SOILS AND GEOLOGY REPORT

Telle Subdivision

El Paso County, Colorado

February 06, 2021

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This Geology and Soils Report was completed for Clifford J. Telle and Nicole T. Telle ("Applicants") by Julia Murphy of Groundwater Investigations LLC ("GWI"), a Professional Geologist, in accordance with the requirements of the El Paso County Land Development Code and the Amendment to the Land Development Code dated August 27, 2019 Section 8.4.9. Ms. Murphy has over 25 years' experience in hydrogeologic analysis. Locally, she has evaluated geology, geologic hazards, and water supply for subdivisions in El Paso County for over 15 years.

1.0 PROJECT DESCRIPTION

The Subdivision Site consists of approximately 10.12 acres located in the SE ¼ SE ¼ of Section 10, Township 12 south, Range 66 West of the 6th P.M., El Paso County, Colorado and also described as Lot 4 of the Bridle Bit Ranch Subdivision (Figure 1). The Applicants intend to subdivide the property into two lots containing 5.055 acres "Lot 1" and 5.066 acres "Lot 2" (Figure 2). A new single-family home and driveway will be situated in the northern portion of Lot 1. There is an existing home on the eastern portion of the Subdivision Site (Lot 2) having the address of 12730 Bridle Bit Road, Colorado Springs, CO 80908; no additional improvements are proposed for this lot.

A prior study of the Geology, Hydrogeology and Soils for the Bridle Bit Ranch Subdivision was completed by Lincoln DeVore and submitted to El Paso County Planning in or around 1979. GWI has reviewed this report and concurs with its findings and opinions.

2.0 GENERAL SITE CONDITIONS

Ponderosa pines and scrub oak cover the northern portion of Lot 1 where there are areas of moderate slopes and upland areas that form a northeast to southwest trending ridge. The flat lying ridge top is the proposed location for a new residence. Southeast of the uplands is a gently southeast sloping terrain covered in native grasses, sparser trees, scrub oak and small cactus. This is the location has been selected of the Onsite Wastewater Treatment System (OWTS) for the new residence. To the west, there are two electrical easements that cross Lot 1 in a north-south direction that are sufficiently setback from the proposed residence and OWTS (Figure 3). Lot 2 has an existing home with a well and septic; no modifications or additional structures are proposed for this lot. Dense coverage of ponderosa pines, scrub oak, and native grasses cover

most of the north and northeast portion Subdivision Site. The low lying areas to the south and southeast are dominated by native grasses with some small cactus and sparse trees. Minor drainages exist on the site and surface runoff is directed to the south and southwest.

3.0 GEOLOGIC DESCRIPTION

The uplifting of the southern Rocky Mountains began in the Late Paleozoic. Most growth occurred during the Laramide Orogeny and the Late Mesozoic Early Cenozoic. The Denver Basin to the east is a result of a succession of both orogenic and epeirogenic tectonic events that now form existing structural basin which is a primary source of water. This asymmetrical structural basin is shallow-dipping toward the northeast in the area of the Subdivision Site. The uppermost materials are that of the Dawson Formation deposited during the early to possibly middle Eocene (Thorson, 2003). The Rampart Range fault is situated about 8 miles west of the Subdivision Site forms the eastern margin of the Rampart Range north of Colorado Springs (Figure 3)

Two surficial units were mapped at the Subdivision Site by the Colorado Geological Survey and shown in Figure 4 include Facies Unit 4 of the Dawson formation ($TKda_4$) and Alluvial deposits derived from the weathering of the Dawson Formation (Qas_1)(Thorson 2003). These are described as:

$TKda_4$ **Dawson Formation of Eocene age.** Facies Unit 4: Dominated by thick-bedded to massive, cross-bedded, light colored arkose, pebbly arkose, and arkose pebble conglomerate. Beds of white to light tan fine-med grained feldspathic friable sandstones. The sandstones are poorly sorted and have high clay contents which are usually thinly bedded.

Qas1 **Alluvium of Holocene and late Pleistocene age.** Includes deposits of both sheet flow and fluvial origin which collectively form general broad thin alluvial veneers on slopes that were graded westward toward Monument Creek. Estimated thickness 5-15 feet.

3.1 Soils

The National Resource Conservation Service (NRCS) identified two soil types on the Property.

Type	Description
40	Kettle gravely loamy sand, 3 to 8 % slopes
93	Tomah-Crowfoot complex 8 to 15% slopes

The natural drainage class for the Kettle gravely loamy sand (Type 40) is "well drained" to "somewhat extensively drained" therefore the runoff potential is low (NRCS, 2018)(Figure 5). Tomah-Crowfoot complex is well drained having a medium potential for runoff. The soils in this region are all classified as Hydrologic Soils Group B. "Group B soils are described as having a moderate infiltration rate when thoroughly wet. These soils consist primarily of moderately deep or deep, moderately well drained to well drained soils. The texture is fine to course and can transmit water at a moderate rate. As the surface runoff is slow, there is a low-to-moderate hazard for erosion" (USDA, 1981).

3.2 OWTS Field Investigation

The soils investigation on Lot 1 occurred on June 10, 2019 by Parr Engineering and Consulting. Two profile pit locations were selected to evaluate the suitability of the subsurface soil properties for onsite wastewater treatment (Figure 6). Each profile pit was excavated to a maximum depth of 7.5 feet below ground surface. The soils were visually classified, and samples collected from select intervals and evaluated in accordance with the U.S. Department of Agriculture (USDA) standards for soil properties. Soils in the profile test pits were identified as Sand Clay, Sandy Clay Loam and Sandy Loam.

Soil analysis results indicate both OWTS sites on Lot 1 will require an engineered system due to encountering a sandy clay layer (USDA Type 4) at 3.5 and 3.0 feet below ground surface in Test Pits 1 and 2, respectively. Details of the OWTS evaluation is in the OWTS Report (GWI, 2021).

4.0 DRAINAGE

The Subdivision Site is situated within the Kettle Creek Drainage Basin. The elevation across the Subdivision Site ranges from 7064 ft above mean sea level (amsl) in the southeast corner to 7140 ft amsl atop of knolls in the northeast corner (Figure 6). Runoff during rain events occurs as sheetwash that flows primarily towards the southeast, collecting in successive drainages and discharge to Monument Creek.

Lot 1 contains isolated areas of moderate slopes on the northern portion of the lot. A ridge that trends from northeast to southwest the northern portion of the lot is the proposed location for the new residence. Water drains off of this ridge along the side slopes to the northwest and southeast. The ridge separates two site-specific drainage areas identified as Basin B and C (Whitehead 2020, Figure 6).

5.0 GEOLOGIC HAZARDS

The Subdivision Site was evaluated for geologic hazards that may impact development. Hazards presented in the El Paso County Land Development Code including: mining, high water table or polluted water, landfills, fill areas, flooding, contamination; airports and major utility facilities, surface water, and landslides were evaluated and were not identified within the Subdivision Site. The Subdivision Site does not lie within the 100 or 500-year floodplain. The FEMA Map is presented in Figure 7.

