



Prevent • Promote • Protect

Environmental Health Division

1675 W. Garden of the Gods Rd., Suite 2044  
Colorado Springs, CO 80907  
(719) 578-3199 phone  
(719) 575-8664 fax  
www.elpasocountyhealth.org

## ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION FORM

ON-SITE ID: ON0048858

APN # 5125101006

DATE: 1/3/2017

P

APPROVED YES ☒ NO ☐

Environmental Health Specialist: Kat McGarvy

Address: 11655 Bison Meadows Ct Colorado Springs Owner: Dave Snyder

Residence: ☒ #Bedrooms: 4 Commercial: ☐ System Installer: Name

SEPTIC TANK: Construction Material concrete

Capacity Gallon 1250 gallon tank, 500 gallon pump tank

### SOIL TREATMENT AREA:

Trench: Depth (Range):      Width:      Total Length:      Sq. Ft.:     

Bed: Depth (Range):      Width: 12' Total Length: 50' Sq. Ft.: 1800

Depth of Rock:      Under PVC:      Type of cover on Rock: landscape fabric

SEEPAGE PITS: # of Pits:      Working Depth #1:      #2:      Size (L x W) #1      #2      Total Sq. Ft.     

### CHAMBER SYSTEMS:

Type of Chamber:      #Chambers:      Sq. Ft./Chamber:      Bed: ☐ Trench: ☐ Depth (Range):     

Sq. Ft. Required (10-1): 1750 Sq. Ft. Required (10-2): 1750 Sq. Ft. Required (10-3): 1750 Sq. Ft. Required for Diverter Valve: (10-2)/(12)

Sq. Ft. Installed: 1800

Engineer Design: Y ☒ N ☐ Engineering Firm: GeoQuest LLC Approval Letter Provided: Y ☐ N ☐

Well installed at time of OWTS inspection: Y ☐ N ☒ Public Water: Y ☐ N ☒

\*Approval will be revoked if in the future the well is found to be within 50 feet of the septic tank and/or 100 feet of the soil treatment area.

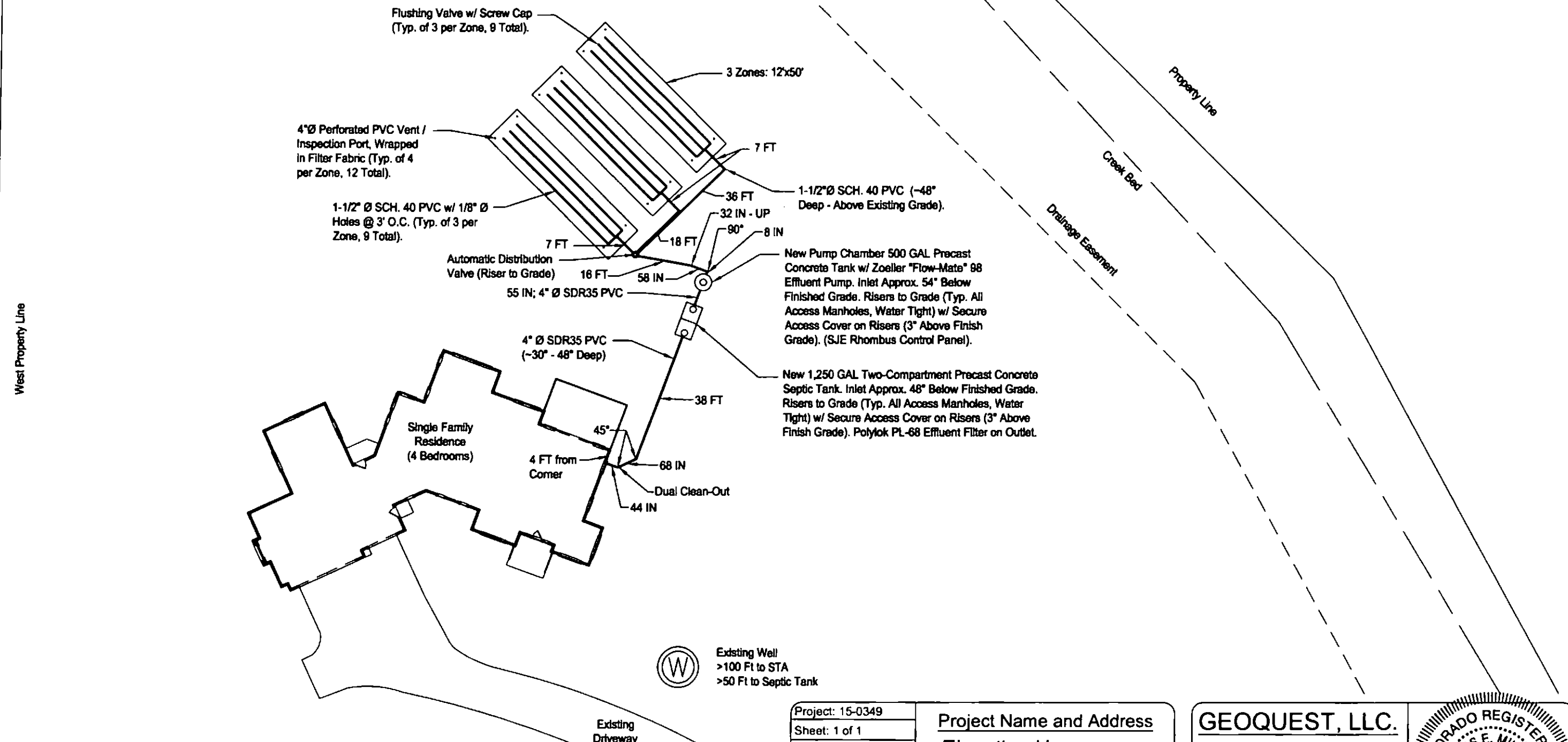
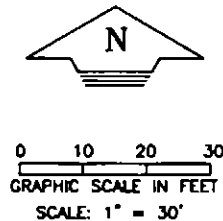
Notes:

See attached GeoQuest as built drawing dated 1.10.17

On-Site Wastewater Treatment System (OWTS) Record Drawing

>50 FT from STA to Creek and Pond  
(Pond Not Visible at Given Scale)

Installer Information:  
Installed by: Backhoe Services  
Contact Info:  
(303) 817-0130 - Mike  
P.O. Box 182  
Elbert, CO 80106  
Installation Inspection Performed on: 1/6/17  
Final Cover Inspection Performed on: 1/8/17



Project: 15-0349	Project Name and Address  Elevation Homes  11655 Bison Meadows Court Lot #4A, Filing #2, Bison Meadows Subdivision, Sch. No. 5125101006 El Paso County, Colorado
Sheet: 1 of 1	
Date: 9 Jan 2017	
Revised:	
Scale: 1" = 30 FT	
Drawn by: djp	
Checked by: cem	

**GEOQUEST, LLC.**  
6825 SILVER PONDS HEIGHTS  
SUITE 101  
COLORADO SPRINGS, CO  
80908  
  
OFFICE: (719) 481-4560  
FAX: (719) 481-9204

COLORADO REGISTERED  
PROFESSIONAL ENGINEER  
CHARLES E. MILLIGAN  
34608  
JAN 17 2017

Geoquest, LLC. has Provided this Design in Accordance with the Standards of Practice Common to the Area. However, as with All Underground Absorption Fields, Guarantee from Failure is Impossible. Even with Proper Installation, as Outlined for this Proposed Construction, There Can Remain Many Uncertainties, and Difficulties Can Still Arise in the Operation of the System in the Future. Proper Design, Construction, and Maintenance can Assist in Minimizing Uncertainties, but Cannot Entirely Eliminate Them. Homeowners Should be Advised of Maintenance and Special Considerations for Septic Systems. Refer to El Paso County Public Health Brochure: "Maintaining Your Septic System" for Additional Information. Due to the Possibility of Unknown Water Usage Factors, Geoquest, LLC. Provides No Warranty of this Design or Installation Against Failure or Damage of Any Type.

