Boulder County

Community Planning and Permitting

Courthouse Annex • 2045 13th Street • Boulder, Colorado 80302 • Tel: 303.441.3930 • Fax: 303.441.4856
Mailing Address: P.O. Box 471 • Boulder, Colorado 80306 • **www.bouldercounty.gov**

BOULDER COUNTY
BOARD OF COUNTY COMMISSIONERS
PUBLIC HEARING

April 1, 2025 at 9:30 a.m.

All Commissioners' public hearings and meetings will be offered in a hybrid format where attendees can join **through Zoom** or **in-person** at the Boulder County Courthouse, 3rd Floor, 1325 Pearl Street, Boulder.

PUBLIC HEARING

STAFF PLANNER: Amber Knotts, Planner I

STAFF RECOMMENDATION REGARDING:

Docket LU-23-0019/SPR-23-0036: Orris/Big Lake LLC Residence & Driveway

Proposal:	Limited Impact Special Use Review to permit 1,585 cubic yards of non-foundational earthwork for driveway construction, and Site Plan Review to construct a new 2,990-square-foot residence with 220 square feet of covered porch area on a vacant 37.7-acre parcel at 3310 County Road 96J.
Location:	3310 County Road 96J, approximately 4.0 miles west from Peak-to-Peak Hwy- Section 22, Township 2N, Range 73W
Zoning:	Forestry (F) Zoning District
Applicant:	Big Lake LLC (c/o Christine Orris)
Agent:	Sam Nishek (Barrett Studio)

STAFF RECOMMENDATION: Staff recommend that the Board of County Commissioners conditionally approve docket LU-23-0019/SPR-23-0036: Orris/Big Lake LLC Residence & Driveway.

PACKET CONTENTS:

Item	Pages
Staff Recommendation	1 – 31
Application Materials (Attachment A)	A1 – A110
Referral Responses (Attachment B)	B1 – B48
Public Comments (Attachment C)	C1

SUMMARY AND RECOMMENDATION:
This application for Limited Impact Special Review (LU) proposes 4,023 cubic yards of non-foundational earthwork to construct a driveway and Site Plan Review (SPR) for the construction of a 2,990-square-foot residence at 3310 County Road 96J (CR 96J). LU is required for the non-foundational earthwork portion of the application because it exceeds 500 cubic yards. The proposed earthwork is analyzed pursuant to the Special Use Criteria outlined in Boulder County Land Use Code (the Code), Article 4-601. SPR is required for development requiring a building permit on a vacant property, (Article 4-802.A.1). The residence is analyzed pursuant to the SPR standards outlined in Article 4-806 of the Code.

Staff recommend conditional approval of the proposal because, as conditioned, staff find the earthwork can meet the LU Criteria and the residential construction can meet the SPR Standards in the Code.

DISCUSSION:
The subject parcel is approximately 37.7 acres in size and is located approximately 4.0 miles west of the Peak-to-Peak Highway. It is also located west of Beaver Reservoir off of CR 96J right-of-way (ROW) as shown in Figure 1 below.

Figure 1: Vicinity Map showing location of the subject parcel

As determined by Community Planning & Permitting (CPP) staff, the parcel is a legal building lot eligible for permits as the parcel meets the minimum lot size of 35-acres to be considered a legal building lot. The parcel was created in currents configuration in 2023, and is described on the Deed recorded November 17, 2023, at Reception 04028764. Legal access to the parcel is accessed from CR 96J, a Boulder County owned and maintained ROW with a Functional Classification of Local, via a

private gravel-surfaced road within a 20-foot access easement. Legal access to the subject parcel has been demonstrated via the easement recorded on April 2, 1998, at Reception 1787384, the easement recorded on February 5, 1999, at Reception 1902641 as well as the 30-foot access easement recorded on November 20, 2023, at Reception 04028765. The proposed physical access to the parcel will cross the adjacent private parcel to the south of the subject parcel, 3305 CR 96J. This parcel, 3305 CR 96J is also owned by the applicants and is historically known as Stapp Lakes Ranch. A portion of the non-foundational earthwork is proposed within the 30-foot access easement located at 3305 CR 96J. The United States Forest Service (USFS) lists a portion of the access road west of Beaver Reservoir as Road Number 508.1 on the 2016 USFS Motor Vehicle Use Map owned by the USFS.

Currently, the subject parcel is vacant as shown in the 2023 aerial photograph (Figure 2) below.

Figure 2: 2023 Aerial of the subject parcel and nearby properties.

The subject parcel encompasses a portion of Stapp Lake and is surrounded by a glacial moraine. Topographically the eastern portion of the subject parcel is characterized by a general upward and then downward slope from west to east in the area where development is proposed. The western portion of the subject parcel is primarily characterized by steep upward slopes south to north and moderate downward slopes west to east, adjacent to Stapp Lake. Figure 3, below, shows the slopes covering the entire subject parcel, a portion of the adjacent parcel located at 3305 CR96J and proposed locations for development, while Figure 4 is a detailed contour map of the eastern portion of the subject parcel where development is primarily proposed to take place.

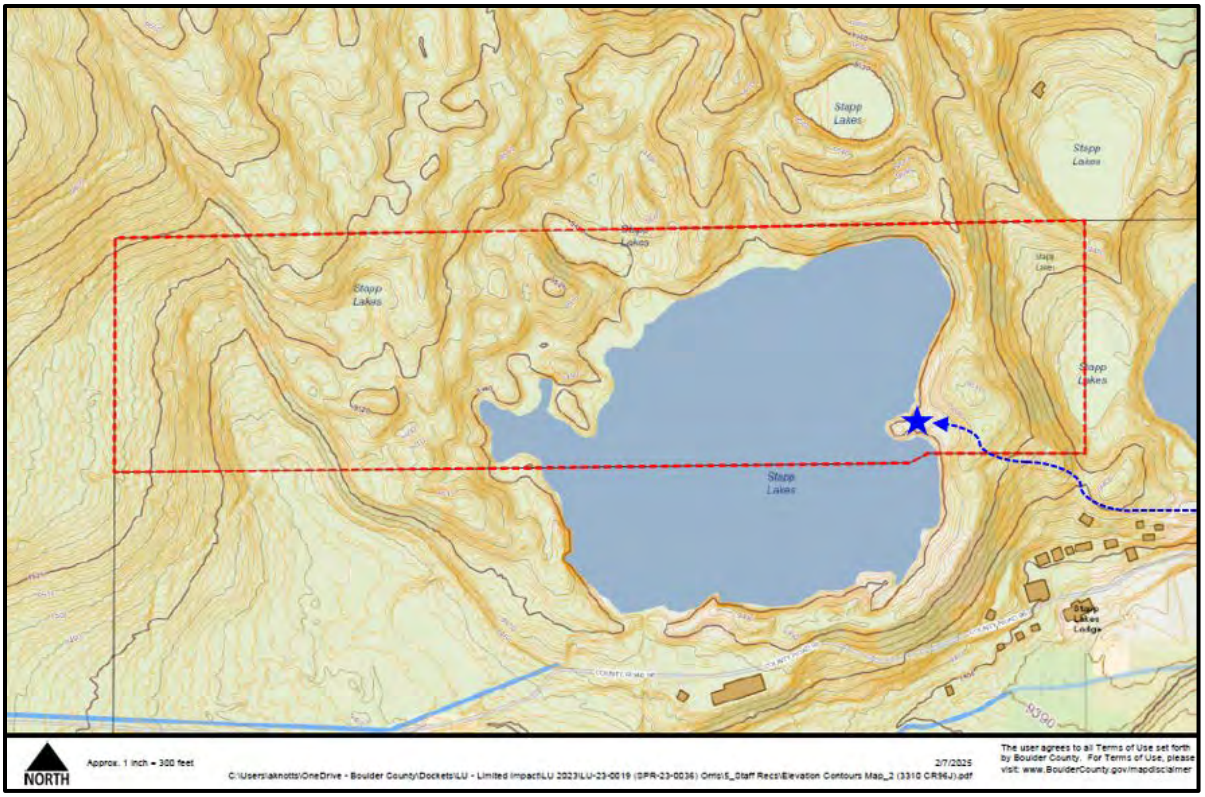


Figure 3: Contour map of subject parcel, with approximate development location shown with a blue star and proposed driveway alignment shown with a blue dashed line.

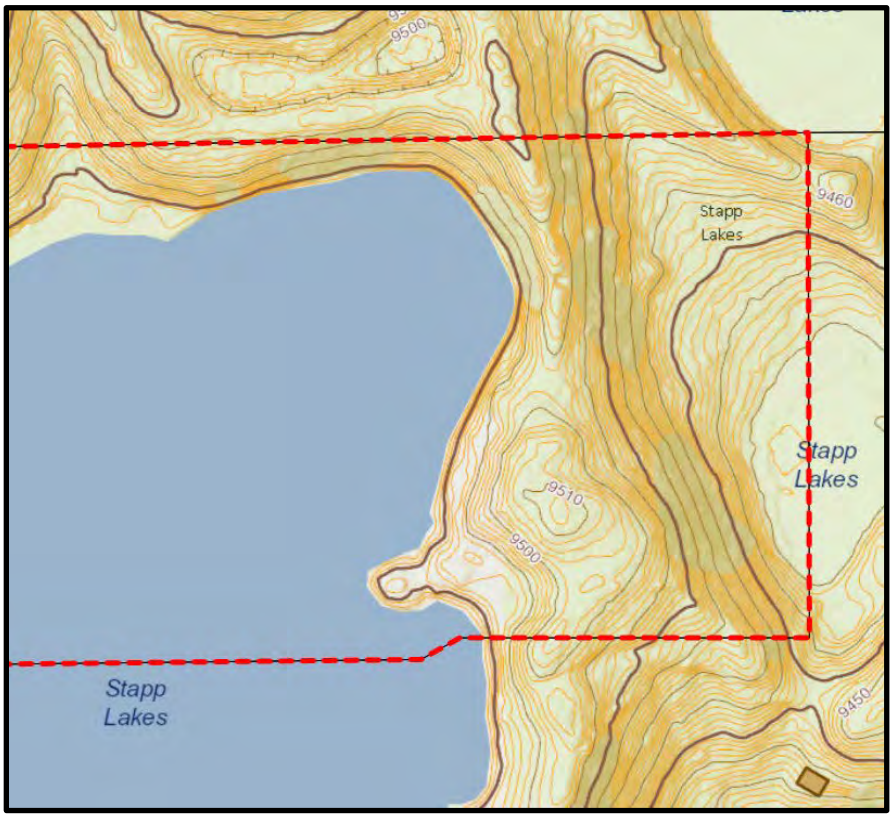


Figure 4: Detailed two-foot contour map of eastern parcel half.