Potential development constraints include: cut slope stability; soils and bedrock containing layers and lenses of expansive clay minerals; erosion. Additional investigation and analysis will be needed for the foundation design, floor systems, subsurface drainage, and roadway/pavements.

5.1 Grading

There will be grading and foundation excavation for the proposed single-family residence on Lot 1. This will involve the removal of debris, grading, and road construction (Whitehead 2020). Depth to bedrock was not determined in the area identified for the proposed home but is likely shallow. It is anticipated that on the ridges that formational bedrock may be at a depth of one or two feet (Lincoln 1979).

The bedrock is described as generally permeable, well drained, and has good foundation characteristics; excavation may be difficulty even though the arkoses are friable and easily eroded on weathered outcrops.

The site contains isolated areas of moderate slopes. Stability of cut slopes should be addressed if proposed at the site. The services of a geotechnical consultant should be used to evaluate adequate building setbacks and other methods to reduce potential hazards associated with possible slope instabilities from erosion as arkoses are easily eroded on exposed weathered outcrops.

5.2 Erosion

The soil types observed at the Subdivision Site are susceptible to erosion by water/frost and wind. Minor wind erosion resulting in dust may occur during construction and grading and can be mitigated by standard dust suppression methods and revegetation. Loosely compacted soils and cut slopes will be suspectable to water erosion from sheet wash and potential rill development. Stabilization of cut slopes should be addressed by a geotechnical engineer.

5.3 Expansive Soils

Within the 2 profile pits a clay layer was encountered at 3 and 3.5 feet bgs of 0.5 to 1-foot in thickness. Although the samples were collected about 20 feet lower in elevation of the proposed residential location, it highlights the variability in the local soils within the Dawson Formation and possible expansive soils. Additional borings will be necessary prior to foundation excavation and subsequentially re-evaluated upon completion of the foundation excavation and prior to the placement of any framework. If expansive soils are encountered, over excavation of expansive soils is recommended and replacement with non-expansive structural fill should extend at least four feet beneath foundation bearing elevations and floor slabs, and four feet laterally from foundation walls.

5.3 Surface Water and Groundwater

Based on the field observations, review of the Monument Quadrangle and Google Earth images dating back to September 1999, springs do not appear to occur on the subject site. Groundwater was not encountered within the soil profile pits. As the new residence is proposed on top of a ridge, shallow groundwater would not be likely, however fluctuations in subsurface moisture conditions may occur due to rainfall and landscape irrigation and if clay layers common to the Dawson Formation exist, perched groundwater above clay lenses may occur.

The primary source for water for the subdivision is groundwater from the Denver Basin Aquifers. The uppermost aquifer is the Dawson aquifer. Underlying the Dawson Aquifer is the Denver Aquifer. The existing home on Lot 2 has an existing well having permit 116298 completed into the Dawson aquifer. The driller reached groundwater at 180 feet bgs. The well for the proposed home will be completed in the Denver aquifer.

`6.0 MINERAL RESOURCES

Colorado Geological Mineral Resources Derivative Map indicates a low potential to contain economically viable mineral resources.

7.0 CONCLUSIONS

The site contains isolated areas of moderate slopes but is not exposed to any geologic hazards or unusual geotechnical constraints that would preclude the proposed residential use and density.

The local geology is based on NRCS Soil Survey data, which is typically valid for only the uppermost five feet below the ground surface, plus two test pits excavated to a depths of 7.5 feet bgs. The data presented on the OWTS in this report is specific to the locations of the profile pit and can vary considerably across the proposed waste treatment site. Potential development constraints include soils and bedrock containing layers and lenses of expansive clay minerals, erosion, slope stability and excavation difficulties of hard bedrock sandstones. Additional investigations including deep borings and their analyses will be necessary for the purpose in foundation design, floor systems, subsurface drainage, and pavements.

REFERENCE MATERIALS

Coloradogeologicalsurvey.org. /geologic-hazards/abandoned-mine-lands/maps

Colorado Geological Survey 1974. Potentially swelling Soil and Rock in the Front Range Urban Corridor, Colorado.

Colorado Geological Survey 1974. Atlas and Sand, Gravel, and Quarry Aggregate Resources Colorado Front Range Counties SB-5B

Federal Emergency Management Agency (FEMA). December 12, 2018. https://www.fema.gov/national-flood-hazard-layer-nfhl; nfhl Viewer.

Groundwater Investigations LLC (GWI), 2021. Onsite Wastewater Treatment System Evaluation.

Lincoln DeVore 1979. Geology, Hydrogeology & Soils Bridle Bit Ranch Subdivision, El Paso County, Colorado.

Mineral Resources. https://cologeosurvey.maps Mineral Resource Potential Derivative Mapping.

Natural Resource Conservation Service (NRCS), August 21, 2017. Web Soil Survey. United States Department of Agriculture: https://websoilsurvey.nrcs.usda.gov

Parr Engineering and Consulting Inc. June 18, 209. Subsurface Soil Investigation JN 19.231

Thorson, Jon P., 2003. Geologic Map of the Monument Quadrangle, El Paso County, Colorado. Colorado Geological Survey Open -File Report 02-04.

United States Department of Agriculture (USDA) Soil Conservation Service June 1981 Soil Survey El Paso County Colorado

