Staff Report

CITY BUILDING CODES UPDATE

8-10-2010

The International Codes (I-Codes) and other standards

The 2009 International Codes now before Council for adoption into Ames Municipal Code Chapter 5 (as well as the Ames Fire Code, Chapter 8) are broad fundamental standards that govern all building construction and maintenance. The Ames Rental Housing Code sets standards for interior and exterior maintenance of rental dwellings, only. Other Ames Municipal Codes set specific standards for maintenance of other exterior buildings and properties. Although the rental and property maintenance codes are separate and distinct from the adopted codes, they are derived from them in some cases, and are consistent in all cases.

Code adoption schedule history

In 2003, an ad hoc citizen committee recommended the City update local building, electrical, mechanical, and plumbing codes at three year intervals to coincide with release of updated editions of the model codes (International Building Codes, Uniform Plumbing Code, and National Electrical Code). A widely-used insurance risk rating organization, Insurance Services Office (ISO), performs reviews of building inspection departments at five year intervals, and assigns numerical rankings in several categories. A more favorable ranking is given to jurisdictions that adopt the latest code editions within one year of publication. The codes are generally published in June of each three year cycle. The 2003 codes were adopted by Council in 2004, the 2006 codes were adopted in 2007, and the 2009 codes are now recommended for adoption in 2010.

In addition to adopting the 2006 codes, the 2007 update included reorganization of four separate Municipal Code Chapters into one combined Building, Electrical, Mechanical, and Plumbing Code in Chapter 5. Inspection Staff initiated a comprehensive review with the three boards – Building, Electrical, and Mechanical/Plumbing Boards. As a result, 26 pages of outdated and unnecessary local text were eliminated from Ames' regulations governing building, electrical, mechanical, and plumbing work. Administrative rules of the four chapters were consolidated and made consistent in the new Chapter 5. Subject areas were organized and clearly identified by topic for customer convenience. Architects, engineers, and contractors, for example, can now locate all local amendments to the model codes within the space of a few adjacent pages – a valuable time saver for design professionals working nationwide. Permit requirements and exemptions were brought together for ease of reference by homeowners, commercial building owners, tradespersons, and contractors to know when they need to get a permit.

The intent of the proposed adoption is to continue to have all of the building code contained in a single chapter, set out in separate divisions with all related provisions grouped together for easy reference. Before 2007, all the separate building component regulations were organized and enacted in individual discrete chapters. Originally, Chapter 5 had only the building code provisions and Chapter 7 - Electrical and Chapter 21 - Plumbing existed separately. The latter two have not been formally repealed so it is also proposed to repeal those chapters so everything is in Chapter 5, eliminating any duplication of code provisions at different locations. To further consolidate all related subjects in Chapter 5, it is proposed to remove all the sign ordinance provisions from Chapter 5- Division VII and to locate these in a separate chapter of their own by moving them into Chapter 21. This is a relocation only, and there are no substantive changes being proposed for the sign regulations. It should also be noted that some divisions of Chapter 5, such as Division V - Penalties and Enforcement, are not being changed

at all, and those will remain in their present location so they are not mentioned in the ordinance being proposed.

Model codes adopted by reference
National and international organizations of professionals in specific branches of building and building-related design, construction, manufacturing and regulatory fields develop detailed standards, by consensus, for their respective industries. These standards are published, distributed and adopted for use by companies, governmental jurisdictions, institutions, and other entities. Such standards are also known as codes, are sometimes referred to as 'code standards', and 'model codes'. The International Codes (known as I-Codes) are the most widely adopted building construction standards now commonly in use on the planet. The Uniform Plumbing Code (UPC) is the most widely adopted plumbing standard in use, followed closely by the International Plumbing Code (IPC). The National Electrical Code (NEC) is the recognized standard for electrical construction internationally. Model codes are adopted through legislative action at state, county, or local levels. The state legislature, county board, or city council adopts model codes 'by reference'. This means that instead of copying several hundred pages of detailed technical standards into their published rules and regulations, they adopt the model code by only 'referring' to it in the published rules for their jurisdiction (I.e., the city code or the state code). The terms 'model code' and 'adopted code' are often used interchangeably.

At each three year cycle, the International Code Council publishes summaries of changes to the model codes. The summaries highlight all significant revisions to the new editions. Boards and staff review the published summaries, and take specific action on any that appear to merit special attention, whether through changing a word or two to fit local conditions, or through deleting specific text, or adding to it. Although the Boards are provided with copies of all of the new code editions, it would not be feasible for them to review the 4,251 pages of code text and compare it to the current codes. Nor would it be feasible for the Council to undertake such a review.

Similarity to other communities and states
Adoption of the current editions of the International Codes is a routine action performed at regular three year intervals by every major city in Iowa and thousands of cities nationwide. By adopting the 2009 Codes, the City of Ames continues to share the same minimum building, electrical, mechanical, and plumbing codes as thousands of other local, state, and county governmental jurisdictions throughout the nation.

The proposal here presented is consistent with the model codes and standards for commercial, industrial, and residential building, electrical, mechanical, and plumbing construction work adopted by the State of Iowa. It is also consistent with the standards in effect in all large and small communities in Iowa which have adopted local building codes.

Review process
This proposal before Council is a part of staff's effort to maintain timely, relevant, and accessible internationally accepted minimum building standards organized and presented as clearly as possible for the community's convenience and safety. The proposed 2009 codes were reviewed with all members of the Building, Electrical, and Mechanical/Plumbing Boards during seven monthly public meetings of the combined membership. Specific local amendments to the model codes were analyzed, evaluated, and unanimously moved for inclusion or exclusion by the twelve Board Members. Where random outdated or confusing text was discovered through actual use of the combined Chapter 5, appropriate improvements were discussed and developed by staff and approved by the Boards. The Boards' decisions were communicated to their local constituencies through such formal groups as the Ames Homebuilders' Association,

and less formally through the local network of architects, engineers, educators, contractors, and tradespersons who regularly deal with local building regulations.

Citizen participation
As was noted above, at each three year cycle, the International Code Council publishes summaries of changes to the model codes. The summaries highlight all significant revisions to the new editions. Our City's three boards and staff reviewed the published summaries and took specific action on any that appeared to merit special attention, whether through changing a word or two to fit local conditions, or through deleting specific text, or adding to it. The task of reviewing the published summaries, becoming familiar with Ames Chapter 5, and preparing for monthly meetings, discussions and formal actions was itself a substantial voluntary contribution of their private time and energy for an important project that benefits the Ames community.

The following board members worked diligently to accomplish the goal of bringing this code package forward for Council adoption. Their thoughtful participation in this task sets the appropriate standard for the continued safe design, construction, and maintenance of all buildings in the community.

Building Board

Steve Shuey	Randy Rathert	Larry Cormicle
Brad Heemstra	Dan Nutini	

Plumbing and Mechanical Board

David Francis	Richard Mercer	Charles Haselhoff
Chris Anderson	Jerry Cable, Jr.	

Board of Electrical Examiners

Larry Brandt	Jeffrey Bailey

Local amendments to the adopted codes
When part of an adopted code is changed by adding removing, reorganizing, or deleting text, it is called a *local amendment* to the adopted code. The first page of Chapter 5 lists the model codes that are adopted into the City of Ames Municipal Code in Chapters 5 (and Chapter 8, Fire Code). In some cases, certain sections or chapters of the I-Codes are not included in the Ames Code. For example, in subsection (4), chapters 27 [electrical], and 29 [plumbing] of the International Residential Code are deleted. These I-Code chapters are not included because Ames and the State of Iowa adopt the more complete National Electrical Code and Uniform Plumbing Code.

The following are general categories of local amendments reviewed by the three boards:

- local physical conditions (freezes in the north, blows in the south, etc.)
- change model code section references in local code to match changes made to model code
- local building or trade preferences or traditions (I.e., "That's the way we've always done it here.")
- conform to a higher governing standard (I.e., state code trumps city code, federal code trumps both)
- other local considerations

Reasons for local amendments
There are reasons Ames and other communities need local amendments to the adopted codes. As an example, a blank table in the International Residential Code (IRC) includes the minimum

required design criteria for new buildings, e.g., the expected weight of snow on roofs, the expected maximum wind speed, the typical depth that frost penetrates the ground in winter. Governmental jurisdictions adopting the IRC are required to fill in the table with correct values for their local conditions. For example, it's a good idea to dig a foundation trench at least 42 inches deep in Iowa. Anything less and the building is liable to move up and down due to annual freezing and thawing cycles. In southern states and cities, however, freezing conditions don't penetrate 42 inches into the soil, but only 24 inches, or 12, or less. Those regions need a different local minimum foundation depth than the cities in Iowa.

With that background, there are reasons why Ames and other jurisdictions choose to adopt model codes with few local amendments. Communities with fewer local amendments receive higher ratings by the Insurance Services Office (ISO). This national insurance rating service assigns risk ratings to communities based upon its evaluation of local building and fire department effectiveness, one measure of which is the extent to which the community has amended the adopted model codes. Another reason has to do with making it easier to do business in the community. National chains and franchises hire architects and engineers to design stores and restaurants utilizing the same or similar design details and construction methods and materials for use in all their projects throughout the nation. When the building departments in all cities use the same codes in reviewing and approving construction plans, it makes it easier for the company, the company's architect, engineers, material and equipment suppliers, and construction contractors, many of whom travel from city to city building the same stores for specific companies in different locations. Not having to change standard construction plans to comply with peculiarities of local or regional building rules is a benefit to business owners and developers.

As was mentioned above, 26 pages of outdated, redundant, and unnecessary local amendments were deleted as part of the 2007 code adoption. Another 18 pages of local amendments are now proposed for deletion as part of this code adoption. This is due, first, to the change from City to State licensing of electricians, plumbers, and mechanical and HVAC (heating, ventilation and air conditioning) contractors that occurred in 2008 and 2009; and secondly, is due to the relocation of the Ames sign regulations out of Chapter 5 and into a separate chapter. The local rules regulating building, electrical, plumbing and mechanical HVAC work have been reduced from 93 pages to 49 pages in the space of the last five years.

2005 - 93 pages of local building, electrical, mechanical, and plumbing code rules
2007 - 67 pages of local rules combined into one chapter
2010 - 49 pages of local rules in one chapter

8 pages - sign code moved to individual new chapter
7 pages - electrical, mechanical, and plumbing licenses to state code
1 pages - local plumbing code amendments
2 pages - condensing, restating, eliminating redundancy,

Ames' Local Amendments

Local amendments to the adopted codes are in Chapter 5, beginning on the first page, and include Section 5.100, Subsections (4) through (16). These sections name the adopted codes and mention the few major departures from them. For example, this includes where we delete the entire administrative chapter 1 of the International Building and Residential Codes, because we have extracted the administrative rules and placed them in our local ordinance to make them more easily accessible to our customers. Detailed amendments to specific requirements of the

adopted model code are included later in Chapter 5, in Division II, aptly entitled – Local Amendments to Adopted Codes.

The proposal now being considered includes the following local amendments. Commentary is included below each numbered section to summarize the impact.

Sec. 5.200. BUILDINGS - INTERNATIONAL BUILDING CODE.

The 2009 International Building Code (IBC) is amended with the deletion of Chapters 1, 27 and 29, and Section 1405.13.2; and the revision of the following text as stated:

The proposed amendment is a continuation of the current amendment.
Deletes the Administrative Chapter 1, Scope and Administration - because we print the entire chapter in our local ordinance;
Deletes Chapter 27, Electrical - because State of Iowa and Ames both adopt the National Electrical Code
Deletes Chapter 29, Plumbing - because State of Iowa and Ames both adopt the Uniform Plumbing Code
Changes code section reference from 1405.12.2 to 1405.13.2, because of renumbering of the section that occurs in the 2009 edition. This section regulates the height of window sills in residences when the window is more than 6 feet above outside grade, and limits the maximum opening of those windows to not more than 4 inches. This section was ***deleted*** *from the current code because it was concluded to be unreasonably restrictive in regulating the design configuration of residential window openings, especially in private single family homes.*

(1) **Chapter 18** of the IBC is amended to allow for foundations and footings of buildings with Type V wood framed construction of three stories or less to be designed to meet, at a minimum, the specifications of the following table.

Number of Floors Supported by the Foundations*	1	2	3
Thickness of Foundation Walls (inches) Concrete	8	8	10
Thickness of Foundation Walls (inches) Concrete Block	8	8	12
Width of Footing (inches)	16	16	18
Thickness of Footing (inches)	8	8	12
Minimum Depth of Foundation Below Grade	42	42	42

***Foundations may support a roof in addition to the stipulated number of floors. Foundations supporting roofs only shall be as required for supporting one floor. All other structures shall have footings and foundations engineered to meet the requirements of Sections 1807, 1808, and 1809 of the IBC, and Chapter 4 of the IRC. All buildings shall have perimeter footings to 42" below grade, and such footings shall be designed to withstand all forces placed upon them as per Sections 1807, 1808, and 1809 of the IBC and Chapter 4 of the IRC or engineering to show equivalency. Trench footings are allowed as a continuous 8" single pass trench for a single story wood frame structure with spans not exceeding 16 feet. The trench must be 42" deep and have at least two (2) horizontal rods fixed in place and tied into the existing structure. Soil bearing capacity shall be a minimum of 2000 psf.

The proposed amendment is a continuation of the current amendment.
Chapter 18 contains minimum design standards for footings and foundations of structures. Design of large or complex building foundations must be calculated by licensed architects or engineers. Foundation design requirements for most wood frame residential and small commercial buildings are less complex and are addressed in this amendment by a prescriptive (generic) set of minimum standards. This local amendment makes project design simpler and less costly for homebuilders, remodelers, and homeowners, because they don't have to hire an architect or engineer to calculate and design the foundation system. Such design work can

range from a few hundred to a few thousand dollars. Such a local amendment would not be appropriate in an earthquake prone region such as the west coast, or in a southern coastal region of swampy or sandy soil conditions.

(2) **Section 1809.5** Frost protection, Exception 2 of the IBC is deleted and the following inserted in lieu thereof:

(2) Area of 900 square feet or less for light-frame construction or 400 square feet or less for other than light-frame construction; and

This text of this local amendment is a continuation of the current code and continues unchanged in the proposed code. The only difference is in the IBC section number - 1805.2.1 in the current code, 1809.5 in the new code.
The IBC limits a building such as a detached garage to not more than 600 square feet (about the size of a double garage). The amendment permits a detached building the size of a three stall garage to be constructed on a concrete slab without foundation walls down to the frostline (42 inches below grade). This local amendment recognizes detached garages/shops are not habitable dwellings, and don't generally have water, sewer, or other buried systems that would be damaged by frost heave. Consequently, it provides some cost savings to owners who prefer to build such a structure without protection from frost heave.

Sec. 5.201. RESIDENTIAL BUILDINGS - INTERNATIONAL RESIDENTIAL CODE.

The provisions of the 2009 International Residential Code for One- and Two-family Dwellings (IRC), are amended with the deletion of Chapter 1, Scope and Administration; Part VII - Plumbing; and Part VIII - Electrical; with the addition of appendix G; and the revision of the following text as stated:

The text of this proposed amendment is a continuation of the current amendment.
This local amendment deletes the Administrative Chapter 1, Scope and Administration - because we print the entire chapter in our local ordinance;
Deletes Part VII,, Plumbing - because State of Iowa and Ames both adopt the Uniform Plumbing Code;
Deletes Part VIII, Electrical - because State of Iowa and Ames both adopt the National Electrical Code;
***Adds** Appendix G, to provide minimum standards for swimming pool, spa, and hot tub installations.*

(1) **Section R301.2.1.1** Design Criteria,
Table R301.2(1), Climatic and Geographical Design Criteria is amended to include the following local values:

Ground Snow Load (lbs)	25
Wind Speed (mph)	90
Seismic Design Category	A
Weathering	Severe
Frost Line Depth (inches)	42
Termite	Moderate to Heavy
Winter Design Temp (F.)	- 5
Ice Shield Underlayment Required	Yes
Flood Hazards	See FEMA Maps
Air Freezing Index	1896
Mean Annual Temperature (F.)	48.2

This proposed text is the same as the current amendment.
It sets the minimum design standards for buildings in Ames based upon actual local weather, climate, and geographical conditions. These standards vary from region to region throughout the United States. For example, ground snow load, and seismic design category are different in Seattle than in Ames.

(2) **Section R302.2,** Townhouses, of the IRC, is amended by deleting the Exception.

*This is a **proposed new amendment**. The Exception relaxes the fire-resistive rating requirement for common walls of townhouses and would only be appropriate if each of the adjacent dwelling units were protected with an automatic fire extinguishing (sprinkler) system. Since sprinklering of new townhomes is not proposed for this code adoption cycle, at either the State or local level, offering the exception serves no useful purpose. (see also local amendment to IRC Section R313)*

(3) **Section R311.3.2,** Floor elevations for other exterior doors, of the IRC, Exception is deleted and the following inserted in lieu thereof:
Exception: A landing is not required where a stairway of three or fewer risers is located on the exterior side of the door, provided the door does not swing over the stairway.

This text of this local amendment is a continuation of the current code and continues unchanged in the proposed code. The only difference is in the IRC section number - was R311.4.3, is now R311.3.2.
The code requires landings at least as wide as the door, and at least 36 inches from front to back for required egress doors. Other exterior doors are permitted to have no landings if they are no higher than 2 risers (approximately 14 inches) above grade. The local amendment expands that to three risers (approximately 21 inches) above grade. This amendment has been in place in Ames for several code cycles.

(4) **Section R311.7.7.2**, Continuity, of the IRC, is amended by adding to the Exceptions a new item 3:
3. Handrails may be interrupted at the point of transition from handrail to guardrail on stairways open on both sides at the bottom of a flight of stairs.

*This is a **proposed new local amendment** requested by the homebuilders. Various stair configurations in some new homes present challenges to compliance with the model code requirement for continuous handrails. This often occurs near the bottom of a flight of stairs when walls adjacent to the stair ends and the remainder of the stairway is open. The handrail, which is typically mounted on the wall, must make a transition to a freestanding handrail. This often requires an offset, or interruption of the handrail. This amendment acknowledges the condition and permits a wall-mounted handrail to terminate at the end of the wall, and a separate handrail segment to continue from that point to the bottom of the stairway.*

(5) **Section R313.2**, One and two-family dwellings automatic fire systems, of the IRC, is amended by deleting the text of that section and inserting the following in lieu thereof:
Automatic residential fire sprinkler systems shall not be required in one- and two-family dwellings.

This 2009 IRC code section requires "an automatic residential fire sprinkler system" to be "installed in [new] one- and two- family dwellings." beginning January 1, 2011. There was a great deal of discussion of this new requirement at the State level in response to intense lobbying by the homebuilders and other interests. This resulted in the State adoption of the following text in the State of Iowa Building Code:

"Delete section R313.2.
*NOTE: **Deletion** of section R313.2, which would have required the installation of sprinklers in newly constructed one- and two-family residences, is consistent with 2010 Iowa Acts, Senate Joint Resolution 2009."*

(6) **Section R313.1,** Townhouse automatic fire sprinkler systems, of the IRC, is amended by deleting the text of that section and inserting the following in lieu thereof:
Automatic residential fire sprinkler systems shall not be required in townhouses.

*This **proposed new local amendment** is requested by the homebuilders, and is consistent with actions at the State Code level regarding new townhouses:*

"Delete section R313.1.
*NOTE: **Deletion** of section R313.1, which would have required the installation of sprinklers in newly constructed townhouses, is consistent with 2010 Iowa Acts, Senate Joint Resolution 2009."*

(7) **Section R315.2** Carbon Monoxide Alarms - Where required in existing dwellings, of the IRC, is deleted and the following text is inserted in lieu thereof:
When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with carbon monoxide detectors located as required for new dwellings.
Exceptions:
1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing or mechanical systems are exempt from the requirements of this section.

*The 2009 IRC includes a **new requirement** that Carbon Monoxide Alarms be installed, in <u>new construction</u> "outside of each separate sleeping area…within which fuel-fired [natural gas] appliances are installed and in dwelling units that have attached garages." It also requires that an alarm be installed in existing dwellings in any remodeling project for which a [building, electrical, mechanical, or plumbing] permit is issued. The **proposed local amendment** retains the requirement for new dwelling construction, but limits the application of the new requirement to only those existing dwellings for which an interior remodel of habitable space, or an addition to habitable space is occurring under authority of a building permit. If only minor repair or replacement is occurring, there is no requirement to install carbon monoxide alarms.*

(8) **Section R403.1.4.1**, Frost Protection, Exception 1 and exception 3 of the IRC, are deleted and the following inserted in lieu thereof:
(1) Protection of freestanding accessory structures with an area of 900 square feet or less, of light-framed construction, with an eave height of 10 feet or less shall not be required.

This amendment has the same effect as the earlier amendment to IBC Section 1809.5.

(9) **Section R403.1.6** Foundation Anchorage, of the IRC, delete 6 foot minimum anchor bolt spacing and insert in lieu thereof a minimum of 4 foot spacing.

This local amendment has been in the Ames Code for several cycles. Due to differing wind and storm conditions, the code spacing of 6 feet prescribed by the IRC has been considered less than adequate for this region. Consequently, prior consensus has been to decrease the spacing of the bolts that hold the house in place on the foundation. Tornados and strong winds can causes houses to shift or move off of foundations.

(10) **Section 903.5** Hail Exposure, of the IRC, is deleted in its entirety.

*This is a **new proposed local amendment** to the code. This section is deleted because it triggers a requirement of another code section, 907.3.4, which states that any time multiple layers of shingles on a dwelling are hail-damaged, all layers must removed and replaced with*

new roof covering. Keeping this code provision would leave no room for judgment - necessary in some cases when only a portion of a roof is damaged and in need of replacement.

(11) **Section R907.3**, Recovering Versus Replacement, of the IRC, is amended by deleting item 4.

This section becomes irrelevant as a result of deleting the previous section, 903.5.

(12) **Sections 1807, 1808, and 1809** of the IBC are amended to allow for footings of buildings with Type V wood framed construction of three stories or less to be designed to meet, at a minimum, the prescriptive standards of the following table.

Number of floors supported by foundations*	1	2	3
Thickness of foundation walls (inches) concrete	8	8	10
Thickness of foundation walls (inches) concrete block	8	8	12
Width of footing (inches)	16	16	18
Thickness of footing (inches)	8	8	12
Minimum depth of footing below grade	42	42	42

*Foundations may support a roof in addition to the stipulated number of floors. Foundations supporting roofs only shall be as required for supporting one floor. All other structures shall have footings and foundations engineered to meet the requirements of Sections 1807, 1808, and 1809 of the IBC, and Chapter 4 of the IRC. All buildings shall have perimeter footings to 42" below grade, and such footings shall be designed to withstand all forces placed upon them as per Sections 1807, 1808, and 1809 of the IBC and Chapter 4 of the IRC or engineering to show equivalency. Trench footings are allowed as a continuous 8" single pass trench for a single story wood frame structure with spans not exceeding 16 feet. The trench must be 42" deep and have at least two (2) horizontal rods fixed in place and tied into the existing structure. Soil bearing capacity shall be a minimum of 2000 psf.

This table is currently part of the Ames Code and is proposed to continue. It is the same as the chart that appears in Section 5.200(1), shown earlier in this document, but in this context, applies to dwelling construction.

(13) **Section G2415.1(404.1)** Prohibited Locations, of the International Residential Code is deleted and the following text is inserted in lieu thereof:
Piping shall not be installed in or through a ducted supply, return or exhaust, or a clothes chute, chimney or gas vent, dumbwaiter or elevator shaft. Piping installed downstream of the point of delivery shall not extend through any townhouse unit other than the unit served by such piping.

*The **proposed local amendment** adds a second sentence to the current amendment. It prohibits gas piping from running through one dwelling on its way to another. This is consistent with other prohibitions against running any kind of utility services across property lines or through adjacent properties.*

Sec. 5.202. ACCESSIBILITY. Reserved.

There are no proposed local amendments to the adopted International Building Code Accessibility Standards.

Sec. 5.203. ENERGY. Reserved.

There are no proposed local amendments to the adopted State of Iowa Energy Conservation Code.

Sec. 5.204. EXISTING BUILDINGS. Reserved.

There are no proposed local amendments to the adopted International Existing Building Code.

Sec. 5.205. ELECTRICAL.
The provisions of the 2008 National Electrical Code (NEC), are amended as follows:

(1) Section 334.10 of the said National Electric Code is amended by substituting the following for subsections (i) through (iii): 'Type NM, Type NMC and Type NMS cables shall be permitted to be used in: (i) one-family dwellings and associated accessory buildings, (ii) two-family dwellings and associated accessory buildings, (iii) multifamily dwellings and associated accessory buildings. All other structures shall be wired using other methods as allowed by the National Electrical Code.

(2) All references in the aforesaid 2008 National Electric Code to the building code shall be deemed a reference to the applicable code set out in and adopted by Chapter 5 of the Municipal Code of the City of Ames, Iowa.

Sec. 5.206. MECHANICAL. Reserved.

There are no proposed local amendments to the adopted International Mechanical Code.

Sec. 5.207. NATURAL GAS.

The provisions of the 2009 International Fuel Gas Code (IFGC), are amended as follows:

(1) Section 404.1 Prohibited Locations, of the International Fuel Gas Code is deleted and the following text is inserted in lieu thereof:

Piping shall not be installed in or through a circulating air duct, clothes chute, chimney or gas vent, ventilating duct, dumbwaiter or elevator shaft. Piping installed downstream of the point of delivery shall not extend through any townhouse unit other than the unit served by such piping.

*The **proposed local amendment** adds a second sentence to the current amendment. It prohibits gas piping from running through one dwelling on its way to another. This is consistent with other code prohibitions against running any kind of utility services across property lines or through adjacent properties.*

Sec. 5.208. PLUMBING.

The provisions of the 2009 Uniform Plumbing Code (UPC), are amended with the deletion of Chapter 16; and with the addition of Appendix A, Appendix B, and Appendix D, and the revision of the following text as stated:

(1) Add new section 101.5.7 stating:

Whenever a structure or building is to be demolished, before demolition begins the following must be completed:

(a) Building sewer capped at curb line with a manufactured plug.
(b) Foundation line capped at curb line with a manufactured plug.
(c) Water service capped or plugged at main.
(d) Plumbing inspector sign-off on demolition sheet given to contractor before demolition permit is issued.

