COLORADO
Division of Water Resources
Department of Natural Resources

WELL PERMIT NUMBER 107457-
RECEIPT NUMBER 0106058

ORIGINAL PERMIT APPLICANT(S)

SHEILA M CROSS

APPROVED WELL LOCATION

Water Division: 1 Water District: 9
Designated Basin: N/A
Management District: N/A
County: JEFFERSON
Parcel Name: EVERGREEN HIGHLANDS (FILING: 5)
Lot: 27 Block: Filing: 4

NE 1/4 NE 1/4 Section 25 Township 5.0 S Range 71.0 W Sixth P.M.

UTM COORDINATES (Meters, Zone:13, NAD83)

Easting: 475752.2 Northing: 4382440.0

See the original well permit file for permit conditions of approval and additional details. The original permit file can be viewed using the Well Permit Search Tool at www.water.state.co.us

Issued By

Date Issued: 6/15/1979
Expiration Date: N/A

PERMIT HISTORY

08-01-2017	CHANGE IN OWNER NAME/MAILING ADDRESS. CHANGED TO KEVIN FEE
08-01-2017	CHANGE IN OWNER NAME/MAILING ADDRESS. CHANGED TO KELLIE FEE

WJR 26-77

THIS FORM MUST BE SUBMITTED WITHIN 60 DAYS OF COMPLETION OF THE WORK DESCRIBED HEREON. TYPE OR PRINT IN BLACK INK.

COLORADO DIVISION OF WATER RESOURCES
1313 Sherman Street - Room 818
Denver, Colorado 80203

WELL COMPLETION AND PUMP INSTALLATION REPORT
PERMIT NUMBER 107457

RECEIVED
JUL 0 6 1979
WATER RESOURCES
STATE ENGINEER
COLO.

WELL OWNER Sheila Cross

ADDRESS 590 Orchard; Golden,Co. 80401

DATE COMPLETED July 2, 1979

NE ¼ of the NE ¼ of Sec. 25

T. 5 S, R. 71 W, 6 P.M.

HOLE DIAMETER

8 3/4 in. from 0 to 20 ft.

6 in. from 20 to 300 ft.

____ in. from ____ to ____ ft.

DRILLING METHOD air percussion

CASING RECORD: Plain Casing

Size 7 & kind steel from 0 to 20 ft

Size 4½ & kind plastic from 10 to 200 ft

Size ____ & kind ____ from ____ to ____ ft

Perforated Casing

Size 4½ & kind plastic from 200 to 300 ft

Size ____ & kind ____ from ____ to ____ ft

Size ____ & kind ____ from ____ to ____ ft

WELL LOG

From	To	Type and Color of Material	Water Loc.
0	40	Granite-Rede	210
40	300	Granite-Grey	270

TOTAL DEPTH 300'

Use additional pages necessary to complete log.

GROUTING RECORD

Material cement

Intervals 0-20'

Placement Method poured

GRAVEL PACK: Size ____

Interval ____

TEST DATA

Date Tested July 2, 19 7

Static Water Level Prior to Test 75 ft

Type of Test Pump air

Length of Test 4 hrs.

Sustained Yield (Metered) 4 GPM

Final Pumping Water Level ____

PUMP INSTALLATION REPORT

Pump Make _____

Type _____

Powered by _____ HP _____

Pump Serial No. _____

Motor Serial No. _____

Date Installed _____

Pump Intake Depth _____

Remarks _____

_____

WELL TEST DATA WITH PERMANENT PUMP

Date Tested _____

Static Water Level Prior to Test _____

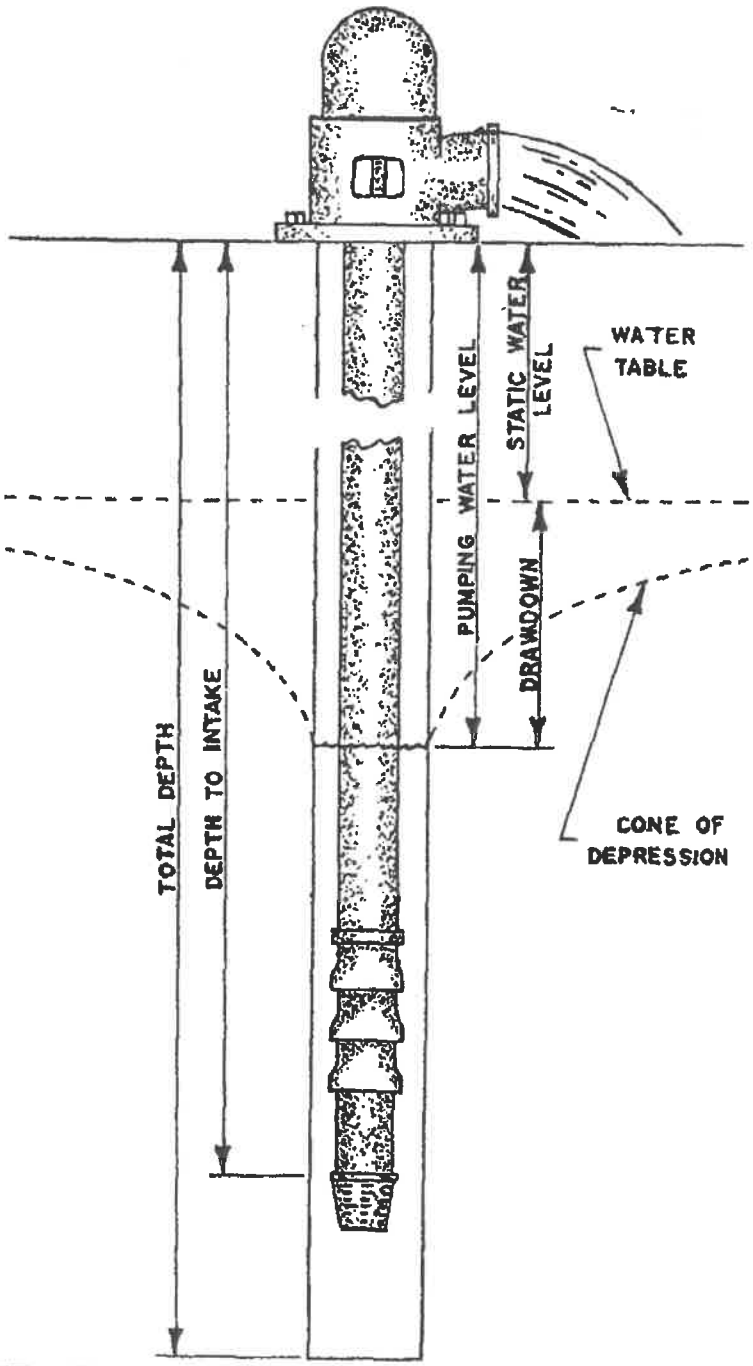
Length of Test _____ Hours

Sustained yield (Metered) _____ GPM

Pumping Water Level _____

Remarks _____

_____



CONTRACTORS STATEMENT

The undersigned, being duly sworn upon oath, deposes and says that he is the contractor of the well or pump installation described hereon; that he has read the statement made hereon; knows the content thereof, and that the same is true of his own knowledge.

Signature Bernard P Storm License No. 942

State of Colorado, County of Jefferson SS

Subscribed and sworn to before me this 3 day of July, 1979.

My Commission expires: 5-1, 1982.

Notary Public Bernice M. Curtis

FORM TO BE MADE OUT IN QUADRUPLICATE: WHITE FORM must be an original copy on both sides and signed. WHITE AND GREEN copies must be filed with the State Engineer. PINK COPY is for the Owner and YELLOW COPY is for the Driller.

GWJ-5-Rev. 76

COLORADO DIVISION OF WATER RESOURCES

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203

RECEIVED
APR 3 0 1979
WATER RESOURCES
STATE ENGINEER

PERMIT APPLICATION FORM

Application must be complete where applicable. Type or print in BLACK INK. No overstrikes or erasures unless initialed.

FOR: (x) A PERMIT TO USE GROUND WATER
(x) A PERMIT TO CONSTRUCT A WELL
(X) A PERMIT TO INSTALL A PUMP

( ) REPLACEMENT FOR NO. _____
( ) OTHER _____
WATER COURT CASE NO. _____

(1) APPLICANT - mailing address

NAME Sheila M. Cross
STREET 1310 Marshall St.
CITY Lakewood, Co. 80215 (State) (Zip)
TELEPHONE NO. 233-1099

(2) LOCATION OF PROPOSED WELL

County Jefferson
NE ¼ of the NE ¼, Section 25
Twp. 5 S (N,S), Rng. 71 W (E,W), 6 P.M.

(3) WATER USE AND WELL DATA

Proposed maximum pumping rate (gpm) 15
Average annual amount of ground water to be appropriated (acre-feet): 1
Number of acres to be irrigated: 0
Proposed total depth (feet): 350
Aquifer ground water is to be obtained from: Fractured-Granite
Owner's well designation #1

GROUND WATER TO BE USED FOR:

(XX) HOUSEHOLD USE ONLY - no irrigation (0)
( ) DOMESTIC (1) ( ) INDUSTRIAL (5)
( ) LIVESTOCK (2) ( ) IRRIGATION (6)
( ) COMMERCIAL (4) ( ) MUNICIPAL (8)
( ) OTHER (9)
DETAIL THE USE ON BACK IN (11)

(4) DRILLER

Name BP Storm: Dyna Drilling, Inc.
Street 14991 W. 44th Ave.
City Golden, Co. 80401 (State) (Zip)
Telephone No. 278-9505 Lic. No. 942

FOR OFFICE USE ONLY: DO NOT WRITE IN THIS COLUMN
SEE 107456
Receipt No. 166058 /
Basin _____ Dist. _____

CONDITIONS OF APPROVAL

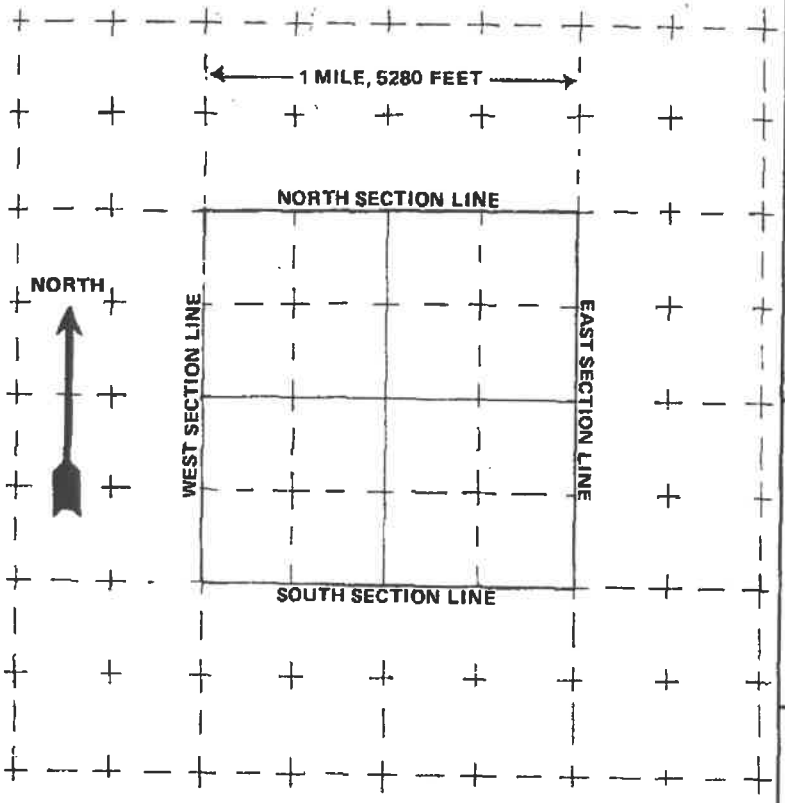
This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of the permit does not assure the applicant that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.

APPROVED FOR HOUSEHOLD USE ONLY, FOR ONE (1) SINGLE FAMILY DWELLING AND NOT TO BE USED FOR IRRIGATION. THE RETURN FLOW FROM THE USE OF THIS WELL MUST BE RETURNED TO THE SAME STREAM SYSTEM IN WHICH THE WELL IS LOCATED.

APPLICATION APPROVED

PERMIT NUMBER 107457
DATE ISSUED JUN 15 1979
EXPIRATION DATE JUN 15 1981
Bruce E. DeBrine (STATE ENGINEER)
BY DEPUTY Hanbold
I.D. 1-09 COUNTY 30

(5) THE LOCATION OF THE PROPOSED WELL and the area on which the water will be used must be indicated on the diagram below. Use the CENTER SECTION (1 section, 640 acres) for the well location.



The scale of the diagram is 2 inches = 1 mile
Each small square represents 40 acres.

WATER EQUIVALENTS TABLE (Rounded Figures)
An acre-foot covers 1 acre of land 1 foot deep
1 cubic foot per second (cfs) . . . 449 gallons per minute (gpm)
A family of 5 will require approximately 1 acre-foot of water per year.
1 acre-foot . . . 43,560 cubic feet . . . 325,900 gallons.
1,000 gpm pumped continuously for one day produces 4.42 acre-feet.

