Grand Cayman

Wall & Fence Guidelines

Revised December 11, 2014

Planning Department

"The peculiar thing about (stone work) is that you have no control over the final product; when the rock breaks you take what you have and work with it."

Crawford Dilbert, Master Mason & Wall Builder

As interviewed in the Newstar, May 1995

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Section 1 - General Regulations

1.1. Applicability

The Central Planning Authority retains the right to review any wall or fence application, and issue any decision relating to an application, subject to the *Development and Planning Law*.

1.2. Delegation of Authority

The Central Planning Authority retains the right to delegate approvals of wall or fence applications to the Director of Planning. This delegation of authority may be revoked at any time by the Central Planning Authority.

1.3. Derelict Walls and Fences

Subject to the *Development and Planning Law* and the *Cayman Islands Building Code*, the Central Planning Authority may require property owners to demolish, remove, and / or rehabilitate fences and walls which have fallen into disrepair and / or represent a public safety hazard, as determined by the CPA.

1.4. Severability

If any part of this policy is found to be unjust, or in conflict with superseding laws and regulations, then only that part of the policy will be struck down, and the remainder of the policy will remain in effect.

1.5. Variances

Enacting a single set of guidelines for Grand Cayman is a challenging task which cannot foresee every situation. There will always be instances which potentially warrant a variance from these Guidelines. Variances will be considered on a project by project basis by the Authority.

Variance requests should conform to the Central Planning Authority's *Variance Policy*.

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Section 2 - Historical Context

2.1. Overview

Walls and fences have existed on the Cayman Islands since the earliest stages of settlement, serving a variety of purposes including property markers and protection for defense establishments. The design of walls and fences throughout Cayman's history have several notable attributes which have been maintained over the centuries.

2.2. Scale

Throughout Cayman's history, walls and fences have always been constructed to a low height. Whether or not this was due to the labour needed to assemble these walls or to extract materials is unclear, however the dominance of low height in the design of walls and fences has been maintained since the 18th century. Even Fort George, the island's primary point of defense, had walls which barely exceeded five feet.

Figure 2.1 A young boy sits on a stone fence forming the edge of a marl road, 1943.

Reproduced courtesy of the Cayman Islands National Archive Photographic Collection

"He (Uncle Tully) fit one rock into the other ones, plaster it, and go right along. He run a line and lay…and that (wall) go right along into that line"

Interview with Emily McLaughlin of East End

Reproduced courtesy of the Cayman Islands National Archive Oral History Programme

2.3. Materials

Walls and fences in Grand Cayman were typically either constructed of wood or stone. For wooden fences, several types of hardwoods could be sourced locally that could stand up to the arduous climate. These were used in construction of some of Cayman's oldest structures, including the mahogany gate of historic Fort George.

Stone walls were much more prevalent than their wooden counterparts, as there was an abundance of limestone material which could be locally sourced. This material could be kept in large pieces to be used as stacked material, or reduced in a kiln and used as a mortar.

Materials such as iron and other metals were expensive to import, and unfamiliar to local tradesmen and were therefore used minimally when compared to limestone and wood.

"(They) used to build lots of those wall that 'round here…the Government take up the front wall and gave him some wooden…wood for out there to fence the front"

Interview with Emily McLaughlin
of East End

Reproduced courtesy of the
Cayman Islands National Archive
Oral History Programme

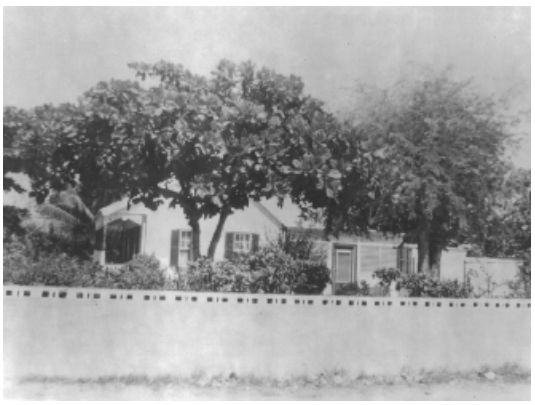


Figure 2.2 A low concrete block wall with stucco finish. George Town, 1965.

Reproduced courtesy of the Cayman Islands National Archive Photographic Collection

Section 3 - Siting

3.1. Principles

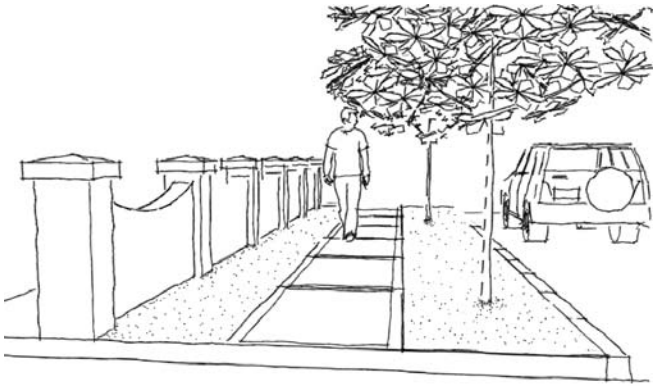


Figure 3.1. - A wall used to physically define a front lot line in a commercial setting

Walls and fences are a method to physically define space in an outdoor environment. They can serve a safety and security function, create an aesthetic addition to a development, deflect sound and light from roadways, as well as direct the surface flow of water. Understanding how walls and fences relate to each of these elements is key to creating a successful design.

3.2. Location on Property

Walls and fences are encouraged to be located along property lines, or to define internal spaces within a lot such as a garden. It is imperative that walls and fences are located within your property only, unless an agreement has been reached to share a wall and fence with a neighbour (see *Section 3.4*). There are a number of considerations which come into place when siting along the various lot lines which comprise a property, and are addressed in subsequent sections of this document. Under exceptional circumstances, siting issues may be issued a variance by the CPA, subject to *Section 1.5 - Variances*.

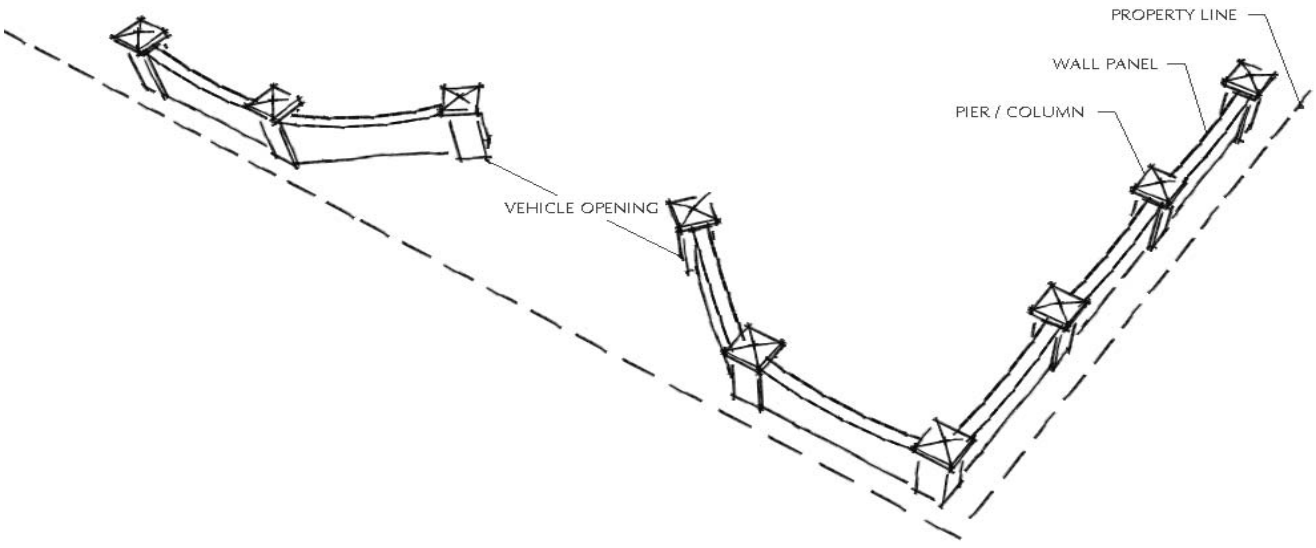


Figure 3.2. - Walls and fences must be located within your property, except where as noted in these Guidelines

3.3. Front Lot Line

For the purpose of this document, the Front Lot Line is defined as any lot line which fronts onto a public or private road. Traditionally on Grand Cayman, low masonry walls have been built along the front road to help define and distinguish the property. These Guidelines seek to guide this practice into the future, with minimal restrictions in place to address vehicle and pedestrian safety.

3.3.1. In typical subdivisions, walls and fences should be setback a minimum of 12 inches and a maximum of 72 inches (excepting situations described in Section 3.3.2) from the front lot line. The area between the right-of-way and the base of the wall or fence should be landscaped with a minimum of ground cover such as turf or shrubs. Applicants are encouraged to use this area for landscaping in accordance with the Central Planning Authority's *Landscape Guidelines*.

Walls and Fences should never be constructed within a road right of way (see Section 8.2). Applicants should check with the Lands and Survey Department, and if necessary consult a land surveyor, to ensure they are not trespassing on a public or private right of way.

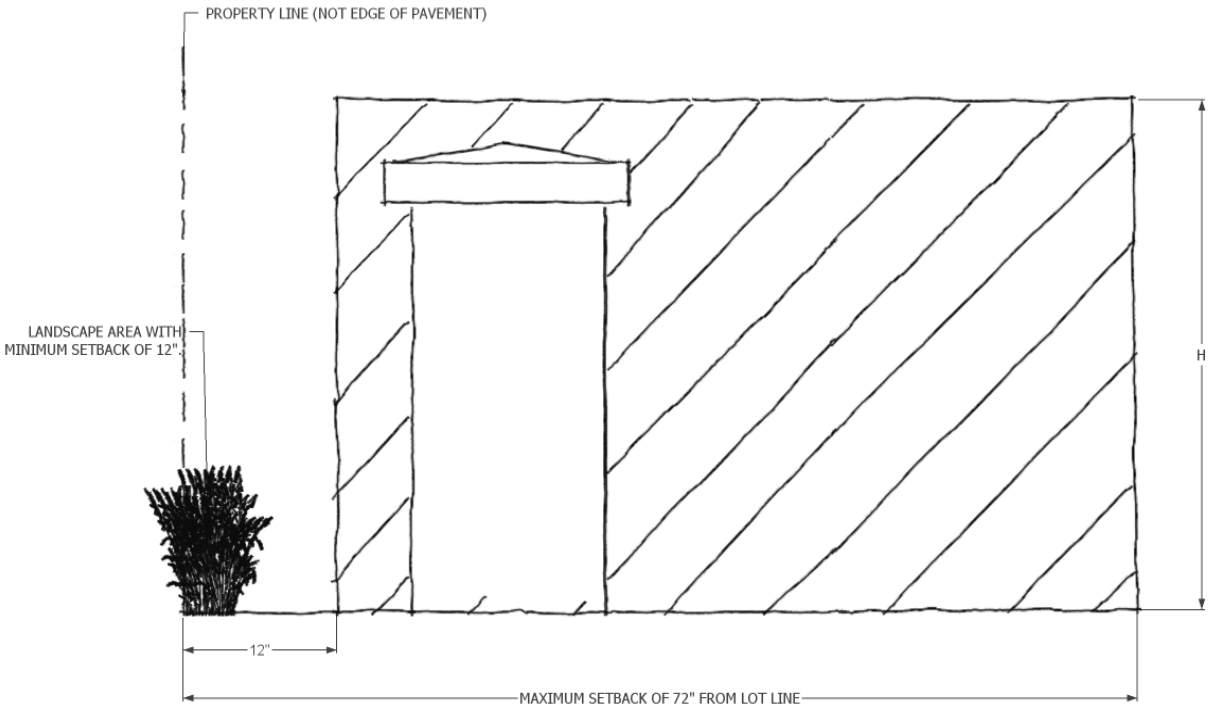


Figure 3.3.1. - Wall / Fence envelope in a typical residential subdivision setting

3.3.2. In any situation where the CPA requires sidewalks, landscaping or other amenities along the front lot line as a condition of planning approval, the wall or fence must be setback the distance necessary to accommodate these amenities. It is understood that in some situations this may result in a fence or wall being located beyond the maximum setback of 72 inches. In situations where the 72 inch setback is exceeded, applicants should site the wall or fence as close to the front lot line as possible.

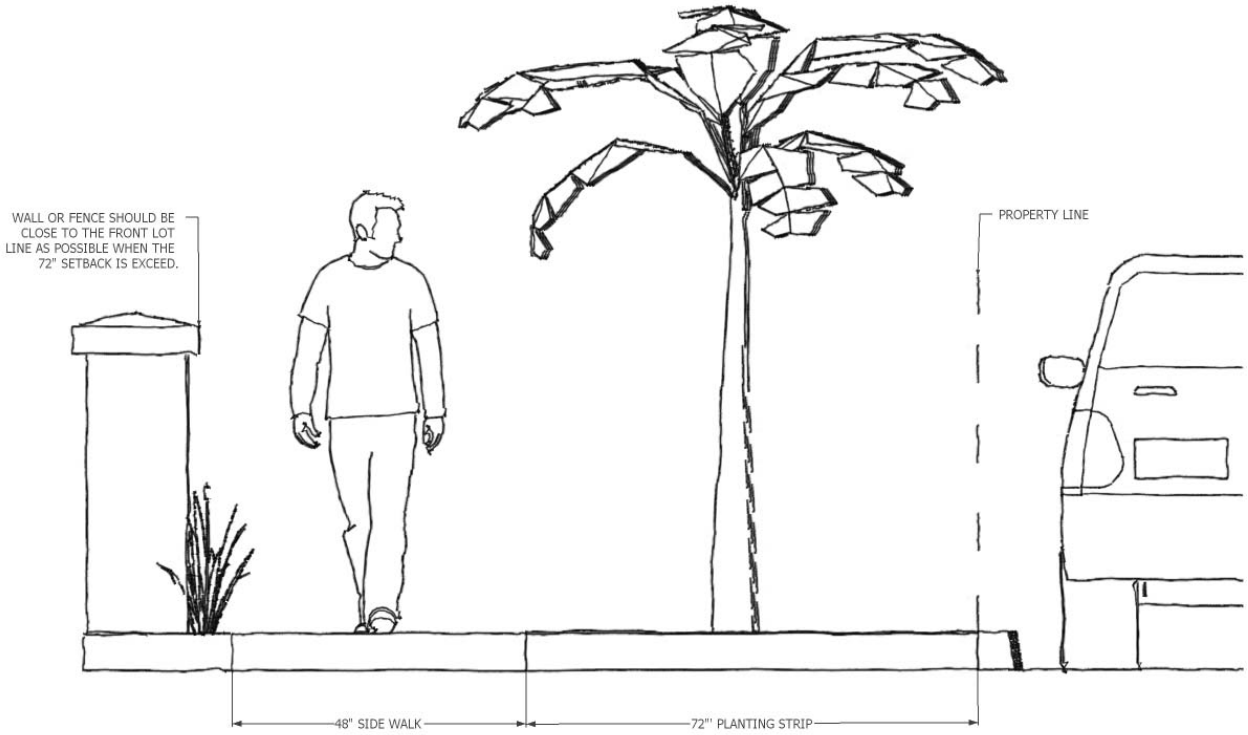


Figure 3.3.2. - Where the CPA requires sidewalks, landscaping or other amenities along the front lot line as a condition of planning approval, the wall or fence must be setback the distance necessary to accommodate these amenities.

3.3.3. If the maximum height of the wall or fence (and associated piers or columns) can be kept under 30 inches along the interior boundary of the right of way, subject to the setback provisions in Section 3.3.1.

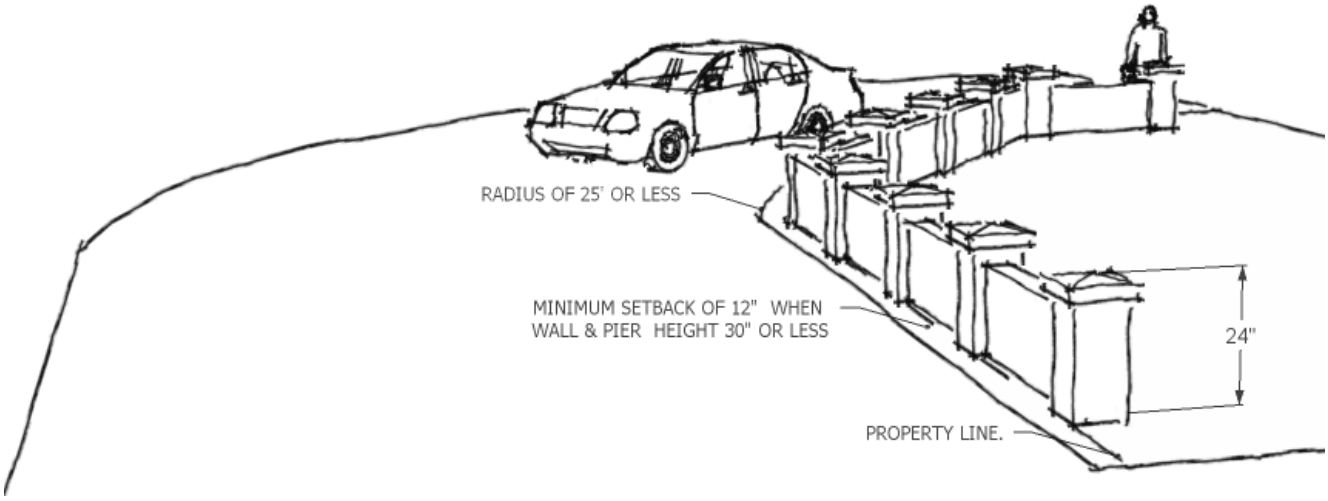


Figure 3.3.3. - Wall height reduced when located on an interior curve of a road

3.3.4. Where a vehicle opening or gate is provided as part of a wall or fence, a sight triangle must be provided to ensure visibility for vehicles turning on to the road from the property. The sight triangle must meet requirements for visibility set out in (*Appendix A – Sight Triangle Minimum Requirements).*

If a wall or fence abuts the intersection of two rights of way, a sight triangle must be provided as per *Appendix A - Sight Triangle Minimum Requirements*.