*This section is **added** to codify the City's water and sewer disconnect requirements in one location.*

(2) Add new section 101.5.8 stating:

When a structure or building is on land that has been or is being annexed into the City of Ames and connection to the public water or sewer system is requested for that building or structure, the City may require that its plumbing system be inspected to determine whether the system has adequate sewer venting and backflow prevention to protect the public water system, and to determine if it is otherwise free from hazards to those exposed or potentially exposed to that system. Based on that inspection, if it is determined that a cross connection or other hazard exists, then the Building Official shall determine what

corrective action is needed to eliminate the hazard(s) and the owner shall complete the corrective action before connection to City services is allowed.

*This section is being **added** to codify existing practice policy regarding plumbing compliance of **annexed properties**. It will not require any immediate change to structures' plumbing upon annexation, but will require an evaluation by the Building Official and appropriate plumbing changes to be made prior to connection to the City's water or sanitary sewer systems.*

(3) Amend Section 408.1 UPC to state:

All water closet bowls shall be of the elongated type with open front seats except in dwelling units, motel and hotel rooms. In nurseries, schools and other similar places where plumbing fixtures are provided for the use of children under six (6) years of age, water closets shall be of a size and height suitable for children's use. All water closets shall be equipped with seats as required below.

No change from current code

(4) Amend Section 411.2 UPC by adding subsection 411.2.4 as follows:

In all buildings, a three-inch (3") floor drain shall be located on the lowest floor level where the water meter is located. A three-inch (3") floor drain shall be located in same room whenever a RPZ type backflow preventer is installed that discharges water. A two-inch (2") or larger floor drain shall be provided in the same room the water heater is located on the lowest floor level.

Exception: Existing water heaters and water meters unless relocated.

No change from current code

(5) Amend Section 412.4.2 UPC to read:

In food establishments the fixture requirements are determined by the statutes and regulations of the State of Iowa. The following requirements apply to food establishments, bars and night clubs:

(a) Bars, taverns and nightclubs shall be provided with a three (3) compartment glass washing sink and a drain board with hot and cold running water. The sink shall have an indirect waste to a floor sink with an air gap.

(b) A restaurant shall have either a three (3) compartment ware washing sink or an automatic dish washing machine of commercial type, including a booster heater along with a two-compartment sink.

(c) A hand-washing sink with hot and cold running water shall be installed in each food preparation area in restaurants and behind each bar area of bars, taverns and nightclubs.

(d) A mop/utility sink shall be required with hot and cold running water in each restaurant, bar, tavern or nightclub, for mop and waste water. The mop/utility sink shall not be used as a hand-washing sink.

No change from current code

(6) Amend Section 417.0 UPC by adding:

All single family dwellings shall be provided with a two-inch (2") future vent stubbed to the basement level. Such vent shall be capped in the floor joist area for future use and labeled or marked as such.

No change from current code

(7) Table 4-1 Minimum Plumbing Facilities

With prior approval, Authority Having Jurisdiction may allow use of Chapter 29 of the 2009 International Building Code.

No change from current code, except reference updated to 2009 IBC

(8) Section 603 of the UPC is amended as follows:

(a) Section 603.3.3 of the UPC is amended by adding: The test report shall be sent to the Administrative Authority no later than ten working days after the test.

No change from current code

The following italicized sections ending at (9) are the backflow/containment regulations of the City of Ames Water Pollution Control Department

(b) Section 603 UPC is further amended by adding after the last numbered section a new section 603.10 as follows:

(i) Purpose. The purpose of these containment regulations is:

a. to protect the City of Ames Public Water Supply (PWS) from the possibility of contamination or pollution by containing within the customer's internal distribution system(s) or the customer's private water system(s) such contaminants or pollutants that could backflow into the PWS; and

b. to provide for the maintenance of a continuing program of containment that will systematically and effectively prevent the contamination or pollution of the PWS.

(ii) Definitions. As used in this section:

a. Approved Backflow Prevention Assembly For Containment means: A backflow prevention assembly which is approved by the University of Southern California - Foundation for Cross-Connection Control and Hydraulic Research. The backflow prevention assembly must also be listed by the International Association of Plumbing and Mechanical Officials, or by the American Society of Sanitary Engineering. The approval and listing requirements do not apply to an air gap used as an approved backflow prevention assembly for containment.

b. Auxiliary Water Supply means: Any source of water that is available to the customer over which the City of Ames water utility does not have sanitary control to reduce pollution, contamination, or other conditions that make that source of water unacceptable as a potable water supply, such as, but not limited to

1. a public or private water supply other than the City of Ames water utility,

2. public or private wells, or

3. lakes, naturally-fed ponds, storm water basins, and flowing waters (rivers, creeks, etc.) from which water is drawn.

c. Available to the Customer means: The water utility customer has authority to use, or direct the use of, the auxiliary water supply by virtue of ownership, contract, or other arrangement for control.

d. Backflow means: The undesirable reversal of flow into the public water distribution system.

e. Backflow Prevention Assembly means: An assembly or means to prevent backflow.

1. Air Gap means: This is a physical break between the PWS and the customer's water system. The air gap is to create an unobstructed vertical distance between the opening of any pipe or faucet conveying water to a tank, plumbing fixture, receptor, or other assembly and the flood level of the receptacle. The air gap shall conform to the requirements of UPC Table 6-3.

2. Reduced-Pressure Principle Backflow Prevention Assembly (RP) means: The RP consists of two independently acting check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves. These units are located between two tightly closing resilient-seated valves as an assembly, and equipped with properly located resilient-seated test shutoffs.

3. Double Check Valve Assembly (DC) means: The DC consists of two internally loaded check valves, either spring loaded or internally weighted, installed as a unit between two tightly closing resilient-seated shutoff valves with properly located resilient-seated test shutoffs.

f. Commercial/Industrial Fluid means: Any liquid, gas, or solution that is a chemical, biological, or other substance in a form, quantity, or concentration that would constitute a hazard (health or non-health) if introduced into the public water supply, such as, but not limited to

1. polluted or contaminated waters;

2. all types of process and used waters (waters which originated from the public water supply but may have deteriorated in sanitary quality);

3. chemicals in fluid form;

4. plating acids and alkalis;

5. circulated cooling waters (except for those solely used for air conditioning);

6. oils, gases, caustic and acid solutions;

7. other liquid and gaseous fluids used industrially, agriculturally, commercially, or for other non-domestic purposes.

g. Commercial/Industrial Fluid System means: Any system used by the water utility customer to store or utilize any commercial/industrial fluid in a manner that may constitute a hazard (health or non-health) to the public water supply, such as, but not limited to

1. car washes,

2. microbreweries,

3. chlorinators,

4. clean-in-place systems,

5. bulk fluid storage with remote dispensing (motor oil, antifreeze, etc.), and

6. injection molding with integral heating and cooling. However, commercial/industrial fluid systems do not include:

1. fuel gas (propane or natural gas) systems;

2. air conditioning, cooling, refrigeration, and similar systems using only Freon or similar refrigerants;

3. sanitary sewer, rainwater, or storm sewer lines; and

4. boilers.

h. Containment means: A method of backflow prevention which requires the installation of a backflow prevention assembly at the water service connection.

i. Contamination means: An impairment of a potable water supply by the introduction or admission of any foreign substance that degrades the quality of the water and creates a health hazard.

j. Cross-Connection means: An actual or potential connection between any part of a potable water system and any other environment containing other substances in a manner that, under any circumstances, would allow such substances to enter the potable water system.

k. Hazard, Degree of means: The rating of a cross-connection or service connection which indicates if it has the potential to cause contamination or pollution. The term is derived from an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.

1. Hazard - Health means: A hazard upon the PWS involving any substance that, if introduced in the potable water supply, could cause death, illness, spread disease, or have a high probability of causing such effects.

2. Hazard - Non-health means: A hazard upon the PWS involving any substance that generally would not be a health hazard but, if introduced into the PWS, could cause a nuisance by introducing color, taste or odor, or would alter the quality of the PWS physically, chemically, or biologically.

l. Permanent Swimming Pool means: A pool or tub with a capacity of 1,000 gallons or more of chemically treated water that has a filtration system with a pump and rigidly supported walls/sides. Above-ground movable pools and tubs that meet the above criteria shall be deemed "permanent swimming pools."

m. Pollution means: The presence of any foreign substance in water that impairs, alters, or degrades its quality but does not constitute a health hazard.

n. Registered Backflow Prevention Assembly Technician (Technician) means: A person who is registered by the State of Iowa to test or repair backflow prevention assemblies and report on the condition of those assemblies.

o. Service Connection means: The terminal end of the pipe connected to, directly or indirectly, the City of Ames water main; that is, the point of delivery to the customer's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter. Service connections shall also include, but not be limited to, a temporary water service connection from a fire hydrant and all other temporary or emergency water service connections from the public water system.

p. Thermal Expansion means: Volumetric increase of water due to heating resulting in increased pressure in a closed system.

(iii) Administrative Authority

a. The Administrative Authority is the Ames City Council acting through such persons or departments as the City Council shall designate.

b. The Administrative Authority shall have the right to enter, with the consent of the customer or upon the basis of a suitable warrant issued by a court of appropriate jurisdiction, any property to determine if the conditions for a partial or total exemption have been satisfied or if a backflow prevention assembly has been properly installed for containment.

1. All backflow prevention assemblies shall be available for City inspection within a short notice by the Administrative Authority. Short notice is considered to be less than 24 hours.

2. The entrance to the property to determine if the conditions for a partial or total exemption have been satisfied will not be necessary if the customer has properly installed, tested, and maintained an approved RP or air gap on every and all service connections serving the customer's premises.

c. The Administrative Authority may collect fees for the administration of this program.

d. The Administrative Authority shall maintain records of containment hazard surveys, and of the installation, testing, and repair of all backflow prevention assemblies installed for containment purposes

(iv) Where Containment Is Required

a. An RP or air gap is required for containment for every direct or indirect service connection unless such connection:

1. qualifies for a total or partial exemption; or

2. supplies a fire protection system.

b. A DC may be installed for containment in place of an RP or air gap when a partial exemption is granted.

c. A partial exemption shall be granted only if all of the following conditions precedent are met.

1. The entire facilities are within the scope and applicability of the plumbing regulations of the City of Ames, Iowa.

2. All water uses are protected by the "isolation" provisions of Chapter 6 of the Uniform Plumbing Code.

3. There are no auxiliary water supplies.

4. There are no solar heating systems.

5. There are no permanent swimming pools.

6. There are no commercial/industrial fluid systems.

7. The entire facilities and all pertinent circumstances and conditions are fully accessible for inspection by representatives of the City's Water and Pollution Control Department.

d. No backflow prevention assembly is required for containment when a total exemption is granted.

e. A total exemption shall be granted when a partial exemption has been granted and all of the following conditions precedent are met.

1. There is only one service connection, not including services for fire protection systems.

2. The facility is less than four stories above grade.

f. Failure of the Administrative Authority to notify a customer that they do not qualify for an exemption and that they shall install backflow prevention assemblies for containment shall in no way relieve a customer of the responsibility to comply with all requirements of these regulations.

g. The Director of the City of Ames Water and Pollution Control Department may require installation of an air gap, by and at the customer's sole expense, at the service connection where records indicate a history of threat to the public water supply system because of inappropriate handling of health hazard substances or actual backflow into the PWS.

(v) New Service Connections

a. Plans shall be submitted to the Administrative Authority for review on all new service connections in order to determine if a partial or total exemption shall be granted.

b. The Administrative Authority shall require the installation of the appropriate backflow prevention assembly for containment before the initiation of water service.

(vi) Fire Protection Systems

a. A backflow prevention assembly to be used in a fire protection system shall meet the requirements of Factory Mutual Research Corporation (FM) and Underwriters Laboratory (UL) and the requirements of the fire code and the building code of the City of Ames, in addition to the requirements of paragraph (ii)a. Assemblies sized smaller than 2-1/2 inches which have not been tested by FM and listed by UL may be allowed if approved by the City of Ames Fire Department Chief.

b. An RP shall be installed on all new and existing fire protection systems which the Administrative Authority determines to have any of the following:

1. Interconnections with auxiliary supplies such as reservoirs, rivers, ponds, wells, mills, or other industrial water systems; or

2. Use of antifreeze or other additives in the fire protection system unless an RP is used to isolate the loop or branch containing antifreeze or other additives when a DC is installed at the service connection; or

3. Any other facility, connection, or condition which may cause contamination

c. A DC will be required for all other fire protection systems. The DC shall be required on all new systems at the time of installation and on existing systems at the time that they are modified.

(vii) Portable Tanks. Portable tanks and vessels shall be filled through a properly installed and maintained backflow prevention assembly or vacuum breaker.

(viii) Installation of Backflow Prevention Assemblies

a. All backflow prevention assemblies for containment shall be installed so that they are accessible for testing as stated in the UPC at Section 603.3.4 thereof. The installation shall also provide the same clearances as called for the water meter in the City of Ames Municipal Code, Section 28.205.(5).

b. No backflow prevention assembly for containment shall be installed in a place where it would create a safety hazard such as, but not limited to, over an electrical panel or above ceiling level.

c. The required backflow prevention assemblies for containment shall be installed in horizontal plumbing immediately following the meter or as close to that location as deemed practical by the Administrative Authority unless approved in writing by the Administrative Authority. In any case, it shall be located upstream of any branch piping. Installation at this point does not eliminate the responsibility of the customer to protect the water supply system from contamination or pollution between the backflow prevention assembly and the water main, and to protect the water supply system from contamination or pollution within the premises.

d. RPs for containment shall be installed so as to be protected from flooding.

e. RPs for containment shall not be installed in underground vaults or pits.

f. All backflow prevention assemblies for containment shall be protected from freezing. Assemblies used for seasonal services may be removed in lieu of being protected from freezing; however, the assemblies must be reinstalled and tested by a technician prior to the service being reactivated.

g. If hot water is used within the water system, thermal expansion shall be provided for when installing a backflow prevention assembly for containment.

h. Provisions shall be made to convey the discharge of water from RPs to a suitable drain.

i. If interruption of water service during testing and repair of backflow assemblies for containment is unacceptable to the customer, another backflow prevention assembly for containment, sized to handle the temporary water flow needed during the time of test or repair, shall be installed in parallel piping.

(ix) Removal of Backflow Prevention Assemblies

a. Approval must be obtained from the Administrative Authority before a backflow prevention assembly for containment is removed, relocated, or replaced.

b. The use of an assembly may be discontinued and the assembly removed from service upon presentation of sufficient evidence that the customer qualifies for an exemption.

c. An assembly may be relocated following confirmation by the Administrative Authority that the relocation will continue to provide the required protection and satisfy installation requirements. A test will be required following the relocation of the assembly.

d. An assembly may be removed and replaced, provided the water use is discontinued until the replacement assembly is installed.

e. An assembly may be removed to protect it from freezing provided that

1. water use is discontinued until the assembly is reinstalled and tested; and

2. the Administrative Authority is notified in writing within five days of the removal.

(x) Testing of Backflow Prevention Assemblies

a. Testing of backflow prevention assemblies for containment shall be performed by a registered backflow prevention assembly technician (technician). The costs of required tests shall be borne by the customer.

b. Backflow prevention assemblies for containment shall be tested and inspected upon installation and at least annually thereafter.

c. Backflow prevention assemblies for containment which are in place, but have been out of service for more than three months, shall be tested before being put back into operation. Backflow prevention assemblies for containment used in seasonal applications shall be tested before being put into operation each season.

d. Before being placed back into service, any backflow prevention assembly for containment which fails a test shall be repaired or replaced. In the case when a reported value is less than the minimum, the Director of the City of Ames Water and Pollution Control Department may approve temporary restoration of service before repairs are completed. Backflow prevention assemblies for containment shall be retested by a technician immediately after repair or replacement.

e. When water service has been terminated for non-compliance, the backflow prevention assembly for containment shall be repaired or replaced and then tested prior to the resumption of water service.

f. When warranted, the Administrative Authority may require backflow prevention assemblies for containment to be tested at any time in addition to the annual testing requirement. Examples of this include, but are not limited to, assemblies with a history of repeated failures or assemblies that have been subjected to fire, flood, or other unusual environmental conditions.

g. The technician shall report the results of all inspections and tests of a backflow prevention assembly for containment to the customer and to the Administrative Authority on the form provided by the Administrative Authority within ten working days of the test. The technician shall immediately report to the Administrative Authority when and where a test indicates that an assembly fails to perform and no immediate repair is done to make the assembly function properly.

h. The Administrative Authority may periodically verify test procedures and results.

(xi) Repair of Backflow Prevention Assemblies For Containment

a. All repairs to backflow prevention assemblies for containment shall be performed by technicians.

b. The technician shall not change the design, material, or operational characteristics of a backflow prevention assembly for containment during repair or maintenance and shall use only original manufacturer replacement parts or equivalent parts approved by the University of Southern California - Foundation for Cross-Connection Control and Hydraulic Research.

c. The repaired assembly must be tested after each repair and pass the test before being placed back into service.

d. The technician shall report the repair of a backflow prevention assembly for containment to the customer and to the Administrative Authority within ten working days of the repair. The report shall include the list of materials or replacement parts used and subsequent tests.

(xii) Backflow Incidents

a. The customer shall immediately notify the Administrative Authority when the customer becomes aware that backflow has occurred in the building, property, or private water system receiving water service.

b. The Administrative Authority may order that water service be temporarily shut off when backflow occurs in a customer's building, property, or private water system.

Such shut off is to protect the system from further contamination or pollution and to allow time for locating and mitigating the cause and extent of the contamination or pollution.

(xiii) Existing Backflow Prevention Assemblies For Containment

a. All backflow prevention assemblies for containment installed prior to November 1, 1996, that do not meet the requirements of these regulations but were approved testable assemblies for the purpose described herein at the time of installation and that have been properly installed and maintained, shall, except for the testing, inspection, and maintenance requirements under Section (x) and Section (xi), be excluded from the requirements of these rules so long as the Administrative Authority is assured that they will satisfactorily protect the PWS. Whenever the existing assembly for containment is moved from the present location, requires replacement, or when the use of the service area protected by the assembly changes so that the Administrative Authority determines that the customer no longer qualifies for a partial exemption, the unit shall be replaced by an approved backflow prevention assembly for containment meeting the requirements of these regulations.

(xiv) Customer Non-compliance

a. In case of non-compliance with these regulations, the Administrative Authority shall notify the customer to comply within ten working days. In the event of failure or upon refusal of the customer to comply as ordered, the Administrative Authority may, after notice and reasonable opportunity for hearing, terminate water service. Non-compliance includes, but is not limited to, the following:

1. Refusal to allow the Administrative Authority access to the property to determine if the conditions for a partial or total exemption have been satisfied, except when an RP or air gap is properly installed for containment and properly maintained

2. Providing inadequate backflow prevention

3. Failure to install a backflow prevention assembly for containment which has been required by the Administrative Authority

4. Failure to test, maintain, or properly repair a backflow prevention assembly for containment as required by the Administrative Authority

5. Failure to comply with the requirements of these regulations

6. Refusal to replace a faulty backflow prevention assembly

7. Removal of a backflow prevention assembly for containment which has been required by the Administrative Authority except for seasonal removal as in Section (viii)f

8. Bypassing of a backflow prevention assembly for containment which has been required by the Administrative Authority

9. Failure to report a backflow incident

10. Direct connection between the PWS and a sewer line

11. A situation which presents an immediate health hazard to the PWS

b. For conditions 7, 8, 9, 10, and 11, the Administrative Authority will take the following steps.

1. Make a reasonable effort to advise the customer of intent to terminate water service.

2. Terminate water service and lock service valve. The water service will remain inactive until correction of the violation has been approved by the Administrative Authority.

(xv) COMMITTEE OF ADJUSTMENT There is hereby established the Containment Committee of Adjustment.

a. The Committee shall consist of three members as follows: the Building Official of the City or that official's designee; the Director of Water and Pollution Control or the Director's designee; and a representative of the Plumbing and Mechanical Board of Appeals, selected from among the members of that Board by majority vote of the Board's members.

b. The said Committee of Adjustment shall have the following powers.

1. To hear and decide appeals that allege an error in any decision or determination made in the administration and enforcement of Section 21.501(47)(b) of the Municipal Code of the City of Ames, Iowa

2. To authorize, in specific cases, such exemption from the requirements of Section 21.501(47)(b) of the Municipal Code of the City of Ames, Iowa, as will not be

contrary to the laws of the State of Iowa, when due to special circumstances not of the property owner's own creation, a strict literal interpretation of Section 21.501(47)(b) would result in undue expenses to the property owner in view of an alternative measure agreed to by the property owner that will not be contrary to the public interest

(xvi) Presumptive Exemptions The following water uses shall generally be presumed exempt from the containment requirements of Section 21.501(47)(b): water closets, lavatories, bath tubs, showers, water softeners, single-faucet water treatment units, boilers, sinks, irrigation systems, clothes washers, dishwashers, pre-rinse stations, garden hose connections, drinking fountains, urinals, carbonators/beverage dispensers, garbage disposals, ice makers, cleaning chemical dispensers, and private fire hydrants. However, when warranted by the facts and circumstances of a particular situation, the Administrative Authority, with notice and opportunity to be heard extended to the property owners, may apply to the Containment Committee of Adjustment for a determination that containment measures are required under such facts and circumstances.
(Ord. No. 3433, Sec. 1; 5-13-97; Ord. No. 3904, 3-6-07)

(9) Section 603.4.8 UPC the Note is reworded to read:
Water-cooled compressors, degreasers, or any other water-cooled equipment shall be protected by a listed IAPMO reduced pressure principle backflow preventer.
***New section** added to clarify containment requirements for specific appliances and fixtures*

(10) Section 603.4.10 UPC is reworded to read:
Potable water make up connections to boilers, sterilizers, chillers, commercial clothes washers, or water heaters for radiant heat, shall have an IAPMO listed reduced pressure type backflow preventer.
***New section** added to clarify containment requirements for specific appliances and fixtures*

(11) Section 603.4.12 UPC is amended by adding:
A stainless steel Watts 9Bd dual check valve backflow preventer or equivalent shall be used on all potable water lines that have a carbonated soda fountain or dispensing machine connected.
***New section** added to clarify containment requirements for specific appliances and fixtures*

(12) Section 604.1 UPC is amended to add:
The following type of pipe and fittings are allowed in the interior/exterior of a building or structure:

Interior

Above concrete floor (lowest level)

(a) soft copper (Type K, L, M)
(b) rigid copper (Type K, L, M)
(c) brass
(d) cross linked polyethylene (PEX) (as approved by Chapter 14 of the Uniform Plumbing Code),
(e) ductile iron (four (4) inch or larger).
(f) CPVC

Below concrete floor (lowest level)

(a) soft copper (type K)
(b) PEX(as approved byChapter14 of the Uniform Plumbing Code)
(c) Polyethylene, IPS 200 p.s.i. SLDR-7, PE3408
(d) ductile iron (four (4) inch or larger) with flanged mechanical joints.
(e) C-900 PVC DR 14 (fire line).

Exterior

(a) PEX(as approved byChapter14 of the Uniform Plumbing Code),and which meets manufacturer's specifications.
(b) Soft copper (Type K)
(c) Brass
(d) Ductile iron (flanged mechanical joint) (bolts shall be teflon coated)
(e) PVC meeting AWWA C-900 standards, DR14 for fire lines and Dr18 for non-fire lines.
(f) Polyethylene, IPS 200 p.s.i. SLDR-7, PE3408

Note: Polyethylene, PEX and PVC C-900 shall have a 14-gauge solid copper tracer wire with a blue jacket. The tracer wire will start at the water main and terminate at a weatherproof junction box. The junction box shall be accessible and be labeled to identify junction box “tracer wire”. The tracer wire shall then continue from the junction box and terminate at the water meter. The wire shall run from the main and be exposed at the curb box. The junction box shall be located next to water meter remote on the exterior of the building or structure.

No change from current code

(13) Section 604.2 UPC shall be deleted

No change from current code

(14) Section 604.5 UPC shall be deleted

No change from current code

(15) Section 604.6 UPC shall be deleted

No change from current code

(16) Section 606.0 UPC is amended by adding new subsections 606.0.1 through 606.0.13 as follows:

Sec. 606.0.1. Curb Stops shall be of the quarter turn ball valve type with the grip joint ends.

Sec. 606.0.2. The polyethylene to copper adaptor coupling, located at least two (2) feet from the outside footing, shall be a Ford Meter Box Co. C26-44-G (1") or equivalent.

Sec. 606.0.3. All threaded taps on the main shall be at least 24 inches apart and shall be at least ¾ inch in size. If more than one tap is made for a service line, the taps will be staggered on the pipe. No more than three (3) threaded taps shall be made for a service connected to a 4-inch or larger main. Maximum threaded tap size for a 4 inch main is ¾ inch. All taps will be made in the top half of the water main, but not more than 45" above the horizontal plane. All services having two (2) taps or more shall be combined through a brass wye pipe connection. The maximum length of service from the main to the wye shall be four (4) feet. The following table lists appropriate number of taps for different service sizes.

Service Size Taps
1 inch = two ¾ inch or one 1 inch
1¼ inch = two 1 inch
1½ inch = two 1 inch

No change from current code

Sec. 606.0.4. Service saddles allowed on four (4) inch or larger water mains when water service is ¾", 1", 1¼", and 1½" shall be a Smith-Blair, or equivalent, #317, #357, #372, #393 or #397. The saddles shall have a stainless steel strap with two bolts wide minimum. The bolts or nuts shall be either stainless steel or blue coated. When tapping a four (4) inch or larger main for water services for a two (2) inch or larger water service, the Smith-Blair, or equivalent stainless steel full wrap around saddle, #238, #239, #264, or #265 shall be used. The bolts and nuts shall be either stainless steel or blue coated. Any water service that is larger than a two(2) inch shall require a tapping valve and sleeve at the main or private main. The Post Indicator Valve (PIV) for fire line shall not serve as the water service valve after the main. All tapping valve sleeves shall meet the Urban Standard Specifications as follows:

(1) Valve: Tapping valve conforming to ANSI/AWWA C509.
(2) Sleeve:
    (a) Minimum 14 gauge
    (b) Stainless steel, ASTM A240, Type 304
    (c) Working pressure 200 psi.
    (d) Must fully surround pipe
    (e) Approved sleeves
        (i) Cascade Water Works Manufacturing Company, Style CST-EX
        (ii) PowerSeal Pipeline Products Corporation, Model 3490AS
        (iii) JCM Industries, Inc. Model JCM 432
        (iv) Approved equal
(3) Gasket:
    (a) To completely surround pipe
    (b) Minimum thickness 0.125 inch
    (c) Material: nitrile rubber.
(4) Outlet Flange:

(a) Stainless steel, ASTM A240, Type 304
(b) ANSI B 16.1, 125 pound pattern
(5) Bolts: Stainless steel, ASTM A240, Type 304

No change from current code

Sec. 606.0.5. In the event a curb box is set in any location where a concrete or asphalt surface is to be placed, a sleeve shall be placed around the cap to allow for expansion and contraction.

