



CODE WISE

BUILDING SAFETY
AND SUSTAINABILITY
An Informational Newsletter

April 11, 2008

10

Volume

Pima County Goes Green!

On March 1st, 2008, at the Civano Northridge Green Expo, the Pima County Residential Green Building Program was officially rolled out in an event that included presentations by Congresswoman Gabrielle Giffords (D-AZ), County Supervisor Sharon Bronson, and City Councilwomen Shirley Scott.

The voluntary program will allow builders from large scale developers to owners that plan to build their own residences to have their projects green features reviewed and certified under the program. Certification is available at four levels: Bronze, Silver, Gold, and Emerald. Builders earn points for incorporating responsible site development techniques, water conservation measures, energy efficiency/renewable energy features, and using materials that are recycled, reused, or provide safer indoor air quality. Some of the credits available are similar to those in the National Association of Home Builders (NAHB) Green Guidelines or the US Green Building Council's LEED for Homes Program, but what makes this program different is the inclusion of many credits tailored specifically to the Pima County Region.

Issues such as water conservation and energy efficiency receive extensive coverage in the Pima County program, as do landscaping methods that are sensitive to the fragile Sonoran Desert environment. A reference guide and checklist to guide builders through their green projects is available on line at www.pimaxpress.com under the "Building" link. The checklist is filled in by the applicant detailing the proposed credits sought, and verification of the green elements is then completed by the same Plans Examiners and Inspectors that do the verification of code issues during the normal permitting process. This enables a builder to apply for the program at the same time they apply for their building permit, and eliminates any redundancy during the review process. Most other national or regional green home certification programs have a review process that is entirely separate from the building permit process. Some of the credits, such as the use of low-VOC paints, are verified by Contractor submittals that must be provided by the applicant prior to the issuance of a Green Building Certificate.

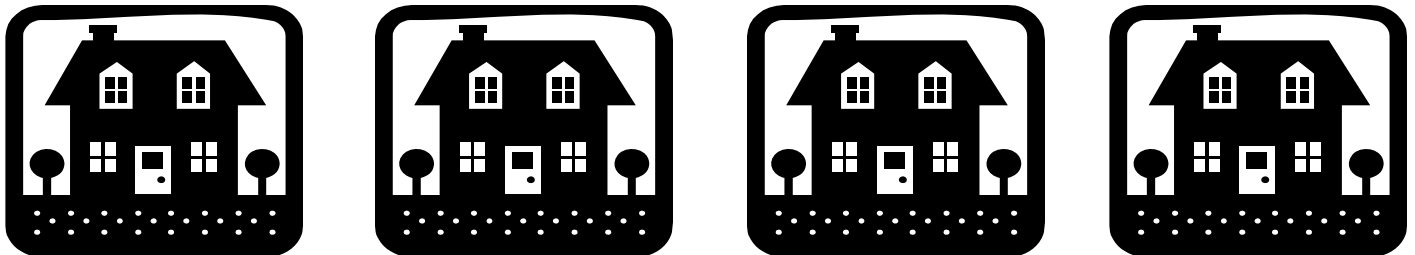
There is also a companion rating system for remodeling programs, the Pima County Residential Green Remodeling Standard for additions and remodeling projects. This program is one of the only certification programs in the country that specifically Address green remodeling.

Pima County Goes Green!

Either program is free to the public and offers a five-day plan review, technical assistance throughout the process, a certificate memorializing the level of “green” the home has achieved, and the opportunity for the builder to purchase a plaque that can be displayed on the home. Development Services will also maintain a copy of all documentation related to the certification, so that future homebuyers will be able to inquire about a home’s green features and view the checklist and certification level. Perhaps the greatest benefit of the program is ability to have a sustainably designed home’s benefits measured objectively, especially as they perform in Sonoran Desert region. Currently, home buyers that want to go green need to use non-specific national rating systems (that often have an associated cost for certification), do their own research or trust the claims of builders about their “green” features.

The program has been endorsed by the Southern Arizona Homebuilders Association, the Governing Council of the Southern AZ Chapter of the US Green Building Council, Tucson Botanical Gardens, and the Tucson/Pima Metropolitan Energy Commission. It is hoped that municipalities throughout Pima County will adopt or adapt the rating standard for their communities, supporting the transformation of the local home building industry towards more sustainable home design and construction.