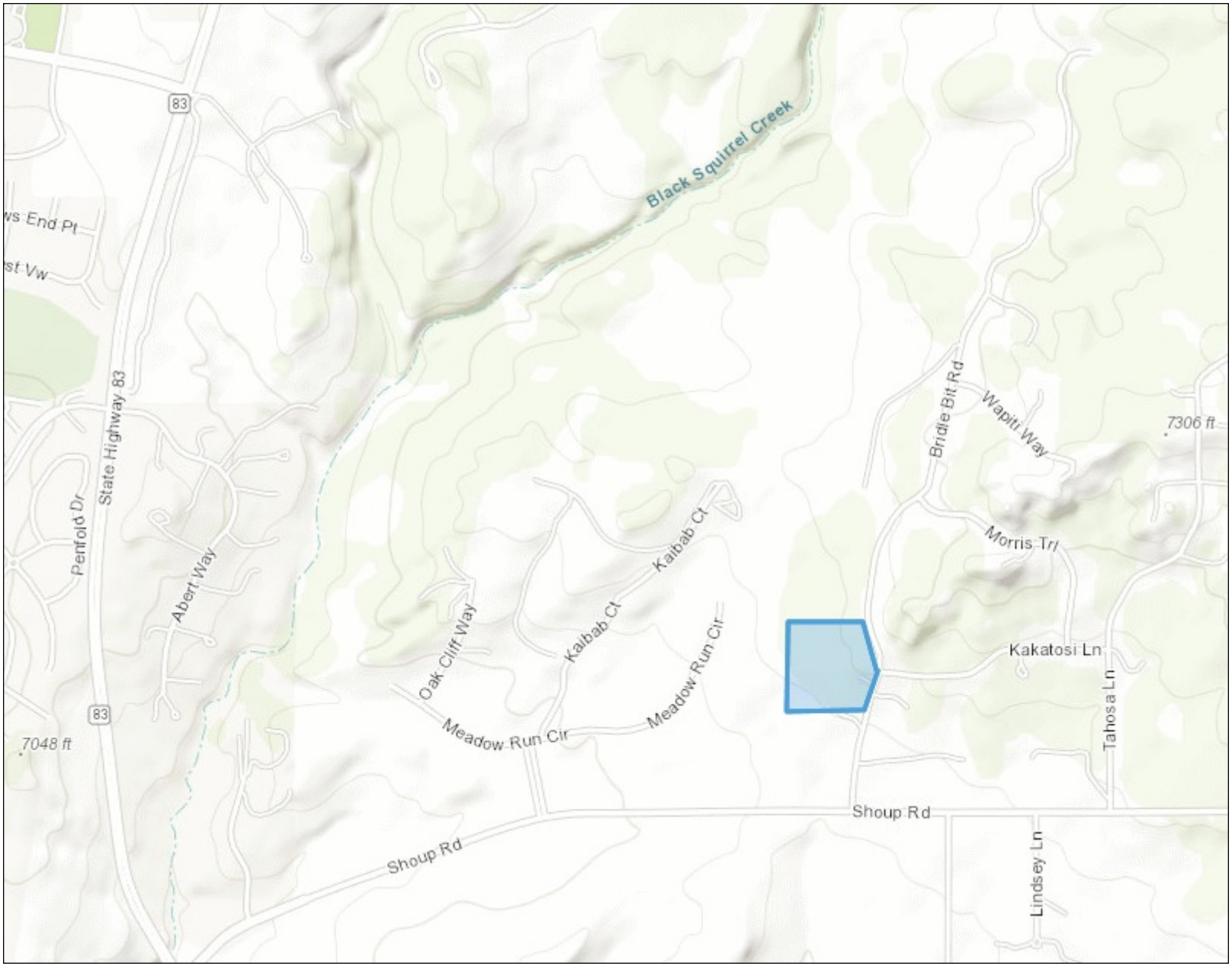
Wait, T.C. & White, J.L., 2006. Rockfall Hazard Susceptibility in Colorado Springs, El Paso County, Colorado. Colorado Geological Survey, Open-File Report 06-3

Whitehead Engineering LLC November 2020. Drainage Letter for Telle Subdivision.

CDSS
Colorado's Decision Support Systems

PROPERTY LOCATION

FIGURE 1



Legend

County

Location

Notes

12730 Bridle Bit Road
SE1/4 SE1/4 Sec10 T12S R66W

2,339 0 1,169 2,339 Feet

1: 14,032

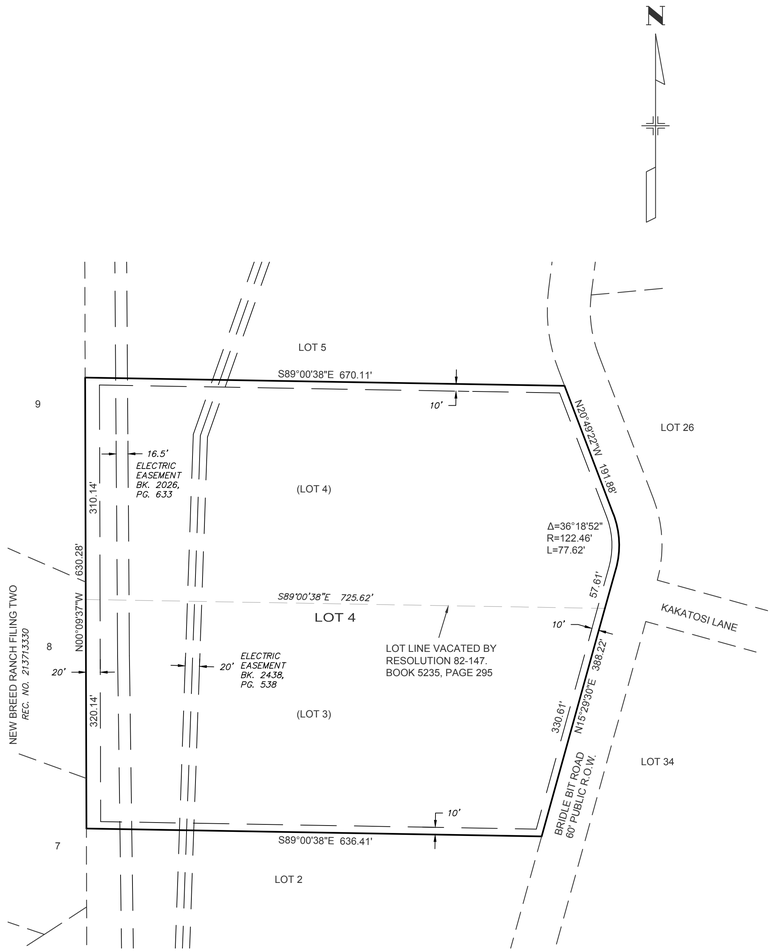
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Date Prepared: 5/17/2019 2:41:02 PM

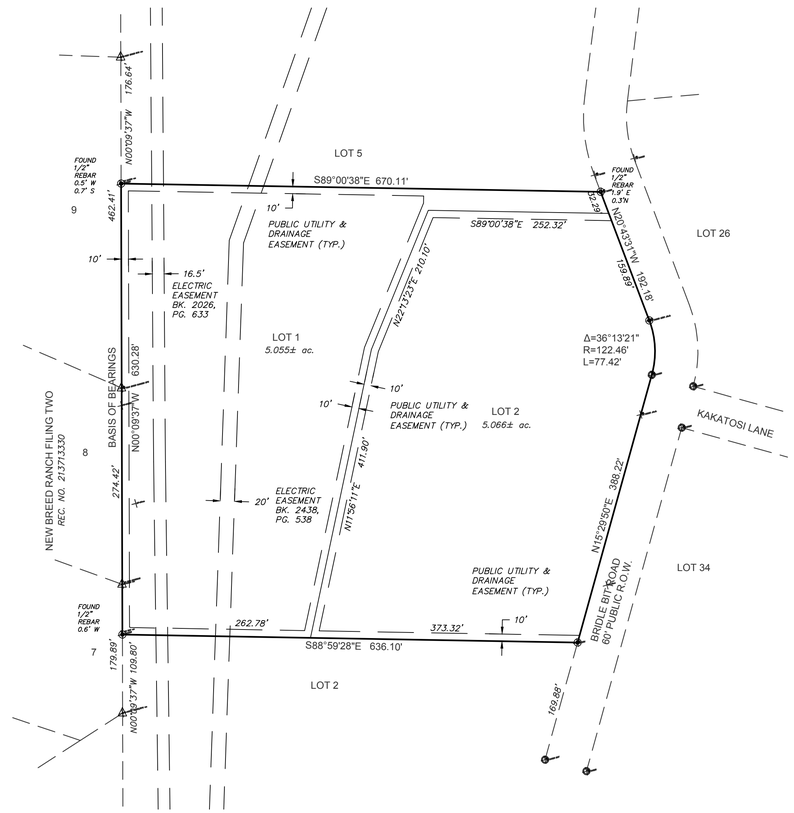
BRIDLE BIT RANCH SUBDIVISION FILING NO. 1A

