MASONRY FENCE WALLS AND RETAINING WALLS
This information covers the basic requirements for the construction or replacement of a residential masonry fence wall or a masonry retaining wall for single-family residence. A building permit is NOT required for construction of a new residential masonry fence or masonry retaining wall to include replacement or modification of an existing fence or retaining wall per City of Mesa Design Guidelines Chapter 14 at Mesa City Code - Title 11, Chapter 14

Building Permits. A building permit shall not be required for the following: (4242). (b) Fences not more than six feet (6') (1,829 mm) high located on property zoned for single residence uses, provided the fence is not located on a property subject to the Desert Uplands Development Standards, is not located in a Historic Preservation Overlay District or on a site designated as a historic landmark and is not located on a public easement. (4242,4579,4807)

However, the construction of the fence or retaining wall must meet structural code requirements and City of Mesa Zoning Ordinance. The code requirements for each installation will vary depending upon the size of the structure, the materials of construction, the proposed location on property and the zoning district of the property. Additional information can be found at the Arizona Masonry Guild.

PLEASE NOTE: The following information is made available to assist you in preparing for and obtaining your project specifications and/or working drawings.

MASONRY FENCE WALLS
And
RETAINING WALLS

Masonry wall construction is used for fencing and is an element in landscape design. It can be an impressive feature, but building one can be an intimidating task. This is especially true if you have never attempted this before. But it is a project you can do if you do the proper planning and learn the right techniques or hire a well experienced contractor. You will also need some patience since this project can take time. At the end you will have a permanent feature you can feel proud of.

Often retaining walls and landscape walls are low structures. There are a couple of different kinds of walls. One type is dry-set with no mortar to hold it together. These are usually made of stone and no footing is required. The other type uses mortar to hold the masonry together and they require a footing. Usually a mortared wall is made of brick, concrete blocks, or stone. Freestanding walls are decorative in function. Aesthetics are a major consideration. Another kind of wall is a retaining wall, a wall that retains earth behind the wall. They also must be pleasing to the eye but they must be strong enough to support the earth they are supporting. These are often on a hillside or slope and can level an area of the landscape or keep soil from eroding.

DEFINITIONS

FENCE, SCREEN WALL, AND/OR RETAINING WALL: Freestanding, self-supporting structures constructed of durable wood, chain link, metal, masonry, or other standard fencing materials. Designed to provide privacy, security, screening, or bank retention between grade separations. (3388)
CORRAL FENCING: An enclosure or pen for horses, cattle, or similar livestock with a maximum height of six feet (6’). Between the height of three feet six inches (3' 6") and six feet (6’) the fence shall be constructed so that a minimum of sixty-six percent (66%) of the fence is open or transparent. (4681)

STRUCTURE: Anything which is built or constructed or any piece of work artificially built up or composed of parts, including but not limited to, buildings, fences, towers, overhead transmission lines, and mechanical equipment. (2658)

MASONRY FENCING: Masonry fencing can typically be of 4 basic construction types, however, there are many other types of masonry/concrete product available. The most common type found in the majority of residential developments is the **Interlocking Fence Block** system. **Interlocking Fence Block** are designed so that there is no mortar used at the vertical joints, making it easier for the do-it-yourselfer to construct a block fence or garden wall. The block interlocks with each other in a tongue and groove fashion, allowing for quicker installation while maintaining the highest quality. Pilaster block are designed to vertically reinforce the interlocking fence block at specified intervals. **Interlocking Fence Block** is available in a variety of architectural textures and colors to give virtually unlimited design possibilities. As with all construction, please follow all manufacture recommended design and installation requirements. **Interlocking Fence Block** is available as a medium weight hollow non load bearing masonry unit. Interlocking Fence Block units are available in 4", 6" and 8" (normal) widths by 8" height. Colors generally come in gray, beige, brown, rose, buff and purple haze.

Another common block type used in fence walls and retaining walls is the **Gray Concrete Block**, typically 8x8x16 in size, is used in a wide range of applications wherever solid, dependable and economical walls are required. As with all concrete masonry units (CMU), gray block is strong and weather resistant. It does not rust, nor warp, nor does it provide a cellulose food for mold or insects. With thermal mass, it’s energy efficient, fire resistant, and termite resistant with great sound dampening qualities - perfect for today’s residential and industrial building needs. Gray block like all CMU's are GREEN building materials and can contribute to LEED building points. They are available in a multitude of shapes, sizes, strengths, and weights.