The Boulder County Comprehensive Plan (BCCP) identifies the Indian Peaks Environmental Conservation Area that covers the entirety of the subject parcel, as well as Significant Natural Communities along its eastern boundary and northwestern portion of the subject parcel. Wetland and Riparian Areas are also identified along the eastern boundary and western portions of the subject parcel. These areas are shown in Figure 5, below, while impacts to these resources are discussed under LU Criterion 3, Criterion 4, Criterion 8 and SPR Standard 7.

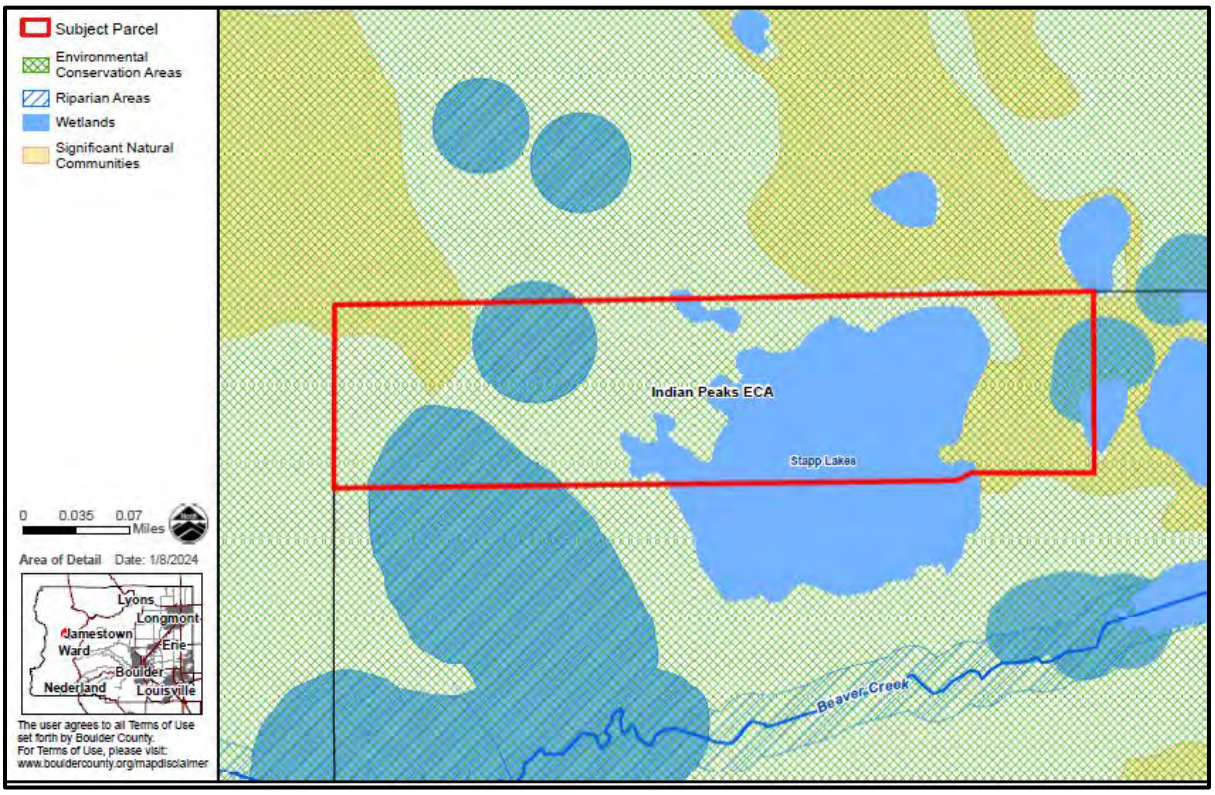


Figure 5: BCCP layers located on the Subject Parcel.

The majority of the subject parcel is considered to be within a landslide susceptibility area as shown in the Geologic Hazard Map, Figure 6 below.

Figure 6: Geologic Hazard Map

The subject parcel is adjacent to USFS lands along the northern and western parcel boundary lines as shown in Figure 7 below.

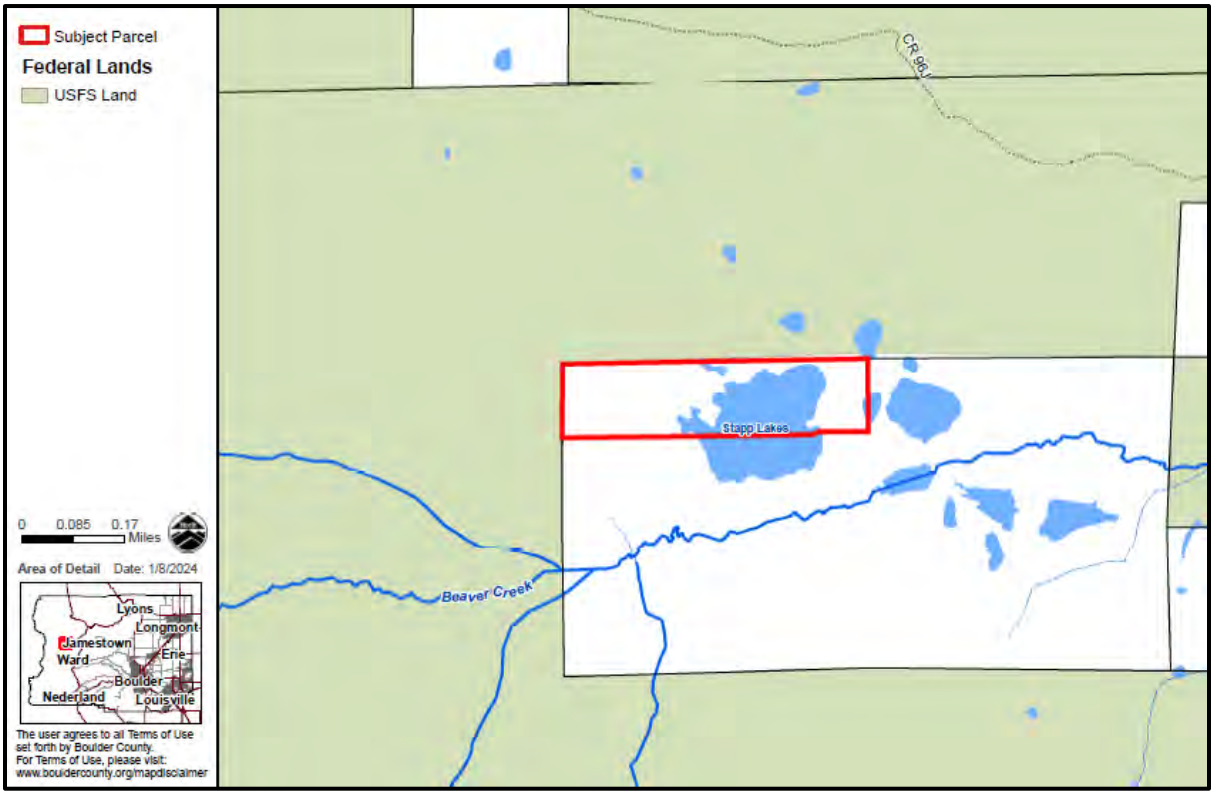


Figure 7: Public Lands Map

PROPOSAL:
The proposed development includes two parcels: 3310 CR 96J ("subject parcel," where the residence is to be located) and 3305 CR 96J (located south of the subject parcel, through which the private access easement crosses). The proposal will require a significant amount of non-foundational earthwork and grading. The applicants request approval of 4,023 cubic yards of non-foundational earthwork, primarily related to the making the private access from 3305 CR 96J to the residence meet the Boulder County Multimodal Transportation Standards (MMTS). Per the application materials, the project will require approximately 2,277 cubic yards of non-foundational cut and 1,746 cubic yards of non-foundational fill, where 269 cubic yards of that cut and 268 cubic yards of that fill are to account for previously unpermitted grading that took place prior to the submittal of this application. Per Article 4-101.F.3.b of the Code, grading of more than 500 cubic yards requires LU.

The residence is proposed at 2,990 square feet of residential floor area, with an additional 220 square feet of covered porch. The proposed maximum height of the residence is 26 feet and two inches above existing grade (see Application Materials in Attachment A). As the parcel is currently considered vacant, per Article 4-802.A.1 of the Code, SPR is required for the proposed residence

As detailed in the criteria review below, staff find that the proposed non-foundational earthwork and grading can meet the Special Review Criteria in Article 4-601 of the Code and that the proposed new residence can meet the SPR Standards in Article 4-806 of the Code, with the recommended conditions of approval.

REFERRALS:
This application was referred to the typical agencies, departments, and nearby property owners. All responses received are attached and summarized below.

