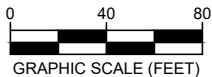


LEGAL LOCATION: SWNW SECTION 23, T.3N.; R84W.

SITE NOTES:

1. THERE ARE NO WATER FEATURES WITHIN 100 FEET OF THE PROPOSED OWTS.
2. AERIAL IMAGE COLLECTED BY DRONE 7/22/22



By:  
Headwater Engineering  
P.O. BOX 1293  
Craig, CO 81626

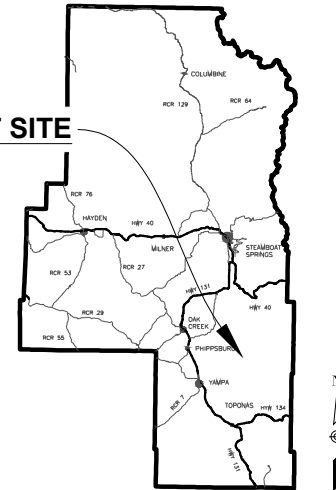


For:  
Chris Reed &  
Keelin Regan-Reed  
1807 Dorothy Circle  
Longmont CO 80503

**ROUTT COUNTY OWTS DESIGN  
LOCATION & SITE PLAN**

SITE ADDRESS:  
34130 Whiffle Tree Trail  
Oak Creek, CO 80467

**PROJECT SITE**



Scale: 1" = 30 Miles

COUNTY OF ROUTT  
STATE OF COLORADO

INDEX OF SHEETS

SHEET NO.	SHEET TITLE
1	LOCATION & SITE PLAN
2	NOTES & QUANTITIES
3	SYSTEM PLAN
4	PROFILE
5	DETAILS OFFSET DISTANCES



08/03/22

File:	Revised:
Drawn By: WAM	Checked By: WAM
Date: 8/3/22	Revised:

**SHEET  
1 OF 4**

## GENERAL NOTES:

- ENGINEER SHALL INSPECT SYSTEM INSTALLATION PRIOR TO BACKFILL. PLEASE NOTIFY ENGINEER AT LEAST 24 HOURS PRIOR TO REQUIRING INSPECTION.
- CONTRACTOR, OR OWNER TO COMMUNICATE ANY DESIGN DEVIATIONS TO ENGINEER IN ADVANCE.
- ENGINEER WILL POINT OUT AND REQUIRE MODIFICATIONS TO THE SYSTEM REQUIRED FOR APPROVAL AT THE TIME OF THE AS-BUILT INSPECTION.
- BACKSLOPE EXCAVATION FOR TANK INSTALLATION IN ACCORDANCE WITH OSHA REGULATIONS (29 CFR PART 1926, SUBPART P, SECTIONS 1926.650 THROUGH 1926.652).
- BRUSH AND VEGETATION SHALL BE CLEARED FROM DRAINFIELD AREA PRIOR TO CONSTRUCTION.
- NEITHER BEDROCK, GROUNDWATER NOR OTHER RESTRICTIVE LAYERS WERE ENCOUNTERED IN THE SOIL PROFILE PITS.
- INSTALL ALL PIPE, DRAINFIELD CHAMBERS, SEPTIC TANK, AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURES' RECOMMENDATIONS AND LOCAL CODES.
- THE NATIVE SOIL IS GRANULAR AND SHOULD BE SUFFICIENT FOR PIPE BEDDING. CONTRACTOR TO USE  $\frac{3}{8}$ " MINUS WASHED ROCK OR EQUAL AT THEIR CHOICE.
- ALL PIPE SHALL BE PLACED STRAIGHT AND WITHOUT HUMPS OR SAGS, AND TO THE GRADES SHOWN IN THESE PLANS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE EXISTING UTILITIES. UTILITIES WERE NOT VERIFIED WITH THIS PROJECT.
- ACTUAL FIELD LENGTHS AND DEPTHS OF THE CONSTRUCTED SYSTEM ARE EXPECTED TO VARY, BUT SHOULD BE WITHIN THE MINIMUMS AND MAXIMUMS AS SPECIFIED WITHIN THESE PLANS.
- TANK IS ASSUMED TO VENT THOUGH THE PLUMBING VENTS IN THE HOUSE.