**Slump Block**, The spirit of the Southwest is unmistakable with **Slump Block**. This block maintains the same basic standard dimensions as regular units. To give slump block is character, the mix "slumps" when removed from its mold. Because of the unpredictable roll in texture when removing the block from the mold, units take the appearance of handmade adobe. Slump block is available in a variety of colors and in some cases; colors can be customized for larger orders (construction of homes or commercial buildings). Slump block is a normal weight hollow load bearing concrete unit. Units are commonly available in 4", 6", 8" and 12" widths with 4" (most common), 6" and 8" heights.
LANDSCAPE MASONRY (Dry Stack/Garden):

Landscape masonry has many specialized categories such as retaining wall block and their accessories, pavers, patio stepping pavers, outdoor barbeques, architectural castings, rock and stone, etc. Many retaining wall blocks are colorful split face units utilizing mortarless methods. Pavers are increasing in their presence in the American landscape. Because of their intimate relationship with the earth, ground preparation and proper overall design is part of successful outdoor enrichment and property value enhancement.

Expanding infill land usage, exercise and sports courts, patio development, pet areas, terraces, streetscapes, ponds, beautifying and stabilizing land contours, bird and wildlife sanctuaries, waterfalls, and hanging gardens are but a few of the breathtaking uses of this extraordinary category. Yet another example of GREEN building materials they can be designed to encourage ground water recharge by absorbing storm water run-off, thus adding LEED points in both residential and commercial applications. The supplier and local building officials are often glad to give assistance regarding design guidance of these products.

ABBREVIATIONS:

W/N = WITHIN
O.C. = ON-CENTER
PRESS. = PRESSURE TREATED
P.U.E. = PUBLIC UTILITY EASEMENT
DIM = DIMENSIONS
IBC = INTERNATIONAL BUILDING CODE
IRC = INTERNATIONAL RESIDENTIAL CODE
NEC = NATIONAL ELECTRICAL CODE
UBC = UNIFORM BUILDING CODE
FEMA = FEDERAL EMERGENCY MANAGEMENT AGENCY
**ZONING ORDINANCE REQUIREMENTS**

In addition to the [Building Code](#) requirements regulating materials & construction, height and location on the property, The City of Mesa Zoning and Development Department also regulates the height and location on the property for residential additions TO INCLUDE FENCING. When there is a conflict between the two regulating bodies, the more restrictive of the two shall govern. Please be advised that each type of lot (corner, interior, or through) has its own setback requirements. The city of [Mesa Zoning and Development Code](#) provides the setbacks, easements and maximum lot coverage zoning district.

**9-2-3: ENCROACHMENTS:** (A) Prohibited Except Under Permit. It shall be unlawful for any person, firm or corporation to cause or to maintain any encumbrance or obstruction of public right-of-way by encroachment therein with any foundation, wall, fence, post, or other structure or any cohesive ground-surfacing material without having first obtained a written Right-of-Way Encroachment Permit to do so from the [City Engineer](#). Such permit may be issued upon a finding by the [City Engineer](#) that the encroachment requested and specified by the applicant will not impair necessary public use or impair access to public facilities located therein and that such encroachment is not otherwise prohibited by the [Mesa City Code](#). (1900)

**FENCES:** Fencing and screening walls must be sound and made from standard, consistent fencing material. They also must be free of deterioration and blight. Fences in residential zones cannot be higher than 42 inches in the required front yard and 6 feet in the required rear yard. Fencing in a residential district may NOT have barbed/razor wire or any other injurious materials attached to them.

**8-6-3: PUBLIC NUISANCES PROHIBITED:** The following acts, omissions, conditions, and things in or upon any land or structure in the City constitute public nuisances, the existence of which are hereby prohibited and declared to be unlawful: (2568)

(I) It shall be unlawful to erect or maintain any electric fence or to attach to any fence any glass, nails, metal objects, or other materials in such a manner that is likely to injure any person who comes in contact with such object, or to erect or maintain any barbed wire or razor wire except that no more than three (3) strands of barbed wire or one (1) coil of razor wire not less than six feet and two inches (6'2") above the ground are permitted at the top of an otherwise lawful fence enclosing a municipal, institutional, or commercial use. Barbed wire fencing is not prohibited on premises larger than one (1) acre used for agricultural or livestock purposes. Barbed wire or razor wire shall not extend beyond the premises permitted to be enclosed. (2568, 3388)