(6) THE WELL MUST BE LOCATED BELOW by distances from section lines.

1290 ft. from North (north or south) sec. line

1220 ft. from East (east or west) sec. line

LOT 27 ~~XXXX~~ UNIT 4 FILING # _____

SUBDIVISION Evergreen Highlands

(7) TRACT ON WHICH WELL WILL BE LOCATED Owner: same

No. of acres 2 . Will this be the only well on this tract? yes

(8) PROPOSED CASING PROGRAM

Plain Casing

7 in. from 0 ft. to 20 ft.

4½ in. from 10 ft. to 250 ft.

Perforated casing

4½ in. from 250 ft. to 350 ft.

_____ in. from _____ ft. to _____ ft.

(9) FOR REPLACEMENT WELLS give distance and direction from old well and plans for plugging it:

n/a

(10) LAND ON WHICH GROUND WATER WILL BE USED:

Owner(s): Sheila M. Cross No. of acres: 2

Legal description: Jefferson: NE¼:NE¼:Sec.25; Twp.5S; Rng.71W; 6PM

(11) DETAILED DESCRIPTION of the use of ground water: **Household use and domestic wells must indicate type of disposal system to be used.**

In House Use
Normal Septic & Leachfield

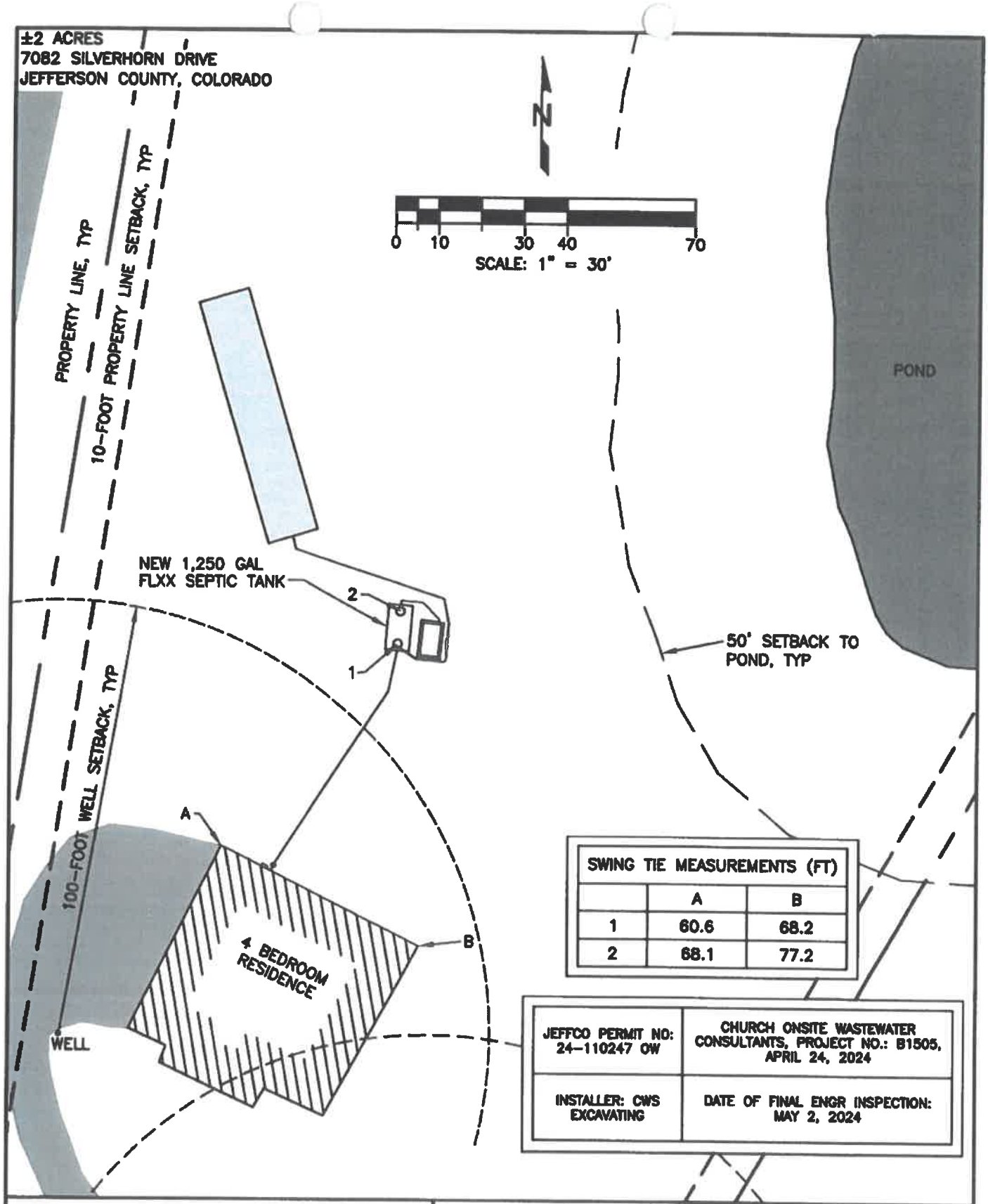
(12) OTHER WATER RIGHTS used on this land, including wells. Give Registration and Water Court Case Numbers.

Type or right	Used for (purpose)	Description of land on which used
—	—	—

(13) THE APPLICANT(S) STATE(S) THAT THE INFORMATION SET FORTH HEREON IS TRUE TO THE BEST OF HIS KNOWLEDGE.

John Upton Agent for Sheila Cross
SIGNATURE OF APPLICANT(S)

Use additional sheets of paper if more space is required.



SWING TIE MEASUREMENTS (FT)		
	A	B
1	60.6	68.2
2	68.1	77.2

JEFFCO PERMIT NO: 24-110247 OW	CHURCH ONSITE WASTEWATER CONSULTANTS, PROJECT NO.: B1505, APRIL 24, 2024
INSTALLER: CWS EXCAVATING	DATE OF FINAL ENGR INSPECTION: MAY 2, 2024

CHURCH OWC, LLC
Onsite Wastewater Consultants
Onsite Wastewater Engineering-Civil Engineering
P.O. Box 18796, Golden, CO 80402
Voice: (720) 898-3434

7082 SILVERHORN DRIVE, MARGOLIN - OWTS

RECORD DRAWING

JOB NO. B1505 5/2/2024 Figure RD

JEFFERSON COUNTY PUBLIC HEALTH
645 PARFET STREET, LAKEWOOD, CO 80215
(303) 232-6301 FAX: (303) 271-5760 INSPECTION LINE: (303) 239-7070
http://jeffco.us/public-health/

ONSITE WASTEWATER SYSTEM COMPONENT INSTALLATION PERMIT

PERMIT NUMBER:	**24-110247 OW**
SITE ADDRESS:	**7082 SILVERHORN DRIVE**
LEGAL DESCRIPTION:	**Lot 0027, Evergreen Highlands Unit 4**
SYSTEM DESIGNED FOR:	**4 Bedroom Single Family Dwelling**
DATE OF ISSUANCE:	**April 30, 2024** Permit expires one year after this date (all inspections must be completed by then)
ISSUED TO:	**KATHRYN CARNEY** **P.O. BOX 18796** **GOLDEN CO 80402** **USA**

COMPONENT TO BE INSTALLED: **SEPTIC OR GRAYWATER TANK**

INSTALLATION REQUIREMENTS

INSTALLATION SHALL BE IN ACCORDANCE WITH THE APPROVED DESIGN PREPARED BY **KATHRYN CARNEY.**
Job Number: **B1505** Engineering Date: **August 26, 2020**

CONSULT THE DESIGN FOR SPECIFIC INSTALLATION REQUIREMENTS AND SEE PAGE 2 FOR SITE-SPECIFIC CONDITIONS.

INSPECTIONS REQUIRED

INSPECTIONS REQUIRED:	**FINAL**
OPEN EXCAVATION DEPTH (ft.):	**N/A**
TO SCHEDULE INSPECTIONS:	**Call (303) 239-7070 by 3:00PM the day before**

REQUIRED ENGINEER CERTIFICATION(S)

FINAL INSPECTION

This on-site wastewater system was installed by AWS excavating, a licensed or approved contractor in Jefferson County and has been inspected and approved by Jefferson County Public Health. The current owner assumes all responsibility for proper operation and maintenance of the system and for repairs in case of failure or malfunction.

INSPECTOR Jesi Gledden DATE 5/8/2024

The capacity and configuration(s) of the components to be installed have been specified by the design engineer.

Unless SPECIFICALLY noted below, a minimum separation of at least 200 feet must be maintained between all wells and absorption systems, on or off-site, existing or proposed.

The installation of this system is governed by the Onsite Wastewater Treatment System Regulation of Jefferson County in its entirety. Your attention is called to the following:

1250 gal 2 comp FLXX tank with effluent filter in second comp.

The existing septic tank shall be pumped, then removed or backfilled.

BLASTING IS NOT PERMITTED WITHIN 200 FEET OF ANY EXISTING WELL.

Property served by well.

CHURCH Onsite Wastewater Consultants

May 3, 2024

Mr. Rick Margolin
7082 Silverhorn Drive
Evergreen, CO 80439
Email: rick.margolin@gmail.com

Subject: OWTS Design Installation Observations
7082 Silverhorn Drive
Jefferson County, Colorado
Job No. B1505, Permit #24-110247 OW

Mr. Margolin,

As requested, CHURCH Onsite Wastewater Consultants, LLC (COWC) performed a site visit to observe the installation of the onsite wastewater treatment system (OWTS) septic tank at the subject site. COWC prepared OWTS design documents under Job No. B1505. The existing Infiltrator septic tank was destroyed while the installer was repairing the drainage issue around the tank.

A site visit was performed on April 23, 2024, at the request of CWS Excavating, the contractor of record. At the time of the site visit, a new 1,250-gallon, 2-compartment, Front Range Precast concrete septic tank was installed with an inlet tee in the first compartment and an outlet tee in the second compartment. The existing effluent filter had been removed and cleaned off before being put back into the outlet tee. The effluent filter high-water alarm float was functioning properly. The 1" Schedule 40 PVC recirculation pipe from the AX Unit was installed going into the inlet tee as designed. The tank was bedded properly and level.

The observed components of the OWTS appear to be installed in general conformance with the COWC OWTS design, plans and specifications.

This letter provides information from observations made during two visits to the subject site by COWC. COWC observed installed components of the OWTS. COWC did not observe the installer's methods or the equipment selected by the installer and/or client. Neither the observations nor the contents of this letter imply a warrantee or guarantee of materials or workmanship. Without continuous observation of the installation process, COWC is not able to assure that elements of the system comply with the intended functionality of the design documents. If there are questions, please call.

Sincerely,
Kathryn E. Carney, P.E.
Principal Engineer

Kathryn E. Carney
DN: cn=Kathryn E. Carney, c=US
United States, l=US United States e=kcarney@cowc.info
Reason: I am approving this document
Location: Wheat Ridge, CO
Date: 2024-05-03 09:56-06:00

KATHRYN ELIZABETH CARNEY
47072

CHURCH Onsite Wastewater Consultants

ON-SITE WASTEWATER TREATMENT SYSTEM (OWTS) DESIGN REPORT

AUGUST 26, 2020

Prepared By:
CHURCH Onsite Wastewater Consultants, LLC
P.O. Box 18796;
Golden, CO 80402
Phone: 720-898-3434
E-Mail: charlotte@cowc.info

Prepared for:
Mr. Rick Margolin
7082 Silverhorn Dr.
Evergreen, CO 84093
Phone: 805-895-2731
E-Mail: rick.margolin@gmail.com

Subject Site: 7082 Silverhorn Drive, Evergreen
Job No: B1505
Jefferson County, Colorado

BASIS OF DESIGN

The following OWTS report provides design information for a 4-bedroom residence at 7082 Silverhorn Drive, Jefferson County, Colorado. The ±2 -acre property is currently developed with a 4-bedroom residence. The existing OWTS is failing and needs to be replaced. The property is fronted on the south Sullivan Drive, by an access road to the west and on all other sides by private developed parcels.

The raw wastewater characteristics for this design are expected to be similar to the average residential raw wastewater properties as indicated in the table below:

Table 8: Typical Composition of Untreated Domestic Wastewater

Composition	Units	Concentration		
		Weak	Average	Strong
Total Suspended Solids	Mg/L	100	220	350
BOD_5 at 20°C	Mg/L	110	220	400
Nitrogen (total as N)	Mg/L	20	40	85
Phosphorus (total as P)	Mg/L	4	8	15
Fats, Oils & Grease (FOG)	Mg/L	50	100	150
Total Coliform	Mg/L	10^6-10^7	10^7-10^8	10^8-10^9

Source: Table 8, Typical composition of untreated domestic wastewater from Wastewater Engineering, Treatment, Disposal and Reuse, Metcalf & Eddy, 1991.