No change from current code

Sec. 606.0.6. In a new subdivision the water service line shall be installed at the center of the property unless otherwise approved by the Administrative Authority.

No change from current code

Sec. 606.0.7. There shall be a curb cock in every service connection to the main. It shall be located on the property line or as close as possible thereto and in alleys within one foot of the alley line, except two (2) inch and larger, which shall have a street valve box over the valve at the water main. The curb cock to be used for services from three-fourths (¾) inch to two (2) inches shall be the style known as Mueller Mark II Oriseal or Ford Ball Valve with 90° curb cock, or equal, provided with T handle and extension rod keyed and locked to curb cock and shall be the same diameter as the pipe served. The curb cock shall be kept in an operative condition at all times.

No change from current code

Sec. 606.0.8. The curb cock shall be covered by a curb box of the Western pattern No. 100, or equal, extending to the curb grade. In cases where the surface of the ground is higher than the curb grade to the extent that the curb box will not extend sufficiently to be in plain view, then the curb box shall be extended to the ground surface. Whenever a water service is renewed the curb box shall be brought to the curb grade or present natural ground level and moved to the property line. In placing the curb cock in position, care must be exercised to provide against settlement of the curb box, by providing a base of brick, stone or concrete block set on solid earth for support. A support shall be placed across the ditch and wired to the curb box near the top to keep it in a vertical position while filling the ditch.

No change from current code

Sec. 606.0.9. A corporation cock of either a Mueller or Ford make, or its equivalent, shall be inserted in every tap one inch or less in diameter made in the water main. The connection to the main shall be made by a regulation corporation cock and copper service with a compression joint if the pipe is plastic SIDR-7 200 P 3408. All connections to the water main shall be adequately looped to prevent breakage from ditch settlement.

No change from current code

Sec. 606.0.10. A service valve shall be installed immediately following a two (2) inch or larger tap on all take offs from the water main or private main.

No change from current code

Sec. 606.0.11. Where a single water service line provides service to a new duplex or is split for any other reason, the service line shall be at least one inch in diameter. Where an existing structure is to be converted to a duplex a 1" equivalent service may be provided by a separate tap. The new service lines shall be divided by a wye at the property line. Existing 1" services may be split inside the building so long as shut-offs are available in a common area. Separate curb boxes shall be installed, and separate ¾ inch service lines shall be run to the individual customer units.

No change from current code

Sec. 606.0.12. Sprinkler systems used for fire protection may be permitted to be attached to the water mains by registered plumbing contractors by direct connection without meters under the direction and supervision of the City. No open connection can be incorporated in the system, and there shall be no valves except a post indicator valve at the entrance to the building, which must be sealed open. One and two family residential sprinkler lines shall be metered through the single meter. The property owner or tenant shall promptly report to the City any seal which has been broken for the closing of the system. A

detailed drawing of the sprinkler system shall be filed with the City and free access to the building shall be granted the City for inspection purposes. No charge will be made for water used for fire purposes through a sprinkler system. The fire line shall be a minimum four (4) inch diameter with a shut-off valve installed after the tap into the main, the PIV shall be a minimum of forty (40) feet from the building or at the determination of the fire inspector.
Exception: The fire line may be smaller than 4" in size if hydraulic calculations by the fire sprinkler company show that a 4" would not be required. If a 4" fire line is not required a Fire Department connection or P.I.V. may not be required if determined by the fire inspector.
No change from current code

Sec. 606.0.13. The post indicator valve (PIV) must be set at 36" above final grade. The termination flange, inside the building, shall not be more than twelve (12) inches above finished floor level and be set at a true vertical position. If the fire line and water service are on one line, the water service shall have the take off prior to the PIV. The take off for the water service shall be either brass, ductile iron, C-900 PVC DR 14, or copper to the curb box. The fire line shall have a two hundred (200) pound pressure test done for a minimum of two (2) hours without losing any pressure. The fire line shall be tested from the tap at the main to the termination flange with the PIV open and the curb box closed. No fire line static pressure test shall be started after 1:30 p.m., Monday through Friday.
A certified fire sprinkler installer may install the backflow device to the sprinkler system for containment. The termination flange, inside the building, from horizontal to the vertical position or from horizontal to the horizontal position traveling through an exterior wall or floor, shall have no smaller than ¾ inch galvanized or equivalent all-thread rod used between said flanges to keep fire line termination stable. The fire line located in the trench may use mega-lug type supports, however, a concrete thrust block shall be in front of fire line traveling from horizontal to vertical prior to the termination flange. Only PVC C-900 DR 14, and ductile iron shall be used for the fire line service. The joints shall have bolted flanged fittings. The tapping valve, PIV, and all other fittings and pipe shall be marked to withstand 200 p.s.i. Before requesting a Bac-T test, the fire line shall be flushed thoroughly by the plumbing contractor. The contractor shall request, from the Inspection Division, a Bac-T test form, complete the form and return it to the Inspection Division. Utility Maintenance Division will collect the sample for testing. If the fire line passes Bac-T test, the Inspection Division will contact the plumbing contractor. The termination flange shall have a two (2) inch ball valve to properly flush the fire line.
No change from current code

(17) Section 606.2.1 UPC is amended to add the following to the end of the section:
Soft copper water service lines, except fire line, shall be either brazed, silver soldered, or flared with a long shouldered joint. Whenever type “K” soft copper is used for the water service, use of any joints is discouraged whenever possible.
No change from current code

(18) Section 608.5 UPC is amended to delete “of galvanized steel” and to replace reference to “outside of the building” with “properly drained surface”.

(19) Section 609.1 UPC is amended to delete the last two sentences in the section and insert the following:
All water service lines shall be installed at least five feet below finish grade. If the water service cannot be buried below frost depth at any point, the trench shall be lined with 1 ½” thick “Blue Board” insulation or equivalent as approved by the Administrative Authority. Sand backfill material shall then be placed to a depth of one foot above the top of pipe, then 1 ½" “Blue Board” or equivalent will be installed so that the entire trench width and length in the area needing protection against freezing is insulated and then backfilled. The insulation shall be at least five (5) feet in depth.
No change from current code

(20) Section 609.5 UPC is reworded to add the following to the end of the section:
Exception: water heaters and boilers.
No change from current code

(21) Section 609.10 UPC is amended by adding:

Exception: Single family dwelling units.
No change from current code

(22) Section 610.8 (6) is amended by replacing the last sentence with:
No building water service line shall be less than one (1) inch diameter.
No change from current code

(23) Amend Table 6-6 UPC by changing footnote:
Replace “Building supply, three-quarter(3/4) inch nominal size minimum.” With “Building supply, one (1) inch nominal size minimum.”
No change from current code

(24) Section610.1 UPC is reworded:
Delete the words “each water meter and” from the first sentence.
Add “Water meter sizing shall be determined by the Water Meter Division” to the end of the section.
No change from current code

(25) Section 701.1 UPC is reworded to read as follows:
Drainage pipe and fittings used inside a new building or an existing building for underground shall be copper (type L), brass, ABS (schedule 40), PVC (schedule 40) or cast iron.
Exception: Galvanized may be used on a sewage ejector system when the discharge line is three (3) inch or larger. The galvanized shall only be piped no more than four (4) feet out of pit.
Above ground piping shall be the same as underground except that copper tube and fittings may be type M for commercial and structures that are more than a one and two-family dwelling. A one and two-family dwelling may use type DWV copper tube.
No change from current code

(26) Section 703.1 UPC is reworded to add the following at the end of the section:
No underground drainage piping or vent shall be less than two (2) inches inside diameter.
No change from current code

(27) Table 7-3 UPC is amended to add the following to footnote #8:
Public use shall be any building or structure that is not a dwelling unit. Fraternities and sororities are not classified by this section as a dwelling unit.
No change from current code

(28) Section 704.3 UPC is reworded to add at the beginning of the section “At the discretion of the Plumbing Inspector and Sanitarian.”

(29) Section 704.3 UPC is reworded to add the following to the end of the section:
or shall be discharged by an airgap indirect waste to a properly sized floor sink.
No change from current code

(30) Section 705.1.6 UPC is reworded to read as follows:
No molded rubber coupling (Fernco Coupling or equivalent) shall be used on any sanitary sewer or storm sewer. A stainless steel shielded molded rubber coupling may be used when connecting to clay pipe or PVC truss pipe on the sanitary or storm sewer.
No change from current code

(31) Section 705.1.8 UPC is reworded to add the following to the end of the section:
Shielded couplings (no hub clamps) are not allowed on any exterior building sanitary sewer, or storm sewer.
No change from current code

(32) Section 710.9 UPC is reworded to add the following to the end of the section:
Exception: When only discharging a lavatory sink, a general sink, or a floor drain into a sewage ejector receiving tank, dual pumps in public use occupancy will not be required.

No change from current code

(33) Section 717.0 UPC is reworded to read as follows:

The minimum size of any building sewer shall be determined on the basis of the total number of fixture units drained by such sewer, in accordance with Table 7-8. No building sewer shall be smaller than four (4) inches. The building sewer shall not be smaller than the building drain.

In unusual circumstances, with prior approval from the plumbing inspector, a sewage ejector may discharge the building sewer to the public sewer manhole when the public main is too shallow to allow the building sewer discharge to flow by gravity. The pipe material to be used shall be Polyethylene (P.E.) Two (2) inch SDR 7, 3408. The 2" line shall at all times be a minimum of five (5) feet deep or be blue-boarded. The sewage ejector shall be vented with a minimum two (2) inch pipe. The ejector pumps shall comply with section 710.9

No change from current code

(34) Section 718.2 UPC is reworded to read as follows:

Building sewer pipe made of cast iron, copper, or extra strength vitrified clay shall be laid on a firm bed. Pipe consisting of Schedule 40 PVC/ABS, PVC SDR 23.5/35 and PVC truss pipe shall be enveloped on bottom, sides and top with a minimum of four (4) inches of either one (1) inch clean or 3/8" minus crushed rock, 3/8" washed chip or “pea gravel”. After enveloping the pipe, the remainder of the ditch may be filled once the inspection is complete.

No change from current code

(35) Section 718.3 UPC is reworded to read as follows:

No building drain or sewer shall be closer than two (2) feet from the building structure or footing that is not made out of cast iron, Schedule 40 PVC, or Type “L” copper. At no point shall the building sewer be less than five (5) feet in depth on new construction or when replacing existing sewers. If less than five (5) feet in depth, the trench shall be lined with 1 ½” thick blue-board insulation. The insulation of the sides shall be at least five (5) feet below finished grade with a cap over the two sides.

One (1) inch clean 3/8" minus, 3/8" washed chips, and pea gravel rock shall be placed on the bottom, sides and top of pipe whenever any type of PVC is used. Whenever cast iron is used sand may take the place of the one (1) inch rock. Whenever possible, the building sewer shall be at a depth of nine (9) feet below street grade from the main to the property line on new construction. Whenever possible on a duplex or single-family dwelling, the building sewer shall not be located under a driveway.

No change from current code

(36) Section 719.6 UPC is amended by deleting the second paragraph.

No change from current code

(37) Section 801.3 UPC is reworded to read as follows:

Sinks (except hand sinks) in a bar, nightclub, tavern, or soda fountain shall drain to an approved and properly trapped and vented floor sink through an approved airgap or airbreak. The floor sink, drain line, trap, and strainer inlet shall be at least three (3) inch pipe size. The developed length from the fixture outlet to the floor sink shall not exceed five (5) feet.

No change from current code

(38) Section 807.4 UPC is reworded to read as follows:

No domestic dishwashing machine shall be directly connected to a drainage system or food waste disposer without the use of an approved dishwasher air gap fitting on the discharge side of the dishwashing machine, or by looping the discharge line of the dishwasher as high as possible near the flood level of the kitchen sink where the waste disposer is connected, and will be supported or strapped. Listed air gap fittings shall be installed with the flood level (FL) marking at or above the flood level of the sink or drainboard, whichever is higher.

No change from current code

(39) Section 901.0 UPC is further amended by adding new sub-section 901.0.1

Section 901.0.1 All single family or two family dwelling units with a basement shall be provided with a two (2) inch future vent. The future vent shall be combined with other vents or terminate through the roof.

Such vent shall be capped in the floor joist area of the basement for future use. The two (2) inch vent is for a future basement bathroom or other approved fixtures.
No change from current code

(40) Section 902.2 UPC is reworded to read as follows:
Sinks (except hand sinks) in a bar, nightclub, tavern, or soda fountain shall drain to an approved and properly trapped and vented floor sink through an approved airgap or airbreak. The floor sink, its drain line, trap, and strainer inlet shall be at least three (3) inch pipe size. The developed length from the fixture outlet to the floor sink shall not exceed five (5) feet.
No change from current code

(41) Section 903.1 UPC is reworded to read as follows:
Drainage and vent pipe and fitting used inside a new building or an existing building for underground shall be copper (Type L), brass, ABS (Schedule 40), PVC (Schedule 40) and cast iron.
Exception: Galvanized may be used on a sewage ejector system when the discharge line is three (3) inch or larger. The galvanized shall be piped no more than four (4) feet out of pit.
Above ground piping shall be the same as underground except that copper tube and fittings may be Type M for commercial and structures that are more than a one and two-family dwelling. One and two-family dwellings may use type DWV copper tube.
No change from current code

(42) Section 903.1.1 UPC is deleted
No change from current code

(43) Section 903.2.1 is reworded to read as follows:
Copper tube for underground drainage and vent piping shall have a weight of not less than that of copper drainage tube type L.
No change from current code

(44) Section 903.2.2 is reworded to read as follows:
Copper tube for aboveground drainage and vent piping shall have a weight of not less than that of copper drainage tube type M.
Exception: Single family and two family dwellings may use copper tube type DWV.
No change from current code

(45) Section 904.1 UPC is reworded to read as follows:
The size of vent piping shall be determined from its length and the total number of fixture units connected thereto, as set forth in Table 7-5. The diameter of an individual vent above ground shall not be less than one and one-fourth (1 ¼) inches, or less than two (2) inches for underground, nor less than one-half (½) the diameter of the drain to which it is connected.
Exception: A water closet shall be vented with a vent no smaller than a two (2) inch inside diameter pipe.
Each individual building or structure shall have a main vent stack equal in size or larger than the required building sewer. The main vent stack shall extend through the roof a minimum of twelve inches undiminished in size from the underground building drain.
Exception: In single-family, duplexes, apartment, motel and hotel buildings four (4) stories or less, a three (3) inch main stack vent is permitted, as long as other vents through the roof equal the cross-sectional diameter of the required building sewer.
No change from current code

(46) Section 906.7 UPC is reworded to:
Change two (2) inches to three (3) inches and ten (10) inches to twelve (12) inches and remove reference to mm.
No change from current code

(47) Section 908.2.1 UPC is reworded to: Single Bathroom or Single Toilet Room.

An individually vented lavatory in a single bathroom or single toilet room shall be permitted to serve as the wet vent for one (1) water closet and/or one (1) bathtub or shower stall, or one (1) water closet and/or one (1) bathtub/shower combination if all of the following conditions are met:

(a) The wet vent, and the dry vent extending from the wet vent, shall be two (2) inch (50 mm) minimum pipe size.

(b) The wet vent pipe opening shall not be below the weir of the trap that it serves. Vent sizing, grades, and connections shall comply with Sections 904.0 and 905.0.

(c) The horizontal branch drain serving both the lavatory and the bathtub or shower stall shall be two inch (50 mm) minimum pipe size.

(d) The length of the trap arm from the bathtub or shower stall complies with the limits in Table 10-1.

(e) The distance from the outlet of the water closet to the connection of the wet vent complies with the limits in Table 10-1.

(f) The horizontal branch drain serving the lavatory and the bathtub or shower stall shall connect to the horizontal water closet branch above its centerline. When the bathroom or toilet room is the top-most load on a stack, the horizontal branch serving the lavatory and the bathtub or shower stall shall be permitted to connect to the stack below the water-closet branch.

(g) No fixture other than those listed in this section shall discharge through a single bathroom or single toilet room wet-vented system.

***New section** - drawn from 2009 appendix to maintain same requirement as 2006 code.*

(48) Section 908.2.2 UPC is reworded to: Double Bathtubs, Bathtub/Shower Combinations, Shower Stalls, and Lavatories.

Two (2) lavatories, each rated at 1.0 drainage fixture unit (DFU), and two (2) bathtubs, bathtub/shower combinations, or shower stalls, installed in adjacent bathrooms, shall be permitted to drain to a horizontal drain branch that is two (2) inch (50 mm) minimum pipe size, with a common vent for the lavatories and no individual vents for the bathtubs, bathtub/shower combinations, or shower stalls, provided that the wet vent from the lavatories and their dry vent is two (2) inch (50 mm) minimum pipe size and the length of all trap arms comply with the limits in Table 10-1.

***New section** - drawn from 2009 appendix to maintain same requirement as 2006 code.*

(49) Section 908.2.3 UPC is reworded to: Batteries of Fixtures (Battery Venting)

908.2.3.1 A maximum of eight (8) floor-outlet water closets, showers, bathtubs, or floor drains connected in battery on a horizontal branch drain shall be permitted to be battery-vented. The drain from each fixture being battery-vented shall connect horizontally to the horizontal wet-vented drain branch. The horizontal wet-vented branch drain shall be considered as a vent extending from the downstream fixture drain connection to the most upstream fixture connection.

908.2.3.2 Back-outlet water closets having carriers conforming to Section 407.4 shall be permitted to be battery-vented provided they connect horizontally to the horizontal wet-vented section.

908.2.3.3 Trap arm lengths for fixtures shall not exceed those as indicated in Table 10-1.

908.2.3.4 A battery vent shall be connected to the horizontal wet-vented branch drain between the two (2) most upstream fixture drains.

908.2.3.5 The entire length of the wet-vented section of the horizontal branch drain shall be uniformly sized for the total drainage discharge connected thereto as per Table 7-5. The maximum slope of the horizontal drain shall be three-eighths (3/8) inch (10 mm) per foot (300 mm).

908.2.3.6 A relief vent shall be provided on each wet vented horizontal branch drain below the uppermost floor. The relief vent shall connect to the horizontal branch drain between the stack and the first upstream fixture drain.

908.2.3.7 Battery vents and relief vent connections shall be taken off vertically from the top of the horizontal drain. Battery vents and relief vents shall not be used as vertical wet vents.

908.2.3.8 Lavatories and drinking fountains shall be permitted to connect horizontally to the horizontal wet-vented branch drain provided that they are located on the same floor as the battery-vented fixtures and each is provided with either an individual or common vent.

908.2.3.9 Batteries of more than eight (8) battery vented fixtures shall have a separate battery vent for each group of eight (8) or less fixtures, and the horizontal branch drain in each group shall be sized for the total drainage into the branch, including all upstream branches and the fixtures within the particular group.

908.2.3.10 All battery vents and relief vents shall be sized according to Section 904.0, but shall be not less than one-half (1/2) the area of the drain pipe that they serve and shall comply with Section 905.0

New section *- drawn from 2009 appendix to maintain same requirement as 2006 code.*

(50) Section 909.0.1 is added to read as follows:

As an alternative for single family dwellings, an "air admittance valve" may be installed as follows:

(a) The air admittance valve shall be two (2) inches in size and have the ANSI/ASSE 1051 listing label clearly visible during inspection.

(b) The stack or horizontal branch drain shall have a 1 ½" vent. The two (2) inch waste line shall be a designated line with no other connections of any sort.

(c) The air admittance valve shall be readily accessible in the cabinet area, be removable, and located at least six (6) inches above the 2 x 2 x 1 ½" tee for the trap.

Only kitchen or bar island sinks may be auto vented. The auto vent shall be readily accessible and shall be located above the trap arm and in same cabinet as "P" trap.

No change from current code

(51) Table 10-1 UPC is amended to read as follows:

Maximum Allowable Horizontal Length Of Trap Arms	
1-1/4"	5' 0"
1-1/2"	6' 0"
2"	8' 0"
3"	12' 0"
4" and larger	13' 0"

The developed length between the trap of a water closet or similar fixture (measured from the top of the closet flange to the inner edge of the vent) and its vent shall not exceed six feet.

No change from current code

(52) Section 1101.2 UPC is reworded to add the following:

Whenever such connection or arrangement is found to exist in violation of the ordinances of this city or this code, whereby surface water runoff, subsoil or footing drainage is discharged or diverted into the sanitary sewer system, the inspector shall issue a written notice to the owner to cause such to be abated by ordering a connection to a public storm main or collector line.

No change from current code

(53) Section 1101.3 UPC is reworded to read as follows:

Rainwater piping placed within the interior of a building to two (2) feet out of building or footings shall be cast iron, brass, copper (Type M), Schedule 40 PVC or Schedule 40 ABS DWV. Schedule 40 PVC and ABS pipe installed within a duct or plenums shall be insulated with an insulation having a flame-spread index of not more than 25 and a smoke index of not more than 50.

Rainwater piping placed outside a building shall be cast iron, brass, copper (Type M), Schedule 40 PVC or Schedule 40 ABS DWV, reinforced concrete pipe (RCP), vitrified clay pipe (VCP), SDR 23.5 PVC, SDR 35 PVC, PVC truss pipe, PVC A2000 pipe, and corrugated high-density polyethylene (P.E.)

SDR 23.5 PVC, SDR 35 PVC, schedule 40 PVC or Schedule 40 ABS, PVC truss, PVC A2000, and corrugated polyethylene pipe outside a building shall be enveloped with four (4) inches of crushed rock, either one (1) inch clean or 3/8" minus 3/8" washed chips, or "pea gravel", on the top, bottom and sides.

The storm water sewer may be connected to the City storm main at intakes, manholes, or connected directly into the storm main. Whenever a direct connection is made to the storm main, the connection shall be made by a clamping saddle or a fitting with a sealant that makes the joints water and root proof.

If the storm sewer is one-half (½) or more of the size of the storm main, a manhole shall be required at the point of connection to the storm main. All manholes shall meet the Iowa Statewide Urban Standards.

All direct taps into the storm main shall be installed on the top one-half (½) of the main.

The storm sewer shall have a cleanout installed every one hundred (100) feet and every change of direction exceeding 135°. In place of a cleanout every one hundred (100) feet, a manhole shall be placed every three hundred (300) feet (manhole shall meet Des Moines Urban Standards).

No Fernco coupling or no-hub clamp shall be used on the storm sewer or main.

Exception: When converting to PVC truss pipe or clay pipe, a Fernco stainless steel shielded coupling shall be used on storm sewer.

No change from current code

(54) Section 1101.5.2 UPC is reworded to read as follows:

The subsoil drains may be allowed to discharge to a pond, or waterway if approved by the Building Official. If not allowed by the Building Official, the subsoil drain shall be discharged to a storm main.

Regardless, the gravity line shall have a backwater valve.

In existing buildings, if granted permission by the plumbing inspector, the perimeter tile may flow by gravity to a storm main, intake, or manhole if there is at least ten (10) feet vertical height difference between the perimeter tile and the storm main, intake, or manhole.

No change from current code

(55) Section 1101.5.3 UPC is amended to:

Replace “fifteen (15) gpm” with “17 gpm with a seventeen (17) foot head”

Add the following to the end of the section:

The sump pump line may be either Schedule 40 PVC or Schedule 80 PVC pipe.

The fittings shall be either schedule 80 PVC deep socket or schedule 40 deep socket pressure fittings. The sump pump line may also be 1 ½" polyethylene (PE) SDR 9, 3408. The PE joints shall be made with ribbed insert fittings secured by stainless steel clamps. The sump line shall be buried no less than five (5) feet in depth from finished grade. If this depth cannot be maintained, the sides and top of pipe wall shall be covered with 1 ½" blue board insulation. The sides of the insulation shall be at least five (5) feet in depth. When the sump line is discharged into a storm manhole, intake, or storm main that is not five (5) feet below final surface grade, a quarter (¼) of an inch hole shall be drilled into the bottom portion of the horizontal 90°elbow before pipe is placed in the vertical position.

If two sump lines are combined together, the sump line shall be a two (2) inch line to the storm main, intake, or manhole. The sump pump shall have an electrical outlet within reach of the manufacturer’s cord.

No foundation drain service line shall be discharged onto property, someone else’s property, or into the building drain or building sewer. No floor drain, clothes washer, or any other plumbing fixture shall be discharged into the foundation sump pit.

Every sump pit in an elevator shaft shall meet the rules and regulations of the State of Iowa Elevator Inspector. No hydraulic elevator sump shall be discharged into a storm or sanitary sewer.

No change from current code

(56) Section 1101.5.4 UPC is deleted.

***New section** to prohibit discharging sump at grade*

(57) Section 1102.1.2 UPC is amended to read:

The inside conductors installed above ground level shall be of seamless copper water tube, Type K, L, or M; Schedule 40 copper pipe or Schedule 40 copper alloy pipe; service weight cast-iron soil pipe or hubless cast-iron soil pipe; or Schedule 40 ABS or Schedule 40 PVC Plastic pipe.

***New section** to keep consistent with prior approved materials*

(58) Section 1102.3 UPC is amended by adding the following:

Rainwater piping placed underground within the interior of a building to two (2) feet out of building or footings shall be cast iron, brass, seamless copper water tube (type K, L, or M), Schedule 40 PVC or Schedule 40 ABS DWV.

No change from current code

(59) Section 1102.4 UPC is amended by adding the following:

Rainwater piping placed outside a building shall be cast iron, brass, copper (Type M), Schedule 40 PVC or Schedule 40 ABS DWV, reinforced concrete pipe (RCP), vitrified clay pipe (VCP), SDR 23.5 PVC, SDR 35 PVC, PVC truss pipe, PVC A2000 pipe, and corrugated high-density polyethylene (P.E.)

SDR 23.5 PVC, SDR 35 PVC, schedule 40 PVC or Schedule 40 ABS, PVC truss, PVC A2000, and corrugated polyethylene pipe outside a building shall be enveloped with four (4) inches of crushed rock, either one (1) inch clean or 3/8" minus 3/8" washed chips, or “pea gravel”, on the top, bottom and sides.