Boulder County Building Safety and Inspection Services Team: Boulder County Building Safety and Inspection Services reviewed the proposal and had no conflicts. Building permits, plan review, inspection approvals, electric vehicle charging outlet, and a Certificate of Occupancy ("C.O.") are required for the proposed dwelling. The proposed residence will be required to meet the County's BuildSmart requirements, must have an automated fire sprinkler system installed, and must be constructed with ignition-resistant materials and defensible space for wildfire mitigation. A grading permit and observation reports are required for driveway grading and access improvements. A more detailed plan review will be performed at the time of permit application, when full details are available, to assure that the proposal will meet all applicable minimum requirements.

Boulder County Public Health Department: The Public Health Department reviewed the proposal and found that an onsite wastewater treatment system (OWTS) permit has not been issued for this parcel. The OWTS permit must be applied for and issued prior to installation and before a building permit can be obtained. The OWTS must be installed, inspected, and approved before issuance of a Certificate of Occupancy. Boulder County Public Health must conduct an onsite investigation and review percolation rates, soil conditions and any design plans and specifications prior to OWTS permit issuance. The OWTS absorption field must be located a minimum distance of 100 feet from all wells, 25 feet from waterlines, 50 feet from waterways and 10 feet from property lines.

Boulder County Parks & Open Space – Natural Resource Planner: The Parks & Open Space (BCPOS) Natural Resource Planner reviewed the application materials and identified a number of natural resources on the subject parcel to be taken into consideration that include Significant Natural Communities consisting of old growth spruce and fir forest, Riparian Areas, Wetlands, Lynx habitat

areas and the parcels general proximity to Critical Wildlife Habitats and High Biodiversity Areas. The Canada Lynx is considered to be a Boulder County "Species of Concern", along with Lake chub. The referral response shows the mapped potential for Lynx habitat, where the subject parcel has the potential to be within that range and notes that Lake chub can be found in nearby Beaver Lake. In addition to ecological designations, the referral response noted the geological history that dates back to the Pleistocene era, where most of the lakes within this area are glacial kettle lakes that were formed by isolated glacier ice melting out under morainal deposits. The referral response also noted concerns regarding the proposed residence's location along the shoreline of Stapp Lake and further fragmentation of the Indian Peaks Environmental Conservation Area (ECA). In response to these concerns the BCPOS Natural Resource Planner states that adequate buffers between a development and a wetland or river riparian or a lake/pond riparian should be taken into consideration and that although Boulder County does not have a codified system for buffers, one could reference the "Planner's Guide to Wetland Buffers for Local Governments," 2008, Environmental Law Institute graph that shows recommended *Buffer Distance by Function*. Additionally, the referral response states all construction machinery must be cleaned prior to transportation to the parcel to remove Aquatic Nuisance Species (ANS) and weed seeds in accordance with State of Colorado ANS regulations; all erosion control straw barriers must be certified weed free; the specific type of bear-proof dumpsters should be reviewed and a construction staging plan that outlines where fuel or chemicals will be stored.

Boulder County Wildfire Mitigation Team: The Wildfire Mitigation Team reviewed the proposal and referral response noted that wildfire mitigation would be required for the proposed residence and driveway, with requirements for site location, ignition-resistant materials and construction, defensible space, emergency water supply, and emergency vehicle access.

Boulder County Development Review Team – Access & Engineering*:* Boulder County Development Review Team – Access & Engineering (DRT – A&E) reviewed the proposal and found that legal access to the parcel is demonstrated via the easement recorded on April 2, 1998, at Reception 1787384, the easement recorded on February 5, 1999, at Reception 1902641, as well as the 30-foot access easement recorded on November 20, 2023, at Reception 04028765. An Access Improvement and Maintenance Agreement (AIMA), which is an agreement for future maintenance responsibility, will need to be issued for the shared driveway. The shared driveway crosses parcel numbers 132300000039, 132300000037, and USFS parcel, and connects to CR 96J adjacent to the outlet of Beaver Reservoir. The referral response further indicated some design deficiencies, noting the driveway approach is shown as out-sloped, instead of the required in-slope with 2% grade between Station 7+50 and 11+50. The velocity calculations for the proposed roadside ditches were not provided in the revised drainage letter and the driveway profile does not indicate the location or depth of proposed cross culverts. The referral response also noted that the geotechnical report does not fully address geologic hazards associated with the driveway improvements above the north side of the historic cabins located on 3305 CR 96J. Lastly, the referral response noted that the driveway design does not currently meet the Boulder County MMTS and must comply with the MMTS.

Boulder County Historic Preservation Team: The Historic Preservation Team did not submit a formal referral response outlining specific concerns. However, this team deferred to DRT – A&E to ensure the design and construction of the driveway would not result in significant negative impacts to the adjacent historical cabins found along the northern property line of 3305 CR 96J and south of the development area.

Boulder County Public Works: Boulder County Public Works Department reviewed the proposal and found that the proposal must adhere to the Municipal Storm Water System (MS4) Construction

Program and a Stormwater Quality Permit (SWQP) is required. This team also notes that the drainage report must conform to Boulder County Storm Drainage Criteria Manual (SDCM) and that at this time the drainage letter does not meet the requirements. The SDCM follows Mile High Flood District (MHFD), Urban Storm Drainage Criteria Manual (USDCM) Volume 3, Chapter 4. MHFD does not recognize infiltration trenches as a stormwater control measure due to inadequate surface area. Acceptable stormwater control measures may include bioretention or other stormwater control measures described in MHFD USDCM. Design details, calculations, and worksheets must be submitted demonstrating the water quality capture volume is infiltrated or treated using a stormwater control measure identified in the MHFD USDCM. The drainage report must also adequately address the road drainage and velocities.

Wright Water Engineers: Wright Water Engineers were consulted as part of the review and had several comments pertaining to the drainage plan and construction specifications that are summarized below. More detail and drainage calculations are required for culverts, stilling basins, and roadside ditches. Additional energy dissipation, such as check dams, may be needed in some areas depending on the results of the calculations. Direct discharges to the lake must be avoided to the extent possible, and runoff must be routed over pervious areas such as a swale or vegetated buffer and does not recommend rock lined swales as they are prone to clog and difficult to maintain. Redirecting the runoff follows low impact development (LID) and County water quality concerns consistent with the requirements in the Storm Drainage Criteria Manual (SDCM) Section 1200. Wright Water Engineers recommend adherence to the MS4 Construction Program and permanent stormwater control measures be implemented. The Colorado Department of Public Health and Environment (CDPHE) requires notification of dredge and fill activities for projects impacting State Waters. Please contact CDPHE to determine applicable requirements. More information can be found at CDPHE Dredge and Fill.

Boulder Valley Longmont Conservation District: The Boulder Valley and Longmont Conservation District reviewed the proposal and noted that care should be taken to ensure there is no stormwater or snowmelt runoff directly into the pristine lake waters and any disturbed areas for the building site and the new access road should be monitored and controlled for invasive weeds as the landscape recovers.

Colorado Department of Natural Resources Division of Water Resources: The Division of Water Resources (DWR) referral response indicated that the proposed water source for the residence is a residential well that has not been constructed, however it is anticipated that this office could issue a permit to construct a new well on the parcel. The well could be used for fire protection, ordinary household purposes, and the irrigation of not more than one acre of home gardens and lawns.

United States Forest Service: The USFS reviewed the proposal and stated that the private property must be surveyed by a licensed surveyor to avoid any/all encroachments on the federal taxpayer's land and if a road permit is needed, to contact Lauren Kryszczuk with the Boulder Ranger District.

Adjacent Property Owners: Notices were sent to all property owners within a 1,500-foot radius of the subject parcel. Staff received responses from one member of the public out of the eight application notices that were mailed to nearby property owners, stating they have no objections to the proposed project.

Agencies that responded with no conflicts: Xcel Energy, Colorado Geological Survey

Agencies that did not respond include: Boulder County Long Range Planning, Boulder County Assessor, Boulder County Attorney Office, Boulder County Code Compliance, Indian Peaks Fire Protection District, Town of Ward Planning Department, US Forest Service, History Colorado, Nature Conservancy of Colorado, St. Vrain & Left Hand Water District. **LIMITED IMPACT SPECIAL REVIEW**

SUMMARY:
CPP staff reviewed the conditions and standards for approval of a LU as they apply to the revised proposal for 4,023 cubic yards of non-foundational earthwork per Article 4-601 of the Code and finds the following:

Driveway Earthwork	2,277 cubic yards of cut and 1,746 cubic yards of fill

(1) Complies with the minimum zoning requirements of the zoning district in which the use is to be established, and will also comply with all other applicable requirements;

The subject parcel is located within the Forestry zoning district and is a legal building lot. Per Article 4101.F.3.b of the Code, LU is required for grading exceeding 500 cubic yards. The SPR regulations (evaluated for the proposed residence) require driveways or grading to have a demonstrated associated Principal Use (see Article 4-806.A.11 of the Code); consequently, this driveway must be reviewed in combination with the proposed SPR.

The referral response provided by Boulder County Public Health noted OWTS permitting requirements must be met prior to issuance of building permits. Staff recommend a condition of approval requiring that the terms of the public health referral response be met.

The referral response provided by the Building Safety & Inspection Services team noted permitting requirements for the proposed non-foundational earthwork. Staff recommend a condition of approval requiring that the terms of the building team's referral response be met.

Therefore, as conditioned, staff find this criterion can be met.