(K) It shall be unlawful for an owner or occupant to fail to properly maintain, repair, or replace the exposed exterior surfaces of a building or structure including exterior windows, doors, canopies, metal awnings, roofs, exhaust ducts, chimneys, painted surfaces, window screening, fences, screen walls, retaining walls, foundations, cooling devices, outdoor stairs, porches, and railings as visible from the adjacent rights-of-way, using materials, colors, or finishes that are incongruous with the predominant materials, colors, or finishes of the exposed exterior surface when such incongruous materials, colors, or finishes constitute more than twenty (20) contiguous square feet, or more than ten percent (10%) of the area of any exposed individual plane surface unbroken by corners or angles. (2568, 3388, 3478)

**LOCATION:** The location of the fence or wall must meet the setback requirements for your property zoning. In most cases the fence can be installed on the property line and the setback is irrelevant. A more common issue is building your fence beyond a utility easement blocking the utility service access. You can confirm if your property has a utility easement [Planning and Development Services Department](#).
If your property is located in a planned community development with amended standards or if you do not know your zoning please contact the Planning and Development Services Department at 480-644-2385. Your planned community homeowners association may have restrictions on what type, style, design, and color of fence or wall that you can construct as well as the location on your property. Walls constructed on a common property line may require written approval from your homeowners association and adjacent neighbor(s)

NOTE: setbacks are measured from property lines.

CITY OF MESA ZONING DESIGN GUIDELINES TITLE 11 – CHAPTER 14
Mesa City Code - Title 11, Chapter 14

**Height of Fences and Other Structures. (2658, 3396):**

1. In the Agricultural and all Residential District, no fence or freestanding wall within or along the exterior boundary of the required front yard shall exceed a height of three feet six inches (3’6”), and no fence or freestanding wall within or along the exterior boundary of the required side or rear yards shall exceed a height of six feet (6’). (2658,3396)

2. In the AG District, corral fences are permitted in the required front yard. In the R1-90 and R1-43 Districts, corral fences are permitted as an accessory to a primary residential use in the required front yard. Corral fences shall be constructed of masonry, wrought iron, pipe-rail, or similar material. Corral fences shall not be constructed of metal wire, such as chain-link or barbed wire (4681)

3. In the Commercial and Industrial District, no fence or freestanding wall within or along the exterior boundary of the required front yard shall exceed a height of three feet six inches (3’6”), and no fence or freestanding wall within or along the exterior boundary of the required side or rear yards shall exceed a height of eight feet (8’). (2658,3396)

4. On a corner lot in all zoning districts, no fence, wall, shrubbery, sign, or other obstruction to vision between a height of three feet (3’) and eight feet (8’) above the centerline grades of the intersecting streets shall be erected, placed, planted, allowed to grow, or maintained within the triangular yard space formed by the intersecting centerlines and a line joining points on such centerlines eighty feet (80') from the point of intersection. Where a conflict occurs between this requirement and the subdivision regulations, the more restrictive provisions shall apply. (2658,3396)

**SITE WALLS:**

Consider the following in site wall design: (3987/Reso.7839)

a) Integrate colors, materials, forms, textures, and design elements with the main building. (3987/Reso.7839)

b) Chain link and wood fences are not allowed. (3987/Reso.7839)

c) Screen walls are specified in Chapter 15. (3987/Reso.7839)

d) Walls adjacent to pedestrian areas to be articulated and have architectural details. (3987/Reso.7839)
TEMPORARY STRUCTURES:

Temporary structures such as reviewing stands and other miscellaneous structures, sheds, canopies, or fences used for the protection of the public around and in conjunction with construction work may be erected by special permit from the Building Safety Director for a limited period of time not to exceed one hundred eighty (180) days. Buildings or structures erected under a special permit need not comply with the type of construction or fire-resistant time periods required by the Building Code. Temporary buildings or structures shall be completely removed upon the expiration of the time limit stated in the permit. (4242).

NOTE:
Please contact your Homeowner’s Association for additional requirements from Deed Restrictions and Covenants.

APPLICABLE BUILDING STANDARDS for MASONRY BLOCK WALLS:

INTRODUCTION

The City standard detail for wall construction applies to masonry walls, block fences and retaining walls over 3 feet high and less than 6 ft. in height. Any other configuration will require structural design by a registered Professional Engineer or licensed Architect.

Walls constructed on a common property line may require written approval from your homeowners association and adjacent neighbor(s) at the discretion of the city. It shall be the responsibility of the property owner performing the work to secure such approval(s). Projects may be subject to verification of property lines by means of a Property Line survey and Certification prepared by a licensed civil engineer or licensed Professional Surveyor.