No change from current code

(60) Tables 11-1, 11-2, and 11-3 UPC are amended by adding the following note to the end of each table:
Rainfall rates for the City of Ames shall be based at three and one-half (3 ½) inches of rain per hour.
No change from current code

(61) Section 1209.5.1.1 UPC is amended to add:
Material allowed six (6) inches or higher above lowest finished floor shall be:

(1) standard weight wrought iron or steel
(2) black iron or steel
(3) corrugated stainless steel (csst)

No change from current code

(62) Section 1209.5.3.4 UPC is amended to add:
No corrugated stainless steel tubing (csst) shall be installed outside of a building or installed below ground in a building. Csst shall be installed by manufacturer's recommendations unless it violates this code.
No change from current code

(63) Section 1212.1 UPC is amended to add:
No appliance connector shall penetrate the housing of an appliance, or be used in an exterior location.
No change from current code

(64) Section 1302.0 UPC is reworded to add the following at the end of the section:
Applicant must provide a certificate to the Inspection Division from an architect or engineer that the facility, as built, meets the requirements of Chapter 13 UPC.
No change from current code

(65) Section D1 of Appendix D UPC is reworded to read as follows:
The maximum rainfall rate for the City of Ames shall be based on three and one-half (3 ½) inches in Table D-1 for design.
No change from current code

ORDINANCE NO. _____

AN ORDINANCE TO AMEND THE MUNICIPAL CODE OF THE CITY OF AMES, IOWA, BY REPEALING CHAPTER 5, DIVISIONS, I, II, III, VI, VII AND ENACTING A NEW CHAPTER 5, DIVISIONS, I, II, III, VI THEREOF, FOR THE PURPOSE OF ADOPTING THE 2009 INTERNATIONAL BUILDING CODE WITH LOCAL AMENDMENTS; AND REPEALING CHAPTER 7 AND CHAPTER 21 AND ENACTING A NEW CHAPTER 21 FOR THE PURPOSE OF SETTING OUT A SEPARATE SIGN ORDINANCE; REPEALING ANY AND ALL ORDINANCES OR PARTS OF ORDINANCES IN CONFLICT TO THE EXTENT OF SUCH CONFLICT; PROVIDING A PENALTY; AND ESTABLISHING AN EFFECTIVE DATE.

BE IT ENACTED, by the City Council for the City of Ames, Iowa, that:

Section One. The Municipal Code of the City of Ames, Iowa shall be and the same is hereby amended by repealing Chapter 5, Divisions I, II, III, VI, VII and enacting a new Chapter 5, Divisions I, II, III, VI; repealing Chapter 7 and Chapter 21 and enacting a new Chapter 21 as follows:

"

DIVISION I
ADOPTION AND ADMINISTRATION

Sec. 5.100. TITLE & ADOPTION.

These regulations shall be known as the Building Code of the City of Ames, hereinafter referred to as "this code."

(1) **Scope.** The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

(2) **Intent.** The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations.

(3) **Referenced codes.** The codes listed in the following Sections and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. Provisions in the appendices of all referenced codes and standards shall not apply unless specifically adopted.

(4) **Adoption.**

(a) The International Building Code, 2009 Edition, (IBC), except for the deletion of Chapters 1, 27, and 29, and

(b) The International Residential Code, 2009 Edition, (IRC), except for the deletion of Chapter 1, Scope and Administration; Part VII - Plumbing; and Part VIII - Electrical; and with the addition of appendix G; are hereby adopted and designated, together with and subject to the additions, deletions and modifications hereinafter stated, plus the ordinances pertaining to plumbing, electrical and mechanical matters, as the Building Code of the City.

(5) **Buildings.** The provisions of the 2009 International Building Code (IBC), as adopted and amended in this municipal code chapter, shall apply to the construction, alteration, movement ,enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

(6) **Residential Buildings.** The provisions of the 2009 International Residential Code for One- and Two family Dwellings (IRC), as adopted and amended in this municipal code chapter, shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition

of detached one- and two-family dwellings and townhouses not more than three stories above-grade in height with a separate means of egress and their accessory structures.

(7) **Accessibility.** The provisions of Chapter 11 of the 2009 International Building Code, and by reference, American National Standards Institute (ANSI) Standard A117.1-2003, entitled Accessible and Usable Buildings and Facilities, 2003 edition, as adopted in this code, shall apply to the design and construction of all public and private buildings intended for use by the general public, and multiple-unit dwellings with four or more units, including site elements and features.

Exception:

(a) This standard does not apply to single family dwellings or apartment buildings with less than four individual dwelling units.

(b) Any building or facility which is in compliance with the applicable requirements of State of Iowa Code Chapter 104A.1, and Administrative Rule 661-Chapter 302 shall be considered in compliance with this code.

(8) **Energy.** The provisions of the State of Iowa Energy Code shall apply to all matters governing the design and construction of buildings for energy efficiency.

(9) **Existing Buildings.**

The provisions of the 2009 International Existing Building Code (IEBC), as adopted and amended in this code, shall be an acceptable code compliance standard for repair, alteration, change of occupancy, addition, and relocation of existing buildings.

(10) **Fire prevention.** The provisions of the 2009 International Fire Code (IFC), as adopted and amended in Chapter 8 of the Ames Municipal Code, shall apply to matters affecting or relating to structures, processes and premises from the hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices; from conditions hazardous to life, property or public welfare in the occupancy of structures or premises; and from the construction, extension, repair, alteration or removal of fire suppression and alarm systems or fire hazards in the structure or on the premises from occupancy or operation.

(11) **Electrical.** The 2008 National Electric Code, as adopted by the Iowa Electrical Examining Board, and published by the National Fire Protection Association, Quincy, Massachusetts, is hereby adopted as the electrical code of the City of Ames and shall govern electrical work and installations in the City of Ames, except for such specific, higher standards and requirements as have been or may from time to time be enacted by the City of Ames. Violations of the standards of said rules, or failure to comply with the provisions of said rules shall, when occurring within the jurisdiction of the City of Ames, constitute an offense against the City of Ames.

(12) **Mechanical.** The provisions of the 2009 International Mechanical Code (IMC), as adopted and amended in this code, shall apply to the installation, alteration, repair and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

Exception: one and two family dwellings shall comply with the International Residential Code.

(13) **Plumbing.** The provisions of the 2009 Uniform Plumbing Code (UPC), except for the deletion of Chapter 16; and with the addition of Appendix A, Appendix B, and Appendix D, are hereby adopted and designated, together with and subject to the additions, deletions, and modifications hereinafter stated in the amendments to this code, shall apply to the installation, alteration, repair and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, all aspects of a medical gas system, and fuel gas piping.

(14) **Gas.** The provisions of the 2009 International Fuel Gas Code (IFGC), as adopted and amended in this code, shall apply to the installation of gas piping from the point of delivery, gas appliances and related accessories as covered in this code. These requirements apply to gas piping systems extending from the point of delivery to the inlet connections of appliances and the installation and operation of residential and commercial gas appliances and related accessories. **Exception:** one and two family dwellings shall comply with the International Residential Code.

(15) **Elevators.** Standards of the State Elevator Safety Board in 875 - Chapter 72 of the State of Iowa Code are hereby adopted by reference. Design review, construction inspection, and periodic maintenance inspections are all within the scope of authority of the Elevator Safety Board, as defined in State of Iowa Code Chapter 89A.

(16) **Factory built structures.** The provisions of Iowa Code Section 103A.10 (3); 661- Iowa Administrative Code chapter 16; and the administrative rules of the U.S. Department of Housing and Urban Development

(HUD) shall be acceptable standards for new units moved into the City. A current HUD label, third party inspection certificates, and proofs of compliance with Iowa Administrative Code Iowa Code Section 103A.26, Certification of Manufactured Home Installers, and 661Chapter 372, Licensing of Manufactured Housing Retailers, Manufacturers and Distributors shall be accepted in lieu of local inspection. Footings, foundation, electrical, mechanical, and plumbing work performed in conjunction with the placement of such factory built structure are subject to permits and inspections as provided in this chapter. Building permit fees for factory built structures shall be based upon the same square foot construction cost valuations as similar site built structures.

Sec. 5.101. Applicability.

Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

(1) **Other laws.** The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

(2) **Application of references.** References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

(3) **Referenced codes and standards.** The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

(4) **Partial invalidity.** In the event that any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions.

(5) **Existing structures.** The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the International Fire Code, or as is deemed necessary by the Building Official for the general safety and welfare of the occupants and the public.

Sec. 5.102. INSPECTION DIVISION.

The Inspection Division of the Fire Department is hereby created and the official in charge thereof shall be known as the Building Official. The Building Official shall be appointed by the Fire Chief.

(1) **Building Official or designees.** Where the term Building Official appears in this Code, it shall also be understood, within context, to include actions performed by inspectors and other members of Inspection Division staff under the direction and authority of the Building Official.

(2) **Inspectors and other staff.** In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the Building Official shall have the authority to appoint the related technical officers, inspectors, plan examiners and other employees. Such employees shall have powers as delegated by the Building Official.

(3) **Duties and powers of the Building Official.** The Building Official is hereby authorized and directed to enforce the provisions of this code. The Building Official shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies and procedures shall be in compliance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.

(4) **Applications and permits.** The Building Official shall receive applications, review construction documents and issue permits for the erection, and alteration, demolition and moving of buildings and structures, inspect the premises for which such permits have been issued and enforce compliance with the provisions of this code.

(5) **Notices and orders.** The Building Official shall issue all necessary notices or orders to ensure compliance with this code.

(6) **Inspections.** The Building Official shall make all of the required inspections, or the Building Official shall have the authority to accept reports of inspection by approved agencies or individuals. Reports of such inspections shall be in writing and be certified by a responsible officer of such approved agency or by the responsible individual. The Building Official is authorized to engage such expert opinion as deemed necessary to report upon unusual technical issues that arise, subject to the approval of the appointing authority.

(7) **Identification.** The Building Official shall carry proper identification when inspecting structures or premises in the performance of duties under this code.

(8) **Right of entry.** Where it is necessary to make an inspection to enforce the provisions of this code, or where the Building Official has reasonable cause to believe that there exists in a structure or upon a premises a condition which is contrary to or in violation of this code which makes the structure or premises unsafe, dangerous or hazardous, the Building Official is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises is unoccupied, the Building Official shall first make a reasonable effort to locate the owner or other person having charge or control of the structure or premises and request entry. If entry is refused, the Building Official shall have recourse to the remedies provided by law to secure entry.

(9) **Department records.** The Building Official shall keep official records of applications received, permits and certificates issued, fees collected, reports of inspections, and notices and orders issued. Such records shall be retained for the period required for retention of public records.

(10) **Liability.** The Building Official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties. Any suit instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representative of the jurisdiction until the final termination of the proceedings. The Building Official or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

(11) **Approved materials and equipment.** Materials, equipment and devices approved by the Building Official shall be constructed and installed in accordance with such approval.

(12) **Used materials and equipment.** The use of used materials which meet the requirements of this code for new materials is permitted. Used equipment and devices shall not be reused unless approved by the Building Official.

(13) **Modifications.** Wherever there are practical difficulties involved in carrying out the provisions of this code, the Building Official shall have the authority to grant modifications for individual cases, upon application of the owner or owner's representative, provided the Building Official shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, accessibility, life and fire safety, or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the department of building safety.

(14) **Alternative materials, design and methods of construction and equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the Building Official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

(15) **Research reports.** Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from approved sources.

(16) **Tests.** Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the Building Official shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the Building Official shall approve the testing procedures. Tests shall be performed by an approved agency. Reports of such tests shall be retained by the Building Official for the period required for retention of public records.

Sec. 5.103. PERMITS REQUIRED.

Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the Building Official and obtain the required permit. It is a violation to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, without having first obtained the required permit.

(1) **Contractor registration required**. Each person, firm, or corporation performing work that requires a building, electrical, mechanical, or plumbing permit must possess a valid State Division of Labor registration number and provide proof of same to the Inspection Division prior to permit issuance.

Exception: A homeowner performing work on his/her primary place of residence is not required to obtain State Division of Labor registration number.

(2) **Contractor insurance required.** Each person, firm, or corporation performing work that requires a building, electrical, mechanical, or plumbing permit must possess current Contractor's Commercial General Liability Insurance in an amount not less that $500,000 combined single limit, and shall provide proof of coverage to the Inspection Division prior to permit issuance. For electrical, plumbing, and HVAC contractors, possession of a State of Iowa contractor license shall serve as evidence of adequate insurance coverage.

Exception: A homeowner performing work on his/her primary place of residence is not required to obtain Contractor's Commercial General Liability Insurance.

(3) **Contractor licenses and registration required.** Permits shall not be issued to persons or companies who are not licensed by the State of Iowa and registered with the City of Ames, except as specifically exempted in other sections of this code. Permitted electrical, mechanical, and plumbing work must be performed by licensed persons, except as specifically exempted in other sections of this code.

(4) **Homeowner permit required**. Contractor registration is not required for alteration or repair work performed on a single family dwelling or accessory structure when the person performing the alteration or repair work is the owner of record and occupies the dwelling as his/her primary residence. An owner-occupant is required to obtain a homeowner building, electrical, mechanical, or plumbing permit for all such work performed, and the work must be inspected for compliance with this code. The scope of work authorized by a homeowner permit is limited by specific provisions in the electrical, mechanical, and plumbing licensing sections of this code.

(5) **Compliance with other codes.**

Exemptions from permit requirements of this code shall not be deemed to grant authorization for any work to be done in violation of this code. All work requires separate building, electrical, mechanical or plumbing permits, unless specifically exempted elsewhere in this code. Each building owner, contractor, or project manager is responsible to request clarification of permit requirements from the Inspection Division before doing any work on any building.

(6) **Emergency Repairs.** Where equipment replacements or repairs must be performed in an emergency situation, and a permit is required for the work, the permit application shall be submitted to the Building Official within the next business day.

(7) **Application for permit.** To obtain a permit, the applicant shall first file an application in writing on a form furnished by the Inspection Division for that purpose. Such application shall:

(a) Identify and describe the work to be covered by the permit.

(b) Describe the land on which the proposed work is to be done by street address or similar description that will identify and locate the proposed building or work.

(c) Indicate the proposed use of the building.

(d) Be accompanied by construction plans and documents as required in Section 5.110.

(e) State the total construction cost of the proposed work for building permits - including labor and materials.

(f) Be signed by the building owner, applicant, or the applicant's authorized agent.

(g) Provide other information as required by the Building Official.

(8) **Action on application.** The Building Official shall examine permit applications within a reasonable time after filing. The Building Official shall reject applications if the form or other submitted documents do not comply

with this code. If rejected, the Building Official will inform the applicant of the reason. If approved, the permit shall be promptly issued.

(9) **Time limitation of application.**
If no work occurs on a permitted project within 180 days after issuance, the project shall be viewed as abandoned, and a new permit must be issued to restart the project. Except, the Building Official may grant one or more 90 day extensions for unusual circumstances, upon receipt of a written request.

(10) **Validity of permit.** The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the Building Official from requiring the correction of errors in the construction documents and other data. The Building Official is authorized to prevent occupancy or use of a structure where in violation of this code.

(11) **Expiration.** Every permit issued shall expire unless the work authorized is completed within 365 days after issuance. If the work is not completed within 365 days, the building official will issue a permit extension. A permit extension fee, in an amount equal to one half the original permit fee, or $25.00, whichever is greater, shall be invoiced to the permit holder. The permit holder shall be given a minimum 30 day advance written notice of impending permit expiration and imposition of extension fee.

Exception: Permit extension fees may be waived for major commercial, industrial, and other projects subject to approval of the Building Official.

(12) **Suspension or revocation.** The Building Official is authorized to suspend or revoke a permit issued under the provisions of this code wherever the permit is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or regulation or any of the provisions of this code.

Sec. 5.104. Building permits not required. No building permit is required for:

(1) Residential single family kitchen and bath and basement remodels when no sheetrock or lath and plaster is removed from a single contiguous area greater than 32 square feet, and when no new plumbing or electrical fixtures are installed in different locations than those replaced, and when no new walls, wall framing, openings, structural alterations or wall furring on the interior face of exterior walls occurs.

(2) Residential or commercial door and window replacements when rough openings are not enlarged in width.

(3) One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 120 square feet.

(4) Fences not over 6 feet high.

(5) Retaining walls that are not more than 4 feet in height above the lowest adjacent grade, unless supporting a surcharge or impounding Class I, II or IIIA liquids.

(6) Sidewalks and driveways not more than 30 inches above adjacent grade, and not over any basement or story below and not part of an accessible route.

(7) Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.

(8) Temporary motion picture, television and theater stage sets and scenery.

(9) Prefabricated swimming pools accessory to a Group R-3 occupancy that are less than 24 inches deep, do not exceed 5,000 gallons and are installed entirely above ground.

(10) Shade cloth structures constructed for nursery or agricultural purposes, not including service systems.

(11) Swings and other playground equipment accessory to detached one- and two-family dwellings.

(12) Awnings on Group R-3 and U occupancies.

(13) Nonfixed and movable fixtures, cases, racks, counters and partitions not over 5 feet 9 inches in height.

(14) Repairs. Application or notice to the Building Official is not required for ordinary minor repairs to structures. Except that such repairs shall not include the cutting away of any wall, partition or portion thereof, the removal or cutting of any structural beam or load-bearing support, or the removal or change of any required means of egress, or rearrangement of parts of a structure affecting the egress requirements; nor shall ordinary repairs include addition to, alteration of, replacement or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas, soil, waste, vent or similar piping, electric wiring or mechanical or other work affecting public health or general safety.

(15) Replacement of siding.

(16) Replacement of shingles or other roof covering.

Sec. 5.105. Electrical permits not required. No electrical permit is required for:

(1) **Repairs and maintenance:** Minor repair work, including the replacement of lamps and fuses, or the connection of approved portable electrical equipment to approved permanently installed receptacles, or for simple replacement of electrical fixtures such as wall plugs, and light fixtures.

(2) **Radio and television transmitting stations:** The provisions of this code shall not apply to electrical equipment used for radio and television transmissions, but do apply to equipment and wiring for a power supply and the installations of towers and antennas.

(3) **Temporary testing systems:** A permit shall not be required for the installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.

(4) **Electric utilities:** The installation, alteration or repair of electrical equipment installed by or for the City of Ames Electric Department, or other licensed or franchised electric utility company in the generation, transmission, distribution, or metering of electricity.

(5) **Manufacturing processes:** Moveable process equipment which is independent of the building structure, is subject to being moved, rearranged, and replaced by equipment manufacturers and staff maintenance personnel. In such instances, permits and inspections are required only for the alteration of the building's electrical supply wiring to the point of connection to the equipment.

(6) **Electrical manufacturing:** Work involved in the manufacturing, testing, servicing, altering or repairing of electrical equipment.

(7) **Elevators:** Work involved in the installation, repairing, remodeling or maintenance of elevators, dumbwaiters or escalators. Except: electrical equipment for supplying current to the control panel of elevators, dumbwaiters or escalators does require permits and inspections.

Sec. 5.106. Gas system permits not required. No gas system plumbing or mechanical permit is required:

(1) Portable heating appliances.

(2) Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.

Sec. 5.107. Mechanical permits not required. No mechanical permit is required:

(1) Portable heating appliances.

(2) Portable ventilation equipment.

(3) Portable cooling unit.

(4) Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.

(5) Repair or replacement of any part that does not alter its approval or make it unsafe.

(6) Portable evaporative coolers.

Sec. 5.108. Plumbing permits not required. No plumbing permit is required:

(1) For the stopping of leaks in drains, water, soil, waste or vent pipe, provided however, that if any concealed trap, drain pipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspection made as provided in this code.

(2) For the clearing of stoppages or the repairing of leaks in pipes, valves or fixtures and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

Sec. 5.109. Public service agencies exempt from some permits.

A permit shall not be required for the installation, alteration or repair of generation, transmission, distribution or metering or other related equipment that is under the ownership and control of public service agencies by established right. Such

agencies include Ames Electric Utility; Alliant Natural Gas Utility; Ames Water Department; Ames Public Works Department; franchised telecommunications companies. Such exemption includes all equipment, lines, and facilities specific to the energy or product produced, processed, conveyed or conducted. Such exemption does not include permanent buildings that house or contain such systems. All buildings constructed, altered, repaired, or removed are subject to the typical plan review, permit, inspection and approval process as described elsewhere in this code.

Sec. 5.110. Submittal Documents.

Construction documents, shall be submitted in one or more sets with each building permit application. Construction documents shall be prepared by a registered design professional where required by the statutes of the State of Iowa, and Construction Document Submittal Guidelines of the Inspection Division. Where special conditions exist, the Building Official is authorized to require additional construction documents to be prepared by a registered design professional. **Exception:** The Building Official is authorized to waive the submission of construction documents and other data not required to be prepared by a registered design professional, if it is found that the nature of the proposed work is such that submittal and review of such construction documents is not necessary to obtain code compliance.

(1) **Information on construction documents.** Construction documents shall be dimensioned and drawn to scale upon suitable material. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations, as determined by the Building Official.

(2) **Fire protection system shop drawings.** Shop drawings for the fire protection system(s) shall be submitted to indicate conformance with this code and the project construction documents and shall be approved prior to the start of system installation. Shop drawings shall contain all information as required by the referenced installation standards in IBC Chapter 9, Fire Protection Systems.

(3) **Means of egress.** The construction documents shall show in sufficient detail that the location, construction, size and arrangement of all portions of the means of egress are in compliance with the provisions of this code.

(4) **Exterior wall envelope.** Construction documents for all buildings shall describe the exterior wall envelope in sufficient detail to demonstrate compliance with this code.

(5) **Site plan.** The construction documents submitted with the permit application shall be accompanied by a site plan showing to scale the size and location of new construction and existing structures on the site, distances from lot lines and, as applicable, flood hazard areas, floodways, and design flood elevations; and it shall be drawn in accordance with an accurate boundary line survey. The Building Official is authorized to waive or modify the requirement for a site plan when the application for permit is for interior alteration or repair or when otherwise warranted.

(6) **Examination of documents.** The Building Official shall examine or cause to be examined the construction plans and documents to determine whether the construction indicated and described is in accordance with the requirements of this code.

(7) **Previous approvals.** This code shall not require changes in the approved construction documents, methods, materials, or designated occupancy of a structure for which a permit has been issued, and construction of which has been commenced within 180 days after the effective date of this code and has not been abandoned.

(8) **Phased approval.** The Building Official is authorized to issue a permit for the construction of foundations or any other part of a building or structure before the construction documents for the entire building or structure have been submitted, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such permit for the foundation or other parts of a building or structure may proceed with construction at the holder's risk. The City can provide no assurance that a permit for the remainder of the structure will be granted, unless the balance of the plans submitted are determined in compliance with this Code.

(9) **Design professional in responsible charge.** When it is required that documents be prepared by a registered design professional, the owner shall engage and designate on the building permit application a registered design professional for the project. The registered design professional shall be responsible for reviewing and coordinating submittal documents prepared by others, including phased and deferred submittal items, for compatibility with the design of the building. Where structural observation is required by IBC Chapter 17, Structural Tests and Special Inspections, the individual or firms performing the structural observations and reporting shall be identified.

(10) **Deferred submittals.** For the purposes of this section, deferred submittals are defined as those portions of the design that are not submitted at the time of the application and that are to be submitted to the Building Official within a specified period. Deferral of any submittal items shall have the prior approval of the Building Official. The deferred submittal items shall not be installed until the design and submittal documents have been approved by the Building Official.

(11) **Amended construction documents.** Work shall be installed in accordance with the approved construction documents. Any changes made during construction must be reviewed, inspected and approved by the Building Official.

(12) **Retention of construction documents.** One set of approved construction documents shall be retained by the Building Official in accord with the City of Ames Record Retention Policy.

Sec. 5.111. TEMPORARY STRUCTURES AND USES

(1) **General.** The Building Official is authorized to issue a permit for temporary structures. Such permits shall be limited as to time of service, but shall not be permitted for more than 180 days. The Building Official is authorized to grant extensions for demonstrated cause.

(2) **Conformance.** Temporary structures shall conform to the structural strength, fire safety, means of egress, accessibility, light, ventilation and sanitary requirements of this code as necessary to ensure public health, safety and general welfare.

(3) **Temporary power.** The Building Official is authorized to approve temporary power in part of an electric installation before such installation has been fully completed and approved. The part approved shall comply with the applicable requirements for temporary lighting, heat or power of this code.

(4) **Termination of approval.** The Building Official is authorized to terminate such permit for a temporary structure and to order the temporary structure or use to be discontinued for due cause.

Sec. 5.112. FEES

(1) **Payment of fees.** A permit shall not be valid until the required fees have been paid. **Exception:** the City may invoice permit applicants for permit and inspection fees, as a customer convenience. In such instances, permits shall be considered valid immediately following permit application review and approval. This customer courtesy may be revoked if payment for billed permit fees is not received within 60 days of receipt of notice to the customer. In such instance, cash payments will be subsequently required in accord with this section.

(2) **Schedule of permit fees.** Fees for each permit type shall be paid as required, in accordance with the schedules as established by the City Council in the following referenced Ames Municipal Code Sections:

Building permit fees.
Appendix L, Ames Municipal Code

Electrical permit fees.
Appendix U, Ames Municipal Code

Mechanical permit fees.
Appendix U, Ames Municipal Code

Plumbing permit fees.
Appendix U, Ames Municipal Code

(3) **Building permit valuations.** The applicant for a building permit shall provide an estimated permit value at time of application. The term ‘permit value’ or ‘permit valuation’ means the actual cost of construction, including all materials and labor for all building, electrical, gas, mechanical, and plumbing equipment and permanent building systems. If, in the opinion of the Building Official, the valuation is underestimated on the application, the submitted permit valuation shall not be accepted unless the applicant can show verifiable project documents, estimates, or signed contracts to substantiate the submittal. Final building permit valuation shall be determined by the Building Official.

(4) **City assessor valuations to be used.** The Building Official shall use average square foot building construction costs as provided by the Ames City Assessor when calculating building permit fees for new residential and commercial buildings, additions, and extensive interior renovations, in absence of more specific data. Such average square foot costs are base valuations for typical buildings of good quality. Buildings of higher quality will be valued at appropriately higher valuations. Square foot costs are adjusted periodically to reflect changes in material and labor costs, as reported by the Ames City Assessor.