(2) Will be compatible with the surrounding area. In determining compatibility, the Board should consider the location of structures and other improvements on the site; the size, height and massing of the structures; the number and arrangement of structures; the design of structures and other site features; the proposed removal or addition of vegetation; the extent of site disturbance, including, but not limited to, any grading and changes to natural topography; and the nature and intensity of the activities that will take place on the site. In determining the surrounding area, the Board should consider the unique location and environment of the proposed use; assess the relevant area that the use is expected to impact; and take note of important features in the area including, but not limited to, scenic vistas, historic townsites and rural communities, mountainous terrain, agricultural lands and activities, sensitive environmental areas, and the characteristics of nearby development and neighborhoods;

For purposes of this review, staff consider the area within 1,500 feet of the subject parcel as the applicable surrounding area, which is consistent with the SPR defined neighborhood. Existing development within this area consists almost entirely of seasonal cabins and single-unit residences on adjacent public and private land. There are several cabins located on the surrounding 9,000-acre USFS parcel that are privately owned through a Recreation

Residence Special Use Permit granted by the USFS. Many of these adjacent cabins are historic in nature and are accessed from CR 96J by either unimproved forest service roads or historically established driveways.

The proposed driveway and access design for the subject parcel utilizes what was once an established forest service maintenance road. The unpermitted grading that is included in this review resulted in a realignment of this road but does follow much of the same historic alignment. In order to improve this road to bring it up to the current requirements outlined in the MMTS, a substantial amount of earthwork is required.

After reviewing the proposal and the unique features of the parcel, staff find that the proposed non-foundational earthwork is necessary to construct a driveway that meets the MMTS requirements and reaches an appropriate area for development. If the access and driveway were to be constructed elsewhere, staff find the overall site disturbance from earth movement would be more impactful to the surrounding area. By limiting the earthwork to what is necessary for the construction of the driveway and slope stabilization, changes to the natural topography are minimized and the overall intensity of development is reduced.

Because the proposed earthwork is necessary to provide access to the proposed residence location, staff find that the proposal is compatible with the surrounding area.

Therefore, staff find that this criterion is met.

(3) The use will be in accordance with the Comprehensive Plan;

The Indian Peaks ECA as identified in the BCCP covers the entirety of the subject parcel. An area of Significant Natural Communities is also identified in the BCCP, that consist of old-growth forest such as Engelmann spruce and subalpine fir encumbering the easternmost portion of the subject parcel, where development is proposed to occur. The proposed driveway and turnaround will be entirely within the identified Significant Natural Communities area. Wetland and Riparian areas are primarily identified on the western portion of the subject parcel and largely located outside of the proposed development area, although the referral response from BCPOS disputes that the shoreline of Stapp Lake should be mapped as Riparian habitat area. The BCPOS referral response indicated concerns with impacts to these resources caused by the proposed driveway and turnaround construction, and recommended conditions of approval to limit impacts from construction are discussed under LU Criterion 4 and LU Criterion 8 below. By following some of the original alignment of the Forest Service maintenance road, tree clearing of these identified Significant Natural Communities will be minimized and limited to what is necessary for wildfire mitigation than if a new route were proposed. Staff find construction of a driveway that primarily avoids the identified Significant Natural Communities area would likely result in a much wider area of disturbance for the development and potentially result in more substantial long-term impacts to the adjacent Stapp Lake if the driveway were to follow the shoreline in order to reach the general development area for the proposed residence.

Development within a potential Lynx habitat area is unavoidable as modeling projections indicate the entire subject parcel is within this potential habitat area. Similarly, the entire subject parcel is located within the Indian Peaks ECA and the proposed location for the driveway takes the shortest path possible to a reasonable build site for residential

construction such that overall fragmentation and disturbance within this designated area is minimized. See Figure 8 below depicting the historic alignment of the Forest Service maintenance road and the existing realignment of this road that was unpermitted.

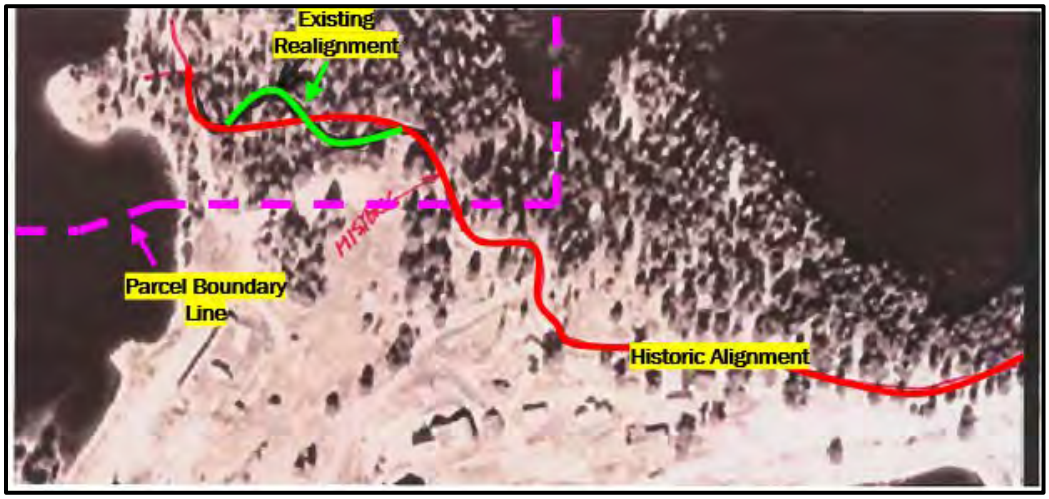


Figure 8: 1999 aerial photograph of the subject parcel with the historic alignment of the Forest Service maintenance road shown in the red line and the existing realignment of the access road shown in the green line.

Therefore, as conditioned, staff find that this criterion is met.

(4) Will not result in an over-intensive use of land or excessive depletion of natural resources. In evaluating the intensity of the use, the Board should consider the extent of the proposed development in relation to parcel size and the natural landscape/topography; the area of impermeable surface; the amount of blasting, grading or other alteration of the natural topography; the elimination or disruption of agricultural lands; the effect on significant natural areas and environmental resources; the disturbance of plant and animal habitat, and wildlife migration corridors; the relationship of the proposed development to natural hazards; and available mitigation measures such as the preservation of open lands, the addition or restoration of natural features and screening, the reduction or arrangement of structures and land disturbance, and the use of sustainable construction techniques, resource use, and transportation management.

Due to the slopes that characterize the subject parcel, constructing a driveway to the proposed residence that meets the MMTS requires substantial earthwork. Construction of the driveway as proposed will provide access to the most appropriate area of the parcel for development while leaving the vast majority of the 37.7-acre parcel undisturbed. Further, staff do not anticipate significant negative impacts to the natural areas or environmental resources which have been identified on the property if constructed utilizing Best Management Practices and to the specified engineered plans. Therefore, staff do not find that the proposed earthwork would constitute over-intensive use of the land or result in the excessive depletion of natural resources.

To ensure that the proposed earthwork meets county standards, final grade cuts and fills must not be steeper than a 1-½ to 1 slope. Grades steeper than a 1-½ to 1 slope will need to be supported by a retaining wall. Retaining walls or series of walls greater than four feet in height, as measured from the bottom of the footer to the top of the wall, require building

permits for construction. Staff recommend a condition that if retaining walls are required, wall details must be designed and stamped by a qualified Colorado-licensed professional engineer and calculations must be submitted for all retaining walls over six feet in height with permit application. Steep sloped areas of stable exposed bedrock are acceptable in lieu of constructing a retaining wall.

The proposed driveway is located above historic cabins as well as adjacent to a pristine high alpine lake. Runoff diverted from the driveway, such as sand, silt, and other debris, has the potential to obstruct drainage features such as rip-rap and culverts. Staff recommend a condition of approval that the applicants develop an annual maintenance plan describing recurring operations required to ensure drainage and water quality infrastructure continues to function as intended.

Cut sheet C-7 dated December 5, 2024, under *Note 11* of the *Erosion Control Notes* propose the use of straw bales or erosion control logs. Staff note that hay often contains seeds of aggressive, non-native grass species. *Note 12* under the *Erosion Control Notes,* states that no fields or chemicals must be stored near construction areas.

Staff recommend conditions of approval that if straw mulch or straw barriers are used, that all straw must be certified weed-free and a Revegetation Plan that includes native grass species to be submitted at time of building permit and that the erosion and sediment control details are to be consistent with the latest edition of the MHFD USDCM Volume 3. Staff also recommend a condition requiring that at time of building permit the applicants provide a construction staging plan that outlines where machinery will be refueled and where fuels or chemicals will be stored.

Therefore, as conditioned, staff find that this criterion can be met.

(5) The use will not have a material adverse effect on community capital improvement programs;

Staff have not identified any material adverse effects of the proposal on community capital improvement programs, and no referral agency responded with such a concern.

Therefore, staff find that this criterion is met.

(6) The use will not require a level of community facilities and services greater than that which is available;

The referral response from Xcel Energy indicated no concerns with the proposed driveway construction. To ensure an adequate response to structure or wildland fire on the subject parcel, the access must be constructed to meet MMTS that include appropriate pullouts at 400-foot intervals and a turnaround compliant with MMTS requirements. Staff find that the proposed non-foundational earthwork will not require a level of community facilities and services greater than that which is available if access is constructed to the specified engineered plans and meet the requirements of the MMTS.

Staff recommend a condition of approval requiring that the driveway and turnaround be constructed according to the MMTS as described in the referral response from DRT A&E dated January 31, 2024, and January 24, 2025.

Therefore, as conditioned, staff find that this criterion can be met.

(7) Will support a multimodal transportation system and not result in significant negative impacts to the transportation system or traffic hazards;

The subject parcel is accessed from CR 96J, a Boulder County owned and maintained ROW with a Functional Classification of Local, via a private gravel-surfaced road within a 20-foot access easement. Legal access to the subject parcel has been demonstrated via the easement recorded on April 2, 1998, at Reception 1787384, the easement recorded on February 5, 1999, at Reception 1902641 as well as the 30-foot access easement recorded on November 20, 2023, at Reception 04028765.

