

VARIANCE APPLICATION FORM

Date of Submission: 5, 6, 14

APPLICANT/OWNER INFORMATION

Applicant MANLOW + Ashley KERN

Address 16500 JACKSON ST LEANDER TX 78641

Phone (512) 981-9943 Fax (512) 244-1445 Email drmanlowkern@gmail.com

Applicants Status: (check one) Owner Tenant Contractor
Owner must sign the application or submit a notarized letter of authorization

Owner: same

Address: _____

Phone _____ Fax _____ Email _____

Ownership: (check one) Individual Partnership Corporation Other
If ownership is a trust, partnership, corporation, or other legal entity, the applicant must name the partners or principals on a separate attachment.

PROPERTY DESCRIPTION

Acreage: 1.01

Physical Address: 16500 JACKSON ST

Legal Description: (attach map of area also if available)

Lot(s): _____ Block(s): _____

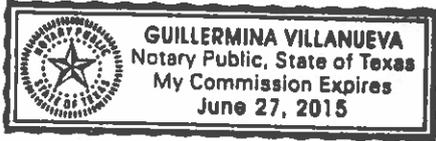
Subdivision: _____ Addition: _____

Existing Use of Property: _____

SWORN AFFIRMATION

SUDCRIBED AND SWORN TO BEFORE ME on May 13th, 2014 by

MAIBON + ASHLYN KEM who is the applicant for a variance as described above, and on whose oath certifies that the above statements are true and correct to the best of the applicant's knowledge.



[Signature]
Notary Public, State of Texas

My Commission expires: 6/27/2015

[Signature]

[Signature]

If the owner of the subject property is not the applicant, by signing below, the owner authorizes the applicant or his authorized representative to make this application on its behalf and to appear before the Village Council.

Owner _____ Date _____

SUBSCRIBED AND SWORN TO BEFORE ME on _____, 20__ by,

_____, who is the owner of the property for which a variance is sought, and on whose oath certifies that the above statements are true and correct to the best of the owners knowledge.

Notary Public, State of Texas

My Commission expires: _____

May 6, 2014

To: Village of Volente

Re: Request for variance to 16500 Jackson St

We are seeking to remodel part of our home by enclosing covered porch area and adding a lower story bedroom/bath combination that will be accessible for my mother who is relocating to live with us and to make room for us to grow our family. Unfortunately my mother was involved in a bicycle accident last week and is currently hospitalized in Medford, Oregon with fractures that will keep her wheelchair bound for some time. We currently have a small home with no ground floor bedrooms or full baths that are wheelchair or elderly accessible and would like to add the addition to provide this and add room for our growing family. We need additional impermeable cover authorization to add this addition and are willing to mitigate with vegetative buffer as needed. We are asking for 675sq feet of IC to offset some mistakes made in measuring our IC in the past and to add an additional 155 sf feet of new IC for the addition bed/bath.

Our property is unique in that we already have a 25 foot drainage easement for our subdivision running down the full length of the driveway/property. We have recently landscaped this area to cover the zone completely in wild plants/flowers to help create a community vegetative buffer that the entire subdivision benefits from.

With the addition of my mother and hopefully a baby soon to our 3/2.5 home we are really looking to be maxed out beyond the capabilities of our current living situation. We have been living in Volente since spring of 2010 and would love to modify our home to suit this change in our life rather than sell and leave the community.

We respectfully ask for your blessing to mitigate our IC and to move forward to building this small addition to our home so that we can make room for our growing family.

Sincerely,

Mahlon and Ashley Kerr



House has unusual architecture which makes addition planning difficult



Proposed site to add addition will be on stone patio and partially under current porch, will extend 155 sq feet past the current house coverage. This is not very visible to any of the neighbors since it is in a wooded area on the back of our home



Recently completed this spring zero-scaped low water use drip system landscaping with native plants on sloping front yard



25 Foot drainage easement already graded, soil added, and fully seeded with native plants/flowers as part of landscaping improvement this spring



Very large front area with native plants and grasses as part of landscaping project this winter



Sloping yard with native plants



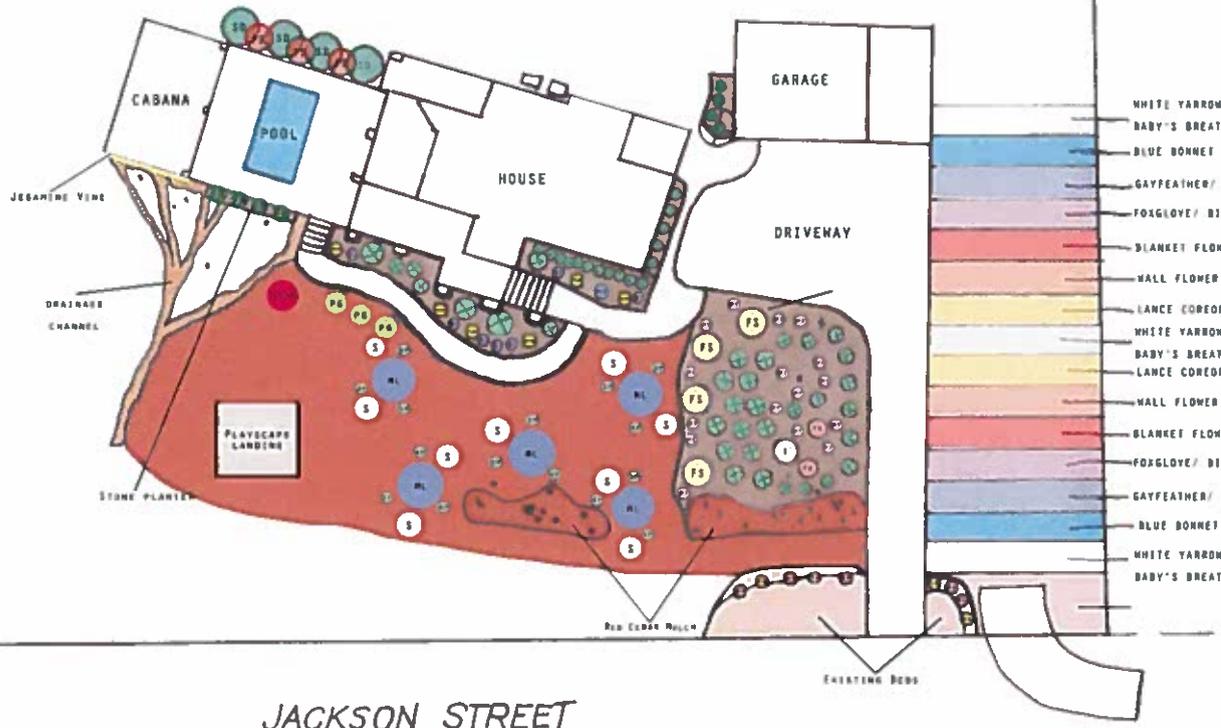
Date
August 20, 2013
Yarrow Landscaping
2102 Manor Rd.
Austin Texas 78722