(5) **Appeal of building permit valuation.** A request to appeal the Building Official's determination of building permit valuation may be filed with the Building Official for cause. Such request must be in writing, and contain a factual basis for review. Such appeals will be reviewed by the Building Official and may also include review by the City Assessor to assure consistency, accuracy, and fairness. If it is found the Building Official erred in the determination of building permit valuation, appropriate adjustment will be made to the permit valuation and the permit fee.

(6) **Work commencing before permit issuance - penalty fees.** Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary permits shall be subject to a fee established by the Building Official that shall be in addition to the required permit fees. A penalty fee equal to the amount of the permit fee may be added for any work that commences prior to permit approval, i.e., the permit fee may be doubled for such building, electrical, mechanical, or plumbing work that occurs prior to permit issuance. Additional fees may also be charged for actual costs of inspections, project research, site visits, and meetings required to obtain code compliance prior to the point of actual permit approval. Such penalties do not prevent the Division from also issuing separate municipal infraction citations for each violation of this section.

(7) **Related fees.** The payment of permit fees for construction, alteration, removal or demolition work done in connection with the work authorized the permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed elsewhere in this Code.

(8) **Refunds.** The Building Official is authorized to establish a refund policy. Deductions from approved refunds shall be made for the actual costs of services rendered in association with the project up to the date of refund request. Actual costs include, but may not be limited to, plan reviews performed, permits issued, and inspections made by the Inspection Division.

Sec. 5.113. BUILDING Inspections

(1) **Building inspections.** Work for which a permit is required shall be subject to inspection by the Building Official and such construction or work shall remain accessible and exposed for inspection purposes until approved. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes. Neither the Building Official nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

(2) **Preliminary inspection.** Before issuing a permit, the Building Official is authorized to examine or cause to be examined buildings, structures and sites for which an application has been filed.

(3) **Required inspections.** The Building Official shall make inspections of the following as necessary to assure compliance with this Code.

(4) **Footing and foundation inspection.** Footing and foundation inspections shall be made after excavations for footings are complete and any required reinforcing steel is in place, and before concrete is poured. For concrete foundations, required forms shall be in place prior to inspection. Concrete shall be on the job, except where concrete is ready mixed in accordance with ASTM C 94.,

(5) **Concrete slab, under-floor, and groundwork inspection.** Concrete slab and under-floor inspections shall be made after in-slab or under-floor reinforcing steel and building service equipment, conduit, piping accessories and other ancillary equipment items are in place, but before any concrete is placed or floor sheathing installed, including the subfloor.

(6) **Lowest floor elevation.** In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, the finish floor elevation certificate shall be submitted to the Building Official.

(7) **Framing and rough-in inspection.** Framing and rough-in electrical, mechanical, and plumbing inspections shall be made after the roof deck, all framing, fireblocking and bracing are in place and all work which is to be concealed is in place.

(8) **Lath and gypsum board inspection.** Inspection of lath and gypsum board that is part of a fire-resistance rated or shear assembly shall be made after lath and gypsum board, interior and exterior, is in place, but before any plastering is applied or gypsum board joints and fasteners are taped and finished.

(9) **Fire-resistant penetrations.** Protection of joints and penetrations in fire-resistance-rated assemblies shall not be concealed from view until inspected and approved.

(10) **Energy efficiency.** Inspections shall be made to determine compliance with the State of Iowa Energy Code.

(11) **Other inspections.** In addition to the inspections specified above, the Building Official is authorized to make or require other inspections of any construction work to obtain compliance with this code.

(12) **Special inspections.** For special inspections, see IBC Chapter 17.

(13) **Final inspection.** The final inspection shall be made after all work required by the building permit is completed.

(14) **Inspection agencies.** The Building Official is authorized to accept reports of approved inspection agencies.

(15) **Inspection requests.** It shall be the duty of the building permit holder or designee to notify the Building Official when work is ready for inspection. It shall be the duty of the permit holder or designee to provide access and means for inspection of such work. Regardless of notification by the permit holder or designee, the Building Official is authorized to make any inspection required by this code at any time during normal business hours throughout the duration of the project.

(16) **Approval required.** Work shall not be done beyond the point indicated in each inspection without first obtaining the approval of the Building Official. Any work that does not comply shall be corrected and such work shall not be covered or concealed until approved by the Building Official.

Sec. 5.114. Electrical inspections.

(1) **Electrical inspections.** The Building Official shall make inspections of the following as necessary to assure compliance with this Code.

(2) **Underground inspection.** Underground inspection shall be made after trenches or ditches are excavated and before any backfill is put in place.

(3) **Rough-in inspection.** Rough-in inspection shall be made after the roof, framing, fireblocking, firestopping, draftstopping and bracing is in place and all electrical distribution conductors are roughed-in, and prior to the installation of wall or ceiling membranes.

(4) **Final inspection.** Final inspection shall be made after the building is complete, all electrical fixtures are in place and properly connected, and the structure is ready for occupancy.

(5) **Other inspections.** In addition to the inspections specified above, the Building Official is authorized to make or require other inspections of any construction work to obtain compliance with this code.

(6) **Inspection agencies.** The Building Official is authorized to accept reports of approved inspection agencies.

(7) **Inspection requests.** It shall be the duty of the electrical permit holder or designee to notify the Building Official when work is ready for inspection. It shall be the duty of the permit holder or designee to provide access and means for inspection of such work. Regardless of notification by the permit holder or designee, the Building Official is authorized to make any inspection required by this code at any time during normal business hours throughout the duration of the project.

(8) **Approval required.** Work shall not be done beyond the point indicated in each inspection without first obtaining the approval of the Building Official. Any work that does not comply shall be corrected and such work shall not be covered or concealed until approved by the Building Official.

Sec. 5.115. Mechanical inspections.

(1) **Mechanical inspections.** The Building Official shall make inspections of the following as necessary to assure compliance with this Code.

(2) **Underground inspection.** Underground inspection shall be made after trenches or ditches are excavated and bedded, piping installed, and before backfill is put in place. When excavated soil contains rocks, broken concrete, frozen chunks and other rubble that would damage or break the piping or cause corrosive action, clean backfill shall be on the job site.

(3) **Rough-in inspection.** Rough-in inspection shall be made after the roof, framing, fireblocking and bracing are in place and all ducting and other components to be concealed are complete, and prior to the installation of wall or ceiling membranes.

(4) **Final inspection**. Final inspection shall be made upon completion of the mechanical system. Exception: Ground-source heat pump loop systems tested in accordance with Section IMC 1208.1.1 shall be permitted to be backfilled prior to inspection.

(5) **Other inspections.** In addition to the inspections specified above, the Building Official is authorized to make or require other inspections of any construction work to obtain compliance with this code.

(6) **Inspection agencies.** The Building Official is authorized to accept reports of approved inspection agencies.

(7) **Inspection requests.** It shall be the duty of the mechanical permit holder or designee to notify the Building Official when work is ready for inspection. It shall be the duty of the permit holder or designee to provide access and means for inspection of such work. Regardless of notification by the permit holder or designee, the Building Official is authorized to make any inspection required by this code at any time during normal business hours throughout the duration of the project.

(8) **Approval required.** Work shall not be done beyond the point indicated in each inspection without first obtaining the approval of the Building Official. Any work that does not comply shall be corrected and such work shall not be covered or concealed until approved by the Building Official.

Sec. 5.116. Plumbing inspections.

(1) **Plumbing inspections.** The Building Official shall make inspections of the following as necessary to assure compliance with this Code.

(2) **Underground inspection.** Underground inspection shall be made after trenches or ditches are excavated and bedded, piping installed, and before any backfill is put in place.

(3) **Rough-in inspection.** Rough-in inspection shall be made after the roof, framing, fireblocking, firestopping, draftstopping and bracing is in place and all sanitary, storm and water distribution piping is roughed-in, and prior to the installation of wall or ceiling membranes.

(4) **Final inspection.** Final inspection shall be made after the building is complete, all plumbing fixtures are in place and properly connected, and the structure is ready for occupancy.

(5) **Other inspections.** In addition to the inspections specified above, the Building Official is authorized to make or require other inspections of any construction work to obtain compliance with this code.

(6) **Inspection agencies.** The Building Official is authorized to accept reports of approved inspection agencies.

(7) **Inspection requests.** It shall be the duty of the plumbing permit holder or designee to notify the Building Official when work is ready for inspection. It shall be the duty of the permit holder or designee to provide access and means for inspection of such work. Regardless of notification by the permit holder or designee, the Building Official is authorized to make any inspection required by this code at any time during normal business hours throughout the duration of the project.

(8) **Approval required.** Work shall not be done beyond the point indicated in each inspection without first obtaining the approval of the Building Official. Any work that does not comply shall be corrected and such work shall not be covered or concealed until approved by the Building Official.

Sec. 5.117. Certificate of occupancy

(1) **Use and occupancy.** No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made until the Building Official has issued a Certificate of Occupancy (C.O.), or until final inspection and approval has been given for minor projects. Issuance of a C.O. or other final approval shall not be construed as approval of a violation of this code.

(2) **Certificate issued.** After the Building Official inspects the building or structure and finds no violations of this code, a C.O. shall be issued that contains the following:

(a) The building permit number.
(b) The address of the structure.
(c) The name and address of the owner.
(d) A description of that portion of the structure for which the certificate is issued.
(e) A statement that the described portion of the structure has received final inspections and may be occupied.
(f) The signature of the Building Official.
(g) The occupancy type as defined in the IBC.
(h) The type of construction as defined in the IBC.
(i) The occupant load,
(j) If an automatic sprinkler system is provided, whether the sprinkler system is required.
(k) Any special stipulations or conditions.

(3) **Temporary occupancy.** The Building Official is authorized to issue a temporary certificate of occupancy (T.C.O.) before the completion of all work, if it is concluded the incomplete work items present no hazard to occupants or the general public. A fee may be charged for issuance of a T.C.O.

(4) **Revocation.** The Building Official is authorized to suspend or revoke a C.O. or other approval wherever it is found the C.O. or other approval is issued in error, or on the basis of incorrect information received, or where it is determined the project, or portion thereof, is in violation of this code.

(5) **Connection of service utilities.** No person shall make connections from a utility, source of energy, fuel or power to any building or system for which a permit is required, unless approved by the Building Official.

(6) **Temporary connection.** The Building Official shall have the authority to authorize temporary connection of the building or system to the utility source of energy, fuel or power.

(7) **Authority to disconnect service utilities.** The Building Official shall have the authority to authorize disconnection of utility service to the building, structure or system regulated by this code in case of emergency where necessary to eliminate an immediate hazard to life or property. The Building Official shall notify the serving utility, and wherever possible the owner and occupant of the building, structure or service system of the decision to disconnect prior to taking such action. If not notified prior to disconnecting, the owner or occupant of the building, structure or service system shall be notified in writing, as soon as practical thereafter.

DIVISION II
Amendments to Adopted Codes

Sec. 5.200. Buildings.

The provisions of the 2009 International Building Code (IBC), are amended with the deletion of Chapters 1, 27 and 29 and Section 1405.13.2; and the revision of the following text as stated:

(1) Chapter 18 of the IBC is amended to allow for foundations and footings of buildings with Type V wood framed construction of three stories or less to be designed to meet, at a minimum, the specifications of the following table.

Number of Floors Supported by the Foundations*	1	2	3
Thickness of Foundation Walls (inches) Concrete	8	8	10
Thickness of Foundation Walls (inches) Concrete Block	8	8	12
Width of Footing (inches)	16	16	18
Thickness of Footing (inches)	8	8	12
Minimum Depth of Foundation Below Grade	42	42	42

*Foundations may support a roof in addition to the stipulated number of floors. Foundations supporting roofs only shall be as required for supporting one floor. All other structures shall have footings and foundations engineered to meet the requirements of Section 1807, 1808, and 1809 of the IBC, and Chapter 4 of the IRC. All buildings shall have perimeter footings to 42" below grade, and such footings shall be designed to withstand all forces placed upon them as per Section 1807, 1808, and 1809 of the IBC and Chapter 4 of the IRC or engineering to show equivalency. Trench footings are allowed as a continuous 8" single pass trench for a single story wood frame structure with spans not exceeding 16 feet. The trench must be 42" deep and have at least two (2) horizontal rods fixed in place and tied into the existing structure. Soil bearing capacity shall be a minimum of 2000 psf.

(2) Section 1809.5, Exception 2 of the International Building Code is deleted and the following inserted in lieu thereof:

(a) Area of 900 square feet or less for light-frame construction or 400 square feet or less for other than light-frame construction

Sec. 5.201. Residential Buildings.

The provisions of the 2009 International Residential Code for One- and Two-family Dwellings (IRC), are amended with the deletion of Chapter 1, Scope and Administration; Part VII - Plumbing; and Part VIII - Electrical; with the addition of appendix G; and the revision of the following text as stated:

(1) **Section R301.2.1.1** Design Criteria, Table R301.2(1), Climatic and Geographical Design Criteria is amended to include the following local values:

Ground Snow Load (lbs)	25
Wind Speed (mph)	90
Seismic Design Category	A
Weathering	Severe
Frost Line Depth (inches)	42
Termite	Moderate to Heavy
Winter Design Temp (F.)	- 5
Ice Shield Underlayment Required	Yes
Flood Hazards	See FEMA Maps
Air Freezing Index	1896
Mean Annual Temperature (F.)	48.2

(2) **Section R302.2,** Townhouses, of the IRC, is amended by deleting the Exception.

(3) **Section R311.3.2,** Floor elevations for other exterior doors, of the International Residential Code, Exception is deleted and the following inserted in lieu thereof:

Exception: A landing is not required where a stairway of three or fewer risers is located on the exterior side of the door, provided the door does not swing over the stairway.

(4) **Section R311.7.7.2**, Continuity, of the International Residential Code is amended by adding to the Exceptions a new item 3:

(3) Handrails may be interrupted at the point of transition from handrail to guardrail on stairways open on both sides at the bottom of a flight of stairs.

(5) **Section R313.2**, One and two-family dwellings automatic fire systems, of the International Residential Code is amended by deleting the text of that section and inserting the following in lieu thereof:

Automatic residential fire sprinkler systems shall not be required in one- and two-family dwellings.

(6) **Section R313.1,** Townhouse automatic fire sprinkler systems, of the IRC, is amended by deleting the text of that section and inserting the following in lieu thereof:

Automatic residential sprinkler systems shall not be required in townhouses.

(7) **Section R315.2** Carbon Monoxide Alarms - Where required in existing dwellings, of the International Residential Code is deleted and the following text is inserted in lieu thereof:

When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with carbon monoxide detectors located as required for new dwellings.

Exceptions:

(a) Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this section.

(b) Installation, alteration or repairs of plumbing or mechanical systems are exempt from the requirements of this section.

(8) **Section R403.1.4.1**, Frost Protection, Exception 1 and exception 3 of the International Residential Code are deleted and the following inserted in lieu thereof:

(a) Protection of freestanding accessory structures with an area of 900 square feet or less, of light-framed construction, with an eave height of 10 feet or less shall not be required.

(9) **Section R403.1.6** Foundation Anchorage. Delete 6 foot minimum anchor bolt spacing and insert in lieu thereof a minimum of 4 foot spacing.

(10) **Section 903.5** Hail Exposure, of the International Residential Code, is deleted in its entirety.

(11) **Section R907.3**, Recovering Versus Replacement, of the International Residential Code, is amended by deleting item 4.

(12) **Sections 1807, 1808, and 1809** of the International Building Code are amended to allow for footings of buildings with Type V wood framed construction of three stories or less to be designed to meet, at a minimum, the prescriptive standards of the following table.

Number of floors supported by foundations*	1	2	3
Thickness of foundation walls (inches) concrete	8	8	10
Thickness of foundation walls (inches) concrete block	8	8	12
Width of footing (inches)	16	16	18
Thickness of footing (inches)	8	8	12
Minimum depth of footing below grade	42	42	42

*Foundations may support a roof in addition to the stipulated number of floors. Foundations supporting roofs only shall be as required for supporting one floor. All other structures shall have footings and foundations engineered to meet the requirements of Sections 1807, 1808, and 1809 of the IBC, and Chapter 4 of the IRC. All buildings shall have perimeter footings to 42" below grade, and such footings shall be designed to withstand all forces placed upon them as per Sections 1807, 1808, and 1809 of the IBC and Chapter 4 of the IRC or engineering to show equivalency. Trench footings are allowed as a continuous 8" single pass trench for a single story wood frame structure with spans not exceeding 16 feet. The trench must be 42" deep and have at least two (2) horizontal rods fixed in place and tied into the existing structure. Soil bearing capacity shall be a minimum of 2000 psf.

(13) **Section G2415.1(404.1)** Prohibited Locations, of the International Residential Code is deleted and the following text is inserted in lieu thereof:

Piping shall not be installed in or through a ducted supply, return or exhaust, or a clothes chute, chimney or gas vent, dumbwaiter or elevator shaft. Piping installed downstream of the point of delivery shall not extend through any townhouse unit other than the unit served by such piping.

Sec. 5.202. Accessibility. Reserved.

Sec. 5.203. Energy. Reserved.

Sec. 5.204. Existing Buildings. Reserved.

Sec. 5.205. Electrical.

The provisions of the 2008 National Electrical Code (NEC), are amended as follows:

(1) Section 334.10 of the said National Electric Code is amended by substituting the following for subsections (i) through (iii): 'Type NM, Type NMC and Type NMS cables shall be permitted to be used in: (i) one-family dwellings and associated accessory buildings, (ii) two-family dwellings and associated accessory buildings, (iii) multifamily

dwellings and associated accessory buildings. All other structures shall be wired using other methods as allowed by the National Electrical Code.'

(2) All references in the aforesaid 2008 National Electric Code to the building code shall be deemed a reference to the applicable code set out in and adopted by Chapter 5 of the Municipal Code of the City of Ames, Iowa.

Sec. 5.206. Mechanical. Reserved.

Sec. 5.207. Gas.

The provisions of the 2009 International Fuel Gas Code (IFGC), are amended as follows:

(1) Section 404.1 Prohibited Locations, of the International Fuel Gas Code is deleted and the following text is inserted in lieu thereof:

Piping shall not be installed in or through a circulating air duct, clothes chute, chimney or gas vent, ventilating duct, dumbwaiter or elevator shaft.

Sec. 5.208. Plumbing.

The provisions of the 2009 Uniform Plumbing Code (UPC), are amended with the deletion of Chapter 16; and with the addition of Appendix A, Appendix B, and Appendix D, and the revision of the following text as stated:

(1) Add new section 101.5.7 stating:

Whenever a structure or building is to be demolished, before demolition begins the following must be completed:

(a) Building sewer capped at curb line with a manufactured plug.

(b) Foundation line capped at curb line with a manufactured plug.

(c) Water service capped or plugged at main.

(d) Plumbing inspector sign-off on demolition sheet given to contractor before demolition permit is issued.

(2) Add new section 101.5.8 stating:

When a structure or building is on land that has been or is being annexed into the City of Ames and connection to the public water or sewer system is requested for that building or structure, the City may require that its plumbing system be inspected to determine whether the system has adequate sewer venting and backflow prevention to protect the public water system, and to determine if it is otherwise free from hazards to those exposed or potentially exposed to that system. Based on that inspection, if it is determined that a cross connection or other hazard exists, then the Building Official shall determine what corrective action is needed to eliminate the hazard(s) and the owner shall complete the corrective action before connection to City services is allowed.

(3) Amend Section 408.1 UPC to state:

All water closet bowls shall be of the elongated type with open front seats except in dwelling units, motel and hotel rooms. In nurseries, schools and other similar places where plumbing fixtures are provided for the use of children under six (6) years of age, water closets shall be of a size and height suitable for children's use. All water closets shall be equipped with seats as required below.

(4) Amend Section 411.2 UPC by adding subsection 411.2.4 as follows:

In all buildings, a three-inch (3") floor drain shall be located on the lowest floor level where the water meter is located. A three-inch (3") floor drain shall be located in same room whenever a RPZ type backflow preventer is installed that discharges water. A two-inch (2") or larger floor drain shall
be provided in the same room the water heater is located on the lowest floor level.

Exception: Existing water heaters and water meters unless relocated.

(5) Amend Section 412.4.2 UPC to read:

In food establishments the fixture requirements are determined by the statutes and regulations of the State of Iowa. The following requirements apply to food establishments, bars and night clubs:

(a) Bars, taverns and nightclubs shall be provided with a three (3) compartment glass washing sink and a drain board with hot and cold running water. The sink shall have an indirect waste to a floor sink with an air gap.

(b) A restaurant shall have either a three (3) compartment ware washing sink or an automatic dish washing machine of commercial type, including a booster heater along with a two-compartment sink.

(c) A hand-washing sink with hot and cold running water shall be installed in each food preparation area in restaurants and behind each bar area of bars, taverns and nightclubs.

(d) A mop/utility sink shall be required with hot and cold running water in each restaurant, bar, tavern or nightclub, for mop and waste water. The mop/utility sink shall not be used as a hand-washing sink.

(6) Amend Section 417.0 UPC by adding:

All single family dwellings shall be provided with a two-inch (2") future vent stubbed to the basement level. Such vent shall be capped in the floor joist area for future use and labeled or marked as such.

(7) Table 4-1 Minimum Plumbing Facilities

With prior approval, Authority Having Jurisdiction may allow use of Chapter 29 of the 2009 International Building Code.

(8) Section 603 of the UPC is amended as follows:

(a) Section 603.3.3 of the UPC is amended by adding: The test report shall be sent to the Administrative Authority no later than ten working days after the test.

(b) Section 603 UPC is further amended by adding after the last numbered section a new section 603.10 as follows:

(i) Purpose. The purpose of these containment regulations is:

a. to protect the City of Ames Public Water Supply (PWS) from the possibility of contamination or pollution by containing within the customer's internal distribution system(s) or the customer's private water system(s) such contaminants or pollutants that could backflow into the PWS; and

b. to provide for the maintenance of a continuing program of containment that will systematically and effectively prevent the contamination or pollution of the PWS.

(ii) Definitions. As used in this section:

a. Approved Backflow Prevention Assembly For Containment means: A backflow prevention assembly which is approved by the University of Southern California - Foundation for Cross-Connection Control and Hydraulic Research. The backflow prevention assembly must also be listed by the International Association of Plumbing and Mechanical Officials, or by the American Society of Sanitary Engineering. The approval and listing requirements do not apply to an air gap used as an approved backflow prevention assembly for containment.

b. Auxiliary Water Supply means: Any source of water that is available to the customer over which the City of Ames water utility does not have sanitary control to reduce pollution, contamination, or other conditions that make that source of water unacceptable as a potable water supply, such as, but not limited to

1. a public or private water supply other than the City of Ames water utility,

2. public or private wells, or

3. lakes, naturally-fed ponds, storm water basins, and flowing waters (rivers, creeks, etc.) from which water is drawn.

c. Available to the Customer means: The water utility customer has authority to use, or direct the use of, the auxiliary water supply by virtue of ownership, contract, or other arrangement for control.

d. Backflow means: The undesirable reversal of flow into the public water distribution system.

e. Backflow Prevention Assembly means: An assembly or means to prevent backflow.

1. Air Gap means: This is a physical break between the PWS and the customer's water system. The air gap is to create an unobstructed vertical distance between the opening of any pipe or faucet conveying water to a tank, plumbing fixture, receptor, or other assembly and the flood level of the receptacle. The air gap shall conform to the requirements of UPC Table 6-3.

2. Reduced-Pressure Principle Backflow Prevention Assembly (RP) means: The RP consists of two independently acting check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves. These units are located between two tightly closing resilient-seated valves as an assembly, and equipped with properly located resilient-seated test shutoffs.

3. Double Check Valve Assembly (DC) means: The DC consists of two internally loaded check valves, either spring loaded or internally weighted, installed as a unit between two tightly closing resilient-seated shutoff valves with properly located resilient-seated test shutoffs.

f. Commercial/Industrial Fluid means: Any liquid, gas, or solution that is a chemical, biological, or other substance in a form, quantity, or concentration that would constitute a hazard (health or non-health) if introduced into the public water supply, such as, but not limited to

1. polluted or contaminated waters;
2. all types of process and used waters (waters which originated from the public water supply but may have deteriorated in sanitary quality);
3. chemicals in fluid form;
4. plating acids and alkalis;
5. circulated cooling waters (except for those solely used for air conditioning);
6. oils, gases, caustic and acid solutions;
7. other liquid and gaseous fluids used industrially, agriculturally, commercially, or for other non-domestic purposes.

g. Commercial/Industrial Fluid System means: Any system used by the water utility customer to store or utilize any commercial/industrial fluid in a manner that may constitute a hazard (health or non-health) to the public water supply, such as, but not limited to

1. car washes,
2. microbreweries,
3. chlorinators,
4. clean-in-place systems,
5. bulk fluid storage with remote dispensing (motor oil, antifreeze, etc.), and
6. injection molding with integral heating and cooling. However, commercial/industrial fluid systems do not include:
1. fuel gas (propane or natural gas) systems;
2. air conditioning, cooling, refrigeration, and similar systems using only Freon or similar refrigerants;
3. sanitary sewer, rainwater, or storm sewer lines; and
4. boilers.

h. Containment means: A method of backflow prevention which requires the installation of a backflow prevention assembly at the water service connection.

i. Contamination means: An impairment of a potable water supply by the introduction or admission of any foreign substance that degrades the quality of the water and creates a health hazard.

j. Cross-Connection means: An actual or potential connection between any part of a potable water system and any other environment containing other substances in a manner that, under any circumstances, would allow such substances to enter the potable water system.

k. Hazard, Degree of means: The rating of a cross-connection or service connection which indicates if it has the potential to cause contamination or pollution. The term is derived from an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.

1. Hazard - Health means: A hazard upon the PWS involving any substance that, if introduced in the potable water supply, could cause death, illness, spread disease, or have a high probability of causing such effects.

