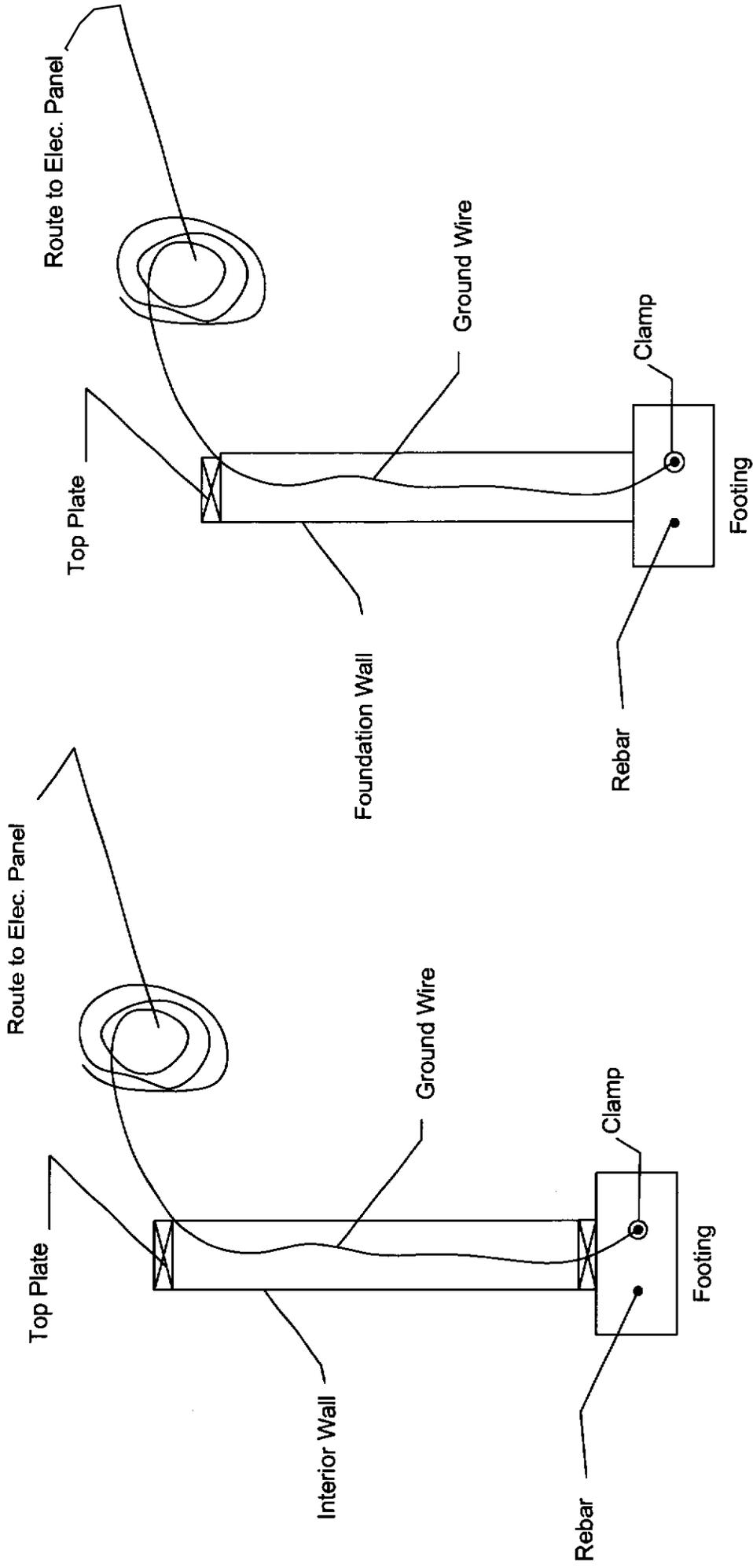
CHANGE IN ELEVATION OF FOOTING

**Section 8-14, City Code : Subsurface Drainage Systems**

All buildings constructed with basements or floor levels twenty-four inches (24") or more below the elevation of the center line of the adjacent public street shall be provided with a subsurface drainage system. A subsurface drainage system shall consist of the minimum following elements:

1. Minimum four inch (4") diameter perforated or scored drain pipe embedded in four inches (4") of course gravel installed around the inside of the perimeter footing such that no floor location is greater than ten feet (10') to such drain pipe.
2. Minimum fifteen inch (15") diameter by thirty inch (30") deep sump pump pit; one pit for each one thousand five hundred (1,500) square feet of floor area to be drained.
3. Minimum two inch (2") diameter weep holes through the footing at eight foot (8') on center intervals with a minimum of four inch (4") gravel cover on the exterior of the footing.
4. Minimum four inch (4") gravel bed under floor slab.
5. A three inch (3") minimum diameter pipe shall be installed through the floors and into the attic, capped and sealed to facilitate a future soil gas ventilation system.





**Center Bearing Wall**

**Foundation Wall**

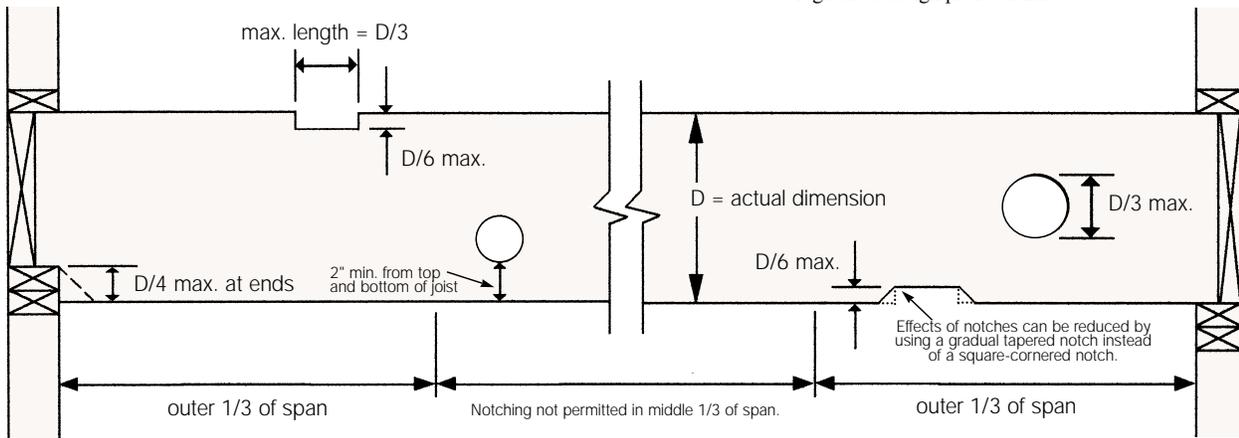
## 2011 NEC Foundation Grounding

# NOTCHING & BORING GUIDE FOR FLOOR JOISTS & STUD WALLS IN CONVENTIONAL LIGHT-FRAME CONSTRUCTION

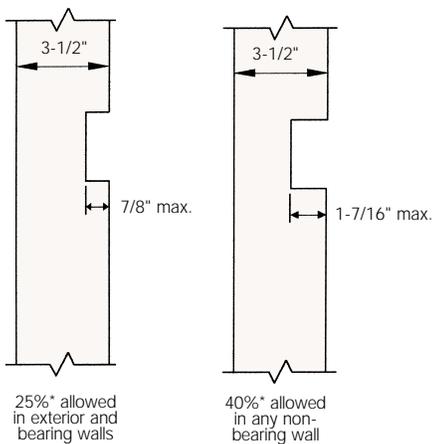
**Table 1:** Maximum Sizes for Cuts in Floor Joists

Joist Size	Max. Hole	Max Notch Depth	Max. End Notch
2x4	none	none	none
2x6	1-1/2"	7/8"	1-3/8"
2x8	2-3/8"	1-1/4"	1-7/8"
2x10	3"	1-1/2"	2-3/8"
2x12	3-3/4"	1-7/8"	2-7/8"

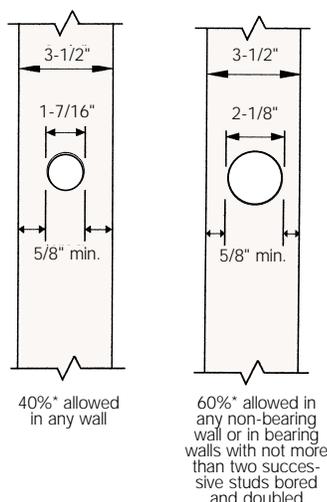
**Fig. 1:** Placement of Cuts in Floor Joists



**Fig. 2:** Notches in 2x4 Studs



**Fig. 3:** Bored Holes in 2x4 Studs



\*Figures 2 and 3 illustrate 25%, 40% and 60% notches or holes in 2x4s (e.g. .25 x 3 1/2" = .875 or 7/8"). These percentages apply to studs of any size.