ASHLEY KERR
16500 JACKSON STREET
LEANDER, TEXAS 78641

Dr
1/3
1/3
1/3

PLANT LIST

- BI - 7 BEARDED IRIS
- FA - 2 FLAME ACANTHUS
- FN - 4 FLEMING HOLLY
- FS - 4 FLOWERING SENNA
- HM - 8 MEXICAN MARIGOLD
- HS - 1 MEXICAN SAGE
- PB - 3 PRIDE OF BARBADOS
- PG - 5 PINEAPPLE GUAVA
- POR - 1 POMEGRANATE TREE
- PI - 16 PINK TURKSCAP
- RY - 5 RED YUCCA
- S - 10 SPIREA
- SD - 4 SANDALWOOD
- SP - 15 SILVER PONYFOOT
- TS - 4 TEXAS SOTOL

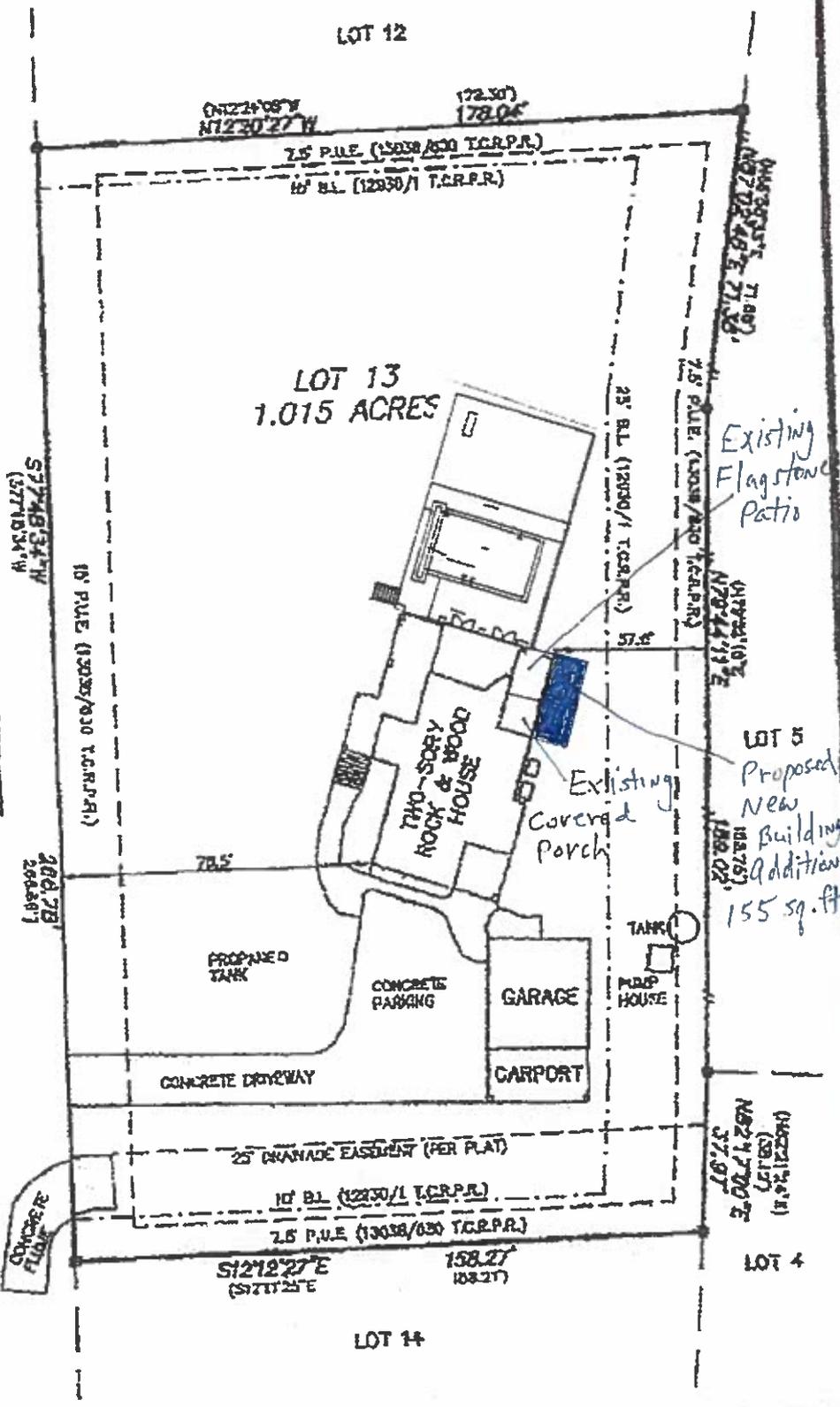


JACKSON STREET

SCALE
1" = 40'

DEEDS AFFECTING THIS TRACT:
 RESTRICTIVE COVENANTS RECORDED UNDER 12801/1038L (12801/1038L), 3/8/84, 12813/838 AND 12830/1 OF REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS AND UNDER 277-278 OF THE PLAT RECORDS OF TRAVIS COUNTY, TEXAS.
 EMINENT RIGHTS AS SET FORTH IN THAT TRACT DECLARATION RECORDED UNDER 12800/1 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS.
 DRAINAGE SETBACK LINES AS SET FORTH IN THAT TRACT DECLARATION RECORDED UNDER 12800/1 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS.
 EASEMENT EXECUTED BY REED SCHULZE TO VERNALES ELECTRIC COOPERATIVE, INC. DATED JUNE 7, 1985, RECORDED UNDER 2/485 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS.
 EASEMENT EXECUTED BY VOLANTE GROUP, TEXAS, LTD. TO TRAVIS COUNTY, TEXAS, DATED OCTOBER 3, 1987, RECORDED UNDER 13038/830 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS.

JACKSON STREET



Existing Flagstone Patio

Existing Covered Porch

LOT 5 Proposed New Building Addition 155 sq. ft.

LEGEND

- = IRON ROD FOUND
- () = RECORD PER PLAT
- ⊕ = POWER POLE
- = WOOD FENCE
- P.U.E. = PUBLIC UTILITY EASEMENT
- B.L. = BUILDING LINE

ADDRESS: 16500 JACKSON STREET, LEANDER, TEXAS

LEGAL DESCRIPTION: LOT 13, BLOCK A, OF VILLAGE AT VOLANTE, PHASE TWO, AN ADDITION IN TRAVIS COUNTY, TEXAS, RECORDED IN BOOK 59, PAGES 277-278, OF THE PLAT RECORDS OF TRAVIS COUNTY, TEXAS.

