TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 15, 2008

Mr. Frank Bass
AT Holdings Copper Ridge LLC
175 Bendel Ranch Road
New Braunfels, Texas 78127

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: 18670 Forty Six Pkwy; Located on the north side of State Hwy 46, approximately 4,851 feet east of Hwy 281; Bulverde, Texas
TYPE OF PLAN: Request for Approval of a Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer
Edwards Aquifer Protection Program ID No. 207.01; Investigation No. 612775; Regulated Entity No. RN105162580

Dear Mr. Bass:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP application for the above-referenced project submitted to the San Antonio Regional Office by Klein Engineering, Inc. on behalf of AT Holdings Copper Ridge LLC on December 17, 2007. Final review of the CZP was completed after additional material was received on January 30, 2008. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 2.42 acres. It will include the construction of two buildings with associated driveways and parking lots, one water quality basin and one vegetative filter strip. The impervious cover will be 1.36 acres (56.2 percent). According to a letter dated, October 22, 2007, signed by Sam Smith, with Comal County, the site in the development is acceptable for the use of on-site sewage facilities.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a sand filter basin and engineered filter strip, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical

Guidance on Best Management Practices (RG-348, 2005) will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 1,221 pounds of TSS generated from the 1.36 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The single chamber sand filter basin design is a variation of the TCEQ technical guidance document, RG-348 (2005). The concrete lined basin will have a drainage area of 1.62 acres with 1.07 acres of impervious cover and treat 1,068 pounds of TSS, which includes 108 pounds of TSS as overtreatment from 0.12 acres of impervious cover not receiving treatment. The basin will have a water capture volume of 10,206 cubic feet (9,920 cubic feet required), a sand filter area of 1,205 square feet (1,190 square feet required) and a water depth of 7.50 feet. The basin filter media will be composed of an eighteen inch sand layer, a six inch gravel layer separated by a geotextile fabric and an under-drain perforated PVC piping system.

The engineered filter strip will be treating 153 pounds of TSS generated from a drainage area of 0.61 acres with 0.17 acres of impervious cover. The filter strip will have the following minimum requirements: 15 feet wide in the direction of flow, 80 percent vegetation coverage, 20 percent slope or less, and extend along the entire length of the contributing area.

SPECIAL CONDITIONS

I. The holder of the approved Edwards Aquifer CZP must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the application.

II. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested format (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved CZP is enclosed.

III. Since one facility is in operation at the project site, the permanent BMPs shall be constructed and operational in the most timely manner possible and prior to the operation of the proposed adjacent building.

IV. Intentional discharges of sediment laden storm water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.

V. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

VI. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

Prior to Commencement of Construction:

2. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved Contributing Zone Plan and this notice of approval shall be maintained at the project location until all regulated activities are completed.

3. Any modification to the activities described in the referenced CZP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

4. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.

5. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP) must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

6. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.

7. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been significantly reduced. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

8. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

9. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

10. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

11. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

12. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Contributing Zone Plan. If the new owner intends to commence any new regulated activity on the site, a new Contributing Zone Plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

13. A Contributing Zone Plan approval or extension will expire and no extension will be granted if more than 50% of the total construction has not been completed within ten years from the initial approval of a plan. A new Contributing Zone Plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

14. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

If you have any questions or require additional information, please contact Charly Fritz of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4065.

Sincerely,

Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/CEF/eg

Enclosures: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Brian Cope, Klein Engineering, Inc.
Ms. Velma Danielson, Edwards Aquifer Authority
Mr. Tom Hornseth, P.E., Comal County
Ms. Sarah Stevik, City of Bulverde

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 15, 2008

Mr. Frank Bass
AT Holdings Copper Ridge LLC
175 Bendel Ranch Road
New Braunfels, Texas 78127

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: 18670 Forty Six Pkwy; Located on the north side of State Hwy 46, approximately 4,851 feet east of Hwy 281; Bulverde, Texas
TYPE OF PLAN: Request for Approval of a Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer
Edwards Aquifer Protection Program ID No. 207.01; Investigation No. 612775; Regulated Entity No. RN105162580

Dear Mr. Bass:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP application for the above-referenced project submitted to the San Antonio Regional Office by Klein Engineering, Inc. on behalf of AT Holdings Copper Ridge LLC on December 17, 2007. Final review of the CZP was completed after additional material was received on January 30, 2008. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 2.42 acres. It will include the construction of two buildings with associated driveways and parking lots, one water quality basin and one vegetative filter strip. The impervious cover will be 1.36 acres (56.2 percent). According to a letter dated, October 22, 2007, signed by Sam Smith, with Comal County, the site in the development is acceptable for the use of on-site sewage facilities.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a sand filter basin and engineered filter strip, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical

Guidance on Best Management Practices (RG-348, 2005) will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 1,221 pounds of TSS generated from the 1.36 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The single chamber sand filter basin design is a variation of the TCEQ technical guidance document, RG-348 (2005). The concrete lined basin will have a drainage area of 1.62 acres with 1.07 acres of impervious cover and treat 1,068 pounds of TSS, which includes 108 pounds of TSS as overtreatment from 0.12 acres of impervious cover not receiving treatment. The basin will have a water capture volume of 10,206 cubic feet (9,920 cubic feet required), a sand filter area of 1,205 square feet (1,190 square feet required) and a water depth of 7.50 feet. The basin filter media will be composed of an eighteen inch sand layer, a six inch gravel layer separated by a geotextile fabric and an under-drain perforated PVC piping system.

The engineered filter strip will be treating 153 pounds of TSS generated from a drainage area of 0.61 acres with 0.17 acres of impervious cover. The filter strip will have the following minimum requirements: 15 feet wide in the direction of flow, 80 percent vegetation coverage, 20 percent slope or less, and extend along the entire length of the contributing area.

SPECIAL CONDITIONS

I. The holder of the approved Edwards Aquifer CZP must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the application.

II. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested format (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved CZP is enclosed.

III. Since one facility is in operation at the project site, the permanent BMPs shall be constructed and operational in the most timely manner possible and prior to the operation of the proposed adjacent building.

IV. Intentional discharges of sediment laden storm water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.

V. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

VI. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

Prior to Commencement of Construction:

2. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved Contributing Zone Plan and this notice of approval shall be maintained at the project location until all regulated activities are completed.

3. Any modification to the activities described in the referenced CZP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

4. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.

5. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP) must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

6. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.

7. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been significantly reduced. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

8. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

9. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

10. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

11. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

12. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Contributing Zone Plan. If the new owner intends to commence any new regulated activity on the site, a new Contributing Zone Plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

13. A Contributing Zone Plan approval or extension will expire and no extension will be granted if more than 50% of the total construction has not been completed within ten years from the initial approval of a plan. A new Contributing Zone Plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

14. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

If you have any questions or require additional information, please contact Charly Fritz of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4065.

Sincerely,

Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/CEF/eg

Enclosures: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Brian Cope, Klein Engineering, Inc.
Ms. Velma Danielson, Edwards Aquifer Authority
Mr. Tom Hornseth, P.E., Comal County
Ms. Sarah Stevik, City of Bulverde

FILE COPY

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 17, 2007

Mr. Thomas H. Hornseth, P.E.
Comal County Engineer
195 David Jonas Drive
New Braunfels TX 78132-3710

RECEIVED
DEC 2 8 2007
COUNTY ENGINEER

Re: Edwards Aquifer, Comal County
PROJECT NAME: 18670 Hwy 46 Parkway, River Crossing Unit 3 Lot 370 located on the north side of hwy 46, 4851 ft east of Hwy 281, Bulverde, Texas
PLAN TYPE: Application for Approval of a Contributing Zone Water Pollution Abatement Plan (CZP) request, 30 Texas Administration Code (TAC) Chapter 213; Edwards Aquifer Protection Program
San Antonio Region File Number: 207.01

Dear Mr. Hornseth:

The enclosed Contributing Zone Water Pollution Abatement Plan application is being forwarded to you pursuant to the Edwards Aquifer Rules. The Texas Commission on Environmental Quality (TCEQ) is required by 30 TAC Chapter 213 to provide copies of all applications to affected incorporated cities and underground water conservation districts for their comments prior to TCEQ approval.

Please forward your comments to this office by January 16, 2007.

The Texas Commission on Environmental Quality appreciates your assistance in this matter and your compliance efforts to ensure protection of the State's environment. If you or members of your staff have any questions regarding these matters, please feel free to contact the San Antonio Region Office at (210) 490-3096.

Sincerely

4021

Lynn M. Bumguardner
Water Section Work Leader
San Antonio Regional Office

LMB/eg

Boyd, Robert

From: Boyd, Robert
Sent: Thursday, January 03, 2008 3:22 PM
To: 'jjupe@tceq.state.tx.us'
Subject: CZP for River Crossing Unit 3 Lot 670R

Jason,

During our review of the referenced CZP, we determined that a correct suitability letter had not been obtained from our office. The suitability letter that was included in the application was a Permit (#88656) that was obtained in October 2006 for what the engineer (Brian Cope, P.E.) termed as the existing development. We researched the issue and determined that a permit (#89663) was issued in October 2007 for what the engineer (Brian Cope, P.E.) termed the proposed development.

The issuance of a permit for the referenced development shows that Comal County found the site to be suitable for an OSSF. It would be our recommendation that Permit #89663, which can be located at the Comal County Engineer's Office website (www.cceo.org), should be included in the CZP application for the fulfillment of the suitability letter.

If you have any questions or need additional information, please contact our office.

Thanks.

Robert Boyd, P.E.
Assistant Comal County Engineer
phone: (830) 608-2090
fax: (830) 608-2009
www.cceo.org

Comal Co
#207.01

18670 HWY 46 PARKWAY
RIVER CROSSING UNIT 3 - LOT 670R
BULVERDE, TEXAS

CONTRIBUTING ZONE PLAN
REQUEST FOR APPROVAL
30 TAC 213
EDWARDS AQUIFER PROTECTION PROGRAM

TCEQ SAN ANTONIO OFFICE

December 12, 2007

Prepared by:

KLEIN ENGINEERING, INC.
8611 Botts Ln.
San Antonio, Texas 78217

18670 HWY 46 PARKWAY
RIVER CROSSING UNIT 3 - LOT 670R
BULVERDE, TEXAS

CONTRIBUTING ZONE PLAN
REQUEST FOR APPROVAL
30 TAC 213
EDWARDS AQUIFER PROTECTION PROGRAM

TCEQ SAN ANTONIO OFFICE

December 12, 2007

Prepared by:

KLEIN ENGINEERING, INC.
8611 Botts Ln.
San Antonio, Texas 78217

Contributing Zone Plan Checklist

_X_ Contributing Zone Plan Application (*TCEQ-10257)*

ATTACHMENT A - Road Map
ATTACHMENT B - USGS Quadrangle Map
ATTACHMENT C - Project Narrative
ATTACHMENT D - Factors Affecting Surface Water Quality
ATTACHMENT E - Volume and Character of Stormwater
ATTACHMENT F - Suitability Letter from Authorized Agent (if OSSF is proposed)
ATTACHMENT G - Alternative Secondary Containment Methods (if AST with an alternative method of secondary containment is proposed)
ATTACHMENT H - AST Containment Structure Drawings (if AST is proposed)
ATTACHMENT I - 20% or Less Impervious Cover Waiver (if project is multi-family residential, a school, or a small business *and* 20% or less impervious cover is proposed for the site)
ATTACHMENT J - BMPs for Upgradient Stormwater
ATTACHMENT K - BMPs for On-site Stormwater
ATTACHMENT L - BMPs for Surface Streams
ATTACHMENT M - Construction Plans
ATTACHMENT N - Inspection, Maintenance, Repair and Retrofit Plan
ATTACHMENT O - Pilot-Scale Field Testing Plan, if BMPs not based on *Complying with the Edwards Aquifer Rules: Technical Guidance for BMPs*
ATTACHMENT P - Measures for Minimizing Surface Stream Contamination

_X_ Storm Water Pollution Prevention Plan (SWPPP)

_X_ Copy of Notice of Intent (NOI)

_X_ Agent Authorization Form (*TCEQ-0599)*, if application submitted by agent

_X_ Contributing Zone Fee Application Form (*TCEQ-10258)*

_X_ Check Payable to the "Texas Commission on Environmental Quality"

_X_ Core Data Form (*TCEQ-10400*)

Contributing Zone Plan Application
for Regulated Activities
on the Contributing Zone to the Edwards Aquifer
and Relating to 30 TAC §213.24(1), Effective June 1, 1999

Regulated Entity Name: 18670 FORTY SIX PKWY
County: COMAL Stream Basin: CIBOLO CREEK

1. __ Regulated activities on this site will disturb at least 5 acres.
X Regulated activities on this site will disturb less than 5 acres and are part of a larger common plan of development or sale with the potential to disturb cumulatively five or more acres.

2. Customer (Applicant):

Contact Person: Frank Bass
Entity: AT Holdings Copper Ridge LLC
Mailing Address: 175 Bendel Ranch Rd.
City, State: New Braunfels, Texas Zip: 78127
Telephone: 830-743-1258 FAX: 801-740-7375

Agent/Representative (If any):

Contact Person: Brian M. Cope
Title: Project Engineer
Entity: Klein Engineering, Inc.
Mailing Address: 8611 Botts Ln.
City, State: San Antonio, Texas Zip: 78217
Telephone: 210-828-7070 FAX: 210-828-7076

3. X This project is inside the city limits of Bulverde, Texas.
__ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
__ This project is not located within any city's limits or ETJ.

4. The location of the project site is described below. Sufficient detail and clarity has been provided so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.
This project is located on the northside of Hwy 46 approximately 4,851 ft. east of the intersection of Hwy 281 and Hwy 46.

5. X **ATTACHMENT A - Road Map.** A road map showing directions to and the location of the project site is found as at the end of this form.

6. X **ATTACHMENT B - USGS Quadrangle Map.** A copy of the a USGS Quadrangle Map (Scale: 1" = 2000') is found at the end of this form. The map(s) clearly shows:
__ Project site boundaries.
__ USGS Quadrangle Name(s).

7. X **ATTACHMENT C - Project Narrative.** A detailed narrative description of the proposed project is found at the end of this form.

8. Existing project site conditions are noted below:
   - X Existing commercial site
   - __ Existing industrial site
   - __ Existing residential site
   - __ Existing paved and/or unpaved roads
   - __ Undeveloped (Cleared)
   - __ Undeveloped (Undisturbed/Uncleared)
   - __ Other: _____

PROJECT INFORMATION

9. The type of project is:
   - __ Residential: # of Lots: ____
   - __ Residential: # of Living Unit Equivalents: ____
   - X Commercial
   - __ Industrial
   - __ Other: _____

10. Total project area (size of site): 2.42 Acres
    Total disturbed area: 1.32 Acres

11. Projected population: 348

12. The amount and type of impervious cover expected after construction is complete is shown below:

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	13,089	÷ 43,560 =	0.30
Parking	31,644	÷ 43,560 =	0.73
Other paved surfaces	14,714	÷ 43,560 =	0.34
Total Impervious Cover	59,447	÷ 43,560 =	1.36
Total Impervious Cover ÷ Total Acreage x 100 =			56 %

13. X **ATTACHMENT D - Factors Affecting Surface Water Quality.** A description of factors that could affect surface water quality is found as at the end of this form. If applicable, this should included the location and description of any discharge associated with industrial activity other than construction.

14. X Only inert materials as defined by 30 TAC 330.2 will be used as fill material.

FOR ROAD PROJECTS ONLY
Complete questions 15-20 if this application is exclusively for a road project.

15. Type of project:
   - __ TXDOT road project.
   - __ County road or roads built to county specifications.
   - __ City thoroughfare or roads to be dedicated to a municipality.
   - __ Street or road providing access to private driveways.

16. Type of pavement or road surface to be used:

__ Concrete
__ Asphaltic concrete pavement
__ Other: _____

17. Length of Right of Way (R.O.W.): _____ feet.
Width of R.O.W.: _____ feet.
L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

18. Length of pavement area: _____ feet.
Width of pavement area: _____ feet.
L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.
Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = ____% impervious cover.

19. __ A rest stop will be included in this project.
__ A rest stop will **not** be included in this project.

20. __ Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

STORMWATER TO BE GENERATED BY THE PROPOSED PROJECT

21. X **ATTACHMENT E - Volume and Character of Stormwater.** A description of the volume and character (quality) of the stormwater runoff which is expected to occur from the proposed project is found at the end of this form. The estimates of stormwater runoff quality and quantity are based on area and type of impervious cover. The runoff coefficient of the site for both pre-construction and post-construction conditions is included.

WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

22. Wastewater will be disposed of by:

X On-Site Sewage Facility (OSSF/Septic Tank):
ATTACHMENT F - Suitability Letter from Authorized Agent. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's written approval is provided at the end of this form. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities, or it identifies those areas that are not suitable for the use of private sewage facilities. The system will be designed by a licensed professional engineer or a registered sanitarian and installed by a licensed installer in compliance with 30 TAC §285.

__ Sewage Collection System (Sewer Lines):
Wastewater is to be disposed of by conveyance to the _____ _____ (name) treatment plant for treatment and disposal. The treatment facility is :
__ existing.
__ proposed.

__ Wastewater is to be discharged in the contributing zone. Requirements under 30 TAC §213.6(c) relating to Wastewater Treatment and Disposal Systems have been satisfied.

FOR PERMANENT ABOVEGROUND STORAGE TANKS (ASTs) > 500 GALLONS
Complete questions 23-29 if this project includes the installation of AST(s) with volume(s) greater than 500 gallons.

23. Tanks and substance stored:

AST Number	Size (Gallons)	Substance to be Stored	Tank Material
1			
2			
3			
4			
5			
Total		x 1.5 =	gallons

24. ___ The AST will be placed within a containment structure that is sized to capture one and one-half (1 1/2) times the storage capacity of the system. For facilities with more than one tank system, the containment structure is sized to capture one and one-half (1 1/2) times the cumulative storage capacity of all systems.

___ **ATTACHMENT G - Alternative Secondary Containment Methods.** Alternative methods for providing secondary containment are proposed. Specifications showing equivalent protection for the Edwards Aquifer are found at the end of this form.

25. Inside dimensions and capacity of containment structure(s):

Length (L) (Ft.)	Width (W) (Ft.)	Height (H) (Ft.)	L x W x H = (Ft^3)	Gallons
Total				

26. ___ All piping, hoses, and dispensers will be located inside the containment structure.
___ Some of the piping to dispensers or equipment will extend outside the containment structure.
___ The piping will be aboveground
___ The piping will be underground

27. ___ The containment area must be constructed of and in a material impervious to the substance(s) being stored. The proposed containment structure will be constructed of ___ _____.

28. **ATTACHMENT H - AST Containment Structure Drawings.** A scaled drawing of the containment

FOR PERMANENT ABOVEGROUND STORAGE TANKS (ASTs) > 500 GALLONS
Complete questions 23-29 if this project includes the installation of AST(s) with volume(s) greater than 500 gallons.

23. Tanks and substance stored:

AST Number	Size (Gallons)	Substance to be Stored	Tank Material
1			
2			
3			
4			
5			
Total		x 1.5 =	gallons

24. ___ The AST will be placed within a containment structure that is sized to capture one and one-half (1 1/2) times the storage capacity of the system. For facilities with more than one tank system, the containment structure is sized to capture one and one-half (1 1/2) times the cumulative storage capacity of all systems.

___ **ATTACHMENT G - Alternative Secondary Containment Methods.** Alternative methods for providing secondary containment are proposed. Specifications showing equivalent protection for the Edwards Aquifer are found at the end of this form.

25. Inside dimensions and capacity of containment structure(s):

Length (L) (Ft.)	Width (W) (Ft.)	Height (H) (Ft.)	L x W x H = (Ft^3)	Gallons
Total				

26. ___ All piping, hoses, and dispensers will be located inside the containment structure.

___ Some of the piping to dispensers or equipment will extend outside the containment structure.

___ The piping will be aboveground

___ The piping will be underground

27. ___ The containment area must be constructed of and in a material impervious to the substance(s) being stored. The proposed containment structure will be constructed of ___ _____.

28. **ATTACHMENT H - AST Containment Structure Drawings.** A scaled drawing of the containment

structure is found at the end of this form that shows the following:

__ Interior dimensions (length, width, depth and wall and floor thickness).
__ Internal drainage to a point convenient for the collection of any spillage.
__ Tanks clearly labeled
__ Piping clearly labeled
__ Dispenser clearly labeled

29. Any spills must be directed to a point convenient for collection and recovery. Spills from storage tank facilities must be removed from the controlled drainage area for disposal within 24 hours of the spill.

__ In the event of a spill, any spillage will be removed from the containment structure within 24 hours of the spill and disposed of properly.
__ In the event of a spill, any spillage will be drained from the containment structure through a drain and valve within 24 hours of the spill and disposed of properly. The drain and valve system are shown in detail on the scaled drawing.

SITE PLAN

Items 30 through 41 must be included on the Site Plan.

30. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 20'.

31. 100-year floodplain boundaries

__ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
X No part of the project site is located within the 100-year floodplain.

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s):

_____

_____

32. X The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
__ The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot contour intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.

33. X A drainage plan showing all paths of drainage from the site to surface streams.

34. X The drainage patterns and approximate slopes anticipated after major grading activities.

35. X Areas of soil disturbance and areas which will not be disturbed.

36. X Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

37. X Locations where soil stabilization practices are expected to occur.

38. X Surface waters (including wetlands).

39. __ Locations where stormwater discharges to surface water.
X There will be no discharges to surface water.

40. __ Temporary aboveground storage tank facilities.
X Temporary aboveground storage tank facilities will not be located on this site.

41. __ Permanent aboveground storage tank facilities.
X Permanent aboveground storage tank facilities will not be located on this site.

Permanent best management practices (BMPs) and measures that will be used during and after construction is completed.

42. X Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

43. X These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

X The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

__ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is provided below

_____

_____

_____

_____

44. X Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

45. X Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

__ This site will be used for low density single-family residential development and has 20% or less impervious cover.

__ This site will be used for low density single-family residential development but has more than 20% impervious cover.

X This site will not be used for low density single-family residential development.

46. X The executive director may waive the requirement for other permanent BMPs for multi-family

residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

__ **ATTACHMENT I - 20% or Less Impervious Cover Waiver.** This site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is found at the end of this form.

X This site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.

__ This site will not be used for multi-family residential developments, schools, or small business sites.

47. **ATTACHMENT J - BMPs for Upgradient Stormwater.**

__ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is provided as **ATTACHMENT J** at the end of this form.

X If no surface water, groundwater or stormwater originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT J** at the end of this form.

__ If permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT J** at the end of this form.

48. **ATTACHMENT K - BMPs for On-site Stormwater.**

X A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is provided as **ATTACHMENT K** at the end of this form.

__ If permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, an explanation is provided as **ATTACHMENT K** at the end of this form.

49. X **ATTACHMENT L - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams is provided at the end of this form.

50. X **ATTACHMENT M - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information have been signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed permanent BMPs and measures are provided at the end of this form. Design Calculations, TCEQ Construction Notes, all proposed structural measures, and appropriate details must be shown on the construction plans.

51. X **ATTACHMENT N - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is provided at the end of this form. The plan has been prepared and certified by the engineer designing the permanent BMPs and measures. The plan has been signed by

the owner or responsible party. The plan includes procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofits as well as a discussion of record keeping procedures.

52. X The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

__ Pilot-scale field testing (including water quality monitoring) may be required for BMPs that are not contained in technical guidance recognized by or prepared by the executive director.

__ **ATTACHMENT O - Pilot-Scale Field Testing Plan.** A plan for pilot-scale field testing is provided at the end of this form.

53. X **ATTACHMENT P - Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is provided at the end of this form. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity which increase erosion that results in water quality degradation.

Responsibility for maintenance of permanent BMPs and measures after construction is complete.

54. X The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.

55. X A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

ADMINISTRATIVE INFORMATION

56. X One (1) original and three (3) copies of the complete application has been provided.

57. X Any modification of this Contributing Zone Plan may require TCEQ review and Executive Director approval prior to construction, and may require submission of a revised application, with appropriate fees.

58. X The site description, controls, maintenance, and inspection requirements for the storm water pollution prevention plan (SWPPP) developed under the EPA NPDES general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) of the technical report. All requirements of 30 TAC §213.24(1-5) have been met by the SWPPP document.