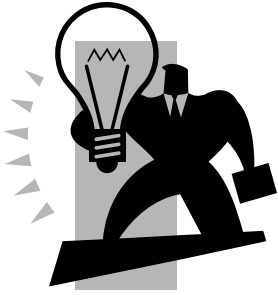
To apply for the program simply download the [PC Regional Residential Green Building Standard](#) or the [PC Regional Residential Green Remodeling Standard](#) and the corresponding checklist to see how your project fits into the rating system.



Cody Says : Revisions approved quicker!



Would you like to have your revisions approved quicker? If you include a short descriptive narrative indicating the scope of the revision, the plans examiner can review your revision much faster. Itemize the scope of the revision and cloud the changes. It is recommended that the scope of work be indicated on the cover sheet for all plans. See the article on page 5 for revision submittal procedures.



Submit your complete Special Inspection Reports early

Special Inspection conditions place inspection holds in order to assure compliance with submitted documents. These holds prevent the scheduling of intermediate or final inspections. Waiting to submit your special inspection reports just prior to scheduling final inspections may cause project delays. These delays may be created by incomplete documentation or issues that require the attention of the Engineer of Record. This may cause a significant delay to resolve these issues, thus creating a problem in scheduling final inspections and occupancy of the project. Prevent delays by submitting your final special inspection reports to Building Safety and Sustainability as soon as they are completed.

Special Inspection Requirements for Fabricated Items

Beginning July 1, 2008 all new Pima County permits with shop fabricated items are either manufactured by an **“approved fabricator”** or have been Special Inspected and the documentation sealed by a registrant licensed to practice in the state where the item is fabricated.

An **“approved fabricator”** is one who is a member of and is participating in a quality assurance program recognized or administered by a national industry association. Pima County will also recognize those fabricators approved by and in good standing with Los Angeles, CA or Clark County, NV.

If not using an “approved fabricator”, the applicant will provide a letter sealed by an Engineer licensed in the state where the items are manufactured, stating that special inspections were conducted per the Building Code regarding fabricated items.

A fabricated item would include wood trusses, engineered wood products, structural panels, aluminum or steel products assembled off site, precast or pre-stressed concrete products to name a few.



Deferred Truss Submittal Requirements

What is meant by a deferred submittal?

Deferred submittals are defined as those portions of the design that are not submitted at the time of the application and are to be submitted to the building official within a specified period.

The minimum requirements for a deferred truss submittal are the following:

- a. A complete set of Pima County approved original construction documents. The original construction documents are also known as the building plans.
- b. The truss submittal package consisting of each individual truss profile/elevation drawing, the truss floor/roof layout diagram, the truss member permanent bracing specifications, as applicable and the cover sheet index.
 - i. The truss manufacturer shall provide a truss layout diagram that identifies the projected location for each individually designated truss and references the matching truss design drawing. The truss layout diagram shall be provided as part of the truss submittal package. Truss layout diagrams need not bear the seal or signature of the design engineer.
 - ii. The building code edition used for the basis of design of the truss system must correspond with the original construction documents approved by Pima County.
 - iii. When a Structural Engineer is involved in the project, deferred submittal items shall first be reviewed by that engineer. This engineer is also known as the Engineer of Record, who shall review the submitted documents and forward them to the Building Official with a notation on the plans indicating that the deferred submittal documents have been reviewed and have been found to be in general conformance to the design of the building.

Permitting Process

How do I obtain a revision permit for a deferred truss submittal?

A deferred submittal is considered a revision and a revision Permit must be obtained by using the following steps:

- a. Obtain a revision permit application for deferred truss submittal at the Public Service counter.
- b. After obtaining the application, present the truss submittal package, application and original construction documents to Building Safety & Sustainability. The turn around time for deferred truss submittal is a maximum of three working days.
- c. When a applicant requests an over the counter review and upon approval by a plan examiner, the permit application may be taken by the applicant to Public Service for processing and issuance of permit.
- d. A minimum fee will be collected at time of permit issuance.
- e. Post the approved truss submittal package at site prior to erection of trusses.

Having a Change of Plans?

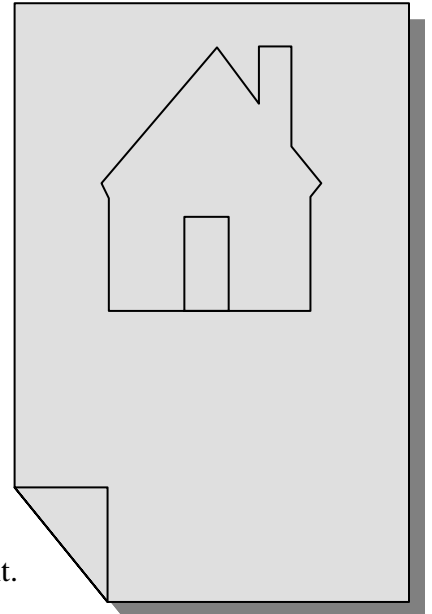
Making a change to an already permitted set of plans is referred to as a “revision”. A revision includes: adding to, removing from, or altering the permitted set of plans. The submission of a revision to the Building Safety and Sustainability department generally requires a minimum of three items.