A VACATION AND REPLAT OF LOTS 3 AND 4 "BRIDLE BIT RANCH"
IN THE SOUTHEAST QUARTER OF SECTION 10, T12S, R66W, 6th P.M.
EL PASO COUNTY, COLORADO

FIGURE 2



AS PLATTED / VACATED



AS REPLATTED

NOTES:

1. STRUCTURAL FOUNDATIONS ON THE LOTS IN THIS SUBDIVISION SHALL BE DESIGNED BY A COLORADO REGISTERED PROFESSIONAL ENGINEER.
2. INDIVIDUAL WELLS ARE THE RESPONSIBILITY OF EACH PROPERTY OWNER. PERMITS FOR INDIVIDUAL WELLS MUST BE OBTAINED FROM THE STATE ENGINEER WHO BY LAW HAS THE AUTHORITY TO SET CONDITIONS FOR THE ISSUANCE OF THESE PERMITS.
3. SEWAGE TREATMENT IS THE RESPONSIBILITY OF EACH INDIVIDUAL PROPERTY OWNER. THE EL PASO COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENT MUST APPROVE EACH SYSTEM AND IN SOME CASES THE DEPARTMENT MAY REQUIRE AN ENGINEERED DESIGN PRIOR TO PERMIT APPROVAL..
4. THE FOLLOWING REPORTS HAVE BEEN SUBMITTED IN ASSOCIATION WITH THE FINAL PLAT FOR THIS SUBDIVISION AND ARE ON FILE AT THE COUNTY DEVELOPMENT SERVICES DEPARTMENT: DRAINAGE REPORT; WATER RESOURCES REPORT; WASTEWATER DISPOSAL REPORT; GEOLOGY AND SOILS REPORT; FIRE PROTECTION REPORT.
5. ALL PROPERTY OWNERS ARE RESPONSIBLE FOR MAINTAINING PROPER STORM WATER DRAINAGE IN AND THROUGH THEIR PROPERTY. PUBLIC DRAINAGE EASMENTS AS SPECIFICALLY NOTED ON THE PLAT SHALL BE MAINTAINED BY THE INDIVIDUAL LOT OWNERS UNLESS OTHERWISE INDICATED. STRUCTURES, FENCES, MATERIALS OR LANDSCAPING THAT COULD IMPEDE THE FLOW OR RUNOFF SHALL NOT BE PLACED IN DRAINAGE EASEMENTS.
6. MAILBOXES SHALL BE INSTALLED IN ACCORDANCE WITH ALL EL PASO COUNTY DEPARTMENT OF TRANSPORTATION AND UNITED STATES POSTAL SERVICE REGULATIONS.
7. THE OWNER, ITS SUCCESSORS AND ASSIGNS SHALL ADVISE THE FUTURE OWNERS OF THESE LOTS OF ALL APPLICABLE REQUIREMENTS OF THE DETERMINATION OF WATER RIGHT RECORDED AT RECEPTION NO. _____.
8. WATER IN THE DAWSON AQUIFER IS ALLOCATED BASED ON A 100 YEAR AQUIFER LIFE; HOWEVER, FOR EL PASO COUNTY PLANNING PURPOSES, WATER IN THE DAWSON AQUIFER IS EVALUATED BASED ON A 300 YEAR AQUIFER LIFE, WHICH IS BASED ON AN ALLOCATION APPROACH. APPLICANTS, ALL FUTURE OWNERS IN THE SUBDIVISION SHOULD BE AWARE THAT THE ECONOMIC LIFE OF A WATER SUPPLY BASED ON WELLS IN A GIVEN DAWSON BASIN AQUIFER MAY BE LESS THAN EITHER THE 100 YEARS OR 300 YEARS INDICATED DUE TO ANTICIPATED WATER LEVEL DECLINES. FURTHERMORE, THE WATER SUPPLY PLAN SHOULD NOT RELY SOLELY UPON NON-RENEWABLE AQUIFERS AND ALTERNATIVE RENEWABLE WATER RESOURCES SHOULD BE ACQUIRED AND INCORPORATED IN A PERMANENT WATER SUPPLY PLAN THAT PROVIDES FUTURE GENERATIONS WITH A WATER SUPPLY.
9. THE DEVELOPER SHALL COMPLY WITH FEDERAL AND STATE LAWS, REGULATIONS, ORDINANCES, REVIEW AND PERMIT REQUIREMENTS, AND OTHER AGENCY REQUIREMENTS, IF ANY, OF APPLICABLE AGENCIES INCLUDING, BUT NOT LIMITED TO, THE COLORADO DEPARTMENT OF WILDLIFE, COLORADO DEPARTMENT OF TRANSPORTATION, U.S. ARMY CORP. OF ENGINEERS, THE U.S. FISH AND WILDLIFE SERVICE REGARDING THE ENDANGERED SPECIES ACT.
10. THE ADDRESSES EXHIBITED ON THIS PLAT ARE FOR INFORMATIONAL PURPOSES ONLY. THEY ARE NOT THE LEGAL DESCRIPTION AND ARE SUBJECT TO CHANGE.
11. NO DRIVEWAY SHALL BE ESTABLISHED UNLESS AN ACCESS PERMIT HAS BEEN GRANTED BY EL PASO COUNTY. INDIVIDUAL LOT PURCHASERS ARE RESPONSIBLE FOR CONSTRUCTING DRIVEWAYS, INCLUDING THE NECESSARY CULVERTS.
12. PROPERTY WITHIN THIS SUBDIVISION IS SUBJECT TO THE TERMS OF THE EL PASO COUNTY TRANSPORTATION IMPROVEMENT FEE RESOLUTION (RESOLUTION 16-454) AS AMENDED. FEES FOR EACH LOT WITHIN THIS SUBDIVISION SHALL BE PAID IN FULL AT THE TIME OF BUILDING PERMIT ISSUANCE.
13. THIS PROPERTY IS LOCATED WITHIN AND SERVICED BY THE MOUNTAIN VIEW ELECTRIC ASSOCIATION SERVICE DISTRICT, THE FALCON FIRE PROTECTION DISTRICT, EL PASO COUNTY SCHOOL DISTRICT NO. 49 AND THE BLACK HILLS ENERGY CORPORATION SERVICE DISTRICT.
14. DRAINAGE EASEMENTS; NO PERMANENT DWELLING UNIT, TEMPORARY STRUCTURES, INCLUDING SHEDS AND OUT BUILDING, WATER WELL OR WASTEWATER TREATMENT SYSTEM MAY BE CONSTRUCTED IN THE DRAINAGE EASEMENTS SHOWN ON THIS PLAT. DRAINAGE CULVERTS AND FENCES THAT DO NOT BLOCK OR IMPEDE STORM WATER RUNOFF ARE ALLOWED IN AND ACROSS DRAINAGE EASEMENTS.
15. SOILS, GEOLOGY, GEOLOGIC HAZARD, AND WASTEWATER STUDY FOR THIS SUBDIVISION DATED JANUARY 16, 2019, PREPARED BY RMG AND FOUND IN DSD FILE # SP-19-____
16. THIS PROPERTY IS LOCATED WITHIN ZONE X "AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOOD PLAIN" AS DETERMINED BY THE FLOOD INSURANCE RATE MAP NUMBER 08041C0295 G, EFFECTIVE DATE DECEMBER 7, 2018.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE WEST LINE OF THE ORIGINAL LOTS 3 AND 4 BRIDLE BIT RANCH, N00°09'37"W – 630.28'. THE DIRECTION IS BASED ON THE BRIDLE BIT PLAT AND THE LINE IS MONUMENTED AS SHOWN.