R502.8 Drilling and notching. Structural floor members shall not be cut, bored or notched in excess of the limitations specified in this section. See Figure 1.

R502.8.1 Sawn lumber. Notches in solid lumber joists, rafters and beams shall not exceed one-sixth of the depth of the member, shall not be longer than one-third of the depth of the member and shall not be located in the middle one-third of the span. Notches at the ends of the member shall not exceed one-fourth the depth of the member. The tension side of members 4 inches (102 mm) or greater in nominal thickness shall not be notched except at the ends of the members. The diameter of holes bored or cut into members shall not exceed one-third the depth of the member. Holes shall not be closer than 2 inches (51 mm) to the top or bottom of the member, or to any other hole located in the member. Where the member is also notched, the hole shall not be closer than 2 inches (51 mm) to the notch.

R502.8.2 Engineered wood products. Cuts, notches and holes bored in trusses, structural composite lumber, structural glue-laminated members or I-joists are prohibited except where permitted by the manufacturer's recommendations or where the effects of such alterations are specifically considered in the design of the member by a registered design professional.

R602.6 Drilling and notching-studs. Drilling and notching of studs shall be in accordance with the following:

1. Notching. Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeding 25 percent of its width. Studs in nonbearing partitions may be notched to a depth not to exceed 40 percent of a single stud width.

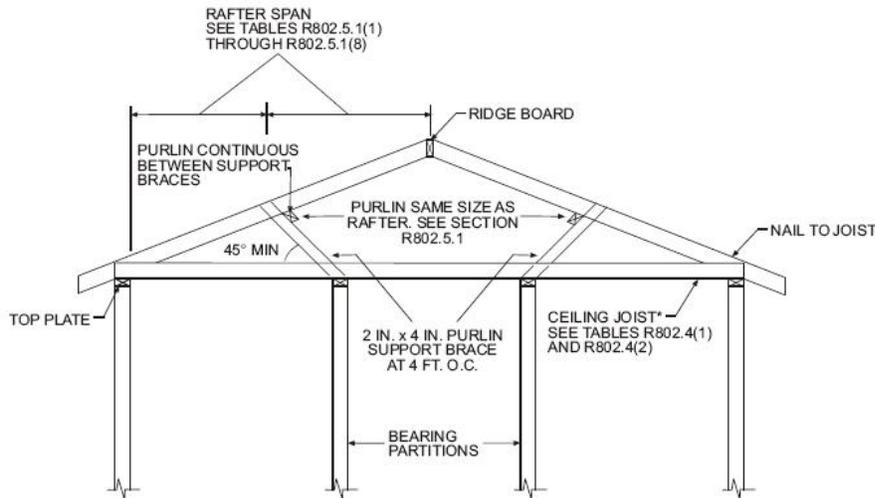
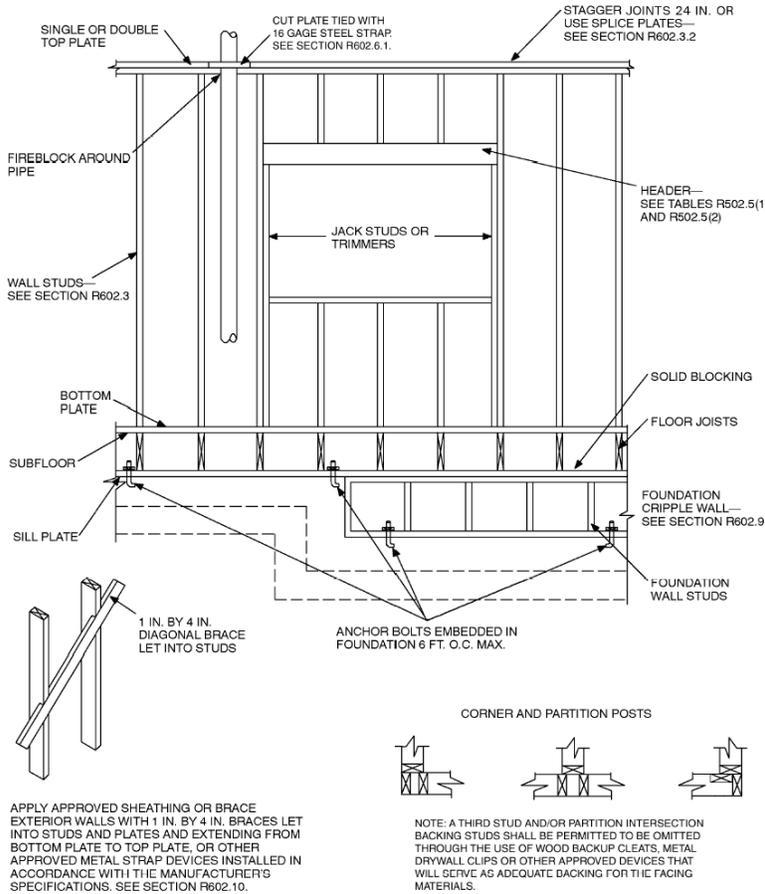
2. Drilling. Any stud may be bored or drilled, provided that the diameter of the resulting hole is no more than 60 percent of the stud width, the edge of the hole is no more than 5/8 inch (16 mm) to the edge of the stud, and the hole is not located in the same section as a cut or notch. Studs located in exterior walls or bearing partitions drilled over 40 percent and up to 60 percent shall also be doubled with no more than two successive doubled studs bored. See Figures R602.6(1) and R602.6(2).

Exception: Use of approved stud shoes is permitted when they are installed in accordance with the manufacturer's recommendations.

R602.6.1 Drilling and notching of top plate. When piping or ductwork is placed in or partly in an exterior wall or interior load-bearing wall, necessitating cutting, drilling or notching of the top plate by more than 50 percent of its width, a galvanized metal tie not less than 0.054 inch thick (1.37 mm) (16 ga) and 11/2 inches (38 mm) wide shall be fastened across and to the plate at each side of the opening with not less than eight 10d (0.148 inch diameter) having a minimum length of 11/2 inches (38 mm) at each side or equivalent. The metal tie must extend a minimum of 6 inches past the opening. See Figure R602.6.1.

Exception: When the entire side of the wall with the notch or cut is covered by wood structural panel sheathing.

**FIGURE R602.3(2) TYPICAL WALL, FLOOR AND ROOF FRAMING**



**Note:** Where ceiling joints run perpendicular to the rafters, rafter ties shall be nailed to each rafter near the top of the ceiling joist.