2. Hazard - Non-health means: A hazard upon the PWS involving any substance that generally would not be a health hazard but, if introduced into the PWS, could cause a nuisance by introducing color, taste or odor, or would alter the quality of the PWS physically, chemically, or biologically.

l. Permanent Swimming Pool means: A pool or tub with a capacity of 1,000 gallons or more of chemically treated water that has a filtration system with a pump and rigidly supported walls/sides. Above-ground movable pools and tubs that meet the above criteria shall be deemed “permanent swimming pools.”

m. Pollution means: The presence of any foreign substance in water that impairs, alters, or degrades its quality but does not constitute a health hazard.

n. Registered Backflow Prevention Assembly Technician (Technician) means: A person who is registered by the State of Iowa to test or repair backflow prevention assemblies and report on the condition of those assemblies.

o. Service Connection means: The terminal end of the pipe connected to, directly or indirectly, the City of Ames water main; that is, the point of delivery to the customer's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter. Service connections shall also include, but not be limited to, a temporary water service connection from a fire hydrant and all other temporary or emergency water service connections from the public water system.

p. Thermal Expansion means: Volumetric increase of water due to heating resulting in increased pressure in a closed system.

(iii) Administrative Authority

a. The Administrative Authority is the Ames City Council acting through such persons or departments as the City Council shall designate.

b. The Administrative Authority shall have the right to enter, with the consent of the customer or upon the basis of a suitable warrant issued by a court of appropriate jurisdiction, any property to determine if the conditions for a partial or total exemption have been satisfied or if a backflow prevention assembly has been properly installed for containment.

1. All backflow prevention assemblies shall be available for City inspection within a short notice by the Administrative Authority. Short notice is considered to be less than 24 hours.

2. The entrance to the property to determine if the conditions for a partial or total exemption have been satisfied will not be necessary if the customer has properly installed, tested, and maintained an approved RP or air gap on every and all service connections serving the customer's premises.

c. The Administrative Authority may collect fees for the administration of this program.

d. The Administrative Authority shall maintain records of containment hazard surveys, and of the installation, testing, and repair of all backflow prevention assemblies installed for containment purposes

(iv) Where Containment Is Required

a. An RP or air gap is required for containment for every direct or indirect service connection unless such connection:

1. qualifies for a total or partial exemption; or

2. supplies a fire protection system.

b. A DC may be installed for containment in place of an RP or air gap when a partial exemption is granted.

c. A partial exemption shall be granted only if all of the following conditions precedent are met.

1. The entire facilities are within the scope and applicability of the plumbing regulations of the City of Ames, Iowa.

2. All water uses are protected by the “isolation” provisions of Chapter 6 of the Uniform Plumbing Code.

3. There are no auxiliary water supplies.

4. There are no solar heating systems.

5. There are no permanent swimming pools.

6. There are no commercial/industrial fluid systems.

7. The entire facilities and all pertinent circumstances and conditions are fully accessible for inspection by representatives of the City's Water and Pollution Control Department.

d. No backflow prevention assembly is required for containment when a total exemption is granted.

e. A total exemption shall be granted when a partial exemption has been granted and all of the following conditions precedent are met.

1. There is only one service connection, not including services for fire protection systems.

2. The facility is less than four stories above grade.

f. Failure of the Administrative Authority to notify a customer that they do not qualify for an exemption and that they shall install backflow prevention assemblies for containment shall in no way relieve a customer of the responsibility to comply with all requirements of these regulations.

g. The Director of the City of Ames Water and Pollution Control Department may require installation of an air gap, by and at the customer's sole expense, at the service connection where records indicate a history of threat to the public water supply system because of inappropriate handling of health hazard substances or actual backflow into the PWS.

(v) New Service Connections

a. Plans shall be submitted to the Administrative Authority for review on all new service connections in order to determine if a partial or total exemption shall be granted.

b. The Administrative Authority shall require the installation of the appropriate backflow prevention assembly for containment before the initiation of water service.

(vi) Fire Protection Systems

a. A backflow prevention assembly to be used in a fire protection system shall meet the requirements of Factory Mutual Research Corporation (FM) and Underwriters Laboratory (UL) and the requirements of the fire code and the building code of the City of Ames, in addition to the requirements of paragraph (ii)a. Assemblies sized smaller than 2-1/2 inches which have not been tested by FM and listed by UL may be allowed if approved by the City of Ames Fire Department Chief.

b. An RP shall be installed on all new and existing fire protection systems which the Administrative Authority determines to have any of the following:

1. Interconnections with auxiliary supplies such as reservoirs, rivers, ponds, wells, mills, or other industrial water systems; or

2. Use of antifreeze or other additives in the fire protection system unless an RP is used to isolate the loop or branch containing antifreeze or other additives when a DC is installed at the service connection; or

3. Any other facility, connection, or condition which may cause contamination

c. A DC will be required for all other fire protection systems. The DC shall be required on all new systems at the time of installation and on existing systems at the time that they are modified.

(vii) Portable Tanks. Portable tanks and vessels shall be filled through a properly installed and maintained backflow prevention assembly or vacuum breaker.

(viii) Installation of Backflow Prevention Assemblies

a. All backflow prevention assemblies for containment shall be installed so that they are accessible for testing as stated in the UPC at Section 603.3.4 thereof. The installation shall also provide the same clearances as called for the water meter in the City of Ames Municipal Code, Section 28.205.(5).

b. No backflow prevention assembly for containment shall be installed in a place where it would create a safety hazard such as, but not limited to, over an electrical panel or above ceiling level.

c. The required backflow prevention assemblies for containment shall be installed in horizontal plumbing immediately following the meter or as close to that location as deemed practical by the Administrative Authority unless approved in writing by the Administrative Authority. In any case, it shall be located upstream of any branch piping. Installation at this point does not eliminate the responsibility of the customer to protect the water supply system from contamination or pollution between the backflow prevention assembly and the water main, and to protect the water supply system from contamination or pollution within the premises.

d. RPs for containment shall be installed so as to be protected from flooding.

e. RPs for containment shall not be installed in underground vaults or pits.

f. All backflow prevention assemblies for containment shall be protected from freezing. Assemblies used for seasonal services may be removed in lieu of being protected from freezing; however, the assemblies must be reinstalled and tested by a technician prior to the service being reactivated.

g. If hot water is used within the water system, thermal expansion shall be provided for when installing a backflow prevention assembly for containment.

h. Provisions shall be made to convey the discharge of water from RPs to a suitable drain.

i. If interruption of water service during testing and repair of backflow assemblies for containment is unacceptable to the customer, another backflow prevention assembly for containment, sized to handle the temporary water flow needed during the time of test or repair, shall be installed in parallel piping.

(ix) Removal of Backflow Prevention Assemblies

a. Approval must be obtained from the Administrative Authority before a backflow prevention assembly for containment is removed, relocated, or replaced.

b. The use of an assembly may be discontinued and the assembly removed from service upon presentation of sufficient evidence that the customer qualifies for an exemption.

c. An assembly may be relocated following confirmation by the Administrative Authority that the relocation will continue to provide the required protection and satisfy installation requirements. A test will be required following the relocation of the assembly.

d. An assembly may be removed and replaced, provided the water use is discontinued until the replacement assembly is installed.

e. An assembly may be removed to protect it from freezing provided that

1. water use is discontinued until the assembly is reinstalled and tested; and

2. the Administrative Authority is notified in writing within five days of the removal.

(x) Testing of Backflow Prevention Assemblies

a. Testing of backflow prevention assemblies for containment shall be performed by a registered backflow prevention assembly technician (technician). The costs of required tests shall be borne by the customer.

b. Backflow prevention assemblies for containment shall be tested and inspected upon installation and at least annually thereafter.

c. Backflow prevention assemblies for containment which are in place, but have been out of service for more than three months, shall be tested before being put back into operation.

Backflow prevention assemblies for containment used in seasonal applications shall be tested before being put into operation each season.

d. Before being placed back into service, any backflow prevention assembly for containment which fails a test shall be repaired or replaced. In the case when a reported value is less than the minimum, the Director of the City of Ames Water and Pollution Control Department may approve temporary restoration of service before repairs are completed. Backflow prevention assemblies for containment shall be retested by a technician immediately after repair or replacement.

e. When water service has been terminated for non-compliance, the backflow prevention assembly for containment shall be repaired or replaced and then tested prior to the resumption of water service.

f. When warranted, the Administrative Authority may require backflow prevention assemblies for containment to be tested at any time in addition to the annual testing requirement. Examples of this include, but are not limited to, assemblies with a history of repeated failures or assemblies that have been subjected to fire, flood, or other unusual environmental conditions.

g. The technician shall report the results of all inspections and tests of a backflow prevention assembly for containment to the customer and to the Administrative Authority on the form provided by the Administrative Authority within ten working days of the test. The technician shall immediately report to the Administrative Authority when and where a test indicates that an assembly fails to perform and no immediate repair is done to make the assembly function properly.

h. The Administrative Authority may periodically verify test procedures and results.

(xi) Repair of Backflow Prevention Assemblies For Containment

a. All repairs to backflow prevention assemblies for containment shall be performed by technicians.

b. The technician shall not change the design, material, or operational characteristics of a backflow prevention assembly for containment during repair or maintenance and shall use only original manufacturer replacement parts or equivalent parts approved by the University of Southern California - Foundation for Cross-Connection Control and Hydraulic Research.

c. The repaired assembly must be tested after each repair and pass the test before being placed back into service.

d. The technician shall report the repair of a backflow prevention assembly for containment to the customer and to the Administrative Authority within ten working days of the repair. The report shall include the list of materials or replacement parts used and subsequent tests.

(xii) Backflow Incidents

a. The customer shall immediately notify the Administrative Authority when the customer becomes aware that backflow has occurred in the building, property, or private water system receiving water service.

b. The Administrative Authority may order that water service be temporarily shut off when backflow occurs in a customer's building, property, or private water system. Such shut off is to protect the system from further contamination or pollution and to allow time for locating and mitigating the cause and extent of the contamination or pollution.

(xiii) Existing Backflow Prevention Assemblies For Containment

a. All backflow prevention assemblies for containment installed prior to November 1, 1996, that do not meet the requirements of these regulations but were approved testable assemblies for the purpose described herein at the time of installation and that have been properly installed and maintained, shall, except for the testing, inspection, and maintenance requirements under Section (x) and Section (xi), be excluded from the requirements of these rules so long as the Administrative Authority is assured that they will satisfactorily protect the PWS. Whenever the existing assembly for containment is moved from the present location, requires replacement, or when the use of the service area protected by the assembly changes so that the Administrative Authority determines that the customer no longer qualifies for a partial exemption, the unit shall be

replaced by an approved backflow prevention assembly for containment meeting the requirements of these regulations.

(xiv) Customer Non-compliance

a. In case of non-compliance with these regulations, the Administrative Authority shall notify the customer to comply within ten working days. In the event of failure or upon refusal of the customer to comply as ordered, the Administrative Authority may, after notice and reasonable opportunity for hearing, terminate water service. Non-compliance includes, but is not limited to, the following:

1. Refusal to allow the Administrative Authority access to the property to determine if the conditions for a partial or total exemption have been satisfied, except when an RP or air gap is properly installed for containment and properly maintained

2. Providing inadequate backflow prevention

3. Failure to install a backflow prevention assembly for containment which has been required by the Administrative Authority

4. Failure to test, maintain, or properly repair a backflow prevention assembly for containment as required by the Administrative Authority

5. Failure to comply with the requirements of these regulations

6. Refusal to replace a faulty backflow prevention assembly

7. Removal of a backflow prevention assembly for containment which has been required by the Administrative Authority except for seasonal removal as in Section (viii) f

8. Bypassing of a backflow prevention assembly for containment which has been required by the Administrative Authority

9. Failure to report a backflow incident

10. Direct connection between the PWS and a sewer line

11. A situation which presents an immediate health hazard to the PWS

b. For conditions 7, 8, 9, 10, and 11, the Administrative Authority will take the following steps.

1. Make a reasonable effort to advise the customer of intent to terminate water service.

2. Terminate water service and lock service valve. The water service will remain inactive until correction of the violation has been approved by the Administrative Authority.

(xv) COMMITTEE OF ADJUSTMENT There is hereby established the Containment Committee of Adjustment.

a. The Committee shall consist of three members as follows: the Building Official of the City or that official's designee; the Director of Water and Pollution Control or the Director's designee; and a representative of the Plumbing and Mechanical Board of Appeals, selected from among the members of that Board by majority vote of the Board's members.

b. The said Committee of Adjustment shall have the following powers.

1. To hear and decide appeals that allege an error in any decision or determination made in the administration and enforcement of Section 21.501(47)(b) of the Municipal Code of the City of Ames, Iowa

2. To authorize, in specific cases, such exemption from the requirements of Section 21.501(47)(b) of the Municipal Code of the City of Ames, Iowa, as will not be contrary to the laws of the State of Iowa, when due to special circumstances not of the property owner's own creation, a strict literal interpretation of Section 21.501(47)(b) would result in undue expenses to the property owner in view of an alternative measure agreed to by the property owner that will not be contrary to the public interest

(xvi) Presumptive Exemptions The following water uses shall generally be presumed exempt from the containment requirements of Section 21.501(47)(b): water closets, lavatories, bath tubs, showers, water softeners, single-faucet water treatment units, boilers, sinks, irrigation systems, clothes washers, dishwashers, pre-rinse stations, garden hose connections, drinking fountains, urinals, carbonators/beverage dispensers, garbage disposals, ice makers, cleaning chemical dispensers, and private fire hydrants. However, when warranted by the facts and circumstances of a particular situation, the Administrative Authority, with notice and opportunity to be heard extended to the property owners, may apply to the Containment Committee of Adjustment for a determination that containment measures are required under such facts and circumstances.

(9) Section 603.4.8 UPC the Note is reworded to read:

Water-cooled compressors, degreasers, or any other water-cooled equipment shall be protected by a listed IAPMO reduced pressure principle backflow preventer.

(10) Section 603.4.10 UPC is reworded to read:

Potable water make up connections to boilers, sterilizers, chillers, commercial clothes washers, or water heaters for radiant heat, shall have an IAPMO listed reduced pressure type backflow preventer.

(11) Section 603.4.12 UPC is amended by adding:

A stainless steel Watts 9Bd dual check valve backflow preventer or equivalent shall be used on all potable water lines that have a carbonated soda fountain or dispensing machine connected.

(12) Section 604.1 UPC is amended to add:

The following type of pipe and fittings are allowed in the interior/exterior of a building or structure:

Interior

Above concrete floor (lowest level)

(a) soft copper (Type K, L, M)
(b) rigid copper (Type K, L, M)
(c) brass
(d) cross linked polyethylene (PEX) (as approved by Chapter 14 of the Uniform Plumbing Code),
(e) ductile iron (four (4) inch or larger).
(f) CPVC

Below concrete floor (lowest level)

(a) soft copper (type K)
(b) PEX(as approved byChapter14 of the Uniform Plumbing Code)
(c) Polyethylene, IPS 200 p.s.i. SLDR-7, PE3408
(d) ductile iron (four (4) inch or larger) with flanged mechanical joints.
(e) C-900 PVC DR 14 (fire line).

Exterior

(a) PEX(as approved byChapter14 of the Uniform Plumbing Code),and which meets manufacturer's specifications.
(b) Soft copper (Type K)
(c) Brass
(d) Ductile iron (flanged mechanical joint) (bolts shall be teflon coated)
(e) PVC meeting AWWA C-900 standards, DR14 for fire lines and Dr18 for non-fire lines.
(f) Polyethylene, IPS 200 p.s.i. SLDR-7, PE3408

Note: Polyethylene, PEX and PVC C-900 shall have a 14-gauge solid copper tracer wire with a blue jacket. The tracer wire will start at the water main and terminate at a weatherproof junction box. The junction box shall be accessible and be labeled to identify junction box "tracer wire". The tracer wire shall then continue from the junction box and terminate at the water meter. The wire shall run from the main and be exposed at the curb box. The junction box shall be located next to water meter remote on the exterior of the building or structure.

(13) Section 604.2 UPC shall be deleted

(14) Section 604.5 UPC shall be deleted

(15) Section 604.6 UPC shall be deleted

(16) Section 606.0 UPC is amended by adding neew subsections 606.0.1 through 606.0.13 as follows:

Sec. 606.0.1. Curb Stops shall be of the quarter turn ball valve type with the grip joint ends.

Sec. 606.0.2. The polyethylene to copper adaptor coupling, located at least two (2) feet from the outside footing, shall be a Ford Meter Box Co. C26-44-G (1") or equivalent.

Sec. 606.0.3. All threaded taps on the main shall be at least 24 inches apart and shall be at least ¾ inch in size. If more than one tap is made for a service line, the taps will be staggered on the pipe. No more than three (3) threaded taps shall be made for a service connected to a 4-inch or larger main. Maximum threaded tap size for a 4 inch main is ¾ inch. All taps will be made in the top half of the water main, but not more than 45" above the horizontal plane. All services having two (2) taps or more shall be combined through a brass wye pipe connection. The maximum length of service from the main to the wye shall be four (4) feet. The following table lists appropriate number of taps for different service sizes.

Service Size Taps
1 inch = two ¾ inch or one 1 inch
1¼ inch = two 1 inch
1½ inch = two 1 inch

Sec. 606.0.4. Service saddles allowed on four (4) inch or larger water mains when water service is ¾", 1", 1¼", and 1½" shall be a Smith-Blair, or equivalent, #317, #357, #372, #393 or #397. The saddles shall have a stainless steel strap with two bolts wide minimum. The bolts or nuts shall be either stainless steel or blue coated. When tapping a four (4) inch or larger main for water services for a two (2) inch or larger water service, the Smith-Blair, or equivalent stainless steel full wrap around saddle, #238, #239, #264, or #265 shall be used. The bolts and nuts shall be either stainless steel or blue coated. Any water service that is larger than a two(2) inch shall require a tapping valve and sleeve at the main or private main. The Post Indicator Valve (PIV) for fire line shall not serve as the water service valve after the main. All tapping valve sleeves shall meet the Urban Standard Specifications as follows:

(1) Valve: Tapping valve conforming to ANSI/AWWA C509.
(2) Sleeve:
    (a) Minimum 14 gauge
    (b) Stainless steel, ASTM A240, Type 304
    (c) Working pressure 200 psi.
    (d) Must fully surround pipe
    (e) Approved sleeves
        (i) Cascade Water Works Manufacturing Company, Style CST-EX
        (ii) PowerSeal Pipeline Products Corporation, Model 3490AS
        (iii) JCM Industries, Inc. Model JCM 432
        (iv) Approved equal
(3) Gasket:
    (a) To completely surround pipe
    (b) Minimum thickness 0.125 inch
    (c) Material: nitrile rubber.
(4) Outlet Flange:
    (a) Stainless steel, ASTM A240, Type 304
    (b) ANSI B 16.1, 125 pound pattern
(5) Bolts: Stainless steel, ASTM A240, Type 304

Sec. 606.0.5. In the event a curb box is set in any location where a concrete or asphalt surface is to be placed, a sleeve shall be placed around the cap to allow for expansion and contraction.

Sec. 606.0.6. In a new subdivision the water service line shall be installed at the center of the property unless otherwise approved by the Administrative Authority.

Sec. 606.0.7. There shall be a curb cock in every service connection to the main. It shall be located on the property line or as close as possible thereto and in alleys within one foot of the alley line, except two (2) inch and larger, which shall have a street valve box over the valve at the water main. The curb cock to be used for services from three-fourths (¾) inch to two (2) inches shall be the style known as Mueller Mark II Oriseal or Ford Ball Valve with 90° curb cock, or equal, provided with T handle and extension rod keyed and locked to curb cock and shall be

the same diameter as the pipe served. The curb cock shall be kept in an operative condition at all times.

Sec. 606.0.8. The curb cock shall be covered by a curb box of the Western pattern No. 100, or equal, extending to the curb grade. In cases where the surface of the ground is higher than the curb grade to the extent that the curb box will not extend sufficiently to be in plain view, then the curb box shall be extended to the ground surface. Whenever a water service is renewed the curb box shall be brought to the curb grade or present natural ground level and moved to the property line. In placing the curb cock in position, care must be exercised to provide against settlement of the curb box, by providing a base of brick, stone or concrete block set on solid earth for support. A support shall be placed across the ditch and wired to the curb box near the top to keep it in a vertical position while filling the ditch.

Sec. 606.0.9. A corporation cock of either a Mueller or Ford make, or its equivalent, shall be inserted in every tap one inch or less in diameter made in the water main. The connection to the main shall be made by a regulation corporation cock and copper service with a compression joint if the pipe is plastic SIDR-7 200 P 3408. All connections to the water main shall be adequately looped to prevent breakage from ditch settlement.

Sec. 606.0.10. A service valve shall be installed immediately following a two (2) inch or larger tap on all take offs from the water main or private main.

Sec. 606.0.11. Where a single water service line provides service to a new duplex or is split for any other reason, the service line shall be at least one inch in diameter. Where an existing structure is to be converted to a duplex a 1" equivalent service may be provided by a separate tap. The new service lines shall be divided by a wye at the property line. Existing 1" services may be split inside the building so long as shut-offs are available in a common area. Separate curb boxes shall be installed, and separate ¾ inch service lines shall be run to the individual customer units.

Sec. 606.0.12. Sprinkler systems used for fire protection may be permitted to be attached to the water mains by registered plumbing contractors by direct connection without meters under the direction and supervision of the City. No open connection can be incorporated in the system, and there shall be no valves except a post indicator valve at the entrance to the building, which must be sealed open. One and two family residential sprinkler lines shall be metered through the single meter. The property owner or tenant shall promptly report to the City any seal which has been broken for the closing of the system. A detailed drawing of the sprinkler system shall be filed with the City and free access to the building shall be granted the City for inspection purposes. No charge will be made for water used for fire purposes through a sprinkler system. The fire line shall be a minimum four (4) inch diameter with a shut-off valve installed after the tap into the main, the PIV shall be a minimum of forty (40) feet from the building or at the determination of the fire inspector.

Exception: The fire line may be smaller than 4" in size if hydraulic calculations by the fire sprinkler company show that a 4" would not be required. If a 4" fire line is not required a Fire Department connection or P.I.V. may not be required if determined by the fire inspector.

Sec. 606.0.13. The post indicator valve (PIV) must be set at 36" above final grade. The termination flange, inside the building, shall not be more than twelve (12) inches above finished floor level and be set at a true vertical position. If the fire line and water service are on one line, the water service shall have the take off prior to the PIV. The take off for the water service shall be either brass, ductile iron, C-900 PVC DR 14, or copper to the curb box. The fire line shall have a two hundred (200) pound pressure test done for a minimum of two (2) hours without losing any pressure. The fire line shall be tested from the tap at the main to the termination flange with the PIV open and the curb box closed. No fire line static pressure test shall be started after 1:30 p.m., Monday through Friday.

A certified fire sprinkler installer may install the backflow device to the sprinkler system for containment. The termination flange, inside the building, from horizontal to the vertical position or from horizontal to the horizontal position traveling through an exterior wall or floor, shall have no smaller than ¾ inch galvanized or equivalent all-thread rod used between said flanges to keep fire line termination stable. The fire line located in the trench may use mega-lug type supports, however, a concrete thrust block shall be in front of fire line traveling from horizontal to vertical prior to the termination flange. Only PVC C-900 DR 14, and ductile iron shall be used for the fire line service. The joints shall have bolted flanged fittings. The tapping valve, PIV, and all other fittings and pipe shall be marked to withstand 200 p.s.i. Before requesting a Bac-T test, the fire line shall be flushed thoroughly by the plumbing contractor. The contractor shall request, from the Inspection Division, a Bac-T test form, complete the form and return it to the Inspection Division. Utility Maintenance Division will collect the sample for testing. If the

fire line passes Bac-T test, the Inspection Division will contact the plumbing contractor. The termination flange shall have a two (2) inch ball valve to properly flush the fire line.

(17) Section 606.2.1 UPC is amended to add the following to the end of the section:

Soft copper water service lines, except fire line, shall be either brazed, silver soldered, or flared with a long shouldered joint. Whenever type "K" soft copper is used for the water service, use of any joints is discouraged whenever possible.

(18) Section 608.5 UPC is amended to delete "of galvanized steel" and to replace reference to "outside of the building" with "properly drained surface".

(19) Section 609.1 UPC is amended to delete the last two sentences in the section and insert the following:

All water service lines shall be installed at least five feet below finish grade. If the water service cannot be buried below frost depth at any point, the trench shall be lined with 1 ½" thick "Blue Board" insulation or equivalent as approved by the Administrative Authority. Sand backfill material shall then be placed to a depth of one foot above the top of pipe, then 1 ½" "Blue Board" or equivalent will be installed so that the entire trench width and length in the area needing protection against freezing is insulated and then backfilled. The insulation shall be at least five (5) feet in depth.

(20) Section 609.5 UPC is reworded to add the following to the end of the section:

Exception: water heaters and boilers.

(21) Section 609.10 UPC is amended by adding:

Exception: Single family dwelling units.

(22) Section 610.8 (6) is amended by replacing the last sentence with:

No building water service line shall be less than one (1) inch diameter.

(23) Amend Table 6-6 UPC by changing footnote:

Replace "Building supply, three-quarter(3/4) inch nominal size minimum." With "Building supply, one (1) inch nominal size minimum."

(24) Section 610.1 UPC is reworded:

Delete the words "each water meter and" from the first sentence.

Add "Water meter sizing shall be determined by the Water Meter Division" to the end of the section.

(25) Section 701.1 UPC is reworded to read as follows:

Drainage pipe and fittings used inside a new building or an existing building for underground shall be copper (type L), brass, ABS (schedule 40), PVC (schedule 40) or cast iron.

Exception: Galvanized may be used on a sewage ejector system when the discharge line is three (3) inch or larger. The galvanized shall only be piped no more than four (4) feet out of pit.

Above ground piping shall be the same as underground except that copper tube and fittings may be type M for commercial and structures that are more than a one and two-family dwelling. A one and two-family dwelling may use type DWV copper tube.

(26) Section 703.1 UPC is reworded to add the following at the end of the section:

No underground drainage piping or vent shall be less than two (2) inches inside diameter.

(27) Table 7-3 UPC is amended to add the following to footnote #8:

Public use shall be any building or structure that is not a dwelling unit. Fraternities and sororities are not classified by this section as a dwelling unit.

(28) Section 704.3 UPC is reworded to add at the beginning of the section "At the discretion of the Plumbing Inspector and Sanitarian."

(29) Section 704.3 UPC is reworded to add the following to the end of the section:

or shall be discharged by an airgap indirect waste to a properly sized floor sink.

(30) Section 705.1.6 UPC is reworded to read as follows:

No molded rubber coupling (Fernco Coupling or equivalent) shall be used on any sanitary sewer or storm sewer. A stainless steel shielded molded rubber coupling may be used when connecting to clay pipe or PVC truss pipe on the sanitary or storm sewer.