To the best of my knowledge, the responses to this form accurately reflect all information requested

concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **CONTRIBUTING ZONE PLAN APPLICATION** is hereby submitted for TCEQ review and Executive Director approval. The application was prepared by:

Frank Bass

Print Name of Customer/Agent

Signature of Customer/Agent

6/20/07

Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF TEXAS
TEXAS WATER DEVELOPMENT BOARD

ANHALT QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

SITE LOCATION

RECHARGE ZONE

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1963. Field-checked 1964

Polyconic projection. 1927 North American datum
10,000-foot grid based on Texas coordinate system, south central zone
1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue

Fine red dashed lines indicate selected fence lines

Areas covered by dashed light-blue pattern are subject to controlled inundation

Revisions shown in purple compiled from aerial photographs taken 1973. This information not field checked

UTM GRID AND 1973 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

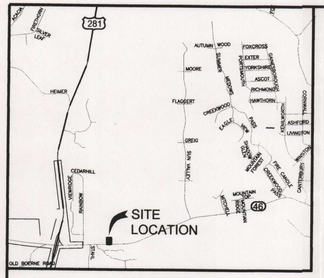
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route
U. S. Route
State Route

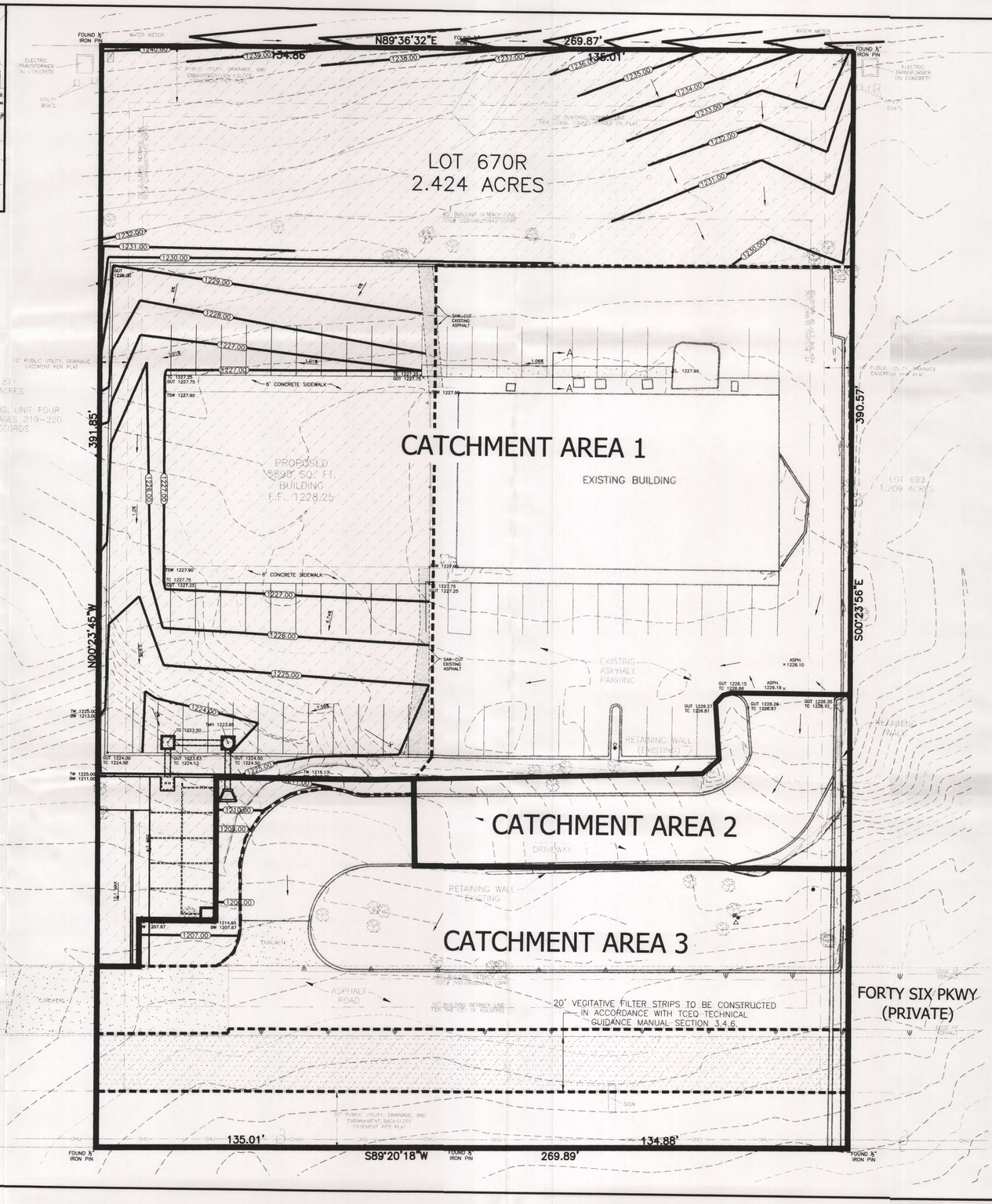
ANHALT, TEX.
N2945—W9822.5/7.5

1964
PHOTOREVISED 1973
AMS 6343 IV SW—SERIES V882

1



LOCATION MAP
N.T.S.



NORTH
SCALE: 1"=20'

TOTAL SITE: = 2.42 acres
A_N = 1.36 ac
A_P = 1.06 ac
IC = 56%

CATCHMENT AREA 1:
A_1 = 1.62 ac
A_I = 1.07 ac
A_P = 0.43 ac
IC = 66%

CATCHMENT AREA 2:
A_1 = 0.15 ac
A_I = 0.10 ac
A_P = 0.05 ac
IC = 67%

CATCHMENT AREA 3:
A_1 = 0.65 ac
A_I = 0.19 ac
A_P = 0.46 ac
IC = 29%

LEGEND

—980—	EXIST. CONTOUR	—·—·—	BUILDING SETBACK
—(980)—	PROP. CONTOUR	—·····—	PROPERTY LINE
TMH	TOP OF MANHOLE	⊗	CLEAN OUT
TG	TOP OF GRATE	⊗	WATER VALVE
TC	TOP CURB	⊘	WATER METER
GUT	GUTTER	●	TREES (MISC)
TW	TOP OF WALL	✱	LIGHT POLE
BW	BOTTOM WALL	○	SPRINKLER HEAD
TSW	TOP OF SIDEWALK		
—OHU—	OVERHEAD UTILITY LINE		LIMITS OF CONSTRUCTION AREAS TO BE DISTURBED
—x—x—x—	WIRE FENCE		CATCHMENT AREA
	EXIST. ASPHALT		

NOTE:

1. SOIL STABILIZATION PRACTICES ARE EXPECTED TO OCCUR AT ALL OPEN AREAS DESIGNATED FOR OPEN SPACE/LAWNS. BARE SOILS SHALL BE SEEDED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING.

REVISIONS

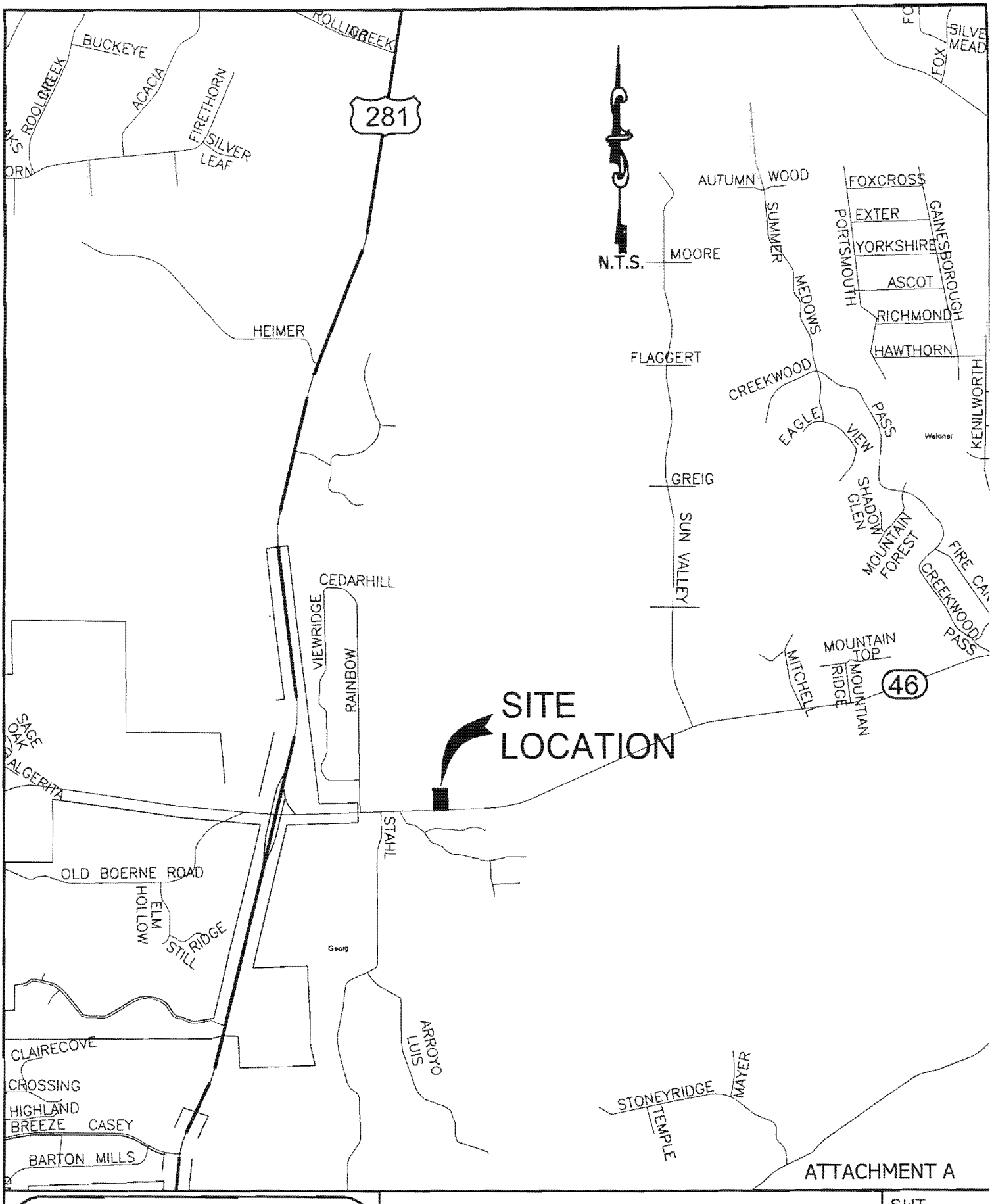
SITE PLAN

CONTRIBUTING ZONE PLAN FOR LOT
670R RIVER CROSSING UNIT 3
BULVERDE TEXAS

STATE OF TEXAS
BRIAN M. COPE
87735
LICENSED
PROFESSIONAL
ENGINEER

KLEIN ENGINEERING, INC.
CIVIL / MUNICIPAL / ENVIRONMENTAL ENGINEERS
8611 BOTTS LANE
SAN ANTONIO, TX. 78217
OFFICE: 210-828-7070
FAX: 210-828-7076

JOB No. : 11-27
DATE : 12-2007
DESIGNED BY: F.R.
DRAWN BY: L.V.
CHECKED BY: B.M.C.
PAGE 1 OF 1



ATTACHMENT A

KLEIN ENGINEERING, INC. CIVIL / MUNICIPAL / ENVIRONMENTAL ENGINEERS SAN ANTONIO, TEXAS	SITE LOCATION FOR LOT 670R RIVER CROSSING UNIT 3 2.424 AC.	SHT 1 OF 1

PROJECT NARRATIVE

This proposed development, also known as Lot 670R River Crossing Unit 3, is located in the City of Bulverde, Comal County, Texas. The property is a total of 2.42 acres in area approximately 1.00 acre of which is currently developed. The existing development consists of a 7,199 square foot commercial building and 28,750 square feet of asphalt parking and driveway, curbs, sidewalks and retaining walls. The proposed development of the remaining 1.42 acres will consist of a 5,890 square foot commercial building 14,375 square feet of asphalt pavement, curbs retaining walls and the necessary utilities services. An On-site Sanitary Sewer Facility will be installed on the property to accommodate the proposed development. According to FEMA FIRM Map Panel No. 4854630035C Revised September 29, 1986, this proposed development lies outside the 100-year floodplain. Runoff from this site currently sheet flows from north to south across the property and on to State Highway 46 and into tributaries of Lewis Creek and eventually on into Cibolo Creek. Currently, the site has an impervious cover of approximately 35%. After proposed improvements are complete the ultimate impervious cover will be approximately 56%.

The developed portion of this property was found to be in violation of the TCEQ 30 TAC Chapter 213 Subchapter B for development within the Contributing Zone of The Edwards Aquifer. A site specific Contributing Zone Plan has been developed and will be submitted to bring this property back into compliance. One sand filter system was designed and located in an area to allow the capture of all the runoff from the proposed development and a portion of runoff from the existing development. To compensate for the portion of runoff that will not be captured the pond was oversized to allow for the treatment of a larger rainfall depth per year. (See attached drainage area map and BMP calculations). Forty-Six Parkway which is the existing private asphalt roadway located between this development and Hwy 46 was built prior to the commencement of the first part of the development of this property. Treatment of runoff sheet flowing across this portion of the property will be treated by Engineered Vegetative Filter Strips placed adjacent to the roadway.

FACTORS AFFECTING WATER QUALITY

The potential sources of contamination on the proposed project include, but are not limited to, hydrocarbons, such as oil and grease, vehicle/machinery fluid leaks, asphalt paving oils, trash or debris, and fertilizers and soil runoff.

All construction equipment will be fueled off-site, and no hazardous materials shall be utilized for the construction of the proposed improvements. Portable toilets will be placed on site for use by construction workers during construction activities. All waste will be hauled off site daily, as generated.

Prior to any construction activity, storm water pollution prevention will include silt fences along the property lines and down gradient for temporary erosion and sedimentation control and the installation of a stabilized construction entrance/exit to reduce sediment removal from the site. The construction contractor will be responsible for the installation, repair and upkeep of all control measures.

VOLUME AND CHARACTER OF STORMWATER

The site is a total of 2.42 acres in area, 1.00 acre of which is currently developed. The remaining undeveloped area is covered with native grass with some oak and cedar trees and has overall average slopes of approximately 9-12%. No off-site area contributes runoff to the site. The weighted runoff coefficient produced from both off-site and on-site area is 0.56. Runoff generated from this site sheet flows to tributaries of Lewis Creek and eventually to Cibolo Creek.

The effects of the proposed improvements, which consist of a 5,890 square foot commercial building and asphalt parking, are estimated to produce a weighted runoff coefficient of 0.63 for the total site.

Potential pollutants contained in storm water runoff produced from the site will include but are not limited to hydrocarbons, such as oils and grease, vehicle fluid leaks, asphalt paving oils, trash or debris and fertilizers and sediment.

Runoff quantities are estimated below using the Rational Method $Q_{cfs} = C*I(in/hr)*A(ac.)$

Pre-Development

	Q (cfs)	Coeff.	Tc (min)	I (in/hr)	Area (ac.)
10 -year	9.13	0.56	13.05	6.74	2.42
100-year	14.31	0.56	13.05	10.56	2.42

Post-Development

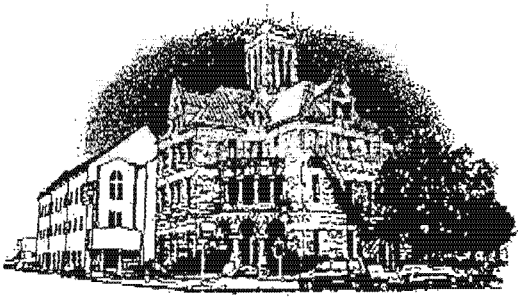
	Q (cfs)	Coeff.	Tc (min)	I (in/hr)	Area (ac.)
10 -year	10.09	0.63	13.55	6.62	2.42
100-year	15.81	0.63	13.55	10.37	2.42

I(in/hr) = b/((Tc+d)^e)

New Braunfels Rainfall Intensity Constants

	10 yr	100 yr
b	71.90	95.1
d	8.69	7.17
e	0.769	0.731

All stormwater originating on-site will be directed to temporary and permanent pollution abatement measures.



Comal County

OFFICE OF COMAL COUNTY ENGINEER

PERMIT OF AUTHORIZATION TO CONSTRUCT AN ON-SITE SEWAGE FACILITY
PERMIT VALID FOR ONE YEAR FROM DATE ISSUED

Permit Number: 88656

Issued this date: October 9, 2006

This Permit is hereby given to: A T Holding- Copper Ridge LLC

To start construction of a private, on-site sewage facility located at:

18670 Hwy 46 Parkway, Spring Branch, TX 78070
Lot 670, River Crossing Unit 3 Subdivision

APPROVED MIMNIMUM SIZES AS PER ATTACHED DESIGN

Type of System: Aerobic Treatment with Surface Irrigation Discharge

This permit gives permission for the construction of the above referenced on-site facility to commence. Installation must be completed by an installer holding a valid registration card from the Texas Natural Resource Conservation Commission (TNRCC). Installation and inspection must comply with current TNRCC and Comal County requirements.

Call (830) 608-2094 to schedule inspections.

CONDITIONS OF THIS PERMIT - SEE ATTACHED EXHIBIT "A"

Exhibit "A"

Permit #88656
A.T. Holdings
River Crossing Unit 3 Lot 670

The referenced on-site sewage facility permit is issued with the following conditions:

The owner of the above referenced property is required to submit monthly water usage records to the permitting authority. These records must show a daily water usage rate of 750 gallons per day or less. If these records exceed the daily permitted amount, the current permit to operate the on-site sewage facility will be void and a new permit must be obtained.

88856

Septic Designs, Etc LLC
Christopher S. Jones, Registered Sanitarian, Canyon Lake, Texas 830-964-2347 csjones4@mac.com

July 24, 2006

RECEIVED
AUG 30 2006
COUNTY ENGINEER

SEPTIC DESIGN FOR:
SER NO: 2006.079.1

A.T. Holding - Copper Ridge LLC
Lot 670, River Crossing, Unit Three
Comal County, Texas

WASTEWATER DESIGN FLOW: This design is for a three space strip mall using watersaving fixtures. The proposed site is located at 18670 Hwy 46 Parkway, Spring Branch, Texas 78070. The design wastewater usage rate will be 750 gallons per day. The strip mall plans to house a Hair Salon with three stations (324 gpd max, 108 gal per station), a fitness center with 70 visitors per day (266 gpd max, 70 x 3 gal = 210 + 7 x 8 gal = 56. Other fitness centers of this franchise report 66 visitiors per day with 10% using shower), and a retail store/office space (160 gpd max,). The salon and retail/office space wll have 1 washroom. The fitness center will have 3 washrooms with a shower in each. Wastewater strength is expected to be residential strength or less. Six to eight inches of class II soil will need to be added to the drip field area.

TREATMENT PROCESS AND APPLICATION RATE: The use of a Class 1 aerobic treatment plant followed by a combination of spray (368 gpd) and drip irrigation (382 gpd) application was chosen for this site. The application area has approximately 5-15% slope. The treated effluent will be dosed on to the spray area at night and the drip area throughout the day and night via a combination timer/zone selector mechanism. The proposed application rates are 0.064 (spray) and 0.2 (drip) gallons per square foot per day, or less. The minimum application area is 5750 (spray) and 1910 (drip) square feet.

CONSTRUCTION NOTES AND COMPONENTS:

One (1) 550 gallon pretreatment (trash) tank (integral to plant).
Norweco Singulair 960-750 Class 1 aerobic treatment plant (or any state approved plant).
One (1) 1250 gallon pump tank.
One (1) 0.5 Hp pump (Norweco High Head Effluent Pump)
One (1) stack feed tablet chlorinator (integral to plant).
One (1) electronic control box with audible/visual alarm for pump tank and aerator.
One (1) timer control for activating pump.
Float controls for activating pumps and alarm.
Two (2) Rainbird PESB150 electronic valves and wiring.
One (1) Rainbird RC-1260C outdoor electro mechanical irrigation timer.
One (1) Rainbird R-100 pump start relay.
Low angle (15°) sprinkler heads.
1.5" and 1" Sch. 40 PVC purple piping for sprinkler lines.
956 linear feet of 0.6 gph Netafim pressure compensated drip tubing.
5 vacuum breakers/flushing valves.

July 24 2006
Christopher S. Jones

STATE OF TEXAS
CHRISTOPHER S. JONES
3609
PROFESSIONAL SANITARIAN

LANDSCAPING: Groundcover is already in place. This cover consists of native grasses, native shrubs, and trees. Clear underbrush as needed to provide a uniform disposal area. Reseed as needed to revegetate disturbed spray disposal area. Cover rocks as required in spray area. Scarify drip field area then add 6 to 8 inches of Class II soil prior to installing drip tubing. Sod drip area prior to final inspection.

Septic Designs, Etc LLC
Christopher S. Jones, Registered Sanitarian, Canyon Lake, Texas 830-964-2347 csjones4@mac.com

INSTALLATION: Dig tank hole. A minimum of four inches of sand, sandy loam, clay loam, or pea gravel free of rock larger than 1/2 inch in diameter, shall be placed under and around all tanks. Install tank(s) and backfill with same type of material (after required inspection). Install audible/visual alarm in a conspicuous place. Install an electrical quick disconnect near the electrical control panel. Install compressor and pump assembly and place an unthreaded hose bib (for sampling) in the sch 40 manifold line going to sprinklers. Install a 100 micron filter in the manifold prior to the drip field. Float levels are depicted on the tank drawing. Drip tubes shall be a minimum of 6" below the ground surface. Electrical wiring shall be in conduit and in accordance with the most recent edition of the National Electric Code. A separate 20 amp breaker is required for the system. Irrigation lines and and manifolds should be kept 10 feet from all water lines (or waterlines must be sleeved).

RECEIVED

AUG 3 0 2006

COUNTY ENGINEER

VARIANCES REQUESTED: None.

FLOOD HAZARD: None.

INSPECTIONS: After tanks, pump, and drip tubes are set and the system is functional, call Comal County Environmental Health at 830-608-2090 to schedule inspections. Normally, 24 hour notice is required. After the system has been covered and landscaping is in place, schedule a final inspection with Comal County.

MAINTENANCE AGREEMENT: A maintenance agreement between the homeowner and a TCEQ approved maintenance company is required. The initial agreement is for a two year period and must be included in the price of the system. A copy of this agreement must be provided to the permitting authority prior to permit approval (normally must be included with design). If a maintenance company discontinues business, the owner has (30) thirty days in which to procure a new agreement with a different company.

AFFIDAVIT: Prior to issuance of a permit, a certified copy, which has been duly recorded at the county clerk's office and filed in reference to the real property deed on which the OSSF system (identified in paragraph 285.91, Table 12) is to be installed, must be submitted. The owner and all new owners shall be advised that the property contains a OSSF requiring a continuing maintenance contract. The transfer of an OSSF permit will accompany the transfer of the property on which an OSSF is located. All new owners are required to obtain a maintenance contract with a TCEQ approved maintenance company, and to submit it to the permitting authority within 30 days after the property has been transferred.

TESTING/REPORTING: The maintenance company shall inspect and report the results to the permitting authority. All tests must adhere to the testing procedure of the TCEQ as shown in 285.91(4), and as to the permitting authorities guidelines.

July 24, 2006
Christopher S. Jones

88656

Septic Designs, Etc LLC
Christopher S. Jones, Registered Sanitarian, Canyon Lake, Texas 830-964-2347 csjones4@mac.com

SEPTIC DESIGN FOR: A.T. Holding - Copper Ridge LLC

RECEIVED
AUG 3 0 2006
COUNTY ENGINEER

SPRAY AREA CALCULATIONS:

Q/Ri = 368 / 0.064 = 5750 square feet.(minimum spray area required)

Designed Irrigation Area: (Nelson 5500/6000 sprinklers with 15° low angle nozzles)

ZONE 1: (Set Rainbird timer for 44 minutes)

GALLONS/DAY	368		APP RATE	0.064	REQUIRED	SPRAY AREA	5750.0
SPRINKLER #	NOZZLE	ARC	RADIUS	AREA	PSI	GPM	GPD/S.F.
1	4	180	25	981.25	35	1.30	0.057
2	4	180	29	1320.37	35	1.30	0.043
3	4	180	29	1320.37	35	1.30	0.043
4	51	360	15	706.50	35	0.70	0.043
5	4	180	29	1320.37	35	1.30	0.043
6	4	180	29	1320.37	35	1.30	0.043
7	4	180	25	981.25	35	1.30	0.057
TOTAL	AREA			7950.48		8.50	GPM
LESS	OVERLAP	AREA		2200.48			
TOTAL	SPRAY	AREA		5750.00			

PUMP RUN	TIME IN	MINUTES	43.3					
FROM	TO	PRESSURE PSI	DISTANCE FEET	1.5" FLOW GPM	SPRAY FRICTION LOSS PER 100'	MANIFOLD FRICTION LOSS FT. HEAD	FACTOR FOR FITTINGS	FRICTION HEAD
TANK	SP1	35	263	8.5	0.61	1.60	1.2	1.92
SP1	TEE	35	29	7.2	0.45	0.13	1.2	0.16
TEE	SP2	35	25	1.3	0.01	0.00	1.2	0.00
TEE	SP3	35	25	1.3	0.01	0.00	1.2	0.00
TEE	SP4	35	28.5	4.6	0.01	0.00	1.2	0.00
SP4	TEE	35	28.5	3.9	0.01	0.00	1.2	0.00
TEE	SP5	35	25	1.3	0.01	0.00	1.2	0.00
TEE	SP6	35	25	1.3	0.01	0.00	1.2	0.00
TEE	SP7	35	29	1.3	0.01	0.00	1.2	0.00

PRESSURE	HEAD=	35 PSI X 2.31 FT/PSI = 80.85 FT.		
ELEVATION	HEAD=	33	FT.	
FRICTION	HEAD=	2.10	FT.	2.10
TOTAL	HEAD=	115.95		

July 24, 2006
Christopher S. Jones

STATE OF TEXAS
CHRISTOPHER S. JONES
3609
PROFESSIONAL SANITARIAN

88656

Septic Designs, Etc LLC
Christopher S. Jones, Registered Sanitarian, Canyon Lake, Texas 830-964-2347 csjones4@mac.com

RECEIVED
AUG 3 0 2006
COUNTY ENGINEER

DRIP AREA CALCULATIONS:

Q/Ri = 382 / 0.02 = 1910 square feet.(minimum drip area required)

ZONE 2: (Set Rainbird timer to actuate for 10 minutes every 3 hours beginning at 2 a.m.)