The wastewater flows are anticipated to be within the normal range for the residential application indicated. The estimated wastewater flows from the structure are provided in the calculations of the components in this report. These OWTS design documents are based on the requirements of sound OWTS engineering design principles and the Jefferson County Public Health (JCPH) Onsite Wastewater Treatment System Regulations, effective May 4, 2018.

Note that the design for this onsite wastewater system shall include both the written report and the design figures. The OWTS design incorporates the County OWTS regulations, as currently amended, by this reference.

COWC recommends that when soliciting for costs of equipment, the complete design package be submitted to suppliers to allow them to understand the design and provide the correct components/equipment.

It is the responsibility of the installer to have sufficient knowledge and experience installing systems of this type to be able to review the entire set of design documents and understand the system concept and the intent of the design. If the installer does not understand the design intent and the system concept, the system installation should not be bid. If there are items in the design that are not clear, or if errors are noted during the installer's review of the design package, the installer should call CHURCH OWC, before bidding, to clarify and correct.

The county permit issued for this site is specific to the engineered design documents as submitted. No changes to the system design are allowed without written permission from the design engineer. If at any time, the installer changes any portion of the design without written permission from the design engineer, there is the risk that the engineer may reject the changes and that the changed item(s) will have to be removed and/or reworked to conform to the permitted design documents at the installer's own expense.

PUBLISHED SITE INFORMATION AND SITE CONDITIONS

Date Site Investigation Conducted: 8/14/2020

Water Supply: The subject property is served by a private well. The proposed soil treatment area will be installed greater than 100-feet from all wells.

Topography: Topography ranges from 5-20%. The area of the proposed soil treatment area is approximately 8% to the east.

Soil Data: A Web Soil Survey has been obtained from the USDA, Natural Resources Conservation Service (NRCS), and is attached to this report.

Subsurface Investigation: Subsurface conditions were investigated in two profile test pits excavated by mini-excavator at the locations indicated on Figure 1. Subsurface conditions are presented in Appendix A attached with this report.

Based on all available soils information, the soil is classified as Soil Type R-0. A TL3N, pressure dosed, chambered, soil treatment area bed is proposed with a long term acceptance rate (LTAR) of 0.8.

Existing OWTS Records: The County records show that a system for a 3 bedroom single family residence was installed. The records verify that the original system consisted of a 1,000 gallon septic tank and a 720 SF absorption bed.

Landscape Position: Landscape position was determined by observation of the site in comparison to the Slope Shape and Hillslope descriptions as defined by the National Resource Conservation

Service, NRCS. Landscape position is described as LCVL (linear, convex, linear), having a slope to the north at the proposed STA location of approximately 3-15%.

Vegetation: The site is covered in native grasses. There is heavy wetland vegetation located near the north/northeast side of the property in proximity to the pond.

Natural and Cultural Features: No known natural or cultural features exist on this site.

Current and Historic Land Use: The current use of the parcel is as a residential parcel. Historical use is unknown.

Additional Information:

A. Survey: Site survey information was not available as part of this design. The site plan drawing was derived from information obtained during the initial site visit, county records, and aerial images. Topographic information included is based on county GIS data, previous records and site visit observations.
B. Easements: No known easements exist on this property.
C. Floodplain: The subject parcel is not located in or near a floodplain.
D. Aerial: An aerial image has been included with this report. Please see attached NRCS soils report for aerial image.
E. Climate information: Climate information is included in the NRCS soils report.
F. Delineated Wetlands: The National Wetland Inventory Mapping (NWIM) system shows that there are wetlands present on the property. However, data provided through the system appears to be inconsistent with vegetation on site and is outdated. COWC believes that wetland vegetation is located greater than 50-feet from all proposed components. NWIM mapping data is from 2009 and aerial photography to which the wetlands are mapped are not provided on a scale that can be compared to site conditions.

OWTS DESIGN

The existing structure is a 4-bedroom residence. There are no known or anticipated changes in land use that would impact the proposed system.

Design flow values: 525 gallons
(3 Bedrooms X 2 Persons X 75 GPD) + (1 Bedrooms X 1Persons X 75 GPD) = 525 GPD

Building Sewer: A section of the existing building sewer shall be used as part of this design. All new sewer pipes should be 4-inch Schedule 40 PVC installed with a minimum slope of 2% to the septic tank. Joints shall be solvent welded or gasketed bell & spigot. Cleanouts are required 1) at the stubout from the building, within 5-feet of the face of the structure, 2) at spacing not exceeding 100 feet, and 3) upslope of two or more bends closer than ten feet in the sewer pipe, within 10-feet above the upslope bend. Short sweep bends in the building sewer pipe are not to exceed 45 degrees although a long sweep bend is permissible. The pipe should be properly bedded per the typical trench detail presented in the design drawings.

Tanks: The existing septic tank shall be properly abandoned in place. A Front Range Precast (FLXX) Concrete, 1,250-gallon, 2-compartment concrete septic tank shall be used for the septic

tank. An Orenco Systems, Inc. (OSI) Advantex AX25-RT higher level treatment unit (AX unit) shall be installed downhill of the tank. The tank shall be fitted with watertight risers with a lid that secures at the ground surface.

The proposed AX25-RT, set-up in Mode 3B (pump discharge), advanced treatment unit shall be installed in accordance with the manufacturer's instructions. Effluent shall gravity flow in a 4" Schedule 40 PVC discharge pipe from the tank to the AXRT unit. The AXRT unit shall be installed with the top of the unit at finished grade. See Figure 2 for tank and AX unit locations.

Provide a stable subgrade for the tank and AXRT unit. Over-excavate all soft and yielding material and backfill with ½" minus-material. Tank bedding shall be 5-inches of sand. Backfill around tank and in lifts not to exceed 12" loose thickness and compact each lift. Compact all fill and backfill to a minimum 90% max dry density and all bedding to minimum 95% max dry density. All compaction shall be in accordance with ASTM D698. See Figure 3 for tank and AXRT unit design and installation details.

The excavation dimensions for the higher level treatment unit shall be in accordance with the manufacturer's installation guidelines. The AXRT unit shall be backfilled in accordance with the manufacturer's instructions, with granular material, placed and consolidated as instructed.

The installer shall provide a handle extension, if necessary, to bring any filter handle within 6 to 12-inches of the bottom of the outlet compartment riser lid.

Pumping Systems: The pump in the AXRT unit to discharge effluent to the STA shall be an Orenco Model PF5005, 1/2 HP, 115 Volt, Single Phase pump, capable of pumping 32.9 GPM at 15.9 FT Total Dynamic Head, housed in the discharge chamber of the Advantex AX25-RT unit. The control system shall have 3 floats: 1) Alarm 2) ON and 3) OFF as indicated on Figure 3.

Tank Discharge Piping: The discharge piping from the AX25-RT unit to the STA shall be 1.5-inch diameter Schedule 40 PVC pipe with solvent welded joints. A minimum pipe slope of 1% is required from the high point back to the pump chamber. The pipe shall be properly bedded per the typical trench detail presented on the design drawings. The dose volume should be set for approximately 75 gallons (reference pump float activation elevations provided on Figure 3).

The depth of the crown of the tank discharge pipe will be approximately 24 inches below finished grade. To ensure that the pipe is protected from frost penetration, a minimum of 2-inch thick, high-density, closed-cell, extruded, insulboard (not white bead-board) shall be installed at the crown of the pipe, to a minimum distance of 12-inches each side of the pipe crown. The soil below the pipe insulation on each side shall be placed in lifts not to exceed 6-inches and compacted to a minimum of 95% maximum dry density.

Control Panel: The control panel for this system shall be a Vericomm AX25B1 Control Panel to control both the recirculation and discharge pumps housed in the Advantex AX25-RT unit. The panel shall be wired by an electrician licensed in the State of Colorado. All installation and wiring shall be in accordance with the instructions of the manufacturer and the National Electric Code; the more stringent requirements shall govern the installation process. The electrical control panel shall be installed on the exterior of the structure with a line of site to the pump vault riser. Do not

install the control panel on an exterior bedroom wall. Controls and alarms shall be listed per UL 508. As an alternative, the control panel can be installed near the septic tank on a 4-inch by 4-inch pressure treated post. Furnish and install a pressure treated plywood backing board to mount the control panel. Coordinate with owner for location of panel. Coordinate with design engineer for a detail of an approved post & board installation.

Soil Treatment Area: The Soil Treatment Area (STA) shall be a chambered bed with pressurized dosing. The soil in the area of the proposed STA is classified as Type R-0. An LTAR of 0.8 will be used for the design.

The STA size is as follows:

- Long Term Acceptance Rate (LTAR) = 0.8 Gallons/day/SF.
- Hydraulic loading rate = 525 gallons per day.
- STA = Design Flow (gallons/day)/LTAR (gallons/day/SF) = 525/0.8 = 656.25 SF
- Configuration: Use one bed, 12 feet, wide with 4 rows of 14 chambers with 1.5-inch pressurized laterals; for a total of 56 chambers.

The STA shall be excavated to the lines and grades indicated on the design figures. The STA laterals shall be 1.5-inch Schedule 40 PVC pipe with 1/8-inch holes at 3-feet on center, oriented up, with the first and last orifices pointing down. The 1.5-inch manifold pipe will distribute effluent to each lateral.

The STA should be constructed similar to details in Figure 5.

Vertical Separations: Two (2) feet of vertical separation is required between the bottom of the gravel (infiltrative surface) and the restrictive layer, when applying TL3N effluent. Effluent shall be dosed via a pump in the septic tank over the STA to attain full, even distribution of the effluent.

Surface Activity: No surface activities that compact the soils of the STA shall be permitted. It is recommended that the STA be fenced and/or barriers be installed to protect the laterals and in-situ soils.

Ground Cover: The STA shall be planted with drought tolerant native grasses, and irrigation shall not be allowed over the STA. Continually watering the absorption area will cause premature absorption system failure. The installer shall verify with the system owner who will have the responsibility of maintaining and watering the seed until it germinates and becomes established.

OWTS CONSTRUCTION

The OWTS shall be constructed to meet all JCPH OWTS requirements. Please see the attached OWTS design drawings for elevations of the key components of the OWTS. There are no anticipated or expected construction issues with the installation of the OWTS. The area selected for the septic tank, piping and STA are clear of interfering objects, set back from existing structures far enough to allow the use of standard excavation equipment and piling of soil spoil. There are no known subsurface impediments to the installation of the system.

INSTALLATION OBSERVATIONS

The installation of the OWTS shall be observed by the design engineer. A minimum of two observation are required 1) after the STA has been excavated, before placing sand, and 2) after the STA laterals and gravel are placed, septic tank, treatment unit and pump are installed with risers on the tank, and inlet and outlet connections properly bedded, prior to backfill. A final observation shall be required after the final electrical connection has been made prior to placing the OWTS into service, if power is not available at the first observation. Our office should be called at 720-898-3434 to observe the installation of the OWTS at least 24 hours in advance. These observations, any repeat observations, OWTS design revisions, staking of STAs or additional site visit requirements are not included in the scope of work of this design and will be invoiced at an additional unit rate fee.

OPERATION AND PREVENTATIVE MAINTENANCE SCHEDULE

The goal of an operation and maintenance schedule is to observe the system function and operation, perform minor maintenance to allow for proper, long term functioning of the system and to record performance data for future evaluation.

Operating Permit: An Operating Permit is required for the life of the OWTS due to the higher level treatment of the system, and must be applied for and maintained with JCPH.

General Operation and Preventative Maintenance: All system equipment will require some level of monitoring and maintenance to ensure it is functioning within the manufacturer's specifications and the intent of the design documents. The owner should obtain the manufacturer's Operations and Maintenance Manual for each piece of proprietary equipment in the system, and ensure that the equipment/component is properly serviced per the manufacturer's recommendations. To ensure that the equipment/component is functioning properly, the system owner can periodically check the equipment, and also must hire a trained and certified maintenance provider.

Septic Tanks: The scum and sludge accumulation in the septic tank(s) should be monitored yearly. Once the cumulative scum or sludge thickness reaches 18-inches, the entire tank should be pumped. A pumping frequency of 1 to 3 years at design flows is common. An alternative is a regular pumping frequency of every 2 years.

Filter and Effluent Pumping System: The effluent filter at the septic tank discharge should be cleaned (hosed off) at the time of pumping or as needed. The effluent pump should be checked semi-annually to ensure pump is functioning properly. If the alarm sounds, the pumps and floats should be checked and/or serviced immediately. The filter should be pulled and observed every six-months for at least the first 18-months to establish a cleaning frequency. If the filter is observed to be relatively clean after a six-month interval, then the interval can be extended to 9-12 months between cleanings. If the filter is observed to be relatively clogged after a six-month interval, then the observation and cleaning frequency should be shortened to 3-4 months.