If a wall/fence is proposed within a public utility easement, written authorization is required from each utility company. You may need to provide them with a site plan showing were your fence will be located and were access locations will be located.

GENERAL INFORMATION

MASONRY UNITS
Shall conform to ASTM C 90, and manufactured in accordance with Masonry Standards Joint Committee (MSJC) standards. f’m = 1500 psi

PORTLAND CEMENT
Shall conform to ASTM C 150, TYPE V.

CONCRETE
Shall have a minimum compressive strength of 2500 psi at 28 days and a water/cement ratio = 0.45 unless a soils report recommends otherwise. (Special inspection is required for concrete over 2500psi)
MORTAR
Shall be freshly prepared and uniformly mixed in the ratio by volumes of 1 part cement, ½ part lime putty, 4 ½ parts sand and shall conform to ASTM C 270. If plastic type cement is used, the lime putty shall be omitted. Cells with reinforcements shall not contain mortar projections over 1/4”.

GROUT
Shall be of fluid consistency. Ratio by volumes 1 part cement, 3 parts sand OR 1 part cement, 3 parts sand, 2 parts pea gravel. Units shall be laid a maximum of 4 feet before grouting. Lifts up to 6 feet may be allowed with the use of cleanouts at the reinforcement cells.

REINFORCING STEEL
Shall be deformed bars conforming to ASTM A 615 Grade 40 or better.

STRUCTURAL LIMITATIONS
Masonry boasts an impressive compressive strength (vertical loads) but is much lower in tensile strength (twisting or stretching) unless reinforced. The tensile strength of masonry walls can be strengthened by thickening the wall, or by building masonry piers (vertical columns or ribs) at intervals. Where practical, steel reinforcements can be added.

WIND DESIGN
1. Walls or fences twelve (12) feet or less in height shall be designed to withstand a 14.8 PSF horizontal pressure upon the gross area.
2. Walls or fences fifteen (15) feet or less but greater than twelve (12) feet shall be designed to withstand a 18.7 PSF horizontal pressure upon the gross area.

LOT DRAINAGE
In accordance with FEMA and City requirements, the following information must be confirmed and which establish lowest floor elevations and flood-proofing elevations for both residential and non-residential structures.

- Before constructing your fence or retaining wall you must confirm the lowest floor elevation(s) and/or flood-proofing elevation(s) on your property are sufficiently high to provide protection from flooding caused by a one hundred year storm, and are in accordance with City of Mesa Revised Code, Title 9, Chapter 6 and 11 - Floodways & Floodplains Ordinance.

SAMPLE DRAWINGS

PLEASE NOTE: The following SAMPLE drawings are made available to assist you in preparing for and obtaining your project specifications and/or working drawings. You may use these drawings as a reference in what is expected from the City of Mesa to complete your project. You will use your working drawings to construct your project or if you hire a contractor to construct it for you.

The City of Mesa does not accept any liability for the design or subsequent construction according to these examples. These details are to be used as an EXAMPLE ONLY!
4” INTERLOCKING BLOCK WALL
WITH PILASTERS and 10’ – 8” SPACING

Drawing provided by Arizona Masonry Guild
6" CMU STANDARD FENCE WALL
FOR EXTERIOR OR INTERIOR AREAS OF PROPERTY
DESIGN BASED ON MINIMUM ALLOWABLE SOIL BEARING PRESSURE OF 1000 PSF
Drawing provided by Arizona Masonry Guild
6" CMU STANDARD FENCE WALL
FOR EXTERIOR OR INTERIOR AREAS OF PROPERTY
DESIGN BASED ON MINIMUM ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF
Drawing provided by Arizona Masonry Guild
6" CMU STANDARD FENCE WALL

THIS DESIGN TO BE USED ONLY FOR INTERIOR AREAS OF PROPERTY

DESIGN BASED ON MINIMUM ALLOWABLE SOIL BEARING PRESSURE OF 1000 PSF

Drawing provided by Arizona Masonry Guild
6" CMU STANDARD FENCE WALL
THIS DESIGN TO BE USED ONLY FOR INTERIOR AREAS OF PROPERTY
DESIGN BASED ON MINIMUM ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF
Drawing provided by Arizona Masonry Guild
TYPICAL CMU STANDARD FENCE WALL SECTION

- 6' 0" maximum height
- 1 - #4 horizontal continuous in bond beam at top
- #4 vertical continuous @ 32" O.C. centered in wall
- 1 - #4 horizontal continuous in bond beam at mid height
- 6" x 8" x 16" block typical
- Solid grout all cells containing reinforcement (rebar)
- 20" minimum lap
- #4 bar @ 32" O.C. alternating bend direction
- FIN. GRADE maximum soil height differential between sides is 12"
Retaining Walls

**Retaining walls** are built in order to hold back ground which would otherwise move downwards. Their purpose is to stabilize slopes and provide useful areas at different elevations, e.g. terraces for agriculture, buildings, roads and railways.