## TYPICAL SPANS FOR COMMON LUMBER

### FLOOR JOIST

40# Per Sq. Ft. Live Load

Size & Spacing	E	Fb	Span
2 x 10 / 12.0	1.3	990	16' - 10"
2 x 10 / 16.0	1.3	1090	15' - 3"
2 x 10 / 24.0	1.3	1250	13' - 4"

### CEILING JOIST

10# Per Sq. Ft. Live Load

Size & Spacing	E	Fb	Span
2 x 4 / 12.0	1.3	980	11' - 7"
2 x 4 / 16.0	1.3	1080	10' - 6"
2 x 4 / 24.0	1.3	1240	9' - 2"

### LOW SLOPE RAFTERS

3 in 12 or Less

30# Per Sq. Ft. Live Load

(No Ceiling Load)

Size & Spacing	E	Fb	Span
2 x 6 / 12.0	1.21	1200	12' - 4"
2 x 6 / 16.0	1.05	1200	10' - 8"
2 x 6 / 24.0	.08	1200	8' - 8"

### HIGH SLOPE RAFTERS

Over 3 in 12

30# Per Sq. Ft. Live Load

(Heavy Roof Covering)

Size & Spacing	E	Fb	Span
2 x 6 / 12.0	.76	1200	11' - 7"
2 x 6 / 16.0	.66	1200	10' - 0"
2 x 6 / 24.0	.54	1200	8' - 2"

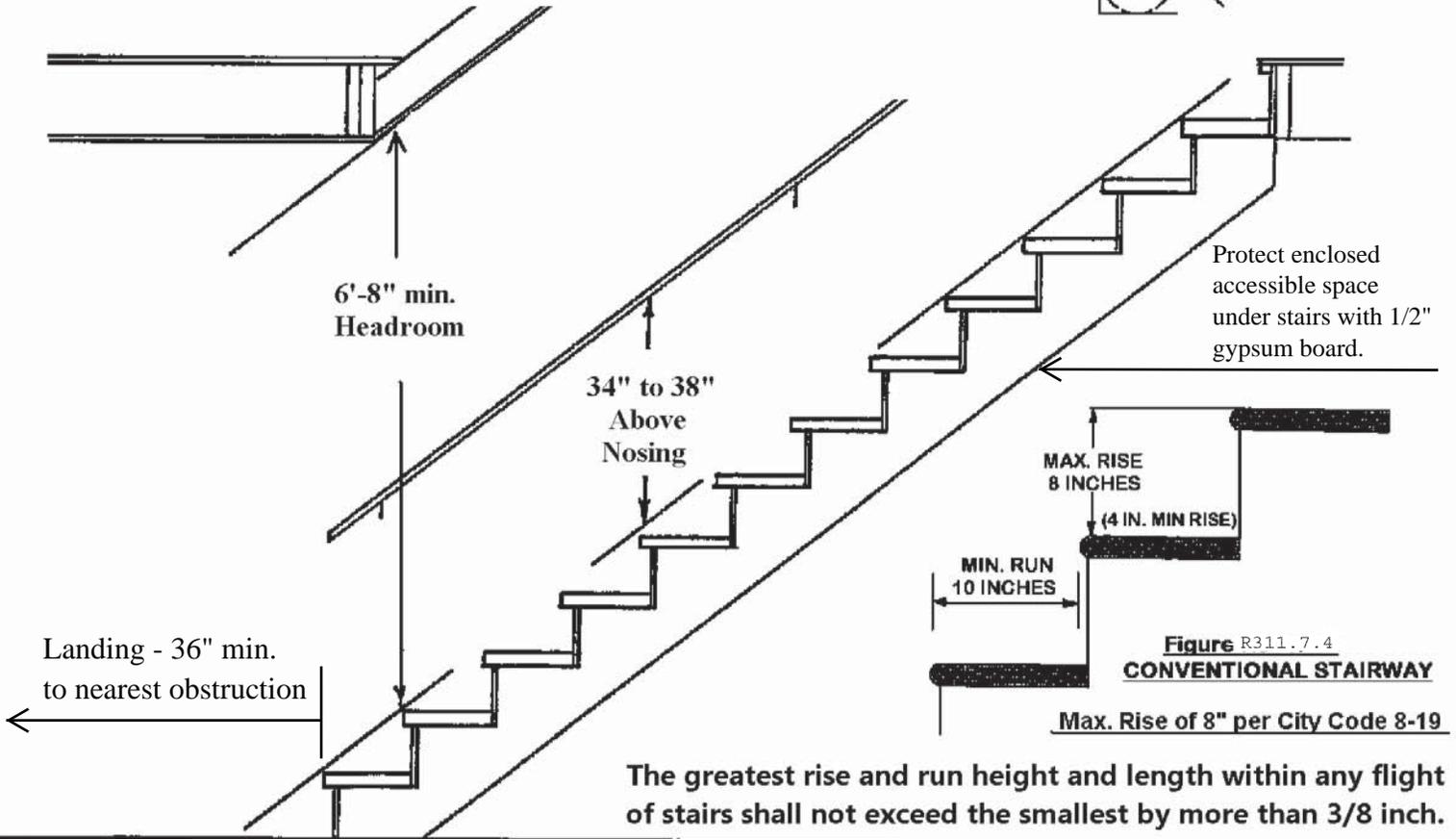
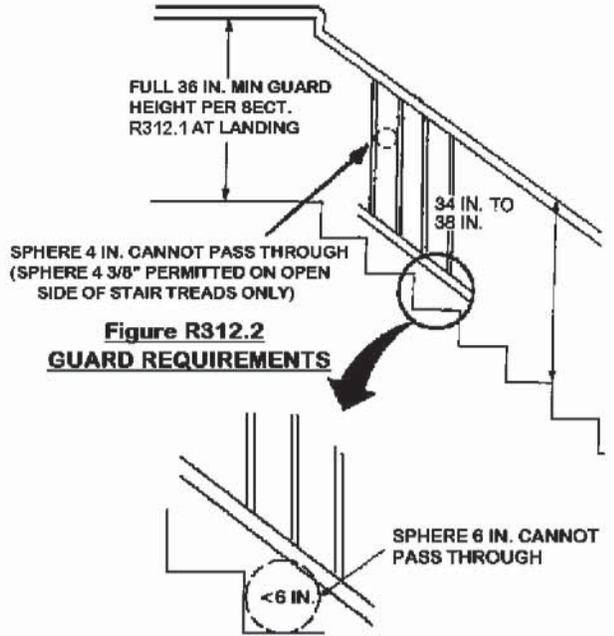
\*E – The required modulus of elasticity in 1,000,000 pounds per square inch.

\*Fb – The allowable extreme fiber stress in bending in pounds per square inch.

# TYPICAL RESIDENTIAL STAIRWAY DETAIL

The handgrip portion of handrails shall not be less than 1-1/4 inches or more than 2 inches in cross-sectional dimension or the shape shall provide an equivalent gripping surface. The handgrip portion of handrails shall have a smooth surface with no sharp corners. Handrails projecting from a wall shall have a space of not less than 1-1/2 inches between the wall and the handrail.

**HEADROOM** Every stairway shall have a headroom clearance of not less than 6 feet 8 inches. Such clearance shall be measured vertically from a plain parallel and tangent to the stairway tread nosings to the soffit above at all points.

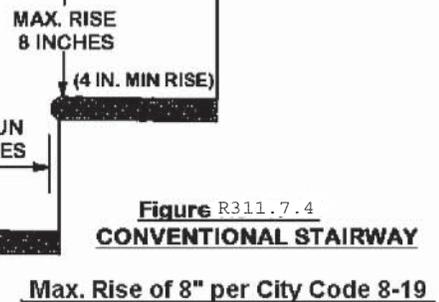


**STAIR STRINGER** - 8" MAX. RISE  
-10" MIN. RUN

Run is measured horizontal from nosing to nosing.

Handrails are required on every stairway with more than 3 risers not less than 34 inches nor more than 38 inches above the nosing or the treads.