1) A permit application that contains your permit number and a brief description of the change (scope of work). This activity sheet is issued at the Public Service counter when entering the Pima County Development Services office.

2) The permitted approved set of plans. This set of plans is used as a reference set to determine that the proposed change is possible. This set of plans will be returned to the customer at the end of the review process.

3) Two copies of the proposed revisions. This is required to expedite the process. When approved, one copy is returned to the customer and the other copy is kept on file with the records department.

4.) Revisions may be drawn on the original set of approved plans. Provide a copy of all sheets revised with all the revisions clouded. All revisions to plans bearing a seal of a registrant, must be done by that registrant and shall



Cody Says : Fast Building Safety Plan Review!



There are three ways to **expedite** your building safety plan review:

1. Walk-thru reviews A walk-thru review is for simple residential projects 400 sq ft or less. Only one walk-thru at a time per customer will be reviewed. If a customer has more than one project, the first walk-thru shall be required to be completed before signing up for a second review. Walk-thru plan reviews are available daily from 8:00 am to 12:00 noon. Provide two sets of plans. Plans requiring only minor corrections will be reviewed. Reviews are limited to 15-20 minutes and incomplete plans will not be reviewed.

2. Over the counter plan review for SFR’S and MODELS Over the counter plan review is available for SFR’s and MODEL plans by appointment. The designer, architect, structural engineer etc. responsible for preparing the plans must be present at the review. The plans must be a complete submittal for a review. For further information see [Over the Counter Plan Review of New homes](#) posted on our web site at PimaXpress.com.

3. Walk-in Tenant Improvements The walk-in tenant improvement program is for small tenant improvements projects. The design professionals responsible for the design must be present for the review. See program requirements and further information at [Walk-In Tenant Improvement Program for Registrants](#) posted on our web site at PimaXpress.com.

2006 International Energy Conservation Code

With the increasing energy costs having a significant impact on the operating expenses for the various types of buildings being built, Pima County adopted the International Energy Conservation Code effective January 1st of 2007. The Energy Code has sections that govern both residential and commercial buildings. This article is intended for electrical designers and will cover only the interior electrical portions of Chapter 5, Commercial Energy Efficiency.

Section 505.1 covers lighting system controls, the connection of ballasts, the maximum lighting power for interior applications and the minimum acceptable lighting equipment for exterior applications.

Section 505.2 is a mandatory section on lighting controls. Each area enclosed by walls or floor to ceiling partitions shall have at least one manual control for the lighting serving that area. The required controls shall be located within the area being served by the controls or by a remote switch that identifies the lights served and indicates their status. This section has 2 exceptions. One is areas designated as security or emergency areas that must be continuously lighted and the other is lighting in stairways or corridors that are elements of the means of egress.

Section 505.2.2.1 is about light reduction controls and is one of the most common reasons for an electrical plan being rejected. Each area that is required to have a manual control shall also allow the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern by at least 50 percent. Lighting reduction shall be achieved by one of the following or other approved method. The first is controlling all lamps or luminaires, which is usually done with dimmer switches. The second is dual switching of alternate rows of luminaires, alternate luminaires or alternate lamps, this is usually done in large storage area type facilities. The third option is switching the middle lamp luminaires independently of the outer lamps with a & b switching, commonly used in office areas. The fourth option is switching each luminaire or lamp. Applicants frequently misunderstand this section stating they don't want to reduce the lighting level by 50%, while the code merely states that they have the ability to reduce the lighting level if the occupant wants to, not that they are required to by code. There are 5 exceptions that cover areas that are exempt from this section. Number one is area that only have one luminaire. The second is areas that are controlled by an occupancy sensor. The third is in corridors, storerooms, restrooms, or public lobbies. Fourth is in sleeping units and the fifth is in spaces that use less than .6 watts per square foot.

Section 505.2.2.2 deals with Automatic lighting shutoff. Buildings larger than 5000 square feet shall be equipped with an automatic control device to shut off lighting in those areas. This automatic control device shall function on either:

1. A scheduled basis, using time-of-day, with an independent program schedule that controls the interior lighting in areas that do not exceed 25,000 square feet and are not more than one floor.
2. An occupant sensor that shall turn off lighting within 30 minutes of an occupant leaving a space.
3. A signal from another control or alarm system that indicates the area is unoccupied.