Soil Treatment Area: The surface area around the STA is to be observed monthly for signs of failure such as lush vegetation growth or effluent ponding. Liquid levels within each field section are to be observed through the observation pipes, and levels recorded. Flow to each field is to be controlled through the pump and piping manifolds. The laterals should be flushed at the same interval the septic tank is pumped.

General: System users must realize an onsite wastewater system is different from public sewer service. There are daily considerations such as not putting plastic or other nonbiodegradable material into the system. Water use should be monitored so toilets are not allowed to leak when seals malfunction. Allowing fixtures to flow continuously to prevent water lines from freezing is not acceptable. Laundry should be spread out through the week to prevent hydraulically overloading the field. Although the proposed system can accommodate variable flows, spreading water use over several hours and eliminating peak flows is recommended. To illustrate the point, a malfunctioning toilet can discharge in excess of 1000 GPD. Excessive daily loading could flood and irreparably harm the OWTS.

Water softener backwash from a salt-type water softener must not be plumbed into the septic tank or AX-RT unit, as this will void the system's warranty. See the Orenco white paper, Water Softeners and Wastewater Treatment Systems, CWP-SOFT-1, for more information. A separate drywell should be constructed for the backwash waste, if a softener is installed.

Discharging fats, oils and grease (FOG) from any source into the household drains can be detrimental to the OWTS. COWC strongly recommends that the owner limit the use of any garbage disposal and dispose of FOG, uneaten food when cleaning dishes before washing, food scraps and food preparation remains into the trash and not down the household drains.

The design of the OWTS is based on the treatment of domestic sewage only. Swimming pool or spa water should not be discharged into the OWTS. The proposed OWTS design is based on the flows noted in the report. Increased flows may hydraulically or organically overload the OWTS, causing premature failure.

LIMITATIONS

Our investigation, layout, design, and recommendations are based on data submitted. If conditions different from those described in this report are encountered, COWC should be called to observe the conditions and make design changes if necessary. If proposed construction is changed, COWC should be notified to evaluate the effect of the changes on the wastewater system. All construction is to be in accordance with the current OWTS regulations. Pipe type and size, burial requirements, septic tank construction, and other specifications, which are not depicted in our report, are to conform to the requirements of the OWTS regulations. The system installer shall be licensed by the county health department & have demonstrated knowledge of the OWTS regulations & requirements.

This onsite wastewater system design is intended to be used only for the wastewater load specified in the STA calculations and for the site indicated on the subject line. Any other application of this design is not authorized by CHURCH Onsite Wastewater Consultants, LLC. Use of this design for any other area on the subject lot than designated, on any other lot or for wastewater volumes or strengths not indicated, constitutes a misapplication of the design and voids all liabilities on the part of COWC.

COWC encourages the owners of the system to research OWTS operations and maintenance information and also visit online websites providing OWTS information: www.nsfc.edu, www.cpow.info or https://www.jeffco.us/2379/Onsite-Wastewater-Treatment-Systems to learn how the OWTS should be operated and maintained.

If there are questions, or if clarifications are desired, please feel free to contact COWC.

Sincerely,

CHURCH Onsite Wastewater Consultants, LLC.

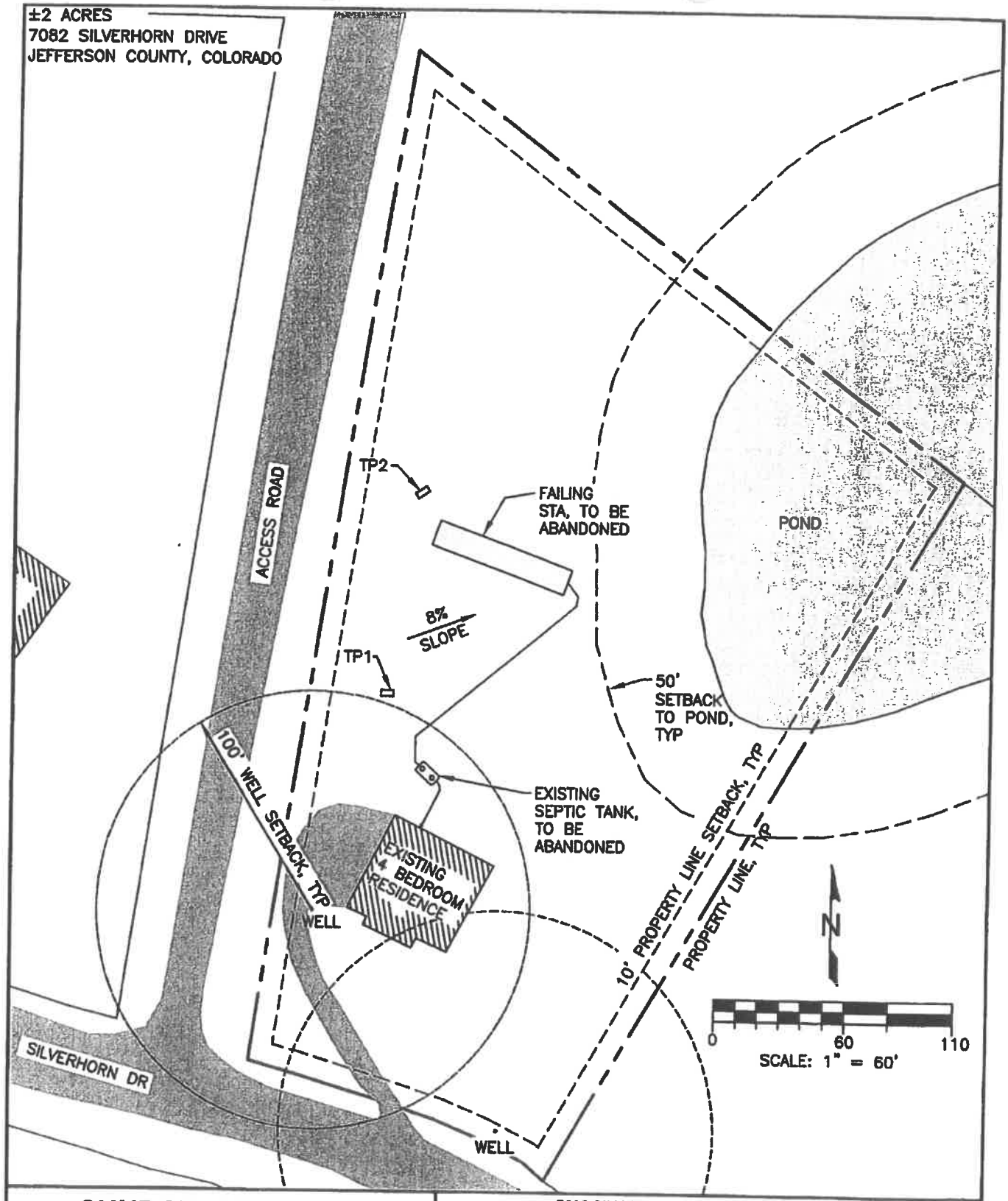
Reviewed by:

C Hampson
8-26-2020



Charlotte Hampson
Project Designer

Kathryn E. Carney, P.E.
Principal Engineer

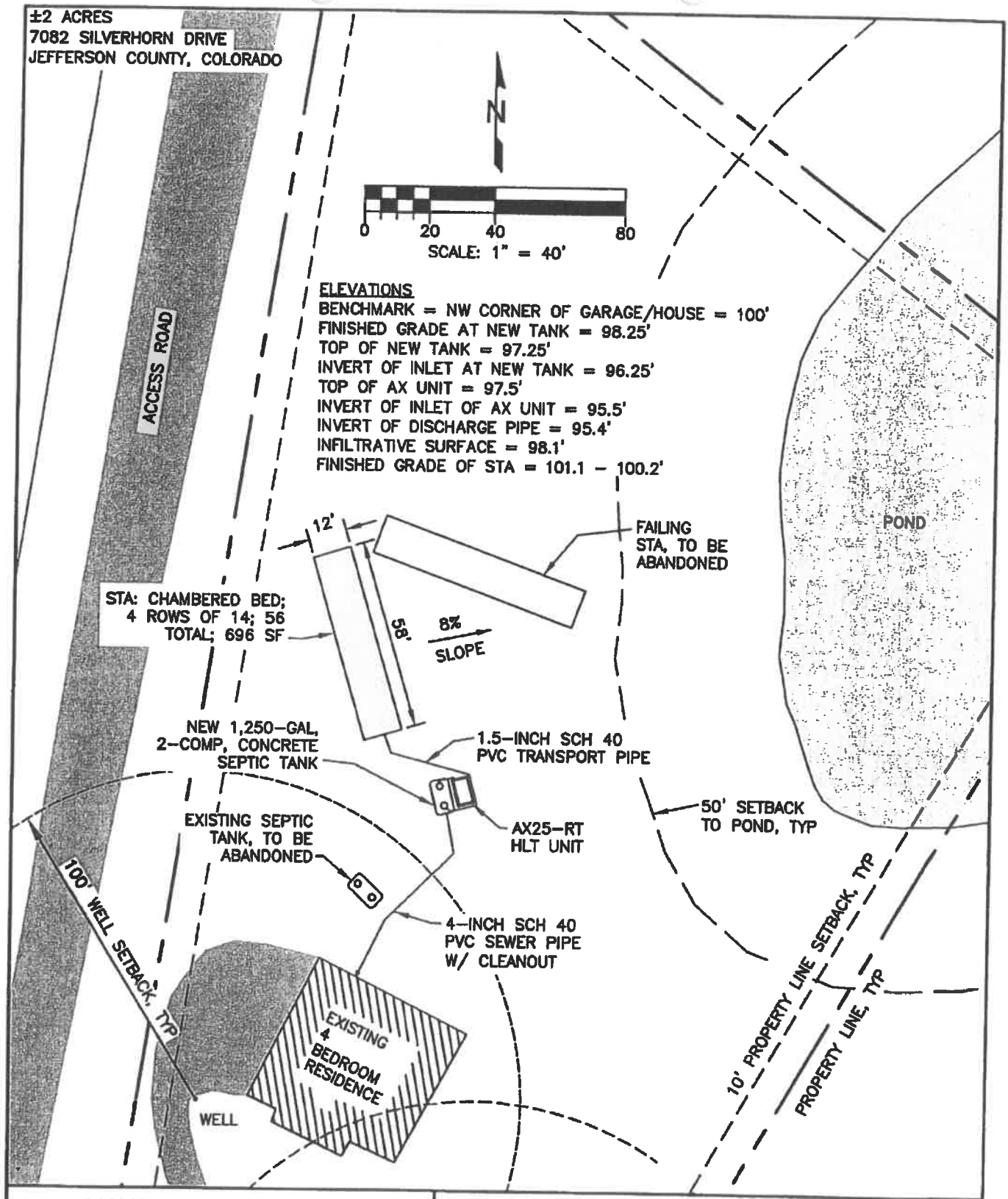


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7082 SILVERHORN DRIVE, MARGOLIN - OWTS

SITE PLAN

JOB NO. B1505 | 8/18/2020 | Figure 1 of 6

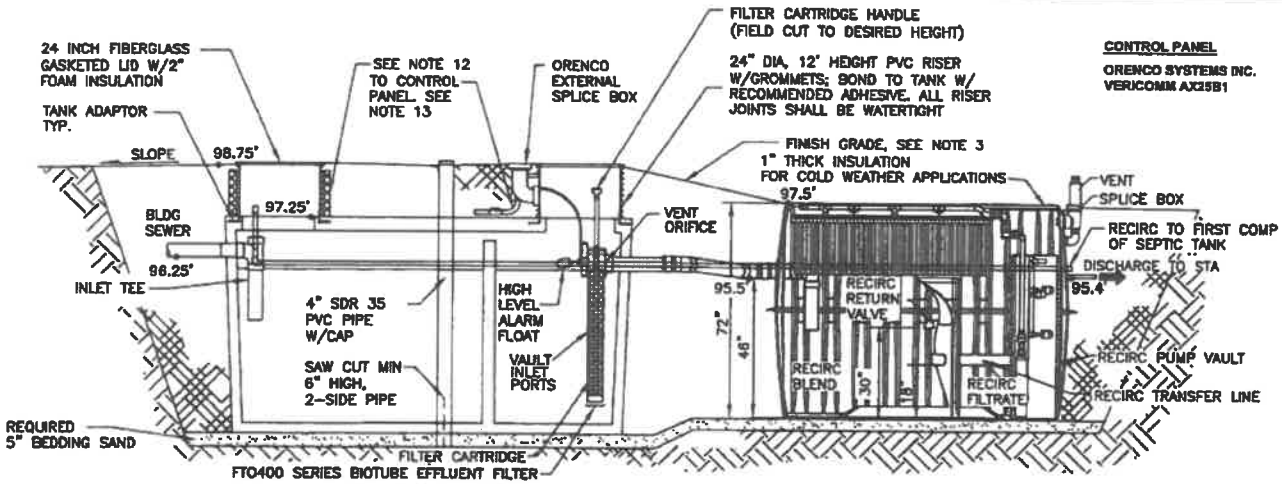


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7082 SILVERHORN DRIVE, MARGOLIN - OWTS