Meeting the required sight triangle distances can be achieved through setting back the fence or wall from the property line, or keeping the wall or fence height and associated piers, columns and posts below 30 inches (a height at which most vehicle drivers can still see over the top). The setback requirements within Section 3 of these Guidelines may be varied if necessary to accommodate the provision of a sight triangle.

Figure 3.3.4. - An example of poor visibility due to lack of a sight triangle.

3.4. Shared Lot Lines

Shared Lot Lines are those lot lines which are common to two or more properties, as is frequently the case with side and rear lot lines. Shared Lot Line situations are very common, and construction of a wall or fence along them is permitted subject to restrictions in these Guidelines, as well as in *The Fences Law (1997 Revision)* .

These guidelines require the construction of a single wall or fence along a shared property line, in order to reduce the construction of redundant walls or fences.

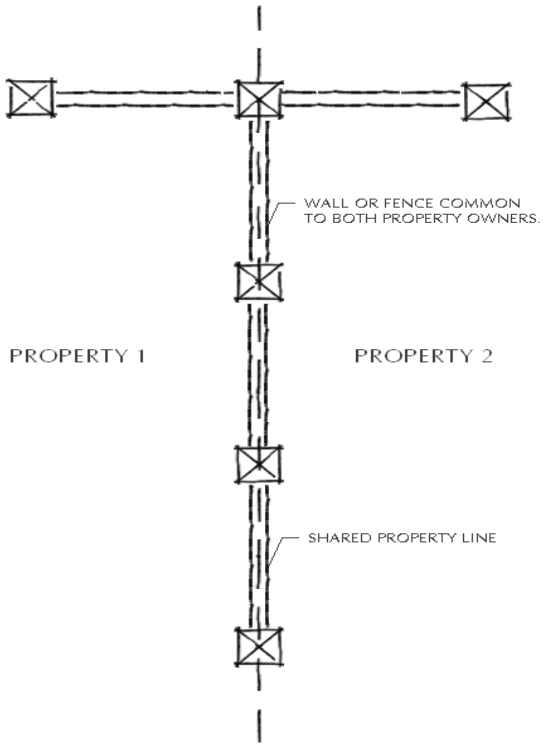


Figure 3.4.1 - Wall located on a shared property line

3.4.1. Where a wall or fence is to be constructed straddling a shared property line, a letter of consent from the adjacent property owner must be provided. Applicants are encouraged to discuss *any* wall or fence proposal with their neighbours prior to submitting an application, whether it is a shared wall or not.

3.4.2. If the wall or fence is to be built on one side of the shared property line only, no setback will be permitted, and its base should abut the property line whenever possible. This setback may be varied in specific locations to accommodate the preservation of natural features such as trees or knolls. Applicants are encouraged to discuss *any* wall or fence proposal with their neighbours prior to submitting an application.

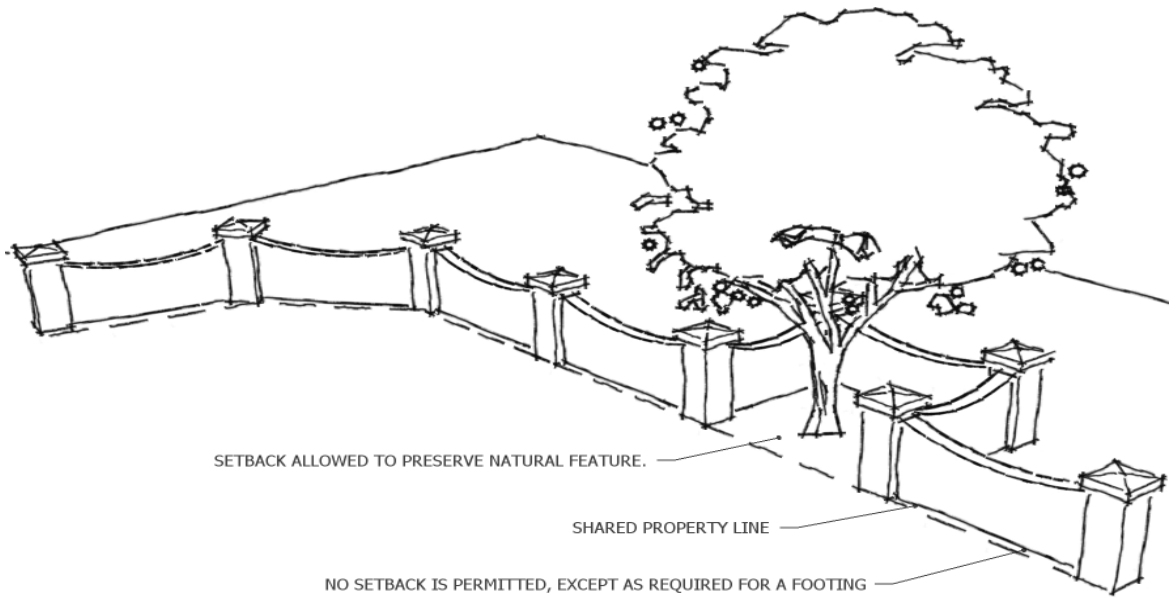


Figure 3.4.2 - Setback to preserve natural features

3.4.3. Where a wall or fence already exists on or immediately adjacent to a shared property line a second wall or fence will not be allowed. This is to discourage the construction of redundant walls and fences. If a neighbouring wall or fence is considered unsightly, applicants are encouraged to screen the wall or fence with landscaping.

3.4.4 Costs and disputes associated with the construction and maintenance of a wall or fence located between properties are outlined in *The Fences Law (1997 Revision)*.

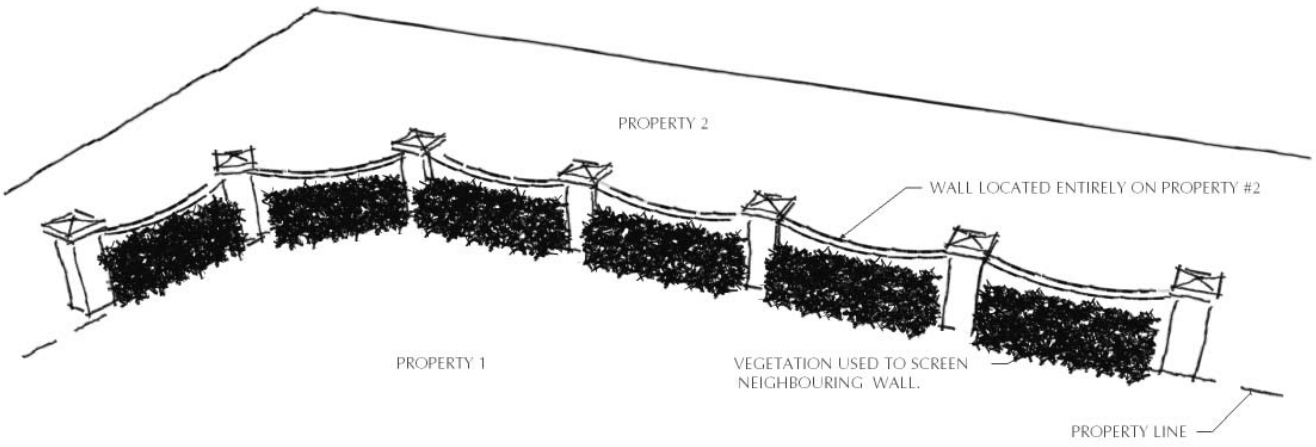


Figure 3.4.3 - Screening of adjacent walls and fences

3.5. Other Considerations

There are other factors to consider when siting a wall or fence in addition to lot lines and setbacks.

3.5.1. Walls or fences should not impede the progress of emergency services, such as the fire department, in accessing any portion of a property, or adjoining properties. The CPA reserves the right to refer all wall or fence applications to external agencies in order to review access and other issues.

3.5.2. Walls or fences must not impede a legally registered easement or right-of-way. Applicants must first remove the registered easement by contact Lands & Survey prior to applying for any fence or wall over the area covered by the easement.

Figure 3.4.4. - An example of two redundant fences

Section 4 - Wall & Fence Height

4.1. Principles

Walls on Grand Cayman were traditionally constructed from shells and rocks, and either dry stacked or accreted using marl or other limestone based mortar. Due to a number of factors including material availability, walls were constructed with low heights of between 12 inches and 36 inches. The effect of this low height was quite distinctive, allowing passerby's to have a view into the property, while offering an opportunity for interaction with residents, whether it be a long conversation or a friendly wave hello.

Fences constructed of wood and sometimes wire, appeared on Grand Cayman less frequently. Even today, wooden and wire fences are less prevalent than masonry walls on Grand Cayman. While fences are typically easier to construct to a greater height than walls, these guidelines encourage fences to be low, keeping with Grand Cayman's tradition of walls.

The tradition of low height masonry walls has been continued in many new development projects, and these Guidelines aim to encourage walls of this scale in the future.

Figure 4.1. - Low height walls

4.2. Measuring Wall Height

The height of a solid wall or fence should be measured vertically from the base of the wall or fence to the top of the wall or fence in a line perpendicular to the ground plane. If the finished height is different on either side of a wall or fence, the greater of the two heights should be used. The height of piers, columns and posts are addressed separately in Section 5.

If the height of a wall or fence varies along its length, the height should be measured at its maximum height between columns, piers or posts. If, contrary to these Guidelines, none of these features exist, the height should be measured along the length of the wall at no more than 18' intervals.

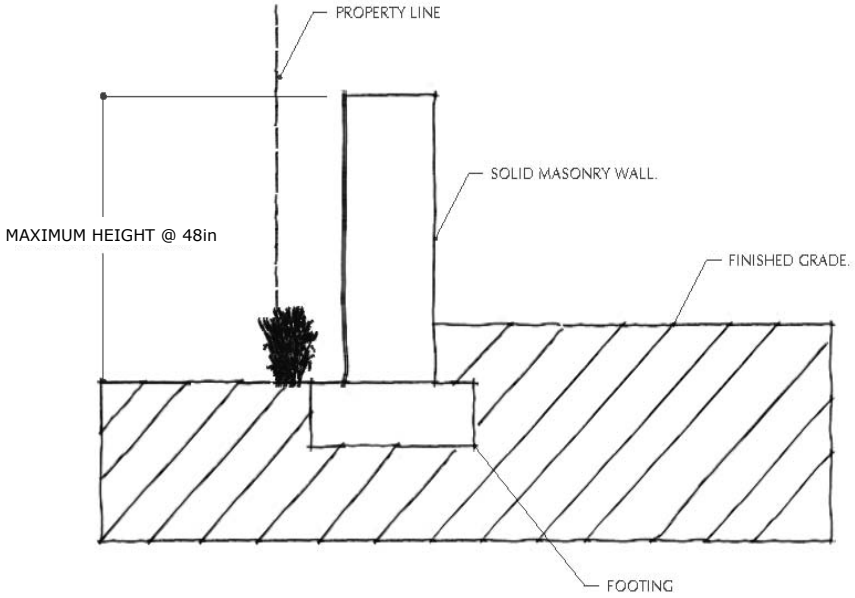


Figure 4.2.1(a). - Proper measurement of walls height when the grade differs on either side

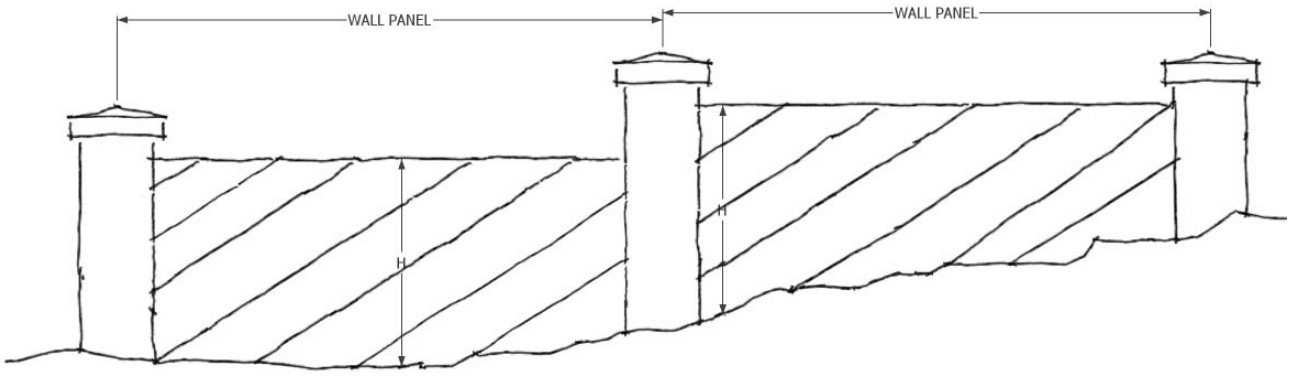


Figure 4.2.1(b). - If a wall or fence height varies along the length of a wall, the maximum height per wall panel should be used. If piers or columns are not present, the wall or fence height should be measured at 18' intervals.

Section 4: Wall & Fence Height

4.3. Wall / Fence Height; Residential & Tourism-Related Zones

The height of a wall or fence is one of the defining aspects of its character. Traditional walls on Grand Cayman have been generally lower than 36 inches, a height which allows for a great deal of 'transparency' into and out of the property. The provisions addressing residential wall and fence height in these Guidelines seek to reinforce the notion of 'transparency' in new walls and fences.

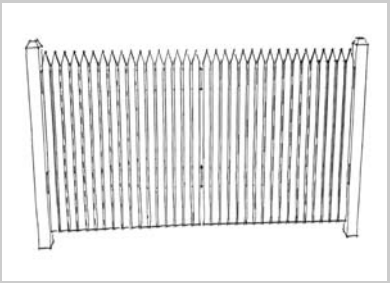
4.3.1. In residential and tourism-related zones, no part of a solid wall or fence (see fact box 4.3.2) should exceed 48 inches in height, except for where provided within these regulations. The height of a solid wall or fence should be measured as per Section 4.2. of these Guidelines.

4.3.2. Fact Box: Solid Walls

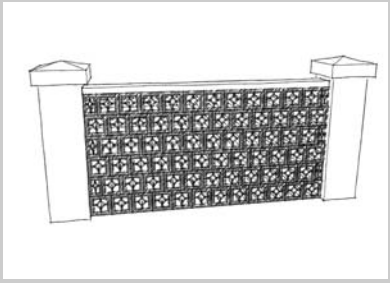
Solid walls or fences are those which exhibit a low degree of transparency.

Solid walls or fences can not withstand extreme wind loads as well as a semitransparent wall or fence and can also retard the flow of storm water. High solid walls or fences can create an imposing or even unfriendly presence, and should be avoided whenever possible. A description of the process to determine what qualifies as a solid wall is contained in *Appendix C - Wall Opacity Measures*.

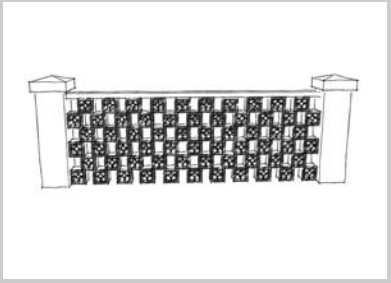
Some examples of solid walls include:



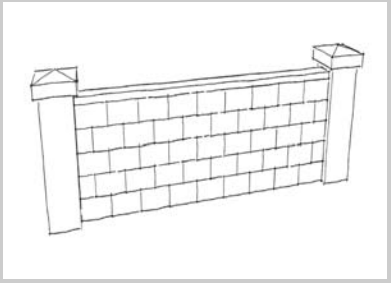
Wood Plank Fence



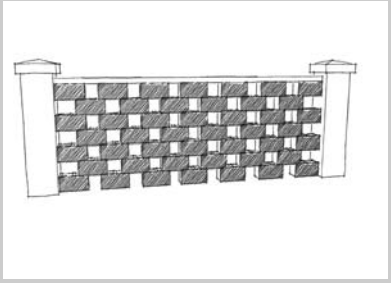
Decorative Masonry Block (stacked)



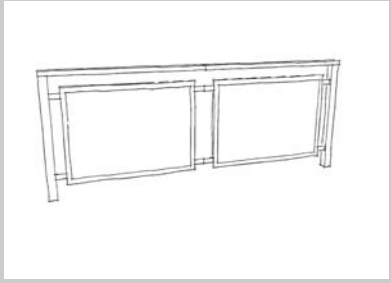
Decorative Masonry Block (staggered)



Solid Masonry Block or CMU'S (prior to finishing)



Solid Masonry Block or CMU'S (staggered)



Sheet Metal Panel Fence

4.3.3. In residential and tourism-related zones, no part of a semi-transparent wall or fence (see Fact Box 4.3.5) should exceed 60 inches in height, except for where provided within these regulations. The height of a semi-transparent wall or fence should be measured vertically from the base of the wall or fence to the top of the wall or fence in a line perpendicular to the ground plane. If the finished height is different on either side of a wall or fence, the greater of the two heights should be used. The height of piers, columns and posts are addressed separately in Section 5.