11/14/2006 TUE 15:55 FAX 512 473 3501 LCRA - OSSF → Marble Falls

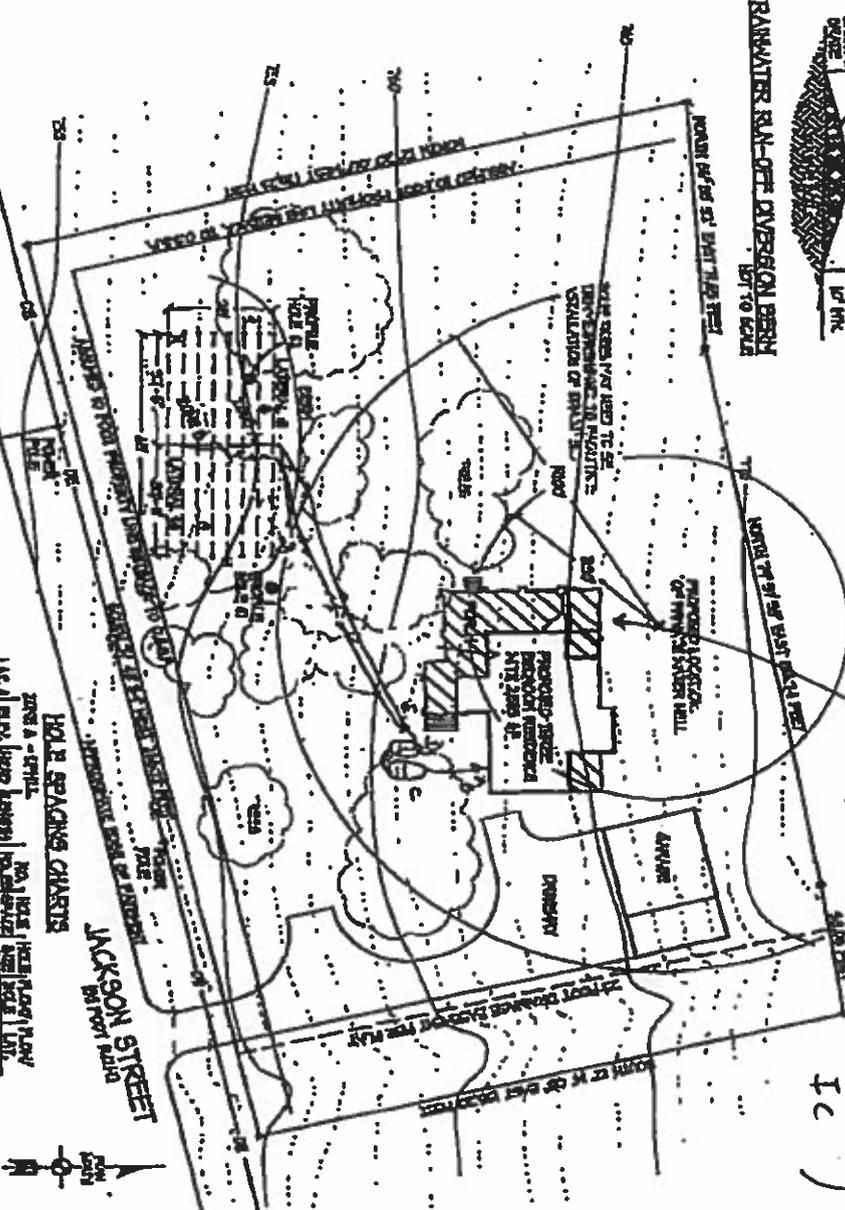
005/013



RAINWATER RUN-OFF DIVERSION BERRY LOT TO ROAD

Dennis Rebeck
Sole 11-15-06

Location of new addition
(figures 155 sq ft addn'l)
Ic



LEGEND

- A. EXISTING PAVED DRIVE
- B. NEW PAVED DRIVE
- C. THICK CONCRETE CONCRETE TASK
- D. EXISTING DRIVE
- E. EXISTING DRIVE
- F. EXISTING DRIVE
- G. EXISTING DRIVE
- H. EXISTING DRIVE
- I. EXISTING DRIVE
- J. EXISTING DRIVE
- K. EXISTING DRIVE
- L. EXISTING DRIVE

W. Stahl
4/13/04
By Joe Sp. Brown
Twp. 66 N. 11 W. 1 E. 6 Road

HOLY SPARKS CHURCH

NO.	AREA	LENGTH	WIDTH	AREA	PERIMETER
1	250	40	31	8000	142
2	250	40	31	8000	142
3	250	40	31	8000	142
4	250	40	31	8000	142
5	250	40	31	8000	142
6	250	40	31	8000	142
7	250	40	31	8000	142
8	250	40	31	8000	142
9	250	40	31	8000	142
10	250	40	31	8000	142
11	250	40	31	8000	142
12	250	40	31	8000	142
13	250	40	31	8000	142
14	250	40	31	8000	142
15	250	40	31	8000	142
16	250	40	31	8000	142
17	250	40	31	8000	142
18	250	40	31	8000	142
19	250	40	31	8000	142
20	250	40	31	8000	142



DE LEON
ENGINEERS & ARCHITECTS
1100 W. 11th Street, Suite 100
Marble Falls, TX 78758
Phone: 817-572-1111
Fax: 817-572-1112
www.deleon.com