The USFS lists a portion of the access road west of Beaver Reservoir as Road Number 508.1 on the 2016 USFS Motor Vehicle Use Map. Staff recommend the applicants contact the Boulder Ranger District for more information on what, if any USFS requirements must be met for the proposed development.

The referral response from the DRT – A&E noted revised plans dated, December 17, 2024, do not fully meet the provisions outlined in the MMTS. Identified deficiencies show an out-sloped driveway between Station 7+50 and 11+50. Standard Drawing 11 of the MMTS requires an in-sloped driveway with a 2% grade. Additionally, staff find the distance between the access pull-out at Station 8+00 and the emergency turnaround at the proposed residence to be approximately 440 feet, which is not in compliance with Standard Drawing 17 of the MMTS. Per MMTS Standard Drawing 17, access pull-outs must be located at intervals of 400 feet. Lastly, the emergency turnaround is located within 50 feet of the proposed residence. Per MMTS Standard Drawings' 18 and 19, the emergency access turnaround must be located a minimum of 50 feet from the front of the residence and no greater than 150 feet from the rear of the residence. The 50-foot distance must be met if both distances cannot be simultaneously achieved due to the shape of the structure. Staff recommend a condition of approval that at time of building permit, the applicants submit revised plans demonstrating an access and driveway that complies with the MMTS.

Staff also recommend a condition of approval that the access be designed to avoid negative impacts to the transportation system that could be caused by the proposed development, including that all equipment and material staging occur on the project site.

Therefore, as conditioned, staff find this criterion can be met.

(8) Will not cause significant air, odor, water, or noise pollution;

Staff do not anticipate that the proposed project will cause any significant long-term air, odor, water, or noise pollution. The potential of air, odor, water, or noise pollution is limited to the period when construction is actually occurring. Due to the fact that there are environmentally sensitive conditions within the project area, staff identified some potential impacts which must be minimized and mitigated.

As discussed above, the project area is considered an environmentally important area and care must be taken that construction activities, equipment, and vehicles do not inadvertently cause pollution. Staff recommend a condition that all machinery needs to be

cleaned before entering the site in accordance the State of Colorado's ANS procedures through either steam (heat) or chemical cleaning. Staff also recommend conditions of approval that a spill kit, with written instructions, be kept on-site at all times in addition to grading limits must be clearly marked and Best Management Practices be implemented throughout the construction process and followed as they have been proposed on the site plan cut sheet A1.1, dated December 5, 2024.

Therefore, as conditioned, staff find this criterion can be met.

(9) Will be adequately buffered or screened to mitigate any undue visual impacts of the use;

Staff have limited concerns related to the visual impacts of the proposed non-foundational earthwork. The driveway and access will not be immediately visible from any public ROW or public lands and minimally visible from the adjacent Stapp Lakes Ranch parcel at 3305 CR 96J.

Therefore, staff find this criterion can be met.

(10) The use will not otherwise be detrimental to the health, safety, or welfare of the present or future inhabitants of Boulder County;

Upon compliance with all applicable requirements and conditions including all Public Health and Building Codes, staff find that the proposed non-foundational earthwork will not otherwise be detrimental to the health, safety, or welfare of the present or future inhabitants of Boulder County, and no referral agencies have responded with such a concern.

Therefore, as conditioned, staff find this criterion can be met.

(11) The use will establish an appropriate balance between current and future economic, environmental, and societal needs by minimizing the consumption and inefficient use of energy, materials, minerals, water, land, and other finite resources;

Staff find that the proposed non-foundational earthwork will minimize the inefficient use of land by localizing and clustering disturbance and is appropriate for the development of a single-unit residence on the subject parcel.

Therefore, staff find this criterion is met.

(12) The use will not result in unreasonable risk of harm to people or property – both onsite and in the surrounding area – from natural hazards. Development or activity associated with the use must avoid natural hazards, including those on the subject property and those originating off-site with a reasonable likelihood of affecting the subject property. Natural hazards include, without limitation, expansive soils or claystone, subsiding soils, soil creep areas, or questionable soils where the safe-sustaining power of the soils is in doubt; landslides, mudslides, mudfalls, debris fans, unstable slopes, and rockfalls; flash flooding corridors, alluvial fans, floodways, floodplains, and flood-prone areas; and avalanche corridors; all as identified in the Comprehensive Plan Geologic Hazard and Constraint Areas Map or through the Special Review or Limited Impact Special Review process using the best available information. Best available information includes, without

limitation, updated topographic or geologic data, Colorado Geologic Survey landslide or earth/debris flow data, interim floodplain mapping data, and creek planning studies.

The majority of the subject parcel is located within a high landslide susceptibility area, and considered a Major Geologic Hazard Area as identified by the BCCP. The applicants submitted a geotechnical report that identified the soil composition of the proposed development area. The geotechnical report addressed geological concerns pertaining to the development of the proposed residence as discussed under SPR Standard 4 below, however staff found there were inadequacies with the report that did not fully address the area associated with the proposed driveway improvements; particularly the potential impacts to the historic cabins directly below areas of where unpermitted grading had occurred along the access easement. Staff find that the potential for natural hazards can be mitigated if the proposal is constructed to the specified engineered plans.

Staff recommend a condition of approval that at time of building permit the applicants provide a revised geotechnical report that addresses the area associated with the proposed driveway to the residence. The revised geotechnical report must note any remediations or mitigations necessary for proper construction of the driveway. Grading plans must align with the findings and recommended mitigations found in the revised geotechnical report. Staff also recommend a condition that the required Revegetation and Erosion Control Plan include provisions for the installation of catch fencing downslope of all disturbed areas during construction to mitigate the risk to adjacent historic cabins and the adjacent waterways.

Therefore, as conditioned, staff find that this criterion can be met.

(13) The proposed use shall not alter historic drainage patterns and/or flow rates unless the associated development includes acceptable mitigation measures to compensate for anticipated drainage impacts. The best available information should be used to evaluate these impacts, including without limitation the Boulder County Storm Drainage Criteria Manual, hydrologic evaluations to determine peak flows, floodplain mapping studies, updated topographic data, Colorado Geologic Survey landslide, earth/debris flow data, and creek planning studies, all as applicable given the context of the subject property and the application.

The Public Works referral response noted that a SWQP would be required for the proposed development and permanent stormwater control measures are required to be implemented even though the subject parcel is not located within a MS4 urbanized area, due to the development's adjacency to Stapp Lake. Staff recommend a condition of approval requiring the submittal of a SWQP application and applicable stormwater management checklist with any grading permit submittal.

The Public Works referral response included an extensive list of comments from Wright Water Engineers regarding the drainage plan and lack of certain design details that were submitted with the application materials. Staff recommend a condition requiring that the changes described in this memo, DRT – A&E referral response and Public Works referral response that include the comments from Wright Water Engineers, be included in the plans submitted for permitting.

The Public Works referral response also noted the drainage report does not conform to the SDCM. Staff recommend a condition that acceptable stormwater control measures be implemented that may include bioretention or other control measures described in MHFD USDCM Volume 3, Chapter 4 and design details, calculations, and worksheets demonstrating the water quality capture volume is infiltrated or treated using stormwater control measures identified in the MHFD USDCM Volume 3, Chapter 4.

Additionally, staff find the driveway profile does not indicate the location or depth of proposed cross culverts. The velocity calculations for the proposed roadside ditches were not provided in the revised drainage letter. Staff noted that portions of the drainage ditch may need energy dissipation. Staff recommend a condition of approval requiring the submittal of a revised drainage report with the building permit application that clearly shows the location and depth of proposed cross culverts and revised plans demonstrating that the ditch velocities are adequate to ensure stability of the ditch lining.

Therefore, as conditioned, staff find that this criterion is met.

SITE PLAN REVIEW SUMMARY:
Article 4-806 of the Code states that no SPR can be approved without compliance with the following standards. All site plan review applications must be reviewed in accordance with the following standards which the Director has determined to be applicable based on the nature and extent of the proposed development. Staff has reviewed these standards as they apply to the proposed residence and finds the following:

(1) To provide a greater measure of certainty as to the applicable neighborhood relevant for comparison, the following definition of neighborhood shall be used to review proposed Site Plan Review applications:

c. For applications outside of platted subdivisions with seven or more developed lots or the townsites of Allenspark, Eldora, Eldorado Springs, Raymond and Riverside, the defined neighborhood is the area within 1,500 feet from the applicable parcel. The neighborhood shall not include any parcels inside municipal boundaries, platted subdivisions with seven or more developed lots or the townsites of Allenspark, Eldora, Eldorado Springs, Raymond and Riverside.

The applicable neighborhood for the subject parcel is the area within 1,500 feet of the subject parcel.

(2) The size of the resulting development (residential or nonresidential) must be compatible with the general character of the defined neighborhood.

a. In determining size compatibility of residential structures within the defined neighborhood, it is presumed that structures of a size within the larger of a total residential floor area of either (1) 125% of the median residential floor area for that defined neighborhood or (2) of a total residential floor area of 1,500 square feet in the mapped townsites of Allenspark, Eldora, Eldorado Springs, Raymond, and Riverside, or 2,500 square feet for all other areas of the County, are compatible with that neighborhood, subject also to a determination that the resulting size complies with the other Site Plan Review standards in this section 4-806.A.