Figure 4.3.3.(a,b,c) - Examples of semi-transparent walls

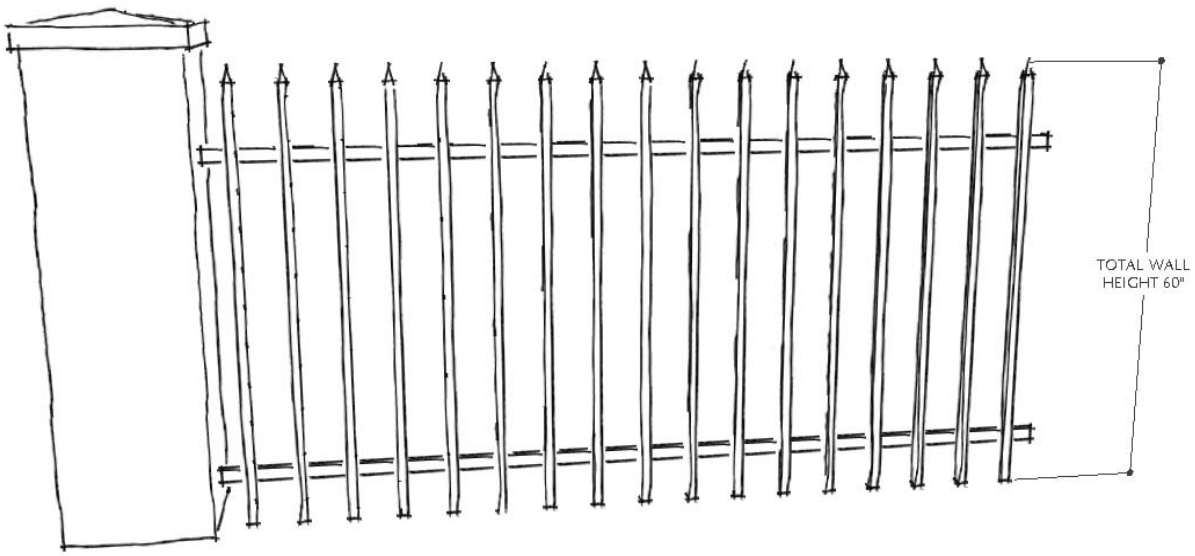


Figure 4.3.3.d - In residential and tourism-related zones, no part of a semi-transparent wall or fence should exceed 60 inches in height

4.3.4. In residential and tourism-related zones, when a semi-transparent wall or fence is used in combination with a solid wall or fence, the solid portion of the wall or fence must not exceed 30 inches. If the solid portion exceeds 30 inches, the wall or fence will be classified as a solid wall or fence, and the total height will be limited to 48 inches. Additionally, the solid portion must be located vertically below the semi-transparent portion of the wall or fence. This is to ensure the principle of transparency is achieved when combining material types.

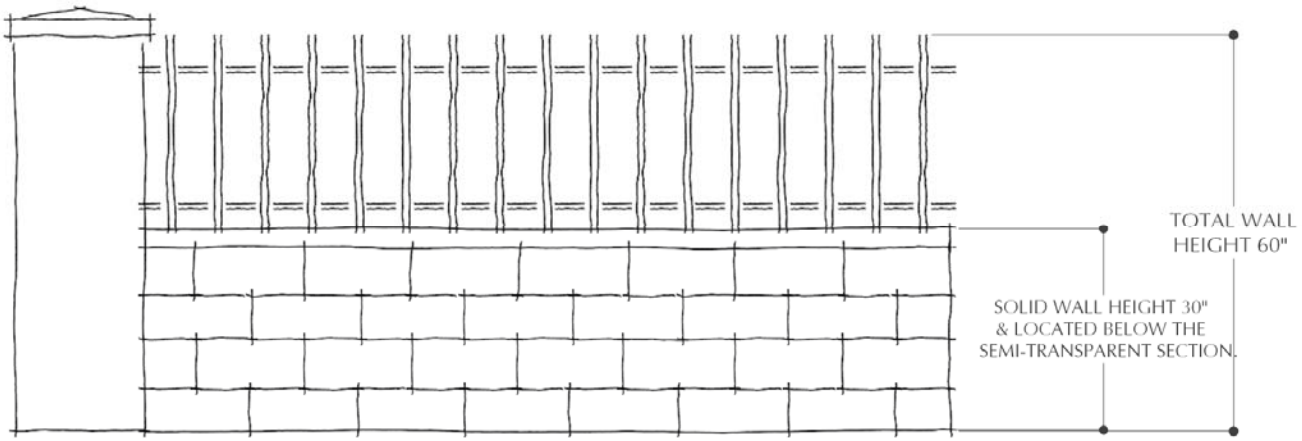


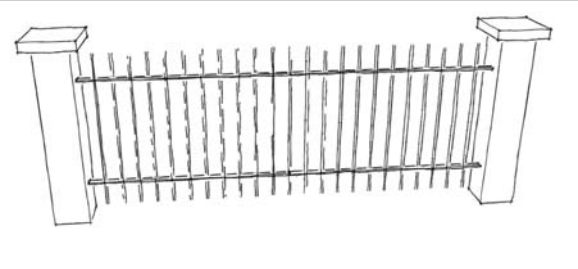
Figure 4.3.4. - A semi-transparent wall in combination with a solid wall.

4.3.5. Fact Box: Semi-transparent Walls & Fences.

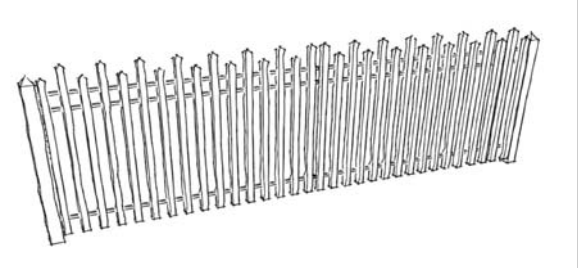
Semi-transparent walls or fences are those which exhibit a high degree of transparency. Semitransparent walls and fences allow wind and water to pass through, reducing stresses which can contribute to wall failure.

Some examples of semi-transparent walls or fences include:

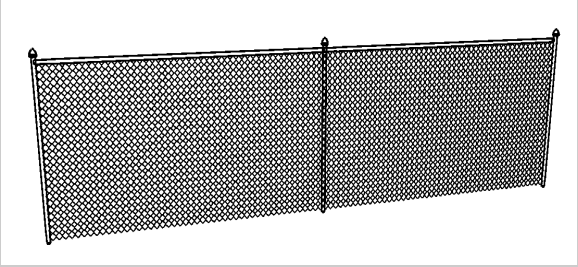
Wrought Iron Fence



Tube Steel Fence



Solid Steel Bar



Chain Link Fence

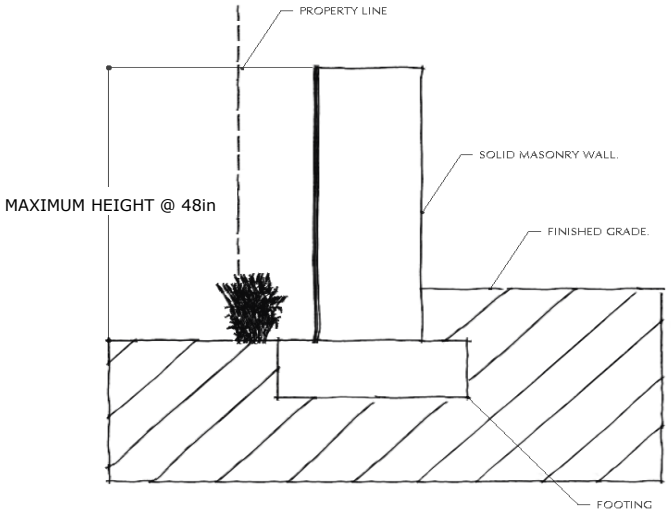


Figure 4.4.1. - Measuring wall height with different finished grades

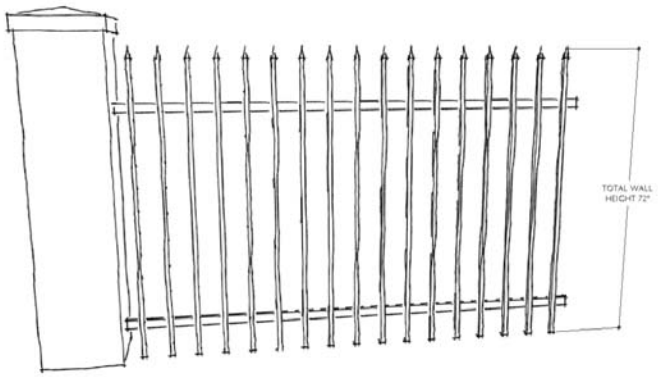


Figure 4.4.2. - no part of a semi-transparent wall or fence should exceed 72 inches in height

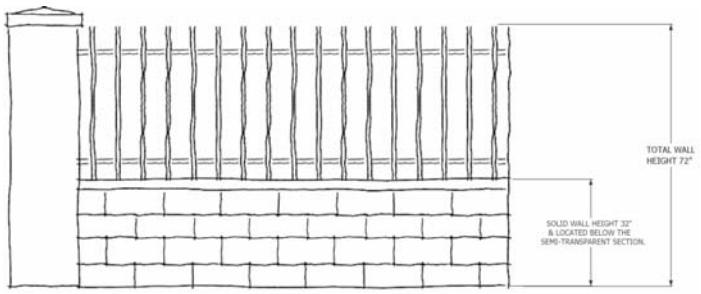


Figure 4.4.3. - when a semi-transparent wall or fence is used in combination with a solid wall or fence, the solid portion of the wall or fence must not exceed 32 inches

4.4. Wall / Fence Height; Commercial, Industrial, Institutional Zones

While traditional walls on Grand Cayman have generally been around 36 inches in height, it is understood that certain land uses require higher walls and fences for reasons primarily of security. Therefore, higher walls and fences may be allowed in specific commercial, industrial and institutional zones.

4.4.1. In commercial, industrial and institutional zones, no part of a solid wall or fence should exceed 48 inches in height, except for where provided within these regulations. The height of a solid wall or fence should be measured as per Section 4.2. of these Guidelines.

4.4.2. In commercial, industrial and institutional zones, no part of a semi-transparent wall or fence should exceed 72 inches in height, except for where provided within these regulations. The height of a semi-transparent wall or fence should be measured vertically from the base of the wall or fence to the top of the wall or fence in a line perpendicular to the ground plane. If the finished height is different on either side of a wall or fence, the greater of the two heights should be used. The height of piers, columns and posts are addressed in Section 5.

4.4.3. In commercial, industrial and institutional zones, when a semi-transparent wall or fence is used in combination with a solid wall or fence, the solid portion of the wall or fence must not exceed 32 inches. If the solid portion exceeds 32 inches, the wall or fence will be classified as a solid wall or fence, and the total height will be limited to 48 inches. Additionally, the solid portion must be located vertically below the semi-transparent portion of the wall or fence. This is to ensure the principle of transparency is achieved when combining material types.

4.5. Entrance Detailing

Exaggerating a wall or fence's height is one method to draw attention to a vehicle or pedestrian opening. For example, a higher column may draw attention to a driveway, while also supporting a vehicle gate. These guidelines recognize the need to accentuate entrance features through an increase in vertical height, and set restrictions on how this can occur.

4.5.1. The maximum allowable height of a fence or wall as set out in Section 4 of these Guidelines can be increased by a ratio of up to 2.0 in the Entrance Area around a vehicle or pedestrian entrance, subject to a maximum of 96 inches. For example, a 30 inch wall could be raised to 60 inches within the Entrance Area. The Entrance Area is defined as that portion of a wall or fence which is within 10 feet of horizontal distance from each edge of a vehicle entrance, or 5 feet from each edge of a pedestrian entrance.

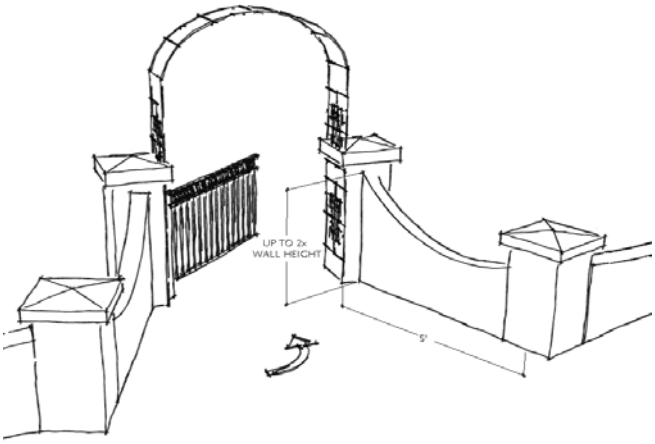


Figure 4.5.1(a) - Pedestrian Entrance Example

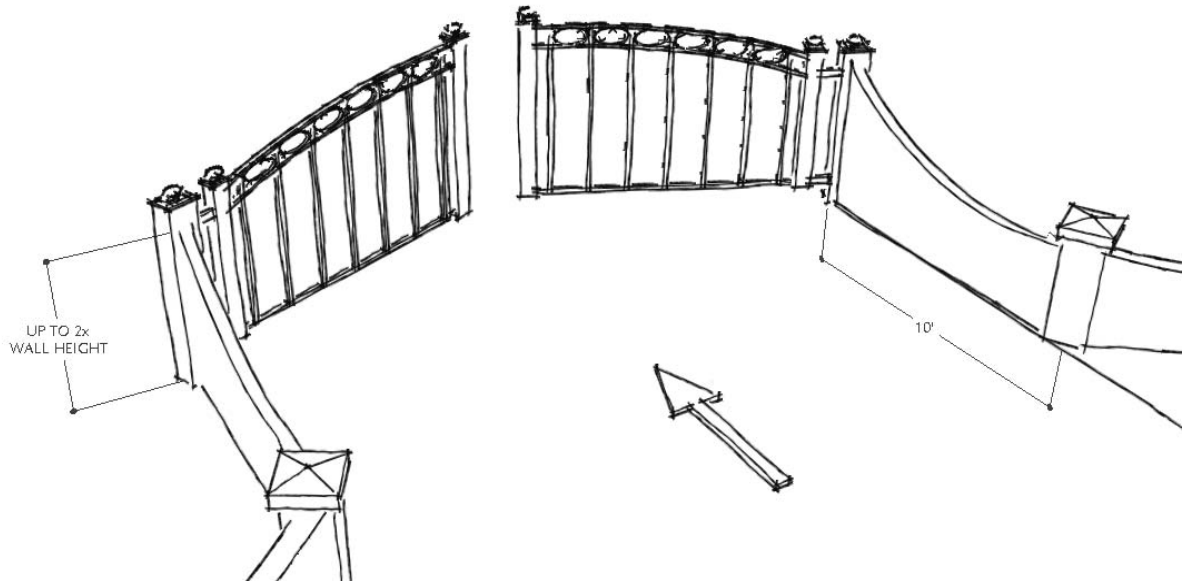


Figure 4.5.1(b) - Vehicle Entrance Example

Section 5 - Piers, Columns & Poles

5.1. Principles

Piers, columns and poles serve an important structural role in a wall or fence application. They are critical to sharing stresses and loads on a wall which can be created from wind, standing water, or vehicle impacts. In masonry wall construction, applicants are strongly encouraged to ensure that piers, columns or poles are connected to the wall or fence panels in an appropriate manner. Piers, columns and poles also gives an important aesthetic role by breaking up continuous wall sections & providing a visual rhythm to the wall. Considerations during design include pier height, spacing and dimensioning.

5.2. Design Requirements

5.2.1. In masonry wall applications, pier or column height must not exceed 1.25 times the height of the immediately adjacent wall panel . Therefore for a 48 inch high wall, a maximum pier height of 60 inches is allowed (48 x 1.25 = 60). The height of a pier or column should be measured vertically from the base of the pier or column to the highest point of the pier or column in a line perpendicular to the ground plane. If the finished wall height is different on either side of a pier or column, the greater of the two heights should be used.

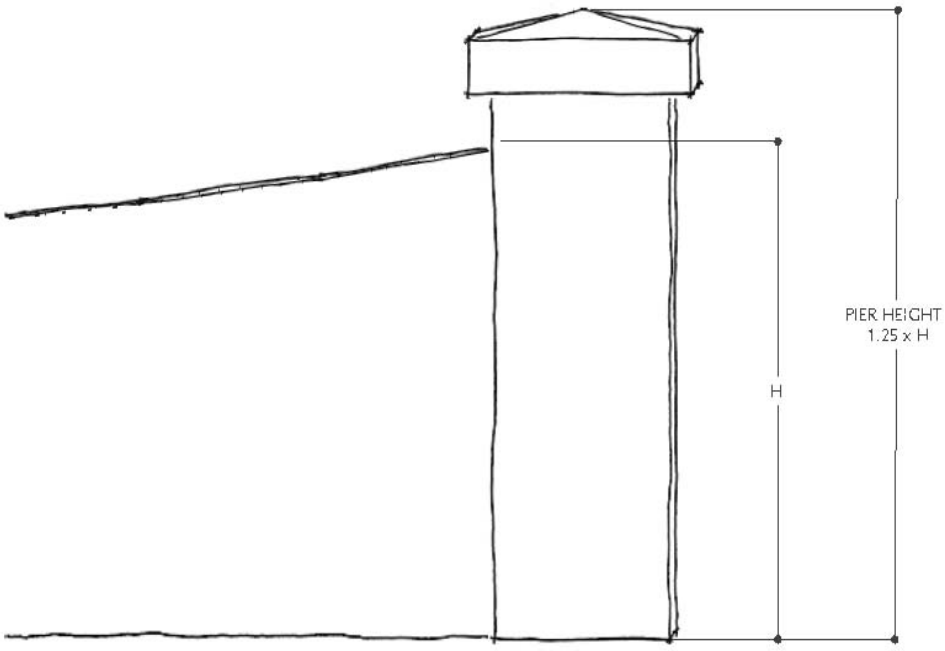


Figure 5.2.1. - Pier or column height must not exceed 1.25 times the height of the immediately adjacent wall panel

5.2.2. In masonry wall applications, piers or columns should be no less than twice the thickness if the wall. For example if the wall thickness is 8 inches, the piers or columns should be a minimum thickness of 16 inches.