Attn: DAVE SNYDER  
11655 BISON MEADOWS CT  
COLORADO SPRINGS, CO 80908

Notify Environmental Health of any change of ownership, type of business activity, business name, or billing address by calling (719) 578-3199. Failure to notify Environmental Health may result in late penalties, Permit/License denial or revocation, and business closure. PERMITS/LICENSES TO OPERATE AND ANNUAL FEE PAYMENTS ARE NOT TRANSFERABLE. Permits become void on change of ownership. New owners must apply and pay for a new Permit(s)/License(s) prior to beginning operation.



**EL PASO COUNTY PUBLIC HEALTH  
ENVIRONMENTAL HEALTH DIVISION**  
1675 W. GARDEN OF THE GODS ROAD, SUITE 2044  
COLORADO SPRINGS, CO 80907  
PHONE: (719) 578-3199 FAX: (719) 578-3188  
[www.elpasocountyhealth.org](http://www.elpasocountyhealth.org)

## NEW SYSTEM PERMIT - OWTS

Valid From 5/9/2016 To 5/9/2017

PERMITEE :

DAVE SNYDER  
11655 BISON MEADOWS CT  
COLORADO SPRINGS, CO 80908

Onsite ID: ON0048858

Tax Schedule #: 5125101006

Permit Issue Date: 05/09/2016

Dwelling Type: RESIDENTIAL

OWNER NAME :

DAVE SNYDER

# of Bedrooms (if Res): 4

Proposed Use (if Comm):

Designed Gallons/Day:

Water Source: PRIVATE WELL

### System Installation Requirements:

- OWTS must be installed according to approved and stamped GEOQUEST design document #15-0349 dated 4.27.16; changes require health department notification
- PE certification and AS Built drawing are required prior to final approval of system
- Ensure all set backs are maintained, including a minimum of 50 feet between existing pond and Soil Treatment Area

**The OWTS must be installed per the stamped and approved Design Document dated 05/09/2016.**

This permit is issued in accordance with 25-10-106 Colorado Revised Statutes. The PERMIT EXPIRES upon completion/installation of the Onsite Wastewater Treatment System, or at the end of twelve (12) months from date of issue, whichever occurs first. If both a Building Permit and an Onsite Wastewater Treatment System Permit are issued for the same property and construction has not commenced prior to the expiration date of the Building Permit, the Onsite Wastewater Permit shall expire at the same time as the Building Permit. This permit is revocable if all stated requirements are not met. The Onsite Wastewater Treatment System must be installed by an El Paso County Licensed System Contractor, or the property owner.

The Health Officer shall assume no responsibility in case of failure or inadequacy of an Onsite Wastewater Treatment System, beyond consulting in good faith with the property owner or representative. Access to the property shall be authorized at reasonable time for the purpose of making such inspections as are necessary to determine compliance with the requirements of this law (permit).

**Inspection request line: Call (719) 575-8699 before 8:30 a.m. of the day that the inspection is requested  
Weekends & Holidays excluded.**

\_\_\_\_\_  
Authorized By: Environmental Health Specialist

530004756 ABC009063

**APPLICATION FOR AN ON-SITE WASTEWATER TREATMENT SYSTEM PERMIT**

☒ NEW PERMIT ☐ MAJOR REPAIR PERMIT ☐ MINOR REPAIR PERMIT

Owner Dave Snyder Daytime Phone 719 352-1710  
 System Installer Kumar Drilling Daytime Phone 719 683-3720  
 Property Address 11655 Bison Meadows City and Zip C/S 80908  
 Legal Description Lot 41 Bison Meadows Sub 2  
 Owners Mailing Address 12348 61st Ave Dr Peyton CO 80831  
 Email Address two2saint@yahoo.com Fax # 8898036348  
 Tax Schedule # 5125101006 Lot Size 5 ac.  
 Site Located Inside City Limits ☐ Yes ☒ No Primary Contact ☐ Owner ☒ Contractor  
 Proposed Use: ☒ Single Family ☐ Multi-Family ☐ Commercial  
 Water Supply: ☒ Well ☐ Cistern ☐ Municipal Number of Bedrooms 4  
☐ Pick up ☐ Fax: ☒ Email: two2saint@yahoo.com

**CURRENT FEES AS APPROVED BY THE EL PASO COUNTY BOARD OF HEALTH**

New Permit: \$685.00 (EPCPH Charge) + \$147.00 (EPC Planning Dept. Surcharge) + \$23.00 (CDPHE Surcharge) = \$855.00

Major Repair Permit: \$525.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge) = \$548.00

Minor Repair Permit: \$240.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge) = \$263.00

- All Payments are due at the time of application submittal; by cash, check or major credit card (Visa / MC)
- This permit will expire one year from the date of issuance.

I, [Signature], that the information provided on this application is in compliance with Section 8.3, Chapter 8 of the Onsite Wastewater System (OWS) Regulations of the El Paso County Board of Health. I also authorize the assigned representative of El Paso County Public Health to enter onto this property in order to obtain information necessary for the issuance of a permit.

Applicants Signature: [Signature] Date: 4-27-16

Site Insp. Date: 5/3/16 Perc. Rate: \_\_\_\_\_ Permit # 0100048858

E.H.S. Review Notes: LTAR 6.30  
4 Bedroom:

Date to E.P.C. Development Services 5/3/16 Flood Plain and Enumerations 5/2/16

Permit Requirements: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

1850  
 Min. Septic Tank Capacity

1750  
 Min. Absorption Area

E.H. Specialist [Signature] Date 5/4/16 ☒ Approved ☐ Denied

Kat



0W0048858  
APN 5125101006  
1/3/17

E

January 10, 2017

6825 Silver Ponds Heights #101  
Colorado Springs, CO 80908  
(719) 481-4560

El Paso County Health Department  
1675 West Garden of the Gods Road  
Colorado Springs, Colorado 80907

Re: Septic System Inspection (GQ #15-0349)  
Lot 4A, Filing #2,  
Bison Meadows Subdivision,  
11655 Bison Meadows Court, Colorado Springs CO 80908  
El Paso County, Colorado

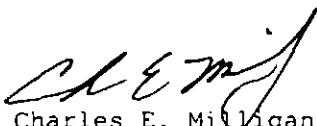
Dear Sir,

We inspected the installation of the engineered septic system at the above address at several points during its construction as well as the finished product. It has been installed in accordance with our engineered plans and specification. This includes having the correct size septic tanks, the proper grade on all pipes and sections of the absorption field, the correct depth, size and configuration of the absorption field, and the backfill around and over the field.

The field should be seeded in the future to allow for vegetation growth next spring. Additional grading may be required in the future to repair any minor erosion areas until the grass seed takes hold. You should ensure that no vehicles are allowed to park on any portion of the system.

The system is ready for final certification from the El Paso County Health Department. A Certificate of Occupancy (CO) will not be issued by PPRBD until El Paso County Health Department has received this letter and the AS-Built Drawing. Please call me if you have any questions.

Sincerely,

  
Charles E. Milligan  
Civil Engineer





6825 Silver Ponds Heights #101  
Colorado Springs, CO 80908  
(719) 481-4560

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**PROFILE PIT EVALUATION**

**FOR**

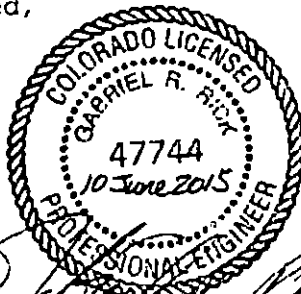
*DAVE SNYDER*  


**JOB #15-0349**

Lot #4,  
Bison Meadow Subdivision,  
11655 Bison Meadows Court,  
El Paso County,  
Colorado

Respectfully submitted,

Gabriel R. Rick, P.E.