UNITS OF MEASURE ARE U.S. SURVEY FEET

○ *FOUND A 1/2" DIAMETER REBAR OR AS NOTED*

△ *FOUND 1/2" DIAMETER REBAR AND CAP "HANNIGAN PLS 25629"*

◉ *FOUND / SET A 5/8" DIAMETER REBAR, 18" IN LENGTH, WITH A 1-1/2" DIAMETER ALUMINUM CAP "LWA PLS 28658"*

TITLE NOTES:

RESEARCH FOR RECORDED RIGHTS OF WAY AND EASEMENTS WAS DONE BY .

THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY LWA LAND SURVEYING, INC. OR KEVIN M. O'LEARY.

THE PROPERTY IS SUBJECT TO THE TELEPHONE EASEMENT RECORDED IN BOOK 2026 AT PAGE 633 AND SHOWN HEREON.

THE PROPERTY IS SUBJECT TO THE ELECTRIC EASEMENT RECORDED IN BOOK 2438 AT PAGE 538 AND SHOWN HEREON.

BOARD OF COUNTY COMMISSIONERS CERTIFICATE:

THIS PLAT FOR SILVERADO RANCH FILING NO. 1 WAS APPROVED FOR FILING BY THE EL PASO COUNTY, COLORADO BOARD OF COUNTY COMMISSIONERS ON THIS ___ DAY OF _____, OF 2019, SUBJECT TO ANY NOTES SPECIFIED HEREON AND ANY CONDITIONS INCLUDED IN THE RESOLUTION OF APPROVAL. THE DEDICATIONS OF LAND TO THE PUBLIC, STREETS, TRACTS AND EASEMENTS ARE ACCEPTED, BUT PUBLIC IMPROVEMENTS THEREON WILL NOT BECOME THE MAINTENANCE RESPONSIBILITY OF EL PASO COUNTY UNTIL PRELIMINARY ACCEPTANCE OF THE PUBLIC IMPROVEMENTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE AND ENGINEERING CRITERIA MANUAL, AND THE SUBDIVISION IMPROVEMENTS AGREEMENT.

_____
PRESIDENT, BOARD OF COUNTY COMMISSIONERS DATE

_____
DIRECTOR, COUNTY PLANNING AND COMMUNITY DEVELOPMENT DATE

_____
COUNTY ASSESSOR DATE

BE IT KNOWN BY THESE PRESENTS:

THAT NICOLE T. TELLE IS THE OWNER OF THE FOLLOWING DESCRIBED TRACT OF LAND, TO WIT:

LOTS 3 AND 4, BRIDLE BIT RANCH, NOW KNOWN AS LOT 4, EL PASO COUNTY, COLORADO, AND VACATED BY RESOLUTION 82-147 AS RECORDED IN BOOK 5235 AT PAGE 295 OF THE EL PASO COUNTY RECORDS.

CONTAINING 10.12 ACRES, MORE OR LESS.

OWNERS CERTIFICATE:

NICOLE T. TELLE, BEING THE OWNER, MORTGAGEES, BENEFICIARIES OF DEEDS OF TRUST AND HOLDERS OF OTHER INTERESTS IN THE LAND DESCRIBED HEREIN, HAVE LAID OUT, SUBDIVIDED AND PLATTED SAID LANDS INTO LOTS AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF BRIDLE BIT RANCH SUBDIVISION FILING NO. 1A. ALL PUBLIC IMPROVEMENTS SO PLATTED ARE HEREBY DEDICATED TO PUBLIC USE AND SAID OWNER DOES HEREBY COVENANT AND AGREE THAT THE PUBLIC IMPROVEMENTS WILL BE CONSTRUCTED TO EL PASO COUNTY STANDARDS AND THAT PROPER DRAINAGE AND EROSION CONTROL FOR THE SAME WILL BE PROVIDED AT SAID OWNER'S EXPENSE, ALL TO THE SATISFACTION OF THE BOARD OF COUNTY COMMISSIONERS OF EL PASO COUNTY, COLORADO. UPON ACCEPTANCE BY RESOLUTION, ALL PUBLIC IMPROVEMENTS SO DEDICATED WILL BECOME MATTERS OF MAINTENANCE BY EL PASO COUNTY, COLORADO. THE UTILITY EASEMENTS SHOWN HEREON ARE HEREBY DEDICATED FOR PUBLIC UTILITIES, COMMUNICATION SYSTEMS AND OTHER PURPOSES AS SHOWN HEREON. THE ENTITIES RESPONSIBLE FOR PROVIDING THE SERVICES FOR WHICH THE EASEMENTS ARE ESTABLISHED ARE HEREBY GRANTED THE PERPETUAL RIGHT OF INGRESS AND EGRESS FROM AND TO ADJACENT PROPERTIES FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF UTILITY LINES AND RELATED FACILITIES.

IN WITNESS WHEREOF:

THE AFOREMENTIONED NICOLE T. TELLE, HAS EXECUTED THIS INSTRUMENT THIS _____ DAY OF_____ 2019.

_____
NICOLE T. TELLE

NOTARIAL:

STATE OF COLORADO)
COUNTY OF EL PASO) SS

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____ 2019 BY NICOLE T. TELLE.