OWTS PLAN

JOB NO. B1505 8/26/2020



1,250-GALLON CONCRETE TANK - SIDE VIEW

NTS

CONTROL PANEL

ORENCO SYSTEMS INC. VERICOMM AX25B1

AX25RT MODE 3B - SIDE VIEW

NTS

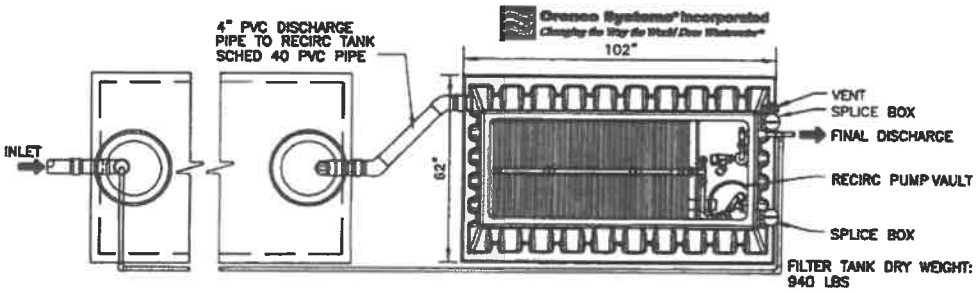
FLOAT SETTING CALCULATIONS

VOL OF LATERAL = 23.7 GALS
3-5 TIMES VOLUME = 71.1 TO 118.5 GALS
VOL OF TRANSPORT PIPE= 4.2 GALS
DRAINBACK VOLUME = 4.2 GALS
TANK DRAWDOWN GALS/INCH= 7.5
GALS PER DOSE = 75 GALS
FLOAT SEPARATION = 10-INCHES
PUMP OFF FLOAT ELEVATION= 26"
PUMP ON FLOAT ELEVATION = 36"
HIGH WATER ALARM FLOAT ELEVATION = 39"

DISCHARGE CHAMBER - SIDE VIEW

NTS

ELECTRICAL REQUIREMENTS	
TWO	115V, 20 AMP CIRCUIT FOR PUMPS
ONE	115V, 10-AMP CIRCUIT FOR CONTROLS



1,250-GALLON CONCRETE TANK - TOP VIEW

NTS

AX25RT 800-GALLON RECIRC TANK - TOP VIEW

NTS

GENERAL NOTES:

1. DETAIL IS FOR A 1,250-GALLON FRONT RANGE (FLXX) PRECAST CONCRETE, 2-COMP, CONCRETE SEPTIC TANK AND AN ORENCO SYSTEMS INC. AX25-RT HIGHER LEVEL TREATMENT UNIT. ALTERNATE TANK CONFIGURATIONS ARE POSSIBLE WITH PRIOR WRITTEN APPROVAL OF DESIGN ENGINEER.
2. THE SEPTIC TANK SHOULD BE: 1) LOCATED DOWN GRADIENT OF THE BUILDING, 2) BURIED W/ LESS THAN 3' OF SOIL COVER OVER THE TANK LID, AND 3) AT A LOCATION ACCESSIBLE FOR PUMPING AND MAINTENANCE.
3. SLOPE FINISHED GRADE AWAY FROM TANK LIDS AT MIN 5% FOR 5-FEET. MIN SLOPE THEREAFTER IS 2% AWAY FROM TANK. GRADE BETWEEN TANKS SUCH THAT SURFACE WATER DOES NOT INUNDATE AX20-RT UNIT LID.
4. INSTALLER SHALL FIT THE SEPTIC TANK WITH WATERTIGHT RISERS AND LIDS. EXTEND ALL RISERS AND LIDS TO 1" ABOVE SURFACE AT FINISHED GRADE.
5. INSTALL OSI EFFLUENT FILTER W/ 1/8" OPENINGS AND HIGH WATER ALARM AT OUTLET OF SEPTIC TANK.
6. INSTALL EFFLUENT FILTER W/ HANDLE EXTENSION W/IN 6" TO 12 " OF THE RISER LID.
7. PROOF ROLL SUBGRADE PRIOR TO PLACING BEDDING. COMPACT BEDDING TO MIN 95% MAX DRY DENSITY.
8. PROVIDE EXCAVATION FOR TANK IN ACCORDANCE W/OSHA REGULATIONS TO FURNISH A SAFE WORKING ENVIRONMENT FOR INSTALLERS.
9. PROVIDE A STABLE SUBGRADE FOR TANK. OVEREXCAVATE ALL SOFT & YIELDING MAT'L. BACKFILL W/1/2" MINUS-MATERIAL. BACKFILL & COMPACT IN LIFTS TO BOT PIPES BEFORE INSTALLING PIPES. COMPACT ALL SUBGRADE & SOIL TO MIN 95% MAX DRY DENSITY PER ASTM D698.
10. BACKFILL BETWEEN TANKS AND COMPACT BACKFILL SOIL TO INVERT OF CONNECTING PVC PIPE, IN 12" LIFTS, BEFORE INSTALLING PVC PIPE.
11. INSTALL GROUND WATER MONITORING PIPE IN TANK EXCAVATION, ADJACENT TO TANK WALL AT MIDPOINT.
12. INSTALL MIN 2" CLOSED CELL FOAM INSULATION AROUND EA RISER AND TO BOTH RISER LIDS FOR ALL AREAS WHERE FROST REACHES 36".
13. EXTEND CONDUIT FULL LENGTH TO CONTROL PANEL. FURNISH & INSTALL A CONDUIT SEAL IN CONDUIT TO CONTROL PANEL.
14. HORIZONTAL DISTANCE FROM THE PUMPER TRUCK POINT OF ACCESS TO THE TANK SHALL BE LESS THAN 100'; VERTICAL DISTANCE FROM THE TANK TO THE POINT OF ACCESS SHALL BE 10'.

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7082 SILVERHORN DRIVE, MARGOLIN - OWTS

1,250 GALLON CONCRETE TANK FOLLOWED BY AN AX25RT TREATMENT UNIT

No.	Revision	Date

DESIGNED BY: CEH
DRAWN BY: CEH
CHECKED BY: KEC
DATE: 8/20/2020

JOB NO. B1505

Pump Selection for a Pressurized System - Single Family Residence Project

B1505, Fig 4, Pump Curve, 2020-8-25, ceh

Parameters

Discharge Assembly Size	2.00	inches
Transport Length	395	feet
Transport Pipe Class	40	
Transport Line Size	1.50	inches
Distributing Valve Model	None	
Max Elevation Lift	6	feet
Manifold Length	9	feet
Manifold Pipe Class	40	
Manifold Pipe Size	1.50	inches
Number of Laterals per Cell	4	
Lateral Length	56	feet
Lateral Pipe Class	40	
Lateral Pipe Size	1.50	inches
Orifice Size	1/8	inches
Orifice Spacing	3	feet
Residual Head	5	feet
Flow Meter	None	inches
'Add-on' Friction Losses	0	feet

Calculations

Minimum Flow Rate per Orifice	0.43	gpm
Number of Orifices per Zone	76	
Total Flow Rate per Zone	32.9	gpm
Number of Laterals per Zone	4	
% Flow Differential 1st/Last Orifice	0.9	%
Transport Velocity	5.2	fps

Frictional Head Losses

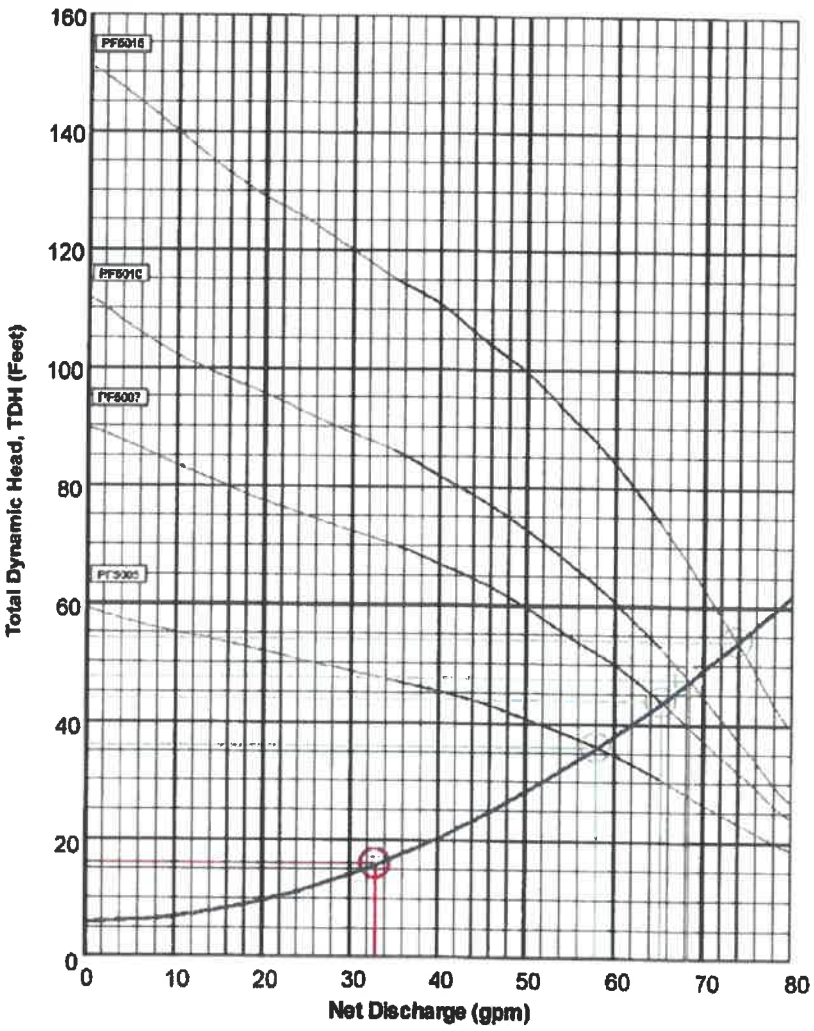
Loss through Discharge	2.2	feet
Loss in Transport	2.5	feet
Loss through Valve	0.0	feet
Loss in Manifold	0.2	feet
Loss in Laterals	0.1	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	0.0	feet

Pipe Volumes

Vol of Transport Line	4.2	gals
Vol of Manifold	0.9	gals
Vol of Laterals per Zone	23.7	gals
Total Volume	28.8	gals

Minimum Pump Requirements

Design Flow Rate	32.9	gpm
Total Dynamic Head	15.9	feet



Pump Data

PF5005 High Head Effluent Pump
50 GPM, 1/2 HP
115/230V 1Ø 60Hz, 200/230V 3Ø 60H z

PF5007 High Head Effluent Pump
50 GPM, 3/4 HP
230V 1Ø 60Hz, 200/230/460V 3Ø 60Hz

PF5010 High Head Effluent Pump
50 GPM, 1 HP
230V 1Ø 60Hz, 200/460V 3Ø 60Hz

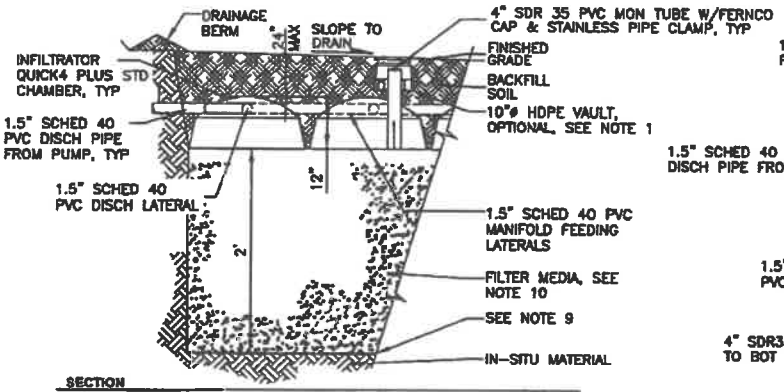
PF5015 High Head Effluent Pump
50 GPM, 1-1/2 HP
230V 1Ø 60Hz, 200V 3Ø 60Hz

Legend

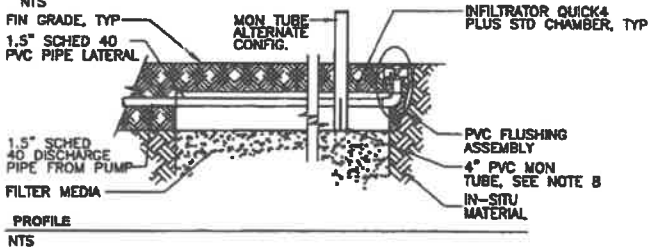
System Curve:
Pump Curve:
Pump Optimal Range:
Operating Point
Design Point