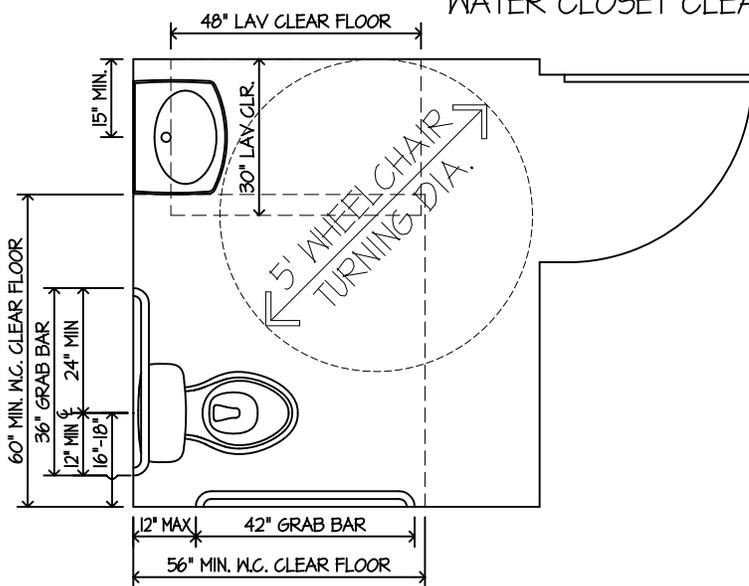
Guardrails are required on the sides of open stairways.



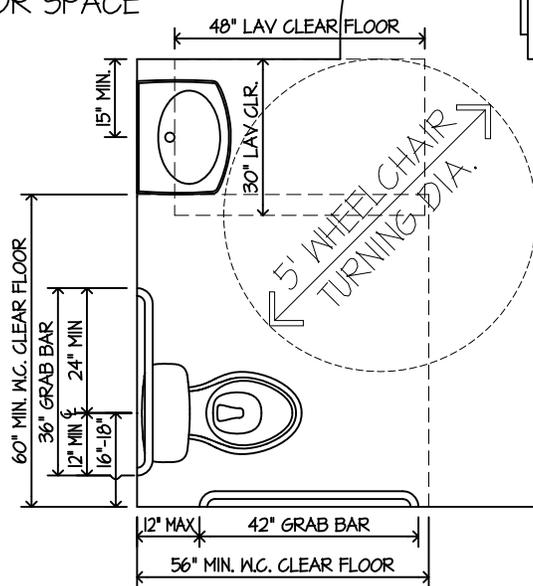
The greatest rise and run height and length within any flight of stairs shall not exceed the smallest by more than 3/8 inch.

# EXAMPLES OF SINGLE USER ACCESSIBLE RESTROOMS

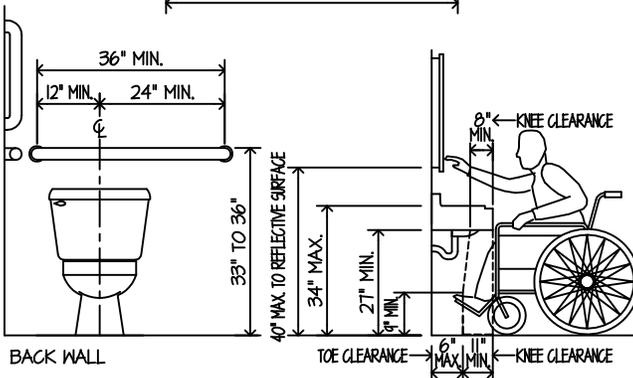
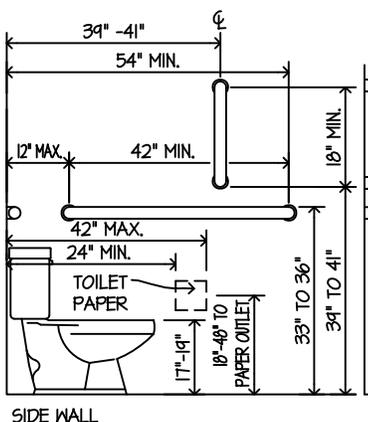
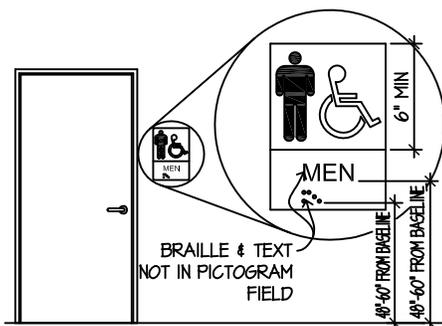
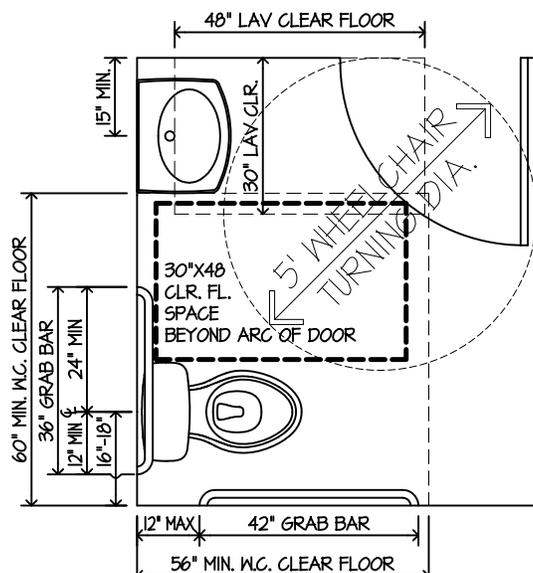
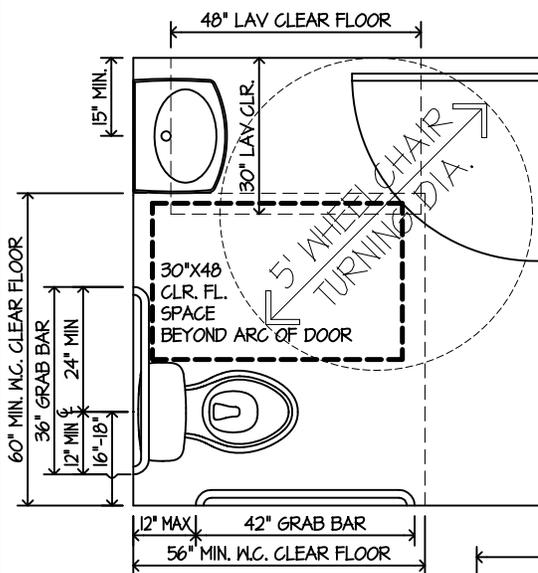
LAVATORY SHALL NOT ENCRoACH INTO WATER CLOSET CLEAR FLOOR SPACE



**FRONT APPROACH**



**SIDE APPROACH**



5' TURNING DIAMETER AND CLEAR FLOOR SPACE FOR FIXTURES SHOWN. DOOR SWING SHALL NOT ENCRoACH CLEAR FLOOR SPACE FOR FIXTURES UNLESS ROOM IS FOR INDIVIDUAL USE AND IS PROVIDED WITH A 30"X48" CLEAR FLOOR SPACE WITHIN THE ROOM BEYOND THE ARC OF THE DOOR SWING (PER ICC/ANSI A117.1-2009 SEC. 603.2.2 EXCPTION. 2).

## Setbacks and Fences

### §36-100. Fences and Hedges; Corner Visibility

(A) There shall be no fences, hedges, or other continuous foliage higher than 36 inches above roadway surface except that trees of a greater height may be permitted if all foliage is removed to a height of five feet above the base of such tree within the sight triangle.

(B) **Fences and Hedges; Other Visibility.** On portions of a lot not covered by the corner visibility restriction, the height of fences, hedges, and foliage, continuous five feet or more, shall be limited in the following manner:

(1) Maximum front yard fence height of thirty-six (36) inches for solid fences (including picket, palisade, fabric weave chain link, "good neighbor", solid planking fencing styles).

(2) Maximum front yard fence height of forty-eight (48) inches for open fences (including chain link, split rail, or wrought iron, where spacing/thickness of fence construction materials allows for an essentially unobstructed view.

(3) Maximum front yard hedge/foliage height of thirty-six (36) inches.

(4) On all other portions of lot lines, fences, hedges and other foliage, barriers may not exceed a height of ninety-six (96) inches.

(C) **Fences and Hedges; Height.** Fences, hedges, and other continuous foliage erected within the building portions of a zoning lot may conform with the height limits of such buildings but shall be subject to any building code provisions which may be applicable for buildings.