A. SIZE PRESUMPTION

Per Article 4-806.A.2.a of the Code, the size of a residential structure presumed to be compatible with the defined neighborhood is the larger of either 125% of the median residential floor area for that defined neighborhood or 2,500 square feet. In this case, 125% of the median residential floor area for the defined neighborhood is 720 square feet. Therefore, the presumed compatible size of residential structures within this defined neighborhood is 2,500 square feet.

Median (total residential floor area) in the defined neighborhood*	576 square feet
125% of the median residential floor area in the defined neighborhood	720 square feet
Total existing residential floor area on the subject parcel*	0 square feet
Total proposed residential floor area	2,990 square feet

**Source: Boulder County Assessor's records, as verified by CPP staff for the subject parcel.*

B. ABILITY TO OVERCOME THE SIZE PRESUMPTION

The presumed compatible size of residential structures within the defined neighborhood is 2,500 square feet. The applicants propose to construct a residence that will consist of a 2,200-square-foot first floor, 318-square-foot second floor, 472-square-foot attached garage and 220 square feet of covered porch area. Per Article 18-189D of the Code, covered porches are not included in the calculation of residential floor area when attached to the principal structure.

Per Article 4-806.A.2.b.i.B.1, a proposed development may be able to overcome the size presumed to be compatible with the defined neighborhood due to the size of residences on at least two adjacent parcels. In this case, Staff find that the distribution of larger residential floor area adjacent to the subject parcel, including a parcel with 14,863 square feet of residential floor area at 3305 CR 96J and a parcel with 4,325 square feet of residential floor area located on the adjacent USFS parcel, parcel number 132300000028, allows the subject proposal to overcome the presumptive size of 2,500 square feet. The median residential floor area of these adjacent properties is 9,594 square feet. Both of these adjacent parcel's consist of multiple historic cabins that count towards the cumulative residential size for each respective parcel. The largest cabin located on the adjacent USFS parcel is 754 square feet. The parcel to south, Stapp Lakes Ranch, located at 3305 CR 96J has a lodge in addition to several larger cabins that range in size from 1,336 square feet to 3,300 square feet along with many smaller sized cabins. In order for the development to remain in character with the defined neighborhood, the size of the resulting residence cannot exceed a maximum of 2,990 square feet. Staff find by limiting the proposal to the size as proposed, it will minimize overall site disturbance from construction and remain in character with other structures found within the defined neighborhood.

Staff recommend a condition of approval limiting the size of the residence to the floor area proposed in the application materials.

Therefore, as conditioned, staff find no conflict with this standard.

C. APPROVED SIZE

RESIDENTIAL FLOOR AREA*	
Total existing residential floor area on the subject parcel to remain	0 square feet
Approved NEW residential floor area	Maximum 2,990 square feet (2,200-square-foot first floor; 318-square-foot second floor; and 472-square-foot attached garage)
TOTAL approved resulting residential floor area	Maximum 2,990 square feet

**Residential Floor Area includes all attached and detached floor area on a parcel including principal and accessory structures used or customarily used for residential purposes, such as garages, studios, pool houses, home offices, and workshops, excluding covered deck. Floor area does not include the area of any covered porch. Gazebos, carports, detached greenhouses and hoophouses up to a total combined size of 400 square feet are also exempt.*

(3) The location of existing or proposed buildings, structures, equipment, grading, or uses shall not impose an undue burden on public services and infrastructure.

The proposed residence will be accessed via an easement across the adjacent parcel at 3305 CR 96J and legal access is demonstrated as described in the discussion of LU Criterion 7 above.

Staff do not foresee any undue burdens imposed on public services or infrastructure by this application if constructed per the specified engineered plans and therefore, as conditioned, find no conflicts with this standard.

(4) The proposed development shall avoid natural hazards, including those on the subject property and those originating off-site with a reasonable likelihood of affecting the subject property. Natural hazards include, without limitation, expansive soils or claystone, subsiding soils, soil creep areas, or questionable soils where the safe-sustaining power of the soils is in doubt; landslides, mudslides, mudfalls, debris fans, unstable slopes, and rockfalls; flash flooding corridors, alluvial fans, floodways, floodplains, and flood-prone areas; and avalanche corridors. Natural hazards may be identified in the Comprehensive Plan Geologic Hazard and Constraint Areas Map or through the Site Plan Review process using the best available information. Best available information includes, without limitation, updated topographic or geologic data, Colorado Geologic Survey landslide or earth/debris flow data, interim floodplain mapping data, and creek planning studies. Development within or affecting such natural hazards may be approved, subject to acceptable measures that will satisfactorily mitigate all significant hazard risk posed by the proposed development to the subject property and surrounding area, only if there is no way to avoid one or more hazards, no other sites on the subject property can be reasonably developed, or if reasonably necessary to avoid significant adverse impacts based upon other applicable Site Plan Review criteria.

The proposed development area is adjacent to moderate upward west slope and steep downward east slope. The subject parcel is located within the remnants of old glacial remains from the Pleistocene era. The proposed development is also located within a landslide susceptibility area, an identified Major Hazard in the BCCP Geologic Hazard and Constraint Areas Map. The proposed residence will be located towards the bottom of a slope, in a generally flat area, where it is likely to be most stable. Additionally, there is no below grade floor area proposed, which reduces the potential for hazard risk that can be caused by subsurface excavation. Geotechnical reports indicate there will not be anticipated impacts from the identified geological hazards areas in respect to the construction of the proposed residence and the Colorado Geological Survey have also indicated they have no concerns. With the conditions requiring catch fencing and erosion control as discussed in Criterion 3 and Criterion 12 above for LU of the earthwork, including the submitted Geotechnical report, which identified the potential for geologic risks, staff anticipate potential hazard risk will be appropriately mitigated.

Therefore, as conditioned above under LU Criterion 3 and Criterion 12, staff find no conflict with this standard.

(5) The site plan shall satisfactorily mitigate the risk of wildfire both to the subject property and those posed to neighboring properties in the surrounding area by the proposed development. In assessing the applicable wildfire risk and appropriate mitigation measures, the Director shall consider the referral comments of the County Wildfire Mitigation Coordinator and the applicable fire district, and may also consult accepted national standards as amended, such as the Urban-Wildland Interface Code; National Fire Protection Association (NFPA); International Fire Code; and the International Building Code.

The proposed project is in Wildfire Zone 1 of unincorporated Boulder County. Therefore, wildfire mitigation is required. The Boulder County wildfire mitigation requirements are composed of site location, ignition-resistant materials and construction, defensible space, emergency water supply, and emergency vehicle access.

There are two paths for completing Boulder County's Defensible Space requirements: 1) Wildfire Partners Certificate or 2) Regulatory Wildfire Mitigation. Contact a Boulder County Wildfire Mitigation Specialist at 303-441-3926 to discuss these paths and associated steps.

Staff recommend a condition of approval requiring that wildfire mitigation take place as outlined in the Wildfire Mitigation referral comments.

Therefore, as conditioned, staff find no conflict with this standard.

(6) The proposed development shall not alter historic drainage patterns and/or flow rates or shall include acceptable mitigation measures to compensate for anticipated drainage impacts. The best available information should be used to evaluate these impacts, including without limitation the Boulder County Storm Drainage Criteria Manual, hydrologic evaluations to determine peak flows, floodplain mapping studies, updated topographic data, Colorado Geologic Survey landslide, earth/debris flow data, and creek planning studies, all as applicable given the context of the subject property and the application.

The drainage impacts associated with the proposed driveway and structures are discussed under the LU Criterion 4 and Criterion 13 above.

Therefore, as conditioned above under LU Criterion 4 and Criterion 13, staff find no conflict with this standard.

(7) The development shall avoid significant natural ecosystems or environmental features, including but not necessarily limited to riparian corridors and wetland areas, plant communities, and wildlife habitat and migration corridors, as identified in the Comprehensive Plan or through the Site Plan Review process. Development within or affecting such areas may be approved, subject to acceptable mitigation measures and in the discretion of the Director, only if no other sites on the subject property can be reasonably developed, or only if reasonably necessary to avoid significant adverse impacts based upon other applicable Site Plan Review criteria.

As discussed under LU Criterion 3 above, the BCCP identifies several resources of concern on the subject parcel, and the BCPOS referral response expressed some concerns that should be taken into consideration.

The applicants submitted an Ecology Report, dated December 2024, that was intended to address concerns outlined in the BCPOS initial referral response dated February 4, 2024. The Ecology Report covers the glacial geology, the identified Significant Natural Communities, and various environmental impact considerations. Two species of concern were noted in the BCPOS referral response, Lake chub and Lynx habitat that may be found on, or nearby to the subject parcel. The submitted Ecology Report states that there are no known Lake chub populations found to occur on the parcel or adjacent parcel to the south and that many years ago, non-native fish were introduced to the lake that would have preyed upon any potential previously existing populations. The Ecology report also takes into consideration the modeling of Lynx habitat and indicates that this area is within a moderate to high Lynx habitat area that is part of a larger migratory corridor. The proposed location for development is intended to reduce habitat fragmentation to the Lynx by clustering development near existing development on the adjacent parcel to the south and near CR 96J. With the proposed residence confined to the eastern portion of the subject parcel in addition to the recommended relocation as discussed under SPR Standard 11 below, this results in the remainder of the subject parcel to be left largely undeveloped for the Lynx population to pass freely.

With the recommended condition to relocate of the residence as discussed below under SPR Standard 11, staff anticipate impacts from the construction of the proposed residence to the lake and other identified resources will be minimized.

Therefore, as conditioned, staff find no conflict with this standard.

(8) The development shall avoid agricultural lands of local, state or national significance as identified in the Comprehensive Plan or through the site plan review process. Development within or affecting such lands may be approved, subject to acceptable mitigation measures and in the discretion of the Director, only if no other sites on the subject property can be reasonably developed, or only if reasonably necessary to avoid significant adverse impacts based upon other applicable site plan review criteria.