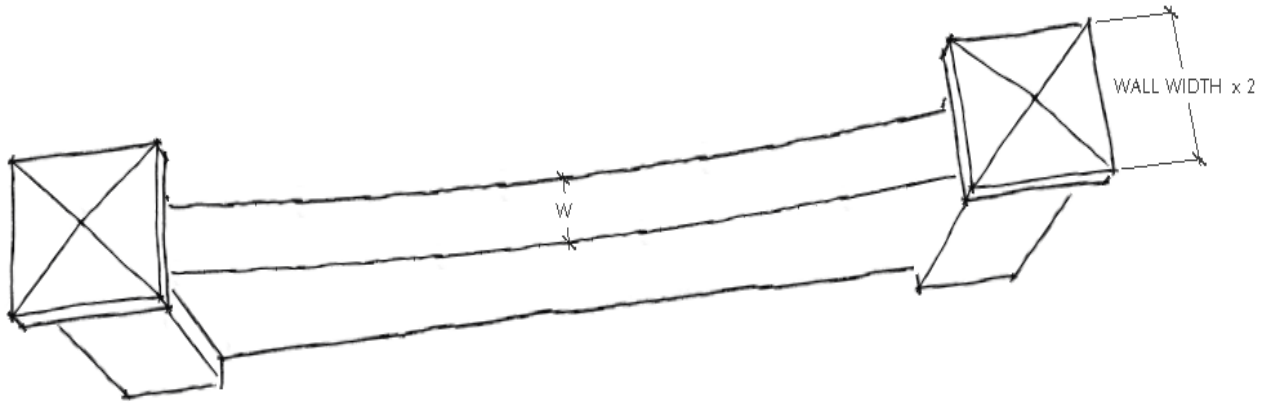


Figure 5.2.2. - Piers or columns should be no less than twice the thickness if the wall

5.2.3. In masonry wall applications, piers or columns are required at a maximum spacing of 18 feet on centre. While there is no minimum spacing requirement, applicants are encouraged to avoid pier or columns spaced at less than 8 feet on centre which tends to create a busy visual effect.

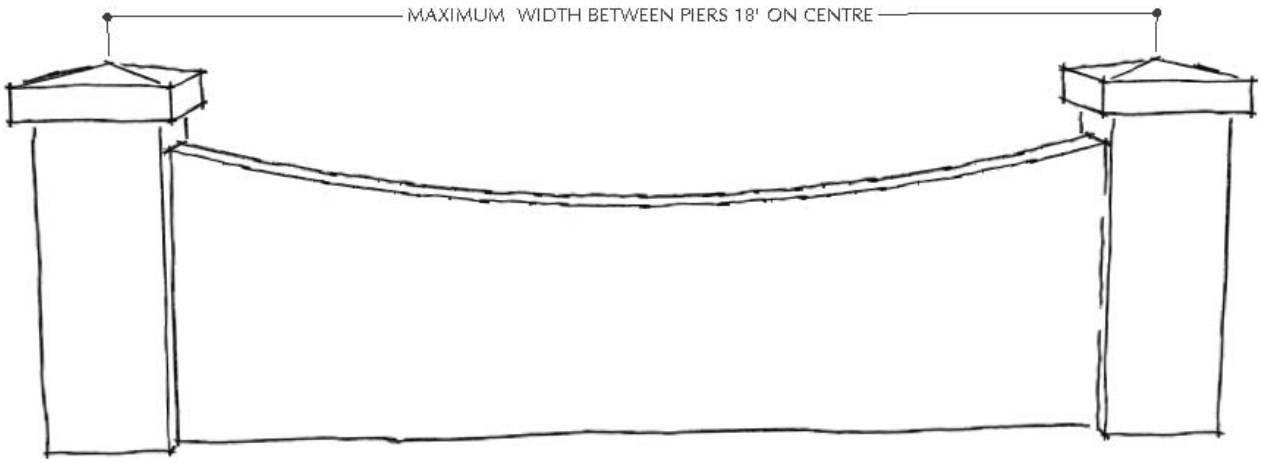


Figure 5.2.3. - piers or columns are required at a maximum spacing of 18 feet on centre.

Section 6 - Materials

6.1. Principles

Materials used in walls and fences can significantly contribute to their durability as well as their aesthetic appeal. Walls which are physically connected to the main building may take on the physical appearance of the building through materials and colours. Conversely, perimeter walls may have their own character, independent of the primary building. Textures applied to a finished wall or fence can help to create interesting rhythm and visual relief along the continuous plane of a wall or fence.

Some materials and finishes may be appropriate for specific wall and fence applications, but appear out of place when applied in a different situation. These guidelines ensure that this problem doesn't occur by recommending materials for a variety of applications, as well as providing lists of unacceptable materials.

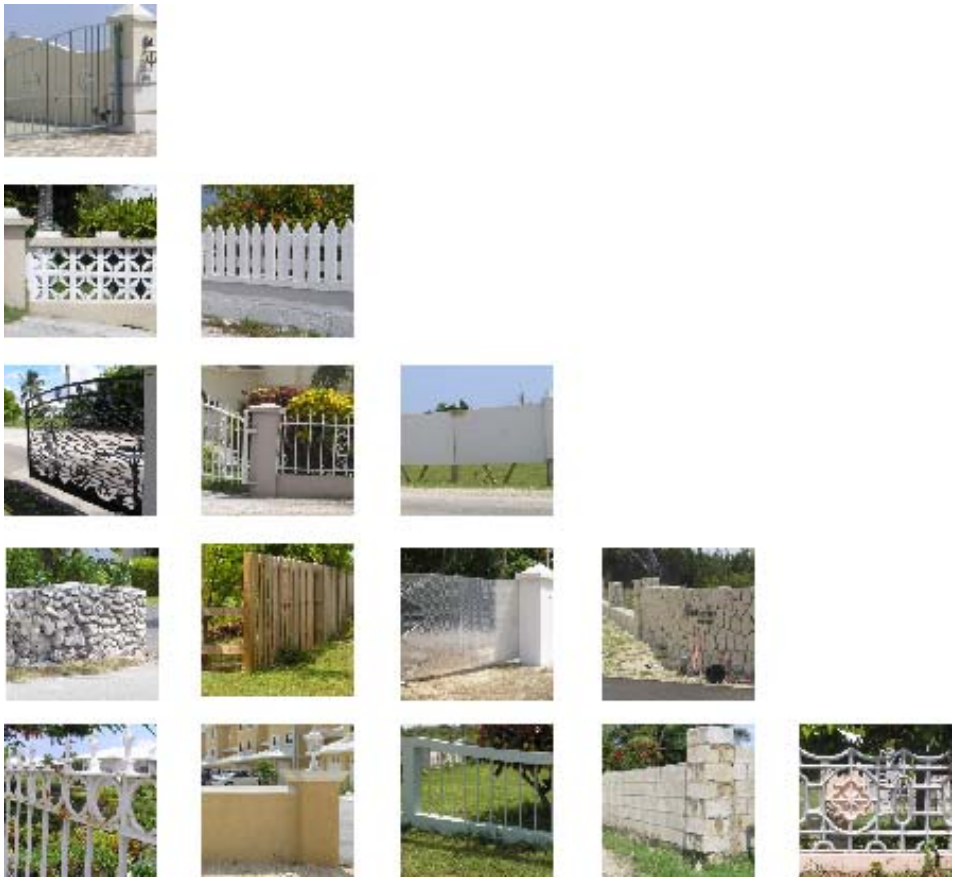


Figure 6.1—There is a wide range in materials used in Grand Cayman for Fences and Walls

6.2. Residential Zones

In residential zones, walls and fences typically serve to define property boundaries, keep domestic pets at home, and provide a safe recreation area for children. While a variety of materials can achieve these goals, not all are appropriate in a residential setting.

Recommended Residential wall and fence materials include (see fact box 6.2.1.):

- Finished/Rendered Concrete Masonry Units
- Finished/Rendered Decorative Concrete Masonry Units
- Finished Coarse Stone
- Wrought Iron Fencing
- Tubular Metal (Steel / Aluminum)
- Wood Picket Fencing

Prohibited residential wall and fence materials (see fact box 6.2.2.):

- Unfinished Concrete Masonry Units (CMUs)
- Sheet Metal Panels
- PVC Tube / Pipe
- Plastic Snow Fencing
- Plywood
- Barbed Wire (Except in Ag/Res zone)
- Razor Wire
- Chain Link (Prohibited in front yard only)

The construction of tennis court fencing with chain link is permitted (subject to height restrictions in *Section 4*) in residential zones. Applicants are encouraged to site their tennis courts and fencing in rear yards, out of view from public rights of ways.

6.2.1. Fact Box: Recommended residential wall & fence materials.

Finished/Rendered CMUs

Wrought Iron Fence

Finished / Rendered Decorative CMUs

Tubular Metal (Steel or Aluminum)

Finished Coarse Stone

Wood Pickett Fence

6.2.2. Fact Box: Prohibited residential wall & fence materials.

Unfinished CMUs

Plywood

Sheet Metal Fence

Barbed Wire

PVC Tube / Pipe

Razor Wire

Plastic Snow Fence

Chain Link

6.3.1. Fact Box: Recommended commercial wall & fence materials.

Finished / Rendered CMUs

Wrought Iron Fence

Finished / Rendered Decorative CMUs

Tubular Metal (Steel or Aluminum)

Finished Coarse Stone

Pre-cast Concrete Panels

6.3.2. Fact Box: Prohibited commercial wall & fence materials.

PVC Tube / Pipe

Plywood

Plastic Snow Fence

Highly Reflective Sheet Metal Panels

Chain Link (Prohibited in Front Yard)

6.3. Commercial Zones

In most commercial zones, walls and fences define property boundaries, reinforce the identity of a project, and at times provide security for material storage areas. A variety of materials can achieve these goals, although it is important to remember that the use of security walls and fences (i.e. those that are excessively high, or include security features) are discouraged except when absolutely necessary.

Recommended Commercial wall and fence materials (see fact box 6.3.1):

- Finished / Rendered Concrete Masonry Units (CMUs)
- Finished / Rendered Decorative Concrete Masonry Units
- Finished Coarse Stone
- Wrought Iron Fencing
- Tubular Metal (Steel / Aluminum)
- Pre-cast Concrete Panels

Prohibited Commercial wall and fence materials (see fact box 6.3.2):

- PVC Tube / Pipe
- Plastic Snow Fencing
- Plywood
- Highly Reflective Sheet Metal Panels (i.e. Stainless Steel)
- Chain Link (Prohibited in front yard only)

The construction of tennis court fencing with chain link is permitted (subject to height restrictions in *Section 4*) in commercial zones. Applicants are encouraged to site their tennis courts and fencing in rear yards, out of view from public rights of ways. Over-height fencing for tennis courts (as per *Section 4*) will not be permitted within view of the West Bay Road corridor.

6.3. Beach Resort Residential / Hotel Tourism Zones

In most commercial and tourism zones, walls and fences define property boundaries, reinforce the identity of a project, and at times provide security for material storage areas. A variety of materials can achieve these goals, although it is important to remember that the use of security walls and fences (i.e. those that are excessively high, or include security features) are discouraged except when absolutely necessary.

Recommended Beach Resort Residential / Hotel Tourism wall and fence materials (see fact box 6.3.1):

- Finished / Rendered Concrete Masonry Units (CMUs)
- Finished / Rendered Decorative Concrete Masonry Units
- Finished Coarse Stone
- Wrought Iron Fencing
- Tubular Metal (Steel / Aluminum)
- Pre-cast Concrete Panels

Prohibited Beach Resort Residential / Hotel Tourism wall and fence materials (see fact box 6.3.2):

- PVC Tube / Pipe
- Plastic Snow Fencing
- Plywood
- Highly Reflective Sheet Metal Panels (i.e. Stainless Steel)
- Chain Link (Prohibited in front yard only)

The construction of tennis court fencing with chain link is permitted (subject to height restrictions in *Section 4*) in tourism related zones. Applicants are encouraged to site their tennis courts and fencing in rear yards, out of view from public rights of ways. Over-height fencing for tennis courts (as per *Section 4*) will not be permitted within view of the West Bay Road corridor.

6.3.1. Fact Box: Recommended tourism zones wall & fence materials.

Finished / Rendered CMUs

Wrought Iron Fence

Finished / Rendered Decorative CMUs

Tubular Metal (Steel or Aluminum)

Finished Coarse Stone

Pre-cast Concrete Panels

6.3.2. Fact Box: Prohibited tourism zones wall & fence materials.

PVC Tube / Pipe

Plywood

Plastic Snow Fence

Highly Reflective Sheet Metal Panels

Chain Link (Prohibited in Front Yard)

6.4.1. Fact Box: Recommended industrial wall & fence materials.

Finished/Rendered CMUs

Wrought Iron Fence

Finished / Rendered Decorative CMUs

Tubular Metal (Steel Aluminum)

Finished Coarse Aggregate

6.4.2. Fact Box: Prohibited industrial wall & fence materials.

Unfinished Concrete Masonry Units

Plywood

PVC Tube / Pipe

Stand-alone Barbed Wire Fence

Plastic Snow Fence

Stand-alone Razor Wire Fence

Highly Reflective Sheet Metal Panels

Chain Link with Tarps / Sheet Screening

6.4. Industrial Applications

In Industrial applications, walls and fences typically serve to define property boundaries, and at times provide security for material storage areas. While a variety of materials can achieve these goals, not all are appropriate in an industrial setting.

Recommended Industrial wall and fence materials (see fact box 6.4.1):

- Finished / Rendered Concrete Masonry Units (CMUs)
- Finished / Rendered Decorative Concrete Masonry Units
- Finished Coarse Stone
- Wrought Iron Fencing
- Tubular Metal (Steel / Aluminum)
- Chain Link

Prohibited Industrial wall and fence materials (see fact box 6.4.2):

- Unfinished Concrete Masonry Units (CMUs)
- PVC Tubes
- Plastic Snow Fencing
- Plywood
- Chain Link with tarps or sheet screening
- Stand-alone Razor Wire Fencing
- Stand-alone Barbed Wire Fencing
- Sheet Metal Panels

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Section 7 - Drainage

7.1. Principles

Walls and fences have the potential to block the natural flow of water, resulting in ground-water pooling up and wearing on the wall or fence structure. Blocking of runoff by a wall or fence can also result in flooding of adjacent properties, which is an unacceptable outcome of fence and wall construction. Water will always find a way around or under a wall or fence structure, and this flow should be accommodated, not impeded.

Additionally, walls which have flat or concave surfaces can collect water, resulting in pitting and decay of finishing material, and eventually contributing to structural decay.

7.2. Design Requirements

In order to minimize the damming effects of walls and fences on drainage patterns, walls must be designed to allow for water to pass through.

7.2.1. Any wall or fence which has a solid base extending 8 inches or higher above finished grade must provide drainage scuppers or other acceptable devices to allow water to flow through.

7.2.2. Drainage scuppers must be provided at a horizontal spacing of at least one per 6 feet, and be of a diameter of no less than 3 inches. Regular maintenance should include ensuring these scuppers are clear of debris.

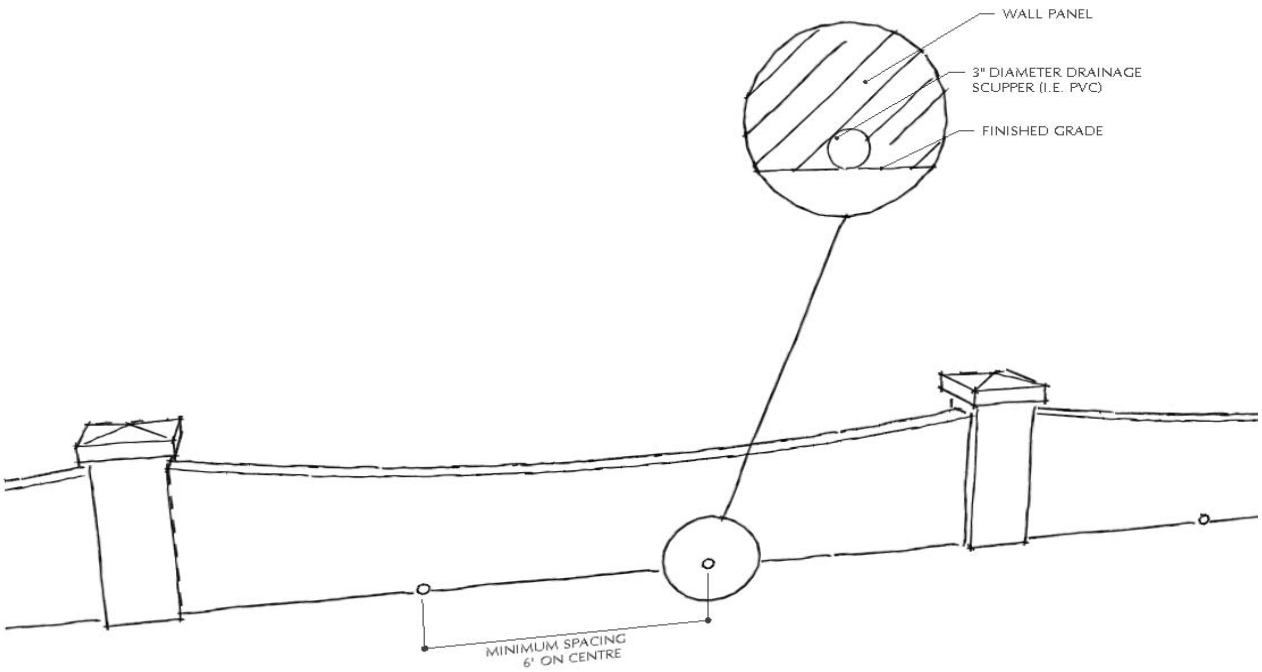

Figure 7.2.2. - Drainage scuppers must be provided at a horizontal spacing of at least one per 6 feet

7.2.3. Walls, fences and their associated columns & piers should avoid having flat or concave surfaces which can collect water. Applicants should ensure their design incorporates a slope or pitch which ensures wall and fence surfaces drain adequately.