GENERAL NOTES

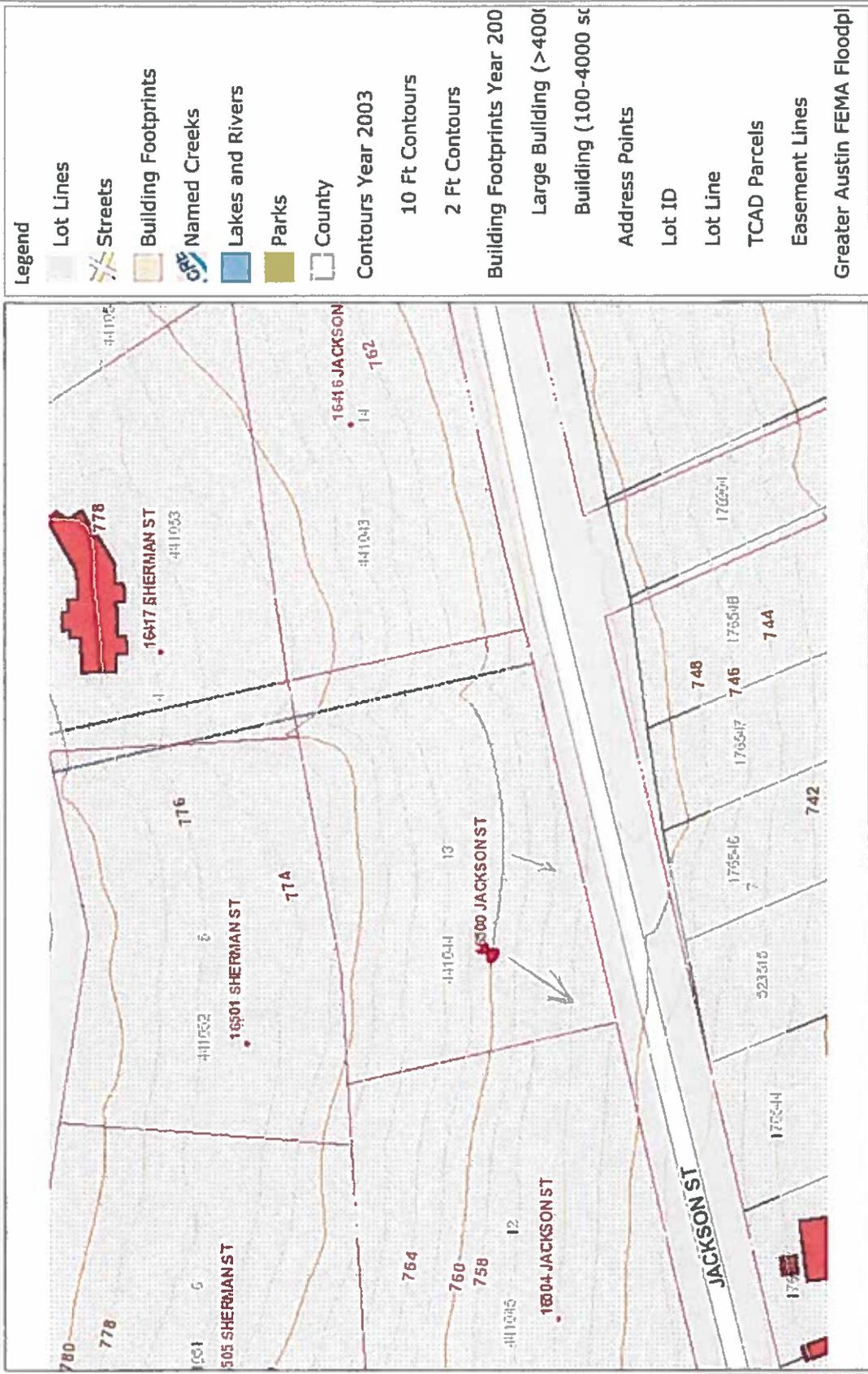
19287

- ALL NOTES SHALL BE CONSIDERED AS PART OF THE CONTRACT DOCUMENTS ON THIS PROJECT.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE TEXAS CONSTRUCTION CODES AND ALL APPLICABLE LOCAL ORDINANCES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES.
- THE CONTRACTOR SHALL MAINTAIN ADEQUATE RECORDS OF ALL WORK PERFORMED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL WORKERS AND THE PUBLIC.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE ENVIRONMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL HISTORIC AND CULTURAL RESOURCES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL NEIGHBORHOODS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PUBLIC UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PRIVATE UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL COMMERCIAL UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL RESIDENTIAL UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL INDUSTRIAL UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL AGRICULTURAL UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL RECREATIONAL UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EDUCATIONAL UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL GOVERNMENT UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL OTHER UTILITIES.

LCRA DOES NOT WARRANT OR REPRESENT THAT THIS SKETCH DEPICTS THE ACTUAL LOCATION OR CONFIGURATION OF THE PRIVATE SEWAGE FACILITY SYSTEM.

CITY OF AUSTIN DEVELOPMENT WEB MAP

DR Kerr 16500 JACKSON



Legend

- Lot Lines
- Streets
- Building Footprints
- Named Creeks
- Lakes and Rivers
- Parks
- County
- Contours Year 2003
- 10 Ft Contours
- 2 Ft Contours
- Building Footprints Year 2003
- Large Building (>4000 sq ft)
- Building (100-4000 sq ft)
- Address Points
- Lot ID
- Lot Line
- TCAD Parcels
- Easement Lines
- Greater Austin FEMA Floodplains

THIS PRODUCT IS FOR INFORMATIONAL PURPOSES AND MAY NOT HAVE BEEN PREPARED FOR OR BE SUITABLE FOR LEGAL, ENGINEERING, OR SURVEYING PURPOSES. IT DOES NOT REPRESENT AN ON-THE-GROUND SURVEY AND REPRESENTS ONLY THE APPROXIMATE RELATIVE LOCATION OF PROPERTY BOUNDARIES. THIS PRODUCT HAS BEEN PRODUCED BY THE CITY OF AUSTIN FOR THE SOLE PURPOSE OF GEOGRAPHIC REFERENCE. NO WARRANTY IS MADE BY THE CITY OF AUSTIN REGARDING SPECIFIC ACCURACY OR COMPLETENESS.

LCRA HIGHLAND LAKES WATERSHED ORDINANCE

Updated March 14, 2008

WATER QUALITY MANAGEMENT DESIGN TOOL - Commercial Development - Alternate Standards

Use on an individual drainage area basis.

All references to tables and figures can be found in the Highland Lakes Ordinance Water Quality Technical Manual

Cells shaded in light green are data input cells

PROJECT:	
Drainage Area ID	
Drainage Area (DA)	1.015 acres

Impervious Cover Type	IC Area (acres)
Driveways	
Parking lots	
Building	0.22
Total	0.22
% Impervious Cover	21.7

Is commercial tract less than 3 acres in area?

If YES to all of the conditions, then proceed to Alternate Standards Design for commercial development
 If Answer NO to one of the conditions, proceed to WO Design Worksheet Step 3

Vegetated filter strips located down-gradient of the developed area can be used to provide water quality protection for the project. Stormwater runoff must discharge in a sheet flow manner from the impervious areas to the vegetated filter strips.

1-year, 3-hour rainfall =	1.93	inches	
Compute Runoff Volume for the 1-year storm =	0.45	inches	Equation 2.9 in Technical Manual
Compute Water Quality Volume (WQV) =	1,666	cubic feet	Equation 2.10 in Technical Manual

Compute Vegetated Filter Strip Area

Filter Strip Type	Area	
Natural Vegetated Filter Strip	3,781	square feet Equation 2.12 in Technical Manual
Vegetated Filter Strip	1,916	square feet Equation 2.13 in Technical Manual
Vegetated Infiltration Strip	1,283	square feet Equation 2.14 in Technical Manual

Locate the selected filter strip down-gradient from the impervious area. See Chapter 4.2.7 in Technical Manual for filter strip details.

assuming 5 min Tc, concrete pavement and clay soils on 2-7% slope, to vary these parameters, use Subarea 1 in the "IC & Runoff" spreadsheet to compute the peak discharge rate and multiply by 10.