There are 3 areas where an automatic control device is not required. One is in sleeping units. The second is lighting in spaces where patient care is provided directly and the third is in spaces where an automatic shutoff would endanger occupant safety or security.

Section 505.2.2.2.1 is about Occupant override. Where an automatic time switch control device is installed to comply with Section 505.2.2.2, Item 1, it shall incorporate an over-ride switching device that meets 5 requirements. They are:

1. Is readily accessible.
2. Is located so that a person using the device can see the lights or the area controlled by that switch, or so that the area being lit is annunciated.
3. Is manually operated.
4. Allows the lighting to remain on for no more than 2 hours when an override is initiated.
5. Controls an area not exceeding 5,000 square feet.

2006 International Energy Conservation Code

There are 2 exceptions to this subsection.

1. In malls and arcades, auditoriums, single-tenant retail spaces, industrial facilities and arenas, where captive-key override is utilized, override time may exceed 2 hours.
2. In malls and arcades, auditoriums, single-tenant retail spaces, industrial facilities and arenas, the area controlled may not exceed 20,000 square feet.

Section 505.2.2.2.2 is Holiday scheduling. If an automatic time switch control device is installed in accordance with Section 505.2.2.2, Item 1, it shall incorporate an automatic holiday scheduling feature that turns off all loads for at least 24 hours, then resumes the normally scheduled operation. The exception to this subsection is retail stores and associated malls, restaurants, grocery stores, places of religious worship and theaters.

Section 505.2.3 is Sleeping units. Sleeping units in hotels, motels, boarding houses or similar buildings shall have at least one master switch at the main entry door that controls all permanently wired luminaires and switched receptacles, except those in the bathroom(s). Suites shall have a control meeting these requirements at the entry to each room or at the primary entry to the suite.

Section 505.3 is another mandatory section. The following luminaires located within the same area shall be tandem wired.

1. Fluorescent luminaires equipped with one, three or odd-numbered lamp configurations, that are recess-mounted within 10 feet center to center to each other.
2. Fluorescent luminaires equipped with one, three or any other odd-numbered lamp configuration, that are pendant or surface-mounted within 1 foot edge-to-edge of each other.

The exceptions to this section are:

- a. Where electronic high-frequency ballasts are used.
- b. Luminaires on emergency circuits.
- c. Luminaires with no available pair in the same area.

Section 505.4 exit signs is another mandatory section. It states that internally illuminated exit signs shall not exceed 5 watts per side.

Section 505.5 interior lighting power requirements. This is a prescriptive section wherein a building complies with this section if its total connected lighting power calculated under section 505.5.1 is no greater than the interior lighting power calculated under section 505.5.2.

Section 505.5.1 total connected interior light power. The total connected interior lighting power (watts) shall be the sum of the watts of all interior lighting equipment as determined in accordance with Section 505.1.1 through 505.5.1.4 There are 5 exceptions in which the connected power associated with the following lighting equipment is not included in calculating total connected lighting power.

- a. Specialized medical, dental and research lighting.
- b. Professional sports arena playing field lighting.
- c. Display lighting for exhibits in galleries, museums and monuments.
- d. Sleeping unit lighting in hotels, motels, boarding houses or similar buildings.
- e. Emergency lighting automatically off during normal building operation.

2006 International Energy Conservation Code

Section 505.5.1.1 Screw lamp holders. The wattage shall be the maximum labeled wattage of the luminaires.

Section 505.5.1.2 Low-voltage lighting. The wattage shall be the specified wattage of the transformer supplying the system.

Section 505.5.1.3 Other luminaires. The wattage of all other lighting equipment shall be the wattage of the lighting equipment verified through data furnished by the manufacturer or other approved sources.

Section 505.5.1.4 Line-voltage lighting track and plug-in busway. The wattage shall be the greater of the wattage of the luminaires determined in accordance with Sections 505.5.1.1 through 505.5.1.3 or 30 watts per linear foot.

Section 505.5.2 is Interior lighting power and is one of the most important sections in conserving energy. It states: The total interior lighting power (watts) is the sum of all interior lighting powers for all areas in the building covered in the permit. The interior lighting power is the floor area for each building area listed in Table 505.5.2 times the value from Table 505.5.2 for that area. For the purposes of this method, an "area" shall be defined as all contiguous spaces that accommodate or are associated with a single building area type as listed in Table 505.5.2. When this method is used to calculate the total interior lighting power for an entire building, each building area type shall be treated as a separate area.