Q = Gallons Per Day	382	
Ra = Loading rate	0.2	
Required Absorption Area Q/Ra	1910	
Emitters required (4 s.f. each)	478	(absorption area / 4)
Emitter spacing (ft)	2	
Linear feet of dripline	956	(#emitters * spacing)
Pressure compensating emitters?	yes	
Dripfield pressure (top line psi)	20	(7-60 psi range)
Pressure head required (ft) PH	46.2	(psi * 2.31)
Flow rate per emitter (gph)	0.61	
Flow rate per emitter (gpm)	0.01	
Total emitter flow rate (gpm)	4.78	(normal operation pump flow required)
Number of flowlines(zones)	5	(connections to supply/return manifold)
Number of flowlines open during flush	5	
Added flushing flow required (gpm)	8.0	(1.6 gpm * no. of flowlines open during flushing)
Total pump flow required (gpm)	12.78	(flushing pump flow required)
Suppy manifold size (inches I.D.)	1.00	
Supply manifold length (ft)	44	
Sup man friction loss factor (ft/100')	10.81	(based on flushing flow)
Supply manifold friction head loss (ft)	4.8	
Longest dripline zone (ft)	191	
Dripline zone loss from chart (psi)	1	
Dripline zone head loss (ft)	2.3	
Total dripline head loss (ft)	11.6	(zone loss * no. of zones)
Return manifold size (inches I.D.)	1.00	
Return manifold length (ft)	70	
Ret man friction loss factor (ft/100')	4.57	(based on added flushing flow)
Return manifold friction head loss (ft)	3.2	
Filter size (in)	1	
Filter loss from chart (psi)	3	
Filter head loss (ft)	6.9	
K-Rain 4402 RCW loss (psi)	0.0	
K-Rain 4402 RCW loss (ft)	0.0	
Total friction head loss (ft) FH	26.4	(manifolds + driplines + filter+K-rain)
Pump inlet to highest zone (ft) EH	6	
Total head loss (ft)	78.6	(PH + FH + EH)
Pump flow req at total head loss (gpm)	12.78	
Total pump run time (minutes)	80	

July 24, 2006
Christopher S. Jones

Septic Designs, Etc LLC
Christopher S. Jones, Registered Sanitarian, Canyon Lake, Texas 830-964-2347 csjones4@mac.com

Septic Design For

April 19, 2007
Christopher S. Jones

STATE OF TEXAS
CHRISTOPHER S. JONES
3609
PROFESSIONAL SANITARIAN

OWNER/LOCATION: A. T. Holding - Copper Ridge LLC
Lot 670R, River Crossing, Unit Three

SITE ADDRESS: 18670 Hwy 46 Parkway
Bulverde, Comal County, Texas 78163

DESIGN NUMBER: 2007.077

WASTEWATER DESIGN FLOW: This design is for a three space strip mall using watersaving fixtures. The proposed site is located at 18670 Hwy 46 Parkway, Bulverde, Texas 78163. The design wastewater usage rate will be 750 gallons per day. The strip mall plans to house a Kids Get Fit fitness center for kids (160 gpd max, 39 kids plus one employee @ 4 gal ea, no showers in this restroom), a retail space with 2 restrooms (320 gpd max, 160 X 2 = 320; this space may also be a church with 106 members @ 3 gal per member), and a retail store/office space (180 gpd max, retail space will have one public restroom @ 160 gpd and one employee only restroom @ 20 gpd). Wastewater strength is expected to be residential strength or less. projected waste water flow will be 750 gallons per day.

SITE EVALUATION: Two test holes were dug approximately 8 -18 inches deep. A field soil analysis indicated the soil was Class III with excess gravel. Eighteen (18) inches of class II soil will need to be added to the drip field area. There are no recharge features located within 150' of the proposed OSSF. The area is not in the 100 year flood plain. The site is located over the Edward's Contributing zone.

TREATMENT PROCESS: The use of a Class 1 aerobic treatment plant followed by drip irrigation was chosen for this site. The residence shall be connected to a 750 GPD TCEQ approved aerobic plant with pre-treatment tank as specified by the manufacturer. The effluent will first pass through the pre-treatment tank, then the aerobic treatment plant. After treatment, the effluent will pass through a chlorinator that is approved by the manufacturer to maintain the required chlorine residual from one required inspection to the next (usually a 4 month period) into a pump tank. Continuous chlorination is not required for this system. A submercible pump (0.5Hp, 110 volt, 1.25" vertical discharge) is included with the aerobic plant. The pump contains an integral check valve. After leaving the pump the effluent shall be filtered by a 100 micron filter. A sampling/pressure check port shall be installed after the filter. A union should be installed in the pump line to facilitate removal of the pump if necessary. The treated effluent will be dosed to the application area via a timer mechanism. The timer will be set to actuate the pump in equal dosing cycles spread over a 24 hour period. The effluent is then pumped to a 3750 square foot drip irrigation field. The drip field shall utilize Netafim Bioline Pressure Compensating Dripperline for wastewater with 0.61 gallon per hour emitters spaced at 24" intervals. The inlet pressure to the drip field shall be 20 psi. The proposed application rate is 0.2 gallons per square foot per day, or less. The minimum application area is 3750 square feet. An electronic control box with audible/visual alarm and timer for the pump is supplied with the aerobic plant.

INSTALLATION: Dig tank hole. A minimum of four inches of sand, sandy loam, clay loam, or pea gravel free of rock shall be placed under and around all tanks. Install tank(s) and backfill with same type of material (after required inspection). Install audible/visual alarm in a conspicuous place. Electrical wiring shall be in accordance with the most recent edition of the National Electric Code. A separate 20 amp

breaker is required for the system. Install pump assembly and place a 100 micron filter and hose bib (for sampling) in the 1" sch 40 manifold line going to the drip field. Drill anti-siphon hole or install check valve as required. Float levels are depicted on the tank drawing. The pump shutoff float must be set to shut the pump off above the pump inlet to prevent the pump from sucking air and damaging itself. The pump tank will be equipped with a visual/audible alarm to signal a high water condition. When the alarm is activated, a minimum of 1/3 of a days storage capacity shall remain in the pump tank. The high water alarm shall activate if the water level in the pump tank exceeds the daily flow plus dead space below the pump on level. The pump tank will employ a 100 micron filter prior to dosing into the drip area. The dosing field will have 8 zones with a total of 1875 feet of Netafim Bioline pressure compensating drip tubing with 0.61 gph emitters every two feet. The pump should run a total of 80 minutes during a 24 hour period. The timer control should be set to dose for 10 minutes every 3 hours. **The Drainfield** is sized for Class III soil. Scarify the existing yard areas where the drip field will be installed. There shall be a minimum of 12" of soil below the emitters in this installation. The tubing shall be covered with 6" of soil and spaced 2' on center. Each zone will be attached to a 1.5" pvc supply and 1.0 " return manifold. This field will contain 938 emitters and will cover 3750 square feet of absorption area. Install berms/retaining walls as depicted on the drawing to contain the built up drainfield areas. Vacuum breakers will be required. A vacuum breaker will be installed in each zone just prior to entering the return manifold. A flushing valve will also be installed in each zone between the vacuum breaker and the attachment point to the return manifold. The return manifold flow will be routed back to the pump tank for flushing. The flushing valves should be opened (one at a time) during each inspection to flush the driplines in each zone. During normal operation, the flushing valves should remain closed.

LANDSCAPING: Groundcover is already in place, but will be covered during the installation. This cover consists of native grasses, native shrubs, and trees. Scarify existing yard as needed to provide a uniform disposal area, add 18" of Class II soil, ensuring a minimum of 12" of soil is over any rock. After installing the drip tubing and covering with 6" of soil, sod entire disposal area.

INSPECTIONS: After tanks, pump, and driplines are installed and the system is functional, call the County Environmental Health office to schedule inspections. Normally, 24 hour notice is required. After the system has been covered and landscaping is in place, schedule a final inspection.

MAINTENANCE AGREEMENT: A maintenance agreement between the homeowner and a TCEQ approved maintenance company is required. The initial agreement is for a two year period and must be included in the price of the system. A copy of this agreement must be provided to the permitting authority prior to final permit approval (normally must be included with design). If a maintenance company discontinues business, the owner has (30) thirty days in which to procure a new agreement with a different company.

AFFIDAVIT: Required.

TESTING/REPORTING: The maintenance company shall inspect and report the results to the permitting authority. All tests must adhere to the testing procedure of the TCEQ as shown in 285.91(4), and as to the permitting authorities guidelines.

April 19, 2007
Christopher S. Jones

VARIANCES REQUESTED: None.

Soil Evaluation Report Information

Date Soil Survey Performed: April 19, 2007

Site Location: **Lot 670R, River Crossing, Unit Three**

County: **Comal** Proposed Excavation Depth: 6" in imported soil

Name of Site Evaluator: Christopher S. Jones Registration Number: OS 0011922

Requirements: At least two soil excavations must be performed on the site, at opposite ends of the proposed disposal area. Locations of soil boring or dug pits must be shown on the site drawing. For subsurface disposal, soil evaluations must be performed to a depth of at least two feet below the proposed excavation depth. For surface disposal, the surface horizon must be evaluated. Describe each soil horizon and identify any restrictive features on the form. Indicate depths where features appear.

Soil Boring Number 1

Depth (Feet)		Texture Class	Soil Texture	Gravel	Drainage	Restrictive Horizons	Observations
0-6"	1	III	Clay loam	>30 %	OK		Native trees and grasses with some exposed rock. Add 18" of Class II soil for drip field.
	2					Frac Rock	
	3						
	4						
	5						

Soil Boring Number 2

Depth (Feet)		Texture Class	Soil Texture	Gravel	Drainage	Restrictive Horizons	Observations
0-18"	1	III	Clay loam	> 30 %	OK		Same as #1
	2					Frac Rock	
	3						
	4						
	5						

I certify that the findings of this report are based on my field observations and are accurate to the best of my ability.

Christopher S. Jones
Signature of Site Evaluator

April 19, 2007
Date

Septic Designs, Etc LLC
Christopher S. Jones, Registered Sanitarian, Canyon Lake, Texas 830-964-2347 csjones4@mac.com

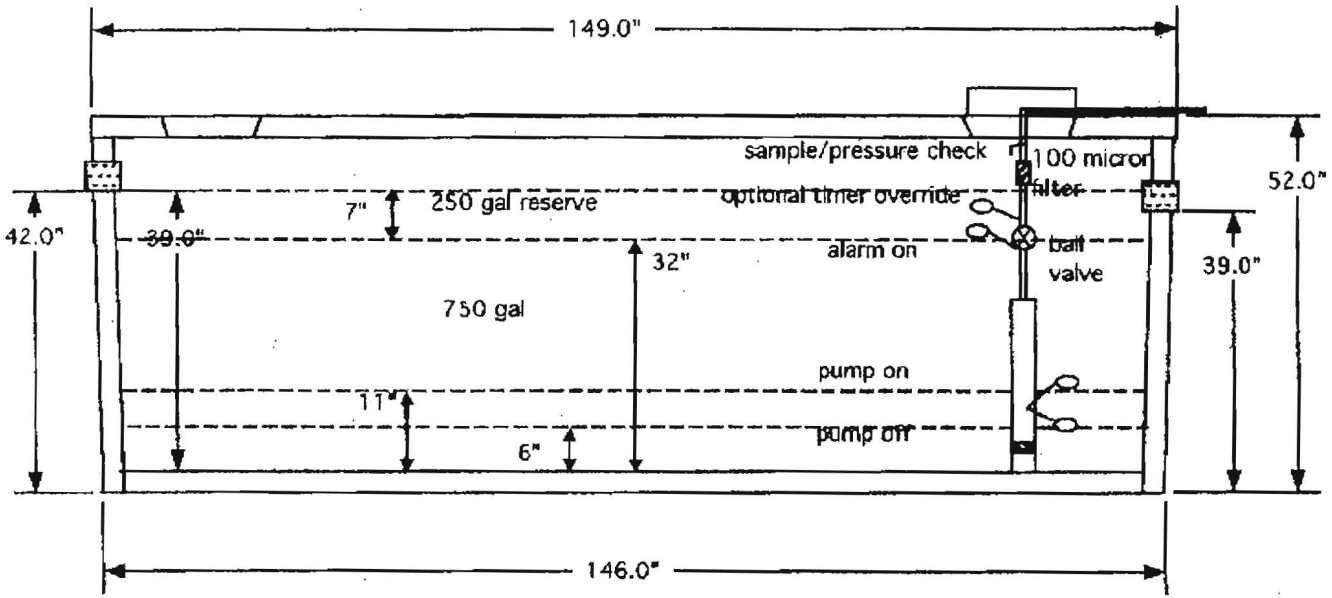
SEPTIC DESIGN FOR: A. T. Holding - Copper Ridge LLC

CALCULATIONS:

Q = Gallons Per Day	750	
Ra = Loading rate	0.2	
Required Absorption Area Q/Ra	3750	
Emitters required (4 s.f. each)	938	(absorption area / 4)
Emitter spacing (ft)	2	
Linear feet of dripline	1875	(#emitters * spacing)
Pressure compensating emitters?	yes	
Dripfield pressure (top line psi)	20	(7-60 psi range)
Pressure head required (ft) PH	46.2	(psi * 2.31)
Flow rate per emitter (gph)	0.61	
Flow rate per emitter (gpm)	0.01	
Total emitter flow rate (gpm)	9.38	(normal operation pump flow required)
Number of flowlines(zones)	8	(connections to supply/return manifold)
Number of flowlines open during flush	1	
Added flushing flow required (gpm)	1.6	(1.6 gpm * no. of flowlines open during flushing)
Total pump flow required (gpm)	10.975	(flushing pump flow required)
Suppy manifold size (inches I.D.)	1.50	
Supply manifold length (ft)	222	
Sup man friction loss factor (ft/100')	1.98	(based on flushing flow)
Supply manifold friction head loss (ft)	4.4	
Longest dripline zone (ft)	250	
Dripline zone loss from chart (psi)	2	
Dripline zone head loss (ft)	4.6	
Total dripline head loss (ft)	37.0	(zone loss * no. of zones)
Return manifold size (inches I.D.)	1.00	
Return manifold length (ft)	224	
Ret man friction loss factor (ft/100')	0.23	(based on added flushing flow)
Return manifold friction head loss (ft)	0.5	
Filter size (in)	1.5	
Filter loss from chart (psi)	1	
Filter head loss (ft)	2.3	
K-Rain 4402 RCW loss (psi)	0.0	
K-Rain 4402 RCW loss (ft)	0.0	
Total friction head loss (ft) FH	44.2	(manifolds + driplines + filter+K-rain)
Pump inlet to highest zone (ft) EH	24	
Total head loss (ft)	**114.4**	(PH + FH + EH)
Pump flow req at total head loss (gpm)	10.975	
Total pump run time (minutes)	80	

April 19, 2007
Christopher S. Jones

ALTEX 1250 PUMP TANK (149"L X 66"W X 52"H)



Volume to bottom of inlet:

39" x 141.3" x 58.3" = 321,274 cu. in.
321,274 cu. in. x 1 cu. ft. / 1728 cu. in. = 185.9 cu. ft.
185.9 cu. ft. x 7.48 gal / 1 cu. ft. = 1390.7 gal

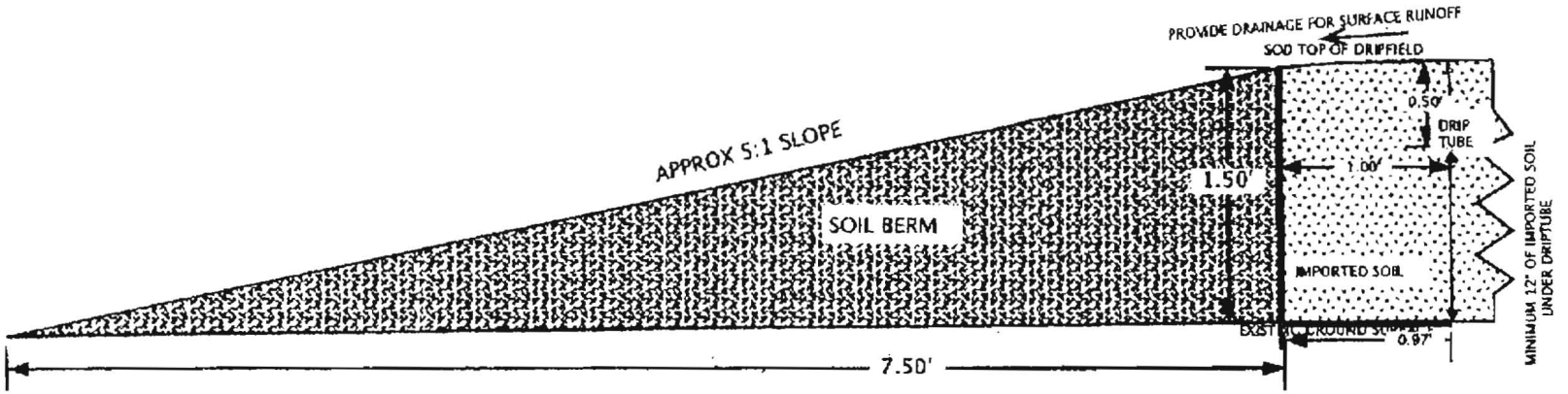
Gallon per inch:

1390.7 / 39 = 35.66 gal/in

April 19, 2007
Christopher S. Jones

STATE OF TEXAS
CHRISTOPHER S. JONES
3609
PROFESSIONAL SANITARIAN

BERM CROSS-SECTION



BERM MUST BE A MINIMUM OF 18" TALL
AT EDGE OF DRIP FIELD
AND CONSTRUCTED OF CLASS III OR IV SOIL.

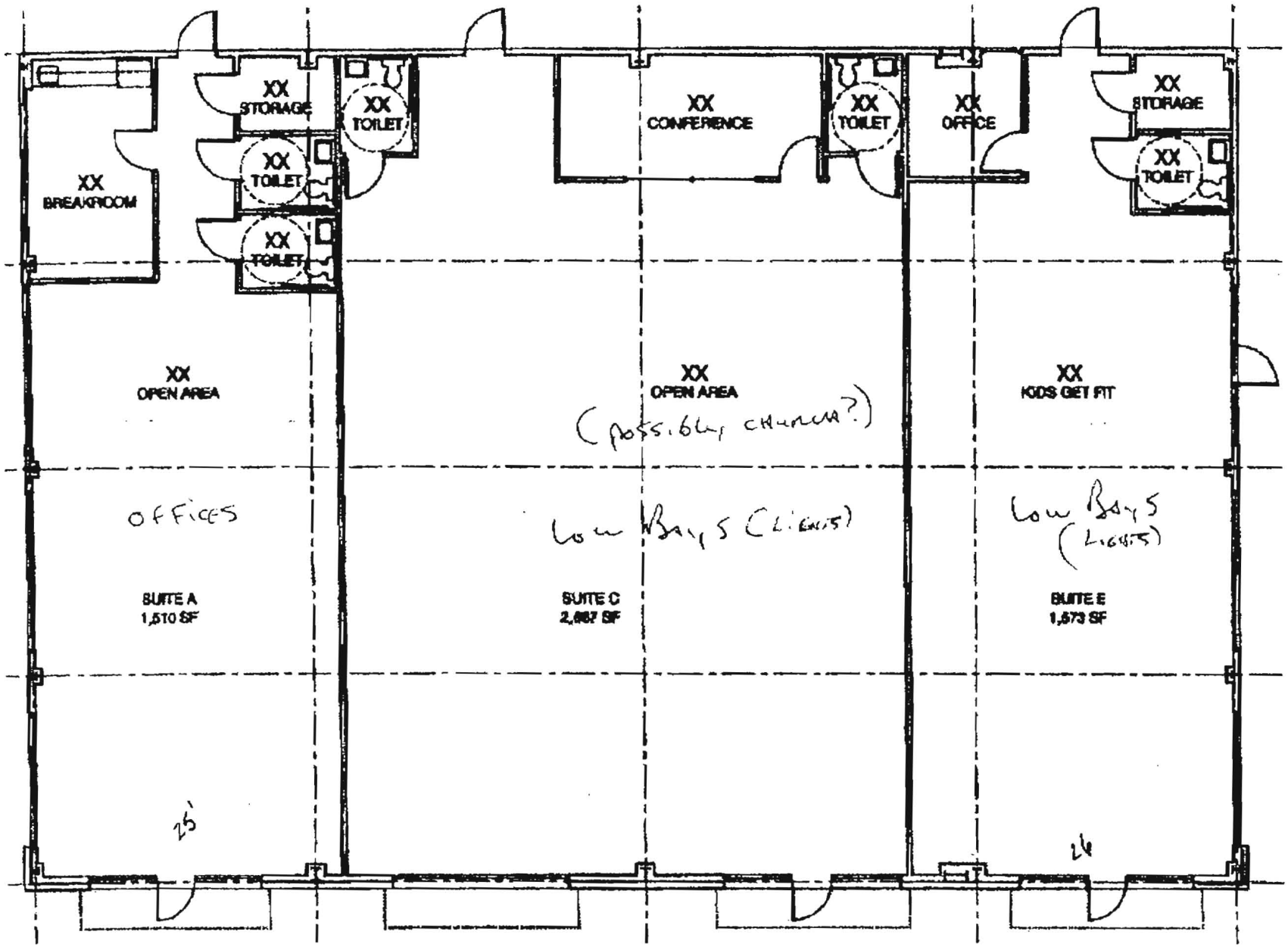
DRIP TUBE MUST BE A MINIMUM OF 6" DEEP AND 12" FROM WALL. ADDITIONALLY, DRIP TUBE MUST BE 1 FOOT AWAY FROM MINIMUM SETBACK REQUIREMENT.

April 19, 2007
Christopher S. Jones

STATE OF TEXAS
CHRISTOPHER S. JONES
3609
PROFESSIONAL SANITARIAN

Dana Lighting?

18670 Forty Six Parkway
Copper Ridge



A.T. HOLDING – COPPER RIDGE LLC
FRANK BASS, MANAGING MEMBER
LOT 670, RIVER CROSSING, UNIT 3
COMAL COUNTY, TEXAS 78070

MAPSCO: 384 D7

INSTALL NORWECO 960-750 AEROBIC PLANT WITH 1250 PUMP TANK.

USE TWO-WAY C/O BETWEEN STRUCTURE AND TANK. (EVERY 50' AS REQUIRED.)

SLEEVE WATERLINE WITHIN 10' OF OSSF.

SCARIFY EXISTING SOIL IN FIELD AREA, THEN ADD 6-8" OF CLASS II SOIL.

INSTALL AUDIBLE/VISUAL ALARM WITH BREAKER PANEL(3 BREAKERS).
INSTALL AERATOR TIMER.
INSTALL RAINBIRD RC-1260C OUTDOOR ELECTRO MECHANICAL IRRIGATION TIMER WITH PUMP START RELAY TO CONTROL ACTIVATION TIME FOR EACH ZONE.

ZONE 1 (SPRAY) SHALL ACTIVATE AT 1 A.M. FOR 44 MINUTES.

ZONE 2 (DRIP) SHALL ACTIVATE FOR 10 MINUTES EIGHT TIMES A DAY (TOTAL 80 MINUTES) AT THE FOLLOWING TIMES: 2 AM, 5AM, 8AM, 11AM, 2PM, 5PM, 8PM, 11PM.(EVERY 3 HOURS).

INSTALL VACUUM BREAKER AND FLUSHING VALVE AT EACH RETURN MANIFOLD CONNECTION. 5 TOTAL CONNECTIONS.

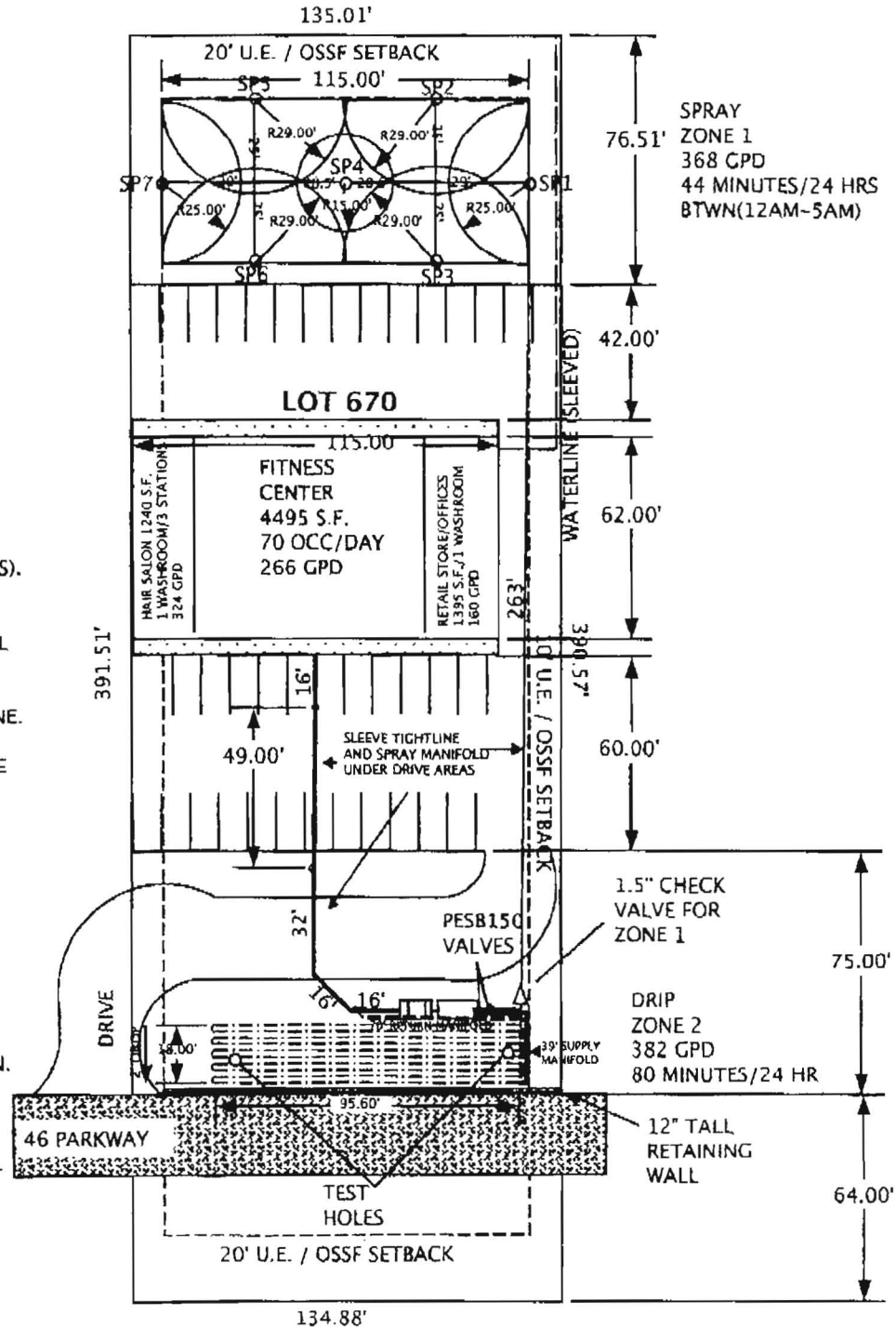
INSTALL CHECK VALVE AT EACH SUPPLY MANIFOLD CONNECTION.