Minimum Filter Strip Width L = 10*Q _{1-year developed}	17	feet	Equation 2.15 in Technical Manual
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4.2.7 Vegetative Filter Strips

Description

Vegetated filter strips are densely vegetated sections of land designed to accept runoff as overland sheet flow. Dense vegetative cover facilitates conventional pollutant removal through detention, filtration by vegetation, and infiltration. Vegetated filter strips can either utilize natural filter strips or be engineered to maximize water quality benefits.

Natural vegetated filter strips make use of existing natural buffers and offer a passive low cost alternative. Natural vegetated filter strips require a slope of less than 12%, an allowable flow length between 30 and 60 feet, and an average soil depth of 4 inches. Natural vegetated filter strips require twice the land area of an engineered vegetated filter strips.

Engineered vegetative filter strips are specifically designed and constructed to maximize the water quality benefits of filter strips, particularly in areas where adequate buffers do not exist. Two types of engineered vegetative filter strips are presented in this manual; engineered vegetative filter strips and engineered vegetative infiltration strips.

Engineered vegetative filter strips differ from natural vegetative filter strips in that they can be placed on slopes up to 20% when combined with an infiltration berm, and require a flow length between 20 and 40 feet, a minimum of 6-inches of topsoil, and a uniform and even surface.

Engineered vegetative infiltration strips provide additional pollutant removals through the use of enhanced infiltration practices. Vegetative infiltration strips require a slope less than 10%, a flow length between 15 and 60 feet, a minimum of 12 inches of topsoil, infiltration berms spaced on intervals of 15 feet, and a uniform and even surface.

The natural and engineered filter strips include a terraced sloped option, which can take advantage of the natural infiltration processes located within the "stair step" topography commonly found within the Glen Rose Formation in the Highland Lakes watershed (Refer to Figure 4.11 below). These natural terraces are effective at infiltrating or abstracting runoff, settling out pollutants, and preventing erosion. Waters are retained within "deep" skeletal soils along risers despite steep slopes. Likewise, some incident water is also retained along the gently sloping treads despite thin soils having low moisture retention (Refer to Figure 4.12 below). In this way, the stair-step form of the terrain is itself a buffer, whereby the risers and treads form multiple barriers to down slope movement of surface water and entrained sediment. Where natural terraces do not exist, they can be engineered to treat runoff from developed areas.

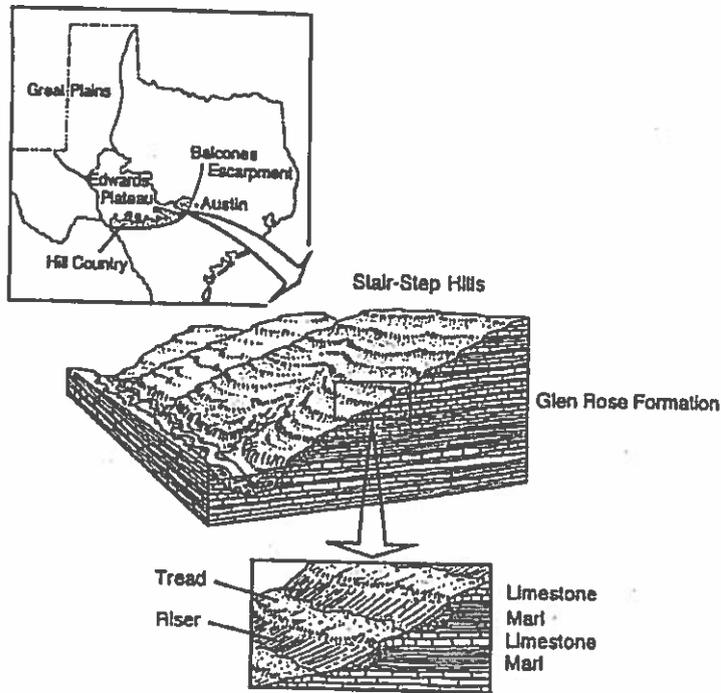


Figure 4-11: Stair-Step Hills of the Glen Rose Formation (Woodruff, 1992)

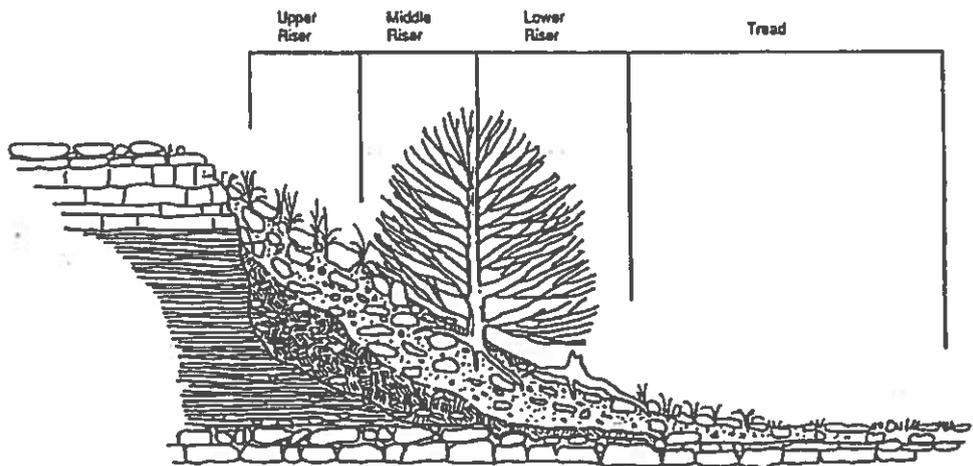


Figure 4-12: Riser/Tread Sequence of Stair-Stepped Topography (Woodruff, 1992)

Application

Filter strips cannot treat high velocity flows, and do not provide enough storage or infiltration to effectively reduce peak discharges to predevelopment levels for design storms. This lack of quantity control restricts their use as a stand-alone BMP to relatively small contributing drainage areas. Filter strips can be used in the following development circumstances:

- Filter strips can be utilized as a stand alone BMP when treating small developments of less than 3 acres (Commercial Alternate Standards) and with a contributing drainage area of less than 3 acres. See Figure 4-13 below;
- Filter strips can be used in conjunction with other structural BMPs such as an extended detention, sand filter, or wet basin by either being placed in series before or after these structural BMPs (See Table 2-9); and
- Filter strips can treat perimeter lots, structures, or roadways of a development that will not drain via gravity to a structural BMP. The use of filter strips to treat perimeter areas is limited to a contributing drainage area of 3 acres and requires the conversion of concentrated flow to sheet flow before entering the strip.