(D) **Fences and Hedges; Measurement.** Height of fences, hedges or other continuous foliage shall be measured from the nearest top of roadway surface or the official established grade thereof, whichever is the higher.

(E) **Fences and Hedges; Exceptions.** The city council may direct as a condition for granting a conditional use that fences, hedges, or other continuous foliage of a height and location in excess of these regulations be placed; provided, that no such approval shall have the effect of reducing corner visibility as provided for herein.

Amended by Ordinance No. 8947, effective 1-5-2005

### §36-21. Obstructions to Vision at Street Intersections Prohibited

Obstructions on corner lots that impede vision in the sight triangle are prohibited. The requirements of this section shall not be deemed to prohibit any necessary retaining wall.

### §36-22. Yard Requirements

(C) Front Yard: There shall be a front yard setback as required herein, provided, that where fifty percent or more of the frontage on one street in any block is built up with buildings, no new building setback shall be less than either the required setback or the setback of any existing building which next exceeds the required setback, whichever is greater. This regulation shall not require a setback of more than 50 feet.

Amended by Ordinance No. 8947, effective 1-5-2005

### §36-25. Permitted Obstructions in Required Yards

The following shall not be considered to be obstructions when located in the required yards:

(A) **All Yards:** Steps and accessibility ramps used for wheelchair and other assisting devices which are four (4) feet or less above grade which are necessary for access to a permitted building or for access to a lot from a street or alley; chimneys and window wells projecting twenty-four (24) inches or less into the yard; approved freestanding signs; arbors and trellises; flag poles; window unit air conditioners projecting not more than eighteen (18) inches into the required yard; and fences or walls subject to applicable height restrictions are permitted in all yards.

(B) **Front Yards:** Bay windows projecting three (3) feet or less into the yard are permitted.

*Rear and Side Yards:* Open off-street parking spaces or outside elements of central air conditioning systems.

Amended by Ordinance No. 8947, effective 1-5-2005

### §36-26. Projections from Buildings

(A) Cornices, eaves, canopies, belt courses, sills, ornamental features, and other similar architectural features may project not more than one (1) foot into any required yard or into any required open space, except that eaves may encroach three (3) feet into a yard when such yard is ten (10) feet or more in width, provided that such required yard or open space meets the current minimum yard standards.

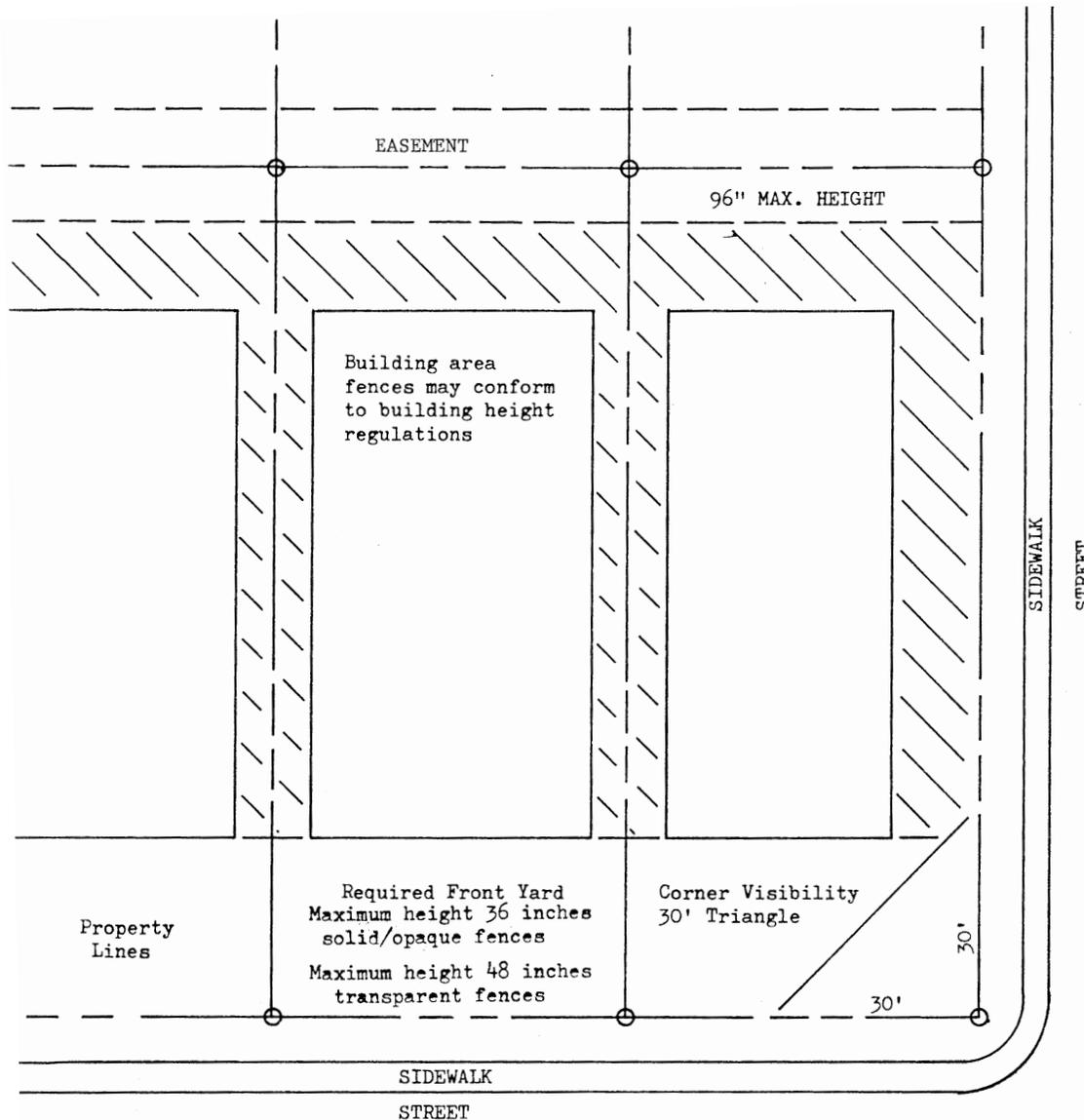
(B) Open, uncovered porches or terraces may extend three feet into any required side yard, ten feet into any required front yard, and any distance into any required rear yard. No railing or other barrier higher than 42 inches shall be placed on such porch or terrace within five feet of any property line except as provided within this ordinance. Any such porch or terrace located on a lot at the intersection of two streets or a street and an alley shall comply with the provisions designed to insure proper sight distances as set forth in this chapter for fences and hedges. A covered porch or terrace, not exceeding sixty square feet, may extend a maximum of six feet into the required front or rear yard, provided, such porch or terrace shall not be enclosed except by a railing or other barrier as previously mentioned.

(C) Provided further, that no railing or other barrier shall be placed around such deck or porch in a rear yard or side yard and no such barrier which interferes appreciably (more than twenty-five (25) percent) with the passage of light or air shall be constructed within the required front yard or within five (5) feet of any side or rear yard lot line. Any such deck or porch when located on a lot at the intersection of two (2) streets or a street and an alley, shall comply with the provisions designed to ensure proper sight distances as set forth in this code for fences and hedges. Any side yard on a corner lot when such yard is twenty (20) feet or more in width, may be considered as a front yard for purposes of determining permitted encroachments as provided herein.

(D) Vertical supports shall meet the City's Building Code.

Amended by Ordinance No. 8976, effective 06-08-2005

Amended by Ordinance No. 9202, effective 02-15-2009



**§20-11. Obstructing Public Right-of-Way**

(A) It shall be illegal for any person, corporation or entity to erect, plant, place, or maintain, fences, hedges, shrubbery, or other natural or man-made objects or structures on any public right-of-way which interfere with or are hazardous to the City's or the general public's use of the right-of-way. No such objects may be placed on any public right-of-way without the prior consent of the City.