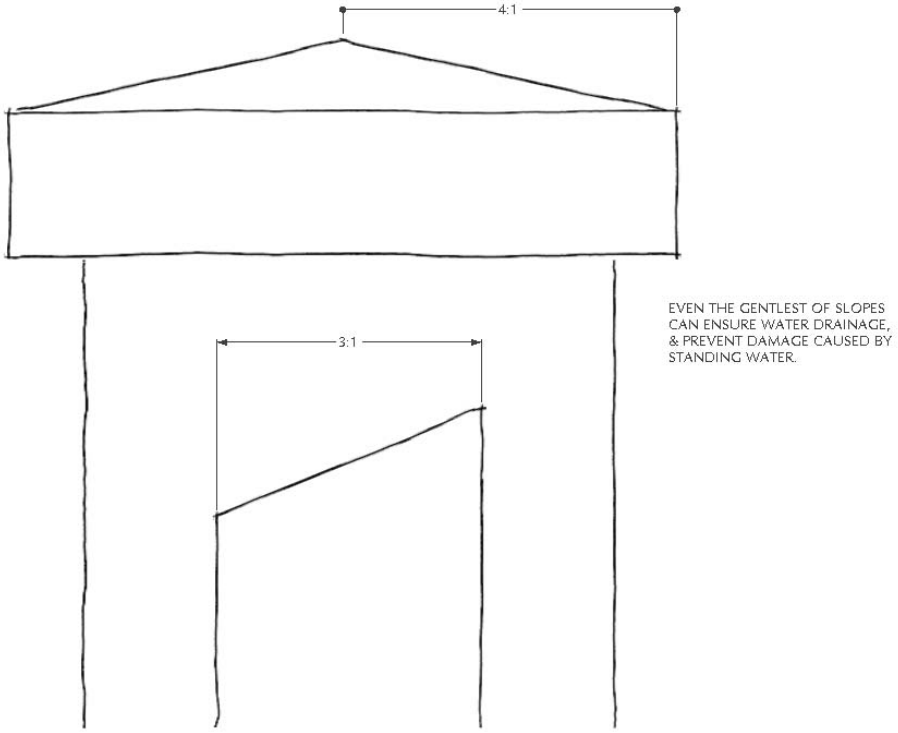

Figure 7.2.3. - Pier cap slopes to enable drainage

Examples of pier caps design to shed water

Section 8 - Entrances & Gates

8.1. Principles

Walls and fences are some of the most effective tools to define movement and circulation corridors. Entrances and gates provide opportunities to accentuate these movement corridors and serve as a wayfinding tool for pedestrians and vehicle drivers. At the same time walls or fences can restrict movement and present a danger to emergency service providers.

8.2. Vehicle Openings & Gates

Vehicular openings or gates serve as entrance and egress points for automobiles and pedestrians. There are a number of design considerations which go into the development of vehicle openings and gates.

General Provisions

8.2.1. No gate may be placed across a public right of way except by a qualified staff member or representative of the Cayman Islands Government a Statutory Authority, or designate.

8.2.2 The development of gated communities on Grand Cayman is strongly discouraged. Therefore gates across private rights of way which access multiple lots will be considered only on an exceptional basis.

8.2.3. If a gate is proposed across a private right of way, the applicant must provide written letters of consent from the owners of all properties accessed by the subject right of way. These letters must be signed within 30 days of the wall or fence application being submitted.

8.2.4. If a gate is proposed across a private right of way which accesses multiple lots, a turnaround facility for vehicles must be provided on the public side of the gate.

8.2.5. All operating vehicle gates require emergency service providers to have access. This can be done by providing a key directly to the Royal Cayman Islands Police Service (RCIPS), the Royal Cayman Islands Fire Service (RCIFS), and the ambulance service. An alternative is to provide a lock-box located on the exterior of the gate, or directly adjacent to the vehicle gate, which contains a key or other entrance device for the subject vehicle gates. A key for accessing the lock-box must be provided to the RCIPS, the RCIFS, and the ambulance service. Emergency service providers may be given an opportunity to comment on any wall or fence application.

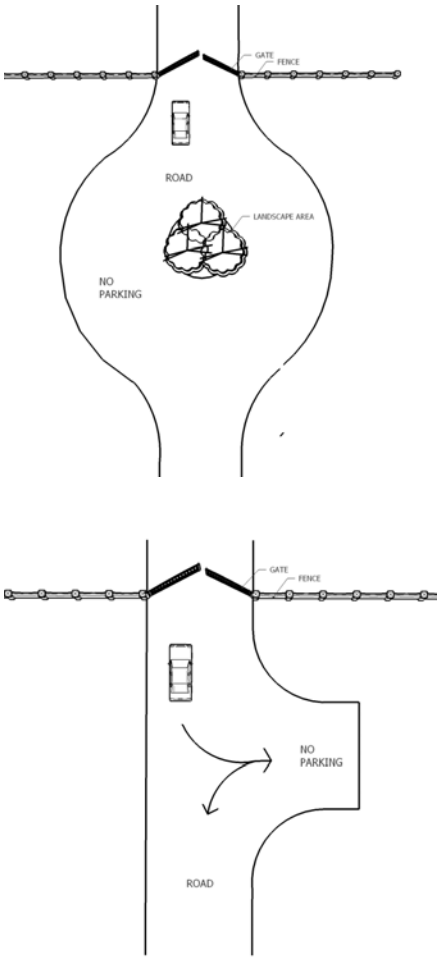

Figure 8.2.1. - Turnaround facilities at gated community entrances

Figure 8.2.5. - Lock box containing entrance key

Design Considerations

8.2.6. A maximum of one vehicle opening and / or gate is permitted from a single family residential property on to roads identified as Primary roads by the National Roads Authority, and a maximum of two vehicle openings and / or gates are permitted from any other type of development on to a Primary road *(see Appendix B -Road Classification Map & Index)*. The purpose of this regulation is to minimize the number of potential turning movements along heavily traveled arterial roads. This regulation may be varied for lots exceeding 5 acres in size, which may require more than two access points.

8.2.7. Vehicle openings and gates should have a minimum width of 8 feet and a maximum width of 36 feet.

8.2.8. While vehicle gates are generally permitted as part of a fence or wall application for a single lot, applicants are encouraged to ensure vehicle gates default to an 'open' position. Closed gates create an additional barrier for emergency services and could easily become inoperable during flooding or any other natural disaster creating an unnecessary hazard.

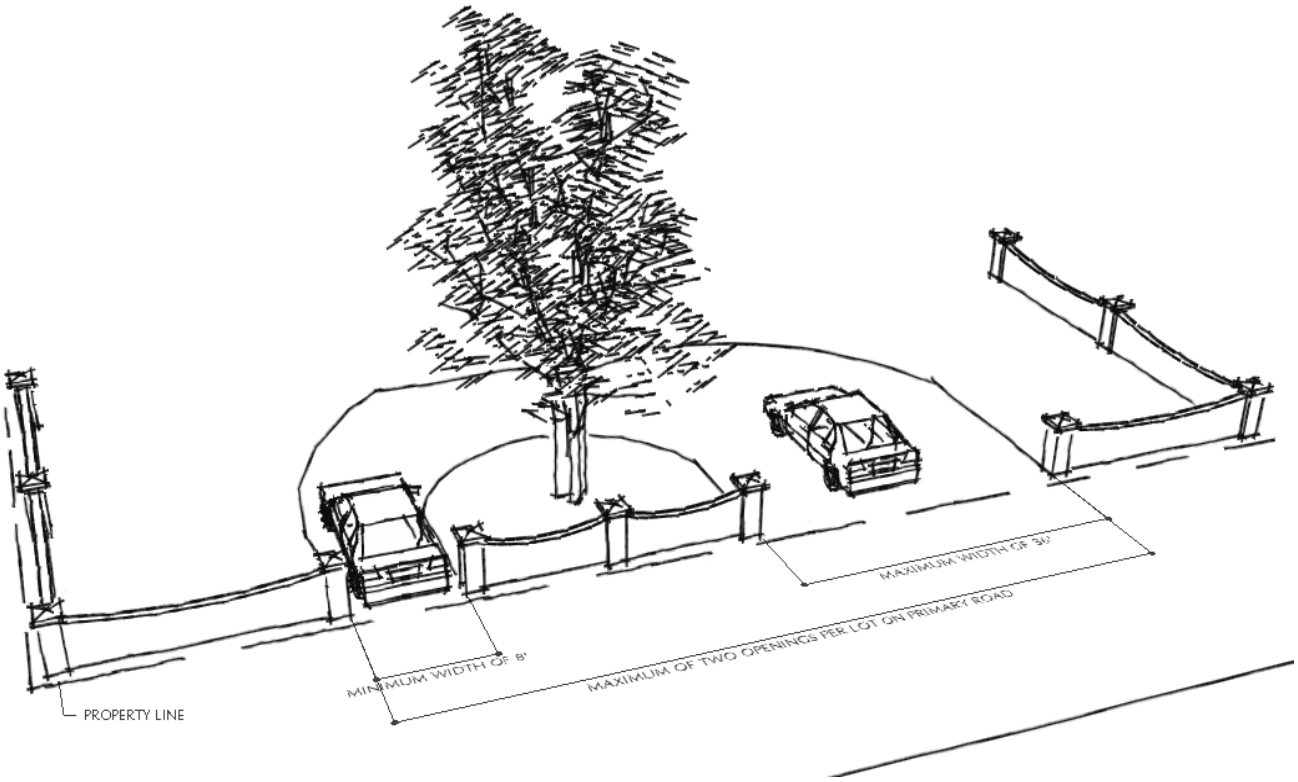

Figure 8.2.8. - Vehicle openings and gates should have a minimum width of 8 feet and a maximum width of 36 feet.

8.2.9. Vehicle openings and gates should generally be aligned perpendicular to the road they are fronting on, and not at an oblique angle. Gates should open into the property they are accessing, and not outwards towards the subject road.

8.2.10. If a vehicle opening or driveway has gates, the gates must be setback from the edge of the fronting right of way by no less than 20 feet.

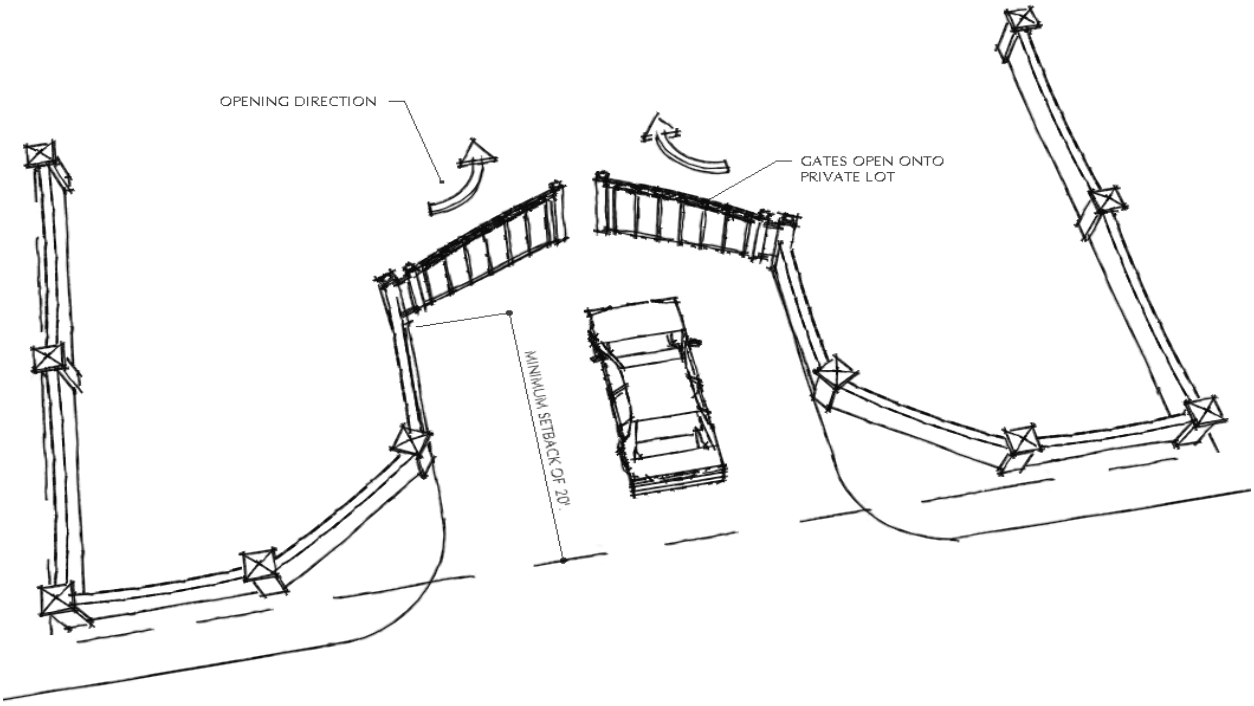

Figure 8.2.10. - Gates should open into the property they are accessing, and not outwards towards the subject road.

8.2.11. Any access system, intercom, or other entrance interface must be sited in an accessible location, and preferably lit for night-time use. Ensure the system is located at a height which is accessible from a range of vehicle types.

8.2.12. Structures related to vehicle entrances such as gatehouses or guardhouses require a separate planning application, and are not considered part of a wall or fence application.

Figure 8.2.12 - Structures related to vehicle entrances such as gatehouses or guardhouses require a separate planning application

8.3. Pedestrian Openings & Gates

Pedestrian openings and / or gates provide non-vehicular entrance and egress points to a property. While typically of a smaller scale than vehicle gates, there are still several design parameters to consider.

Design Considerations

8.3.1. On residential properties, pedestrian openings or gates are encouraged to be located in line with the dwelling's front door and linked by a walkway.

8.3.2. Pedestrian openings or gates are limited in width to a maximum of 5 feet.

8.3.3. There is no minimum setback required for a pedestrian opening or gate.

8.3.4. Pedestrian gates should open into the property they are accessing, and not outwards towards the subject road.

8.3.5. Any access system, intercom, or other entrance interface must be sited in an accessible location, and preferably lit for night-time use. Ensure the system is located at a height which is accessible for visitors using wheelchairs.

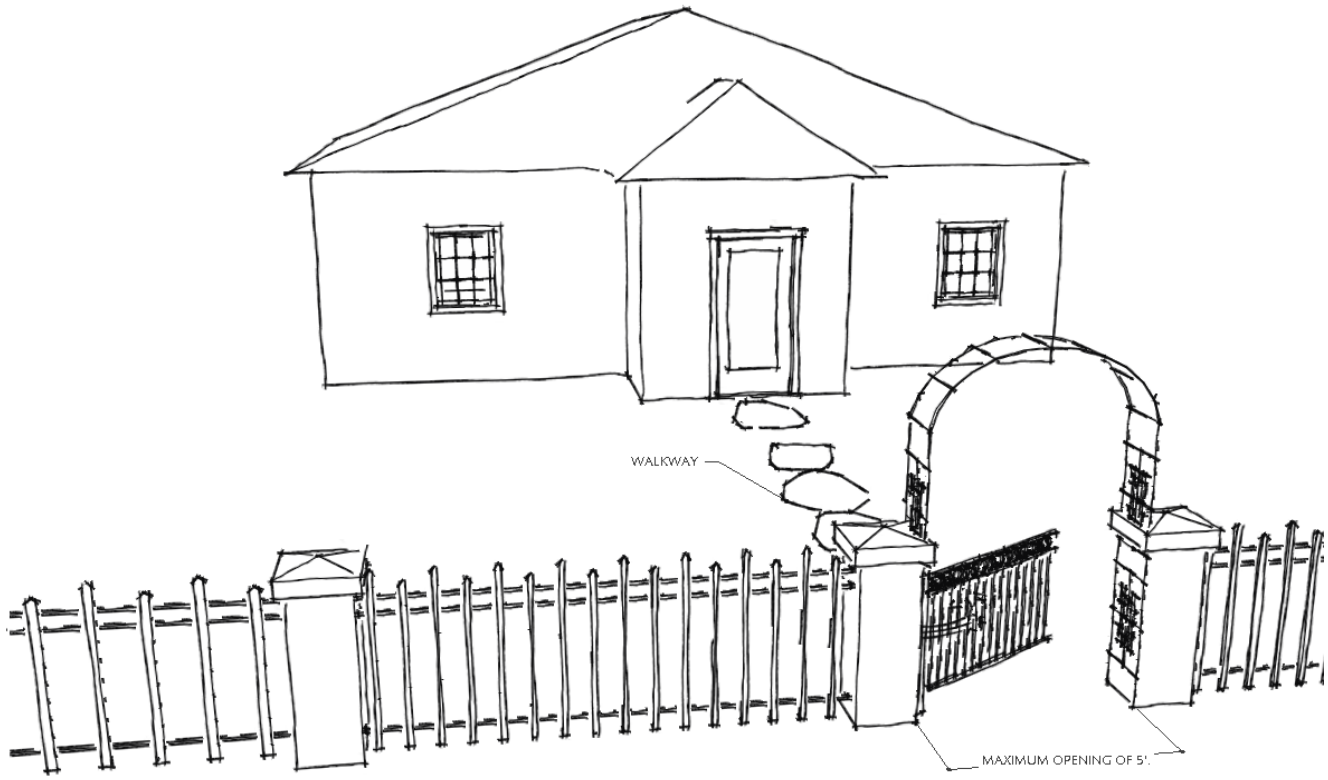

Figure 8.3.2. - pedestrian openings or gates are encouraged to be located in line with the dwelling's front door and linked by a walkway.

8.4. Garbage Enclosures

Garbage enclosures are areas within the front yard which are designated to hold trash cans and receptacles. In Single Family and Duplex situations, they are generally sited near the front lot line, and therefore require coordination with any wall or fence design. These Guidelines encourage applicants to integrate their garbage enclosure within a wall or fence, and to use the wall or fence as a screening tool to hide solid waste receptacles from the public view.