## PROFILE PIT FINDINGS

Enclosed are the results of the profile pit for the septic system to be installed at Lot #4, Bison Meadows Subdivision, 11655 Bison Meadows Court, El Paso County, Colorado. The location of the test pit was determined by Doug Bandle. The residence will not be on a public water system. The number of bedrooms in the design for the residence is unknown. Due to the natural slope of the property, the entire system will feed to the northeast at 8.7% at least 20 feet. All applicable portions of the El Paso County Health Department OWTS Regulations must be complied with for the installation of the treatment system.

The inspection was performed on May 14, 2015, in accordance with Table 10-1 of the E.P.C.P.H. OWTS Regulations.

### Soil Profile:

- 0 to 6" - Topsoil- loam, organic composition.
- 6" to 54" - USDA soil texture sandy clay loam, soil type 3A, structure shape GR, structure grade 1, non-cemented, LTAR 0.30, brown in color, 10 YR 5/3, redoximorphic from 21" to 54".
- 54" to 93" - USDA soil texture gravely sandy clay loam, soil type 3A, structure shape GR, structure grade 1, non-cemented, LTAR 0.30, Pale brown in color, 10 YR 7/4, random clay pockets, Dawson Arkose.
- 93" to 8' - USDA soil texture sandy clay loam, soil type 3A, structure shape GR, structure grade 1, non-cemented, LTAR 0.30, light yellowish brown in color, 10 YR 6/4, Dawson Arkose.

Evidence of historical perched ground waters was encountered at the depth of 21 inches during the inspection. Bedrock was not encountered during the inspection. No known wells were observed within 100 feet of the proposed system. All setbacks shall conform to county regulations.

~~Due to encountering evidence of historical groundwater at the depth of 21 inches the septic system to be installed on this site shall be designed by a Colorado Licensed Engineer. Based on the observed conditions, we feel a design based on an LTAR of 0.30 is reasonable, using an above ground uniformly pressure dosed soil treatment area is required.~~

If during construction of the field itself, subsurface conditions change considerably or if the location of the proposed field changes, this office shall be notified to determine whether the conditions are adequate for the system as designed or whether a new system needs to be designed.





Weather conditions at the time of the test consisted of partly cloudy skies, with warm temperatures.

# PROFILE PIT LOG - Profile Pit #1

JOB#: 15-0349

DATE EVALUATED: 14 May 2015

EQUIPMENT USED: MINI-EXCAVATOR

DEPTH (in ft.)	SYMBOL	SAMPLES	WATER %	SOIL TYPE
0"-6"				
6"-54"				3A
54"-93"				3A
93"-8'				3A

**LTAR** to be Used for On-site Wastewater Treatment System (OWTS) Sizing: 0.30 (Treatment Level 1, Engineered Design Required)

**Depth to Groundwater (Permanent or Seasonal):** 21" (Evidence of Historical Perched)

**Depth to Bedrock and Type:** None Encountered

**Depth to Proposed Infiltrative Surface from Ground Surface:** Uniformly Pressure Dosed STA Required (Above Grade)

**Soil Treatment Area Slope and Direction:** N.E. @ ~ 8.7%

Note: See El Paso County Board of Health Regulation Chapter 8: On-Site Wastewater Treatments Systems (OWTS) Regulations for Additional Information. Refer to Table 10-1 for Corresponding LTAR if Treatment Level 2, 2N, 3, or 3N will be Implemented in the Design of the OWTS. System Sizing Depends on a Number of Factors (i.e. LTAR, # of Bedrooms, Type of Soil Treatment Area (STA), Method of Transfer to the STA (Gravity, Dosed, or Pressure Dosed), and Type of Storage / Distribution Media Used in the STA)

Project: 15-0349

Sheet: 1 of 1

Date: 10 June 2015

Scale: 1/4" = 1'