SLEEVE ALL OSSF LINES UNDER DRIVE AREAS. SLEEVE ENTIRE WATERLINE.

COPPER RIM

N

SCALE: 1" = 50'



18670 HWY 46 PARKWAY

(PHASE I)

A.T. HOLDING - COPPER RIDGE LLC
FRANK BASS, MANAGING MEMBER
LOT 670R, RIVER CROSSING, UNIT 3
COMAL COUNTY, TEXAS 78070

MAPSCO: 384 D7

INSTALL 750 GPD (MIN) STATE APPROVED CLASS I AEROBIC PLANT WITH PRE-TREATMENT TANK PER MANUFACTURER. INSTALL PUMP TANK (MIN 1250 GAL) ADEQUATE FOR 750 GPD ABOVE ON FLOAT PLUS 250 GPD RESERVE.

USE TWO-WAY C/O BETWEEN STRUCTURE AND TANK. (EVERY 50' AS REQUIRED.)

SCARIFY EXISTING SOIL IN FIELD AREA, THEN ADD 18" OF CLASS II SOIL. INSTALL BERM AS SHOWN.

INSTALL AUDIBLE/VISUAL ALARM. INSTALL OUTDOOR IRRIGATION TIMER TO CONTROL PUMP ACTIVATION.

PUMP SHALL ACTIVATE FOR 10 MINUTES EIGHT TIMES A DAY (TOTAL 80 MINUTES).

INSTALL VACUUM BREAKER AND FLUSHING VALVE AT EACH RETURN MANIFOLD CONNECTION. 8 TOTAL CONNECTIONS.

INSTALL CHECK VALVE AT EACH SUPPLY MANIFOLD CONNECTION.

USE SCD 40 PVC FOR OSSF LINES UNDER DRIVE AREAS AND BED IN SAND.

SLEEVE WATERLINE WITHIN 10' OF OSSF. USE LARGER DIAMETER SCD 40 PVC FOR SLEEVE MATERIAL.

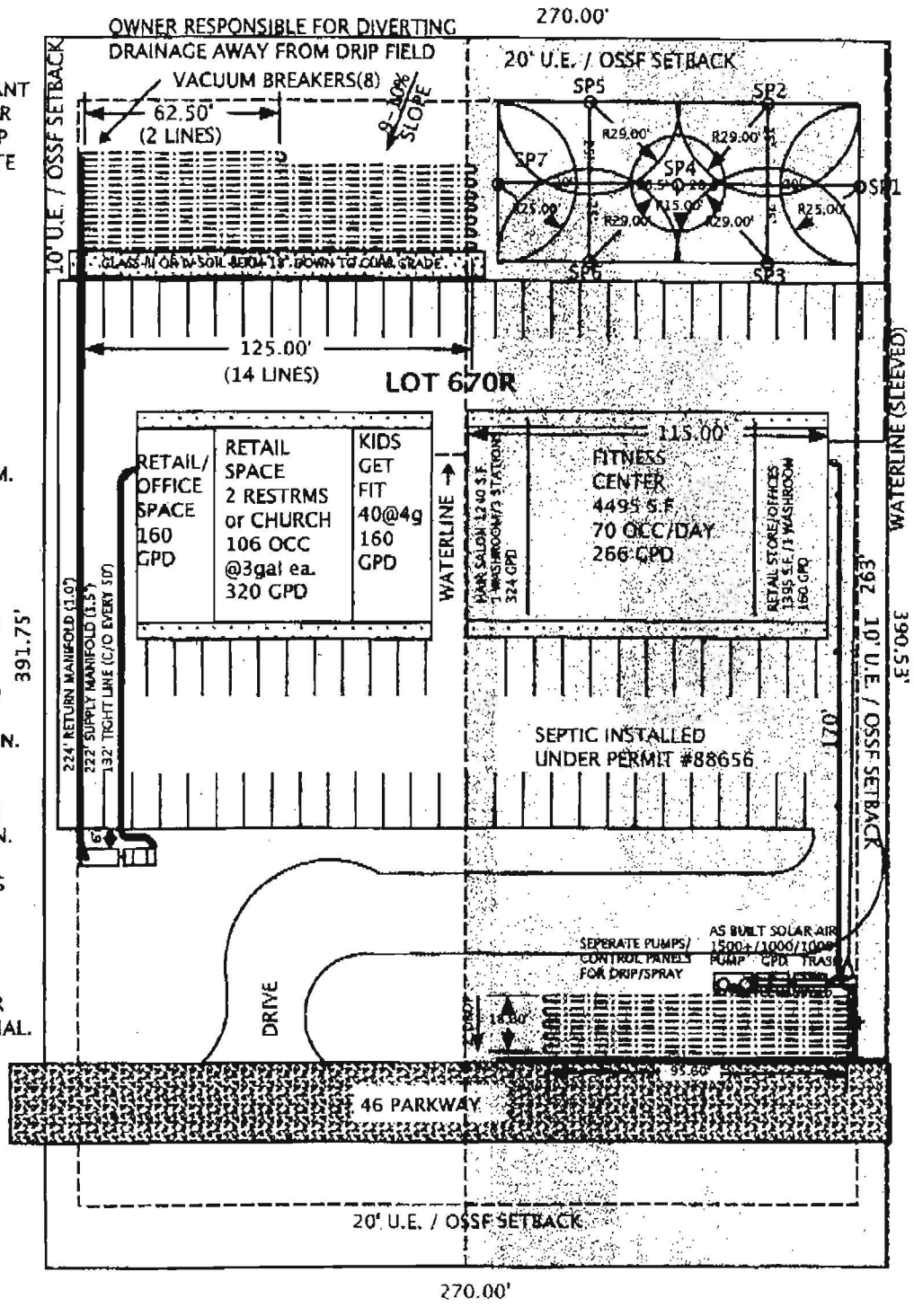
April 19, 2007
Christopher S. Jones

STATE OF TEXAS
CHRISTOPHER S. JONES
3609
PROFESSIONAL SANITARIAN

COPPER RIM

N

SCALE: 1" = 50'



18670 HWY 46 PARKWAY

(PHASE I + II)

COUNTY OF COMAL **COUNTY ENGINEER'S OFFICE**

Staff will complete shaded items

Date Received *Initials*

Permit Number

OSSF/FLOODPLAIN DEVELOPMENT

APPLICATION CHECKLIST

A. T. Holding - Copper Ridge LLC

Instructions:

Place a check mark next to all items that apply. For items that do not apply, place "N/A". This OSSF/Floodplain Development Application Checklist **must** accompany completed application.

OSSF Permit

____ Completed Application for Permit for Authorization to Construct an On-Site Sewage Facility and License to Operate

✓ Site/Soil Evaluation Completed by a Certified Site Evaluator or a Professional Engineer

✓ Planning Materials of the OSSF as Required by the TCEQ Rules for OSSF Chapter 285. Planning Materials shall consist of a scaled design and all system specifications.

____ Required Permit Fee

✓ ~~Surface~~ Drip Application/Aerobic Treatment System

____ Recorded Certification of OSSF Requiring Maintenance/Affidavit to the Public

____ Signed Maintenance Contract with Effective Date as Issuance of License to Operate

Floodplain Development Permit

✓ Property in Incorporated City (Bulverde)

____ Completed Application

✓ Boundary Map Indicating Location of Proposed Improvements

____ Copy of Recorded Deed

____ Required Permit Fee

I affirm that I have provided all information required for my OSSF/Floodplain Development Application and that this application constitutes a completed OSSF/Floodplain Development Application.

Signature of Applicant Date

____ **COMPLETE APPLICATION**

Check No. _____ **Receipt No.** _____

____ **INCOMPLETE APPLICATION**

(Missing Items Circled, Application Refused)

*** COMAL COUNTY OFFICE OF ENVIRONMENTAL HEALTH ***

APPLICATION FOR PERMIT FOR AUTHORIZATION TO CONSTRUCT AN ON-SITE SEWAGE FACILITY AND LICENSE TO OPERATE

Date: April 19, 2007 Permit# _____

Property Owners Name A. T. Holding - Copper Ridge LLC

Mailing Address 175 Bendel Ranch Rd.

City, State, Zip Code Canyon Lake, Tx 78133

Phone # 830-743-1258

LEGAL DESCRIPTION OF PROPERTY:

Subdivision Name: River Crossing

Unit: 3 Lot: 670R Block: _____ Acreage _____

Street Address 18670 Hwy 46 Parkway City Bulverde Zip 78163

PROPERTY MUST BE MARKED ON-SITE WITH THE STREET ADDRESS, LOT# & OWNERS NAME. A LOCATION MAP TO THE PROPERTY MUST BE ATTACHED WITH THIS APPLICATION ALONG WITH PROOF OF OWNERSHIP.

IS PROPERTY LOCATED OVER THE EDWARDS RECHARGE ZONE? YES _____ NO X IF YES, SITE EVALUTAION & PLANNING MATERIALS MUST BE COMPLETED BY A REGISTERED SANITARIAN OR PROFESSIONAL ENGINEER.

TYPE OF DEVELOPMENT:

___ Single Family Residence Total Sqr. Ft. of Dwelling 750 Gallons per Day

X Commercial Type of Business/Institution Strip Center with 3 spaces (retail, office, kids fitness)

Number of Occupants varies (see design) Gallons per Day 750

SITES GENERATING MORE THAN 5000 GALLONS PER DAY ARE REQUIRED TO OBTAIN PERMITTING THROUGH THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION.

SOURCE OF WATER: PUBLIC XX PRIVATE _____

Planning materials & site evaluation as required completed by: Christopher Jones, R.S. #3609

System Description: Aerobic Treatment, Filter & Drip Emitter

SIZE OF SEPTIC SYSTEM REQUIRED BASED ON PLANNING MATERIALS & SITE EVALUATION:

Tank Size(s) 550gt/750gpd/1250g gallons Absorption/Application area 3750 sqr ft

Are water saving devices being utilized within the residence? YES XX NO _____

INSTALLERS NAME: Luke Wilburn OS0022675

I CERTIFY THAT THE COMPLETED APPLICATION AND ALL ADDITIONAL INFORMATION SUBMITTED DOES NOT CONTAIN ANY FALSE INFORMATION AND DOES NOT CONCEAL ANY MATERIAL FACTS. AUTHORIZATION IS HEREBY GIVEN TO THE PERMITTING AUTHORITY AND DESIGNATED AGENTS TO ENTER UPON THE ABOVE DESCRIBED PROPERTY FOR THE PURPOSE OF SITE/SOIL EVALUATION AND INSPECTION OF PRIVATE SEWAGE FACILITIES. I ALSO UNDERSTAND THAT A PERMIT OF AUTHORIZATION TO CONSTRUCT WILL NOT BE ISSUED UNTIL THE FLOOD PLAIN ADMINISTRATOR HAS APPROVED AND RELEASED THE DEVELOPMENT PERMIT FOR THIS PROPERTY.

_____

SIGNATURE OF OWNER

COMAL COUNTY FLOODPLAIN DEVELOPMENT PERMIT APPLICATION

Permit # _____

Date: April 19, 2007

Owners Name:	Address:	Telephone
A. T. Holding - Copper Ridge LLC	18670 Hwy 46 Parkway, Bulverde	830-743-1258

Builders Name:	Address	Telephone
Apex Commercial Development	175 Bendel Ranch Rd. Canyon Lake, Tx 78133	830-743-1258

PROJECT LOCATION ***; Lot 670R, River Crossing, Unit Three

Legal Description of Property:(i.e. subdivision and lot # or acreage amount within what survey.)

** PLEASE PROVIDE THE FOLLOWING DOCUMENTS TO IDENTIFY THE PROPERTY AND STRUCTURES: ***Recorded document showing ownership of property; Sketch or drawing of property lines that is "TO SCALE" showing were structures will be within the property lines.***

Ferguson Map Page 384 **Section** D7 **Commissioner Precinct #** _____

DESCRIPTION OF WORK *(Please check all that apply)*:

ACTIVITY
- ☒ New Construction
- ☐ Addition
- ☐ Improvements
- ☐ Replacement

STRUCTURE TYPE
- ☐ Residential
- ☒ Non Residential (Floodproofing Required? ☐ Yes)
- ☐ Combined Residential & Commercial
- ☐ Manufactured Home (In Manufactured Home Park? ☐ Yes)

ESTIMATED COST OF CONTRUCTION: $_____

OTHER DEVELOPMENT ACTIVITY ***(Please check all that apply)***

- ☐ Clearing
- ☐ Fill
- ☐ Grading
- ☐ Drainage Improvements
- ☐ Water Course Alteration
- ☐ Other (Please Specify) _____
- ☐ Excavation
- ☐ Water Well

***** PLEASE READ THE FOLLOWING BEFORE SIGNING THIS APPLICATION*****

The flood insurance rate maps and other data used by the County Administrator in evaluating flood hazards for the proposed developments are considered reasonable and accurate for regulatory purposes, and are based on the best scientific and engineering data available. Greater floods can occur, and flood heights may be increased by man-made or natural causes. This application/exemption certificate does not imply that developments outside the identified areas of special flood hazards will be free from flooding or flood damage. Issuance of this exemption certificate shall not create liability on the part of Comal County in the event flooding or flood damage does occur.

ACKNOWLEDGEMENT OF WARNING BY: ☒ APPLICANT ☐ AGENT _____ DATE _____

Affidavit to the Public

THE COUNTY OF _____

STATE OF TEXAS

CERTIFICATION OF OSSF REQUIRING MAINTENANCE

According to Texas Commission on Environmental Quality Rules for On-Site Sewage Facilities, this document is filed in the Deed Records of __Comal___County, Texas.

I

The Texas Health and Safety Code, Chapter 366 authorizes the Texas Commission on Environmental Quality (TCEQ) to regulate on-site sewage facilities (OSSFs). Additionally, the Texas Water Code (TWC), § 5.012 and § 5.013, gives the TCEQ primary responsibility for implementing the laws of the State of Texas relating to water and adopting rules necessary to carry out its powers and duties under the TWC. The TCEQ, under the authority of the TWC and the Texas Health and Safety Code, requires owner's to provide notice to the public that certain types of OSSFs are located on specific pieces of property. To achieve this notice, the TCEQ requires a deed recording. Additionally, the owner must provide proof of the recording to the OSSF permitting authority. This deed certification is not a representation or warranty by the TCEQ of the suitability of this OSSF, nor does it constitute any guarantee by the TCEQ that the appropriate OSSF was installed.

II

An OSSF requiring a maintenance contract, according to 30 Texas Administrative Code §285.91(12) will be installed on the property described as (insert legal description): ____Lot 670R, River Crossing, Unit Three, Comal County, Texas____

The property is owned by ___A. T. Holding - Copper Ridge LLC___

This OSSF must be covered by a continuous maintenance contract. All maintenance on this OSSF must be performed by an approved maintenance company, and a signed maintenance contract must be submitted to __Comal__ County Environmental Health within 30 days after the property has been transferred.

The owner will, upon any sale or transfer of the above-described property, request a transfer of the permit for the OSSF to the buyer or new owner. A copy of the planning materials for the OSSF can be obtained from __Comal__ County Environmental Health.

WITNESS BY HAND(S) ON THIS____ DAY OF_____, _____.

_____

_____
(Owner(s)signature(s))

SWORN TO AND SUBSCRIBED BEFORE ME ON THIS ____DAY OF _____, _____

_____
Notary Public, State of Texas
Notary's Printed Name:
My Commission Expires:

Instructions:
1) Document must be completed and Property Owner(s) signature(s) notarized.
2) Record completed document in the County Clerk's Office.
3) Submit recorded document to the County Environmental Health Office.

Regulatory Authority_____ Permit / License Number _____

WASTEWATER TREATMENT FACILITY MONITORING AGREEMENT

RS Aerobic Services, LLP
7260 Hwy 281 N #4
Spring Branch, TX 78070
Off. (830) 885-6600
Fax (830) 885-5956

Customer A. T. Holding - Copper Ridge LLC
Site Address 18670 Hwy 46 Parkway
City Bulverde Zip 78163
Mailing Address 175 Bendel Ranch Rd.
County Comal Map # 384 D7
Phone # 830-743-1258 Emergency #_____

I. General: This Work for Hire Agreement (hereinafter referred to as "Agreement") is entered into by and **between** A. T. Holding - Copper Ridge LLC (hereinafter referred to as "Customer") and RS Aerobic Service, LLP. By this agreement, RS Aerobic Service, LLP and its employees (hereinafter inclusively referred to as "Contractor") agree to render services at the site address stated above, as described herein, and the Customer agrees to fulfill his/her/their responsibilities, as described herein. The designed flow rate for this system is a maximum of 750 gallons per day.

II. Effective Dates: This Agreement commences on _____ and end on _____ for a total of two (2) years (initial agreement) or one (1) year (there after). If this is an initial agreement (new installation), the Customer will notify the Contractor within two (2) business days of the system's first use to establish the date of commencement. If no notification is received by Contractor within ninety (90) days after completion of installation or where county authority mandates, the date of commencement will be the date the "License to operate" (Notice of Approval) was issued by the permitting authority. This agreement may or may not commence at the same time as any warranty period of installed equipment, but in no case shall it extend the specified warranty.

III. Renewal: This Agreement shall automatically renew each at the same terms and conditions (costs are subject to increase), unless either party gives notice of termination a minimum of thirty (30) days prior to end of first agreement period. See Section IV.

IV. Termination of Agreement: This Agreement may be terminated b either party with thirty (30) days written notice for any reason, including for example, substantial failure to perform in accordance with its terms, without fault or liability of the terminating party. If this Agreement is so terminated, Contractor will be paid at the rate of $75.00 per hour for any work performed and for which compensation has not been received. After the deduction of all outstanding charges, any remaining monies from prepayment for services will be refunded to customer within thirty (30) days. Either party terminating this Agreement for any reason, including non-renewal, shall notify in writing the equipment manufacturer and the appropriate regulatory agency a minimum of thirty (30) days prior to the date of such termination. Nonpayment of any kind shall be considered breach of contract and a termination of contract.

V. Services: Contractor will:

a. Inspect and perform routine upkeep on the On-Site Sewage Facility (hereinafter referred to as OSSF) as recommended by the treatment system manufacturer, and required by state and/or local regulation, for a total of three visits to site per year.

b. Provide a written record of visits to the site by means of an inspection tag attached to or contained in the control panel.

c. **Repair or replace, if Contractor has necessary materials at site, any component of the OSSF to be failing or inoperative during the course of a routine monitoring visit. If such services are not covered by warranty, and services costs are $100.00, or less. Customer hereby authorizes Contractor to perform the service and bill Customer for said service. When service costs are greater than $100.00, or if contractor does not have necessary supplies at the site. Contractor will notify Customer of required service(s) and associated cost(s). Customer must notify Contractor of arrangements to affect repair of system with two (2) business days after said notification.**

d. Provide sample collection and laboratory testing of TSS and BOD on a yearly basis (commercial systems only).

e. Forward copies of this Agreement and all reports to the regulatory agency and the Customer.

f. **Visit site in response to Customer's request for unscheduled services within forty-eight (48) hours of the date of notification (weekends and holidays excluded) of said request. Unless otherwise covered by warranty, costs for such unscheduled responses will be billed to Customer.**

VI. **Disinfection: X Not required _____ required. The responsibility to maintain the disinfection device(s) and provide any necessary chemicals is that of the Customer. _____ (Initial)**

VII. Electronic Monitoring is not included in this Agreement.

VIII. Performance of Agreement: Commencement of performance by Contractor under this Agreement is contingent on the following conditions:

a. If this is an initial Agreement (new installation):
   i. Contractor's receipt of a fully executed original copy or facsimile of this agreement and all documentation requested by Contractor.
   ii. Contractor's receipt of payment of the wastewater monitoring fee in accordance with the terms as described in Section XIV of this Agreement.

b. If this is not an initial Agreement (existing system):
   i. Contractors receipt of a fully executed original copy or facsimile of this agreement and all documentation requested by Contractor.

ii. Contractor's receipt of payment of the wastewater monitoring fee in accordance with the terms as described in Section XIV of this Agreement.

c. If the above conditions are not met, Contractor is not obligated to perform any portion of this Agreement.

IX. **Customer's Responsibilities:** The customer is responsible for each and all of the following:

a. Provide all necessary yard or lawn maintenance and removal of all obstacles, including but not limited to dogs and other animals, vehicles, trees, brush, trash, or debris, as needed to allow the OSSF to function properly, and to allow Contractor safe and easy access to all parts of the OSSF.

b. Protect equipment from physical damage including but not limited to that damage caused by insects.

c. Maintain a current license to operate, and abide by the conditions and limitation of that license, and all requirements for and OSSF from the State and/or local regulatory agency, whichever are more stringent, as well as proprietary system's manufacturer recommendations.

d. Notify Contactor immediately of any and all alarms, and/or any and all problems with, including failure of, the OSSF.

e. Provide, upon request by Contractor, water usage records for evaluation by Contractor as to the performance of the OSSF.

f. Allow for samples at both the inlet and outlet of the OSSF to be obtained by Contractor for the purpose of evaluation the OSSF's performance. If these samples are taken to a laboratory for testing, with the exception of the service provided under Section V. sub-section d. above. Customer agrees to pay contractor for sample collection and transportation, portal to portal, at a rate of $50.00 per hour, plus the associated fees for laboratory testing.

g. Prevent the backwash or flushing of water treatment or conditioning equipment from entering the OSSF.

h. Prevent the condensation from air conditioning or refrigeration units, or the drains of icemakers, from hydraulically overloading the aerobic treatment units. Drain lines may discharge into the surface application pump tank if approved by system designer.

i. Provide for pumping and cleaning of tanks and treatment units, when and as recommended by Contactor, at Customer's expense.

j. Maintain site drainage to prevent adverse effects on the OSSF.

k. Pay promptly and fully, all Contractor's fees, bills, or invoices as described herein.

X. Access by Contractor: Contractor is hereby granted an easement to the OSSF for the purpose of performing services described herein. Contractor may enter the property during Contractor's normal business hours and/or other reasonable hours without prior notice to Customer to perform the Services and/or repairs described herein. Contractor shall have access to the OSSF electrical and physical components. Tanks and treatment units shall be accessible by means of man ways, or risers and removable covers, for the purpose of evaluation as required by State and/or local rules and the proprietary system manufacturer. If not an initial agreement (new installation) and this access is not in place or provided for by the Customer, the cost for the labor of excavation, and possibly other labor and material costs will be required. These costs shall be billed to Customer as an additional service at a rate of $50.00 per hour, plus material at list price. Excavated soil shall be replaced as best as Contractor can at the time such service is performed and under no circumstances is Contractor responsible for damages to sod, grass, roots, landscaping, or any unmarked underground items (telephone, television, or electrical cable, water, air, or gas lines, etc.), or for the uneven settling of the soil.

XI. Limit of Liability: Contractor shall not be held liable for any incidental, consequential, or special damages, or for economic loss sue to expense, or for loss of profits or income, or loss of use to Customer, whether in contract tort or any other theory. In no event shall Contractor be liable in an amount exceeding the total Fee for Services amount paid by Customer under this Agreement.

XII. Severability: If any provision of the "Proposal and Contract" shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a court finds that any provision of the "Agreement" is invalid or unenforceable, but that by limiting such provision it would become valid and enforceable, then such provision shall be deemed to be written, construed, and enforced as so limited.