Orenco Systems® Incorporated

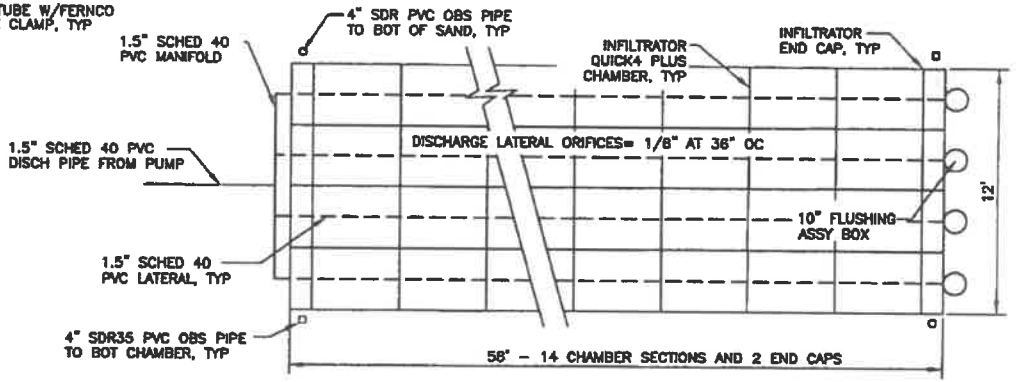
Changing the Way the World Does Wastewater®



SECTION
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PROFILE
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CHAMBERED STA PLAN
NTS

JEFFERSON COUNTY DESIGN CALCULATIONS

FOUR BEDROOM RESIDENCE

LOADING= Q = (75 X 2 X 3) + (75 X 1 X 1) = 525 GPD

SOIL TYPE R-0, LTAR: 0.8

SOIL TREATMENT AREA = Q/LTAR = 525/0.8 = 656.25 SF

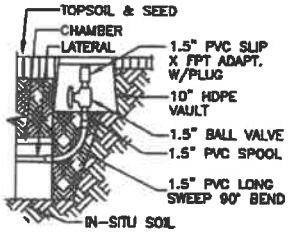
656.25 SF/ 12 SF/CHAMBER = 54 CHAMBERS

CHAMBERS USED IN DESIGN= 58 CHAMBERS TOTAL, 4 ROWS OF 14 CHAMBERS EACH, 672 SF PROVIDED

OVER-EX CHAMBERED PRESSURE BED SOIL TREATMENT AREA
NTS

SAND FILTER TREATMENT AREA NOTES:

1. OBSERVATION PIPES ARE REQUIRED. VAULTED MON PIPE IS OPTIONAL AT THE DISCRETION OF THE OWNER. STANDARD MON PIPE CONFIGURATION SHALL OMIT THE VAULT AND EXTEND THE PIPE MIN 18" ABOVE FINISHED GRADE.
2. INSTALL CHAMBERS TO ENSURE MINIMUM OF 10" OF COVER OVER TOP OF CHAMBERS AFTER SOIL SETTLEMENT. DO NOT COVER WITH MORE SOIL THAN THE EQUIVALENT OF 24" AFTER SETTLEMENT.
3. ALL PRESSURE PIPE SHALL BE SCHEDULE 40 PVC PIPE.
4. ALL LATERALS SHALL BE INSTALLED LEVEL.
5. SECURE LATERAL PIPE TO CEILING OF CHAMBER W/NON-DEGRADABLE HANGER MATERIAL.
6. PERFORATED PVC LATERALS SHALL HAVE 1/8"ø ORIFICES ON 36" CENTERS. FIRST, MIDDLE, AND LAST ORIFICE IN A LATERAL SHALL FACE 6 O'CLOCK POSITION FOR DRAINAGE. ALL OTHER ORIFICES SHALL FACE 12 O'CLOCK POSITION WHEN INSTALLED.
7. LANDSCAPING SHALL BE THE RESPONSIBILITY OF THE OWNER. SEE DESIGN REPORT FOR GUIDANCE.
8. SAW CUT BOTTOM OF PIPE MIN 6" HIGH, 2-SIDES, 180° APART.
9. OVEREXCAVATE SOIL TREATMENT AREA 48-INCHES BELOW EXISTING GRADE ON DOWNHILL SIDE. BACKFILL WITH 2-FEET OF FILTER MEDIA. PLACE CHAMBERS ON FILTER MEDIA, BOTTOM OF CHAMBERS SHALL BE NO DEEPER THAN 36" BELOW FINISHED GRADE ON THE UPHILL SIDE.
10. FILTER MEDIA SHALL BE SAND MEETING REGULATION 43 REQUIREMENTS FOR SECONDARY SAND. GRADATION MUST BE SENT TO COWC FOR APPROVAL BEFORE PLACEMENT.
11. THE FINISHED GRADE OF THE STA SHALL BE CONFIGURED TO DRAIN PRECIPITATION AWAY FROM THE FIELD AREA.
12. LEVEL AND SCARIFY THE INFILTRATIVE SURFACE OF THE SAND FILTER.



FLUSHING VALVE ASS'Y
NTS

SECONDARY SAND FILTER MATERIAL
EFFECTIVE SIZE(mm): 0.15-0.60
UNIFORMITY COEFFICIENT: ≤ 7.0
PERCENT OF FINES PASSING #200 SIEVE: ≤ 3.0

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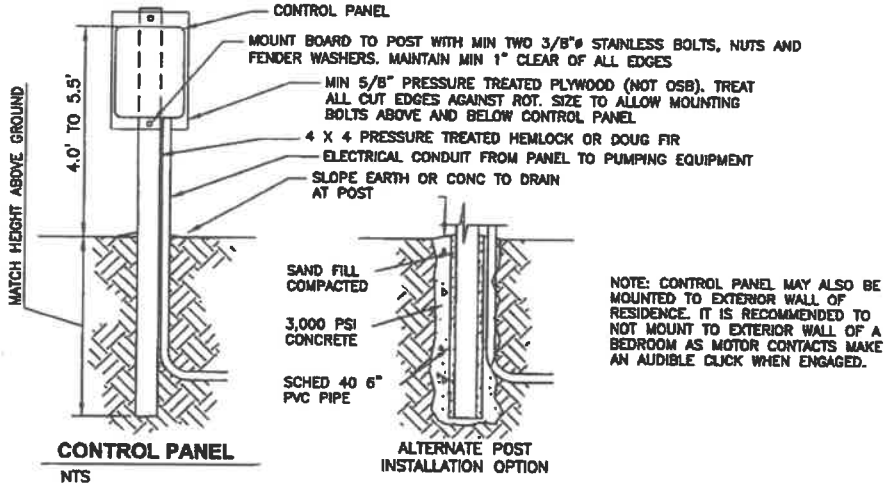
7082 SILVERHORN DRIVE, MARGOLIN - OWTS

OVER-EXCAVATED CHAMBERED BED STA DETAILS

No.	Revision	Date

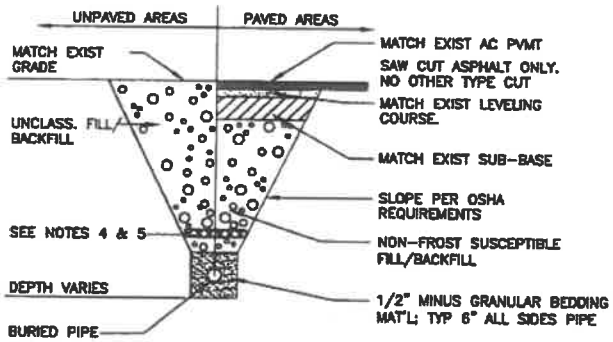
DESIGNED BY: CEH
DRAWN BY: CEH
CHECKED BY: KEC
DATE: 8/19/2020

JOB NO. B1505



CONTROL PANEL
NTS

ALTERNATE POST INSTALLATION OPTION



BUILDING SEWER/DISCHARGE PIPE SECTION
NTS

TRENCH NOTES:
1. PLACE & COMPACT BEDDING MATERIAL TO BOTTOM OF PIPE ELEVATION BEFORE INSTALLING PIPE.
2. BEDDING SHALL BE IN PLACE, COMPACTED & PIPE INSTALLED AT TIME OF COWC INSTALLATION OBSERVATION.
3. BURY DEPTH MEANS DISTANCE FROM FINISHED GRADE TO THE PIPE CROWN.
4. FOR ALL SITUATIONS WHERE THE MIN PIPE BURY DEPTH PER COUNTY REQUIREMENTS CANNOT BE MET, A MIN OF 1" OF HIGH DENSITY CLOSED CELL FOAM INSULATION CAN BE SUBSTITUTED FOR EA 12" OF SOIL COVER THAT IS LACKING. A MIN OF 2" OF FOAM INSULBOARD SHALL BE REQUIRED. STYROFOAM BEAD BOARD IS NOT ACCEPTABLE.
5. MINIMUM INSULATION WIDTH IS 24", CENTERED OVER CROWN OF PIPE.
6. ALL COMPACTION SHALL BE IN ACCORDANCE WITH ASTM D-698. COMPACT FILL & BACKFILL OUTSIDE RIGHT OF WAY TO MIN 90% MAX DRY DENSITY. COMPACT FILL & BACKFILL INSIDE RIGHT OF WAY TO MIN 95% MAX DRY DENSITY.

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7082 SILVERHORN DRIVE, MARGOLIN - OWTS

CONTROL PANEL AND TRENCH DETAILS

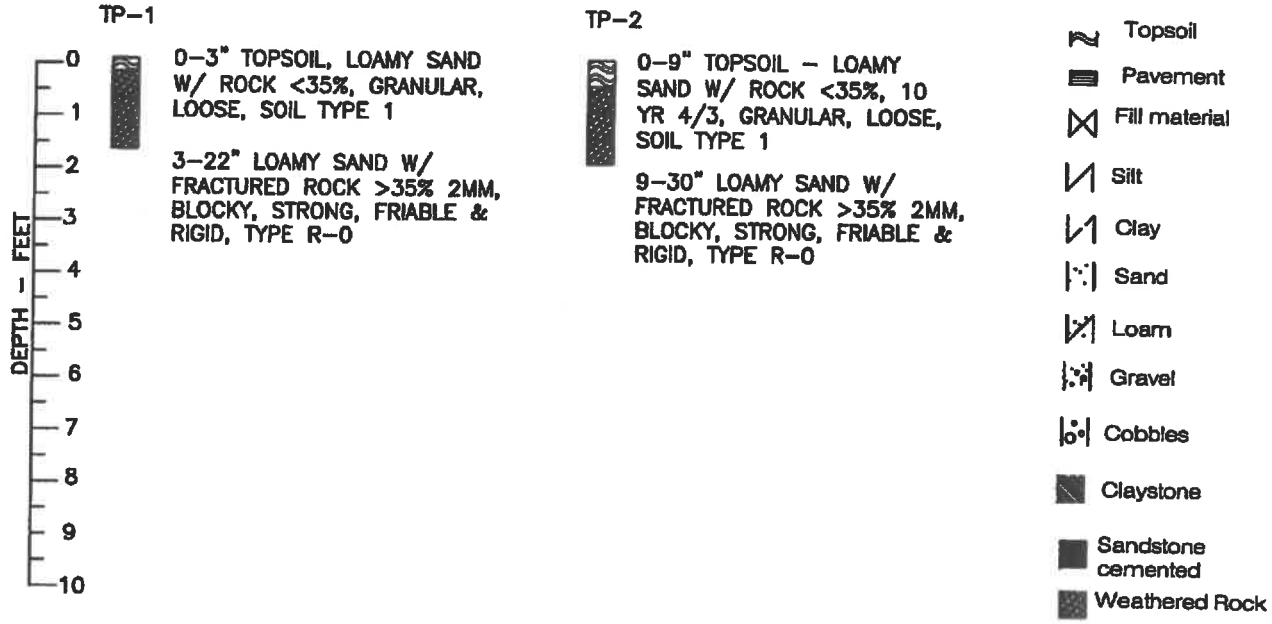
No.	Revision	Date

DESIGNED BY: CEH
DRAWN BY: CEH
CHECKED BY: KEC
DATE: 8/25/2020

JOB NO. B1505
Figure 6 of 6

APPENDIX A
SOIL LOG,
and NRCS SOILS REPORT

JOB NO. B1505
7082 SILVERHORN DR - OWTS



TEST PIT NOTES:

1. THE EXPLORATORY PROFILE HOLES WERE DUG USING A MINI–EXCAVATOR.
2. THE PROFILE HOLES WERE EVALUATED ON 8–14–2020 BY CHARLOTTE HAMPSON OF COWC.
3. FREE WATER WAS NOT ENCOUNTERED IN THE TEST PITS AT THE TIME OF EXCAVATING.