## DESIGN NOTES:

- SCH 40 SEWER PIPE SHALL BE USED UNDER DRIVEWAYS AND PARKING AREAS. SDR 35 CAN BE USED ELSEWHERE ALTHOUGH SCH 40 IS RECOMMENDED.
- ALL FITTINGS SHALL BE SANITARY FITTINGS. (PRESSURE FITTINGS SHALL NOT BE USED UNLESS SPECIFIED)
- BENDS IN THE SEWER LINE SHALL NOT EXCEED A 45° BEND AND WILL BE INSTALLED WITH A CLEANOUT.
- SEPTIC TANK SHALL BE TWO COMPARTMENT UNLESS OTHERWISE SPECIFIED. INSTALL TANK IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS.
- ELEVATIONS FROM AUTONOMOUS GPS LOCATION OVER THE WELL ADJUSTED TO APPROXIMATE FOUR POINTS ELEVATIONS. GROUND ELEVATION AT THE BASE OF THE WELL CAP IS 8063.8
- HEADWATER ENGINEERING ADVANCED TWO BOREHOLES TO A DEPTH OF FOUR FEET TO CONFIRM THE SOIL TYPE. HEADWATER ENGINEERING IS DEFERRING TO A JANUARY 29, 2022 LETTER BY BEAR VALLEY DESIGN LTD. INDICATING THAT THERE WAS NO GROUNDWATER OR BEDROCK ENCOUNTERED WITHIN A DEPTH OF SEVEN FEET.

## Quantities and Specifications

Chris Reed

Item	Unit	Quantity	Specification/ Notes
1,000 Gal. Septic Tank	EA	1	Infiltrator Water Technologies IM 1060 O.E.
Septic Tank Risers	EA	2	≈ 2' Tall
Drainfield Distribution Box	EA	1	Tuff-Tite 6-hole, w/ speed levelers and Lid Riser
Washed Drain Rock	CY	31	1 1/2" Minus Washed
	TON	44	Converted @1.4 tons per CY
Geotextile Separation Fabric	SF	900	2 oz. per sq-yd, or 4 oz, per sq-yd max
<b>SCH 40 Sewer Pipe</b>			
4" SCH 40 PCV Pipe	LF	35	
4" SCH 40 Sanitary WYE (Cleanout)	EA	1	
4" SCH 40 Sanitary 45° ELL	EA	4	
4" SCH 40 Sanitary 22.5° ELL	EA	0	
<b>Effluent &amp; Distribution Pipe</b>			
<i>Note: Use either SCH 40 or SDR 35 fittings depending on type of pipe used.</i>			
4" SDR 35 or SCH 40 PCV Pipe	LF	65	
4" Ø ASTM 2729 Perforated Pipe	LF	280	
4" SCH 40 Pressure TEE (Distribution)	EA	0	
4" Sanitary 90° ELL	EA	5	
4" Sanitary 45° ELL	EA	0	
4" Sanitary 22.5° ELL	EA	0	
4" Threaded Coupler (Inspection Pipes)	EA	4	
4" Threaded Cap (Inspection Pipes)	EA	4	

### Sources/Notes:

1. All quantities are approximate and based on design measurements; field measurements and quantities may vary. Estimates are for planning purposes only.