XIII. Fee for Services: **The fee does not include any equipment, material, or labor necessary for non-warranty repairs or for unscheduled inspections. Customer requested visits to the site.**

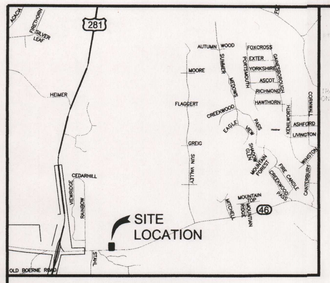
XIV. Payment: Full amount due upon signature (Required of new Customer). Payment of invoice(s) for any other service or repair provided by contractor in due upon 140receipt of invoice. **Invoices are mailed on the date of invoice. All payments not received within thirty (30) days form the invoice date will be subject to a $29.00 late penalty and a 1.5% per month carrying charge, as well as any reasonable attorney's fees, and all collection and court costs incurred by Contractor in collection of unpaid debt(s). Contractor may terminate contract at any time for nonpayment for services. Any check returned to Contractor for any reason will be assessed a $30.00 return check fee.**

XV. Application or Transfer of payment: The fees paid for this agreement may transfer to the subsequent property owner(s); however this Agreements not transferable. Customer will advise subsequent property owner(s) of the state requirement that they sign a replacement agreement authorizing Contractor to perform the herein described Services, and accepting Customer's Responsibilities. This replacement Agreement must be signed and received in Contractor's offices within ten (10) business days of date of transfer of property ownership. Contractor will apply all funds received from Customer first to any past due obligation arising from this Agreement including late fees or penalties, return check fees, and/or charges for services or repairs not paid within thirty (30) days of invoice date. Any remaining monies shall be applied to the funding of the replacement Agreement. The consumption of funds in this manner may cause a reduction in the termination date of effective coverage per this Agreement. See Section IV.

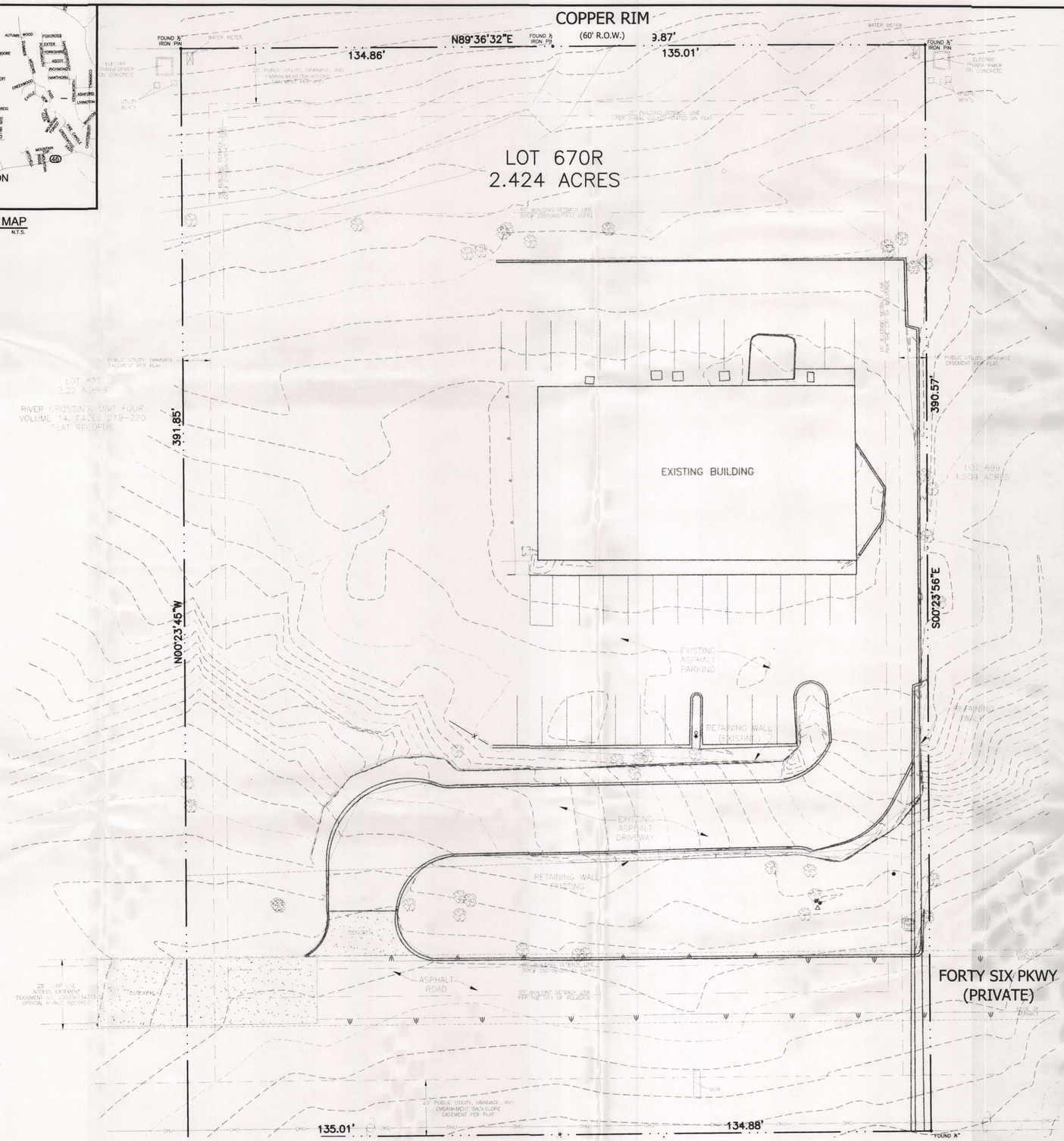
XVI. Entire Agreement: This agreement contains the entire Agreement of the parties, and there are no other conditions in any other agreement, oral or written.

Luke Wilburn Lic. #: MP0000937 Customer Signature Date

White copy: RS Aerobic Services, LLP Yellow copy: Home Owner Pink copy: Regulatory Authority



LOCATION MAP
N.T.S.



NORTH

SCALE: 1"=20'

GENERAL NOTES

1. CONTRACTOR SHALL COMPLY WITH THE CITY OF BULVERDE REGULATIONS. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, AS WELL AS, ALL APPLICABLE SAFETY CODES AND INSPECTION REQUIREMENTS.
2. CONTRACTOR SHALL NOTIFY ALL RESPECTIVE GOVERNMENTAL AND/OR UTILITY AGENCIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR CONSTRUCTION.
4. CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY VERTICAL AND HORIZONTAL ALIGNMENT.
5. THE LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN IN THE CONSTRUCTION DOCUMENTS ARE APPROXIMATE ONLY. IT IS THE CONTRACTOR'S REPONSIBILITY TO CONTACT UTILITY COMPANIES AND LOCATE UTILITY LINES AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION AND TO PROTECT THE UTILITY LINES DURING CONSTRUCTION. DAMAGE TO ANY UTILITY OR DRAINAGE LINE DURING THE CONSTRUCTION OF THIS PROJECT MUST BE REPORTED IMMEDIATELY TO THE APPROPRIATE UTILITY COMPANY OR AGENCY AND REPAIRED AT THE CONTRACTOR'S EXPENSE.

TEXAS ONE-CALL (UTILITY LOCATOR)	1-800-545-6005
CITY PUBLIC SERVICE (GAS/ELECTRIC)	978-3500
SBC	1-800-828-5127
CITY OF BULVERDE	830-438-3612

DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR SHALL PROTECT AND WORK AROUND ANY GAS VALVES LOCATED IN THE PROJECT AREA.

6. CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN CITY INSPECTIONS AND LETTERS OF ACCEPTANCE FROM THE CITY OF BULVERDE, IF REQUIRED.
7. TRAFFIC CONTROL, WHERE REQUIRED, SHALL BE PROVIDED IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. NO SEPARATE PAY ITEM FOR THIS WORK.
8. CONTRACTOR SHALL PROTECT EXISTING GRASS, TREES AND NATURAL LANDSCAPE NOT IN DIRECT CONFLICT WITH THE PROPOSED IMPROVEMENTS.
9. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT SHALL REVIEW THESE PLANS. AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICAPATED SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXACAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONCTRACTOR'S IMPLEMENTATION OF THESE SYSTEM'S, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION IN COMPLIANCE WITH OSHA REGULATIONS (STANDARD 1926 SUBPART P) FOR TRENCH EXCAVATION SPECIFICALLY, GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING AND AROUND TRENCH EXCAVATION.
10. THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIRED EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF SITE IMPROVEMENTS. CONTRACTORS IS RESPONSIBLE FOR THE INSTALLATION AND SHALL MAINTAIN THE EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL THE DISTURBED AREA HAS BEEN 70% REVEGETATED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR SUBMITTING NOTICE OF INTENT AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) TO TCEQ (IF REQUIRED). NOTICE OF TERMINATION TO BE SUBMITTED UPON COMPLETION OF WORK (IF REQUIRED).
11. ALL TRENCHES SHALL BE BACKFILLED IN 8 INCH LIFTS AND COMPACTED TO 95% MAXIMUM DRY DENSITY.
12. CONCRETE SHALL BE CLASS 'A' WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI, UNLESS OTHERWISE NOTED. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾ INCH.
13. REINFORCING STEEL SHALL BE ASTM A615 GR60, UNLESS OTHERWISE NOTED.
14. ALL DIMENSIONS TO CURB LINES ARE TO FACE OF CURB, UNLESS OTHERWISE NOTED.

LEGEND

--1220.00--	EXISTING CONTOUR
——OHU——	OVERHEAD UTILITY LINE
—— . . ——	PROPERTY LINE
—x——x——x—	WIRE FENCE
——▪——▪——	EXIST. ASPHALT
⊗	CLEAN OUT
⊗	WATER VALVE
⊘	WATER METER
●	TREES (MISC)
✱○	LIGHT POLE
○	SPRINKLER HEAD
△	CONTROL POINT

CALL AT LEAST 48 HOURS BEFORE DIGGING

AS OF OCT 1, 1998, IT IS TEXAS STATE LAW THAT YOU CONTACT A ONE-CALL SYSTEM BEFORE EXCAVATING

ONE-CALL SYSTEM OF TEXA	DIG TESS	LONE STAR NOTIFICATION	TEXAS ONE-CALL
1-800-545-6005	1-800-344-8377	1-800-669-8344	1-800-245-4545

A FEDERAL LAW NOW IN EFFECT ALSO STATES THAT ANY PERSON WHO ENGAGES IN EXCAVATION ACTIVITIES WITHOUT FIRST USING AN AVAILABLE ONE-CALL NOTIFICATION SYSTEM TO DETERMINE LOCATIONS OF UNDERGROUND FACILITIES; OR WITHOUT HEEDING LOCATION INFORMATION OR MARKINGS AND SUBSEQUENTLY DAMAGES AN UNDERGROUND FACILITY SHALL BE SUBJECT TO A FINE, IMPRESONMENT, OR BOTH. THE LAW ALSO STATES THAT OSHA MAY BE NOTIFIED OF ANY ACCIDENT CAUSED BY AN EXCAVATOR.

REVISIONS

EXISTING SITE PLAN

CONTRIBUTING ZONE PLAN FOR LOT 670R RIVER CROSSING UNIT 3

BULVERDE TEXAS

STATE OF TEXAS
BRIANT M. COPE
87235
LICENSED
PROFESSIONAL ENGINEER
9/6/07

KLEIN ENGINEERING, INC.
CIVIL / MUNICIPAL / ENVIRONMENTAL ENGINEERS
8611 BOTTS LANE
SAN ANTONIO, TX. 78217
OFFICE: 210-828-7070
FAX: 210-828-7076

JOB No. : 11-27

DATE : 12-2007

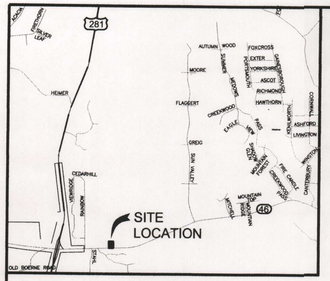
DESIGNED BY: F.R.

DRAWN BY: L.V.

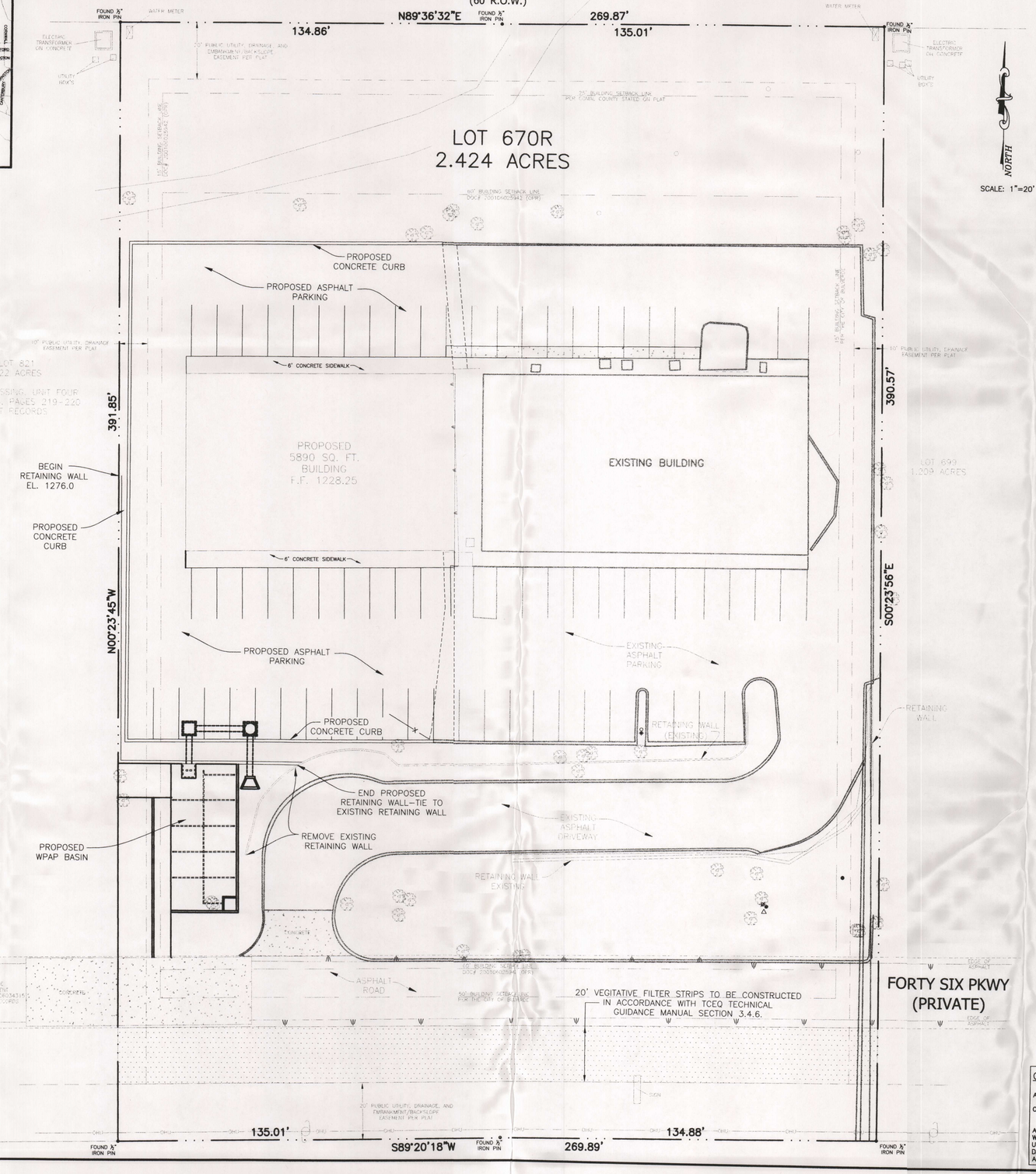
CHECKED BY: B.M.C.

COPPER RIM

(60' R.O.W.)



LOCATION MAP
N.T.S.



LEGEND

- 980 — EXIST. CONTOUR
- OHU — OVERHEAD UTILITY LINE
- WIRE FENCE
- EXIST. ASPHALT
- BUILDING SETBACK
- PROPERTY LINE
- CLEAN OUT
- WATER VALVE
- WATER METER
- TREES (MISC)
- LIGHT POLE
- SPRINKLER HEAD

NOTE:

1. SOIL STABILIZATION PRACTICES ARE EXPECTED TO OCCUR AT ALL OPEN AREAS DESIGNATED FOR OPEN SPACE/LAWNS. BARE SOILS SHALL BE SEEDED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES

1. WRITTEN CONSTRUCTION NOTIFICATION SHOULD BE PROVIDED TO THE APPROPRIATE TCEQ REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION SHOULD INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR AND THE NAME AND THE TELEPHONE NUMBER OF THE CONTRACT PERSON.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
3. NO TEMPORARY ABOVEGROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEMS MAY BE INSTALLED WITHIN 150 FEET IF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL.
4. PRIOR TO COMMENCEMENT OF CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURE MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE SWPPP SECTION OF THE APPROVED EDWARDS AQUIFER CONTRIBUTING ZONE PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.
5. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENTS MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS TO WATER QUALITY (E.G., FUGITIVE SEDIMENT IN STREET BEING WASHED INTO SURFACE STREAMS OR SENSITIVE FEATURES BY THE NEXT RAIN).
6. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%. A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WATER SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORM WATER DISCHARGES (E.G., SCREENING OUTFALLS, PICKED UP DAILY).
8. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SIT AND STORED ON-SITE WITH PROPER E&S CONTROLS INSTALLED.
9. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND CONSTRUCTION ACTIVITIES WILL NOT RESUME WITHIN 21 DAYS. WHEN THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY IS PRECLUDED BY WEATHER CONDITIONS, STABILIZATIONS MEASURES SHALL BE INITIATED AS SOON AS PRACTIBLE.
10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: THE DATES WHEN MAJOR GRADING ACTIVITES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
11. THE HOLDER OF ANY APPROVED CONTRIBUTING ZONE PLAN MUST NOTIFY THE APPROPIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

   A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICE OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAM, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;

   B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;

   C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION FOR THE EDWARDS AQUIFER AND HYDROLOGICALLY CONNECTED SURFACE WATER; OR

   D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED IN A CONTRIBUTING ZONE PLAN AS UNDEVELOPMENT.

AUSTIN REGIONAL OFFICE 1921 CEDAR BEND, SUITE 150 AUSTIN, TEXAS 78758-5336 PHONE (512) 339-2929 FAX (512) 339-3795	SAN ANTONIO REGIONAL OFFICE 14250 JUDSON ROAD SAN ANTONIO, TEXAS 78233-4480 PHONE (210) 490-3096 FAX (210) 545-4329

GENERAL NOTES

1. CONTRACTOR SHALL COMPLY WITH THE CITY OF BULVERDE REGULATIONS. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, AS WELL AS, ALL APPLICABLE SAFETY CODES AND INSPECTION REQUIREMENTS.
2. CONTRACTOR SHALL NOTIFY ALL RESPECTIVE GOVERNMENTAL AND/OR UTILITY AGENCIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR CONSTRUCTION.
4. CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY VERTICAL AND HORIZONTAL ALIGNMENT.
5. THE LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN IN THE CONSTRUCTION DOCUMENTS ARE APPROXIMATE ONLY. IT IS THE CONTRACTOR'S REPONSIBILITY TO CONTACT UTILITY COMPANIES AND LOCATE UTILITY LINES AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION AND TO PROTECT THE UTILITY LINES DURING CONSTRUCTION. DAMAGE TO ANY UTILITY OR DRAINAGE LINE DURING THE CONSTRUCTION OF THIS PROJECT MUST BE REPORTED IMMEDIATELY TO THE APPROPRIATE UTILITY COMPANY OR AGENCY AND REPAIRED AT THE CONTRACTOR'S EXPENSE.

TEXAS ONE-CALL (UTILITY LOCATOR)	1-800-545-6005
CITY PUBLIC SERVICE (GAS/ELECTRIC)	978-3500
SBC	1-800-828-5127
CITY OF BULVERDE	830-438-3612

   DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR SHALL PROTECT AND WORK AROUND ANY GAS VALVES LOCATED IN THE PROJECT AREA.
6. CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN CITY INSPECTIONS AND LETTERS OF ACCEPTANCE FROM THE CITY OF BULVERDE, IF REQUIRED.
7. TRAFFIC CONTROL, WHERE REQUIRED, SHALL BE PROVIDED IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. NO SEPARATE PAY ITEM FOR THIS WORK.
8. CONTRACTOR SHALL PROTECT EXISTING GRASS, TREES AND NATURAL LANDSCAPE NOT IN DIRECT CONFLICT WITH THE PROPOSED IMPROVEMENTS.
9. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT SHALL REVIEW THESE PLANS. AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICAPATED SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXACAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONCTRACTOR'S IMPLEMENTATION OF THESE SYSTEM'S, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION IN COMPLIANCE WITH OSHA REGULATIONS (STANDARD 1926 SUBPART P) FOR TRENCH EXCAVATION SPECIFICALLY, GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING AND AROUND TRENCH EXCAVATION.
10. THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIRED EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF SITE IMPROVEMENTS. CONTRACTORS IS RESPONSIBLE FOR THE INSTALLATION AND SHALL MAINTAIN THE EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL THE DISTURBED AREA HAS BEEN 70% REVEGETATED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR SUBMITTING NOTICE OF INTENT AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) TO TCEQ (IF REQUIRED). NOTICE OF TERMINATION TO BE SUBMITTED UPON COMPLETION OF WORK (IF REQUIRED).
11. ALL TRENCHES SHALL BE BACKFILLED IN 8 INCH LIFTS AND COMPACTED TO 95% MAXIMUM DRY DENSITY.
12. CONCRETE SHALL BE CLASS 'A' WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI, UNLESS OTHERWISE NOTED. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾ INCH.
13. REINFORCING STEEL SHALL BE ASTM A615 GR60, UNLESS OTHERWISE NOTED.
14. ALL DIMENSIONS TO CURB LINES ARE TO FACE OF CURB, UNLESS OTHERWISE NOTED.

CALL AT LEAST 48 HOURS BEFORE DIGGING

AS OF OCT 1, 1998, IT IS TEXAS STATE LAW THAT YOU CONTACT A ONE-CALL SYSTEM BEFORE EXCAVATING

ONE-CALL SYSTEM OF TEXA	DIG TESS	LONE STAR NOTIFICATION	TEXAS ONE-CALL
1-800-545-6005	1-800-344-8377	1-800-669-8344	1-800-245-4545

A FEDERAL LAW NOW IN EFFECT ALSO STATES THAT ANY PERSON WHO ENGAGES IN EXCAVATION ACTIVITIES WITHOUT FIRST USING AN AVAILABLE ONE-CALL NOTIFICATION SYSTEM TO DETERMINE LOCATIONS OF UNDERGROUND FACILITIES; OR WITHOUT HEEDING LOCATION INFORMATION OR MARKINGS AND SUBSEQUENTLY DAMAGES AN UNDERGROUND FACILITY SHALL BE SUBJECT TO A FINE, IMPRESONMENT, OR BOTH. THE LAW ALSO STATES THAT OSHA MAY BE NOTIFIED OF ANY ACCIDENT CAUSED BY AN EXCAVATOR.

REVISIONS

PROPOSED SITE PLAN

CONTRIBUTING ZONE PLAN FOR LOT 670R RIVER CROSSING UNIT 3

BULVERDE TEXAS

KLEIN ENGINEERING, INC.
CIVIL / MUNICIPAL / ENVIRONMENTAL ENGINEERS
8611 BOTTS LANE
SAN ANTONIO, TX. 78217
OFFICE: 210-828-7070
FAX: 210-828-7076

STATE OF TEXAS — BRIAN M. COPE — 93735 — LICENSED PROFESSIONAL ENGINEER

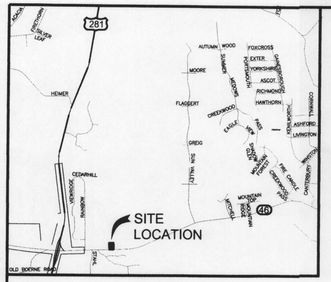
JOB No. : 11-27

DATE : 12-2007

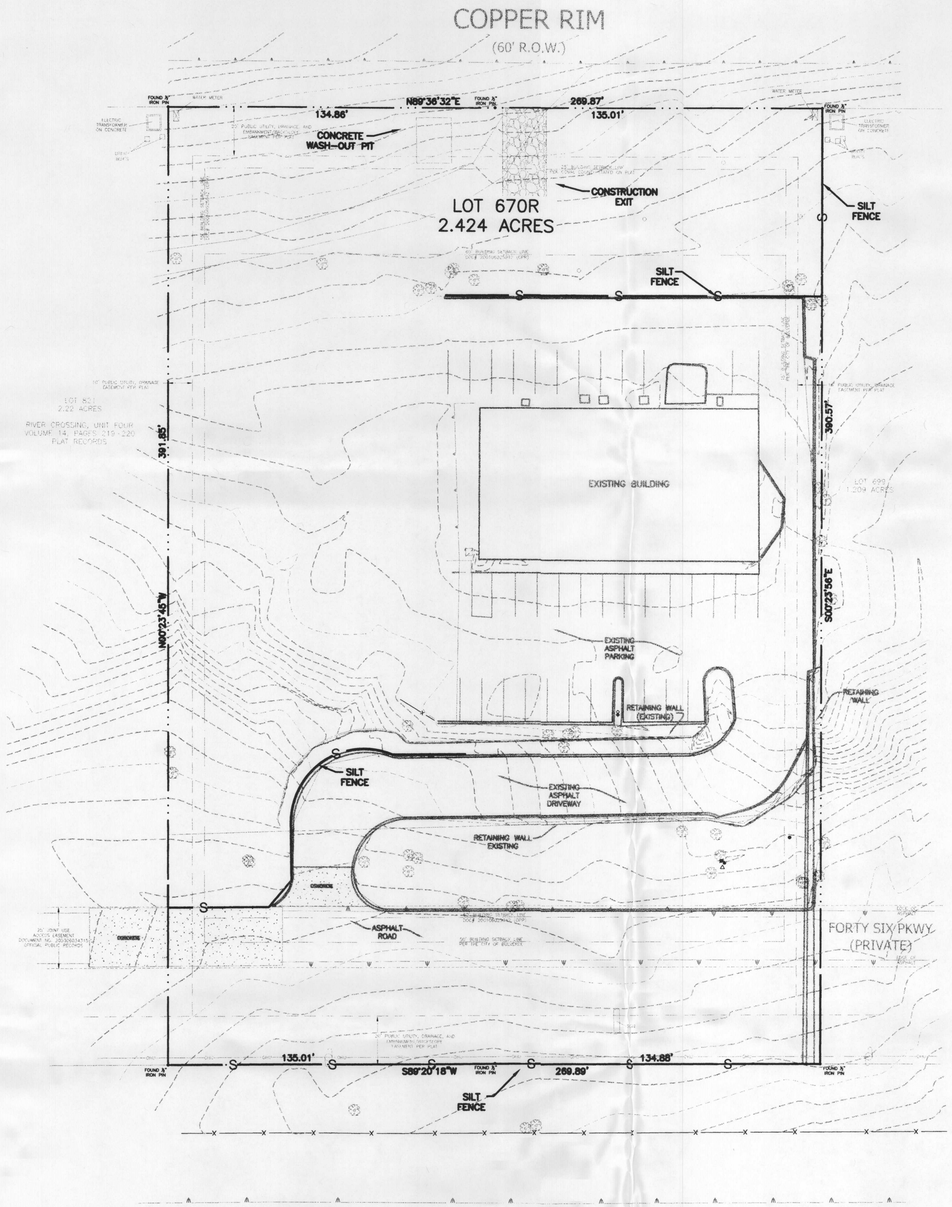
DESIGNED BY: F.R.