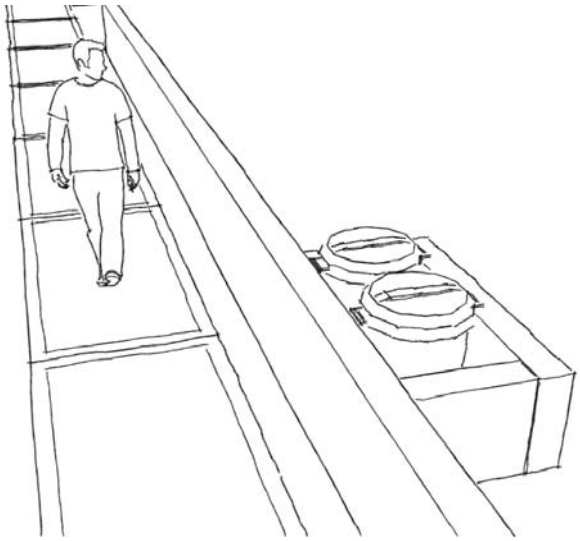

Figure 8.4. - Applicants are encouraged to integrate their garbage enclosure within a wall or fence

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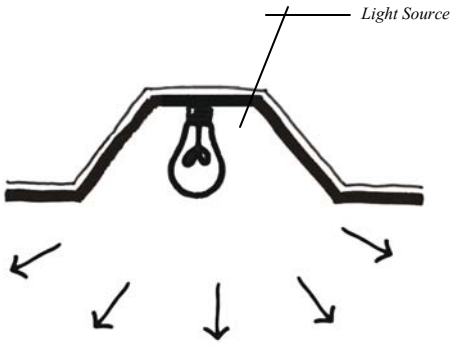
Section 9 - Lighting



9.1. Principles

A well designed fence or wall lighting scheme can help accentuate a fence or wall at night, alert vehicle drivers to a potential hazard, direct visitors towards a driveway, and provide an element of public safety. A poorly designed fence or wall lighting scheme can distract or even blind drivers, create a nuisance for residents and neighbours, and create a safety hazard.

9.2. Design Considerations

There are a number of general design considerations to take into account when developing a lighting scheme for a fence or wall.

9.2.1. Lighting sources (bulbs, fluorescent tubes, etc…) should be hidden from direct view. When light sources are exposed they create unnecessary glare which can distract motorists, and produces a generally abrasive visual effect. Examples of indirect light sources include hidden flood lights, backlighting and recessed bulb cavities.

Figure 9.2.1.(a) - An example of a concealed light source which still illuminates the subject effectively.

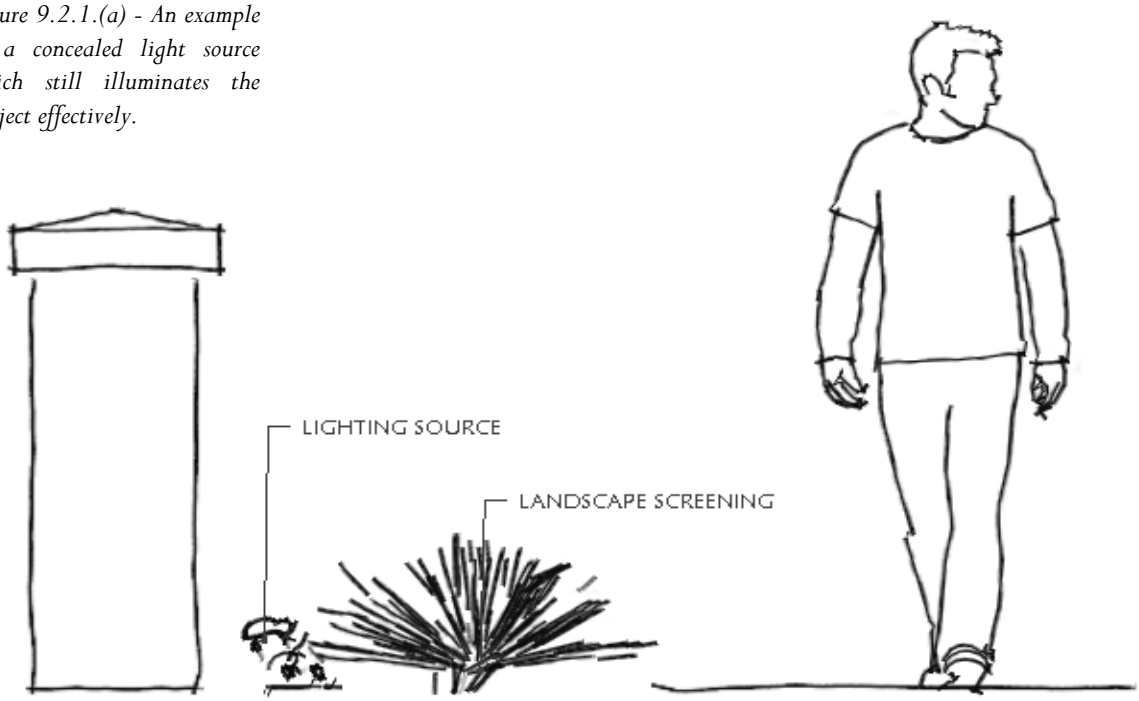


Figure 9.2.1.(b) - Light sources should be concealed whenever possible

9.2.2. Lighting design should draw particular attention to:

1. Vehicle and pedestrian entrances;
2. Project signage (if applicable); and,
3. Home address numbers.

This can be achieved through directing light onto openings or gates, and by concentrating the placement of lights around these areas. Unnecessary lighting of wall or fence panels is discouraged.

9.2.3. Light intrusion on to adjacent properties from fence and wall lighting is not permitted. Applicants are encouraged to use shields or shrouds around lighting sources to focus light on the subject wall or fence.

9.2.4. All lighting schemes must be illustrated on a plan, and must be approved by the Building Control Unit.

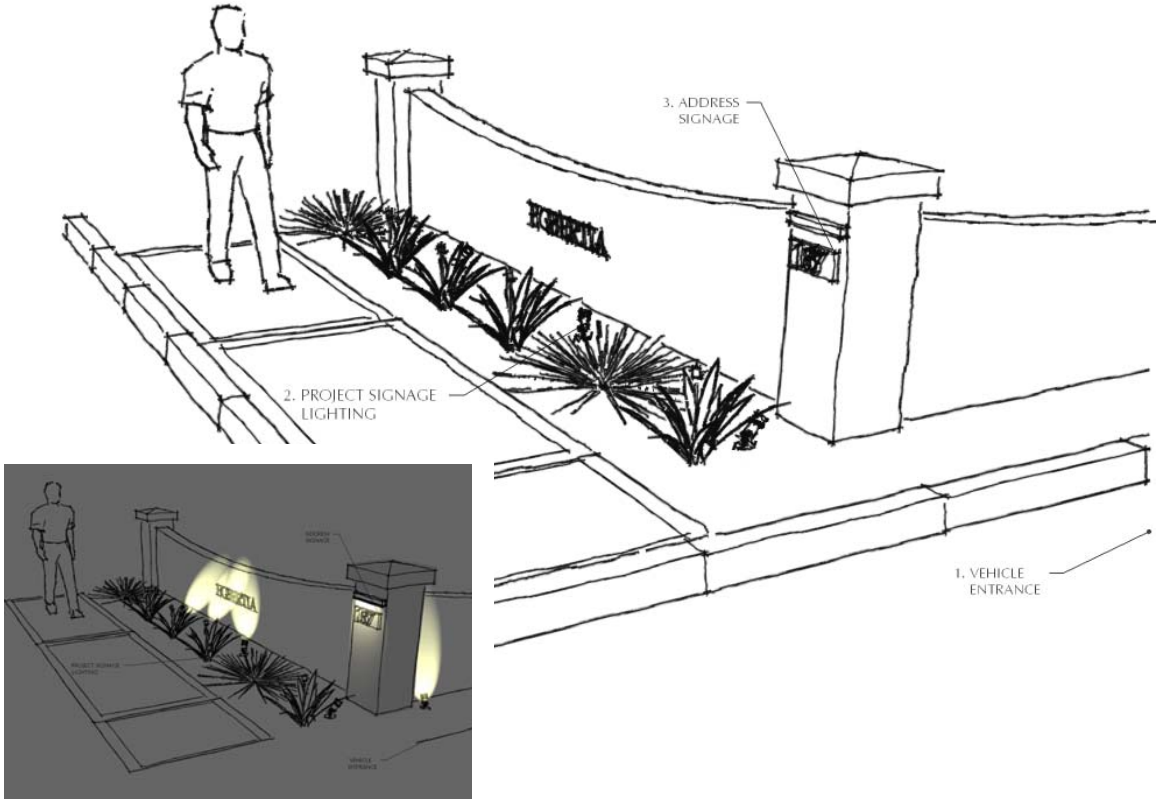


Figure 9.2.3. - Lighting design should draw particular attention to vehicle and pedestrian entrances, project signage, and home address numbers.

9.2.5. Infrastructure related to lighting of a wall or fence should be concealed whenever possible. The use of in-ground or in-wall vaults is encouraged. Floodlights should be in-ground whenever possible, or concealed with landscape.

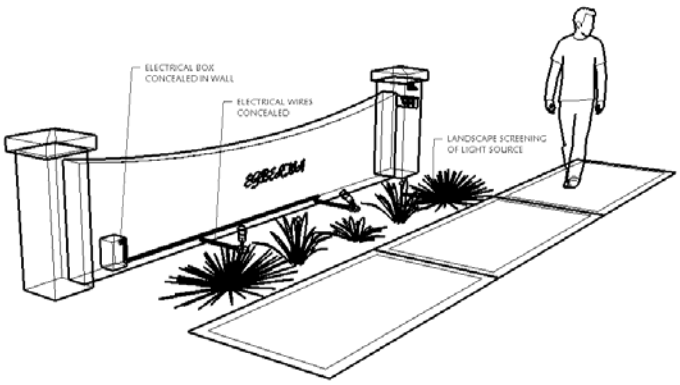


Figure 9.2.5. - Lighting Infrastructure should be concealed when possible

Section 10 - Security Features

10.1. Principles

Security features for walls and fences can range from an entry-phone or intercom on a gate to a set of barbed wire strands on top of a high wall. The addition of security features to walls and fences is discouraged, and will only be allowed when deemed necessary for a bona fide security need, as determined by the CPA.

Situations which may warrant a security feature include:

- Law enforcement and correctional facilities;
- Airport perimeter fencing;
- Armored car depots; or,
- Cash sorting facilities.

Security features such as those listed in Section 10.2 are most likely to be approved in industrial and some commercial applications, and rarely for tourism related uses or residential applications.

The use of security features will be considered by the Central Planning Authority as part of any fence or wall application.

10.2. Security Features Examples

There are a number of security features for walls and fences available. Below is a listing of some in use on Grand Cayman, and information on their applicability to different situations.

- **Barbed Wire**

  Stand alone barbed wire fencing will generally be permitted only in agricultural applications. Barbed wire as a security feature on top of a masonry wall or chain link fence is permitted subject to CPA approval.

Barbed Wire

- **Broken Glass Shards**

  The use of broken glass on top of walls and fences as a climbing deterrent is not permitted in any situation.

Broken Glass Shards

- **Razor Wire / Concertina Wire**

  The use of razor wire on top of walls and fences will be permitted for correctional facilities and other public security institutions only.

Razor Wire

- **Bent-Top Tubular Metal / Wrought Iron**

  Combining a bent top with spikes or other finials offer additional security by further inhibiting climbing.

Bent-top Tubular Steel / Wrought Iron

- **Spikes on Tubular Metal / Wrought Iron**

  Tubular metal fences with spiked tops or other finials are encouraged as an alternative to chain link and razor wire. These fence types often have a more visually appealing appearance than chain link with barbed wire on top.

Spiked Tubular Steel / Wrought Iron

Metal Finials

Section 11- Wall & Fence Construction

11.1. Principles

Methods used in wall and fence construction must positively contribute to its appearance, safety and longevity. A poorly constructed wall or fence can pose a hazard to the property owner as well as the general public, and decaying walls or fences do not contribute to a positive image of Grand Cayman. These guidelines provide a set of fundamental design principles, intended to ensure the long-term health of Grand Cayman's walls and fences.

11.2. Footings

Crucial to the integrity of a wall or fence is the provision of concrete footings. While these may be relatively small in scale for a short picket fence, larger fences and masonry walls should never be constructed without proper structural footings in place.

11.2.1. When constructing a masonry wall, reinforced concrete footings (i.e. using No. 4 type steel rebar) must be provided. A topical pour of concrete over packed earth is insufficient, and will eventually result in wall failure.

11.2.2. Steel reinforcement in the footings should be tied to wall panels, piers / columns, and caps.

11.2.3. Footers for masonry walls should generally extend a minimum of 6 inches from the extent of each wall, and be a minimum of 9 inches thick. For further information, the American Concrete Institute has online resources related to the structural loads of freestanding walls on concrete footings.

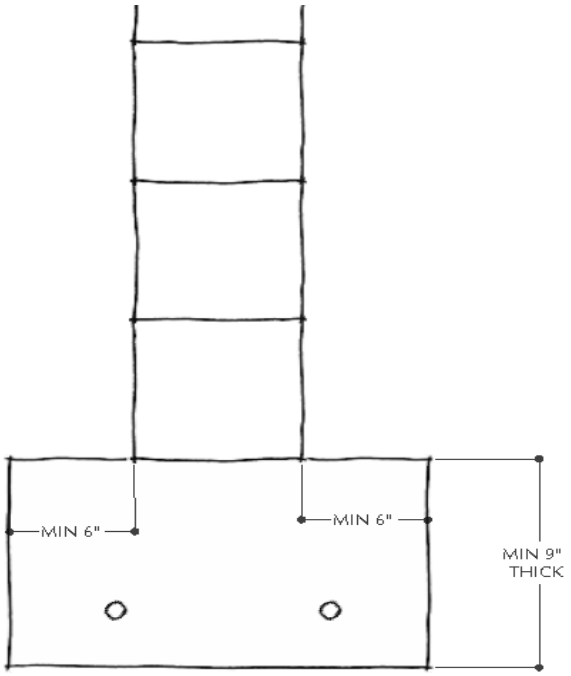


Figure 11.2.3. - Proper footings for masonry walls must be provided

11.3. Structural Reinforcement

When constructing with masonry block, internal structural reinforcement is required. This is usually in the form of rebar (No. 4 or larger), which as noted in Section 10.2 should be tied into to the footings. Structural rebar should also be used to tie the coping or capstone to the wall panel, as well as the pier caps to the piers.

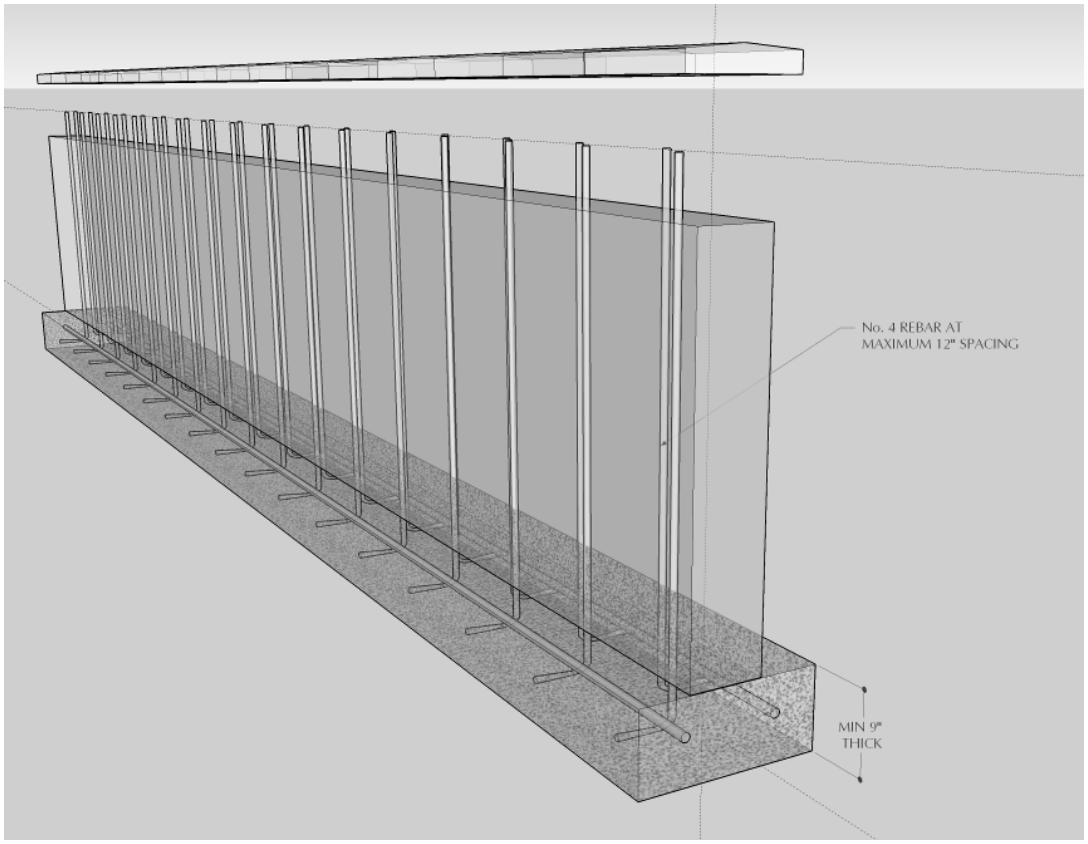


Figure 11.3 - Internal structural reinforcement is required to extend the life of the wall

Section 12 - Construction Fencing

12.1 Principles

During many construction projects, builders may opt for the construction of a temporary fence in order to shield neighbouring properties from noise and dust, protect construction materials left on-site, and provide a measure of safety for workers. These guidelines recognize the need for such fencing and set some basic standards for their design, construction, and removal at the end of construction.