No agricultural lands of significance are identified on the subject parcel, and therefore staff find no conflict with this standard.

(9) The development shall avoid significant historic or archaeological resources as identified in the Comprehensive Plan or the Historic Sites Survey of Boulder County, or through the site plan review process. Development within or affecting such resources may be approved, subject to acceptable mitigation measures and in the discretion of the Director, only if no other sites on the subject property can be reasonably developed, or only if reasonably necessary to avoid significant adverse impacts based upon other applicable site plan review criteria.

The potential impacts to historic resources are associated with the construction of the access and driveway and discussed under the LU Criterion 4 and Criterion 13 above. The construction and location of the proposed residence is not anticipated to impact historic resources if constructed to the specified engineered plans.

Therefore, staff find no conflict with this standard.

(10) The development shall not have a significant negative visual impact on the natural features or neighborhood character of surrounding area. Development shall avoid prominent, steeply sloped, or visually exposed portions of the property. Particular consideration shall be given to protecting views from public lands and rights-of-way, although impacts on views of or from private properties shall also be considered. Development within or affecting features or areas of visual significance may be approved, subject to acceptable mitigation measures and in the discretion of the Director, only if no other sites on the subject property can be reasonably developed, or only if reasonably necessary to avoid significant adverse impacts based upon other applicable site plan review criteria.

b. For development anywhere in the unincorporated areas of the county, mitigation of visual impact may include changing structure location, reducing or relocating windows and glazing to minimize visibility, reducing structure height, changing structure orientation, requiring exterior color and materials that blend into the natural environment, and/or lighting requirements to reduce visibility at night.

Location	Not approved as shown on the submitted site plan dated December 5, 2024 (see discussion below)
Height	Approved at approximately 26 feet and 2 inches above existing grade
Exterior Materials	Cement and corrugated metal siding and standing-seam metal roof
Exterior Colors	Gray walls and gray roof

The application materials indicate that the proposed residence will be constructed at an approximate height of 26 feet and two inches above existing grade. In the Forestry zoning district where the subject parcel is located, the height limit for residential structures is 30 feet above existing grade. Staff have limited concerns related to the visual impacts of the structure due to the steep slopes that characterize the parcel. The proposed residence will

not be visible from any public lands or public ROW and will be minimally visible from the jointly owned parcel that is Stapp Lakes Ranch located at 3305 CR 96J.

A. TREE PRESERVATION

The preservation of existing trees is necessary to ensure there is minimal disturbance and minimal impacts to the Significant Natural Communities identified in the BCCP. Only those trees necessary to clear the building site, provide access, install the individual sewage disposal system, and provide for defensible space/forest management may be removed. Staff recommend a condition of approval requiring the submittal of a Tree Preservation Plan for staff approval prior to the issuance of any building or grading permits.

B. EXTERIOR COLORS AND MATERIALS

The application materials indicate that the proposed residence will use gray tones and cement and corrugated metal siding and a gray tone standing-seam metal roofing. However, no specific colors were submitted for the exterior of any structure. Staff recommend a condition requiring that the applicants include proposed color and material samples for all exterior materials as part of the building permit application for CPP review and approval, and that CPP staff verify the approved color samples are used on the new structure prior to the issuance of a Certificate of Occupancy.

C. EXTERIOR LIGHTING

The locations and types of exterior lighting fixtures were not indicated in the application materials. Given the visible position in the landscape and the rural character of the area, lighting has the potential to cause negative visual impacts. Staff recommend a condition of approval that lighting on site be limited to one fixture for each exterior entrance and the use of landscape or driveway lighting is not allowed. Staff recommend a condition requiring the submittal of an exterior lighting plan with manufacture cut sheets for CPP staff approval, prior to the issuance of any building or grading permits, and that CPP staff verify that the exterior lighting has been added to the structure according to the approved plan prior to the issuance of a Certificate of Occupancy.

As conditioned, staff find no conflict with this standard.

(11) The location of the development shall be compatible with the natural topography and existing vegetation and the development shall not cause unnecessary or excessive site disturbance. Such disturbance may include but is not limited to long driveways, over-sized parking areas, or severe alteration of a site's topography. Driveways or grading shall have a demonstrated associated principal use.

A. LOCATION

The proposed location for the residence as shown on cut sheet A1.1 on the Site Plan dated December 5, 2024, is on a peninsula located at Stapp Lake, where the design closely follows the shoreline of the peninsula. As discussed under SPR Standard 7 above, staff expressed concern regarding the environmental impacts' development would have to this pristine subalpine lake with the proposed residence being located right on the edge of the shoreline. As discussed under LU Criterion 13 above, staff identified stormwater control measures

necessary to ensure impacts from this development are minimized. Staff find development on the peninsula would result in unnecessary site disturbance close to the Stapp Lake shoreline. Staff find the potential for negative impacts could be mitigated if the residence were to be relocated 100 feet east from the most western edge of the peninsula shoreline. By relocating the residence 100 feet east from its current proposed location, and with permanent stormwater control measures in place as conditioned under LU Criterion 13, impacts from runoff, erosion and sedimentation would be minimized. There is a relatively flat area suitable for development to the east of the peninsula before the topography begins to upslope from the west to the east. In addition to the recommended relocation, there must be a minimum setback of approximately 25 feet from the shoreline from both the northwest and southwest elevations. Although significant earthwork is still required to provide vehicular access, staff find the relocation of the residence to be the most suitable for development when considering other site constraints, BCCP environmental resource designations, and proximity to existing development on the adjacent parcel to the south. Therefore, staff recommend conditions of approval requiring the proposed residence be relocated and setback 100 feet east from the most western edge of the peninsula shoreline, in addition to the minimum 25-foot setback from the shoreline for both the northwest and southwest elevations in the area staff has recommended the residence to be relocated to. See Figure 9 below depicting the recommended relocation for the proposed residence. Staff also recommend a condition of approval that a setback survey be completed to verify the location of the structure.

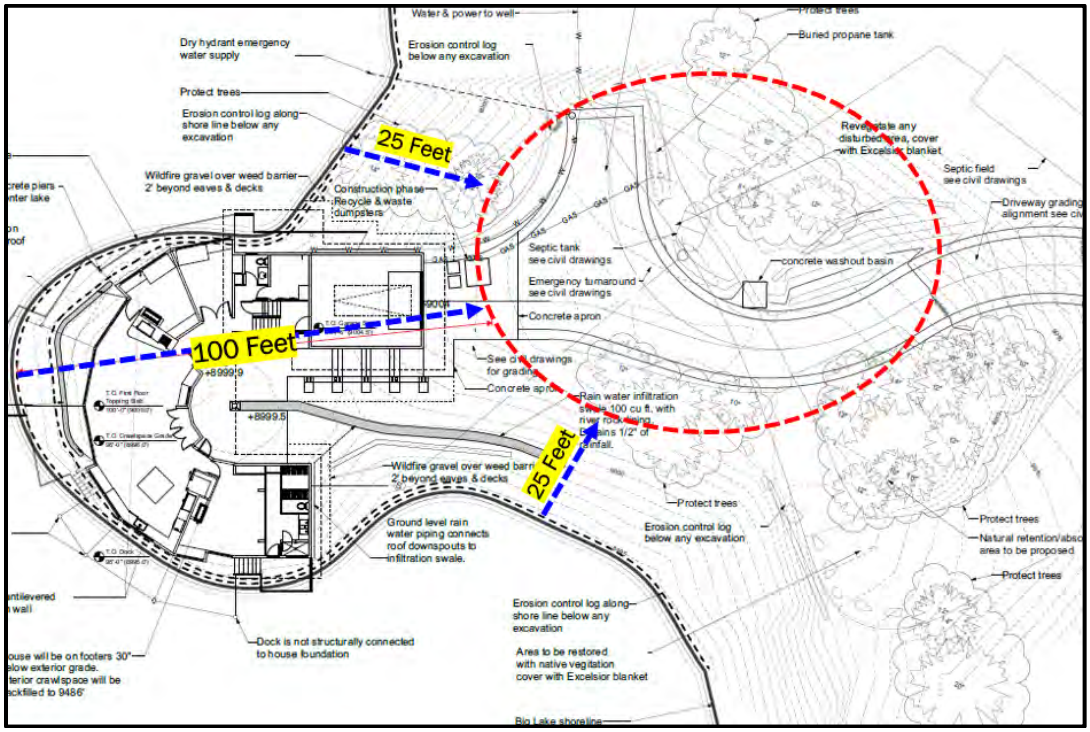


Figure 9: Site Plan that shows the recommended relocation 100 feet setback from the western most edge of the Peninsula with the relocation for residence shown with the red dashed circle and minimum setbacks shown in the blue dashed lines.

B. EARTHWORK AND GRADING

The proposed non-foundational earthwork exceeds that which is allowed under the SPR Standards and is therefore addressed under the LU review Criterion above. The following

foundational earthwork and grading requirements associated with the proposed residence are recommended for approval:

Foundational Earthwork (exempt from 500 cubic yards threshold)	77 cubic yards cut, 185 cubic yards fill

C. GRADING NARRATIVE

The earthwork calculations submitted by the applicants indicate that construction of the residence will require 77 cubic yards of foundation cut and 185 cubic yards of backfill. Any fill placed around the new residence must be placed in a manner which promotes positive drainage away from the residence and does not result in drainage to the adjacent waterway. Because staff recommend a relocation of the residence and because there will be required changes to the drainage plan in order to implement permanent stormwater control measures as discussed under LU Criterion 13 above, it is unclear at this time what the total amount of excess materials on site will be from the resulting earthwork. Staff note that transporting fill in excess of 50 cubic yards to a separate parcel (receiving site) within Boulder County may require additional county review for the receiving site, including SPR or LU if excess cut created during site development to be transported off-site within Boulder County exceeds 50 cubic yards.