Drawn by: lgs

Checked by: grr

## Project Name and Address

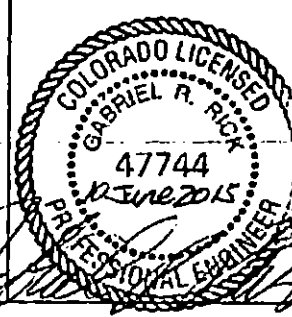
### Bison Builders

11655 Bison Meadows Court  
Lot #4  
Bison Meadows Subdivision  
Sch. No. 5125101002  
El Paso County, Colorado

## GEOQUEST, LLC.

6825 SILVER PONDS HEIGHTS  
SUITE 101  
COLORADO SPRINGS, CO  
80908

OFFICE: (719) 481-4560  
FAX: (719) 481-9204



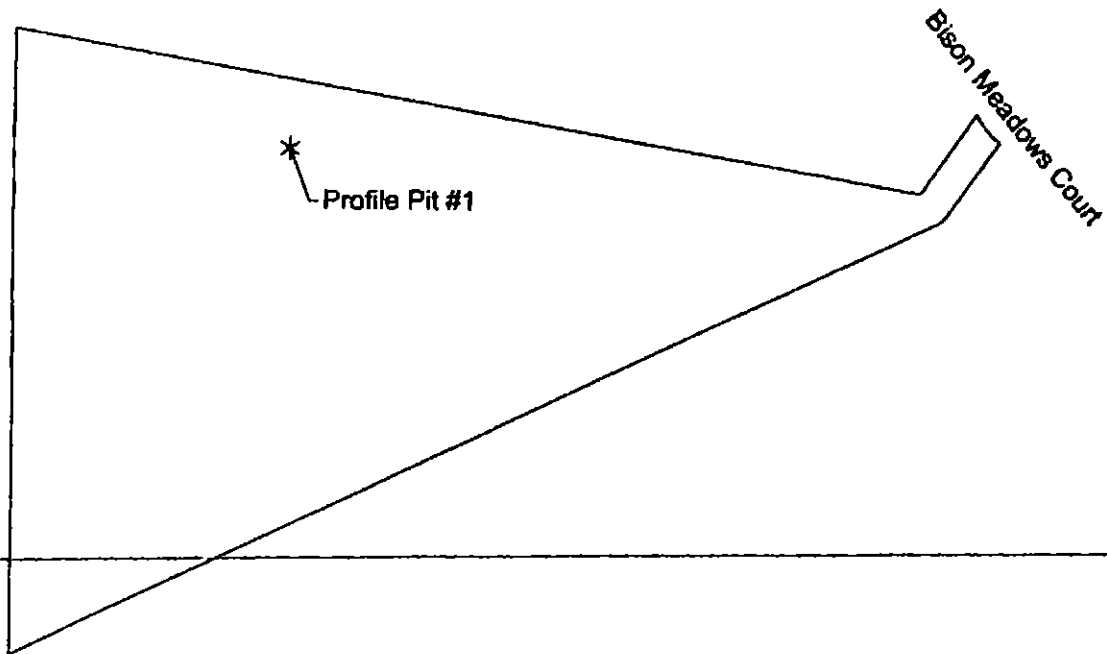


GEOQUEST LLC

**SITE MAP**

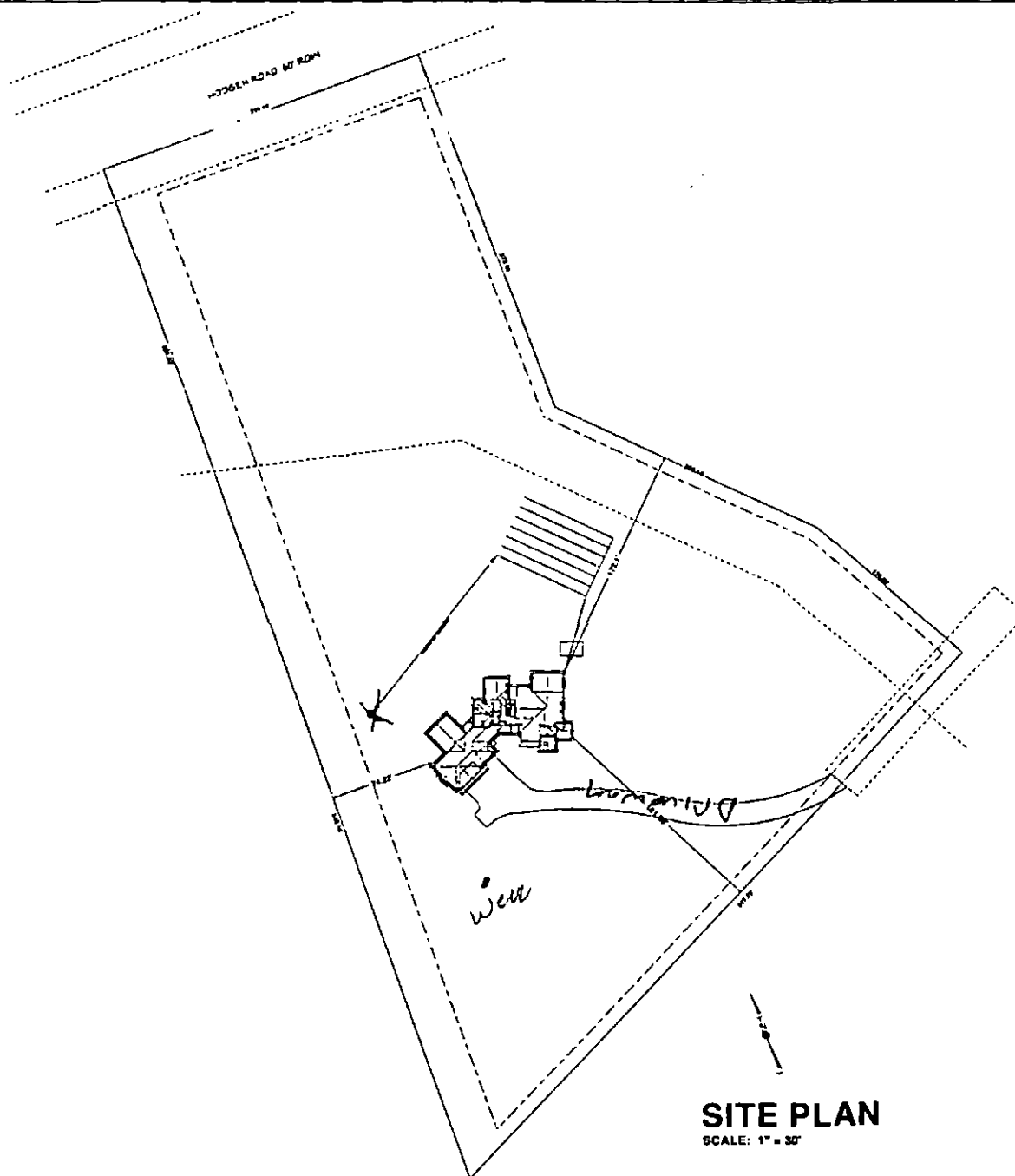
Lot #4

Bison Meadows Subdivision,  
11655 Bison Meadows Court,  
Sch. No. 5125101002  
El Paso County,  
Colorado  
Job #15-0349



0 30 60 90 120 150  
GRAPHIC SCALE IN FEET  
SCALE: 1" = 150'

\*Indicates Geoquest, LLC. Profile Pit Test Locations  
Location from Northwest Lot Corner to Profile Pit #1: S. 67° E. - 246'  
GPS Coordinates Profile Pit #1: N. 39° 4' 12.8", W. 104° 36' 46.8"



# SITE PLAN

## DRAWING INDEX

COLE SCHULLE

19635 Bloom Meadows Court  
Colorado Springs, CO 80908

Let A.D. Elmer Meadows Subdivision  
Filing No. 1, Colorado Springs,  
El Paso County, Colorado

LOT AREA: 219,211.22 SQ FT 4.88 ACRES  
FOUNDATION FOOTPRINT AREA: 4,776.25 sq ft (2.19%)  
HIGHEST BRIDGE HEIGHT FROM AVG GRADE: 10'

### CONCENTRATED LIVING AREA

DAMAGE: 1.173 eq M

Building Images and Interiors  
**Perry C Design Services**  
54230 Old Farm Terrace  
Olatheville Springs, CO 80317  
713-944-2548  
www.perrydesign.com

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**Project Director**  
**Caroline Black Family Foundation**

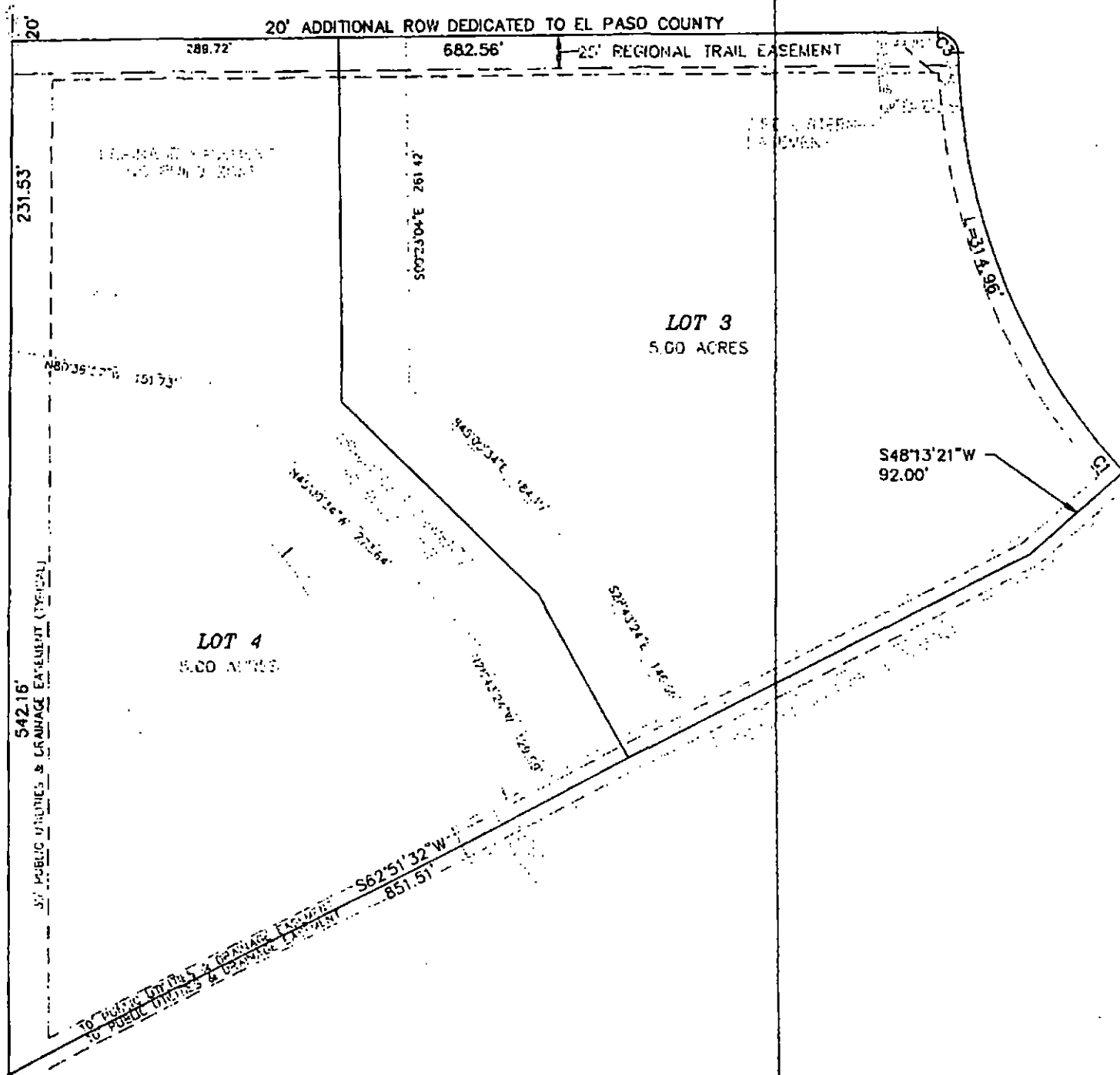
CONSTRUCTION EDITION  
SUBJECT TO SPACE AVAILABILITY

0 MAY 69

11

Print Date: 4/20/2018

1 019



**Calculations (New OWTS):**

Proposed Single Family  
Residence with 4 Bedrooms

**LTAR = 0.30 Gallons per Day per Square Foot (GPD/SF).**  
**(USDA Soil Type 3A, Treatment Soil, Treatment Level 1)**  
**per Profile Pit Evaluations 5/14/15.**