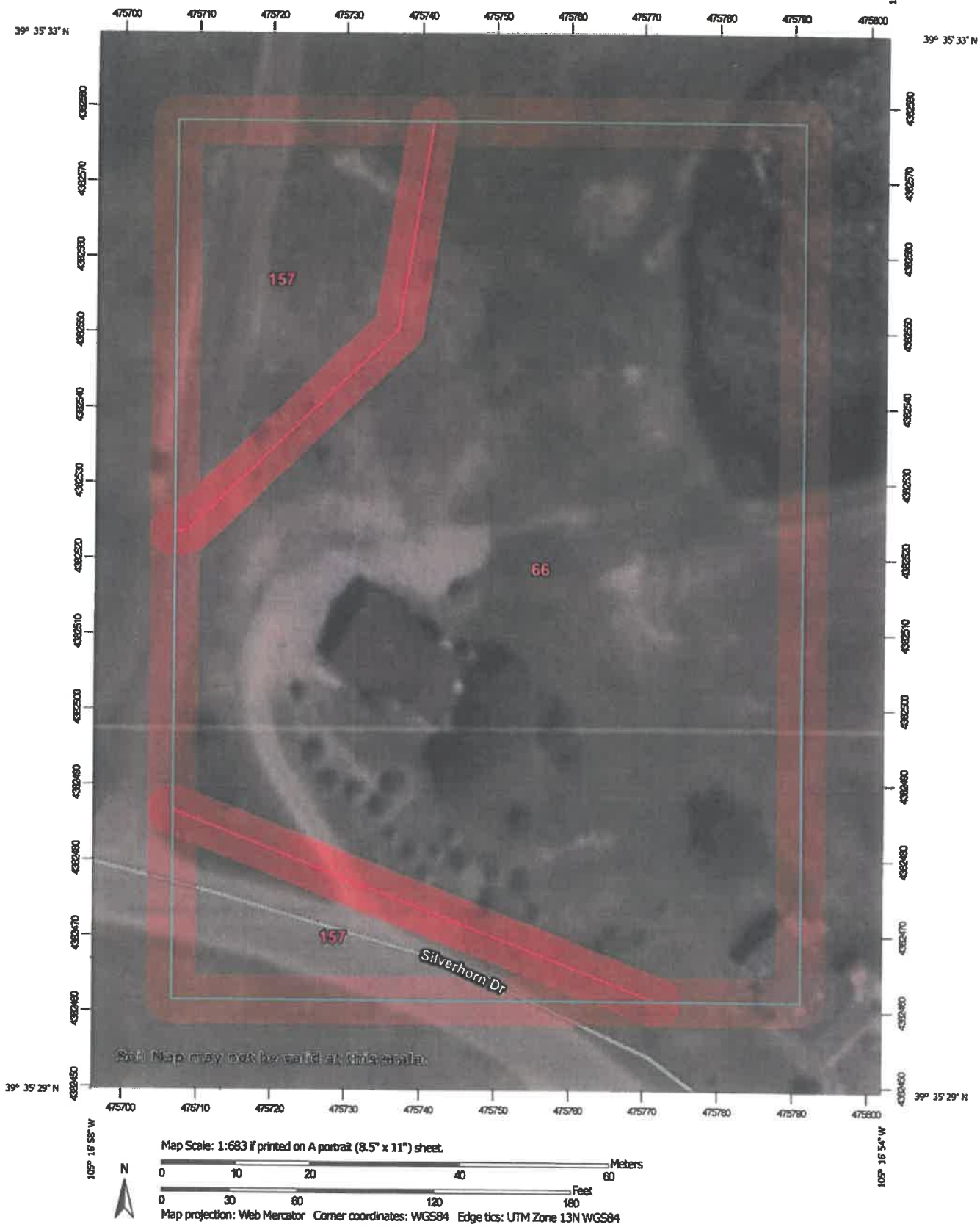
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7082 SILVERHORN DRIVE, MARGOLIN - OWTS

SOIL LOG

JOB NO. B1505 DATE: 8/18/2020 Figure A1

Soil Map—Golden Area, Colorado, Parts of Denver, Douglas, Jefferson, and Park Counties
(B1505, NRCS Soil Survey, 2020-8-20, ceh)



Map Scale: 1:683 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 30 60 120 180

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Golden Area, Colorado, Parts of Denver, Douglas, Jefferson, and Park Counties
Survey Area Data: Version 15, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 4, 2010—Oct 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
66	Kittredge-Earcree complex, 3 to 9 percent slopes	1.9	78.3%
157	Troutdale-Sprucedale gravelly sandy loams, 3 to 15 percent slopes	0.5	21.7%
Totals for Area of Interest		**2.4**	**100.0%**

Golden Area, Colorado, Parts of Denver, Douglas, Jefferson, and Park Counties

66—Kittredge-Earcree complex, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: jpps
Elevation: 7,600 to 9,500 feet
Mean annual precipitation: 17 to 20 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 55 to 75 days
Farmland classification: Not prime farmland

Map Unit Composition

Kittredge and similar soils: 60 percent
Earcree and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kittredge

Setting

Landform: Terraces, mountain slopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Mountainbase, tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium and/or colluvium derived from igneous and metamorphic rock

Typical profile

H1 - 0 to 8 inches: sandy loam
H2 - 8 to 39 inches: sandy clay loam, clay loam
H2 - 8 to 39 inches: sandy loam
H3 - 39 to 60 inches:

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 13.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B
Ecological site: R048AY222CO
Hydric soil rating: No

Description of Earcree

Setting

Landform: Alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Noncalcareous, gravelly and loamy alluvium and/or colluvium derived from igneous and metamorphic rock

Typical profile

H1 - 0 to 11 inches: gravelly sandy loam
H2 - 11 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R048AY222CO
Hydric soil rating: No

Minor Components

Urban land

Percent of map unit: 3 percent
Hydric soil rating: No

Rogert

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F048AY910CO
Hydric soil rating: No

Venable

Percent of map unit: 3 percent
Landform: Flood plains, terraces

Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R048AY241CO
Hydric soil rating: Yes

Cryofluvents

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R048AY236CO - River Bottom
Hydric soil rating: No

Troutdale

Percent of map unit: 3 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear, convex
Across-slope shape: Linear
Ecological site: F048AY910CO
Hydric soil rating: No

Data Source Information

Soil Survey Area: Golden Area, Colorado, Parts of Denver, Douglas, Jefferson, and Park Counties
Survey Area Data: Version 15, Jun 5, 2020

Golden Area, Colorado, Parts of Denver, Douglas, Jefferson, and Park Counties

157—Troutdale-Sprucedale gravelly sandy loams, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: jpmc
Elevation: 7,600 to 9,500 feet
Mean annual precipitation: 17 to 20 inches
Mean annual air temperature: 41 to 43 degrees F
Frost-free period: 55 to 75 days
Farmland classification: Not prime farmland

Map Unit Composition

Troutdale and similar soils: 45 percent
Sprucedale and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Troutdale

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear, convex
Across-slope shape: Linear
Parent material: Gravelly, loamy residuum weathered from igneous and metamorphic rock

Typical profile

H1 - 0 to 8 inches: gravelly sandy loam
H2 - 8 to 18 inches: sandy clay loam, gravelly sandy clay loam, loam
H2 - 8 to 18 inches: coarse sandy loam, sandy loam, gravelly sandy loam
H2 - 8 to 18 inches: weathered bedrock
H3 - 18 to 29 inches:
H3 - 18 to 29 inches:
H3 - 18 to 29 inches:
H4 - 29 to 33 inches:

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F048AY910CO
Hydric soil rating: No

Description of Sprucedale

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Mountainflank, mountaintop
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Noncalcareous, micaceous, gravelly, and loamy residuum weathered from igneous and metamorphic rock

Typical profile

H1 - 0 to 6 inches: gravelly sandy loam
H2 - 6 to 12 inches: sandy loam, loam, gravelly sandy loam
H2 - 6 to 12 inches: weathered bedrock
H2 - 6 to 12 inches:
H3 - 12 to 16 inches:

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F048AY910CO
Hydric soil rating: No

Minor Components

Kittredge

Percent of map unit: 3 percent
Landform: Mountain slopes

Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R048AY222CO
Hydric soil rating: No

Rogert

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F048AY910CO
Hydric soil rating: No

Venable

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R048AY241CO
Hydric soil rating: Yes

Urban land

Percent of map unit: 3 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 3 percent
Landform: Mountain slopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountainflank, free face
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Golden Area, Colorado, Parts of Denver, Douglas, Jefferson, and Park Counties
Survey Area Data: Version 15, Jun 5, 2020

OWTS PROGRAM DESIGN REVIEW CHECK SHEET

ADMINISTRATIVE PREVIEW		DATE RECEIVED:	04-23-2024
FOLDER NUMBER:	24-110 247	PREVIOUS FILE or FICHE* (attach copy of record drawing, if available)	20-120 854 17-105 460
PROPERTY ADDRESS:	7082 Silverthorn Dr. Evergreen CO 80439	NAME:	Natalie Wright
CURRENT ENGINEER JOB #	B1505	ENGINEERING DATE:	08-26-2020

IS PROPERTY IN A SANITATION DISTRICT (*If YES, 'no objection' letter from district required*)? (NO) YES

IS THE PROPERTY WITHIN FLOODPLAINS/DELINEATED WETLANDS (IN JMAP)? (NO) YES

NO. OF BEDROOMS (12.1, 14.3, 4.4)	Previous OW:	4	JC Assessor:	4	Current Design:	4	
PROPERTY SIZE (4.2)	Previous OW:	2	JC Assessor:	2	Current Design:	2	

DESIGN DOCUMENT REVIEW (11.11.A.4)				
SITE EVALUATION (* N/A for tank replacement only)	YES	NO	N/A	Comment
Bed / trench / tank / well locations staked? (4.8)			✓	
All tank/ STA setbacks to physical features verified and OK? (App B) • *Property lines* • *Water bodies* • *Potable water lines* • *Dwellings / structures* • *Subsurface drainage* • *Dry gulches*			✓	
Physical features identified and OK? (11.2) • *Landscape position* • *Topography (slope)* • *Vegetation* • *Drainage*			✓	
Additional information: (11.1.A.7) • *Surveys* • *Easements* • *Floodplain maps* • *Delineated wetland maps* • *Grading plans*			✓	
Soil Profile Test Pit Excavations open for inspection? * (4.10.A.2)			✓	
Percolation Test holes completed? * (11.6)			✓	
SOIL INVESTIGATION (*N/A for tank replacement only)	**YES**	**NO**	**N/A**	**Comment**
No. Percolation Test holes:		Soil Profile Test Pit Excavations:	Number:	Minimum Depth:
Soil Profile Test Pit Excavations inspected / completed / consistent w/ report * (11.3.A.1)			✓	
Dates of field investigation noted? (11.11.A.3)			✓	
Equipment used for excavations identified? * (11.11.A.4)			✓	
Soil profile completed for each excavation, including soil horizons? * (11.5)			✓	
Limiting layer (bedrock, groundwater) present? * (11.5)			✓	
Redoximorphic features identified? * (11.5)			✓	
Percolation test information provided? * (11.3.A.2)			✓	
LTAR properly selected based on soil test results? * (11.4.A&B)			✓	

4 bdr 1250 gpd 2 comp PLXX + AX 2521 (072 SEA
S25 gpd

SITE PLAN (*N/A for tank replacement only)	YES	NO	N/A	Comment
Dimensions, scaled, and provided with north arrow? (11.11.A.7)			✓	
Plans are of proper size (min. 8.5" x 11")? (11.11.A.7)				
Fixed benchmark provided? (11.11.A.7a,11.12.C.2)				
Proposed elevations of septic tank invert & STA infiltrative surface; relative to benchmark reference (vertical/horizontal) * (11.11.A.7a)				
Boundary lines, slope contours, direction and % slope shown? (11.11.A.7b)				
Location of profile test pits / perc holes included? * (11.11.A.7)				
Setbacks, improvements, easements, delineations, all wells and STAs (onsite and adjacent) shown and in conformance with Appendix B? (11.11.A.5&6)				
High water mark shown for ponds, creeks/streams, wetlands, other surface waters, and detention/retention ponds? (11.11.A.7a)				
All onsite components located onsite? • *Survey and easement agreement submitted?* (4.9.B)				
REPORT REVIEW (*N/A for tank replacement only)	**YES**	**NO**	**N/A**	**Comment**
Company contact & site evaluator credential info provided? (11.11.A.1)			✓	
Anticipated construction related issues? (11.11.A.8)				
Statement regarding potential future land use changes? (11.11.A.9)				
Site difficulty narrative (soils, landforms, resolution)? (11.11.A.10)				
Special structural design considerations? (11.12.C.6)				
Design or O&M manuals/technical materials provided? (11.12.C.9)				
Additional installation procedures? (if applicable) (11.12.C.8)				
Is the design document internally consistent?				
SEPTIC TANK				
Tank dimensions and calculations provided and properly sized? (14.3, 14.5)	✓			
Tank accessible for maintenance/pumping? (13.1)	✓			
Tanks CDPHE-approved? (14.4,6,7)	✓			
Burial depth of septic tank and other components shown? (13.1, 14.2)	✓			
Effluent screen provided? Properly sized. (14.22)	✓			
Dosing siphon provided?* Calculations provided? (14.16.A)			✓	
Tank anchors provided (if applicable)? (14.1)			✓	
Clean outs provided at appropriate intervals?* (14.12)	✓			
DOSING SIPHONS: If YES, items below are required*				
Dosing siphon located correctly? Correct tank compartment? (14.16.D-F)			✓	
Total dynamic head (TDH) and gallons per minute (GPM) provided? 11.12.C.1)				
Dose volume calculations provided and acceptable? (14.16.F-G)				
Air or vacuum lock prevention? Self draining? (14.16.I)				
Dose counter provided (if applicable)? (14.17.A)				