**Definition**
A retaining wall is a structure designed and constructed to resist the lateral pressure of soil when there is a desired change in ground elevation that exceeds the **angle of repose** of the soil.

The basement wall is thus one form of **retaining wall**.

However, the term is most often used to refer to a cantilever retaining wall, which is a freestanding structure without lateral support at its top.

Typically **retaining walls** are cantilevered from a footing extending up beyond the grade on one side and retaining a higher level grade on the opposite side. The walls must resist the lateral pressures generated by loose soils or, in some cases, water pressures.

The most important consideration in proper design and installation of retaining walls is to recognize and counteract the fact that the retained material is attempting to move forward and downslope due to gravity. This creates **lateral earth pressure** behind the wall which depends on the **angle** of internal **friction** (phi) and the cohesive strength (c) of the retained material, as well as the direction and magnitude of movement the retaining structure undergoes.

Lateral earth pressures are zero at the top of the wall and - in homogenous ground - increase proportionally to a maximum value at the lowest depth. Earth pressures will push the wall forward or overturn it if not properly addressed. Also, any **groundwater** behind the wall that is not dissipated by a **drainage** system causes **hydrostatic pressure** on the wall. The total pressure or thrust may be assumed to act at one-third from the lowest depth for lengthwise stretches of uniform height.

Unless the wall is designed to retain water, It is important to have proper drainage behind the wall in order to limit the pressure to the wall's design value. Drainage materials will reduce or eliminate the hydrostatic pressure and improve the stability of the material behind the wall. **Drystone** retaining walls are normally self-draining.

As an example, the **International Building Code** requires retaining walls to be designed to ensure stability against overturning, sliding, excessive **foundation** pressure and water uplift; and that they be designed for a **safety factor** of 1.5 against lateral sliding and overturning.
Block Wall Construction Tips

- Build the corner first and then fill in between the corners to form the courses. Build the leads several layers high before filling them in with the blocks between them.
- If you have to apply mortar to block ends then set then on in end and apply the mortar to all of them at once.
- When excess mortar needs to be removed wait until it starting to dry and then scrape it off. If you remove it from soft mortar you can mar the surface.
- Strike the joints in small sections. If you are going to put a finish like stucco on the wall then just scrape off the extra mortar instead of spending the time to strike the joints.
- When you have finished the wall and the mortar has dried use a stiff brush to remove any dirt or excess mortar.

Brick Wall Construction Tips

- A foundation or footing of the wall is essential for a durable brick wall. The ratio of foundation to wall is 3:1. For every 3 feet of wall height the foundation should be set 1 foot deep. The width of your foundation should be four times the brick width.
- Pour water on the brick so they don’t absorb the water in the mortar.
- Be sure to use a level when laying each course.
- Use a trowel to fill in any gaps in the brick with mortar.
- If using vertical rebar, the core that the rebar is in must be filled with grout.

These tips will help you to build a wall you can take pride in.
### Fence/Wall on Common Property Line

**Neighboring Property Owner Authorization**

Authorization is required to be signed by all affected property owners.

<table>
<thead>
<tr>
<th>Name:</th>
<th></th>
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<tbody>
<tr>
<td>Address:</td>
<td></td>
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<tr>
<td>Subject Property Address:</td>
<td></td>
</tr>
</tbody>
</table>

* I hereby authorize my neighbor (above) to construct a fence/wall on our common property line. I acknowledge that the construction of such wall will require footings that extend into my property and that workers will require access to my property during construction.