MY COMMISSION EXPIRES: _____ _____
NOTARY PUBLIC

EASEMENTS:

SIDE AND REAR LOT LINES ARE HEREBY PLATTED WITH A TEN (10) FOOT EASEMENT FOR DRAINAGE AND PUBLIC UTILITIES ONLY, WITH THE SOLE RESPONSIBILITY FOR MAINTENANCE BEING VESTED WITH THE PROPERTY OWNERS.

SURVEYOR'S CERTIFICATION:

I, KEVIN M. O'LEARY, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON THE DATE OF THE SURVEY, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON; THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:10,000; AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISION, OR SURVEYING OF LAND AND ALL APPLICABLE PROVISIONS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE.

I ATTEST THE ABOVE ON THIS ___ DAY OF _____, 2019.

_____ _____
KEVIN M. O'LEARY DATE
COLORADO REGISTERED PLS #28658
FOR AND ON BEHALF OF
LWA LAND SURVEYING, INC.

RECORDING:

STATE OF COLORADO) SS
COUNTY OF EL PASO)

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD AT MY OFFICE AT _____ O'CLOCK ___ M., THIS _____ DAY OF _____, 2019, AND IS DULY RECORDED AT RECEPTION NO. _____
OF THE RECORDS OF EL PASO COUNTY, COLORADO.

CHUCK BROERMAN
BY: _____
COUNTY CLERK AND RECORDER

FEE: _____

SURCHARGE: _____

FEES:

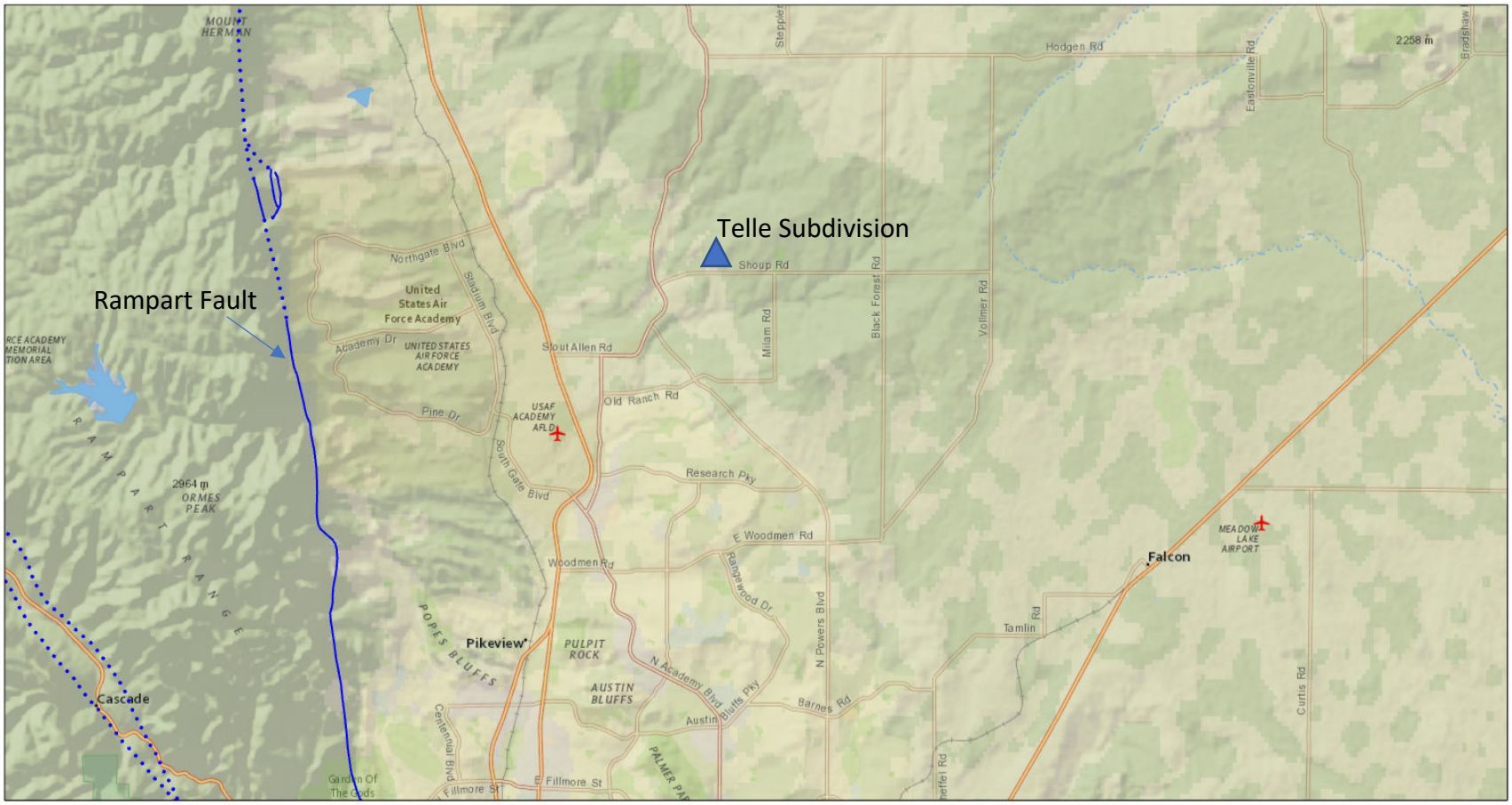
DRAINAGE FEES: _____
BRIDGE FEES: _____
SCHOOL FEES: _____
PARK FEES: _____

SF-19-___

PREPARED BY
LWA LAND SURVEYING, INC.
953 EAST FILLMORE STREET
COLORADO SPRINGS, COLORADO 80907
Phone (719) 636-5179

BRIDLE BIT.DWG
MARCH 11, 2019
PROJECT 18034
SHEET 1 OF 1

U.S. Geological Survey Quaternary Faults



2/7/2021, 6:32:26 PM

1:144,448

Fault Areas
- Class B
- historic
- late Quaternary
- latest Quaternary
- middle and late Quaternary

National Database
- Historic (< 150 years), well constrained location
- Historic (< 150 years), moderately constrained location
- Historic (< 150 years), inferred location
- Latest Quaternary (<15,000 years), well constrained location
- Latest Quaternary (<15,000 years), moderately constrained location
- Latest Quaternary (<15,000 years), inferred location
- Late Quaternary (< 130,000 years), well constrained location
- Late Quaternary (< 130,000 years), moderately contrained location
- Late Quaternary (< 130,000 years), inferred location
- Middle and late Quaternary (< 750,000 years), well constrained location
- Middle and late Quaternary (< 750,000 years), moderately constrained location
- Middle and late Quaternary (< 750,000 years), inferred location