Abbreviations: EA= Each, LF= Linear feet, SF= Square feet, O.E. = Or Equal



By:  
Headwater Engineering  
P.O. BOX 1293  
Craig, CO 81626



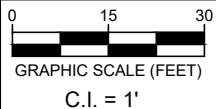
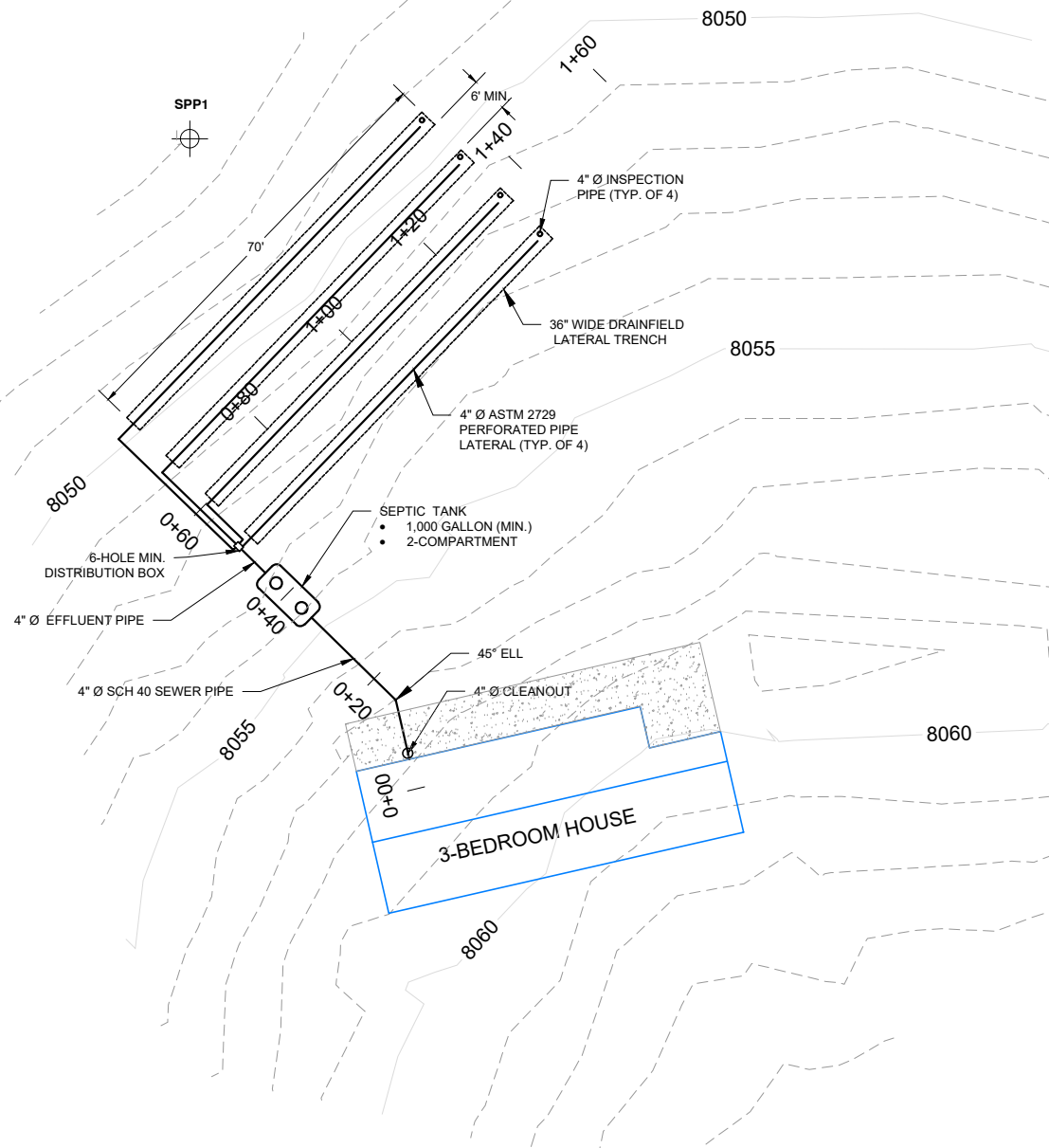
For:  
Chris Reed &  
Keelin Regan-Reed  
1807 Dorothy Circle  
Longmont CO 80503

## ROUTT COUNTY OWTS DESIGN NOTES & QUANTITIES

SITE ADDRESS:  
34130 Whiffle Tree Trail  
Oak Creek, CO 80467

**SHEET**  
**2 OF 5**

File:	Revised:
Drawn By: WAM	Checked By: WAM
Date: 8/3/22	Revised:



**LEGEND**  
SOIL PROFILE PIT

By:  
Headwater Engineering  
P.O. BOX 1293  
Craig, CO 81626



For:  
Chris Reed &  
Keelin Regan-Reed  
1807 Dorothy Circle  
Longmont CO 80503

## ROUTT COUNTY OWTS DESIGN SYSTEM PLAN

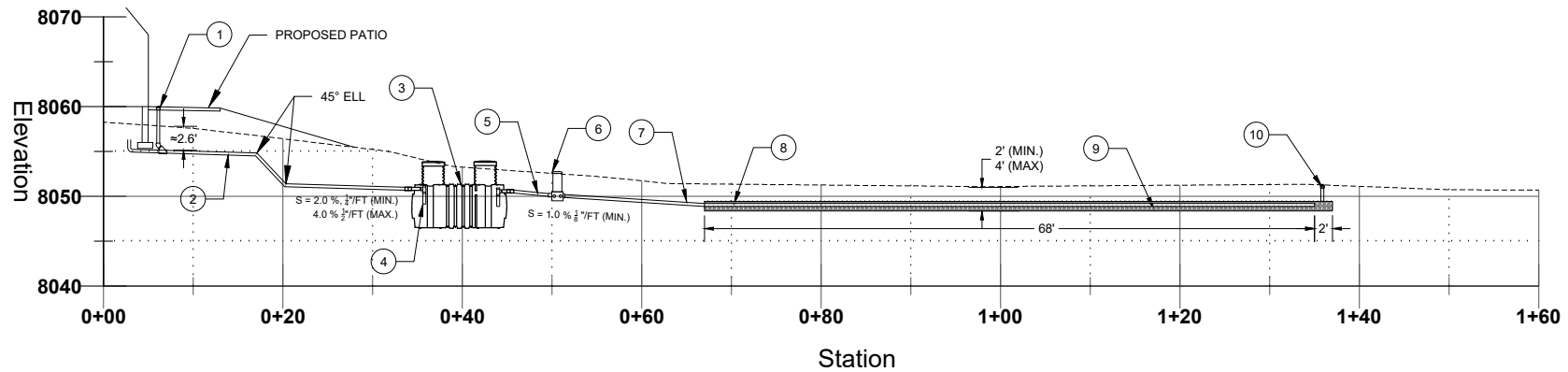
SITE ADDRESS:  
34130 Whiffle Tree Trail  
Oak Creek, CO 80467