**Evidence of Historical Ground Water Encountered at 21"**  
**Below Native Grade.**

**Perc. Rate = 124.4 Min./Inch per Geoquest 5/19/15**

$$Q = (3 \text{ BDRM})(150 \text{ GPD}) + (1 \text{ BDRM})(75)$$

$$Q = 525.0 \text{ Gallons per Day (GPD)}$$

$$A = \frac{Q}{\text{LTAR}} = \frac{525.0 \text{ GPD}}{0.30 \text{ GPD/SF}}$$

$$A = 1,750.0 \text{ SF}$$

Uniformly Pressure Dosed  
Pipe and Gravel Bed:

$$A = (1,750.0 \text{ SF})(1.0)(1.0)$$

$$A = 1,750.0 \text{ SF Required}$$

**Pipe and Gravel Bed (Uniformly Pressure Dosed):**

Each Zone (Typ. of 3)

3 Rows @ 3 FT On Center (2 @ Edge Plus Center)

Each Zone Min. Pipe and Gravel Bed Length = 50 FT

Each Zone Min./Max. Pipe and Gravel Bed Width = 12 FT

Zone Contact Area = 600.0 SF Provided

OWTS Contact Total Area = 1,800.0 SF Provided

OWTS Contact Area = 1,750.0 SF Required

Main Tank Size = 1,250 Gallons

Pump Chamber = Min. 500 Gallons

1-1/2" Ø Pipe from Pump Chamber to 3-Way Automatic Distribution  
Valve (ADV) Orenco Systems, Inc V6403 or Approved Equivalent.

Install at Highest Point per Manufacturers Recommendations.

1-1/2" Ø Pipe from ADV to Each Zone Level Manifold.

\* Indicates Geoquest, LLC. Profile Pit Test Locations

Location from Southwest Lot Corner to Profile Pit #1: N. 29° E. - 471'

GPS Coordinates Profile Pit #1: N. 39° 4' 12.8", W. 104° 36' 46.8"

Location from Southwest Lot Corner to Profile Boring: N. 31° E. - 355'

Location from Profile Boring to P1: S. 70° W. - 9'

Location from Profile Boring to P2: N. 88° E. - 24'

Location from Profile Boring to P3: N. 17° E. - 21'

GPS Coordinates Profile Boring: N. 39° 4' 11.4", W. 104° 36' 47.51"

Geoquest, LLC. has Provided this Design in Accordance with the Standards of Practice Common to the Area. However, as with All Underground Absorption Fields, Guarantee from Failure is Impossible. Even with Proper Installation, as Outlined for this Proposed Construction, There Can Remain Many Uncertainties, and Difficulties Can Still Arise in the Operation of the System in the Future. Proper Design, Construction, and Maintenance can Assist in Minimizing Uncertainties, but Cannot Entirely Eliminate Them. Homeowners Should be Advised of Maintenance and Special Considerations for Septic Systems. Refer to El Paso County Public Health Brochure: "Maintaining Your Septic System" for Additional Information. Due to the Possibility of Unknown Water Usage Factors, Geoquest, LLC. Provides No Warranty of this Design or Installation Against Failure or Damage of Any Type.

OWTS to be Roped Off (Caution Tape or Temporary Construction Fencing is Acceptable) During Construction to  
Prevent Construction Traffic from Compacting Surface Soils and Protect the STA from Traffic After Installation.

Install Drainage Swale on All  
Uphill Sides to Ensure Surface  
Runoff is Diverted Around the  
STA. Downspouts near the STA  
Shall Discharge into the Swale or  
Extended Beyond the STA.

**General Notes:**

All Work per El Paso County Board of Health  
Regulations Chapter 8: On-Site Wastewater  
Treatment Systems (OWTS) Criteria.

All Setbacks Shall Conform to El Paso County  
Regulations (See Table 7-1 in the Regulations for  
Additional Information). Contractor/Homeowner  
Must Verify All Setbacks and Obtain Utility  
Clearances Prior to Construction.

Contractor/Homeowner is Responsible for Permit.  
Contractor/Homeowner Must Obtain Approval of  
Engineered OWTS from the El Paso County Health  
Department.

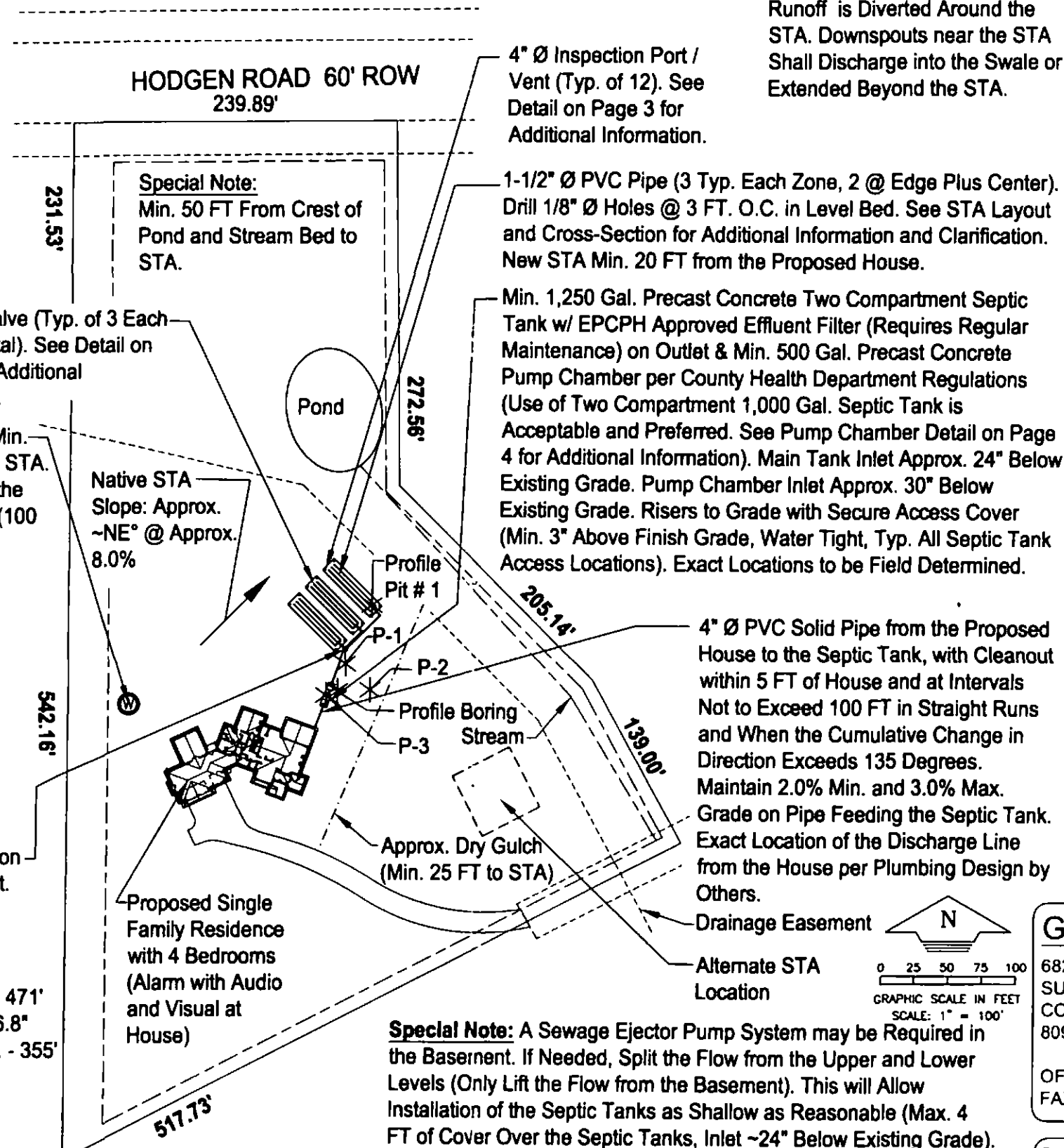
All Bends Limited to 45 Degree Ells or Long Sweep  
Quarter Bends. Areas Under Driveways Shall Be  
Protected as Per El Paso County Health  
Department Regulations.