0 1.25 2.5 5 mi
0 2.25 4.5 9 km

National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

USGS
National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp. | USGS |

FIGURE 3

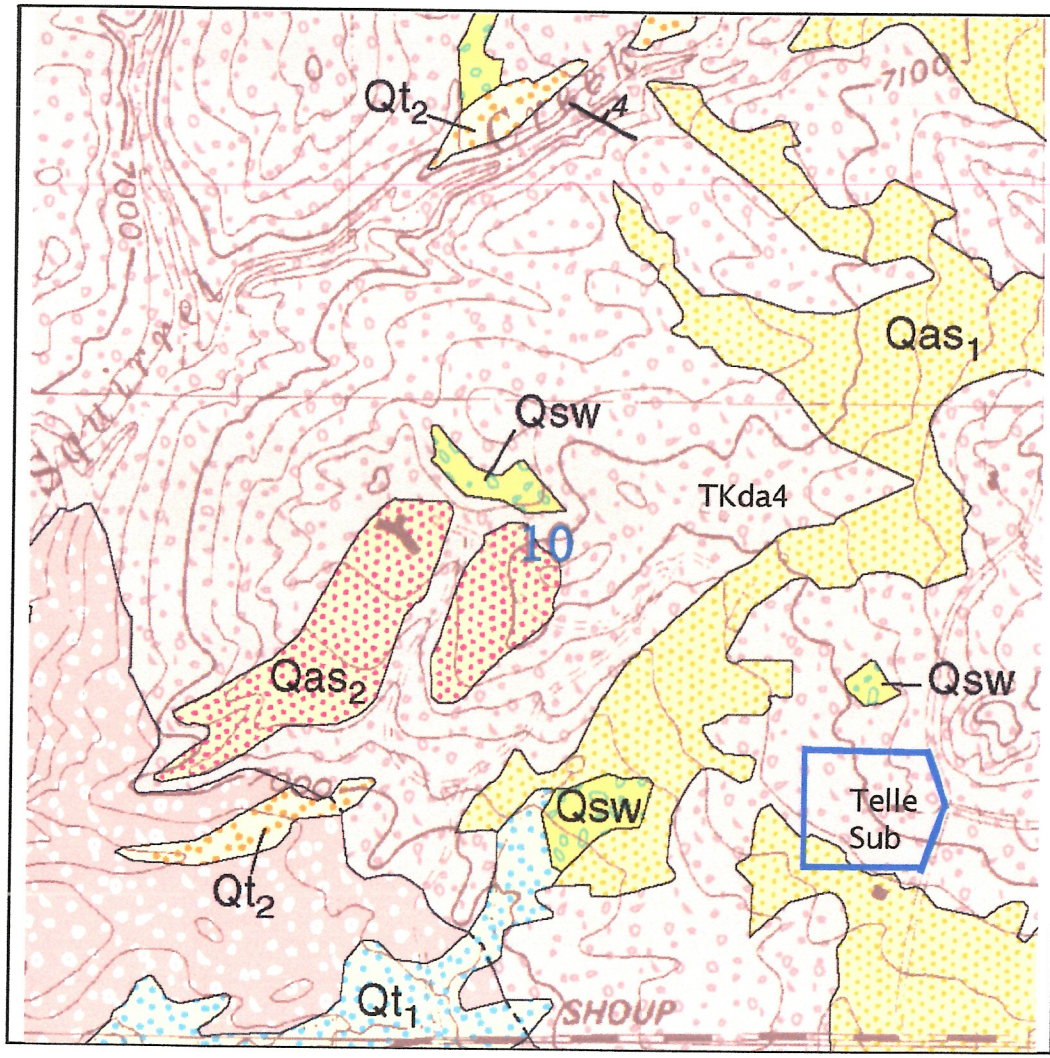
RAMPART FAULT

FIGURE 4

Geology

R66W Section 10 Township 12S Range 66W

T12S



TKda$_4$ **Facies unit four (Paleocene)**—Similar to facies unit one (TKda$_1$); dominated by very thick bedded to massive, cross-bedded, light colored arkoses, pebbly arkoses and arkosic pebble conglomerate; contains common white to light-tan, fine- to medium grained feldspathic cross-bedded friable sandstone, poorly sorted with high clay content, thin or medium bedded; wavy bedding and ripple cross-laminations common. Unit contains massive structureless mudflow beds that occasionally have dark-colored swampy soil zone tops. Contains rare interbeds of thin- to very thin-bedded gray claystone and sandy claystone, or dark-brown to brownish-gray, organic-rich siltstone to coarse sandstone containing plant fragments. Facies four is about 500 ft thick in the center of the quadrangle; it may thin towards the northwest and thicken towards the southeast.

Qas$_1$ **Younger alluvial-slope deposits (Holocene and late Pleistocene)**—Unit is similar in form and origin to Qas$_2$, but is poorly exposed and less extensive. It includes deposits of both sheet flow and fluvial origin, which collectively form general broad, thin alluvial veneers on slopes that were graded westward toward Monument Creek. Estimated thickness is 5–15 ft