**SHEET**  
**3 OF 5**

File:	Revised:
Drawn By: WAM	Checked By: WAM
Date: 8/3/22	Revised:



**PROFILE**  
SCALE: 1" = 20'



**PROFILE CALLOUT NOTES**

- |  |   |
|--|---|
| <p>① 4" Ø CLEANOUT WITHIN 5' OF BUILDING, (2-WAY CLEANOUT OPTIONAL)</p> <p>② 4" Ø SCH 40 SEWER PIPE L= ±35'</p> <p>③ 1,000 GALLON, MIN. SEPTIC TANK, (2' COVER TYP.)</p> <p>④ DROP PIPE 14" BELOW INLET AND OUTLET</p> <p>⑤ 4" Ø SDR 35 OR SCH 40 EFFLUENT PIPE<br/>L = ±5' S = 1% (<math>\frac{1}{8}</math>" / FT MIN.)</p> | <p>⑥ 6-HOLE DISTRIBUTION BOX, WITH RISER, SPEED LEVELERS &amp; CONCRETE AROUND BASE</p> <p>⑦ 4" Ø SDR 35 OR SCH 40 DISTRIBUTION PIPE (TOTAL LENGTH ±60')</p> <p>⑧ 4" Ø ASTM 2729 PERFORATED PIPE</p> <p>⑨ WASHED DRAIN ROCK SIZED: <math>\frac{1}{2}</math>" (MIN), 2 <math>\frac{1}{2}</math>" (MAX)</p> <p>⑩ 4" Ø INSPECTION PIPE (TYP. OF 4)</p> |
|--|---|

By:  
Headwater Engineering  
P.O. BOX 1293  
Craig, CO 81626



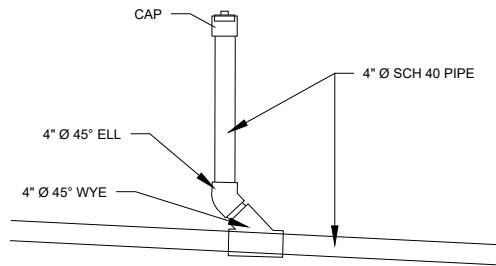
For:  
Chris Reed &  
Keelin Regan-Reed  
1807 Dorothy Circle  
Longmont CO 80503

**ROUTT COUNTY OWTS DESIGN  
PROFILE & DETAILS**

SITE ADDRESS:  
34130 Whiffle Tree Trail  
Oak Creek, CO 80467

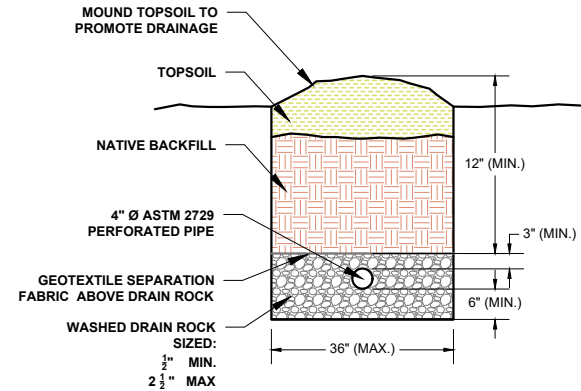
**SHEET  
4 OF 5**

File:	Revised:
Drawn By: WAM	Checked By: WAM
Date: 8/3/22	Revised:



**TYPICAL CLEANOUT DETAIL**

SCALE: 5/16" = 1"



**TYPICAL DRAINFIELD TRENCH SECTION**

SCALE: 5/16" = 1"