Cody Says : Model plans accepted by city!

Did you know that you can submit your model plans to the county and use them for the county and the city.



Type I Hoods

Cooking appliances installed in cafeterias, restaurants, dormitory kitchens, hotels, motels, schools and institutional are examples of appliances that typically require Type I exhaust hood systems. Unusual circumstances sometimes arise that may warrant a close evaluation of a cooking appliance before determining that a Type I hood is required. Keep in mind that the primary purpose of a Type I hood is to control the potential fire hazard associated with grease.

Type I hoods shall be constructed of not less than 18 gauge steel or 20 gauge stainless steel. External hood joints, seams and penetrations shall be made with a continuous external liquid-tite weld. Type I hoods must be designed and constructed to contain, without leakage, all liquid residue that accumulates from the grease laden vapors. The intent is to require welded or brazed joints for all seams that form the external shell of the hood to prevent grease from escaping the confines of the hood.

Type I hoods shall have a minimum clearance from combustibles of not less than 18 inches in all directions from the hood.

Listed grease filters designed for the specific purpose shall be installed in the Type I hood. Grease-collecting equipment shall be provided with access for cleaning. These listed and labeled filters are required to prevent large amounts of grease from collecting in the hood. Filters must be arranged to direct grease or other condensate to the troughs, gutters and receptacles of the hood, which are intentionally designed to collect and drain these effluents to an approved grease collection receptacle.

2005 NATIONAL ELECTRIC CODE



NEC ARTICLE 410.73(G)

All permit applications for commercial projects received after January 1st, 2008 will be required to comply with the new article 410.73(G). This article covers disconnecting means for luminaires.

410.73(G) Disconnecting Means. In indoor locations, other than dwellings and associated accessory structures, fluorescent luminaires (fixtures) that utilize double-ended lamps and contain ballasts that can be serviced in place or ballasted luminaires that are supplied from multiwire branch circuits and contain ballasts that can be serviced in place shall have a disconnecting means either internal or external to each fixture, to disconnect simultaneously from the source of supply all conductors of the ballast, including the grounded conductor if any. The line side terminals of the disconnecting means shall be guarded. The disconnecting means shall be located so as to be accessible to qualified persons before servicing or maintaining the ballast.

Exception #1: A disconnecting means shall not be required for luminaires installed in hazardous (classified) locations.

Exception #2: A disconnecting means shall not be required for emergency illumination required in article 700.16.

Exception #3: For cord-and-plug connected luminaires, an accessible separable connector or an accessible plug and receptacle shall be permitted to serve as the disconnecting means.

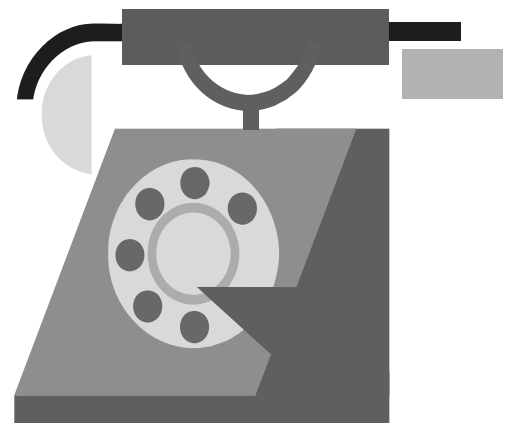
Exception #4: A disconnecting means shall not be required in industrial establishments with restricted public access where conditions of maintenance and supervision ensure that only qualified persons service the installation by written procedures.

Exception #5: Where more than one luminaire is installed and supplied by other than a multiwire branch circuit, a disconnecting means shall not be required for every luminaire when the design of the installation includes locally accessible disconnects, such that the illuminated space cannot be left in total darkness.



Cody Says: Please leave it twice

It would be very helpful to speak slowly and distinctly when leaving your phone number. Please leave your phone number twice.



Cutting and Notching

Drilling and notching. Structural floor members shall not be cut, bored or notched in excess of the limitations specified in this section. **See Figure R502.8.** (page 12)

Sawn lumber. R502.8.1 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 to the notch.

See figure R502.8. (page 12)

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. **R502.8.2** (page 12)

Drilling and notching—studs. R602.6 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.

See figure R602.6(1) and R602.6(2) (page 13)

Drilling and notching of top plate. R602.6.1 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 of not less than 0.054 inch thick (1.37 mm) (16 ga) and 1 1/2 inches (38 mm) wide shall be fastened across and to the plate at each side of the opening with not less than eight 16d nails at each side or equivalent.