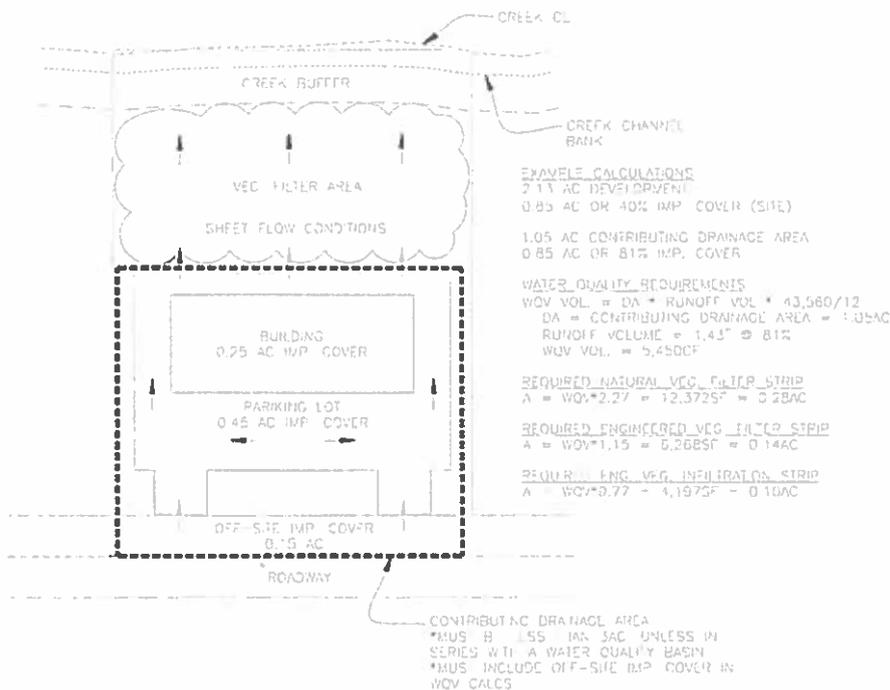


Figure 4-13: Example of Stand Alone Vegetative Filter Strip Application

Design Guidelines

A) Natural Vegetative Filter Strips

- (1) *Contributing Drainage Area:* The use of a filter strip as a stand alone BMP should be limited to a contributing drainage area of less than 3 acres. Larger contributing areas are allowed when a filter strip is used in series with a water quality basin such as an extended detention pond, a sand filter, or a wet pond.

- (2) *Required Area:*

Stand Alone (Drainage Area. < 3 acres)	$A = WQV * 2.27$
Up-gradient of Extended Detention Pond	$A = WQV * 1.05$
Down-gradient of Extended Detention Pond	$A = WQV * 0.4$
Up-gradient of Sand Filter	$A = WQV * 0.77$
Down-gradient of Sand Filter	$A = WQV * 0.3$
Up-gradient of Wet Pond	$A = WQV * 0.69$
Down-gradient of Wet Pond	$A = WQV * 0.26$

where: A = Required Area (sf)
 WQV = Water Quality Volume calculated per Chapter 2.3

- (3) *Slope Restrictions:* No portion of the natural filter area shall exceed a slope of 12%.
- (4) *Minimum Dimension in Direction of Flow:* The flow length over the vegetative filter or filter width must be at least 30 feet and no greater than 60 feet to be credited towards the required area. An additional level spreader, infiltration device, or berm may be added for additional length, effectively creating two filter strips in series.
- (5) *Upper Boundary Requirements:* The filter strip must run along the entire edge of the contributing area, no collection or routing allowed except following a water quality basin with flow attenuation or discharge from a level spreader to the filter strip. The soil along the upper boundary must be reinforced with protective matting or an infiltration trench (preferred) may be used. Refer to Figure 4.14 below.
- (6) *Velocity Restrictions:* Vegetative filter strips are susceptible to erosion and the formation of rills; therefore, may require the use of a flow spreader or an infiltration trench to spread flows and dissipate erosive velocities.

The runoff from the contributing area entering the upper boundary of the filter strip shall be in sheet flow conditions. Sheet flow conditions must meet the following constraints during the peak flow of a 1-yr, 3-hr storm event under fully-developed conditions:

- i. The velocity of flow across the filter strip must not exceed 1 ft/sec.
 - ii. The average depth of flow across the filter strip must not exceed 0.2 feet for a vegetative filter strip used in combination with a water quality basin.
 - $L = 5Q_{1 \text{ year dev}}$
 - L = minimum width of a flow spreader (ft) perpendicular to flow
 - $Q_{1 \text{ year dev}}$ = Peak flow rate from the 1-yr, 3-hr storm event (See App. 2.4)
 - iii. The average depth of flow across the filter strip must not exceed 0.1 feet for a vegetative filter strip used as a stand alone BMP.
 - $L = 10Q_{1 \text{ year dev}}$
 - L = minimum width of a flow spreader (ft) perpendicular to flow
 - $Q_{1 \text{ year dev}}$ = Peak flow rate from the 1-yr, 3-hr storm event (See App. 2.4)
- (7) *Surface Characteristics:* The filter area must be free of gullies, rills and flow concentrations and have 70% vegetative cover.
- (8) *Soil Requirements:* The soil must average 4-inches in depth. Rock crop areas may be present but must be deducted from the total filter strip area and must not affect the function of the Vegetative Filter Strip.
- (9) *Terrace Slope Option:* Must be naturally occurring "stair-stepped" topography over the Glen Rose Formation. Required to consist of an overall slope less than 20%, riser slopes may be steeper than 20%, treads should be greater than 4 feet in length with a slope less than 15%. Risers must be stable and capable of functioning as flow spreaders.