DRAWN BY: L.V.

CHECKED BY: B.M.C.



LOCATION MAP
N.T.S.

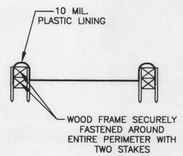


SCALE: 1"=30'

LEGEND

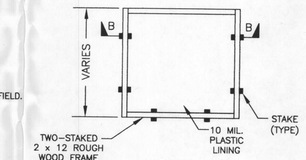
- EXISTING CONTOUR
- OHU — OVERHEAD UTILITY LINE
- WIRE FENCE
- EXIST. ASPHALT
- S — SILT FENCE
- CONSTRUCTION ENTRANCE/EXIT
- CLEAN OUT
- WATER VALVE
- WATER METER
- TREES (MISC)
- LIGHT POLE
- SPRINKLER HEAD
- CONTROL POINT

NOTES:
1. STONE SIZE: 3-5" OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 50'.
3. THICKNESS: NOT LESS THAN 8".
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
8. CONTRACTOR MUST ENSURE THAT THE CITY'S RIGHT-OF-WAY MUST BE CLEAR OF ALL CONSTRUCTION DEBRIS AT THE END OF EVERY DAY.



SECTION B-B
NTS

NOTES
1. ACTUAL LAYOUT DETERMINED IN FIELD.



PLAN
TYPE "ABOVE GRADE"
NTS

SOIL STABILIZATION PRACTICES:

____HYDROMULCHING
____TEMPORARY SEEDING
__X__PERMANENT PLANTING, SODDING, OR SEEDING
____MULCHING
____SOIL RETENTION BLANKET
____BUFFER ZONES
__X__PRESERVATIVE OF NATURAL RESOURCES

OTHER: _____

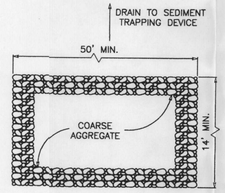
STRUCTURAL PRACTICES:

__X__ SILT FENCES
____ HAY BALES
____ ROCK BERMS
____ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
____ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
____ DIVERSION DIKE AND SWALE COMBINATIONS
____ PIPE SLOPE DRAINS
____ PAVED FLUMES
__X__ ROCK BEDDING AT CONSTRUCTION EXIT
____ TIMBER MATTING AT CONSTRUCTION EXIT
____ CHANNEL LINERS
____ SEDIMENT TRAPS
____ SEDIMENT BASINS
____ STORM INLET SEDIMENT TRAP
____ STONE OUTLET STRUCTURES
__X__ CURBS AND GUTTERS
____ STORM SEWERS
____ VELOCITY CONTROL DEVICES

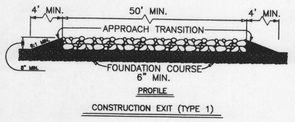
OTHER: _____

NARRATIVE -- SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:
STRUCTURAL PRACTICES, AS APPLICABLE, WILL BE INSTALLED PRIOR TO EACH PHASE OF THE PROJECT AND MAINTAINED DURING THE CONSTRUCTION OF THAT PHASE. SOIL STABILIZATION PRACTICES WILL CLOSELY FOLLOW COMPLETION AND ACCEPTANCE OF CONSTRUCTION FOR EACH PROJECT PHASE.

STABILIZED CONSTRUCTION ENTRANCE



PLAN



PROFILE

CONSTRUCTION EXIT (TYPE 1)

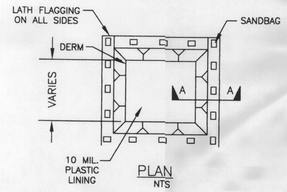
SEDIMENT CONTROL FENCE USAGE GUIDELINES

A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

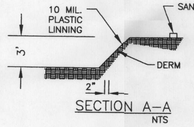
SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAX. FLOW THROUGH RATE OF 100 GPM/FT

GENERAL NOTES

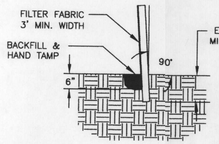
1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6:1 AND CONSTRUCTE AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.



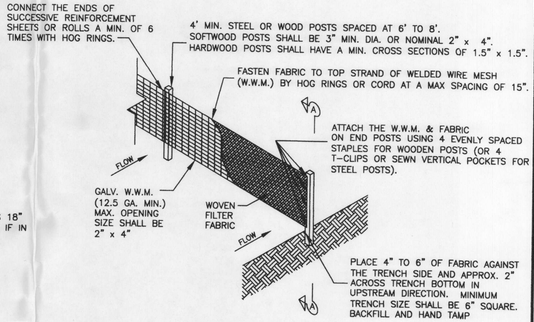
PLAN
NTS



SECTION A-A
NTS



SECTION A-A
NTS



TEMPORARY SEDIMENT CONTROL FENCE

REVISIONS

STORM WATER POLLUTION PREVENTION PLAN

CONTRIBUTING ZONE PLAN FOR LOT 670R RIVER CROSSING UNIT 3

BULVERDE, TEXAS

STATE OF TEXAS
BRIAN M. COPE
93735
LICENSED PROFESSIONAL ENGINEER

KLEIN ENGINEERING, INC.
CIVIL / MUNICIPAL / ENVIRONMENTAL ENGINEERS
8611 BOTTS LANE
SAN ANTONIO, TX. 78217
OFFICE: 210-828-7070
FAX: 210-828-7076

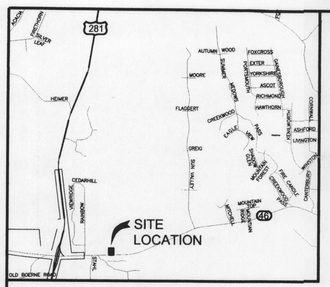
JOB No. : 11-27

DATE : 12-2007

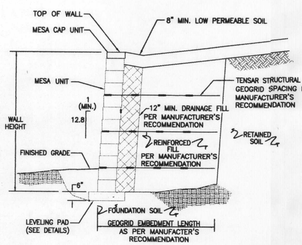
DESIGNED BY: F.R.

DRAWN BY: L.V.

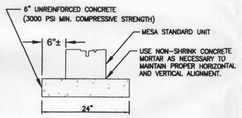
CHECKED BY: B.M.C.



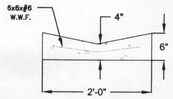
LOCATION MAP
N.T.S.



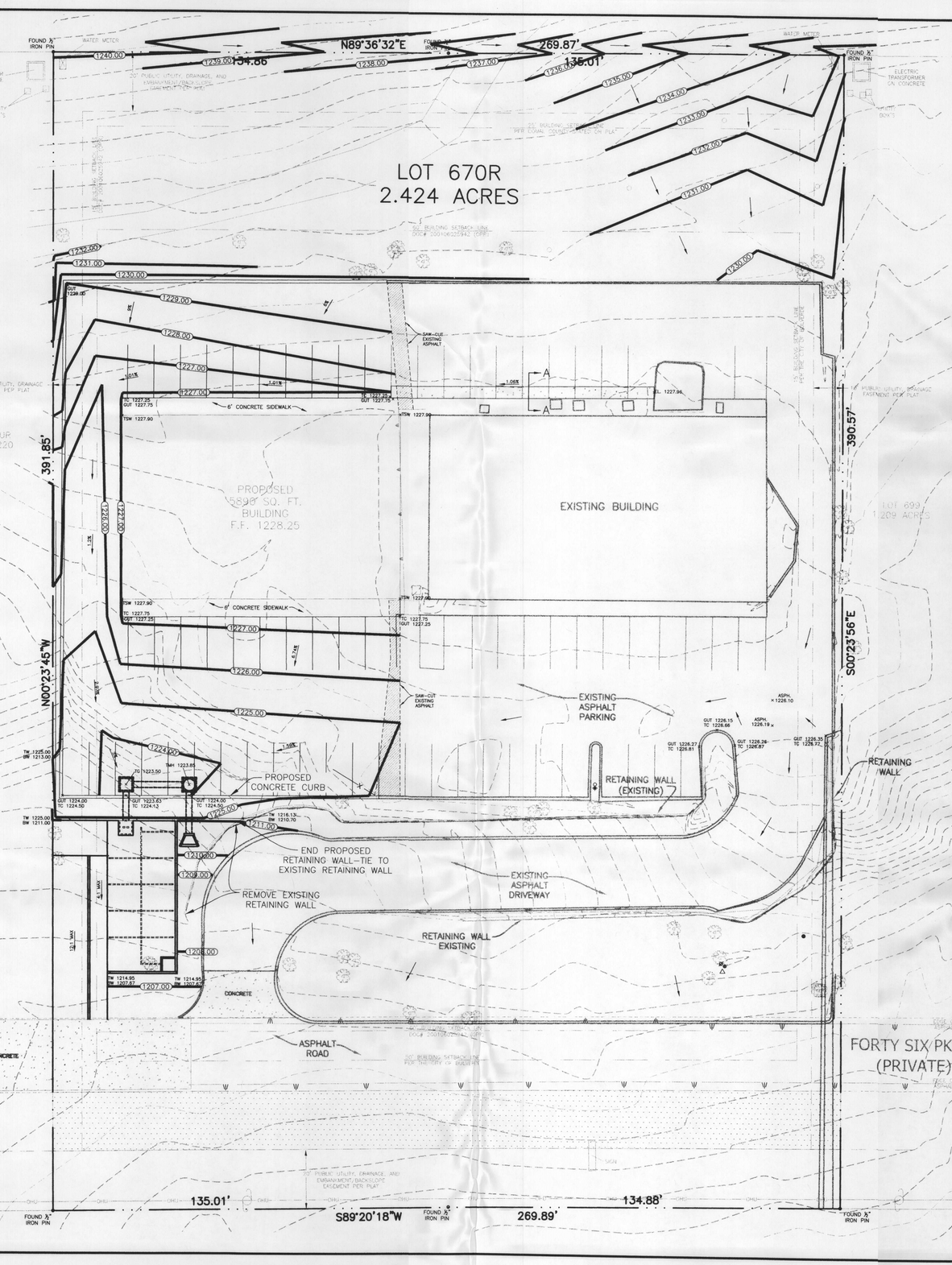
CONCRETE BLOCK RETAINING WALL
OR APPROVED EQUAL
TYPICAL CROSS-SECTION
N.T.S.



CONCRETE LEVELING PAD DETAIL
N.T.S.



CONCRETE PILOT CHANNEL
SECTION "A-A"
N.T.S.



SCALE: 1"=20'

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES

1. WRITTEN CONSTRUCTION NOTIFICATION SHOULD BE PROVIDED TO THE APPROPRIATE TCEQ REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION SHOULD INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR AND THE NAME AND THE TELEPHONE NUMBER OF THE CONTRACT PERSON.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
3. NO TEMPORARY ABOVEGROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEMS MAY BE INSTALLED WITHIN 150 FEET IF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL.
4. PRIOR TO COMMENCEMENT OF CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURE MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE SWPPP SECTION OF THE APPROVED EDWARDS AQUIFER CONTRIBUTING ZONE PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.
5. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENTS MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS TO WATER QUALITY (E.G., FUGITIVE SEDIMENT IN STREET BEING WASHED INTO SURFACE STREAMS OR SENSITIVE FEATURES BY THE NEXT RAIN).
6. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%. A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WATER SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORM WATER DISCHARGES (E.G., SCREENING OUTFALLS, PICKED UP DAILY).
8. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SIT AND STORED ON-SITE WITH PROPER E&S CONTROLS INSTALLED.
9. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND CONSTRUCTION ACTIVITIES WILL NOT RESUME WITHIN 21 DAYS. WHEN THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY IS PRECLUDED BY WEATHER CONDITIONS, STABILIZATIONS MEASURES SHALL BE INITIATED AS SOON AS PRACTIBLE.
10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: THE DATES WHEN MAJOR GRADING ACTIVITES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
11. THE HOLDER OF ANY APPROVED CONTRIBUTING ZONE PLAN MUST NOTIFY THE APPROPIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICE OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAM, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;

B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;

C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION FOR THE EDWARDS AQUIFER AND HYDROLOGICALLY CONNECTED SURFACE WATER; OR

D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED IN A CONTRIBUTING ZONE PLAN AS UNDEVELOPMENT.

AUSTIN REGIONAL OFFICE	SAN ANTONIO REGIONAL OFFICE
1921 CEDAR BEND, SUITE 150	14250 JUDSON ROAD
AUSTIN, TEXAS 78758-5336	SAN ANTONIO, TEXAS 78233-4480
PHONE (512) 339-2929	PHONE (210) 490-3096
FAX (512) 339-3795	FAX (210) 545-4329

LEGEND

—980—	EXIST. CONTOUR		BUILDING SETBACK
—(980)—	PROP. CONTOUR		PROPERTY LINE
TMH	TOP OF MANHOLE	⊗	CLEAN OUT
TG	TOP OF GRATE	⊗	WATER VALVE
TC	TOP CURB	⊘	WATER METER
GUT	GUTTER	●	TREES (MISC)
TW	TOP OF WALL	✱○	LIGHT POLE
BW	BOTTOM WALL	○	SPRINKLER HEAD
TSW	TOP OF SIDEWALK		
ASPH	ASPHALT ELEVATION		
—x—OHU—	OVERHEAD UTILITY LINE	⟵	DIRECTION OF FLOW
—x—x—	WIRE FENCE		
	EXIST. ASPHALT		

CALL AT LEAST 48 HOURS BEFORE DIGGING

AS OF OCT 1, 1998, IT IS TEXAS STATE LAW THAT YOU CONTACT A ONE-CALL SYSTEM BEFORE EXCAVATING

ONE-CALL SYSTEM OF TEXA	DIG TESS	LONE STAR NOTIFICATION	TEXAS ONE-CALL
1-800-545-6005	1-800-344-8377	1-800-669-8344	1-800-245-4545

A FEDERAL LAW NOW IN EFFECT ALSO STATES THAT ANY PERSON WHO ENGAGES IN EXCAVATION ACTIVITIES WITHOUT FIRST USING AN AVAILABLE ONE-CALL NOTIFICATION SYSTEM TO DETERMINE LOCATIONS OF UNDERGROUND FACILITIES: OR WITHOUT HEEDING LOCATION INFORATION OR MARKINGS AND SUBSEQUENTLY DAMAGES AN UNDERGROUND FACILITY SHALL BE SUBJECT TO A FINE, IMPRESONMENT, OR BOTH. THE LAW ALSO STATES THAT OSHA MAY BE NOTIFIED OF ANY ACCIDENT CAUSED BY AN EXCAVATOR.

REVISIONS

PROPOSED SITE GRADING PLAN

CONTRIBUTING ZONE PLAN FOR LOT 670R RIVER CROSSING UNIT 3 BULVERDE TEXAS

KLEIN ENGINEERING, INC.
CIVIL / MUNICIPAL / ENVIRONMENTAL ENGINEERS
8611 BOTTS LANE
SAN ANTONIO, TX. 78217
OFFICE: 210-828-7070
FAX: 210-828-7076

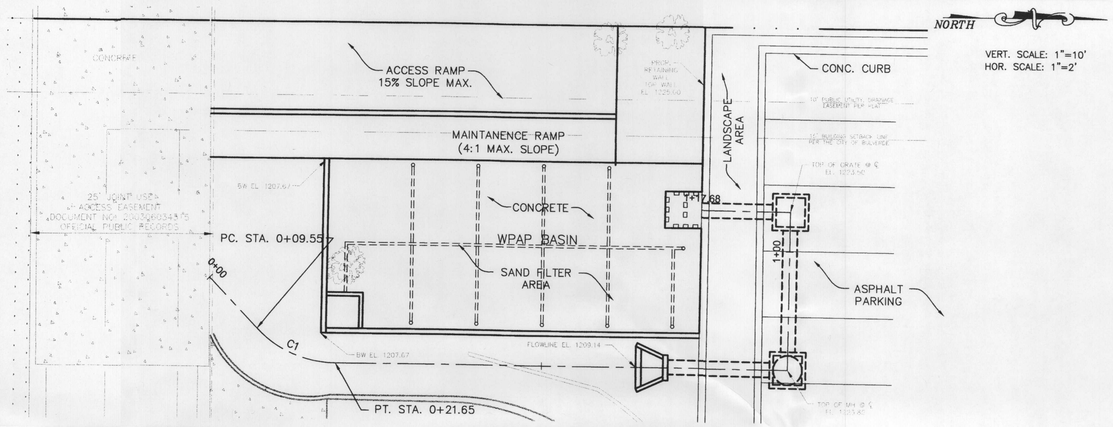
JOB No. : 11-27

DATE : 12-2007

DESIGNED BY: F.R.

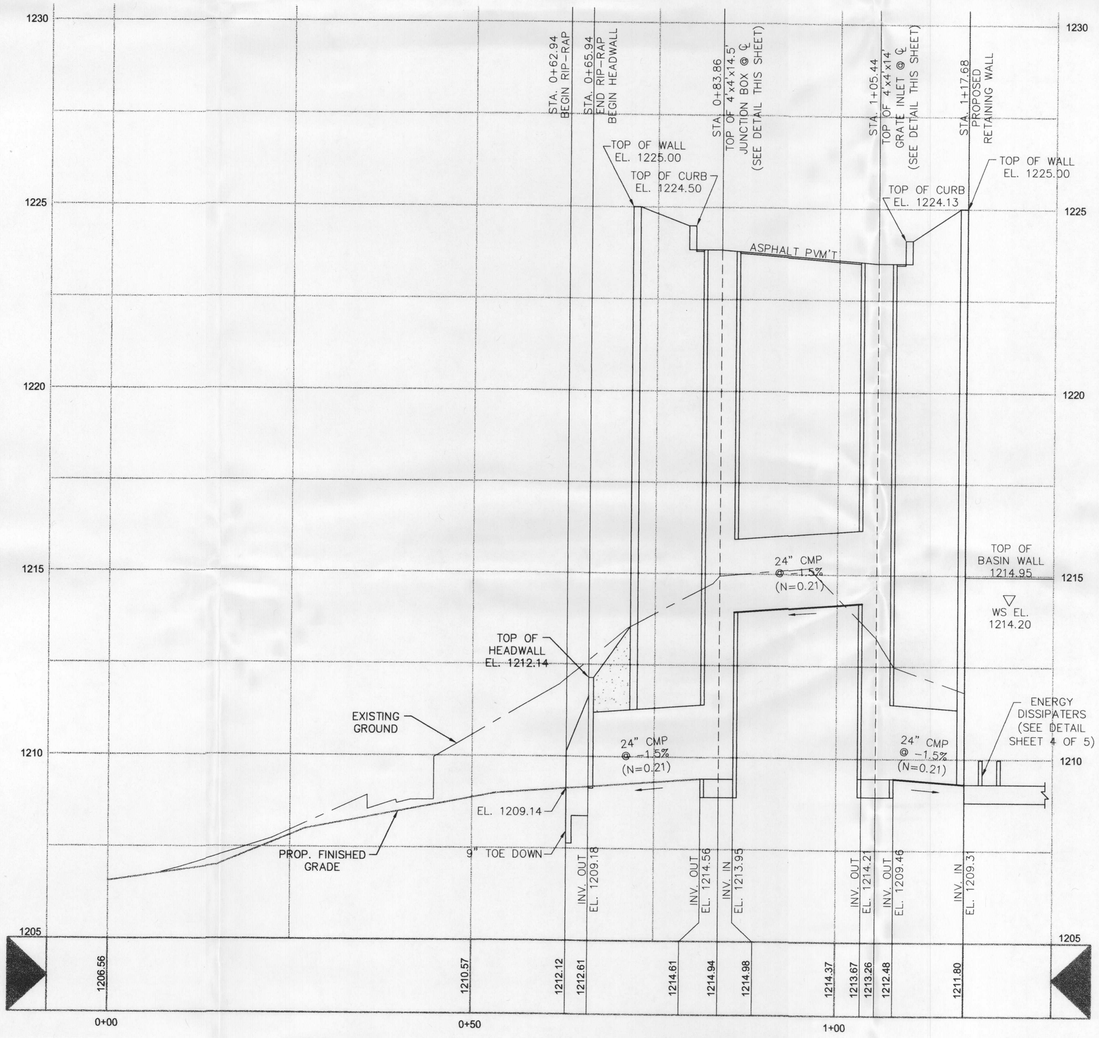
DRAWN BY: L.V.

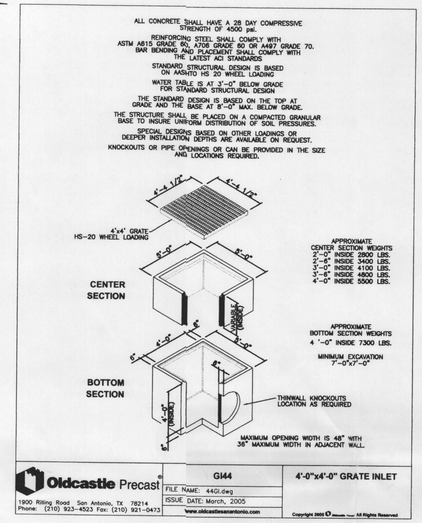
CHECKED BY: B.M.C.

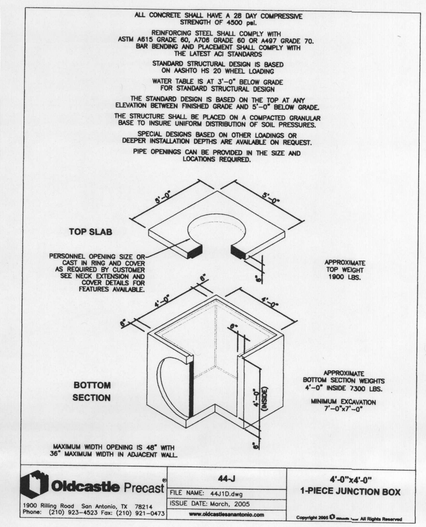


CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD
C1	12.10	15.00	46°12'23"	6.40	S22°45'39"W	11.77

FLOW SPLITTER
STA. 0+00.00 TO 1+17.68







TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEEOR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTORS IMPLEMENTATION OFTHE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATETRENCH EXCAVATION THAT COMPLIES WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTORS INDEPEIDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

LEGEND

——•——•——	ASPHALT
— —980— —	EXIST. CONTOUR
●	TREES (MISC)
INV.	INVERT
PROP.	PROPOSED
B.W.	BOTTOM WALL
T.W.	TOP OF WALL
EL.	ELEVATION
CONC.	CONCRETE
℄	CENTERLINE

REVISIONS

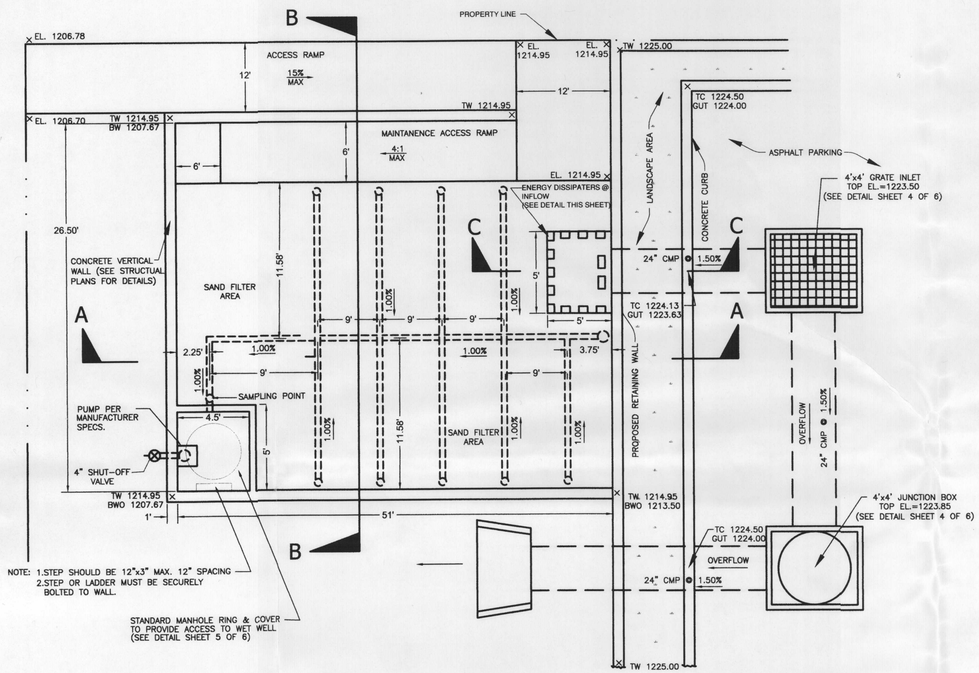
FLOW SPLITTER PLAN PROFILE & DETAILS
STA. 0+00.00 TO 1+17.68

CONTRIBUTING ZONE PLAN FOR LOT
670R RIVER CROSSING UNIT 3
BULVERDE TEXAS

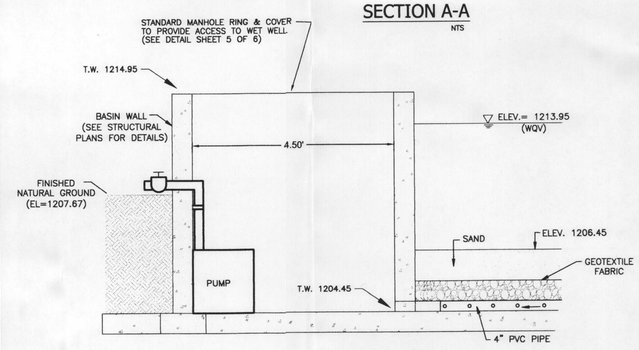
10/19/07
BRIAN M. COPE
93735
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

KLEIN ENGINEERING, INC.
CIVIL / MUNICIPAL / ENVIRONMENTAL ENGINEERS
8611 BOTTS LANE
SAN ANTONIO, TX. 78217
OFFICE: 210-828-7070
FAX: 210-828-7076

JOB No. : 11-27
DATE : 12-2007
DESIGNED BY: F.R.
DRAWN BY: L.V.
CHECKED BY: B.M.C.