(B) When the City discovers any objects on the city right-of-way as described in Subsection (A) herein, the City will notify the adjacent property owner or tenant that said objects shall be removed immediately upon giving personal notice or posting the property.

(C) Any objects not removed pursuant to Subsections (A) and (B) herein may be removed by city personnel and taken to the Grand Island Police Department impoundment facility or such other facility as the city deems appropriate for storing said objects. If the objects are not claimed by the owners within thirty days after being placed in storage, then the city may dispose of the property as it deems appropriate. If said objects are auctioned, the City may retain sufficient funds to pay all of the expenses of removal from the right-of-way and storage. Any person who has items removed from the right-of-way by the City shall pay a daily storage fee, the cost of disposal and an administrative fee of \$50.00.

Amended by Ordinance No. 8936, effective 10-13-2004

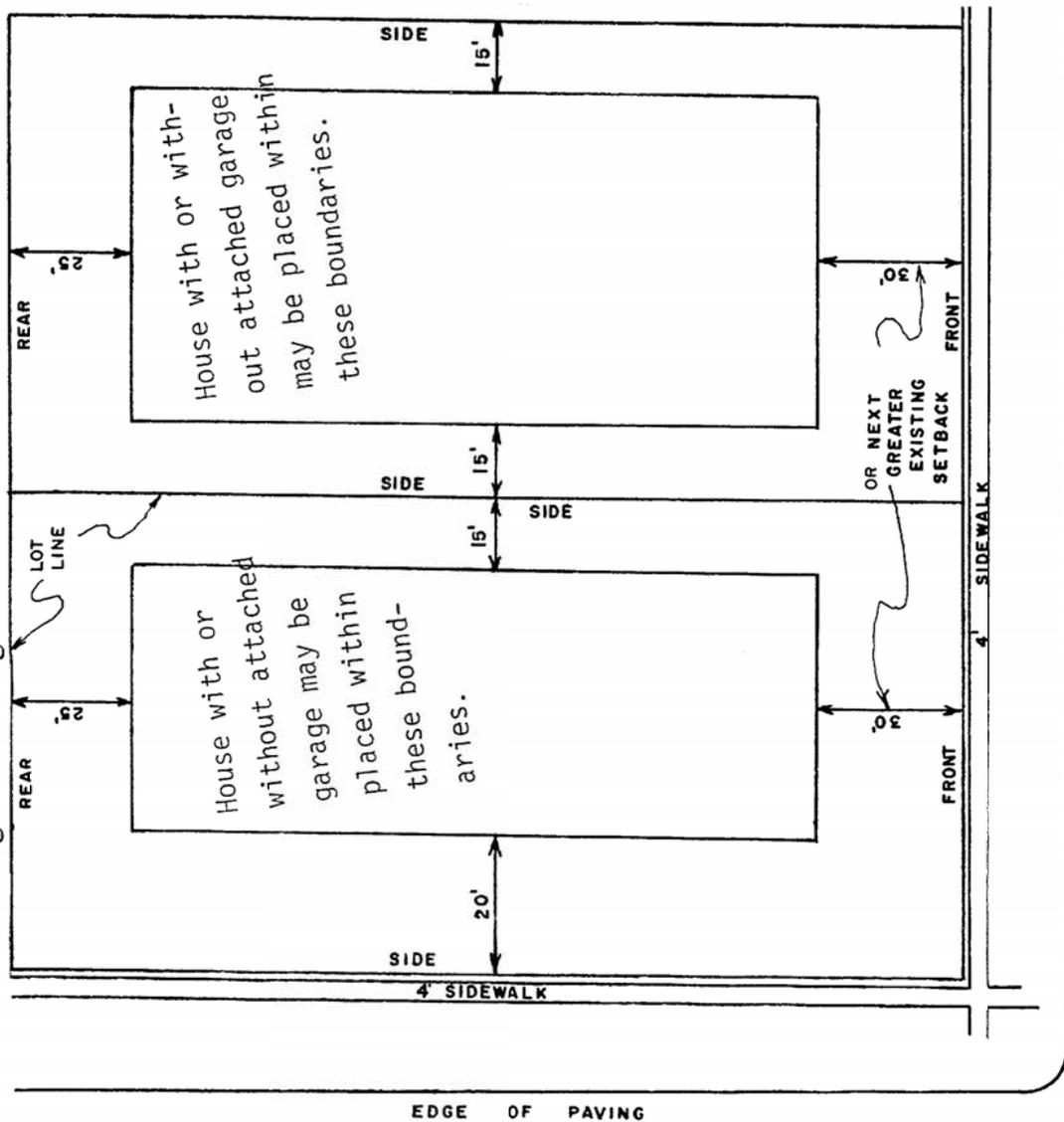
**§20-12. Obstructing Public Easement**

It shall be unlawful for the owner, tenant, or person in charge of private property to erect, plant, place, or maintain trees, fences, hedges, shrubbery, or other natural or man-made objects or structures on any portion of said property on which the City has an easement, where the said object will interfere in any way with the City's rights under the easement in effect.

## SPACE LIMITATIONS

- Minimum lot area per dwelling unit: 20,000 square feet.
- Minimum lot width: 100 feet.
- Maximum height of building: 35 feet.
- Minimum front yard: 30 feet.
- Minimum rear yard: 25 feet.
- Minimum side yard: 15 feet; a corner lot shall have a minimum setback of 20 feet adjacent to the side street
- Maximum ground coverage: 25%.

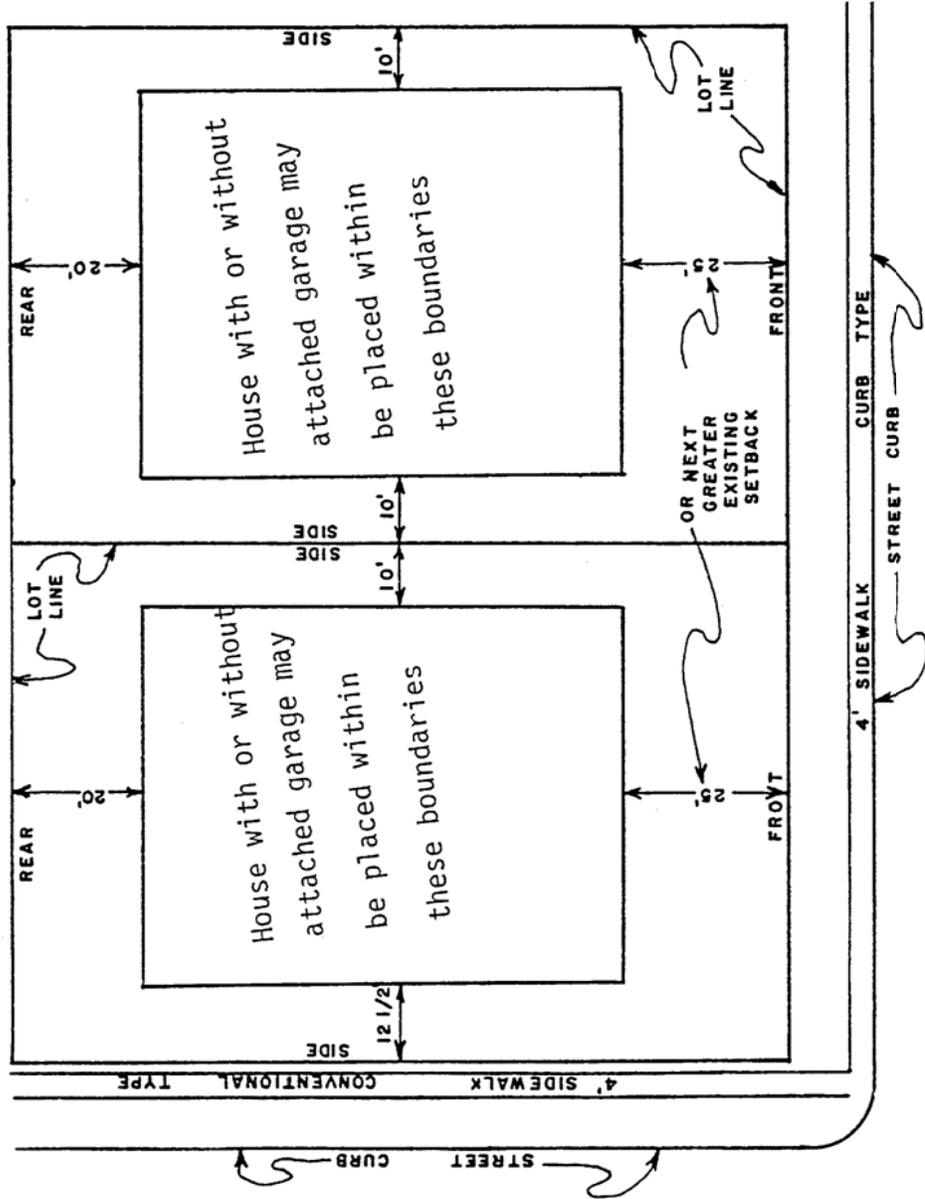
## LLR (Large Lot Residential)