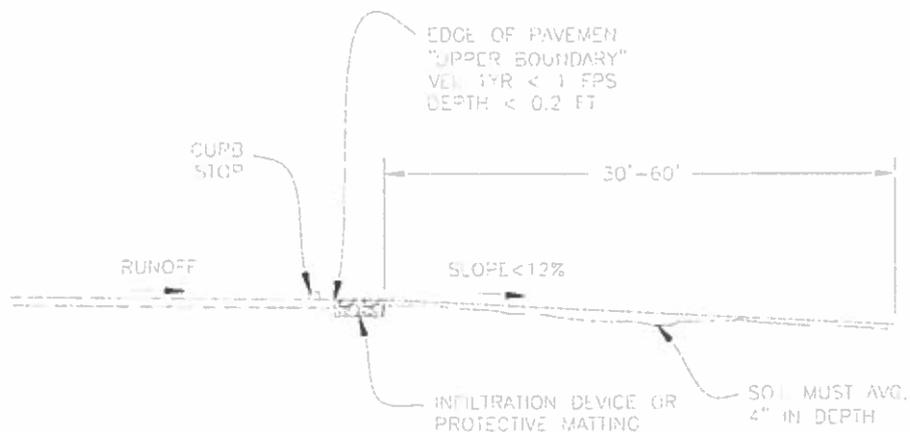


Figure 4-14: Natural Vegetative Filter Strip

B) Engineered Vegetative Filter Strips

(1) *Contributing Drainage Area:* The use of a filter strip as a stand alone BMP should be limited to a contributing drainage area of less than 3 acres. Larger contributing areas are allowed when a filter strip is used in series with a water quality basin such as an extended detention pond, a sand filter, or a wet pond.

(2) *Required Area:*

Stand Alone (Drainage Area < 3 acres)	$A = WQV * 1.15$
Up-gradient of Extended Detention Pond	$A = WQV * 0.53$
Down-gradient of Extended Detention Pond	$A = WQV * 0.2$
Up-gradient of Sand Filter	$A = WQV * 0.39$
Down-gradient of Sand Filter	$A = WQV * 0.15$
Up-gradient of Wet Pond	$A = WQV * 0.35$
Down-gradient of Wet Pond	$A = WQV * 0.13$

where: A = Required Area (sf)
 WQV = Water Quality Volume calculated per Chapter 2

- (3) *Slope Restrictions:* No portion of the filter area shall exceed a slope of 20%.
- (4) *Minimum Dimension in Direction of Flow:* The flow length over the vegetative filter or filter width must be at least 20 feet and no greater than 40 feet to be credited towards the required area. An additional level spreader may be added for additional length, effectively creating two filter strips in series.
- (5) *Upper Boundary Requirements:* The filter strip must run along the entire edge of the contributing area, no collection or routing allowed except following a water quality basin with flow attenuation or discharge from a level spreader to the filter strip. The soil along the upper boundary must be reinforced with protective matting or an infiltration trench (preferred). Refer to Figure 4.15 below.
- (6) *Velocity Restrictions:* Vegetative filter strips are susceptible to erosion and the formation of rills; therefore, may require the use of a flow spreader or an infiltration trench to spread flows and dissipate erosive velocities.

The runoff from the contributing area entering the upper boundary of the filter strip shall be in sheet flow conditions. Sheet Flow conditions must meet the following two constraints during the peak flow of a 1-yr, 3-hr storm event under fully-developed conditions:

- i. The velocity of flow across the filter strip must not exceed 1 ft/sec.
- ii. The average depth of flow across the filter strip must not exceed 0.2 feet for a vegetative filter strip used in combination with a water quality basin.

$$L = 5Q_{1\text{ year dev}}$$

L = minimum width of a flow spreader (ft) perpendicular to flow

$Q_{1\text{ year dev}}$ = Peak flow rate from the 1-yr, 3-hr storm event (See App. 2.4)

- iii. The average depth of flow across the filter strip must not exceed 0.1 feet for a vegetative filter strip used as a stand alone BMP.

$$L = 10Q_{1 \text{ year dev}}$$

L = minimum width of a flow spreader (ft) perpendicular to flow

$Q_{1 \text{ year dev}}$ = Peak flow-rate from the 1-yr, 3-hr storm event (See App. 2.4)

- (7) **Surface Characteristics:** The filter area, after final grading, should have a uniform and even slope and be capable of maintaining an even sheet flow across the entire filter surface. The filter area must be free of gullies, rills and flow concentrations. The strip must be sodded or if seed is used it must be accompanied by the appropriate soil blanket or matting per 3.2.11.
- (8) **Soil Requirements:** A minimum of 6-inches of topsoil is required. The topsoil must contain 10-20% compost, a clay content less than 20 percent and be free of stones, stumps, roots or other similar objects larger than one (1) inch. If on-site soils do not meet these specifications, topsoil per the above specs must be added. Sandy loam is not an approved soil and caliche is not considered a soil.
- (9) **Infiltration Berm:** Required at the downgradient end of a filter strip with a slope greater than 2%. The required depth of the infiltration berm is the lesser of $L*s/3$ or 1-foot where "L" is the minimum dimension in the direction of flow and "s" is the average slope of the filter area. Berm side slopes should be no steeper than 3:1, and berm top-width should be 4-8 inches.
- (10) **Terrace Slope Option:** Required to consist of an overall slope less than 20%, riser slopes may be steeper than 20%, treads should be greater than 4 feet in length with a slope less than 15%. Risers must be stable and capable of functioning as flow spreaders.

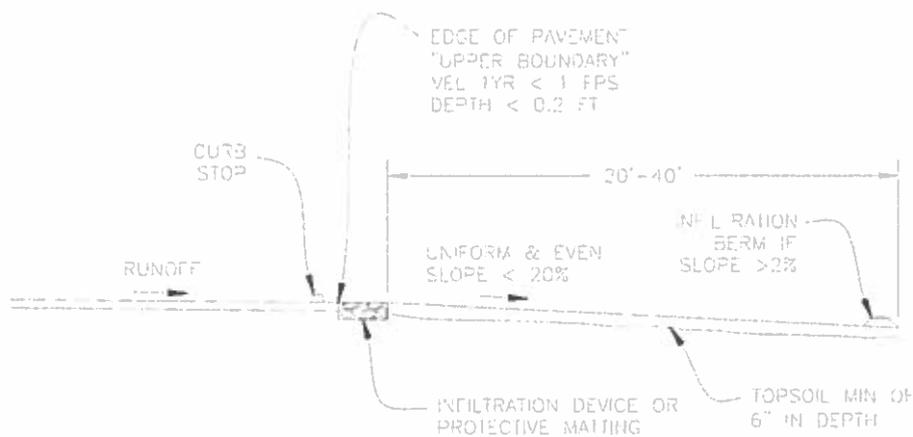


Figure 4-15: Engineered Vegetative Filter Strip

C) **Engineered Vegetative Infiltration Strip**

(1) **Contributing Drainage Area:** The use of a filter strip as a stand alone BMP should be limited to a contributing drainage area of less than 3 acres. Larger contributing areas are allowed when a filter strip is used in series with a water quality basin such as an extended detention pond, a sand filter, or a wet pond.