See Figure R602.6.1. (page 11)

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

Cutting and Notching

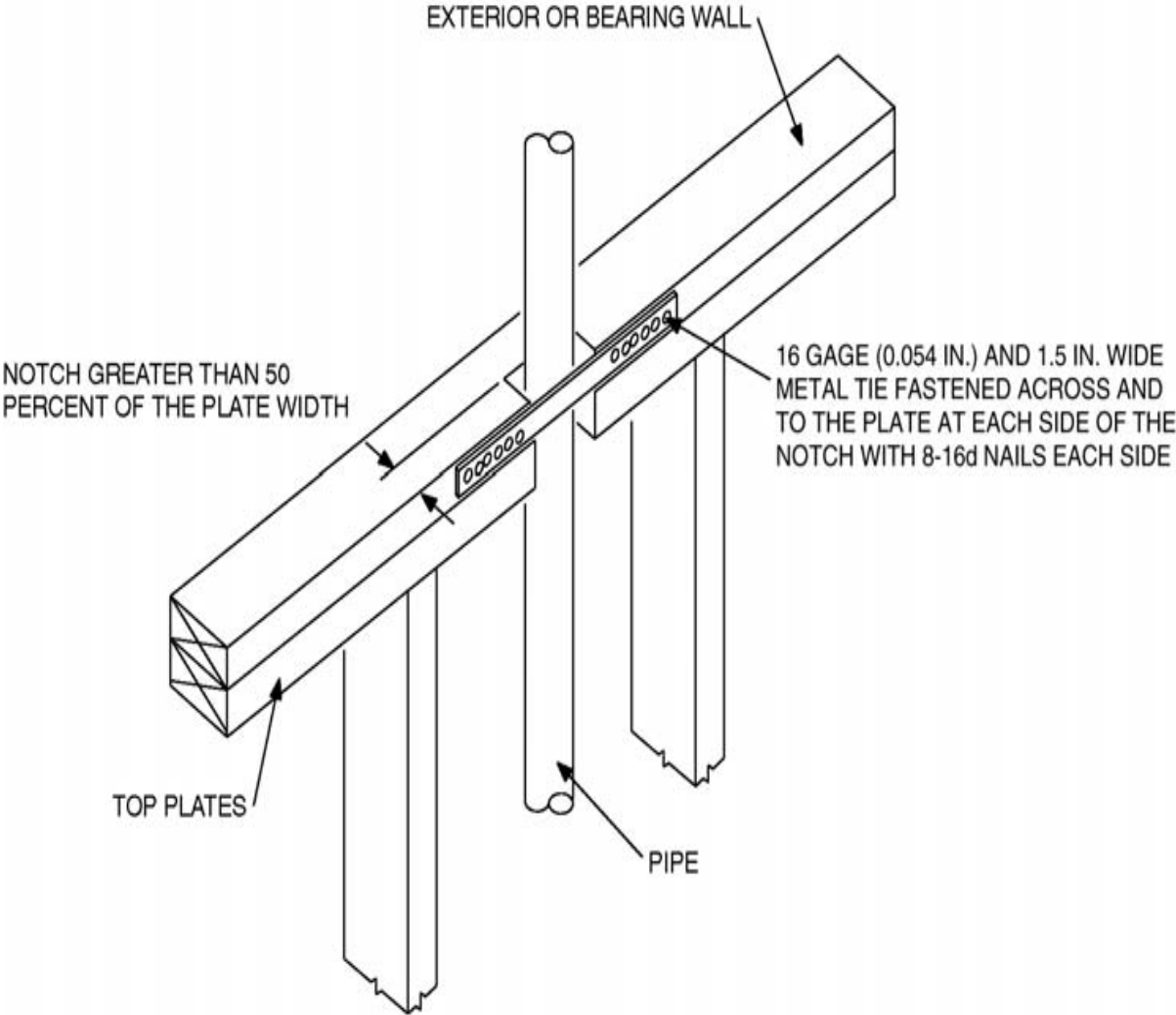


FIGURE R602.6.1
TOP PLATE FRAMING TO ACCOMMODATE PIPING
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Cutting and Notching