## SPACE LIMITATIONS

- Minimum lot area per dwelling unit: 9,000 square feet.
- Minimum lot width: 70 feet.
- Maximum height of building: 35 feet.
- Minimum front yard: 25 feet.
- Minimum rear yard: 20 feet.
- Minimum side yard: 10 feet; a corner lot shall have a minimum setback adjacent to the side street equal to 50% of the required front yard.
- Maximum ground coverage: 30%.

## R1 (Suburban Residential Zone)

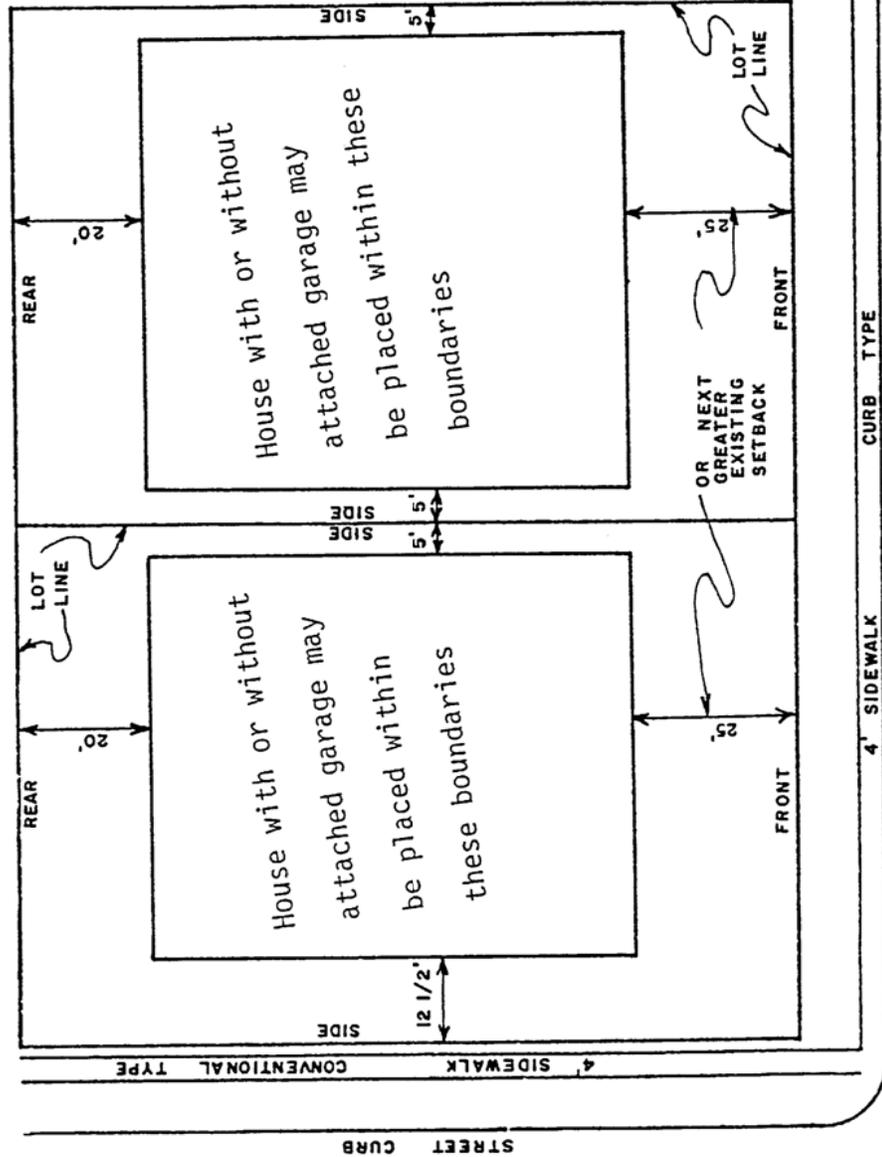


## CITY OF GRAND ISLAND ZONING ORDINANCE

### RESIDENTIAL SETBACKS FROM LOT LINES AND CORNER LOTS

## SPACE LIMITATIONS

- Minimum lot area per dwelling unit: 6,000 square feet.
- Minimum lot width: 50 feet.
- Maximum height of building: 35 feet.
- Minimum front yard: 25 feet.
- Minimum rear yard: 20 feet.
- Minimum side yard: 5 feet; a corner lot shall have a minimum setback adjacent to the side street equal to 50% of the required front yard.
- Maximum ground coverage: 35%.



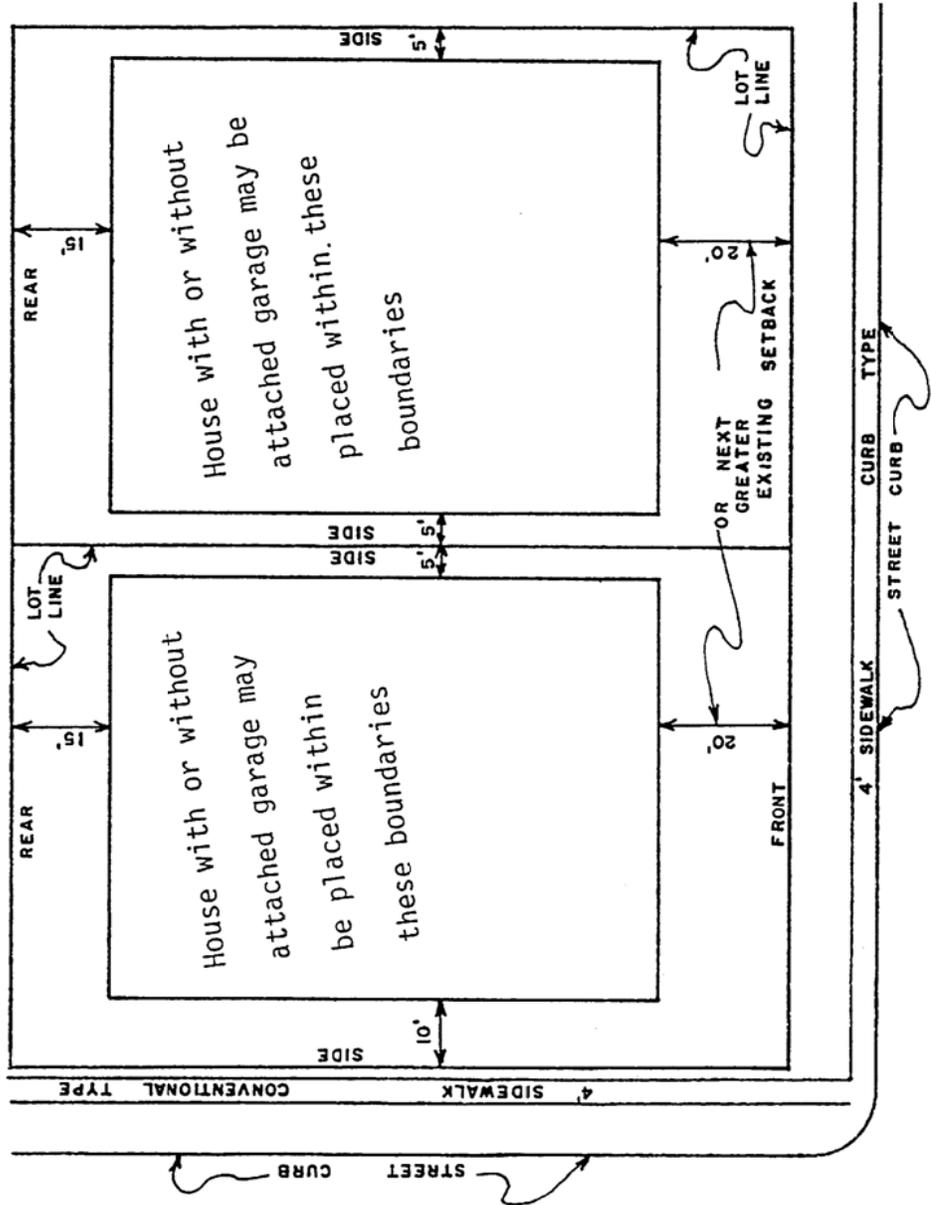
## R2 (Low Density Residential Zone)