(2) **Required Area:**

Stand Alone (Drainage Area < 3 acres)	$A = WQV * 0.77$
Up-gradient of Extended Detention Pond	$A = WQV * 0.35$
Down-gradient of Extended Detention Pond	$A = WQV * 0.13$
Up-gradient of Sand Filter	$A = WQV * 0.26$
Down-gradient of Sand Filter	$A = WQV * 0.10$
Up-gradient of Wet Pond	$A = WQV * 0.23$
Down-gradient of Wet Pond	$A = WQV * 0.09$

where: A = Required Area (sf)
 WQV = Water Quality Volume calculated per Chapter 2

(3) **Slope Restrictions:** No portion of the filter area shall exceed a slope of 10%.

(4) **Minimum Dimension in Direction of Flow:** The flow length over the vegetative filter or filter width must be at least 15 feet and no greater than 60 feet to be credited towards the required area. An additional level spreader, infiltration device, or berm may be added for additional length, effectively creating two filter strips in series.

(5) **Upper Boundary Requirements:** The filter strip must run along the entire edge of the contributing area, no collection or routing allowed except following a water quality basin with flow attenuation or discharge from a level spreader to the filter strip. The soil along the upper boundary must be reinforced with protective matting or an infiltration device (preferred) may be used. Refer to Figure 4.16 below.

(6) **Velocity Restrictions:** Vegetative filter strips are susceptible to erosion and the formation of rills; therefore, may require the use of a flow spreader or an infiltration trench to spread flows and dissipate erosive velocities.

The runoff from the contributing area entering the upper boundary of the filter strip shall be in sheet flow conditions. Sheet Flow conditions must meet the following two constraints during the peak flow of a 1-yr, 3-hr storm event under fully-developed conditions:

- i. The velocity of flow across the filter strip must not exceed 1 ft/sec.
- ii. The average depth of flow across the filter strip must not exceed 0.2 feet for a vegetative filter strip used in combination with a water quality basin.

$$L = 5Q_{1 \text{ year dev}}$$

L = minimum width of a flow spreader (ft) perpendicular to flow

$Q_{1 \text{ year dev}}$ = Peak flow-rate from the 1-yr, 3-hr storm event (See App. 2.4)

- iii. The average depth of flow across the filter strip must not exceed 0.1 feet for a vegetative filter strip used as a stand alone BMP.

$$L = 10Q_{1 \text{ year dev}}$$

L = minimum width of a flow spreader (ft) perpendicular to flow

$Q_{1 \text{ year dev}}$ = Peak flow-rate from the 1-yr, 3-hr storm event (See App. 2.4)

- (7) **Surface Characteristics:** The filter area, after final grading, should have a uniform and even slope and be capable of maintaining an even sheet flow across the entire filter surface. The filter area must be free of gullies, rills and flow concentrations. The strip must be sodded or if seed is used it must be accompanied by the appropriate soil blanket or matting per 3.2.11.
- (8) **Soil Requirements:** A minimum of 12-inches of topsoil is required. The topsoil must contain 10-20% compost, 20-30% sand or granite sand and 50-60% topsoil, of which total clay content must be less than 20 percent and be free of stones, stumps, roots or other similar objects larger than one (1) inch. If on-site soils do not meet these specifications, topsoil per the above specs must be added. Sandy loam is not an approved soil and caliche is not considered a soil.
- (9) **Infiltration Berm:** Required for slopes greater than 1%. The top of each berm should be 0.1 feet below the uphill edge of the strip or the base of the preceding berm. Berm side slopes should be no steeper than 3:1, and berm top-width should be 4-8 inches. Standard design will be one or more berms placed downgradient at intervals of 15 feet, other designs will be acceptable if they maintain equivalent infiltration area and ponding volume.

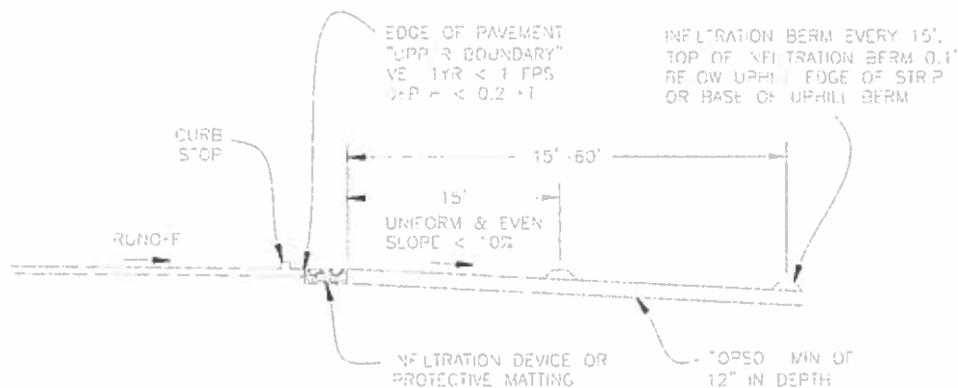


Figure 4-16: Engineered Vegetative Infiltration Strip



Engineering Solutions

Village Of Volente

Site Development Review

16100 Wharf Cove
(512) 250-2075 (P/fax)

Project Site Address: 16500 Jackson Date: May 19, 2014
Permit Applicant: Kerr Residence Project: Residential Application
Zoning District: R-1
Reviewer: Marc Dickey

REVIEW – DISAPPROVED

First Review Comments:

FYI: This review is only for the Site Development Plan. The building review will be issued separately following approval of the Site Plan.

1. It appears the proposed addition to the house will increase the allowable square footage over 20% impervious cover. **A variance must be requested to exceed 20% impervious cover.**
2. FYI: Silt fence will be required along the perimeter of the site area until revegetation of the disturbed areas has occurred.

These plans have been reviewed for compliance with the Village of Volente Ordinances. Items identified as insufficient information or where a noncompliance exists must be corrected.

Review of these plans does not represent the code(s) in their entirety. Field verification must be done to ensure compliance with jurisdiction adopted code(s) and ordinances. Review of structural documents by a design professional is limited to assuring that they have been provided.



August 26, 2013
 Yarrow Landscaping
 2105 Manor Rd
 Austin Texas 78722

MOPLER INC
 16500 JACKSON STR
 LEANDER, TEXAS 78

PLANT LIST

- BEARDED IRIS
- FLAME ACANTHUS
- LEMING HOLLY
- LOWERING SEMMA
- MEXICAN HARIGOLD
- MEXICAN SAGE
- PRIDE OF BARBADOS
- WAXAPPLE GUAVA
- OMEGRANATE TREE
- PINK TURKSCAP
- RED YUCCA
- SPIREA
- SANDANKWA
- SILVER PONYFOOT
- TEXAS SOTOL