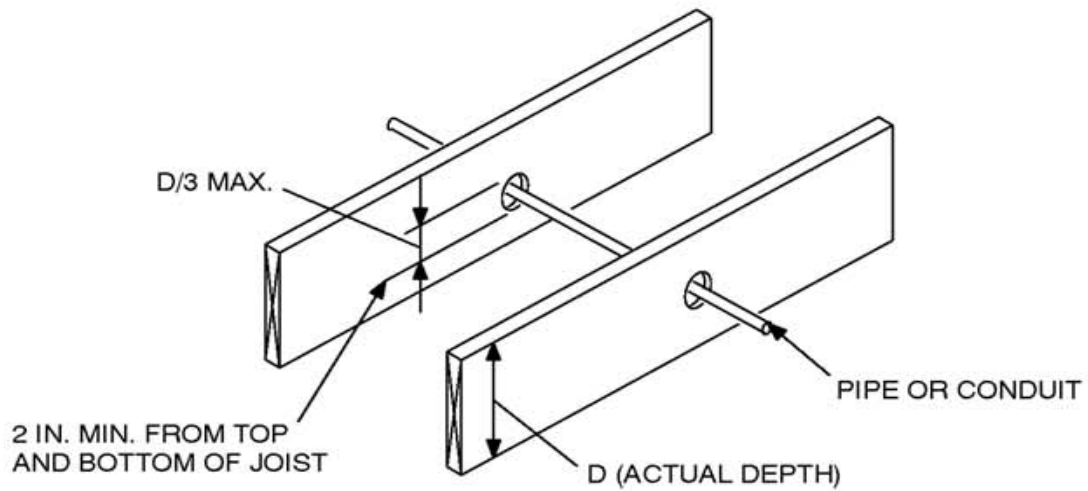
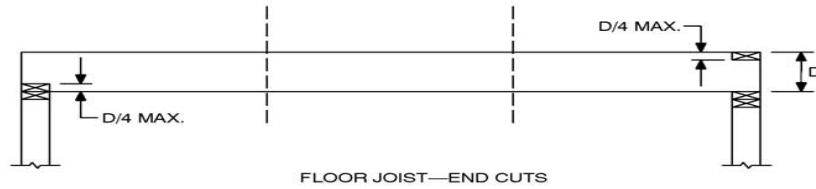
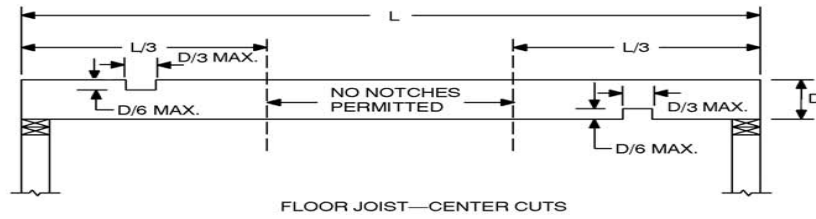
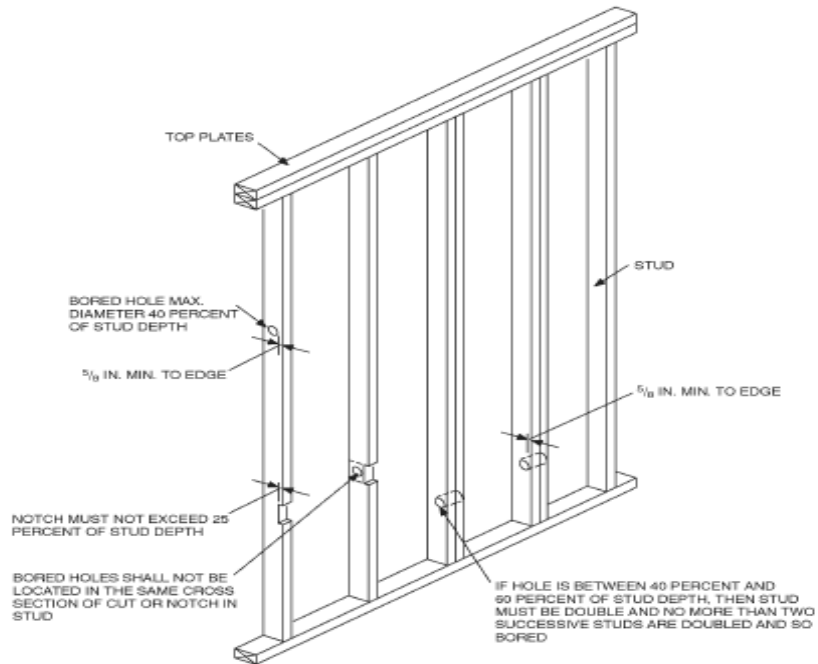