Building Sewer Clean-Outs Shall Be Installed within  
5 FT of the Structure and at Intervals Not to Exceed  
100' in Straight Runs and When the Cumulative  
Change in Direction Exceeds 135 Degrees.

Grade Surrounding Area to Drain Away from the  
Soil Treatment Area (STA).

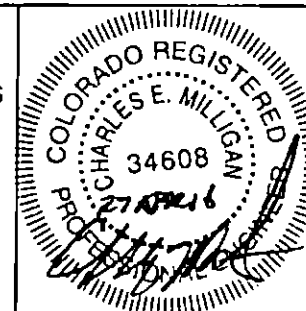
Paving, Planting of Trees/Shrubs, and Vehicular or  
Hoofed Animal Traffic of Any Kind Over the STA  
may Cause Premature Failure and is Prohibited.

**Refer to Sheet 2, 3, and 4 for  
Additional Details and Information.**

**GEOQUEST, LLC.**

6825 SILVER PONDS HEIGHTS  
SUITE 101  
COLORADO SPRINGS, CO  
80908

OFFICE: (719) 481-4560  
FAX: (719) 481-9204



Project: 15-0349

Sheet: 1 of 4

Date: 27 Apr 2016

Revised:

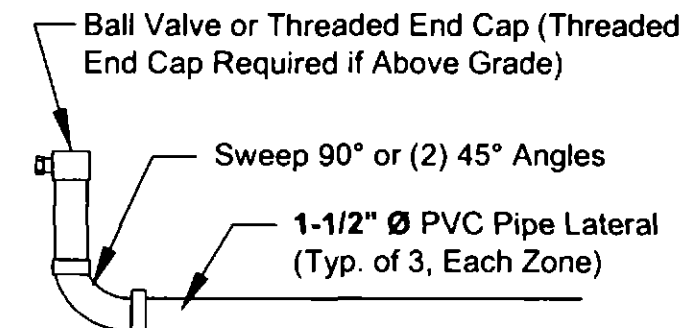
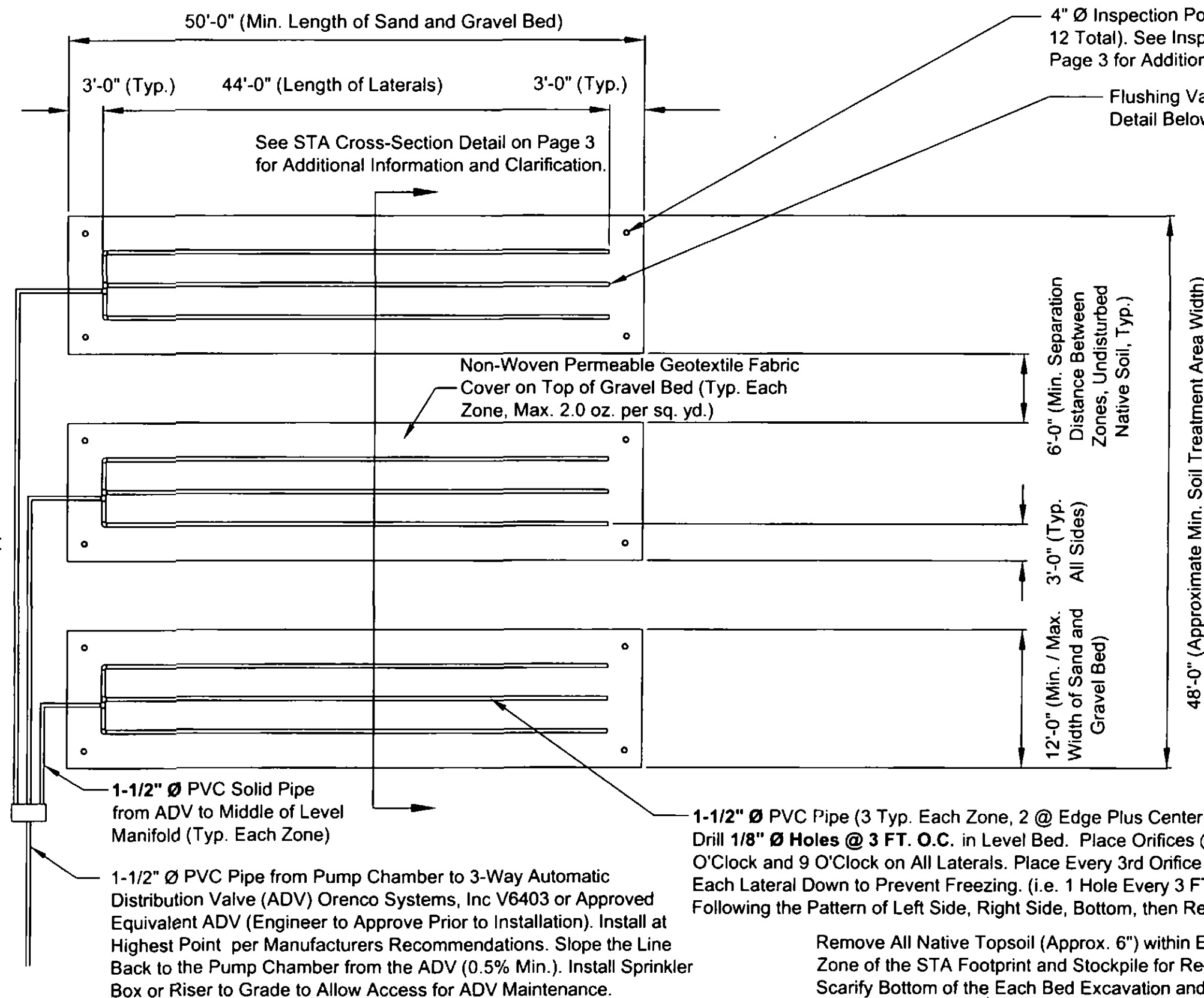
Drawn by: mas

Checked by: cem

**Project Name and Address**

Elevation Homes  
11655 Bison Meadows Court  
Lot # 4A, Filing # 2,  
Bison Meadows S/D,  
Sch. No. 5125101006  
El Paso County, Colorado

STA Native Slope: Approx.  
NE at Approx. 8.0%



Min. 6" Above Finish Grade or May be Placed in Small Valve Box if Desired. This Will Provide Access to Flush Each Lateral, Allowing for Removal of the Build-Up of Organics (System Maintenance).

### Flushing Valve Detail

Not to Scale

#### INSPECTIONS REQUIRED ARE AS FOLLOWS:

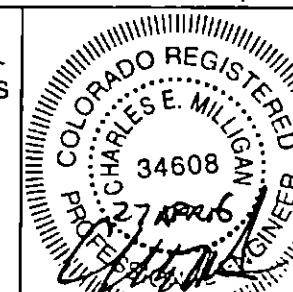
- 1.) Engineer to Verify Soil Treatment Area Location at Time of Construction.
- 2.) Engineer to Inspect Excavation Prior to Placement of Approved Sand Fill.
- 3.) Engineer Will Inspect the Installation of All OWTS Components (i.e. All Plumbing, Tanks, Pump Chamber, STA, etc.) Prior to Backfill.
- 4.) Engineer to Inspect the Soil Treatment Area After Backfill to Insure Min. Cover and Proper Drainage Away from Soil Treatment Area.