---

#### Neighbor Name (please print):

<table>
<thead>
<tr>
<th>Neighbor Signature:</th>
<th></th>
<th>Date:</th>
</tr>
</thead>
</table>

Maintenance of the fence/wall will be the responsibility of:

- [ ] Both property owners jointly
- [ ] Solely the responsibility of:  

---

#### Neighbor Name (please print):

<table>
<thead>
<tr>
<th>Neighbor Signature:</th>
<th></th>
<th>Date:</th>
</tr>
</thead>
</table>

Maintenance of the fence/wall will be the responsibility of:

- [ ] Both property owners jointly
- [ ] Solely the responsibility of:  

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<tr>
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<th>Date:</th>
</tr>
</thead>
</table>

Maintenance of the fence/wall will be the responsibility of:

- [ ] Both property owners jointly
- [ ] Solely the responsibility of:  

Additional Reference Information and Examples:

*Walls constructed on a common property line may require written approval from your homeowners association and adjacent neighbor(s) at the discretion of the city. It shall be the responsibility of the property owner performing the work to secure such approval(s).*
City of Mesa Contact Information

Construction Inspection Services

Inspection Services is responsible for inspecting new and existing construction, buildings, and structures for compliance with federal, state, and local code and ordinance requirements as well as conformance to approved plans and issued permits. Once a construction permit has been issued and the work has begun, inspections must be requested through the Development & Sustainability Inspection Section. All work must be approved by the building inspector before proceeding with the next step of construction. For your convenience, Inspections has a 24-hour Interactive Voice Response System (IVR) for requesting inspections (480-644-2428).

Inspection Requests

Industrial, Commercial or Residential, Fire, Zoning (480) 644-2428 (24-hour line)
Permits, Gas & Electric Release, Mobile Homes and Park Model Permit Information (480) 644-4273

Calls received after 12:00 am will be scheduled for the next business day. Regular inspection hours are 6:30 am - 5:00 pm, Monday through Friday. After hours inspections and fees are made by appointment after 5:00 pm weekdays and weekends. Also see website at http://www.mesaaz.gov/devsustain/

Utility Provider Contact Information

If wall/fence is proposed within a public utility easement, written authorization is required from each of the following service providers:

<table>
<thead>
<tr>
<th>Utility Company</th>
<th>Contact</th>
<th>Phone</th>
<th>Fax</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>APS</td>
<td>Michael Bouche</td>
<td>602-371-7033</td>
<td>602-371-6586</td>
<td><a href="mailto:michael.bouche@aps.com">michael.bouche@aps.com</a></td>
</tr>
<tr>
<td>SRP</td>
<td>Sherry Wagner</td>
<td>602-236-3126</td>
<td>602-236-8193</td>
<td><a href="mailto:sherry.wagner@srpnet.com">sherry.wagner@srpnet.com</a></td>
</tr>
<tr>
<td>Qwest</td>
<td>Chris (Maria) Lertique</td>
<td>602-630-0492</td>
<td>480-831-0294</td>
<td><a href="mailto:maria.lertique@qwest.com">maria.lertique@qwest.com</a></td>
</tr>
<tr>
<td>Cox Communications</td>
<td>Traffic Management Center</td>
<td>623-328-3554</td>
<td>623-322-7500</td>
<td><a href="mailto:phx.tmc@cox.com">phx.tmc@cox.com</a></td>
</tr>
<tr>
<td>Southwest Gas</td>
<td>Greg Cooper</td>
<td>602-484-5276</td>
<td>602-484-5353</td>
<td><a href="mailto:greg.cooper@swgas.com">greg.cooper@swgas.com</a></td>
</tr>
</tbody>
</table>

Updated September 2010
Commonly Used Terms:

To better understand the engineered details, commonly used terms are defined as follows:

- ASCE. [American Society of Civil Engineers](http://www.asce.org).
- Bed joint. The horizontal layer of mortar on which a masonry unit is laid.
- Bond beam. A horizontal grouted element within the masonry block fence which contains embedded steel reinforcement.
- Fence height. The height of a fence measured vertically from the finished grade to the highest elevation along the length of the fence structure, including the cap block. ***Please Note: Raising the finish grade by placing fill solely for the purpose of adding additional height to the fence is prohibited. If a fence is placed on an earth berm, the fence height is measured vertically from the base of the berm.
- Head joint. Vertical mortar joint placed between masonry units within the wythe at the time the masonry units are laid.
- Joint reinforcement. Ladder-type or truss-type reinforcement that is added along the bed joints of a masonry block fence.
- Lateral wind load, "exposure B" category. Urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger.
- Perimeter fence. Common fencing that normally encloses or semi-encloses a community or a portion of a community, usually located adjacent to roadways, parks, public walkways, storm water retention facilities, etc.
- Wythe. Each continuous, vertical section of a wall, one masonry unit in thickness.