FIGURE R502.8
CUTTING, NOTCHING AND DRILLING
2006 INTERNATIONAL RESIDENTIAL CODE®

Cutting and Notching



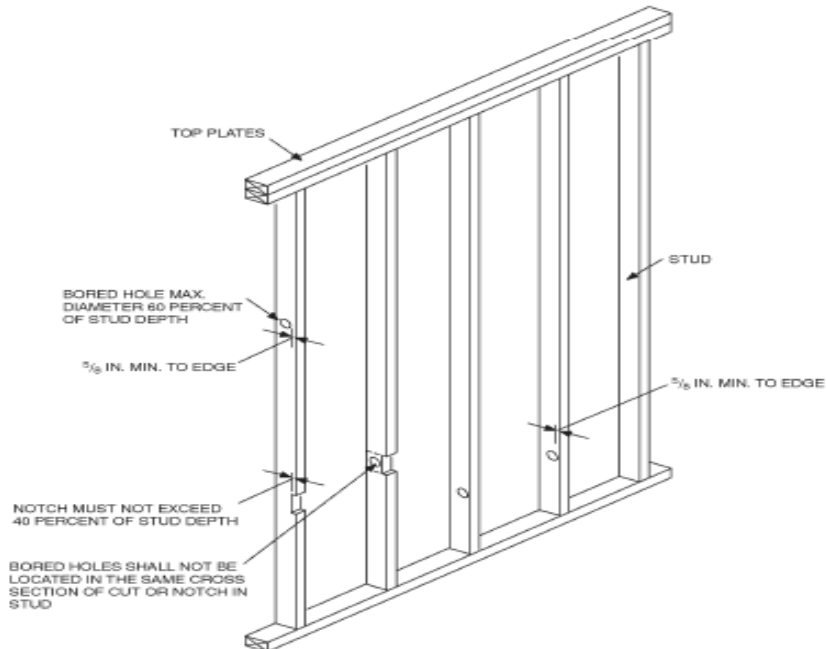
For SI: 1 inch = 25.4 mm.

NOTE: Condition for exterior and bearing walls.

FIGURE R602.6(1)
NOTCHING AND BORED HOLE LIMITATIONS FOR EXTERIOR WALLS AND BEARING WALLS

132

2006 INTERNATIONAL RESIDENTIAL CODE[®]



For SI: 1 inch = 25.4 mm.

FIGURE R602.6(2)
NOTCHING AND BORED HOLE LIMITATIONS FOR INTERIOR NONBEARING WALLS

Pima County Board of Supervisors

Ann Day , District 1

Ramon Valadez, District 2

Sharon Bronson, Chair, District 3

Raymond J. Carroll, District 4

Richard Elías, District 5



www.pimaXpress.com

Questions about your project? Call the Building Safety and Sustainability Division and talk to a Plans Examiner. (520) 740-6490

The 2008 Spring Education Institute will be held in Prescott Arizona



The week of April 21st. thru April 25th. Visit the AZBO web site at: www.azbo.org

A complete listing of the courses and course descriptions is available on the web.



Copies of these codes are available at the main branch of the Tucson-Pima County Library. Help-Line 791-4010

Purchase on line at: www.ICCSAFE.org
Ph. 1-888-422-7233

CODES in Effect in Pima County

2006 International Residential Code (Amended)
2006 International Building Code (Amended)
2006 International Fuel Gas Code
2006 International Mechanical Code (Amended)
2006 International Energy Conservation Code
2006 International Property Maintenance Code
2006 International Plumbing Code
2005 National Electrical Code-NFPA 70 (Amended)
2006 Sustainable Energy Standard
2006 Pima County Outdoor Lighting Code
Inclusive Home Design Ordinance
2006 International Wildland-Urban Interface Code

Useful Telephone	Numbers
PC Bldg. Safety and Plan Review	740-6490
PC Bldg. Safety FAX	740-6888
Inspection Request-IVR	740-6970
Building Inspectors between 7AM and 7:30AM	243-2800
PC Zoning Enforcement	740-6470
Zoning Information	740-6450
Public Service	740-6510
Az State Fire Marshall	(520) 628-6920
Az State Office of Manufactured Housing	(520) 628-6920
City of Tucson	791-5550

Prepared by the Plans Review Staff of the BUILDING SAFETY AND SUSTAINABILITY Division of Development Services Department.
Carmine DeBonis, Director, Carla Blackwell, Deputy Director Development Services, Yves Khawam , Chief Building Official
 The information provided herein is for information only and is not to be interpreted as superceding the codes as adopted by Pima County but should only be used as an aid in understanding the requirements of those codes to facilitate compliance.