(31) Section 705.1.8 UPC is reworded to add the following to the end of the section:

Shielded couplings (no hub clamps) are not allowed on any exterior building sanitary sewer, or storm sewer.

(32) Section 710.9 UPC is reworded to add the following to the end of the section:

Exception: When only discharging a lavatory sink, a general sink, or a floor drain into a sewage ejector receiving tank, dual pumps in public use occupancy will not be required.

(33) Section 717.0 UPC is reworded to read as follows:

The minimum size of any building sewer shall be determined on the basis of the total number of fixture units drained by such sewer, in accordance with Table 7-8. No building sewer shall be smaller than four (4) inches. The building sewer shall not be smaller than the building drain.

In unusual circumstances, with prior approval from the plumbing inspector, a sewage ejector may discharge the building sewer to the public sewer manhole when the public main is too shallow to allow the building sewer discharge to flow by gravity. The pipe material to be used shall be Polyethylene (P.E.) Two (2) inch SDR 7, 3408. The 2" line shall at all times be a minimum of five (5) feet deep or be blue-boarded. The sewage ejector shall be vented with a minimum two (2) inch pipe. The ejector pumps shall comply with section 710.9

(34) Section 718.2 UPC is reworded to read as follows:

Building sewer pipe made of cast iron, copper, or extra strength vitrified clay shall be laid on a firm bed. Pipe consisting of Schedule 40 PVC/ABS, PVC SDR 23.5/35 and PVC truss pipe shall be enveloped on bottom, sides and top with a minimum of four (4) inches of either one (1) inch clean or 3/8" minus crushed rock, 3/8" washed chip or “pea gravel”. After enveloping the pipe, the remainder of the ditch may be filled once the inspection is complete.

(35) Section 718.3 UPC is reworded to read as follows:

No building drain or sewer shall be closer than two (2) feet from the building structure or footing that is not made out of cast iron, Schedule 40 PVC, or Type “L” copper. At no point shall the building sewer be less than five (5) feet in depth on new construction or when replacing existing sewers. If less than five (5) feet in depth, the trench shall be lined with 1 ½” thick blue-board insulation. The insulation of the sides shall be at least five (5) feet below finished grade with a cap over the two sides.

One (1) inch clean 3/8" minus, 3/8" washed chips, and pea gravel rock shall be placed on the bottom, sides and top of pipe whenever any type of PVC is used. Whenever cast iron is used sand may take the place of the one (1) inch rock. Whenever possible, the building sewer shall be at a depth of nine (9) feet below street grade from the main to the property line on new construction. Whenever possible on a duplex or single-family dwelling, the building sewer shall not be located under a driveway.

(36) Section 719.6 UPC is amended by deleting the second paragraph.

(37) Section 801.3 UPC is reworded to read as follows:

Sinks (except hand sinks) in a bar, nightclub, tavern, or soda fountain shall drain to an approved and properly trapped and vented floor sink through an approved airgap or airbreak. The floor sink, drain line, trap, and strainer inlet shall be at least three (3) inch pipe size. The developed length from the fixture outlet to the floor sink shall not exceed five (5) feet.

(38) Section 807.4 UPC is reworded to read as follows:

No domestic dishwashing machine shall be directly connected to a drainage system or food waste disposer without the use of an approved dishwasher air gap fitting on the discharge side of the dishwashing machine, or by looping the discharge line of the dishwasher as high as possible near the flood level of the kitchen sink where the waste disposer is connected, and will be supported or strapped. Listed air gap fittings shall be installed with the flood level (FL) marking at or above the flood level of the sink or drainboard, whichever is higher.

(39) Section 901.0 UPC is further amended by adding new sub-section 901.0.1

Section 901.0.1 All single family or two family dwelling units with a basement shall be provided with a two (2) inch future vent. The future vent shall be combined with other vents or terminate through the roof. Such vent shall be capped in the floor joist area of the basement for future use. The two (2) inch vent is for a future basement bathroom or other approved fixtures.

(40) Section 902.2 UPC is reworded to read as follows:

Sinks (except hand sinks) in a bar, nightclub, tavern, or soda fountain shall drain to an approved and properly trapped and vented floor sink through an approved airgap or airbreak. The floor sink, its drain line, trap, and strainer inlet shall be at least three (3) inch pipe size. The developed length from the fixture outlet to the floor sink shall not exceed five (5) feet.

(41) Section 903.1 UPC is reworded to read as follows:

Drainage and vent pipe and fitting used inside a new building or an existing building for underground shall be copper (Type L), brass, ABS (Schedule 40), PVC (Schedule 40) and cast iron.

Exception: Galvanized may be used on a sewage ejector system when the discharge line is three (3) inch or larger. The galvanized shall be piped no more than four (4) feet out of pit.

Above ground piping shall be the same as underground except that copper tube and fittings may be Type M for commercial and structures that are more than a one and two-family dwelling. One and two-family dwellings may use type DWV copper tube.

(42) Section 903.1.1 UPC is deleted

(43) Section 903.2.1 is reworded to read as follows:

Copper tube for underground drainage and vent piping shall have a weight of not less than that of copper drainage tube type L.

(44) Section 903.2.2 is reworded to read as follows:

Copper tube for aboveground drainage and vent piping shall have a weight of not less than that of copper drainage tube type M.

Exception: Single family and two family dwellings may use copper tube type DWV.

(45) Section 904.1 UPC is reworded to read as follows:

The size of vent piping shall be determined from its length and the total number of fixture units connected thereto, as set forth in Table 7-5. The diameter of an individual vent above ground shall not be less than one and one-fourth (1 ¼) inches, or less than two (2) inches for underground, nor less than one-half (½) the diameter of the drain to which it is connected.

Exception: A water closet shall be vented with a vent no smaller than a two (2) inch inside diameter pipe.

Each individual building or structure shall have a main vent stack equal in size or larger than the required building sewer. The main vent stack shall extend through the roof a minimum of twelve inches undiminished in size from the underground building drain.

Exception: In single-family, duplexes, apartment, motel and hotel buildings four (4) stories or less, a three (3) inch main stack vent is permitted, as long as other vents through the roof equal the cross-sectional diameter of the required building sewer.

(46) Section 906.7 UPC is reworded to:

Change two (2) inches to three (3) inches and ten (10) inches to twelve (12) inches and remove reference to mm.

(47) Section 908.2.1 UPC is reworded to: Single Bathroom or Single Toilet Room.

An individually vented lavatory in a single bathroom or single toilet room shall be permitted to serve as the wet vent for one (1) water closet and/or one (1) bathtub or shower stall, or one (1) water closet and/or one (1) bathtub/shower combination if all of the following conditions are met:

(a) The wet vent, and the dry vent extending from the wet vent, shall be two (2) inch (50 mm) minimum pipe size.

(b) The wet vent pipe opening shall not be below the weir of the trap that it serves. Vent sizing, grades, and connections shall comply with Sections 904.0 and 905.0.

(c) The horizontal branch drain serving both the lavatory and the bathtub or shower stall shall be two inch (50 mm) minimum pipe size.

(d) The length of the trap arm from the bathtub or shower stall complies with the limits in Table 10-1.

(e) The distance from the outlet of the water closet to the connection of the wet vent complies with the limits in Table 10-1.

(f) The horizontal branch drain serving the lavatory and the bathtub or shower stall shall connect to the horizontal water closet branch above its centerline. When the bathroom or toilet room is the top-most load on a stack, the horizontal branch serving the lavatory and the bathtub or shower stall shall be permitted to connect to the stack below the water-closet branch.

(g) No fixture other than those listed in this section shall discharge through a single bathroom or single toilet room wet-vented system.

(48) Section 908.2.2 UPC is reworded to: Double Bathtubs, Bathtub/Shower Combinations, Shower Stalls, and Lavatories. Two (2) lavatories, each rated at 1.0 drainage fixture unit (DFU), and two (2) bathtubs,

bathtub/shower combinations, or shower stalls, installed in adjacent bathrooms, shall be permitted to drain to a horizontal drain branch that is two (2) inch (50 mm) minimum pipe size, with a common vent for the lavatories and no individual vents for the bathtubs, bathtub/shower combinations, or shower stalls, provided that the wet vent from the lavatories and their dry vent is two (2) inch (50 mm) minimum pipe size and the length of all trap arms comply with the limits in Table 10-1.

(49) Section 908.2.3 UPC is reworded to: Batteries of Fixtures (Battery Venting)

908.2.3.1 A maximum of eight (8) floor-outlet water closets, showers, bathtubs, or floor drains connected in battery on a horizontal branch drain shall be permitted to be battery-vented. The drain from each fixture being battery-vented shall connect horizontally to the horizontal wet-vented drain branch. The horizontal wet-vented branch drain shall be considered as a vent extending from the downstream fixture drain connection to the most upstream fixture connection.

908.2.3.2 Back-outlet water closets having carriers conforming to Section 407.4 shall be permitted to be battery-vented provided they connect horizontally to the horizontal wet-vented section.

908.2.3.3 Trap arm lengths for fixtures shall not exceed those as indicated in Table 10-1.

908.2.3.4 A battery vent shall be connected to the horizontal wet-vented branch drain between the two (2) most upstream fixture drains.

908.2.3.5 The entire length of the wet-vented section of the horizontal branch drain shall be uniformly sized for the total drainage discharge connected thereto as per Table 7-5. The maximum slope of the horizontal drain shall be three-eighths (3/8) inch (10 mm) per foot (300 mm).908.2.3.6 A relief vent shall be provided on each wet vented horizontal branch drain below the uppermost floor. The relief vent shall connect to the horizontal branch drain between the stack and the first upstream fixture drain.

908.2.3.7 Battery vents and relief vent connections shall be taken off vertically from the top of the horizontal drain. Battery vents and relief vents shall not be used as vertical wet vents.

908.2.3.8 Lavatories and drinking fountains shall be permitted to connect horizontally to the horizontal wet-vented branch drain provided that they are located on the same floor as the battery-vented fixtures and each is provided with either an individual or common vent.

908.2.3.9 Batteries of more than eight (8) battery vented fixtures shall have a separate battery vent for each group of eight (8) or less fixtures, and the horizontal branch drain in each group shall be sized for the total drainage into the branch, including all upstream branches and the fixtures within the particular group.

908.2.3.10 All battery vents and relief vents shall be sized according to Section 904.0, but shall be not less than one-half (1/2) the area of the drain pipe that they serve and shall comply with Section 905.0

(50) Section 909.0.1 is added to read as follows:

As an alternative for single family dwellings, an “air admittance valve” may be installed as follows:

(a) The air admittance valve shall be two (2) inches in size and have the ANSI/ASSE 1051 listing label clearly visible during inspection.

(b) The stack or horizontal branch drain shall have a 1 ½" vent. The two (2) inch waste line shall be a designated line with no other connections of any sort.

(c) The air admittance valve shall be readily accessible in the cabinet area, be removable, and located at least six (6) inches above the 2 x 2 x 1 ½” tee for the trap.

Only kitchen or bar island sinks may be auto vented. The auto vent shall be readily accessible and shall be located above the trap arm and in same cabinet as “P” trap.

(51) Table 10-1 UPC is amended to read as follows:

Maximum Allowable Horizontal Length Of Trap Arms	
1-1/4”	5’ 0”
1-1/2”	6’ 0”
2”	8’ 0”
3”	12’ 0”
4” and larger	13’ 0”

The developed length between the trap of a water closet or similar fixture (measured from the top of the closet flange to the inner edge of the vent) and its vent shall not exceed six

feet.

(52) Section 1101.2 UPC is reworded to add the following:

Whenever such connection or arrangement is found to exist in violation of the ordinances of this city and Chapter 21, whereby surface water runoff, subsoil or footing drainage is discharged or diverted into the sanitary sewer system, the inspector shall issue a written notice to the owner to cause such to be abated by ordering a connection to a public storm main or collector line.

(53) Section 1101.3 UPC is reworded to read as follows:

Rainwater piping placed within the interior of a building to two (2) feet out of building or footings shall be cast iron, brass, copper (Type M), Schedule 40 PVC or Schedule 40 ABS DWV. Schedule 40 PVC and ABS pipe installed within a duct or plenums shall be insulated with an insulation having a flame-spread index of not more than 25 and a smoke index of not more than 50.

Rainwater piping placed outside a building shall be cast iron, brass, copper (Type M), Schedule 40 PVC or Schedule 40 ABS DWV, reinforced concrete pipe (RCP), vitrified clay pipe (VCP), SDR 23.5 PVC, SDR 35 PVC, PVC truss pipe, PVC A2000 pipe, and corrugated high-density polyethylene (P.E.)

SDR 23.5 PVC, SDR 35 PVC, schedule 40 PVC or Schedule 40 ABS, PVC truss, PVC A2000, and corrugated polyethylene pipe outside a building shall be enveloped with four (4) inches of crushed rock, either one (1) inch clean or 3/8" minus 3/8" washed chips, or “pea gravel”, on the top, bottom and sides.

The storm water sewer may be connected to the City storm main at intakes, manholes, or connected directly into the storm main. Whenever a direct connection is made to the storm main, the connection shall be made by a clamping saddle or a fitting with a sealant that makes the joints water and root proof.

If the storm sewer is one-half (½) or more of the size of the storm main, a manhole shall be required at the point of connection to the storm main. All manholes shall meet the Iowa Statewide Urban Standards.

All direct taps into the storm main shall be installed on the top one-half (½) of the main.

The storm sewer shall have a cleanout installed every one hundred (100) feet and every change of direction exceeding 135°. In place of a cleanout every one hundred (100) feet, a manhole shall be placed every three hundred (300) feet (manhole shall meet Des Moines Urban Standards).

No Fernco coupling or no-hub clamp shall be used on the storm sewer or main.

Exception: When converting to PVC truss pipe or clay pipe, a Fernco stainless steel shielded coupling shall be used on storm sewer.

(54) Section 1101.5.2 UPC is reworded to read as follows:

The subsoil drains may be allowed to discharge to a pond, or waterway if approved by the Building Official. If not allowed by the Building Official, the subsoil drain shall be discharged to a storm main.

Regardless, the gravity line shall have a backwater valve.

In existing buildings, if granted permission by the plumbing inspector, the perimeter tile may flow by gravity to a storm main, intake, or manhole if there is at least ten (10) feet vertical height difference between the perimeter tile and the storm main, intake, or manhole.

(55) Section 1101.5.3 UPC is amended to:

Replace “fifteen (15) gpm” with “17 gpm with a seventeen (17) foot head”

Add the following to the end of the section:

The sump pumpline may be either Schedule 40 PVC or Schedule 80 PVC pipe.

The fittings shall be either schedule 80 PVC deep socket or schedule 40 deep socket pressure fittings. The sump pump line may also be 1 ½" polyethylene (PE) SDR 9, 3408. The PE joints shall be made with ribbed insert fittings secured by stainless steel clamps. The sump line shall be buried no less than five (5) feet in depth from finished grade. If this depth cannot be maintained, the sides and top of pipe wall shall be covered with 1 ½" blue board insulation. The sides of the insulation shall be at least five (5) feet in depth. When the sump line is discharged into a storm manhole, intake, or storm main that is not five (5) feet below final surface grade, a quarter (¼) of an inch hole shall be drilled into the bottom portion of the horizontal 90°elbow before pipe is placed in the vertical position.

If two sump lines are combined together, the sump line shall be a two (2) inch line to the storm main, intake, or manhole. The sump pump shall have an electrical outlet within reach of the manufacturer’s cord.

No foundation drain service line shall be discharged onto property, someone else’s property, or into the building drain or building sewer. No floor drain, clothes washer, or any other plumbing fixture shall be discharged into the

foundation sump pit.
Every sump pit in an elevator shaft shall meet the rules and regulations of the State of Iowa Elevator Inspector. No hydraulic elevator sump shall be discharged into a storm or sanitary sewer.

(56) Section 1101.5.4 UPC is deleted.

(57) Section 1102.1.2 UPC is amended to read:

The inside conductors installed above ground level shall be of seamless copper water tube, Type K, L, or M; Schedule 40 copper pipe or Schedule 40 copper alloy pipe; service weight cast-iron soil pipe or hubless cast-iron soil pipe; or Schedule 40 ABS or Schedule 40 PVC Plastic pipe.

(58) Section 1102.3 UPC is amended by adding the following:

Rainwater piping placed underground within the interior of a building to two (2) feet out of building or footings shall be cast iron, brass, seamless copper water tube (type K, L, or M), Schedule 40 PVC or Schedule 40 ABS DWV.

(59) Section 1102.4 UPC is amended by adding the following:

Rainwater piping placed outside a building shall be cast iron, brass, copper (Type M), Schedule 40 PVC or Schedule 40 ABS DWV, reinforced concrete pipe (RCP), vitrified clay pipe (VCP), SDR 23.5 PVC, SDR 35 PVC, PVC truss pipe, PVC A2000 pipe, and corrugated high-density polyethylene (P.E.)
SDR 23.5 PVC, SDR 35 PVC, schedule 40 PVC or Schedule 40 ABS, PVC truss, PVC A2000, and corrugated polyethylene pipe outside a building shall be enveloped with four (4) inches of crushed rock, either one (1) inch clean or 3/8" minus 3/8" washed chips, or “pea gravel”, on the top, bottom and sides.

(60) Tables 11-1, 11-2, and 11-3 UPC are amended by adding the following note to the end of each table:

Rainfall rates for the City of Ames shall be based at three and one-half (3 ½) inches of rain per hour.

(61) Section 1209.5.1.1 UPC is amended to add:

Material allowed six (6) inches or higher above lowest finished floor shall be:

(1) standard weight wrought iron or steel
(2) black iron or steel
(3) corrugated stainless steel (csst)

(62) Section 1209.5.3.4 UPC is amended to add:

No corrugated stainless steel tubing (csst) shall be installed outside of a building or installed below ground in a building. Csst shall be installed by manufacturer’s recommendations unless it violates this code.

(63) Section 1212.1 UPC is amended to add:

No appliance connector shall penetrate the
housing of an appliance, or be used in an exterior location.

(64) Section 1302.0 UPC is reworded to add the following at the end of the section:

Applicant must provide a certificate to the Inspection Division from an architect or engineer that the facility, as built, meets the requirements of Chapter 13 UPC.

(65) Section D1 of Appendix D UPC is reworded to read as follows:

The maximum rainfall rate for the City of Ames shall be based on three and one-half (3 ½) inches in Table D-1 for design.

DIVISION III
Contractor and Trade Licenses

Sec. 5.300. Building contractor registration.

(1) **Contractor registration required**. Each person, firm, or corporation performing work requiring a building, electrical, mechanical, plumbing, or sign permit must possess a valid State Division of Labor registration number and provide proof of same to the Inspection Division prior to permit issuance. For electrical, plumbing, and

HVAC contractors, possession of a State of Iowa contractor license shall serve as evidence of registration with the Division of Labor.

(2) **Contractor insurance required.**

All persons, firms, or corporations performing work that requires a building permit must possess current Contractor's Commercial General Liability insurance in not less than $500,000.00 combined single limit, and provide proof of coverage to the Inspection Division prior to permit issuance. For electrical, plumbing, and HVAC contractors, possession of a State of Iowa contractor license shall serve as evidence of adequate insurance coverage.

Sec. 5.301. CITY ELECTRICAL CONTRACTOR REGISTRATION AND STATE LICENSING.

Before doing any electrical work governed by this code in the City of Ames, an electrical contractor must register with the City of Ames Inspection Division as an electrical contractor on a form provided by the Division.

(1) Conditions for Registration. An electrical contractor must hold a valid State of Iowa license as an electrical contractor.

(2) Information to be provided. An applicant for electrical contractor registration under this section shall provide the following information:

(a) Copy of possession of current State license

(b) Name, mailing address, email address, phone number of the principal of the registered firm or corporation

(c) The names and State license classifications of all employees who may be working on projects in the City of Ames

(3) Registration not Transferable. Contractor registration is not transferable to any other person, firm or corporation.

Sec. 5.302. STATE ELECTRICIAN LICENSE CATEGORIES.

(1) **Apprentice electrician**. An apprentice electrician is a person who holds an apprentice electrician license issued by the State of Iowa.

(2) **Journeyperson electrician**. A journeyman electrician is a person who holds a journeyperson electrician license issued by the State of Iowa.

(3) **Master electrician**. A master electrician is a person who holds a master electrician license issued by the State of Iowa.

(4) **Electrical Contractor**. An electrical contractor is a person, firm or corporation that holds an electrical contractor license issued by the State of Iowa.

Sec. 5.303. STATE ELECTRICIAN LICENSE REQUIRED.

(1) Where this code requires electrical work to be performed by a licensed person, such person must hold and have in their immediate possession, a valid Electricians license issued by the State of Iowa that authorizes the work being performed.

Sec. 5.304. EXEMPTIONS.

(1) No license or registration shall be required for minor repair work, including the replacement of lamps and fuses, or the connection of approved portable electrical equipment to approved permanently installed receptacles, or for simple replacement of electrical fixtures such as wall plugs, and light fixtures, in single family dwellings when the person performing the repair work is the owner of the structure, and has his or her primary place of residence there.

(2) No license or registration shall be required for a mobile home dealer or the employee of a mobile home dealer to perform electrical connections in a mobile home space or within ten feet of such space, located in a mobile home park, all within the meaning and intent of Section 322B.3(5) Code of Iowa. The requirements for permits and inspections remain in effect, and the mobile home dealer shall pay the permit and inspection fees.

Sec. 5.305. CITY PLUMBING CONTRACTOR REGISTRATION AND STATE LICENSING.

Before doing any plumbing work governed by this code in the City of Ames, a plumbing contractor must register with the City of Ames Inspection Division as a plumbing contractor on a form provided by the Division.

(1) Conditions for Registration. A plumbing contractor must hold a valid State of Iowa license as a plumbing contractor.

(2) Information to be provided. An applicant for plumbing contractor registration under this section shall provide the following information:

(a) Copy of possession of current State license

(b) Name, mailing address, email address, phone number of the principal of the registered firm or corporation

(c) The names and State license classifications of all employees who may be working on projects in the City of Ames

(3) Registration not Transferable. Contractor registration is not transferable to any other person, firm or corporation.

Sec. 5.306. STATE PLUMBERS LICENSE CATEGORIES.

(1) **Apprentice plumber**. An apprentice plumber is a person who holds an apprentice plumber license issued by the State of Iowa.

(2) **Journeyperson plumber**. A journeyman plumber is a person who holds a journeyperson plumber license issued by the State of Iowa.

(3) **Master plumber**. A master plumber is a person who holds a master plumbers license issued by the State of Iowa.

(4) **Plumbing contractor**. A plumbing contractor is a person, firm or corporation that holds a plumbing contractor license issued by the State of Iowa.

Sec. 5.307. STATE PLUMBERS LICENSES REQUIRED.

(1) Where this code requires plumbing work to be performed by a licensed person, such person must hold and have in their immediate possession, a valid Plumbers license issued by the State of Iowa that authorizes the work being performed.

Sec. 5.308. EXEMPTIONS.

(1) No license or registration shall be required for plumbing work to be performed on a single family residential structure when the person performing the plumbing work is the owner of the structure, and has his/her primary place of residence there.

(2) No license or registration procedure shall be required for a mobile home dealer or employee of a mobile home dealer to perform water, gas, or utility service connections in a mobile home space or within ten feet of such space, located in a mobile home park, all within the meaning and intent of Section 322B.3(5,) Code of Iowa. The requirements for permits and inspections remain in effect, and the mobile home dealer shall pay the permit and inspection fees. No homeowners or mobile home dealer will be allowed to tap a water main, sanitary or storm main or repair nor be allowed to install a building sanitary sewer, water service, foundation drain, or a storm sewer or make repair of such.

Sec. 5.309. CITY MECHANICAL HVAC CONTRACTOR REGISTRATION AND STATE LICENSING.

Before doing any heating, ventilation, air conditioning, or ducted heating work governed by this code, in the City of Ames, an HVAC contractor must register with the City of Ames Inspection Division as an HVAC contractor on a form provided by the Division.

(1) Conditions for Registration. An HVAC contractor must hold a valid State of Iowa license as an HVAC contractor.

(2) Information to be provided. An applicant for HVAC contractor registration under this section shall provide the following information:

(a) Copy of possession of current State license

(b) Name, mailing address, email address, phone number of the principal of the registered firm or corporation

(c) The names and State license classifications of all employees who may be working on projects

in the City of Ames

(3) Registration not Transferable. Contractor registration is not transferable to any other person, firm or corporation.

Sec. 5.310. STATE HVAC MECHANICAL LICENSE CATEGORIES.

(1) **HVAC Mechanical Apprentice**. An HVAC mechanical apprentice is a person who holds an HVAC mechanical apprentice license issued by the State of Iowa.

(2) **HVAC Mechanical Journeyperson**. An HVAC mechanical journeyperson is a person who holds an HVAC mechanical journeyperson license issued by the State of Iowa.

(3) **HVAC Mechanical Master**. An HVAC mechanical master is a person who holds an HVAC mechanical master license issued by the State of Iowa.

(4) **HVAC Mechanical Contractor**. An HVAC mechanical contractor is a person, firm or corporation that holds an HVAC mechanical contractor license issued by the State of Iowa.

Sec. 5.311. STATE HVAC MECHANICAL LICENSES REQUIRED.

(1) Where this code requires mechanical work to be performed by a licensed person, such person must hold and have in their immediate possession, a valid HVAC license issued by the State of Iowa that authorizes the work being performed.

Sec. 5.313. EXEMPTIONS .

(1) No such license or registration procedure shall be required for mechanical work to be performed on a single family residential structure when the person performing the mechanical work is the owner of the structure, and has his/her primary place of residence there.

(2) No license or registration procedure shall be required for a mobile home dealer or employee of a mobile home dealer to perform water, gas, or utility service connections in a mobile home space or within ten feet of such space, located in a mobile home park, all within the meaning and intent of Section 322B.3(5,) Code of Iowa. The requirements for permits and inspections remain in effect, and the mobile home dealer shall pay the permit and inspection fees. No homeowners or mobile home dealer will be allowed to tap a water main, sanitary or storm main or repair nor be allowed to install a building sanitary sewer, water service, foundation drain, or a storm sewer or make repair of such.

CHAPTER 21
SIGNS

Sec. 21.101. SHORT TITLE; SCOPE; PURPOSE.