### CITY OF GRAND ISLAND ZONING ORDINANCE

### RESIDENTIAL SETBACKS FROM LOT LINES AND CORNER LOTS

## SPACE LIMITATIONS

- Minimum lot area per dwelling unit: 3,000 square feet.
- Minimum zoning lot: 6,000 square feet.
- Minimum lot width: 50 feet.
- Maximum height of building: 35 feet.
- Minimum front yard: 20 feet.
- Minimum rear yard: 15 feet.
- Minimum side yard: 5 feet; except a corner lot shall have a 10 foot setback adjacent to street.
- Maximum ground coverage: 50%.



## R3 (Medium Density Residential Zone)

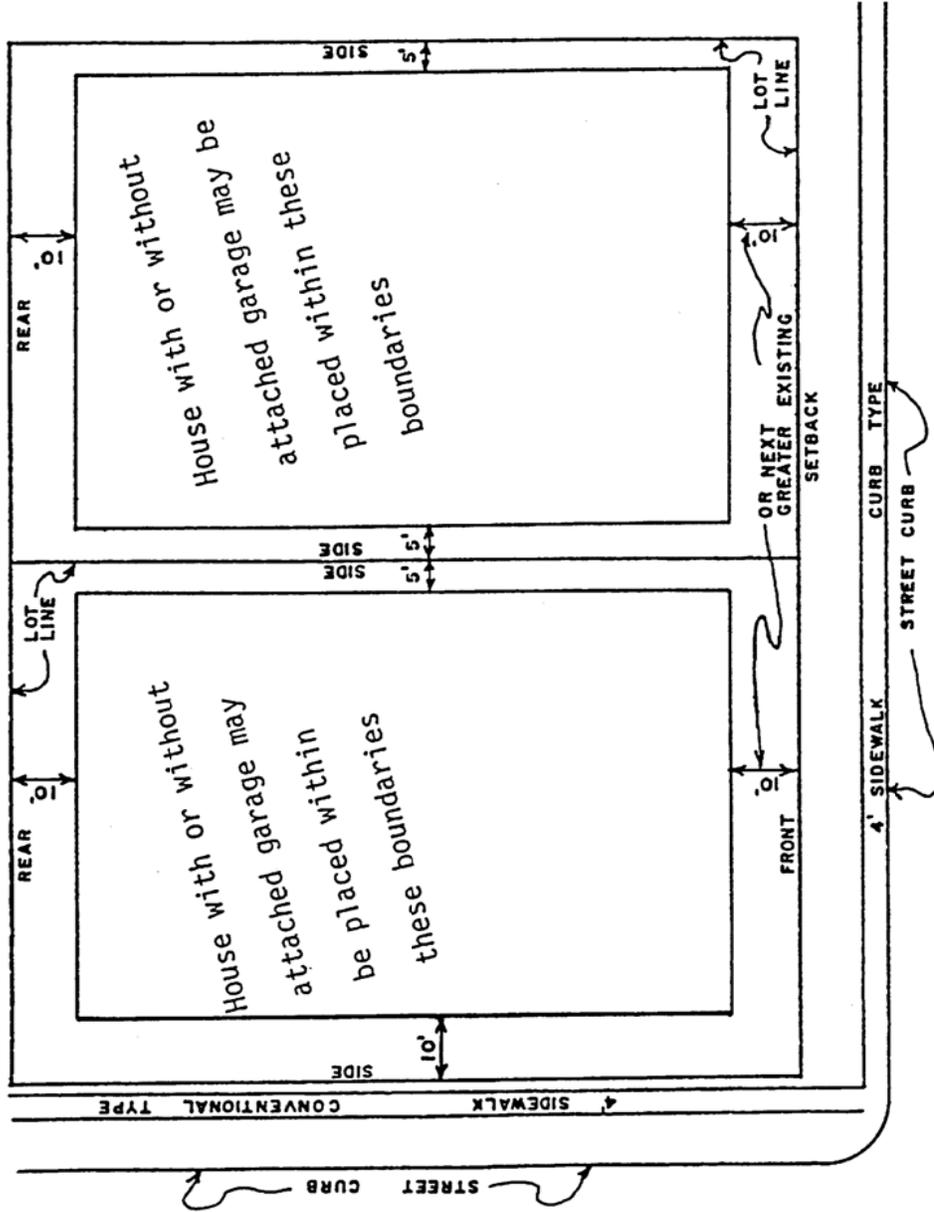
### CITY OF GRAND ISLAND ZONING ORDINANCE

#### RESIDENTIAL SETBACKS FROM LOT LINES AND CORNER LOTS

## SPACE LIMITATIONS

- Minimum lot area per dwelling unit: 1,000 square feet.
- Minimum zoning lot: 6,000 square feet.
- Minimum lot width: 50 feet.
- Maximum height of building: 80 feet.
- Minimum front yard: 10 feet.
- Minimum rear yard: 10 feet.
- Minimum side yard: 5 feet; except a corner lot shall have a 10 foot setback adjacent to street.
- Maximum ground coverage: 60%.

## R4 (High Density Residential Zone)



## CITY OF GRAND ISLAND ZONING ORDINANCE

### RESIDENTIAL SETBACKS FROM LOT LINES AND CORNER LOTS

# ACCESSORY BUILDING REGULATIONS

- Accessory buildings shall not be located within the required front yard setback of the lot and or within an easement.
- Accessory buildings shall comply with all requirements for the principal building if located within fifteen (15) feet of the principal building or when any part of the accessory building is located in the area between the required front yard setback and a line extending from the back of the principal building to the side lot line.
- An accessory building on a corner lot shall have a setback from the side street equal to or greater than the requirement for the principal building.
- There shall be a minimum setback of six (6) feet between accessory buildings.
- If an accessory building has a door opening of over six (6) feet in width on a side parallel to an alley, then such accessory building shall be located not less than eight (8) feet from the lot line abutting the alley.
- Detached accessory buildings shall not be allowed on more than 50% of the allowable lot coverage and no single detached accessory building shall exceed 35% of the allowable lot coverage.
- Accessory buildings shall be permitted only on the same platted lot as the principal building.

Accessory buildings constructed within the rear yard & located no nearer than fifteen feet from the principal building shall comply with the applicable setbacks as noted with an A or B.

Setbacks for garages entered from an alley or side street:

- C = garage entrance parallel to alley (minimum).
- D = garage entrance perpendicular to alley (minimum).
- E = garage entrance directly from street (minimum).

**A - Setback on lots with a frontage of less than 100' = 2'-0"**

**B - Setback on lots with a frontage of 100' or more = 5'-0"**