## OFFSET DISTANCES

Table 7-1 Minimum Horizontal Distances in Feet Between Components of an On-Site Wastewater Treatment System Installed After November 15, 1973 and Water, Physical and Health Impact Features

	Spring, Well, Suction Line	Potable Water Supply Line	Potable Water Supply Cistern	Dwelling Occupied Building	Property Lines, Piped or Lined Irrigation Ditch	Subsurface Drain, Intermittent Irrigation Lateral, Drywell, Stormwater Infiltration Structure	Lake, Water Course, Irrigation Ditch, Stream, Wetland	Dry Gulch, Cut Bank, Fill Area (from Crest)	Septic Tank
Septic Tank, Higher Level Treatment Unit, Dosing Tank, Vault	50'	10'	25'	5'	10'	10'	50'	10'	—
Building Sewer or Effluent Lines	50'	10'	25'	0'	10'	10'	50'	10'	—
STA Trench, STA Box, Unlined Sand Filter, Sub-surface Dispersal System, Steepage Pit	100'	25'	25'	20'	10'	25'	50'	25'	5'
Lined Sand Filter	60'	10'	25'	15'	10'	10'	25'	10'	5'
Lined Evapo-transpiration Field or Outside of Berm of Lined Wastewater Pond	60'	10'	25'	15'	10'	10'	25'	10'	5'
Unlined Sand Filter in Soil With a Percolation Rate Slower than 60 Minutes per Inch, Unlined or Partially Lined Evapotranspiration System, Outside of Berm of Unlined Wastewater Pond, or System Not Relying on STA for Treatment Other than Aeration	100'	25'	25'	15'	10'	25'	25'	15'	10'

Table 7-2 On-site Wastewater Treatment System Design Consideration and Treatment Requirements – Separation Distances from Soil Treatment Area

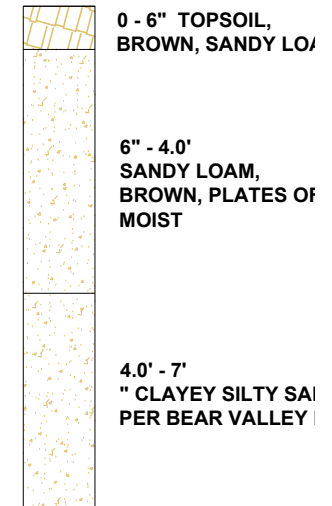
Requirements – Separation Distances		Pressure Dosing Required			
ITEM	OWTS DESIGN CONSIDERATION	Treatment Levels 1 and 2	Treatment Level 2N	Treatment Level 3	Treatment Level 3N
	<u>Horizontal Separation Distances</u>				
1	Distance from soil treatment area to on-site well	Greater than or equal to 100 feet	Greater than or equal to 100 feet	Greater than or equal to 100 feet	Greater than or equal to 75 feet
2	Distance from soil treatment area to pond, creek, lake, or other surface water feature	Greater than or equal to 50 feet	Greater than or equal to 25 feet	Greater than or equal to 25 feet	Greater than or equal to 25 feet
3	Distance from soil treatment area to dry gulch or cut bank	Greater than or equal to 25 feet	Greater than or equal to 10 feet	Greater than or equal to 10 feet	Greater than or equal to 10 feet
	<u>Vertical Separation Distances</u>				
4	Depth in feet from soil treatment area infiltrative surface to restrictive layer or ground water	4 feet (3 feet with pressure dosing)	Greater than or equal to 2 feet	Greater than or equal to 2 feet	Greater than or equal to 2 feet

NOTE: Treatment levels are defined in Table 6-3. Reductions in separation distances with higher level treatment may be granted only if the local public health agency regulations have included provisions for operation and maintenance.

1 Prior to approval, all setback distance reductions to the 100 foot requirement for wells and soil treatment areas must be in full compliance with the minimum standards and variance requirements of the State of Colorado Division of Water Resources: Rules and Regulations for Water Well Construction, Pump Installation, Cistern Installation, and Monitoring and Observation Hole/Well Construction.

## SPP 2 SOIL PROFILE LOG

N.T.S.



By:  
Headwater Engineering  
P.O. BOX 1293  
Craig, CO 81626



For:  
Chris Reed &  
Keelin Regan-Reed  
1807 Dorothy Circle  
Longmont CO 80503

## ROUTT COUNTY OWTS DESIGN DETAILS

SITE ADDRESS:  
34130 Whiffle Tree Trail  
Oak Creek, CO 80467

**SHEET**  
**5 OF 5**