12.2. General Provisions

12.2.1. Temporary construction fencing is permitted without a Planning application for all project types, except Single Family dwellings and Duplexes. These latter two project types do not typically require temporary construction fencing. However if such a fence is requested for a single family dwelling or duplex, an application can be made to the Central Planning Authority.

12.2.2. Materials used in temporary construction fencing should be designed to shroud the site from adjacent properties and rights of ways. The materials restrictions noted in Section 8 of these Guidelines do not apply to temporary construction fencing.

Figure 12.2.2. - Materials used in temporary construction fencing can include plywood

12.2.3. Temporary construction fencing can be installed once the Building Permit is issued, and not before. If fencing is to be installed prior to the Building Permit being issued, an application to the Central Planning Authority is required.

12.2.4. Temporary construction fencing must be removed prior to receiving a Certificate of Occupancy, or after a period of one year, whichever is the lesser. If a year passes without a Certificate of Occupancy being issued, an application for the wall or fence must be made to the Central Planning Authority.

12.2.5. Temporary construction fencing must not exceed a height of 12 feet.

12.2.6. Primary construction fencing must not be used for retaining loose material such as fill, and should not be used to support temporary electrical systems, scaffolding or other structures on a construction site.

Figure 12.2.6. - Construction fencing should not be used for retaining fill.

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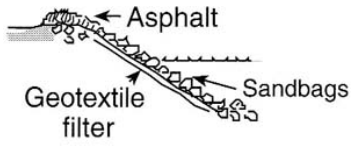
Section 13 - Seawalls

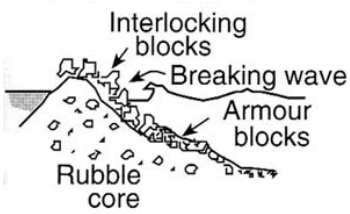
13.1 Principles

Seawalls are structural walls which are put in place along or near the shore to provide a defense against erosion and damage caused by waves and high seas. When designing a seawall, applicants should consider a seawall structure as part of a larger coastal defense system, and not a stand-alone feature. Materials and finishing of seawalls should consider the aesthetics of these structures, from both the land and the sea.

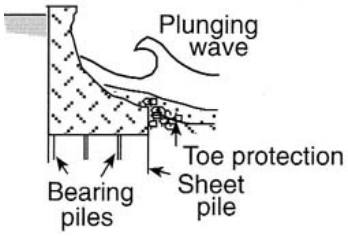
Figure 13.2 - Various types of seawalls



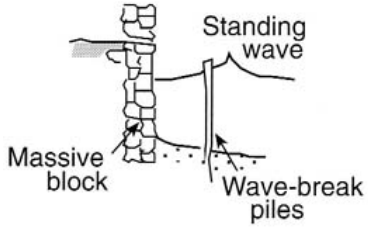
Rubble-mound



Revetment



Curved concrete wall



Vertical wall

13.2. Structural Integrity

The primary purpose of a seawall is to mitigate the effects of strong wave action along a shoreline, and to protect the land against erosion. There are several design options for seawalls, usually focusing on either dissipating or deflecting wave energy. Because seawalls serve a critical function for protecting property and sometimes life, it is essential that professional engineering oversight be provided on all seawall designs. A professional engineering review can not only highlight issues related to the construction of the wall itself, but also draw attention to the off-site effects of a seawall, such as the deflection of wave energy onto nearby properties.

13.2.1. All seawalls must be reviewed and approved by a Design professional, as described in Section 104.2.3 of the *Cayman Islands Building Code*.

13.2.2. Seawalls may be subject to additional requirements such as the Department of Environment's Coastal Works License. Applicants are encouraged to consult with the Planning Department regarding any additional requirements prior to submitting an application.

13.3. Finishing / Rendering of Surfaces

The finishing used on a wall or fence should aim to create an aesthetically pleasing final product which minimizes blank continuous facades and surfaces. This can be achieved through a number of measures, including horizontal articulation of a seawall, the use of textured concrete, stamped concrete patterns, or the provision of horizontal features such as piers and columns along the length of the seawall. Provision of these measures should not detract from the structural integrity of the seawall.

Figure 13.3 - The use of patterned concrete can help break up blank surfaces.

13.4. Drainage

As seawalls or often continuous structures, they serve as an impediment to the natural flow of groundwater. Accumulation of groundwater behind these structures can undermine their backing, and eventually contribute to their decay and failure.

13.4.1. Where appropriate, seawall design should include the provision of weep-holes to allow for groundwater flow, and avoid the buildup of water behind the seawall.

Figure 13.4 - Providing weep-holes for groundwater drainage will help the longevity of a seawall.

13.5. Massing

Seawalls have the potential to become imposing structures, especially due to excessive height. These Guidelines encourage applicants and designers to explore avenues through which they can break up the massing of large seawall structures.

13.5.1 Seawalls which exceed 4 feet of vertical height above the High Water Mark at their highest point should be terraced at a ratio of no less than 1:1 when possible to avoid the creation of a single high façade.

13.5.2 The stepback distance on seawalls under Section 13.5.1 must not be less than 4' in total horizontal terrace distance. There is no maximum stepback distance.

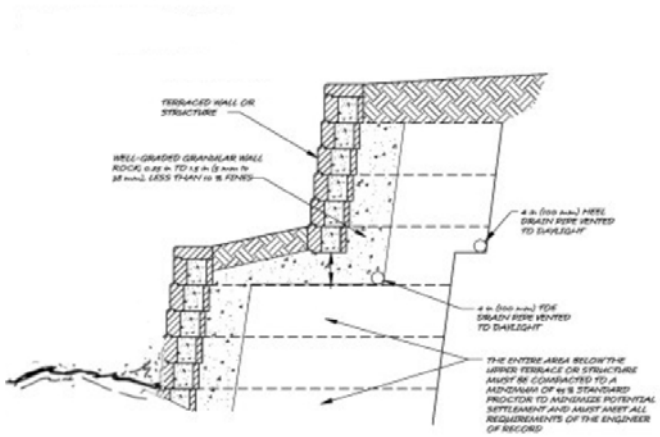


Figure 13.5 - Larger seawalls should be segmented into terraces to reduce their mass and visual impact.

Figure 13.6 - Protecting Sea Turtle nesting areas is a key consideration in permitting a seawall.

13.6 Sea-Turtle Nesting Provisions

Seawalls located near sandy beaches may affect sea turtle nesting paths. Applicants are encouraged to consult with the Department of Environment prior to submitting a seawall application in order to determine whether they will be constructing in an area which Sea Turtles may use for nesting.

Figure 13.7(a) and (b) - Seawalls need not act as barriers to access, as seen in these examples (Vancouver, Canada and Havana, Cuba)

13.7. Protection of Public Access

Since a seawall's primary purpose is to act as a coastal barrier, it can also end up acting as a barrier for people attempting to access the waterfront. This should be avoided, especially along defined public access routes. Some methods which can achieve public access over a seawall include the incorporation of steps or stairs into the design of the seawall, such as is done in many other jurisdictions.

A seawall's continuous character may also represent an opportunity for creating a new circulation system, such as a pedestrian or cycling trail. Regional examples of this include the Malecon in Havana, which is one of the longest, continuous pedestrian seawalls in the Caribbean.

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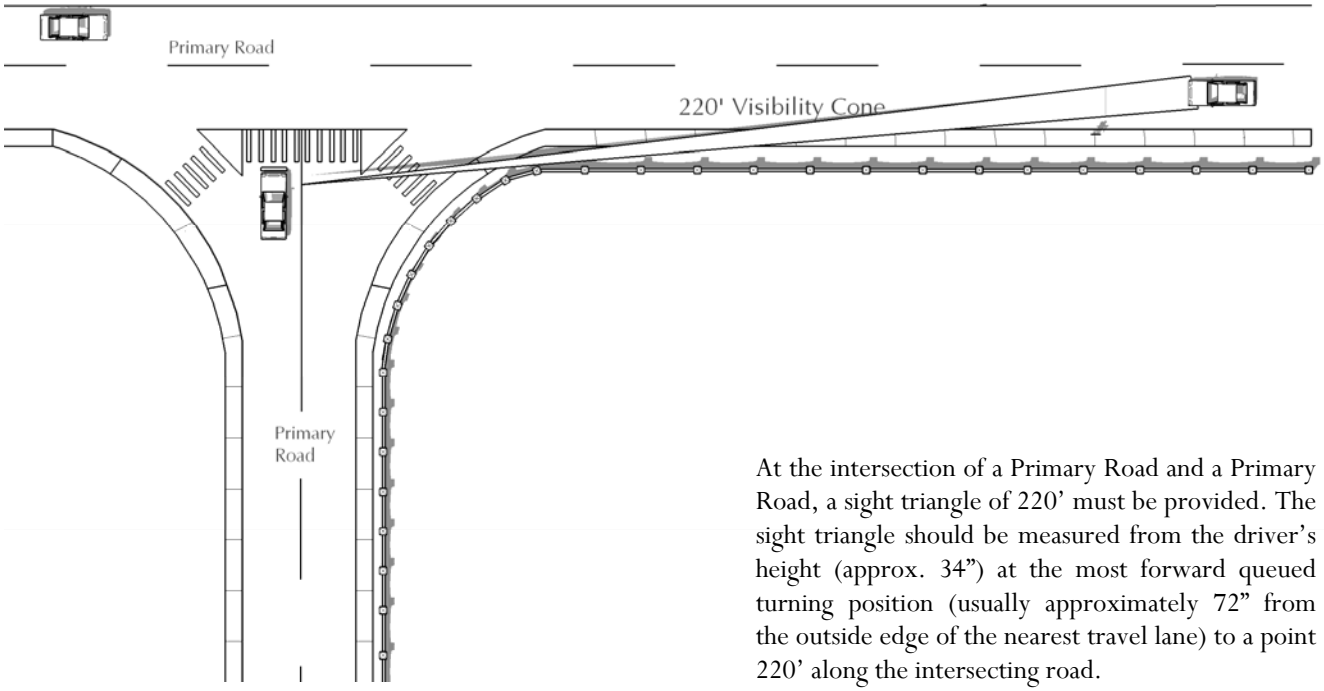
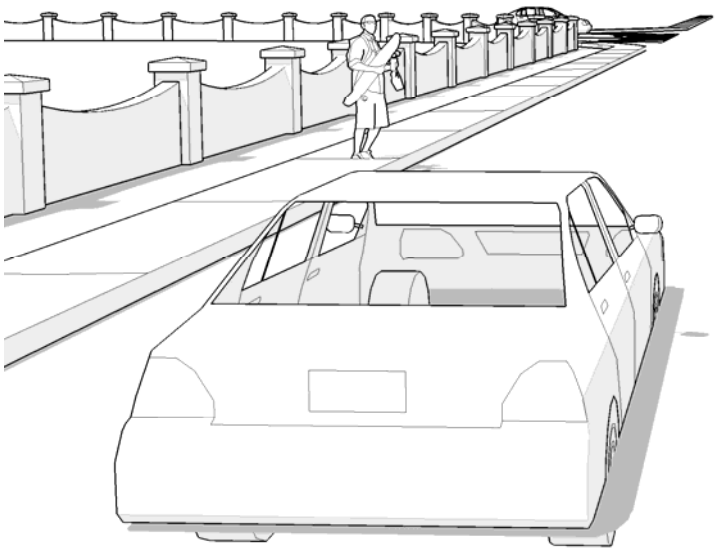
Appendix A. Sight Triangle Requirements

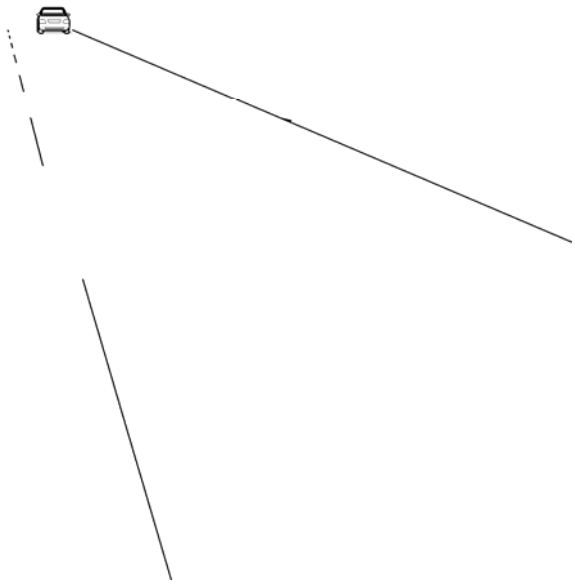
Primary Road / Primary Road Intersection



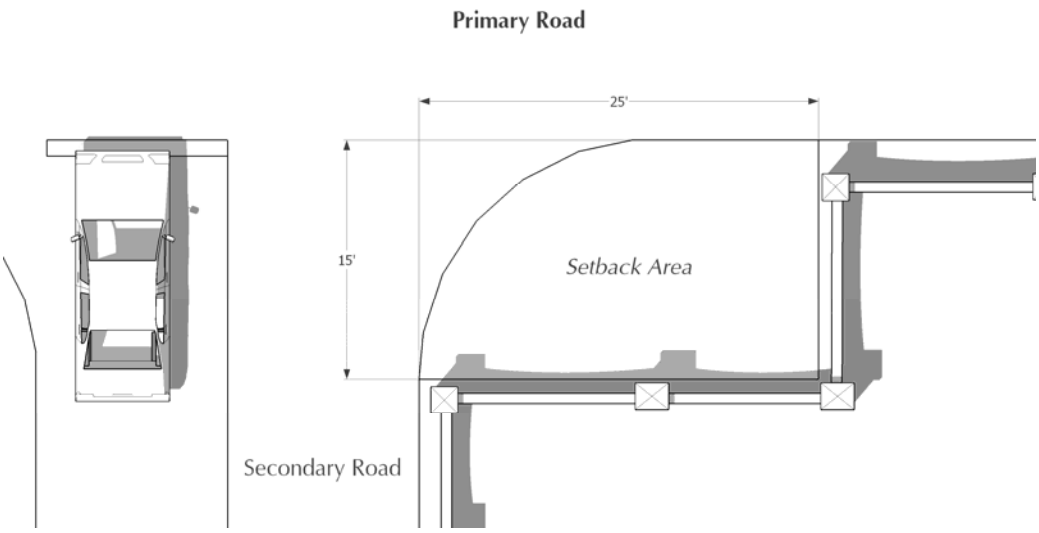
At the intersection of a Primary Road and a Primary Road, a sight triangle of 220' must be provided. The sight triangle should be measured from the driver's height (approx. 34") at the most forward queued turning position (usually approximately 72" from the outside edge of the nearest travel lane) to a point 220' along the intersecting road.

Where 220' of visibility cannot be achieved due to the road curvature, the setbacks of walls and fences should produce a visibility cone of as close to 220' as possible.