Monument Quadrangle, OF 02-04

Custom Soil Resource Report
Soil Map

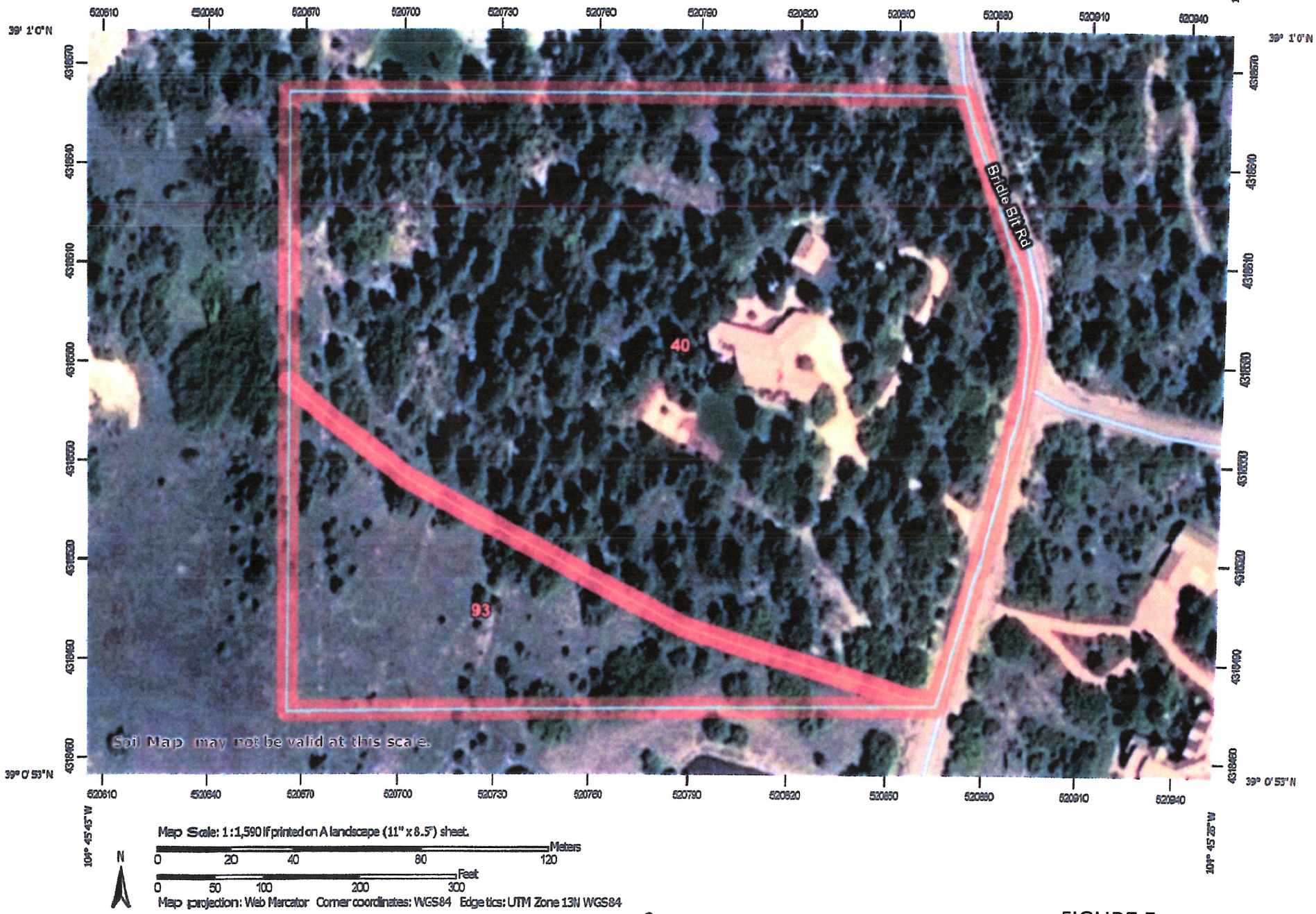
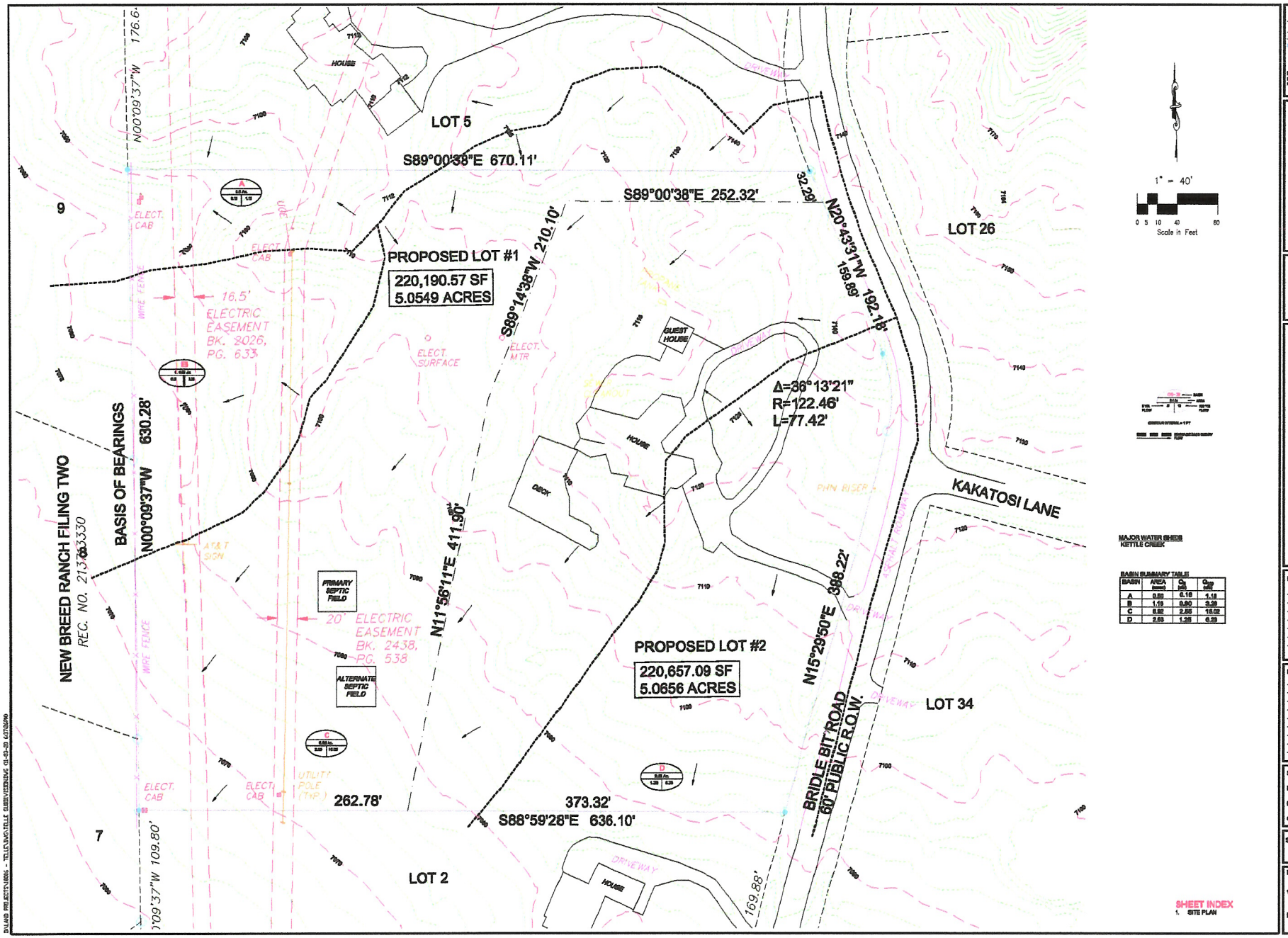


FIGURE 5



WHITEHEAD ENGINEERING, LLC
CONSULTING CIVIL ENGINEERS
P.O. Box 1251
COLORADO SPRINGS, CO 80901
PHONE (719) 351-0411

SHEET TITLE: DRAINAGE PLAN

PROJECT NAME: TELLE SUBDIVISION
EL PASO COUNTY, COLORADO

BENCHMARK:

ELEVATION = [illegible] (NGVD 29)

REVISIONS:

SCALE: 1" = 40'
DATE: 11-03-2020
DRAWN BY: DW
CHECKED BY: DW

SHEET NO: 1 OF 1

DRAWING NAME: Telle Subdivision
VIEW: Site Plan
PROJECT NO: 19006

FIGURE 6

National Flood Hazard Layer FIRMette

FEMA

39°1'9.68"N

104°45'50.49"W

104°45'13.03"W

39°0'41.72"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend FIGURE 7

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represen an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/17/2019 at 6:11:40 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.