Please Notify this Office Min. 24 Hours Prior to Inspection.

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Project: 15-0349

Sheet: 2 of 4

Date: 27 Apr 2016

Revised:

Drawn by: mas

Checked by: cam

#### Project Name and Address

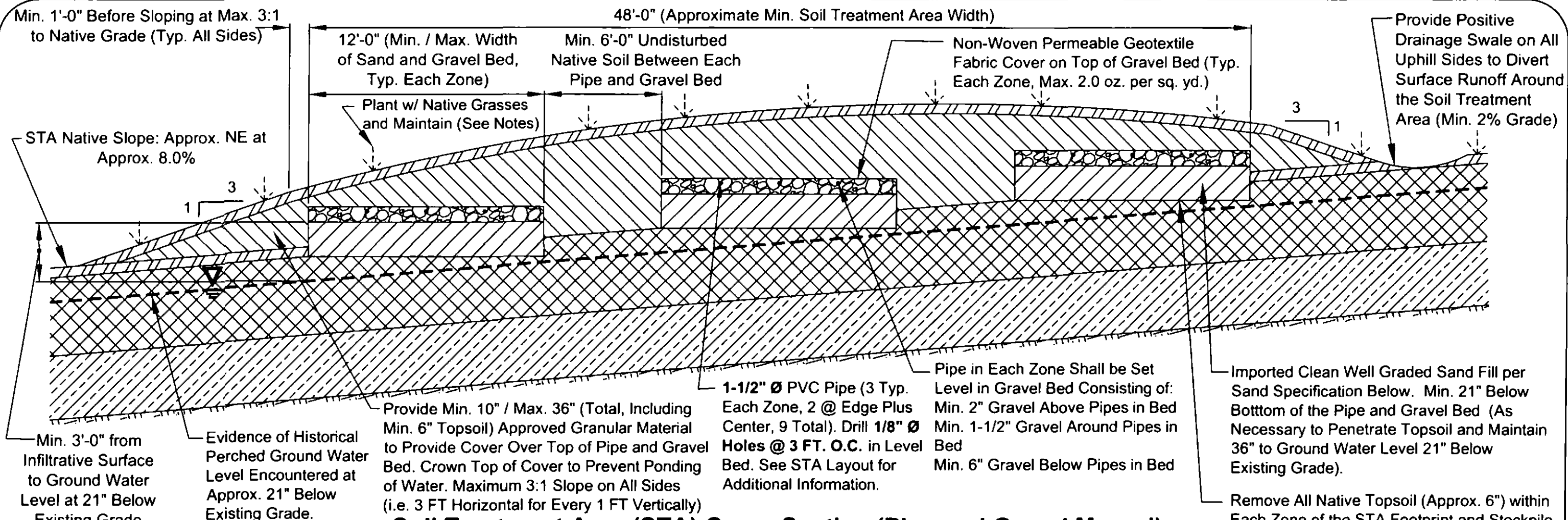
Elevation Homes  
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El Paso County, Colorado

Minor Rotation (ie. Less Than 15°) of the Soil Treatment Area (STA) to Best Fit the Site Topography is Acceptable (i.e. Install STA Parallel to Site Contours to Maintain Even Depth on Each Side of Each Excavation). STA shall Maintain the Approximate Orientation Shown on Page 1 with Respect to Buildings and Lot Lines. Contact Engineer for Clarification.

### Soil Treatment Area (STA) Layout (Pipe and Gravel Beds)

SCALE: 1" = 10'

Remove All Native Topsoil (Approx. 6") within Each Zone of the STA Footprint and Stockpile for Re-Use. Scarify Bottom of the Each Bed Excavation and Eliminate Bucket Smear on All Excavation Sidewalls (Prior to Placing Imported Sand and Gravel). See STA Cross Section on Page 3 for Additional Information and Clarification.



#### IMPORTED GRAVEL SPECIFICATION:

All of the Gravel or Stone Shall Meet the Following:

Sieve Size	Percent Passing (%)
2"	100%
1 1/2"	80% - 100%
1"	20% - 55%
3/4"	0% - 15%
3/8"	0% - 10%
#200	Less Than 2%

i.e. CDOT #4 (Coarse Aggregates AASHTO 43) or Approved Equivalent.

#### IMPORTED SAND SPECIFICATION (if Necessary to Maintain Minimum 36" to the Ground Water):

Sand for Soil Treatment Area Absorption Bed to be Imported (i.e. ASTM C-33 or Approved Equivalent) Effective Size (D10) = 0.25-0.6 mm

Coefficient of Uniformity, Cu (D60/D10) < 4.0

Note: 100% Passing #4 Sieve

Less Than 1% Passing #200 Sieve

Gradation Curve's for Each Imported Material to be Provided for Engineer to Approve Prior to Delivery of the Material to the Jobsite.

#### Soil Treatment Area (STA) Cross Section (Pipe and Gravel Mound)

Not to Scale



Topsoil (Min. 6" on Final Cover). Native Topsoil (Approx. 6", Remove from STA and Stockpile for Re-Use on Final Cover)



Approved Granular Material to Provide Cover (Min. 10", Max. 36" Total, Including Topsoil)



Native Soil - Sandy Clay Loam (USDA 3A, Approx. 6" - 54" Below Existing Grade)



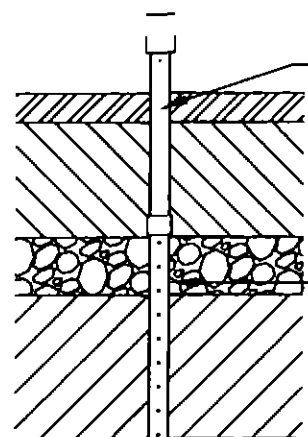
Native Soil - Gravely Sandy Clay Loam (USDA 3A, Approx. 54" - 93" Below Existing Grade)



Native Soil - Sandy Clay Loam (USDA 3A, Approx. 93" - 8' Below Existing Grade)



Imported Gravel Bed per EPCHD Specifications at Below (Min. 9-1/2")



4" Ø Solid Pipe w/ Removable Cap (Min. 6" Above Finish Grade). Drill Min. (4) 1/8" Ø Holes Above Grade to Allow System to Vent (Approx. 1/2" Below the Bottom of the Cap).

4" Ø Perforated Pipe to the Bottom of the Sand Bed. Wrap in Filter Fabric Below the Top of the Gravel Bed. Transition to 4" Ø Solid Pipe Above the Gravel Bed.

#### Inspection Port / Vent Detail

Not to Scale

#### NOTES:

All Work per El Paso County Board of Health Regulations Chapter 8: On-Site Wastewater Treatment Systems (OWTS) Criteria.

Contact Soil Conservation Service or County Extension Agent for Vegetation Best Suited for the Area. Grasses are Best. Trees and Shrubs May Damage/Block Pipes. Vegetation Shall Be Maintained and Mowed to Prevent Formation of Bio-Matting. Do Not Pave Over the Soil Treatment Area.