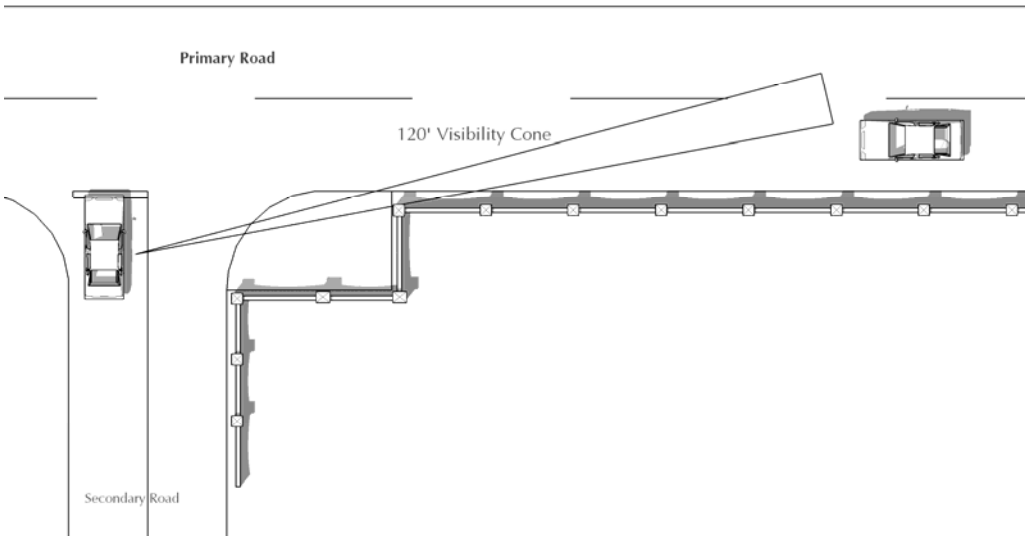


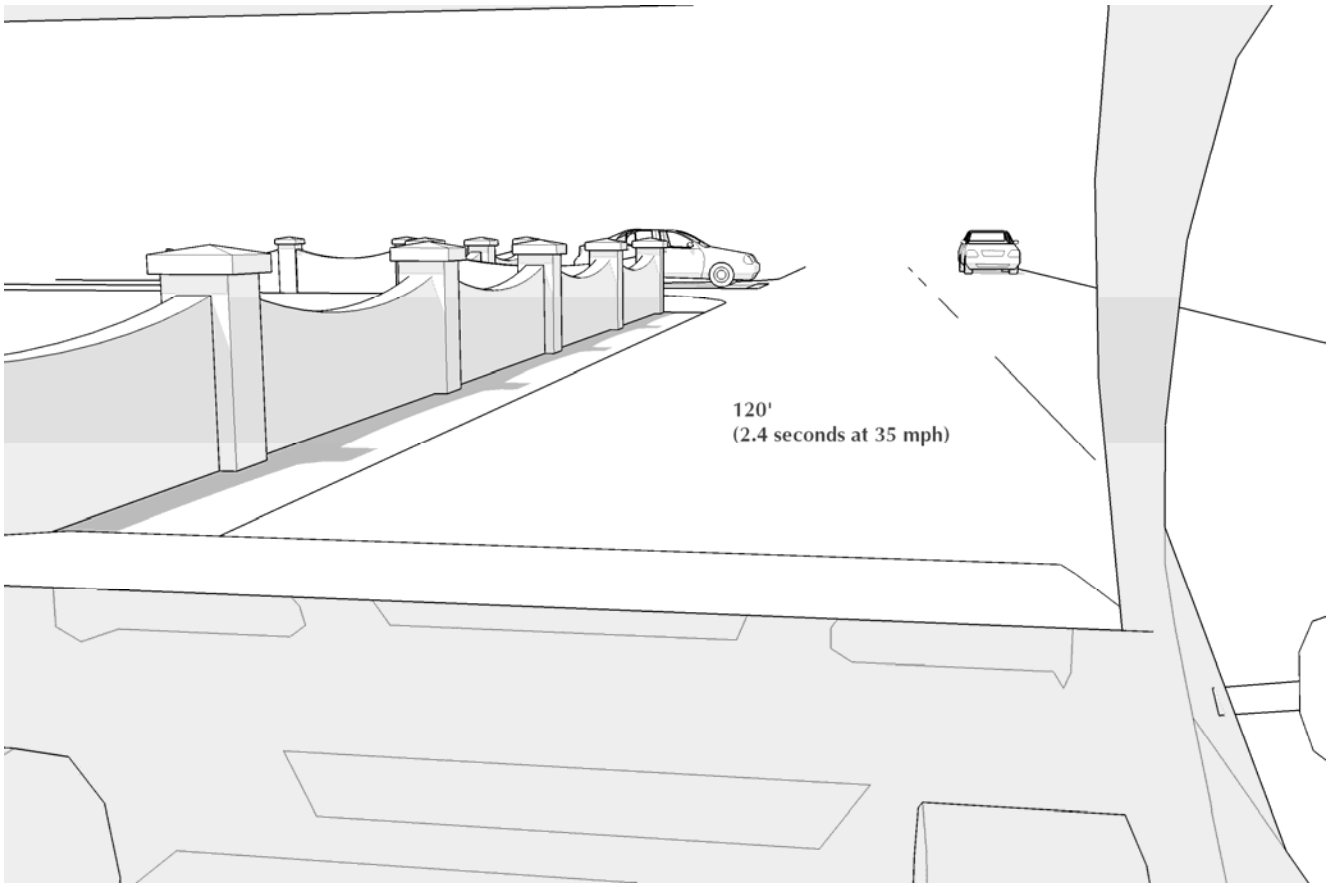


Primary Road / Secondary Road Intersection



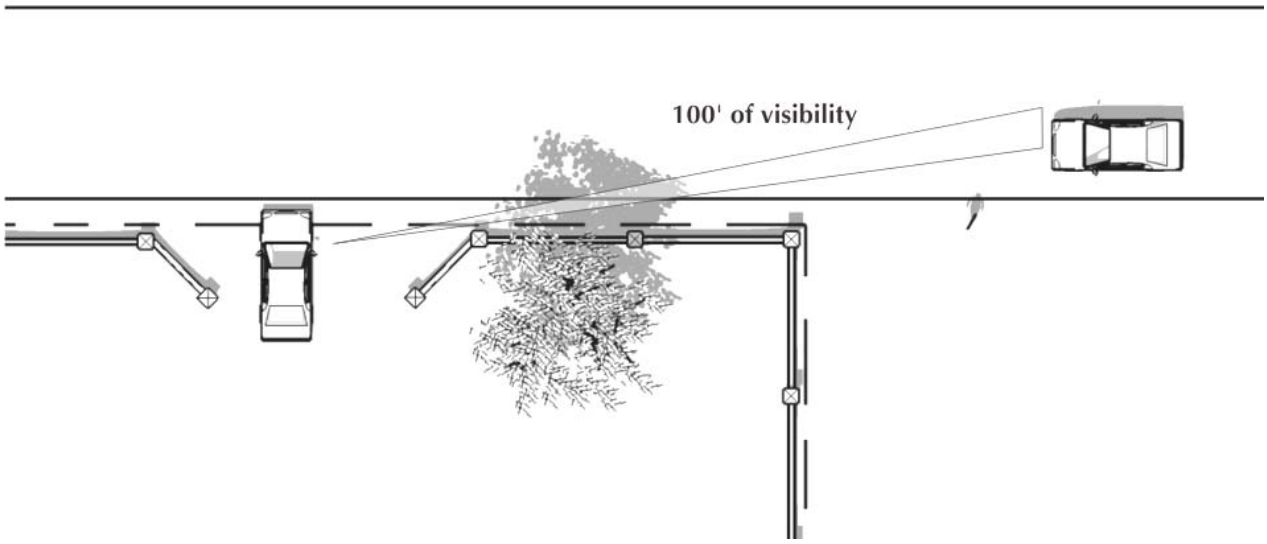
At the intersection of a Secondary Road and a Primary Road, a sight triangle allowing for 120' of visibility from the former to the latter must be provided. Generally, this will translate into a setback of 15' by 25' as illustrated. Where 120' of visibility cannot be achieved due to the road curvature, the setbacks and / or heights of walls, fences and their associated piers and columns should produce a visibility cone of as close to 120' as possible.



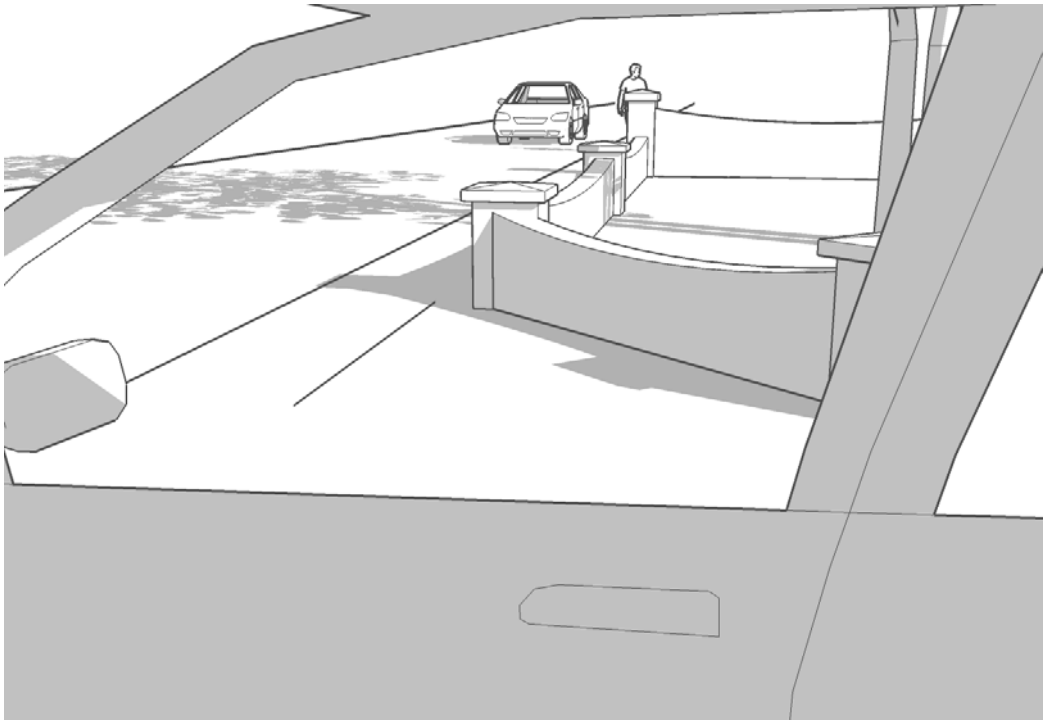


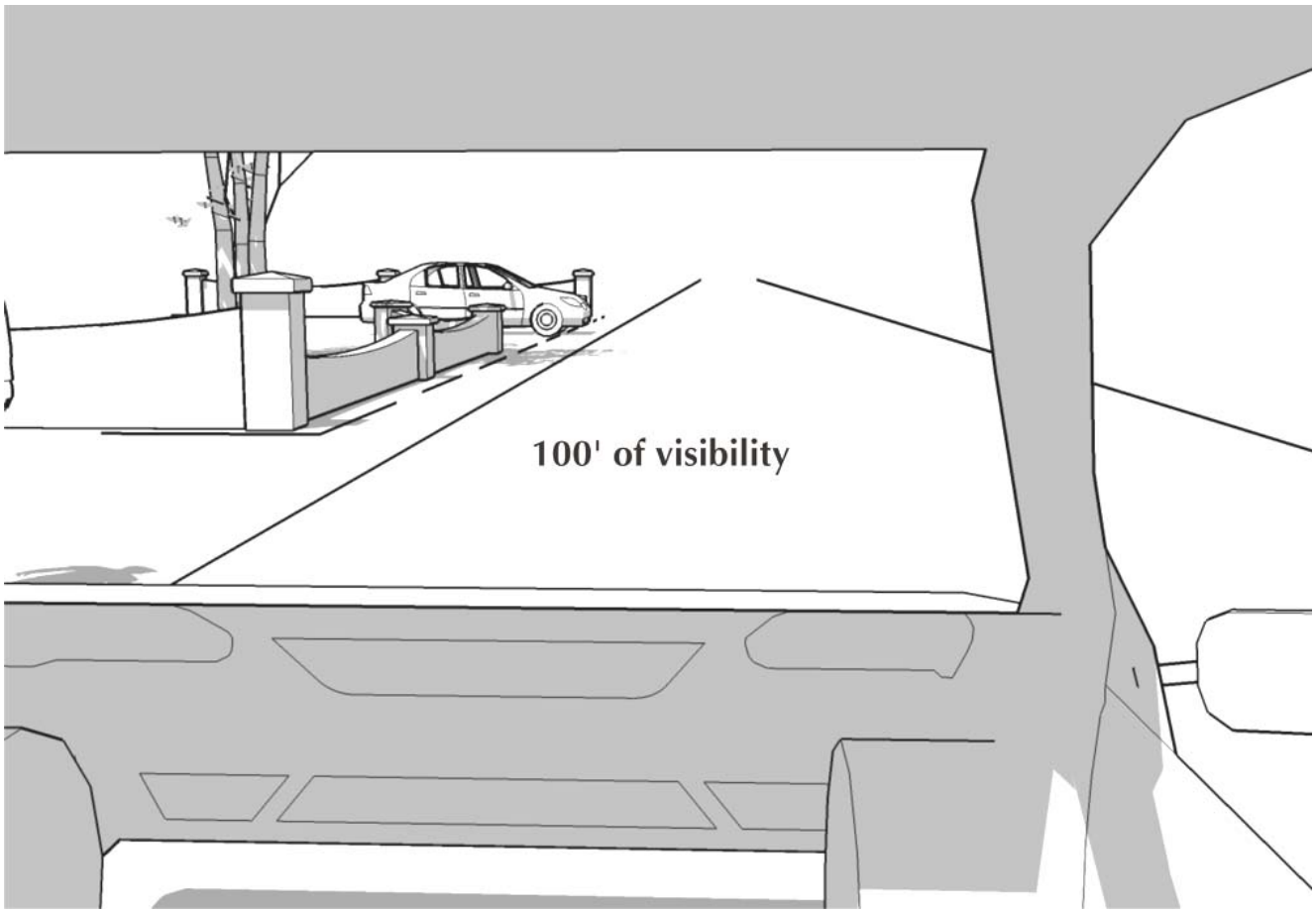
With a visibility distance of 120', a driver traveling at 35 miles per hour will have 2.4 seconds to react and if necessary, take evasive action. This distance also allows the merging vehicle to judge whether or not it is safe to begin a turning movement.

Driveway / Road Interface



At the intersection of a driveway and any road, a sight triangle allowing for 100' of visibility from the former to the latter should be achieved. Where 100' of visibility cannot be achieved due to the road curvature or other factors, the setbacks and / or heights of walls, fences and their associated piers and columns should produce a visibility cone of as close to 120' as possible.





With a visibility distance of 120', a driver traveling at 35 miles per hour will have 2.4 seconds to react and if necessary, take evasive action. This distance also allows the merging vehicle to judge whether or not it is safe to begin a turning movement.

Appendix B. Road Classification Map & Index

Appendix C. Wall Transparency Measures

Overview

These Guidelines frequently discuss walls and fences as belonging to one of two transparency categories;

a. Semi-Transparent; or

b. Solid.

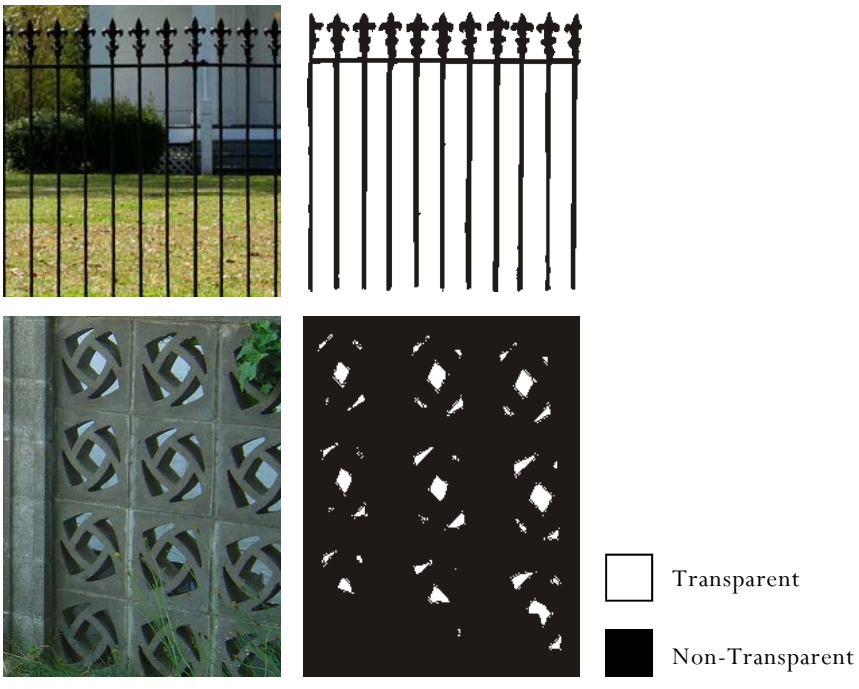
Whether or not a wall or fence is classified as one or the other is an important distinction, as it is this definition which often governs the maximum permitted height of a wall or fence. The goal of this Appendix is to define the process for establishing whether a wall or fence is Solid or Semi-Transparent, and also provide a reference guide for applicants and construction professionals on which readily available wall and fence building materials fall into which transparency category.

Semi-Transparent Walls & Fences

No wall or fence can be completely transparent. Every material type used in the construction of a wall or fence contributes to obscuring the ability to see through it. The goal of these Guidelines is to ensure that a semi-transparent wall or fence is one which has more transparent areas than solid areas when seen at a range of viewing angles.

The method for calculating this transparency measure is contained within this Appendix.

Figure C.1. - The range of materials available to the wall and fence designer can result in varied levels of transparency.



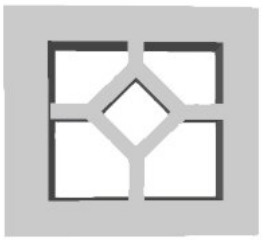
Calculating a Fence or Wall's Level of Transparency

Since all walls and fences are made from materials that have a certain amount of depth to them, the level of transparency of varies depending on the viewing angle.

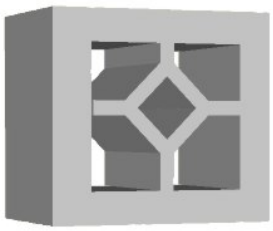
Consider for example a decorative concrete block. When viewed at a 90° angle, a person can see through approximately 25% of the block (i.e. 75% of the block is solid, and 25% are holes). However, because the depth of the block is anywhere from 4" to 6", the ability to see through it decreases as the viewing angle decreases. For example, at 45° you can only see through approximately 21% of a wall made from concrete block, while at 22.5°, you can see through a mere 4% of the same wall. These changing angles might represent how a vehcile or pedestrian passing this wall would be able to see through it.

The Planning Department has submitted numerous materials through this 'Opacity Test', in order to determine which should qualify as 'Transparent' and which as 'Semi-Transparent'. This process has involved computer modelling to create a 'Transparency Index' of wall opacity for different material types.

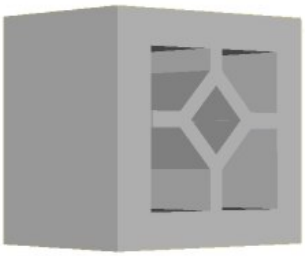
90°



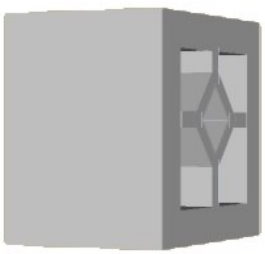
67.5°



45°



22.5°



Summary of Results

The Planning Department tested a variety of building materials at a range of wall or fence heights in order to arrive at a calculation of which materials are deemed to be 'semi-transparent'. The results are summarized in the table on this page.

Any wall or fence material which has a Transparency Index equaling or exceeding 100 is deemed to be semi-transparent, while any wall or fence with a Transparency Index less than 100 is deemed to constitute a solid wall.

The Planning Department recognizes that applicants may desire to construct walls and fences out of materials other than those listed here. Staff will be happy to conduct an analysis on the materials and wall design to determine which category (semi-transparent or solid) the wall or fence falls into.

	Wall Height (inches)	Transparency Index[1] ($\sum$ (Wall Transparency at 22.5°, 45°, 67.5° & 90°))
Solid Wall (i.e. Masonry Block)	42	0
Cedar Plank	42	17
Picket Fence	42	22
Decorative Concrete Block	42	51
Decorative Concrete Block	72	53
Tube Steel (1/2" square tube, 3" o/c)	42	142
Chain Link	48	147
Chain Link	72	150
Wrought Iron	72	215

[1] Walls and Fences were measured from these respective viewing angles at a viewing height of 60". The level of transparency was determined by using a histogram analysis of the resulting image.