Signal device provided (if applicable)?			✓	
PRESSURE DISTRIBUTION: If YES, items below are required*				
Approved pump specified? (if applicable) (14.18)			✓	
Dose size and / or frequency of flows provided? (15.5.A)				
Pipe diameter and strength requirements correct? (15.5.A)				
Orifice size and spacing correct? (15.5.A)				
Operating head correct (30-72 inch)? (15.5.A)				
Total dynamic head (TDH) and gallons per minute (GPM) provided? (11.12.C.1)				
Drain-back volume provided? (15.5.A)				
Calculations showing equal flow provided? (15.5.A)				
End of row flushing assembly provided? (15.5.C)				
Signal device provided? (14.21.A.1, 13.4)				
Timed pressure distribution required? (12.4, 16.5)				
SOIL TREATMENT AREA*				
STA calculations provided and properly sized? (15.1, 11.12.C.1, 15.7)	✓			
Sewage pipe proper diameter? (Table 16-1, 16.2.B)	✓			
Required sand calculations provided?			✓	
Distribution lateral length, width, and spacing correct? (Table 16-1, 15.4)			✓	
Effluent pipe properly placed? (15.4.G)	✓			
Orifices oriented correctly? (15.4.H)			✓	
Inspection ports properly placed? (15.11.A)			✓	
Sand media meet specs? (16.2.D)			✓	
REPAIRS				
For repairs or additions, bedrooms ≤ Assessor or previous permit? (12.1)	✓			
Calculations for existing STA provided (if applicable)? (15.9.B)	✓			
All setbacks meet Appendix B? (15.14.B)	✓			
All other options considered? (if applicable) (15.14)	✓			
Dosing included? (if applicable) (14.16)			✓	
Effluent screen added? (if applicable) (14.22)	✓			

ENTER PERMIT CONDITIONS

1 REDUCT FR ONSITE WELL (lot, distance) _____

2 REDUCT FR ONSITE BED (lot,distance) _____

3 ALL WELLS 100 FT
4 ALL WELLS 60 FT
5 ABANDON WELL REQUIRED
6 SLOPE CONDITIONS
7 ROADCUT SETBACK
8 LINED CURTAIN DRAIN REQ'D
9 WATER – SEWER SEP DISTANCE
10 ALARM INSTALLATION REQ'D
11 DBL CASE LINE W/IN 50 FT OF WELL
12 ABANDON OLD TANK
13 DRY GULCH SETBACK
14 TANK/VAULT - WELL SETBACK
15 SURFACE WATER SETBACK
16 PROPERTY LINE SETBACK
17 SUBMINIMUM SETBACK
18 REMOVE CONTAMINATED SOIL
19 ABANDON PRIVY
20 NO BLASTING
21 BLASTING OK (pick 20 or 21)
22 DWELLING – BED SETBACK
23 ONGOING O&M REQUIRED
24 PRESSURE DOSED REQ'D
25 ELECTRIC LIFT STATION
26 BW / GW PLUMBING
27 STARTUP LETTER REQ'D
28 REMOTE MONITORING

INFO ITEMS (NOTE: add system specifics AFTER final inspection)

TANK 1250 **gal+ existing** — **gals** **BED** 672 **ft2+ existing** — **ft²**

OPEN HOLE n/a **ft (or N/A)** **SLOPE** — **%** **PERC RATE** 28 **(28, if grad analysis)**

INSPECTION AREA: ( ) NORTH ( ) CENTRAL (X) SOUTH ( ) DEEP SOUTH

ENGINEER CERTIFICATIONS

1. SUITABILITY OF MATERIALS
2. ACCEPTABILITY OF BLASTING
3. INSTALLATION OF PUMPS/ALARMS/SIPHONS etc. _____
4. (4.) FINAL INSPECTION
5. OTHER _____

DESIGN REVIEW COMPLETED		
APPROVED FOR ISSUE	NO	YES ✓
ITEMS TO BE CORRECTED		
INSPECTOR: Jesi Gladden	DATE: 4/29/24	

FORM 100

OWTS PERMIT APPLICATION

USE THIS FORM TO APPLY FOR ALL ONSITE WASTEWATER TREATMENT SYSTEM (OWTS) PERMITS for the installation, repair, or addition to an existing system. This permit application becomes void one year from the date of application unless a permit has been issued or an extension has been granted by the health officer.

Property Address	7082 Silverhorn Drive, Evergreen CO 84093
Legal Description	

APPLICANT INFORMATION

Name	Natalie Wright - Church On-Site Waterwater Consulting
Mailing Address	3340 N. Wright St.
City, State, Zip	Wheatridge, CO 80033
Email	natalie@cowc.info
Phone	303-350-6194

PROPERTY OWNER INFORMATION

Name	Same as above.
Mailing Address	
City, State, Zip	
Email	
Phone	

ENGINEER/DESIGNER INFORMATION

Name	Church On-site Wastewater Consulting
Mailing Address	3340 N. Wright St.
City, State, Zip	Wheatridge, CO 80033
Email	natalie@cowc.info
Phone	303-350-6194

SYSTEMS CONTRACTOR INFORMATION (if know at time of application)

Name	Matthew Morgan - Commonwealth Services Excavating
Mailing Address	
City, State, Zip	Denver, CO
Email	matthew@cwsexcavating.com
Phone	~~804-895-6355~~ 303-243-2298

For assistance with this application or questions call 303-232-6301 or email PublicHealthOWTSDocs@jeffco.us

Revised 2/28/2024

JEFFERSON COUNTY PUBLIC HEALTH ENVIRONMENTAL HEALTH SERVICES

OWTS PERMIT APPLICATION

FEES (check one)

☐ Full OWTS **without** higher level treatment Full system- More than a single component (tank, STA) New install, additions, and repairs, not requiring an Operating Permit, state fee included (payment with credit card fee)	$1,523.00 ($ 1,549.65)
☐ Full OWTS **with** higher level treatment Full system- more than a single component (tank, STA) New install, additions, and repairs, requiring an Operating Permit, state fee included (payment with credit card) *may also include vaults or other non-HLT systems that require an Operating Permit	$ 1,643.00 ($ 1,671.75)
☑ Component only **without** higher level treatment One component such as a septic tank, bed or trench New install, additions, and repairs, not requiring an Operating Permit, state fee included (payment with credit card fee)	$ 773.00 ($ 786.53)
☐ Component only **with** higher level treatment One component such as a septic tank, bed or trench New install, additions, and repairs, requiring an Operating Permit, state fee included (payment with credit card) *may also include vaults or other non-HLT systems that require an Operating Permit	$ 893.00 ($ 908.63)
☐ Renewing a previously-issued OWTS permit (payment with credit card)	$ 375.00 ($381.56)

*if you are unsure whether or not your system requires higher level treatment, please contact your designer or Jefferson County Public Health.

Fees can be paid via cash, check, or credit card.

Checks are to be made payable to "Jefferson County Treasurer".

If you would like to pay with a credit card (in person or over a secured telephone line), there is a 1.75% convenience fee.

Please note if an application for a permit without higher level treatment is paid, but after the permit review it is determined higher level treatment is required, the difference between the permit fee with higher level treatment will be required prior to permit issuance.

FORM 100

OWTS PERMIT APPLICATION

PROPOSED WORK TYPE

☐ New Construction ☑ Repair ☐ Addition

PROPOSED STRUCTURE TYPE

☑ DWELLING UNIT* ☐ Accessory Dwelling Unit ☐ Commercial Use

* For single family dwellings, please show the number of bedrooms 4-bedrooms

* For multi-family structures show number of units [ ] & total bedrooms [ ] in the structure(s).

WATER SUPPLIED BY: ☑ Well ☐ Cistern ☐ Public system (name) _____

ACREAGE OF PROPERTY: 2 acres PLAT DATE (obtained from P&Z): [ ]

Is the property located in the Parmalee Gulch drainage? ☑ NO ☐ YES

REQUIRED SUPPLEMENTAL FORMS

Please complete and attach the following forms, as appropriate (check as appropriate):

☐ Is a Board of Health variance needed?
Attach FORM 100-B. For new OWTS construction on properties that do not meet minimum lot sizes and require a Board of Health hearing prior to permit issuance or for other conditions as shown on Page 3 of Form 100-B.

☐ Is a property easement required for this installation?
Attach copy of the easement agreement and survey.

☐ Is this property in a sanitation district?
Attach letter from the district stating they have determined connection to public sewer is not feasible or otherwise have no objection to the installation of this system.

☐ Does this property share an OWTS with another property?
Attach a copy of the shared use agreement.

☐ Is this property served by a sealed vault?
Attach a copy of the limited use occupancy agreement. A new limited use occupancy agreement may be required.

TERMS AND CONDITIONS OF APPLICATION

In applying for this onsite wastewater treatment system permit, I acknowledge the above information is true and correct to the best of my knowledge and any false material statement made on this application may be cause to revoke the permit issued for this property. I hereby authorize the health officer and/or their representative to enter onto this property to determine compliance with the onsite wastewater treatment system regulations pursuant to the issuance of a permit. Once approved, I agree to install the permitted system in accordance with permit conditions and the requirements of the Jefferson County Onsite Wastewater Treatment System Regulation.

Natalie Wright
OWNER/APPLICANT/AGENT

04/22/2024
DATE

For assistance with this application or questions call 303-232-6301 or email PublicHealthOWTSDocs@jeffco.us

Revised 2/28/2024

JEFFERSON COUNTY PUBLIC HEALTH ENVIRONMENTAL HEALTH SERVICES

On[illegible]e Wastewater Treatment System – Inspectio[illegible]checklist

Folder Number	24-110 247	Address	7082 Silverhorn Dr. Evergreen CO 80439

Site Evaluation/ Onsite Inspection **Date(s):**

PH Depth	#1	—	#2	—	STA & Tank Staked?	(Y)/ N	

Soil	Profile Hole # 1	Profile Hole # 2	Comments
Texture			
Structure Type			Tank replace
Grade			

Features	Profile Hole # 1	Profile # 2	Comments
Color			
Ground water present	Y N/O	Y N/O	
Gley/ Redoximorphic present	Y N/O	Y N/O	Tank replace
Limiting Layer visible	Y N/O	Y N/O	
Smearing of Walls observed	Y N/O	Y N/O	
Rock Size & Quantity			
Tree Roots present	Y N/O	Y N/O	

Site Setbacks (Distances)	STA	Tank	Well	Closest Well	Property Line	Water Bodies	Utility Lines	Easement	Dry gulch
Tank									
STA									

Site Conditions	Approved	Comments
Slope %	(Y)/N	
Landscape Position	(Y) N	Linear/ Convex/ Concave
Trees/ Rocks	(Y) N	
Other	(Y) N	

303 243 2248

Onsite Wastewater Treatment System – Inspection Checklist

Folder Number	24 - 110 247	Address	7082 Silverhorn Dr. Evergreen CO 80439

Open Hole Inspection **Date(s):** **Approved:**

Comments / Deficiencies	
Dimensions of open hole meet design specifications Setback distances meet regulations Soils consistent with onsite & engineering Sand gradation provided (if applicable)	n/a

Final Inspection **Date(s):** **Approved:**

		Comments / Deficiencies
Sewer / Effluent Lines	Size of sewer line meets engineering Schedule 40 Schedule 35 Cleanouts present Bedded & Fall (at least 2%) Foundation	4" sch 40 sewer line (existing) to tank

		Comments / Deficiencies
Tank	Capacity Compartments Pressurized Dosing Siphon Counter Pump Alarm check Risers to grade Effluent Filter HLT (Make & Mode) Level Water Tight / Lids Secure	1250 2 comp concrete tank, filter in 2nd comp

		Comments / Deficiencies
STA	Manifold- installed level Distribution Piping Observation Ports Orifice Holes Final Grading Flushing Assemblies Liner Sand Distribution Box ADV Gravel Chambers	4" sch 40 outlet pipe 1" sch 40 recirc from AX unit back to concrete tank

Required Documents

Sand Receipts	Total Received		Comments
	Total Required		

Gravel Receipts	Total Received		Comments N/A
	Total Required		

Engineer's Certification	Approve / Deny	Comments

Record Drawing	North Arrow ✓	Scale ✓	Dimensions/Depths/Sizes ✓
	Findable Points ✓	Permit Number ✓	Manufacturer's Model ✓

O&M Start up letter received? Yes____ No ✓

Other Permit Conditions? Yes ✓ No____

Final Approval? Yes ✓ No____

EHS: [signature] **Date:** 5/8/24

Additional Comments:

Rev 1/12/21