SECTION A-A
NTS



SECTION "D-D" (WET WELL)
NTS

BASIN VOLUME CALCULATIONS

WATERSHED AREA = 1.62 ACRES

RUNOFF DEPTH = 2.8 INCHES

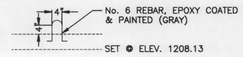
BASIN DEPTH = 7.50 FEET

WATER QUALITY. VOL. REQUIRED = 9,259

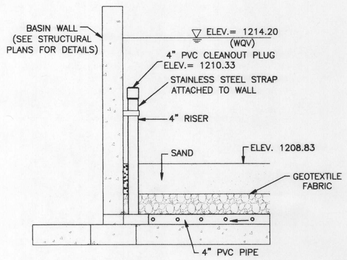
CUFT. WATER QUALITY. VOL. PROVIDED = 9,568 CUFT.

MIN. SAND FILTER AREA REQUIRED = 925.9 X 1.2 = 1,111.08 SQFT. AREA

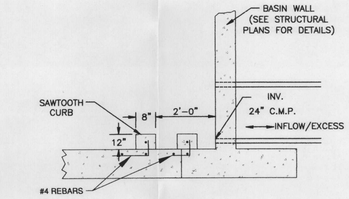
PROVIDED = 1,139 SQFT.



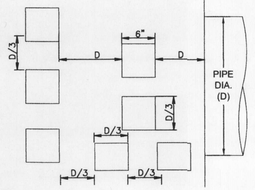
SEDIMENT DEPTH MARKER
NTS



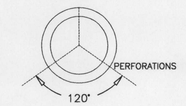
SAMPLING POINT DETAIL
NTS



(SECTION "C-C")
ENERGY DISSIPATION @ SEDIMENTATION BASIN
BASIN INFLOW
NTS



ENERGY DISSIPATERS
TOP VIEW
NTS



4" PIPE PERFORATIONS
SCALE: N.T.S

NOTES:

1. CONTRACTOR TO REFERENCE STRUCTURAL DESIGN PLANS FOR DETAILS REGARDING WIDTH OF CONCRETE WALLS AND STEEL REINFORCING.
2. THE WASHED SAND GRAIN SIZE DISTRIBUTION SHOULD BE COMPARABLE TO THAT OF "WASHED CONCRETE SAND" (ASTM C-33).
3. USE 1"-1.5" DIAMETER CLEAN CRUSHED STONE OR GRAVEL FOR UNDERDRAIN LAYER.
4. FILTER SAND MAY SEEDED WITH GRASS SEED VISUAL IMPACT OF FILTER AREA.
5. REFER TO ATTACHMENT G OF THE PERMANENT POLLUTION ABATEMENT SECTION OF THE WATER POLLUTION ABATEMENT PLAN FOR THE CALCULATIONS ON THE REQUIRED VOLUME FOR THE SAND FILTRATION BASIN.
6. REFERENCE GEOTEXTILE FILTER FABRIC ANCHORING DETAIL AND GATE VALVE DETAIL ON IN EXHIBIT 9 OF THE WPAP REPORT.

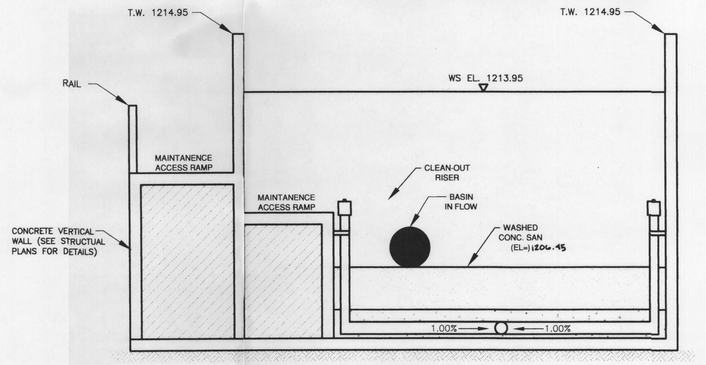
A GEOTEXTILE SEPARATION LAYER MEETING THE FOLLOWING SPECIFICATIONS SHALL BE INSTALLED BETWEEN THE SAND MEDIA AND THE PERFORATED PIPE UNDERDRAIN SYSTEM.

GEOTEXTILE FABRIC

PROPERTY	TEST METHOD	SPECIFICATION
WEIGHT (OZ/SY)	ASTM D 3776	4.0
GRAB STRENGTH (LBS.)	ASTM D 4632	115
ELONGATIONS (%)	ASTM D 4632	50
PUNCTURE (LBS.)	ASTM D 3787	65
AOS (#40 SIEVE)	ASTM D 4751	70
FLOW RATE (GPM/SF)	ASTM D 4491	140

LEGEND

TMH	TOP OF MANHOLE
TG	TOP OF GRATE
TC	TOP OF CURB
GUT	GUTTER
TW	TOP OF WALL
BWO	BOTTOM WALL OUTSIDE BASIN
TSW	TOP OF SIDEWALK
——OHU——	OVERHEAD UTILITY LINE
—x—x—x—	WIRE FENCE
———	EXIST. ASPHALT
———	PROPERTY LINE



SECTION "B-B"
N.T.S.

REVISIONS

WPAP BASIN DETAILS

CONTRIBUTING ZONE PLAN FOR LOT 670R RIVER CROSSING UNIT 3

BULVERDE TEXAS

BRIAN M. COPE 83735 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

KLEIN ENGINEERING, INC.
CIVIL / MUNICIPAL / ENVIRONMENTAL ENGINEERS
8611 BOTTS LANE SAN ANTONIO, TX. 78217
OFFICE: 210-828-7070
FAX: 210-828-7076

JOB No. : 11-27

DATE : 12-2007

DESIGNED BY: F.R.

DRAWN BY: L.V.

CHECKED BY: B.M.C.

PAGE 6 OF 6

BMPs FOR UPGRADIENT STORMWATER

A bar ditch will be constructed adjacent to the existing roadway to direct runoff originating from the roadway and ROW and away from the proposed site, therefore, there will be no storm water runoff originating upgradient from this development.

BMPs FOR ON-SITE STORMWATER

Storm water runoff generated on-site from Catchment area 1 (see attached Drainage Area Map) will flow into a sand filter system. The sand filter system was oversized to compensate for runoff generated on-site from the area labeled Catchment Area 2, which will by-pass the proposed BMP. This BMP was designed in accordance with the TCEQ Technical Guidance Manual to comply with 30 TAC Chapter 213 requirements. The pollutant removal is achieved by straining pollutants through a filter media. The area labeled Catchment Area 3 will be treated with Engineered Vegetative Filter Strips in accordance with the TCEQ Technical Guidance Manual to comply with 30 TAC Chapter 213 requirements.

BMPs FOR SURFACE STREAMS

Storm water runoff generated on-site from Catchment area 1 (see attached Drainage Area Map) will flow into a sand filter system. The sand filter system was oversized to compensate for runoff generated on-site from the area labeled Catchment Area 2, which will bypass the proposed BMP. This BMP was designed in accordance with the TCEQ Technical Guidance Manual to comply with 30 TAC Chapter 213 requirements. The pollutant removal is achieved by straining pollutants through a filter media. The area labeled Catchment Area 3 will be treated with Engineered Vegetative Filter Strips in accordance with the TCEQ Technical Guidance Manual to comply with 30 TAC Chapter 213 requirements. This filter system and the Engineered Vegetative Filter Strips were designed to prevent pollutants from entering the Lewis Creek tributary of Cibolo Creek.

INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLANS

Regular inspections will occur two times a year. During each inspection erosion areas inside and downstream of the BMP must be identified and repaired or re-vegetated immediately. Any identifiable damage to the structure will be repaired immediately. After any heavy rain, inspection will occur for erosion. Damaged areas will be repaired within 7 days.

Sediment shall be removed from the inlet structure and sedimentation chamber when sediment buildup reaches a depth of 6 inches or when the proper functioning of inlet and outlet structures is impaired. Sediment should be cleared from the inlet structure at least once a year and sediment should be cleared from the sedimentation basin at least once every 5 years.

Media Replacement- The filter under drain will be cleaned to remove sediment build up every 2 years, or as needed to maintain the designed drawdown time. When the drawdown time exceeds 48 hours, the upper layer of the geotechnical material and gravel ballast should be removed and replaced with new materials meeting the original specifications. Any discolored sand should be removed and replaced.

Debris and Litter Removal- Debris and litter will accumulate near the sedimentation basin outlet device and should be removed during regular mowing operations and inspections Attention should be brought to any debris that can float and clog the control device.

Filter Under drain- Clean the piping network to remove any sediment buildup as needed to maintain design drawdown time.

Mowing- Grass areas in and around sand filters must be mowed at least twice annually to limit vegetation height to 18 inches.

Record Keeping- Owner shall maintain a field logbook to record any relevant information noted during any site visits or inspections. Include notations about any activities or issues that could affect the water quality (e.g. maintenance activities, and improperly functioning equipment or components). Results of inspection visits and corrective actions should be recorded.

Frank Ross

Print Name of Customer / Agent

Signature of Customer / Agent

6/20/07

Date

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

The measures to avoid or minimize surface stream contamination are as identified in Attachments K & L. The proposed project will be graded to a sedimentation sand filter basin. Pollutants will be removed from the storm water runoff as it filters through the sand filter media. The discharge from the basin will be to the Right-of-Way of State Highway 46. The velocity and erosion controls will conform to the requirements of Comal County.

STORM WATER POLLUTION PREVENTION PLAN

A. Intended Sequence of Major Events

1. The general sequence of events will be as follows:

- Site preparation, clearing and grubbing.
- Install all temporary erosion and sedimentation controls (Erosion and Sedimentation Control Placement Schedule provided in the Erosion Control Layout in the construction drawings).
- Rough cut or fill parking and building pad area.
- Install underground utilities.
- Install rock berms at points of concentrated runoff.
- Grade parking lots to final sub-grade.
- Pour concrete foundation and construct building and permanent BMPs.
- Install pavement section (lime treatment, base, curb and gutter section, sidewalks and asphalt)
- Remove temporary construction entrances/exits only prior to pavement construction in these areas that will be paved last.
- Finalize grading and re-vegetation.
- Remove temporary erosion and sedimentation controls upon achieving final stabilization (i.e. at least 70 % vegetative cover for disturbed areas).
- Final clean up and re-vegetate all areas disturbed by removal of erosion and sedimentation controls.

2. Discharges Associated with industrial Activity.

- There will be no discharges associated with industrial activity during construction.

3. Receiving Water

- Storm water will sheet flow across the site to an existing bar ditch adjacent to Hwy 46 and eventually to tributaries of Cibolo Creek.

B. Description of Temporary Best Management Practices.

Storm water runoff originating from the project site will flow generally southward across the site to the existing bar ditch adjacent to Hwy 46. The structural controls at this location are identified in the SW3P plan. Controls shall be implemented prior to each construction phase.

Non-structural and structural measures and stabilization practices that will be implemented to prevent potential pollutants in storm water discharges are listed below. Contractor is responsible for installing structural and non-structural controls prior to construction and maintaining the structural and non-structural controls until construction is complete.

1. *Soil disturbing Activities*
   Areas shall not be disturbed until it is necessary for construction to begin. Areas that have been disturbed shall be covered and stabilized as soon as possible.
2. *Erosion and Sediment Controls*
   Erosion and sediment controls such as Silt fence shall be installed at down gradient locations where sheet flow leaves the project site. Rock berms are required where flow is concentrated across drainage channels. Equipment wash down pits shall be installed on-site to capture pollutants. Construction exits shall be placed where vehicular access is provided to the construction site.

   - Soil erosion and sediment controls will be designed to trap and retain sediment on site.
   - Soil erosion and sediment controls will be designed to prevent or significantly reduce the transport of pollutants and suspended sediments off site.
   - Soil erosion and sediment controls will be in place prior to commencement of construction activities including site clearing, grading and grubbing. Disturbed areas will be restored as soon as possible during construction. Temporary BMP's will be removed only after all disturbed areas have been fully restored.

2. Controls used to Prevent Solid Materials

The Contractor is responsible for insuring that no solid materials such as building material or litter are discharged into receiving waters. Litter and other solid wastes shall be contained in receptacles allocated to this purpose. Waste will be removed from the site in accordance with local requirements.

3. Controls used to Minimize Off-Site Tracking

Construction entrances and exits identified on the SW3P Plan shall be used. The SW3P Plan is located in the attached plans. The contractor must remove offsite accumulations of sediment that escape the construction site. These accumulations must be removed at a frequency sufficient to minimize offsite impact.

4. Materials to be stored On Site

The Contractor shall keep a record describing the construction and waste materials expected to be stored on the site and shall be expected to update this record as appropriate.

5. Off Site Material Storage Areas

This project will have no off site material storage areas associated with it.

6. Pollutants from Support Activities

Storm water discharges that are from the project site may include sources aside from sedimentation. This pollution is from support activities that include fluid leaks from construction vehicles, hydrocarbons associated with asphalt paving, and wash out from concrete trucks.

7. Control Measures for Support Activities

Control measures for support activities to be followed by the Contractor include:

- Designating an equipment storage area and placing silt fence along the down gradient side of the storage area.
- Placing fuel storage tanks within a designated equipment storage area and placing silt fence along the down gradient side of the storage area.
- Removing contaminated soil from accidental spills and disposing of it in accordance with applicable regulations. Vehicle or equipment fluid shall no be intentionally released onto the ground.
- Vehicle maintenance will be performed within the equipment storage areas. Rinse out pits for concrete construction equipment shall be drained and cleaned periodically and the waste shall be disposed offsite in accordance with local governing regulations.
- The Contractor is responsible for keeping a record of control measures for support activities.

8. Measures to protect threatened or endangered species, or critical habitat

The Contractor shall contact USFWS to determine if threatened or endangered species, or critical habitat is located within the project site. The Contractor will enlist the aid of wildlife officials if it is determined that threatened or endangered species or critical habitat is contained within the project site.

C. Compliance with Local and State Regulations

Contractors must insure that the storm water pollution prevention plan they are using is consistent with the requirement specified and approved by state or local officials. The Contractor must keep plans updated as necessary to remain consistent with any changes required by state or local officials for which the Contractor receives written notice.

D. Maintenance Procedures

- When applicable, sediment must be removed from sediment tracts or sedimentation ponds when design capacity has been reduced by 50%.
- The Contractor is responsible for selecting, installing, and maintaining control for stabilization measures for offsite material storage.
- Stabilization measures shall be initiated as soon as practical in portions of the site where construction activities are temporarily or permanently ceased, but in no case more than 14 days after construction activity and a portion has temporarily or permanently ceased.
- The Contractor is responsible for the installation and maintenance of storm water management measures prior to final stabilization of this site and is not responsible for maintenance after storm water discharges associated with construction activity have been eliminated from the site.

- The Contractor shall follow local waste disposal, sanitary sewer, or septic system regulations to the extent these are located within the permitted area
- All erosion and sediment control measures and other protective measures identified in the storm water pollution prevention plan must be maintained in an effective operating condition.
- If erosion and sediment controls are found by the inspector to be ineffective maintenance shall be performed before the next anticipated storm event or as necessary to maintain the continued effectiveness of the controls.
- If periodic inspections indicate that a control has been used inappropriately, or incorrectly, the contractor must modify or replace the control to satisfy the site situation.
- If sediment escapes the construction site, any accumulations of sediment off site must be removed in a frequent and timely manner sufficient to minimize off site impacts.
- If maintenance prior to the next anticipated storm event is not possible, maintenance must be scheduled and accomplished as soon as practical.

E. Inspections

Qualified personnel provided by the Contractor shall inspect disturbed areas of the construction site that have not been stabilized. Inspection requirements include, but are not limited to:

- Inspecting areas used for storage of materials that are exposed to precipitation. Inspection of structural control measures and locations where vehicles enter and exit the site.
- Inspecting these sites at least once every 14 calendar days and within 24 hours of the end of the end of the storm event of ½ inch or greater.
- Inspecting sediments and erosion control measures identified in the storm water pollution plan shall be observed to insure that they are operating correctly.
- Where discharge location points are accessible, they shall be inspected to ascertain whether diversion controlled measures are effective in preventing significant impacts to receiving waters.
- Where discharge points are not accessible, nearby downstream locations shall be inspected to the extent such inspections are practical.
- Locations where vehicles enter and exit shall be inspected for evidence of offsite sediment tracking.
- The storm water pollution prevention plan shall be modified as necessary to include additional or modified practices to correct the problem identified by inspection.
- Revisions to the storm water pollution prevention plan shall be completed within 7 calendar days following the inspection. If modifications are required, they shall be completed before the next anticipated storm event. If implementation before the next anticipated storm event is not practical, modifications shall be implemented as soon as practical.

1. Inspection Reports

- The Contractor shall create a report summarizing the scope of the inspection, names and qualifications or personnel making the inspections, date of inspection, and major observations relating to the implementation of the storm water pollution prevention plan shall be maintained and retained as part of the plan for at least three years from the date the site was finally stabilized.
- Major observations should include the location of discharges of sediment, or other pollutants from the site, location of control that need to be maintained, locations of controls that failed to operate as designed or proved inadequate for the particular location and locations where additional controls are needed that did not exist at time of inspection.
- The report shall identify any incidents of non-compliance.
- Where a report does not identify any incidences of non-compliance the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit.
- A chart entitled "Inspections" may be used to keep inspection records, however, other record keeping practices may be used.
- A rainfall gauge may be placed on site. Rainfall during construction shall be recorded.

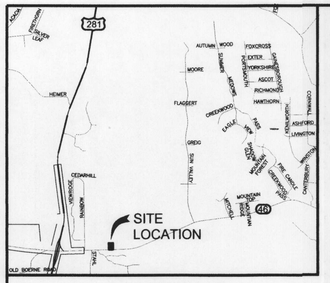
F. Non-storm water discharge sources and control measures

Storm water discharges from this development may be intermittently mixed with non-storm water of discharges from fire hydrant flushings, water used to control dust, potable water sources including water line flushing, irrigation drainage from watering vegetation, pavement wash waters and air conditioning condensate, springs uncontaminated ground water (including dewatering ground water filtration), and foundation or footing drains where flows are not contaminated with process materials such as solvents.

The non-storm water components would exit the site via the storm water drainage paths and would be subject to the same filtering and sedimentation provided by the vegetated drainage channels and structural controls used for storm water runoff.

Trees, limbs, leaves, brush and vegetation from clearing operations shall be burned on site in accordance with applicable permit requirements or removed from the site and disposed off-site in accordance with applicable regulations.

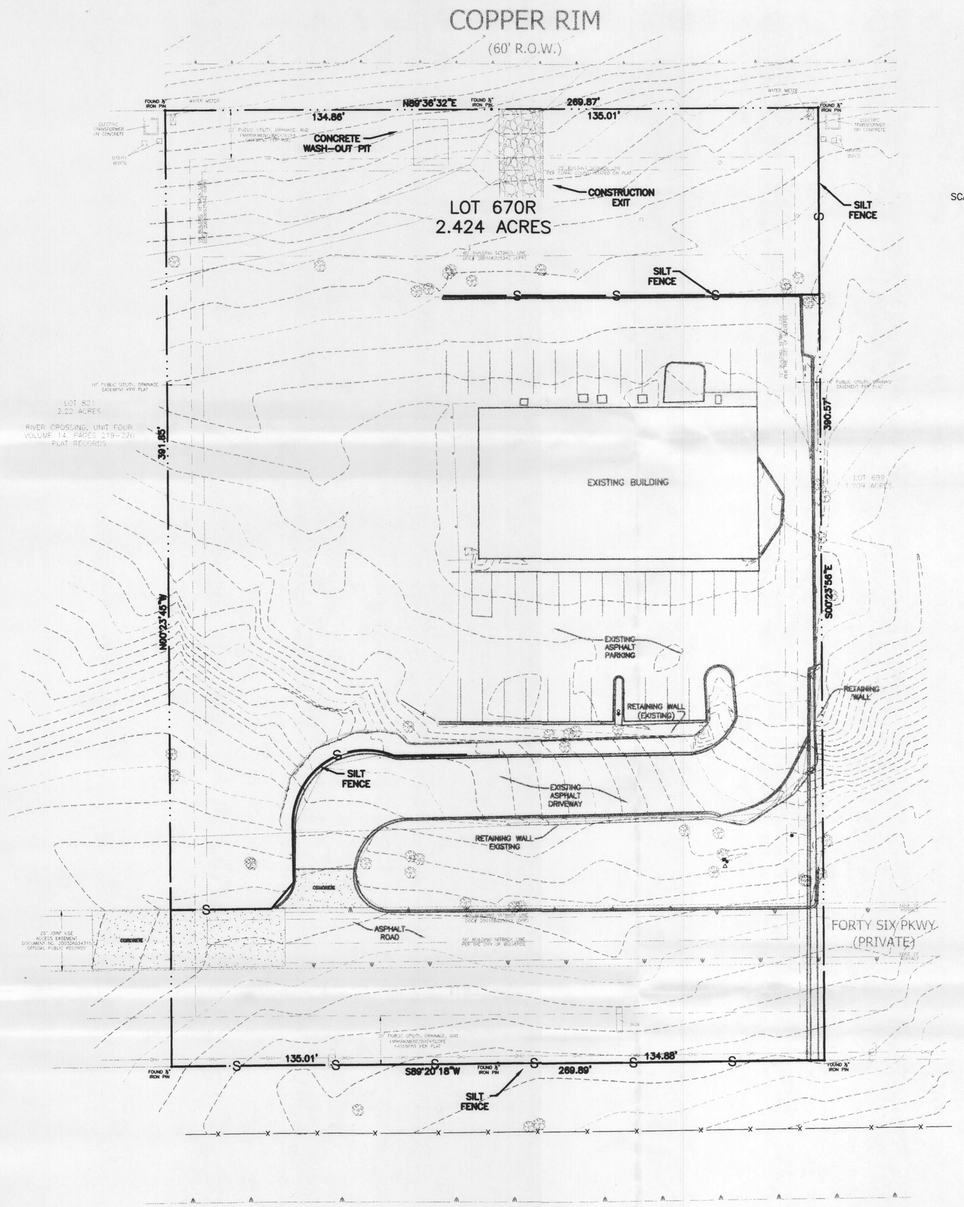
Other non-storm water discharges are not anticipated from the construction of this development.



LOCATION MAP
N.T.S.

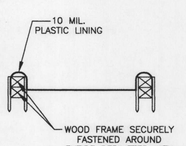
LEGEND

--1220.00--	EXISTING CONTOUR
OHU	OVERHEAD UTILITY LINE
WIRE FENCE	
EXIST. ASPHALT	
S	SILT FENCE
	CONSTRUCTION ENTRANCE/EXIT
	CLEAN OUT
	WATER VALVE
	WATER METER
	TREES (MISC)
	LIGHT POLE
	SPRINKLER HEAD
	CONTROL POINT



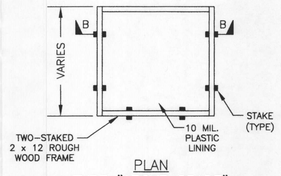
SCALE: 1"=30'

NOTES:
1. STONE SIZE: 3–5" OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 50'.
3. THICKNESS: NOT LESS THAN 8".
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
8. CONTRACTOR MUST ENSURE THAT THE CITY'S RIGHT-OF-WAY MUST BE CLEAR OF ALL CONSTRUCTION DEBRIS AT THE END OF EVERY DAY.