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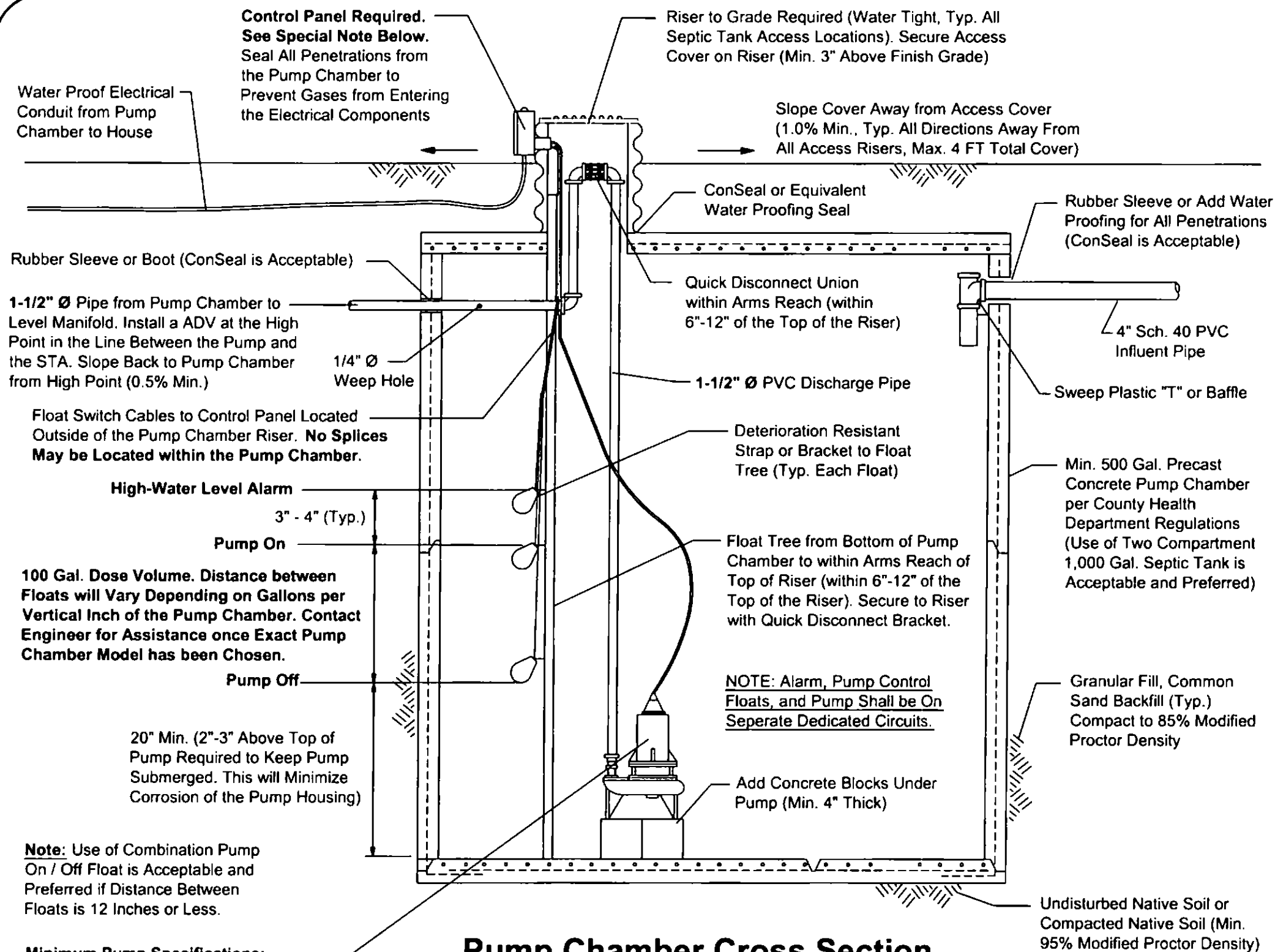
Revised:

Drawn by: mas

Checked by: cem

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Elevation Homes  
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Lot # 4A, Filing # 2  
Bison Meadows S/D,  
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El Paso County, Colorado



**Pump Chamber Cross Section**  
Not to Scale

**Special Note:** Per El Paso County Board of Health Regulations Chapter 8: On-Site Wastewater Treatment Systems (OWTS) Criteria, the Pump System Shall have a Mechanism for Tracking Both the Amount of Time the Pump Runs (Pump Run Counter) and the Number of Cycles the Pump Operates (Event Counter). A Manual Pump Run Switch is Required. A Control Panel is the Most Common Device to Fulfill these Requirements (as well as the Alarm System).

**We Recommend the use of the Orenco MVP, Aquaworkx IPC, SJE-Rhombus or Approved Equivalent Control Panel Equipped with a Manual Pump Run Switch, Pump Run Counter, and Event Counter. Engineer to Approve Prior to Installation.**

**Electrical Code Requirements:** All Electrical Work, Equipment, and Material Shall Comply with the Requirements of the Currently Applicable National Electrical Code as Designated by the State Electrical Board Rules and Regulations (3 CCR 710-1) on the Date of the Permit. The Electrical Installer Shall Contact the Electrical Inspector for the Location where the OWTS is Constructed. All Electrical Components Shall be Protected from Moisture and Corrosive Gases. Special Care Shall be Taken to Ensure the Electrical Requirements of Each Component Meet Manufacturer Specifications (i.e. Voltage and Amperage).

1. All Wire Splices Shall be Enclosed in the Control Panel. The Control Panel Shall be Placed in an Accessible Location Positioned Outside of the Tank Riser.
2. All Wires Shall be Spliced with Corrosion-Resistant, Watertight Connectors. **NO WIRE SPLICES ARE ALLOWED WITHIN THE PUMP CHAMBER OR RISER.**
3. Conduits Shall be Sealed to Prevent Gases from Entering the Control Panel and Electrical panel.
4. A Means to Disconnect the House Power Supply to OWTS Components Shall be Provided at the Control Panel.
5. The Branch Circuit Wire from the Building to the Control Panel Shall be a Minimum of 24" Below the Ground Surface. Lines Buried Less than 24" are Allowed, but Will be Required to be in Conduit or have Ground Fault Protection on the Circuit. Conduit from the Control Panel to the House is Strongly Recommended for All Wiring.
6. Conduit Risers for Physical Protection Must Extend Min. 18" Below Finish Grade.

**Best Practices Guidelines:** The Following "Best Practices" are Intended to Facilitate Maintenance and Servicing of the Electrical Components Associated with Lift Stations, Dosing Systems, and Treatment Units that are Part of an OWTS.

1. The "Quick Disconnect" for the Pump Discharge pipe (i.e. Union) Shall be Located within 6"-12" of the Top of the Riser(s). Electrical Lines at the Septic Tank, Dosing Tank, or Treatment Unit Must be Placed in such a Manner as to Protect them from Damage During Backfill. Conduit from the Control Panel to the House is Strongly Recommended for All Wiring.
2. The Floats Shall be Secured to a Separate Float Tree with Approved Connecting Straps or Brackets that will Remain Secure Underwater and Not Deteriorate. Electrical Tape is Not Acceptable. Top of Float Tree to be within 6" - 12" of the Top of the Riser.
3. The Risers Shall be Secured to the Tank to Maintain the Riser in an Upright and Plumb Position. Special Care Shall be Taken During Backfill to Ensure Riser Maintains Upright and Plumb Position.
4. Control Panel Shall be Placed within "Line of Sight" of the Pump.
5. The Alarm, Pump Control Floats, and Pump Shall be Placed on a Separate Dedicated Circuits

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Project: 15-0349

Sheet: 4 of 4

Date: 27 Apr 2016

Revised:

Drawn by: mas

Checked by: cem

**Project Name and Address**

Elevation Homes  
11655 Bison Meadows Court  
Lot # 4A, Filing # 2  
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Sch. No. 5125101006  
El Paso County, Colorado

**Minimum Pump Specifications:**  
Pump: Use Zoeller "Flow-Mate" 98, Orenco PF3005, or Approved Equivalent Effluent Pump Prior to Installation (May be Revised Once System has Been Plumbed and Exact Site Conditions are Verified)  
**Design Flow Rate = Min. 17.4 GPM**  
**Total Dynamic Head (TDH) = Approx. 20.0 ft**  
Operating (Residual) Head = 4 FT  
Dose Volume = 100 Gallon Dose Required