This chapter may hereafter be known and cited as the "sign regulations." The provisions of this chapter shall govern the construction, repair, erection, alteration, location, and maintenance of privately owned outdoor signs and outdoor advertising and identification devices of every kind, together with their appurtenant and auxiliary devices. The sign regulations are found and declared to be necessary and proper to the following purposes:

(1) Protecting property values within the City of Ames.

(2) To prevent the occurrence of urban blight and slum conditions.

(3) To protect the general public from damage and injury which may be caused by the faulty and unregulated use of signs.

(4) To prevent any unreasonable appropriation of the public domain, its open spaces, streets, and ways to private use.

(5) To restore, preserve, and promote aesthetic character in the City of Ames.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.102. DEFINITIONS.

(1) Awning sign: Any sign affixed directly on or attached to an awning.

(2) Canopy sign: Any sign mounted on or supported by a canopy.

(3) Ground signs: Any sign supported by one or more uprights or braces placed upon or set into the ground.

(4) Illuminated sign: Any sign which has characters, letters, figures, designs or outline illuminated by electric lights or luminous tubes as a part of the sign proper.

(5) Marquee signs: Any sign mounted on or supported by a marquee.

(6) Off premises: Signs not located at the site of that which is advertised or identified.

(7) On premises: Signs located at the site of that which is advertised or identified.

(8) Projecting sign: Any sign other than a wall sign which is attached to a building and extends beyond the line of said building.

(9) Roof sign: Any sign erected, constructed and maintained wholly upon or over the roof of any building.

(10) Sign: Any advertising device or surface out-of-doors, on or off premises, which conveys information or identification.

(11) Sign structure: An element or assemblage of elements which supports or is capable of supporting a sign. A sign structure may be free-standing, attached to a building, an integral part of the building, or combination thereof.

(12) Structural member: A component part of a structural system required to carry the primary supportive stresses of the building to the ground, as opposed to members carrying little or no supportive stress other than their own weight, and functioning as an in-fill or nonstructural enclosure.

(13) Temporary and/or portable signs: Any sign, banner, pennant, valance, to be displayed for a limited time only, or any sign set upon the ground unsecured. A portable sign shall be defined as any sign set upon or affixed to any device or ground with wheels or skids or framing so as to afford portability by persons or auxiliary devices.

(14) Wall sign: A sign, impressed or painted on, or attached to a wall with the exposed face of the sign in a plane approximately parallel to the plane of the wall.

(Ord. No. 2578, Sec. 2, 12-21-76)

(15) Subdivision Development Sign: A temporary sign identifying a new or developing residential housing subdivision by name.

(16) Developer: The legal or beneficial owner or owners of a lot or of any land included in a proposed development including the holder of an option or contract to purchase, or other persons having enforceable proprietary interests in such land.

(Ord. No. 3053, Sec. 1, 6-27-89)

(17) Residential Subdivision Entrance Sign: A freestanding, on premise, permanent, ground sign designating the name of a residential subdivision.

(Ord. No. 3255, Sec. 1, 1-11-94)

(18) Freestanding Sign: Any sign supported by structures or supports that are placed on, or anchored in, the ground and that are independent from any building or other structure.

(Ord. No. 3255, Sec. 1, 1-11-94)

(19) Sign Height: The vertical distance between finished grade of the ground nearest the sign structure and the uppermost point of the sign structure for residential subdivision entrance signs.

(Ord. No. 3194, 9-24-92; Ord. No. 3255, Sec. 1, 1-11-94)

Sec. 21.103. MEASUREMENT STANDARDS.

If a sign has two (2) or more faces, the area of all faces shall be included in determining the total area of the sign: Except that if two sign faces are placed back to back, and are at no point more than thirty (30) inches from one another, the area of the sign shall be taken as the area of one face if the two faces are of equal area, or as the area of the larger face if the two (2) faces are of unequal area.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.104. PERMITS, FEE REQUIRED.

(1) It shall be unlawful for any person to erect, alter structurally or relocate within the City of Ames any sign as herein defined without first obtaining a permit from the building official. The City Manager shall establish and charge reasonable fees to cover costs related to issuance of permits. All electrically illuminated signs shall be subject to the provisions of all electrical codes adopted by the City of Ames.

(2) The City Council shall, from time to time, set a reasonable fee for sign permits.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec.21.105. SIGN ERECTORS, REGISTRATION REQUIRED.

Persons erecting or installing signs for which permits are required shall be registered in accordance with Section 5.103, except business owners may receive permits for signs placed on property that they own or lease.
(Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.106. APPLICATIONS FOR PERMITS.

Applications for permits shall be made upon blanks provided by the building official and shall contain or have attached thereto the following information:

(1) The name, address and telephone number of the applicant.

(2) The location of building, structure, or lot where the sign is to be located.

(3) Position of signs in relation to nearby buildings or structures.

(4) Two (2) blueprints or ink drawings of the plans and specifications and method of construction and attachment to the building or on the ground.

(5) Written consent of the owner of the building, structure, or land to which or on which the sign is to be erected. The lease between landlord and tenant will constitute written consent.

(6) The name of the person, firm, corporation, or association which is registered with the City of Ames to do the work of installing or erecting the sign.

(7) Such other information as the building official shall require to show full compliance with this and all other laws and ordinances of the City of Ames which may be applicable, including the intended duration of temporary signs.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.107. ILLUMINATED SIGNS; APPROVED BY ELECTRICAL INSPECTOR, BUILDING OFFICIAL.

The application for a permit for erection of a sign in which electrical wiring and connections are to be used shall be submitted to the electrical inspector. The electrical inspector shall examine the plans and specifications with respect to all wiring and connections to determine if the same specifications comply with applicable electrical codes prior to submission of the application to the building official for final approval or disapproval.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.108. PERMIT ISSUED IF APPLICATION IN ORDER.

It shall be the duty of the building official upon the filing of an application for a permit to examine such plans and specifications and other data and the premises upon which it is proposed to erect the sign, and if it shall appear that the provisions of the sign regulations and all other laws and ordinances of the City of Ames are complied with, he shall then issue the permit. If the work authorized by such permit is not completed in six (6) months from the date of its issuance, such permit shall become null and void.

In addition, where the permit is for a subdivision development sign, the sign permit shall be renewed annually until such time as the sign must be removed. Removal is subject to approval by the City Building Official.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3053, Sec, 1, 6-27-89; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.109. INSPECTION.
The building official or designees may inspect signs subject to the provisions of the sign regulations for the purpose of determining whether the same is in compliance with the sign regulations.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.110. PERMIT REVOCATION.
If the building official shall find that any sign subject to the sign regulations is unsafe or insecure or is a menace to the public or has been constructed or erected or is being maintained in violation of the provisions of the sign regulations, the building official shall give written notice thereof to the person in possession and control of the premises on which the sign is located. If such person fails to remove or alter the sign so as to comply with the provisions of the sign regulations within thirty (30) days of such notice, such person commits a municipal infraction. If a sign is an immediate hazard, the building official may cause it to be removed immediately. A permit for a sign is a license revocable at any time by the city council for the City of Ames subsequent to notice to the permittee and an opportunity for the permittee to be heard by said city council.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3003, Sec. 7, 2-23-88; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.111. CONSTRUCTION.
All signs shall be constructed in such a manner and installed with such materials so as to be considered safe and substantial by the building official. The division of permits and inspections may require a copy of stress sheets and calculations showing the structures as designed for dead load and wind velocity in the amount required by the building code adopted by the City of Ames.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.112. MAINTENANCE PROVISIONS.
Signs shall be maintained so as to be structurally sound and in a safe condition, and shall be kept in a state of undeteriorated appearance by means of painting, sealing or coating and repair or replacement of damaged parts, panels or lights.

Sec. 21.113. REMOVAL OF CERTAIN SIGNS.
Any sign now or hereafter existing, which for a period of six (6) months no longer advertises a bona fide business conducted, or a product sold, or a service offered, shall be taken down and removed by the owner or owners of the building or premises upon which it is located within thirty (30) days of written notice from the building official.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.114. PROHIBITIONS.
No person shall have or permit on any premises:

(1) Any permanent sign which consists of or incorporates pennants, twirler lights, pinwheels, whirligigs or other displays or devices which are designed to be activated by atmospheric conditions so as to attract or distract the attention of the public by virtue of their movements.

(2) A ground sign which extends to any degree over public property.

(3) Any signs which employ flashing, blinking or rotating lights, except electronic message signs that conform to Section 5.231 and are located in a commercial or industrial zoning district.
(Ord. No. 3468, Sec. 1, 10-28-97)

(4) Any off premises sign nearer than three hundred (300) feet radius to any other off premises sign.
(Ord. No. 3463, Sec. 1, 10-14-97)

(5) Any off premises sign shall not exceed three hundred (300) square feet or contain more than two (2) surfaces back to back.

(6) Any off premises sign in the following zoning districts in the City of Ames: RL, RM, RH, RLP, FS-RL, FS-RM, F-VR, and H-M.
(Ord. No. 3753, 1-13-04)

(7) Signs attached to or placed upon rocks, fences, trees or utility poles.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec.21.115. EXEMPTIONS FROM PERMITS.
The following signs shall not require a permit; however, such signs shall be subject to the sign regulations:

(1) Nonelectrical real estate signs not exceeding six (6) square feet in area, which advertise the sale, rental, or lease of the premises upon which said signs are located only.

(2) Nonelectrical signs, including bulletin boards, which are not over sixteen (16) square feet in area for public, educational, charitable, fraternal or religious institutions when the same are located on the premises of such institution.

(3) Nonelectrical signs denoting only the name and profession/ business of an occupant in a commercial building, public institutional building, or dwelling house and not exceeding two (2) square feet in area.

(4) A nonelectrical single sign denoting the architect, engineer or contractor when placed upon work under construction and not exceeding thirty-two (32) square feet in area.

(5) Nonelectrical memorial signs or tablets, names of buildings, and date of erection when cut into any masonry surface or when constructed of bronze or other noncombustible materials.

(6) Publicly owned street name signs, traffic control signs, legal notices, railroad crossing signs, danger and temporary warning or emergency signs; and, emblems, names, logo, and symbols on motor vehicles and equipment being used for purposes other than the display of signs or advertising devices.

(7) Nonelectrical public service signs which give only directions "in and out" or signs which provide only information about directing people to ancillary facilities such as parking, entrance, etc.

(8) A nonelectrical temporary sign supporting a candidacy for office or urging action on any other matter on the ballot of a primary, general or special election, or city election.

(9) A nonelectrical temporary or portable sign.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec.21.116. OBSTRUCTION--DOORS, WINDOWS, OR FIRE ESCAPES.
No person shall erect, locate or maintain any sign so as to prevent free ingress to or egress from any door, window, or fire escape. No person shall attach any sign of any kind to a stand pipe or fire escape.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.117. SIGNS NOT TO CONSTITUTE TRAFFIC HAZARDS.
No person shall erect any sign at the intersection of any street in such a manner as to obstruct free and clear vision of such intersection, or at any location where by reason of the position, shape or color it may interfere with, obstruct the view of or be confused with any authorized traffic sign, signal or device.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.118. REFLECTOR LIGHTS.
Lighting shall be permitted on signs provided, however, the reflectors shall be provided with proper lenses, concentrating the illumination on the area of the sign so as to prevent glare upon the street or adjacent property.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.119. SPOTLIGHTS AND FLOODLIGHTS.

It shall be unlawful for any person to have any sign which is wholly or partially illuminated by floodlights or spotlights that interferes with the vision of pedestrian or vehicular traffic.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.120. BEACON-TYPE LIGHTS PROHIBITED.

It shall be unlawful for a person to operate any device, or to permit a site under their use and control to be the location of any device that is being operated, to produce a beacon-type beam of electric light, whether portable or fixed, (except common battery powered hand held lights), the primary purpose of which is to cast a concentrated beam of light generally skyward during any time between sunset and sunrise as a means of attracting attention to a location rather than to illuminate any place, person or thing; except this section shall not apply to lights used in connection with the operation of the Ames Municipal Airport.

(Ord. No. 3424, Sec. 1, 3-25-97)

Sec. 21.121. ON PREMISES SIGNAGE.

For all signs subject to the sign regulations, in agricultural, commercial and industrial zoning districts in the City of Ames except in the H-M District, there may be three (3) square feet of signage for each foot of street frontage. Signs in the Planned Zoning districts are as permitted on the approved site plan. Where any side of a building abuts on an alley, only painted on wall signs shall be permitted on the side abutting the alley. Such sign shall be calculated as part of total permissible signage. For all signs subject to the sign regulations in residential zoning districts in the City of Ames, only the following signs are permitted:

(1) Real estate signs not exceeding six (6) square feet in area, which advertise the sale, rental, or lease of the premises upon which said signs are located only.

(2) Signs, including bulletin boards, which are not over sixteen (16) square feet in area for public, educational, charitable, fraternal or religious institutions when the same are located on the premises of such institution.

(3) Signs denoting only the name and profession/business of an occupant in a commercial building, public institutional building, or dwelling house and not exceeding two (2) square feet in area.

(4) Single sign denoting the architect, engineer or contractor when placed upon work under construction and not exceeding thirty-two (32) square feet in area.

(5) Memorial signs or tablets, names of buildings, and date of erection when cut into any masonry surface or when constructed of bronze or other noncombustible materials.

(6) Publicly owned street name signs, traffic control signs, legal notices, railroad crossing signs, danger and temporary warning or emergency signs; and emblems, names, logos, and symbols on motor vehicles and equipment being used for purposes other than the display of signs or advertising devices.

(7) Public service signs which give only directions "in and out" or signs which provide only information about directing people to ancillary facilities such as parking, entrance, etc.

(8) Temporary Sign supporting a candidacy for office or urging action on any matter on the ballot of a primary, general or special election, or city election.

(9) Temporary or portable sign.

(10) Subdivision Development Signs. One subdivision development sign may be permitted per preliminary plat or Conceptual Development Plan for subdivisions of 2 acres or more in area. This sign shall not exceed 96 sq.ft. in area and 12 ft. in height. It shall be located in the subdivision it identifies and no closer than 25 ft. from any property line, no closer than 100' from any pre-existing residence and only on lots abutting collector or arterial streets. The sign shall be the sole use of the property on which it is located. The sign shall identify the name of the subdivision exactly as it is set out on the preliminary plat or conceptual development plan approved by the City and may include the names of the subdivision developers, a map of the area covered by the subdivision and a description of amenities in it. The sign shall not be installed until utility construction has begun in the subdivision and the sign shall be removed once building permits have been issued for 50% of the lots in the subdivision.

(11) Residential Subdivision Entrance Signs. The regulations described in this section apply to subdivision entrance signs in residential subdivisions. The location, number, size, height, materials, maintenance, and message regulations for subdivision identification signs are as follows:

(a) Signs located on private property shall be no closer to the traveled part of a street than the right-of-way line. Signs shall not be allowed in the street visibility triangle, as such is described by Section 29.28.

(b) It shall be unlawful to erect a subdivision entrance sign on public property, and the Council shall grant no encroachment permits for such signs.

(c) Subdivision entrance signs shall not be permitted off-premise.

(d) Two signs shall be permitted at each subdivision entrance. Double-faced signs shall be counted as two signs.

(e) The size of the message area (subdivision name and address) of the sign shall not exceed 20 square feet. The size of the sign structure in comparison to the size of the message area shall not exceed a ratio of 7 to 1, unless approved as part of a Planned Unit Development.

(f) Signs shall not exceed six (6) feet in height.

(g) Materials used in the construction of subdivision entrance signs shall be low maintenance materials and may include: metal, wood, brick, stone, and concrete.

(h) Maintenance of signs, illumination devices, and landscaping shall be the responsibility of the property owner. Signs which, by reason of deterioration, may become unsafe or unsightly, shall be repaired or removed by the property owner upon written notice of the City. Signs which by reason of deterioration become unsafe or unsightly, may be removed by the City upon written notice of the City.
(Ord. No. 3299, Sec. 1, 9-27-94)

(i) The message on a subdivision entrance sign shall include only the name and address of the subdivision.

(j) Signs may be illuminated internally or by reflected light subject to the following:

(i) The light source shall not be directly visible and shall be arranged to reflect away from adjoining premises;

(ii) The light source shall not be placed so to cause confusion or hazard to traffic, or to conflict with traffic control signs or lights;

(iii) No illumination involving movement, by reason of the lighting arrangement, the lighting source, or other devices shall be permitted. This includes blinking, flashing, rotating, and message changing; and

(iv) The Property Owner's Association shall be responsible for the costs associated with providing electricity to the light source.

(k) Landscaping shall be incorporated at the base of each subdivision entrance sign which enhances the site and the surrounding area. Plant materials shall not obstruct the visibility of moving vehicles or interfere with the maintenance of adjacent public property. Approval of a landscape plan for each residential subdivision entrance sign by the Director of Planning and Housing is required.
(Ord. No. 3255, Sec. 2, 1-11-94, Ord. No. 3753, 1-13-04S)
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 2594, Sec. 1, 4-19-77; Ord. No. 3053, Sec. 3, 6-27-89; Ord. No. 3194,Sec. 1, 9-24-92)"

Sec. 21.122. GROUND SIGNS.

All ground signs subject to sign regulations shall meet the following requirements:

(1) All letters, figures, characters or representations in cut out or irregular form maintained in conjunction with or attached to or superimposed upon any ground sign shall be safely and securely built or attached to the sign's structure.

(2) Signs and location:

(a) It shall be unlawful to erect or permit any ground sign of a height greater than fifty (50) feet;

except, at points within 1,500 feet of the edge of any part of the right-of-way for Interstate Highway 35 a ground sign may have a height not to exceed 100 feet measured from the base of the sign support to the top of the sign.
(Ord. No. 3448, Sec. 1, 7-22-97)

(b) Off premises ground signs will be permitted to have a maximum of three hundred (300) square feet of sign surface on a side.

(c) No ground sign shall be erected or permitted nearer the street than the property line; provided, however, such placement is not in conflict with special building line setbacks as established from time to time by city council. No part of said sign shall be permitted to overhang the public domain.

(d) The minimum distance between on premises ground signs on any one business location shall be fifty (50) feet.

(3) The premises surrounding all ground signs shall be maintained by the owner thereof in a sanitary and uncluttered condition, free and clear of all obnoxious substances, rubbish, litter, and weeds.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.123. WALL SIGNS.
Wall signs subject to the sign regulations shall meet the following location requirements:

(1) Limitation on placement. No wall sign shall cover wholly or partially any wall opening or project beyond the ends or tops of the wall to which it is attached.

(2) Projection over public property. No wall sign shall be erected on public right of way without approval of the City Council.

(3) Size Regulations. The size regulations of Section 5.220 notwithstanding, there shall be allowed, with respect to each building, subject to applicable zoning regulations, one permanent wall sign that is not larger than sixty-four (64) square feet, or which does not occupy more than ten percent (10%) of the area of the wall to which it is affixed, whichever is smaller, for each of the building=s sides that parallel a public street, if the wall sign is not internally lighted.
(Ord. No. 3623, 7-10-01)(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.124. ROOF SIGN.

(1) Materials. The uprights, supports, and braces thereof shall be constructed of materials as set forth in the uniform building code adopted by the City of Ames.

(2) Location.

(a) Height limitations. No roof sign shall have its highest point extend more than twenty (20) feet above the roof level.

(b) Setback from roof edge. No roof sign shall be erected or maintained with a face thereof nearer than five (5) feet to the outside wall toward the sign faces.

(c) Prohibited obstructions. No roof sign shall be placed on the roof of any building or structure in such manner as to prevent free passage from one part of said roof to another part thereof, or interfere with openings on said roof.

(3) Bracing, anchorage and supports. Every roof sign shall be thoroughly secured to the building by iron or other metal anchors, bolts, supports, rods, or braces. The sign supports shall be anchored into the basic building structure, roof joists, or roof girders. The bearing points of such sign may bear on masonry walls or intermediate steel columns in the building or shall be supported or anchored to the structural members of the building.

(4) Off premises. Off premises roof signs shall not be permitted.
(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.125. PROJECTING SIGNS.
All projecting signs subject to the sign regulations shall meet the following requirements:

(1) Support. All bracing systems shall be designed and constructed to transfer lateral forces to the foundations. For signs on buildings, the dead and lateral loads shall be transmitted through the structural members of the building to the ground in such manner as not to overstress any of the elements thereof.

(2) Limitations on glass. The lettering or advertising design to be illuminated on projecting signs may be composed of glass or other transparent or semitransparent material. Any glass forming a part of any sign shall be safety glass or wire glass.

(3) Movable parts to be secured. Any movable parts of a projecting sign such as a cover of a service opening shall be securely fastened by safety chains or hinges.

(4) Height limitations. The top line of the projecting sign shall not be higher than the roof or parapet line of the building to which attached, except that when the roof line is less than fifteen (15) feet in height, the sign may extend three (3) feet above; but under no circumstances shall the top line of a projecting sign be permitted at a height of more than fifty (50) feet above ground level.

(5) Thickness limitations. The distance measured between the principal faces of any projecting sign shall not exceed eighteen (18) inches.

(6) Location. The bottom line of every projecting sign shall be placed at least ten (10) feet above any sidewalk over which it is erected. No projecting signs shall be erected in an alleyway. No projecting signs shall project across or over any portion of public right of way.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.126. TEMPORARY AND/OR PORTABLE SIGNS.

Temporary and/or portable signs subject to the sign regulations shall meet the following requirements:

(1) A banner shall not exceed one hundred (100) square feet in area. All other temporary and/or portable signs shall not exceed thirty-two (32) square feet in area.

(2) Except for those temporary signs and banners affixed to city light and utility poles with the permission of the city, no temporary or portable sign shall be displayed longer than ninety (90) consecutive days without removal or replacement.

(Ord. No. 3430, Sec.2, 5-13-97) (Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 2785, Sec. 2, 9-21-81; Ord. No. 3194, Sec. 1, 9-24-92; Ord. No. 3291, Sec. 1, 8-23-94)

Sec. 21.127. MARQUEE SIGNS.

Marquee signs subject to the sign regulations shall meet the following provisions:

(1) Signs attached to or placed upon the roof of a marquee shall be completely within the border line of the marquee's outer edge.

(2) Signs hung from a marquee shall be completely within the border line of the marquee's outer edge and in no instance shall the bottom of said sign be lower than seven and one-half (72) feet above the sidewalk. No hanging or suspended sign shall exceed eighteen (18) inches in height overall. They may overhang the public right of way only by permission of the City Council.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.128. AWNING AND CANOPY SIGNS.

No portion of an awning or canopy may be lower than seven and one-half (7½) feet above a sidewalk.
They may overhang public right of way only by permission of the City Council.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92; Ord. No. 3772, 6-22-04)

Sec. 21.129. NONCONFORMING SIGNS.

Signs in existence on December 21, 1976, when these sign regulations became effective, may continue in existence subject to Sections 5.209, 5.210, 5.212, and 5.213 and also subject to the following:

(1) A sign shall not be altered structurally or moved unless it be made to comply with the provisions of this chapter, except that the changing of the movable parts of an existing sign that is designed for such changes, or the repainting or reposting of display matter shall not be deemed a structural alteration.

(2) The lawful use of a sign existing on the effective date of these regulations, although such sign does not conform to the provisions hereof, may continue; but if such nonconforming use is discontinued for a period of six

(6) months, any future use of such sign shall be in conformity with the provisions of this chapter.

(3) No sign which has been damaged by fire, wind, explosion, or other act of God to the extent that fifty (50) per cent or more of the sign is destroyed, shall be restored except in conformity with the regulations of this chapter. Any sign which has been damaged to an extent less than fifty (50) per cent, may be restored to its condition which existed as a nonconforming use prior to its damage.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92)

Sec. 21.130. SIGN APPEALS.

(1) The Board of Appeals established by this chapter shall have jurisdiction, and its appeal procedures shall apply when it is claimed that the regulations of this chapter pertaining to signs have been incorrectly interpreted, or an equally good or better form of construction, method of installation or type of material can be used.

(2) A sign is also subject to the zoning regulations. Appeals and applications for variances and exception to zoning regulations applicable to a sign or signs shall be the exclusive jurisdiction of the Zoning Board of Adjustment.

(Ord. No. 2578, Sec. 2, 12-21-76; Ord. No. 3194, Sec. 1, 9-24-92; Ord. No. 3477, Sec. 1, 3-12-98)

Sec.21.131. ELECTRONIC MESSAGE SIGNS.

Signs which display a message by means of electronically induced changes in points of illumination, herein called electronic message signs, shall conform to the following:

(1) Not more than one electronic message sign shall be installed on or in relation to the same building.

(2) An electronic message sign shall not have more than two sides on which messages can be displayed by electronic means.

(3) No electronic message sign shall have a continuously running message or messages. That is, each display of a message shall have a clearly discernable beginning and ending indicated by a blank or dark time on the message display device or screen, which blank or dark time shall be not less than three tenths (0.3) of a second in duration.

(4) The minimum time for display of a message shall be four (4) seconds, except for time and temperature displays.

(5) A message that requires sequential changes in the image displayed on the message display device shall be displayed in its entirety in not more than eight seconds.

(Ord. No. 3468, Sec. 2, 10-28-97)

Sec. 21.132. CERTAIN MOVABLE MARQUEE SIGNS PROHIBITED.

The use of a certain device, as hereinafter described, for the outdoor display of messages at locations such that the device is visible to motorists traveling on the city streets, is prohibited. The prohibited device is described as:

(1) not constructed or installed as a permanent structure but merely set upon the ground,

(2) consisting of a framework surrounding a vertical surface that is intended for the display of messages by such means that the message displayed can be changed by adding, removing or rearranging items that can be affixed to the framed vertical surface of the device again and again.

(Ord. No. 3506, Sec. 1, 11-24-98)

Sec. 21.133. SIGNS POSTED ON FENCES AT BASEBALL AND SOFTBALL DIAMONDS.

Notwithstanding any other provisions of this Division, non-electrical temporary signs, including off-premises signs, are permitted on fences surrounding baseball and softball diamonds in a Government/Airport (S-GA) District, but only during the season during which scheduled games are played on those premises.

(Ord. No. 3973, 11-06-08)"

Section Two. Violation of the provisions of this ordinance shall constitute a simple misdemeanor punishable as set out by law.

Section Three. All ordinances, or parts of ordinances, in conflict herewith are hereby repealed to the extent of such conflict, if any.

Section Four. This ordinance shall be in full force and effect from and after its passage and publication as required by law.

Passed this _____ day of _____, _____.

_____ _____

Diane R. Voss, City Clerk Ann H. Campbell, Mayor