SECTION B–B
NTS

NOTES
1. ACTUAL LAYOUT DETERMINED IN FIELD.



PLAN
TYPE "ABOVE GRADE"
NTS

SOIL STABILIZATION PRACTICES:

____HYDROMULCHING
____TEMPORARY SEEDING
_X_PERMANENT PLANTING, SODDING, OR SEEDING
____MULCHING
____SOIL RETENTION BLANKET
____BUFFER ZONES
_X_PRESERVATIVE OF NATURAL RESOURCES

OTHER:_____

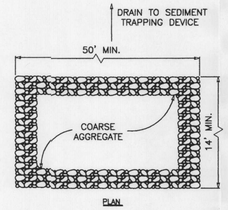
STRUCTURAL PRACTICES:

_X_SILT FENCES
____HAY BALES
____ROCK BERMS
____DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
____DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
____DIVERSION DIKE AND SWALE COMBINATIONS
____PIPE SLOPE DRAINS
____PAVED FLUMES
_X_ROCK BEDDING AT CONSTRUCTION EXIT
____TIMBER MATTING AT CONSTRUCTION EXIT
____CHANNEL LINERS
____SEDIMENT TRAPS
____SEDIMENT BASINS
____STORM INLET SEDIMENT TRAP
____STONE OUTLET STRUCTURES
_X_CURBS AND GUTTERS
____STORM SEWERS
____VELOCITY CONTROL DEVICES

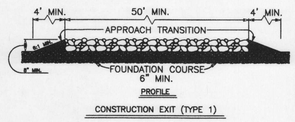
OTHER:_____

NARRATIVE – SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:
STRUCTURAL PRACTICES, AS APPLICABLE, WILL BE INSTALLED PRIOR TO EACH PHASE OF THE PROJECT AND MAINTAINED DURING THE CONSTRUCTION OF THAT PHASE. SOIL STABILIZATION PRACTICES WILL CLOSELY FOLLOW COMPLETION AND ACCEPTANCE OF CONSTRUCTION FOR EACH PROJECT PHASE.

STABILIZED CONSTRUCTION ENTRANCE



PLAN



PROFILE

CONSTRUCTION EXIT (TYPE 1)

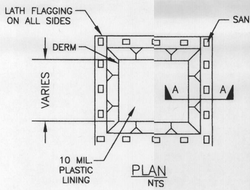
SEDIMENT CONTROL FENCE USAGE GUIDELINES

A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

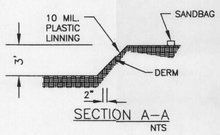
SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAX. FLOW THROUGH RATE OF 100 GPM/FT

GENERAL NOTES

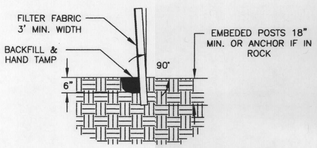
1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6:1 AND CONSTRUCTE AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.



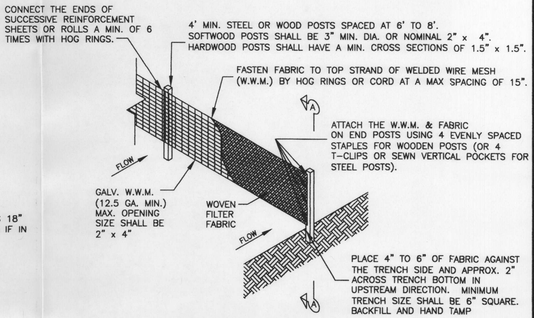
PLAN
NTS



SECTION A–A
NTS



SECTION A–A
NTS



TEMPORARY SEDIMENT CONTROL FENCE

REVISIONS

STORM WATER POLLUTION PREVENTION PLAN

CONTRIBUTING ZONE PLAN FOR LOT 670R RIVER CROSSING UNIT 3

BULVERDE, TEXAS

KLEIN ENGINEERING, INC.
CIVIL / MUNICIPAL / ENVIRONMENTAL ENGINEERS
8611 BOTTS LANE
SAN ANTONIO, TX. 78217
OFFICE: 210-828-7070
FAX: 210-828-7076

JOB No. : 11-27

DATE : 12-2007

DESIGNED BY: F.R.

DRAWN BY: L.V.

CHECKED BY: B.M.C.

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity under TPDES General Permit (TXR150000)

TCEQ Office Use Only
Permit No.:
RN:
CN:

Sign up now for on line NOI at http://www.tceq.state.tx.us/permitting/steers/steers.html Get Instant Approval

Did you know you can pay on line? Go to https://www6.tceq.state.tx.us/epay/
Select Fee Type: GENERAL PERMIT CONSTRUCTION STORM WATER DISCHARGE NOI APPLICATION

Application Fee: You must pay the $100 Application Fee to TCEQ for the application to be considered complete.
How did you pay this fee?

Mailed: ☐	Check/Money Order No.:	Name Printed on Check:
EPAY: ☐	Voucher No.:	Is the Payment Voucher copy attached? ☐ Yes

IMPORTANT:
- Use the attached **INSTRUCTIONS** when completing this form.
- After completing this form, use the attached **CUSTOMER CHECKLIST** to make certain all items are complete and accurate.
- Missing, illegible, or inaccurate items may delay final acknowledgment or coverage under the general permit.

A. OPERATOR (applicant)

1. If the applicant is currently a customer with TCEQ, what is the Customer Number (CN) issued to this entity? **CN**

2. What is the full Legal Name of the applicant?

Frank Bass

(The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal document forming the entity.)

3. What is the applicant's mailing address as recognized by the US **Postal Service**?

Address: 175 Bendel Ranch Rd.	Suite No./Bldg. No./Mail Code:	
City: New Braunfels	State: Texas	ZIP Code: 78133-5941
Country Mailing Information (if outside USA).	Country Code:	Postal Code:

4. Phone No.: (830) 743-1258	Extension:
5. Fax No.: (830) 885-6164	E-mail Address: fbasil@gvtc.com

6. Indicate the type of Customer:

☐ Individual ☑ Sole Proprietorship-D.B.A. ☐ Limited Partnership
☐ Corporation ☐ Federal Government ☐ General Partnership
☐ State Government ☐ County Government ☐ City Government
☐ Other:

7. Independent Operator: ☑ Yes ☐ No (If governmental entity, subsidiary, or part of a larger corporation, check "No".)

8. Number of Employees: ☑ 0-20; ☐ 21-100; ☐ 101-250; ☐ 251-500; or ☐ 501 or higher

9. Customer Business Tax and Filing Numbers *(This item is not applicable to Individuals, Government, GP or Sole Proprietor.)*
REQUIRED for Corporations and Limited Partnerships

State Franchise Tax ID Number: n/a	Federal Tax ID: n/a
TX SOS Charter (filing) Number: n/a	DUNS Number (if known): n/a

B. BILLING ADDRESS

The Operator is responsible for paying the annual fee. The annual fee will be assessed to permits **active on September 1 of each year.** TCEQ will send a bill to the address provided in this section. The Operator is responsible for terminating the permit when it is no longer needed.

Is the billing address same as the Operator Address? ☑ Yes, go to **Section C.** ☐ No, fill out **Section B**

1. Billing Mailing Address:	Suite No./Bldg. No./Mail Code:	
City:	State:	ZIP Code:
2. Country Mailing Information (if outside USA). Territory:	Country Code:	Postal Code:
3. Billing Contact (Attn or C/O):		
4. Phone No.: ( )	Extension:	
5. Fax No.: ( )	E-mail Address:	

C. APPLICATION CONTACT

If TCEQ needs additional information regarding this application, who should be contacted?

1. Name: Frank Bass	Title: Managing Member	Company: A.T. Holding - Copper Ridge LLC
2. Phone No.: (830) 743-1258	Extension:	
3. Fax No.: 830 885 6164	E-mail Address:	

D. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

1. TCEQ Issued RE Reference Number (RN) (if available): 105162580

2. Name of Project or Site (the name as known by the community where this facility/project is located):

18670 Forty-Six Parkway

(example: phase and name of subdivision or name of project that's unique to the site)

3. Physical Address of Project or Site: (enter in spaces below)

Street Number: 78670	Street Name: Forty-Six Parkway	
City: Bulverde	ZIP Code: 78163	County (Counties if >1): Comal

4. If no physical address (Street Number & Street Name), provide a written location access description to the site:
(Ex.: phase 1 of Woodland subdivision located 2 miles west from intersection of Hwy 290 & IH35 accessible on Hwy 290 South)

5. Latitude: 29 47' 54.79" N	Longitude: -98 24' 12.83" W

6. What is the primary business of this entity? In your own words, briefly describe the primary business of the Regulated Entity:
(Do not repeat the SIC and NAICS code) Commercial Development

7. What is the mailing address and contact information for the regulated entity?

Is the RE mailing address the same as the Operator? [✓] Yes, address is the same as Operator [ ] No, provide the address

Street Number:	Street Name:	
City:	State:	ZIP Code:

E. GENERAL CHARACTERISTICS

1. I certify that the project/site is **not** located on Indian Country Lands? [✓] Yes [ ] No
If No, you must obtain authorization through EPA, Region VI.

2. Is this NOI being submitted due to a change in Operator? [ ] Yes [✓] No

3. What is the Standard Industrial Classification (SIC) code (see instructions for common codes):
Primary: 1542 Secondary:

4 What is the total number of acres disturbed? 1.55
Is the project site part of a larger common plan of development or sale? [✓] Yes [ ] No

If **Yes**, the total number of acres disturbed can be less than 5 acres.

If **No**, the total number of acres disturbed must be 5 or more. If the total number of acres disturbed is less than 5 then the project site does not qualify for coverage through this Notice of Intent. Coverage will be denied. See the requirements in the general permit for small construction sites.

5. Discharge Information

a What is the name of the first water body to receive the storm water runoff or potential runoff from the site? Cibolo Creek

b. What is the segment number(s) of the classified water body(s) that the discharge or potential discharge will eventually reach? 1908

c. Is the discharge into an MS4? [ ] Yes [✓] No
If **Yes**, what is the name of the MS4 Operator?
Note: The general permit requires you to send a copy of the NOI to the MS4 Operator.

6. Is the discharge or potential discharge within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer? [✓] Yes [ ] No
If the answer is Yes, please note that a copy of the agency approved Plan required by the Edwards Aquifer Rule (30 TAC Chapter 213) must be included in the Storm Water Pollution Prevention Plan.

F. CERTIFICATION

Check "Yes" to the certifications below. **Failure to indicate "Yes" to ALL items** may result in denial of coverage under the general permit.

I certify that I have obtained a copy and understand the terms and conditions of the general permit TX150000.	☑ Yes
I certify that the activities at this site qualify for coverage under the general permit TX150000.	☑ Yes
I understand that a Notice of Termination (NOT) must be submitted when this authorization is no longer needed.	☑ Yes
I understand that permits active on September 1st of each year will be assessed an Annual Water Quality Fee.	☑ Yes
I certify that a Storm Water Pollution Prevention Plan (SWP3) has been prepared and implemented as required by the general permit.	☑ Yes

Operator Certification:

I, _____ _____

Typed or printed name ***(Required)*** Title ***(Required)***

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under **30 Texas Administrative Code §305.44** to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signature:_____ Date: _____

(Use blue ink)

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I Frank Bass,
Print Name

Owner
Title - Owner/President/Other

of 18670 Forty Six Pkwy
Corporation/Partnership/Entity Name

have authorized Brian M. Cope, P.E.
Print Name of Agent/Engineer

of Klein Engineering, Inc.
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For applicants who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

Applicant's Signature — Date: 6/20/07

THE STATE OF Texas §

County of Bexar §

BEFORE ME, the undersigned authority, on this day personally appeared Frank Basil Bass, Jr. known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 20th day of June, 2007.

NOTARY PUBLIC

DARLA M. REID
Notary Public, State of Texas
My Commission Expires
March 20, 2010

Darla M. Reid
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: Mar. 20, 2010

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Contributing Zone Fee Application Form

NAME OF PROPOSED REGULATED ENTITY: 18670 Forty Six Pkwy
REGULATED ENTITY LOCATION: Unit 3 Lot 670R River Crossing, Bulverde, Texas
NAME OF CUSTOMER: Frank Bass
CONTACT PERSON: Brian M. Cope PHONE: (210)828-7070
(Please Print)

Customer Reference Number (if issued): CN 603152745 (nine digits)
Regulated Entity Reference Number (if issued): RN 105162580 (nine digits)

AUSTIN REGIONAL OFFICE (3373)
- ☐ Hays
- ☐ Travis
- ☐ Williamson

SAN ANTONIO REGIONAL OFFICE (3362)
- ☐ Bexar
- X Comal
- ☐ Kinney
- ☐ Medina
- ☐ Uvalde

APPLICATION FEES MUST BE PAID BY CHECK, CERTIFIED CHECK, OR MONEY ORDER, PAYABLE TO THE Texas Commission on Environmental Quality. YOUR CANCELED CHECK WILL SERVE AS YOUR RECEIPT. **THIS FORM MUST BE SUBMITTED WITH YOUR FEE PAYMENT. THIS PAYMENT IS BEING SUBMITTED TO (CHECK ONE):**

X **SAN ANTONIO REGIONAL OFFICE**

☐ **AUSTIN REGIONAL OFFICE**

☐ **Mailed to TCEQ:**
TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ **Overnight Delivery to TCEQ:**
TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
512/239-0347

Check one:

X **Contributing Zone Plan - Fee Due $250**

☐ **Modification of a Previously Approved Contributing Zone Plan - Fee Due $250**

☐ **Extension of Time Request - Fee Due $100**

Signature

6/20/07
Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. **Reason for Submission** *(If other is checked please describe in space provided)*

☒ New Permit, Registration or Authorization *(Core Data Form should be submitted with the program application)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

2. **Attachments** **Describe Any Attachments:** *(ex. Title V Application, Waste Transporter Application, etc.)*

☒ Yes ☐ No — Contributing Zone Application

3. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	4. Regulated Entity Reference Number *(If Issued)*
CN 603152745		RN 105162580

SECTION II: Customer Information

5. **Effective Date for Customer Information Updates (mm/dd/yyyy)**

6. **Customer Role** (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check only one of the following:*

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

7. **General Customer Information**

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State) ☒ No Change**

If "No Change" and Section I is complete, skip to Section III – Regulated Entity Information.

8. Type of Customer:			
☐ City Government	☐ County Government	☐ Federal Government	☐ State Government
☐ Other Government	☐ General Partnership	☐ Limited Partnership	☐ Other:

9. **Customer Legal Name** *(If an individual, print last name first: ex: Doe, John)* *If new Customer, enter previous Customer below* *End Date:*

10. **Mailing Address:**

City | State | ZIP | ZIP + 4

11. **Country Mailing Information** *(If outside USA)*

12. **E-Mail Address** *(If applicable)*

13. **Telephone Number** ( ) -

14. **Extension or Code**

15. **Fax Number** *(if applicable)* ( ) -

16. **Federal Tax ID** *(9 digits)*

17. **TX State Franchise Tax ID** *(11 digits)*

18. **DUNS Number** *(if applicable)*

19. **TX SOS Filing Number** *(if applicable)*

20. **Number of Employees**

☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

21. **Independently Owned and Operated?**

☐ Yes ☐ No

SECTION III: Regulated Entity Information

22. **General Regulated Entity Information** *(If 'New Regulated Entity" is selected below this form should be accompanied by a permit application)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information ☒ No Change** *(See below)*

**If "NO CHANGE" is checked and Section I is complete, skip to Section IV, Preparer Information.

23. **Regulated Entity Name** *(name of the site where the regulated action is taking place)*

18670 Forty Six Parkway (AT Holding Copper Ridge LLC)

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*	18670 Forty Six Parkway							
	City	Bulverde	State	TX	ZIP	78163	ZIP + 4	
25. Mailing Address:	AT Holding Copper Ridge LLC							
	175 Bendel Ranch Road							
	City	New Braunfels	State	TX	ZIP	78133	ZIP + 4	5941

26. E-Mail Address:	fbasil@gvtc.com	
27. Telephone Number	28. Extension or Code	29. Fax Number *(if applicable)*
(830) 743-1258		(830) 885-6164

30. Primary SIC Code (4 digits)	31. Secondary SIC Code (4 digits)	32. Primary NAICS Code (5 or 6 digits)	33. Secondary NAICS Code (5 or 6 digits)
1542		236220	

34. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*

commercial

Questions 34 – 37 address geographic location. Please refer to the instructions for applicability.

35. Description to Physical Location:	Located on the Northside of Hwy 46 approximately 4,851 ft East of the intersection of Hwy 281 and Hwy 46.

36. Nearest City	County	State	Nearest ZIP Code
Bulverde	Comal	TX	78163

37. Latitude (N) In Decimal:	29.79833		38. Longitude (W) In Decimal:	-98.40361	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	47	54.79	-98	24	12.83

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form or the updates may not be made. If your Program is not listed, check other and write it in. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☒ Edwards Aquifer	☐ Industrial Hazardous Waste	☐ Municipal Solid Waste
☐ New Source Review – Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS	☐ Sludge
☐ Stormwater	☐ Title V – Air	☐ Tires	☐ Used Oil	☐ Utilities
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Brian M. Cope, P.E.	41. Title:	Project Engineer

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 828-7070		(210) 828-7076	bcope@kleinengineering.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 9 and/or as required for the updates to the ID numbers identified in field 39.

(See the Core Data Form instructions for more information on who should sign this form.)

Company:		Job Title:	
Name *(In Print)*:	Frank Bass	Phone:	(830) 743-1258
Signature:		Date:	12/10/07

Texas Commission on Environmental Quality

TSS Removal Calculations 05-09-2006

Project Name: 18670 Forty Six Pkwy
Date Prepared: 4/10/2007

1. The Required Load Reduction from the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:

Lm = Required TSS removal
A_N = Net increase in Impervious area for site
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Comal	
Total project area included in plan * =	2.42	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	1.36	acres
Total post-development impervious cover fraction * =	0.56	
P =	33	inches

Total L_M required for this plan = **1221** lbs.

Number of drainage basins / outfalls areas leaving the plan area	3

2. Calculations for the Required Load Reduction:

Catchment Area / Outfall Area No. = 1

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:

Lm = Required TSS removal
A_N = Net increase in impervious area for site
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

Total drainage basin / outfall area * =	1.62	acres
Predevelopment impervious area within drainage basin / outfall area * =	0.00	acres
Post-development impervious area within drainage basin / outfall area * =	1.07	acres
Post-development impervious fraction within drainage basin / outfall area * =	0.66	
P =	33	inches
L_M =	**960**	lbs.

3. Indicate the Drainage Basin and Select the desired BMP Code for this Section.

Proposed BMP =	sf	abbreviation
Removal efficiency =	89	percent

BMP Code:	BMP Type:
AC	Aqua logic Cartridge Filter
BR	Bioretention
CW	Constructed Wetland
ED	Extended Detention
GS	Grassy Swale
RI	Retention / Irrigation
SF	Sand Filter
WB	Wet Basin
WV	Wet Vault

4. Calculate TSS Load Removed (L_R) from this Drainage Basin by the Proposed BMP Type.

RG 348 Page Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

A_C = Total On-Site drainage area in the BMP Catchment area
A_I = Impervious area proposed in the BMP catchment
A_P = Pervious area remaining in the BMP catchment
L_R = TSS Load removed by the proposed BMP

A_C =	1.62	acres
A_I =	1.07	acres
A_P =	0.55	acres
L_R =	**1096**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

F = **0.88**

If F>1, then a more efficient BMP
or a larger treatment area is required.

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.50	inches
Post Development Runoff Coefficient =	0.47	IC = Drainage Area to BMP / drainage Area to BMP
On-site Water Quality Volume =	4133	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Storage for Sediment =	827	
Total Capture Volume =	4960	cubic feet

2. Calculations for the Required Load Reduction:

Catchment Area / Outfall Area No. = 2

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:

Lm = Required TSS removal
A_N = Net increase in impervious area for site
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

Total drainage basin / outfall area * =	0.15	acres	
Predevelopment impervious area within drainage basin / outfall area * =	0.00	acres	
Post-development impervious area within drainage basin / outfall area * =	0.10	acres	
Post-development impervious fraction within drainage basin / outfall area * =	0.67		
P =	33	inches	
L_M =	**90**	lbs.	

* The values entered in these fields should be for the drainage basin / outfall area.

3. Indicate the Drainage Basin and Select the desired BMP Code for this Section.

Proposed BMP =	sf	abbreviation
Removal efficiency =	89	percent

BMP Code:	BMP Type:
AC	Aqua logic Cartridge Filter
BR	Bioretention
CW	Constructed Wetland
ED	Extended Detention
GS	Grassy Swale
RI	Retention / Irrigation
SF	Sand Filter
WB	Wet Basin
WV	Wet Vault

4. Calculate TSS Load Removed (L_R) from this Drainage Basin by the Proposed BMP Type.

RG 348 Page Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:

A_C = Total On-Site drainage area in the BMP Catchment area
A_I = Impervious area proposed in the BMP catchment
A_P = Pervious area remaining in the BMP catchment
L_R = TSS Load removed by the proposed BMP

A_C =	0.15	acres
A_I =	0.10	acres
A_P =	0.05	acres
L_R =	**102**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

F = **0.88**

If F>1, then a more efficient BMP or a larger treatment area is required.

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.50	inches	
Post Development Runoff Coefficient =	0.47		IC = Drainage Area to BMP / drainage Area to BMP
On-site Water Quality Volume =	387	cubic feet	
Storage for Sediment =	77		
Total Capture Volume =	**465**	cubic feet	

2. Calculations for the Required Load Reduction:

Catchment Area / Outfall Area No. = 3

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:

Lm = Required TSS removal
A_N = Net increase in impervious area for site
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

Total drainage basin / outfall area * =	0.65	acres
Predevelopment impervious area within drainage basin / outfall area * =	0.00	acres
Post-development impervious area within drainage basin / outfall area * =	0.19	acres
Post-development impervious fraction within drainage basin / outfall area * =	0.29	
P =	33	inches
L_M =	171	lbs.

* The values entered in these fields should be for the drainage basin / outfall area.

3. Indicate the Drainage Basin and Select the desired BMP Code for this Section.

Proposed BMP =	sf	abbreviation
Removal efficiency =	89	percent

BMP Code:	BMP Type:
AC	Aqualogic Cartridge Filter
BR	Bioretention
CW	Constructed Wetland
ED	Extended Detention
GS	Grassy Swale
RI	Retention / Irrigation
SF	Sand Filter
WB	Wet Basin
WV	Wet Vault

4. Calculate TSS Load Removed (L_R) from this Drainage Basin by the Proposed BMP Type.

RG 348 Page Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

A_C = Total On-Site drainage area in the BMP Catchment area
A_I = Impervious area proposed in the BMP catchment
A_P = Pervious area remaining in the BMP catchment
L_R = TSS Load removed by the proposed BMP

A_C =	0.65	acres
A_I =	0.19	acres
A_P =	0.46	acres
L_R =	200	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

F = 0.85

If F>1, then a more efficient BMP or a larger treatment area is required.

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.32	inches
Post Development Runoff Coefficient =	0.25	
On-site Water Quality Volume =	792	cubic feet

IC = Drainage Area to BMP / drainage Area to BMP

TSS Compensation Calculations.

2. Calculations for the Required Load Reduction:

Catchment Area / Outfall Area No. = 1 & 2

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:

Lm = Required TSS removal
A_N = Net increase in impervious area for site
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

Total drainage basin / outfall area	* =	1.77	acres
Predevelopment impervious area within drainage basin / outfall area	* =	0.00	acres
Post-development impervious area within drainage basin / outfall area	* =	1.17	acres
Post-development impervious fraction within drainage basin / outfall area	* =	0.66	
P =		33	inches
L_M =		**1050**	lbs.

3. Indicate the Drainage Basin and Select the desired BMP Code for this Section.

Proposed BMP =	sf	abbreviation
Removal efficiency =	89	percent

BMP Code:	BMP Type:
AC	Aqua logic Cartridge Filter
BR	Bioretention
CW	Constructed Wetland
ED	Extended Detention
GS	Grassy Swale
RI	Retention / Irrigation
SF	Sand Filter
WB	Wet Basin
WV	Wet Vault

4. Calculate TSS Load Removed (L_R) from this Drainage Basin by the Proposed BMP Type.

RG 348 Page Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

A_C = Total On-Site drainage area in the BMP Catchment area
A_I = Impervious area proposed in the BMP catchment
A_P = Pervious area remaining in the BMP catchment
L_R = TSS Load removed by the proposed BMP

A_C =	1.62	acres
A_I =	1.07	acres
A_P =	0.55	acres
L_R =	**1096**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

F = **0.96**

If F>1, then a more efficient BMP or a larger treatment area is required.

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	**2.80**	inches
Post Development Runoff Coefficient =	**0.47**	IC = Drainage Area to BMP / drainage Area to BMP
On-site Water Quality Volume =	**7716**	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Storage for Sediment =	**1543**	
Total Capture Volume =	**9259**	cubic feet

9. Filter area for Sand Filters Designed as Required in RG-348 Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	**9259**	cubic feet	
Minimum filter basin area =	**514**	square feet	
Maximum sedimentation basin area =	**4629**	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	**1157**	square feet	For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	**9259**	cubic feet	
Minimum filter basin area =	**926**	square feet	
Maximum sedimentation basin area =	**4629**	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	**231**	square feet	For maximum water depth of 8 feet