Staff recommend a condition of approval that a grading narrative be submitted at time of building permit application and the location and receipt for any transport and dumping be submitted to the CPP Department to verify the receipt of fill materials.

D. UTILITIES

To minimize disturbances to the site, staff recommend a condition requiring all utility service lines be routed underground (see Article 7-1200 of the Code) and located in areas already disturbed or proposed to be disturbed (e.g., along driveway).

As conditioned, staff find no conflict with this standard.

(12) Runoff, erosion, and/or sedimentation from the development shall not have a significant adverse impact on the surrounding area

With the above-described requirement for submittal of a Revegetation and Erosion Control Plan under LU Criterion 4, staff find that the proposed development will not result in adverse impacts to the surrounding area from runoff, erosion, or sedimentation.

Therefore, as conditioned, staff find no conflict with this standard.

(13) The development shall avoid Natural Landmarks and Natural Areas as designated in the Goals, Policies & Maps Element of the Comprehensive Plan and shown on the Zoning District Maps of Boulder County. The protection of Natural Landmarks and Natural Areas shall also be extended to their associated buffer zones. Development within or affecting such Landmarks or Areas may be approved, subject to acceptable mitigation measures and in the discretion of the Director, only if no other sites on the subject property can be

reasonably developed, or only if reasonably necessary to avoid significant adverse impacts based upon other applicable site plan review criteria.

The BCCP does not identify any Natural Landmarks or Natural Areas on the subject property.

Therefore, staff find no conflicts with this standard.

(14) Where an existing principal structure is proposed to be replaced by a new principal structure, construction or subsequent enlargement of the new structure shall not cause significantly greater impact (with regard to the standards set forth in this Section 4-806) than the original structure.

There is no existing principal structure on the subject parcel.

Therefore, staff find that this standard is not applicable.

(15) The proposal shall be consistent with the Comprehensive Plan, any applicable intergovernmental agreement affecting land use or development, and this Code.

As conditioned, staff find no conflict with this standard.

RECOMMENDATION:
Staff has determined that, as conditioned, the proposal can meet all the applicable criteria of the Boulder County Land Use Code for Limited Impact Special Review and for Site Plan Review. Therefore, staff recommend that the Board of County Commissioners **CONDITIONALLY APPROVE** Docket LU-23-0019/SPR-23-0036: Orris/Big Lake LLC Residence & Driveway, subject to the following conditions:

1. The development is subject to the requirements of the Boulder County Building Safety and Inspection Services Team and adopted County Building Codes, as outlined in the referral comments, including, but not limited to required fire sprinkler system, ignition resistant materials and defensible space, and the BuildSmart energy efficiency and sustainability requirements. ***We have updated the Building Code Amendment, the effective date for this new code is March 31, 2025. You can review the new Boulder County Building Code Amendments, effective March 31, 2025***

2. The development must be constructed to the specified engineered plans, and an observation report is required.

3. The development is subject to the requirements of the Boulder County Public Health-Environmental Health division on site wastewater treatment system (OWTS) requirements as outlined in the referral comments.

4. The improved driveway must comply with the Boulder County MMTS for residential development, including without limitation:
    a. Table 5.5.1 – Parcel Access Design Standards (1-Lane Mountain Access)
    b. Standard Drawing 11 – 12 Private Access
    c. Standard Drawing 14 – Access with Roadside Ditch
    d. Standard Drawing 15 – Access Profiles Detail

e. Standard Drawing 16 – Access Grade & Clearance
f. Standard Drawing 18 – Access Turnaround
g. Standard Drawing 19 – Typical Turnaround & Pullout Locations

The access drive travel surface must be between 12 and 18 feet in width, plus an additional 2' horizontal clearance on each side

The emergency access turnaround must be located a minimum of 50 feet from the front of the residence and no greater than 150 feet from the rear of the residence. a minimum 30-foot centerline radius is required for the emergency access turnaround

The access must be surfaced with 4" ABC (Class 6) or other suitable material as approved by the County Engineer

At building or grading permit submittal, the plans must include a driveway design that meets the MMTS.

At building permit, ensure all retaining wall details and calculations are included in the building permit plan set.

During construction, all materials, machinery, vehicles dumpsters, and other items must be staged on the subject property; no items are permitted to be stored or staged on CR 96J.

Prior to the issuance of a Certificate of Occupancy, the CPP Department must verify that the driveway has been constructed according to the approved plan.

5. The applicants must contact the United States Forest Service Boulder Ranger District for more information on what, if any USFS requirements must be met for the proposed development.

6. ***At time of building or grading permit submittal***, the applicants are to submit to the CPP Department a maintenance plan describing recurring operations required to ensure drainage and water quality infrastructure continues to function as intended. This maintenance plan must be submitted and updated on an annual basis.

7. ***At time of building or grading permit submittal***, the applicants must submit to the CPP Department a construction staging plan that outlines where machinery will be refueled and where fuels or chemicals will be stored.

8. ***At time of building or grading permit submittal,*** a Revegetation and Erosion Control Plan must be submitted for approval. The erosion and sediment control details must be consistent with the latest edition of the Mile High Flood District's Urban Storm Drainage Criteria Manual Volume Construction sequence and must adhere to the sequencing notes on the Erosion and Sediment Control Plan. Any straw used for mulching, or straw bales used for erosion control, must be certified weed-free. The revegetation plan must include native grass species to be used, mapped delineation of all disturbance areas (this includes

construction staging areas, driveway, utility lines, and septic system), locations of silt fence or erosion control logs down slope of disturbed areas, and matting requirements on steeper slopes. New horticultural plantings should emphasize xeriscaping principles (Article 7-200-B-8, the Code).

a. ***Prior to any grading or site disturbance,*** the silt barrier location and materials must be installed as required per the approved plans.
b. ***Prior to any grading or site disturbance,*** the location of the catch fencing must be installed downslope of all areas of disturbance and upslope of the perimeter control as required per the approved plans.

Prior to issuance of a Certificate of Occupancy, the full installation of the approved Revegetation and Erosion Control Plan must be inspected and approved by the CPP Department. If weather is not conducive to seeding or if adequate revegetation efforts have not occurred and vegetation is not adequately established at the time of final inspection request, an irrevocable letter of credit or monies deposited into a County Treasurer account will be required to assure the success of revegetation. You should consider the following well in advance of your revegetation inspection:

a. Whether you are applying for a Certificate of Occupancy, final inspection, or the return of funds held in escrow for completion of revegetation, some level of germination and growth of grass seed is required.
b. Keep in mind that the steeper the slopes and dryer the soil, the greater the attention needed to establish a level of germination adequate to obtain revegetation approval.
c. Areas of disturbance found at inspection not included on the revegetation plan are still subject to reseeding and matting.

Incomplete revegetation is the leading cause for delays in obtaining a Certificate of Occupancy.

9. ***At building or grading permit submittal,*** the applicants must apply for a Stormwater Quality Permit.
    a. ***At building permit,*** provide a complete Stormwater Quality Permit submittal to stormwater@bouldercounty.gov

10. ***At building or grading permit submittal***, submit a revised geotechnical report that addresses the area associated with the proposed driveway to the residence. The revised geotechnical report must note any remediations or mitigations necessary for proper construction of the driveway. Grading plans must align with the findings and recommended mitigations found in the revised geotechnical report.

11. The development must adhere to MS4 New Development and Boulder County Storm Drainage Criteria Manual (SDCM) requirements including providing for detention and permanent stormwater management.
    a. Acceptable stormwater control measures may include bioretention or other stormwater control measures described in the Mile High Flood District (MHFD), Urban Storm Drainage Criteria Manual (USDCM) Volume 3, Chapter 4 and design details, calculations, and worksheets demonstrating the water quality capture

volume is infiltrated or treated using stormwater control measures identified in the MHFD USDCM Volume 3, Chapter 4.

b. ***At building permit***, provide the Permanent Stormwater Management Facilities checklist found on the Boulder County Stormwater Quality Permit Website and send to stormwater@bouldercounty.gov

12. Biodegradable hydraulic fluids must be used in all equipment and machinery operating in surface waters.

13. All equipment must be cleaned and disinfected in accordance the State of Colorado's Aquatic Nuisance Species (ANS) procedures through either steam (heat) or chemical cleaning to prevent aquatic invasive species and noxious weeds before entering the construction site. A spill kit, with written instructions, must be kept on-site at all times.

14. All construction activities require the use of Best Management Practices.

15. ***At building permit,*** please review and address all referral comments from Boulder County Public Works and referral comments from Boulder County Access and Engineering.

16. ***At building or grading permit submittal***, a revised drainage report is required. The report must clearly show the location and depth of proposed cross culverts and plans must demonstrate that the ditch velocities are adequate to ensure stability of the ditch lining.

    Final grade cuts and fills must not be steeper than a 1-½ to 1 slope. Grades steeper than a 1-½ to 1 slope will need to be supported by a retaining wall. Retaining walls or series of walls greater than four feet in height, as measured from the bottom of the footer to the top of the wall, require building permits for construction. Steep sloped areas of stable exposed bedrock are acceptable in lieu of constructing a retaining wall. At permitting, the height of the retaining wall must be provided and, if greater than four feet in height, wall details must be designed and stamped by a qualified Colorado-licensed professional engineer. Calculations must be submitted for all retaining walls over 6 feet in height.

    The revised grading and drainage plan must be signed and sealed by a qualified Colorado-licensed Professional Engineer, Landscape Architect, or Architect.

    Prior to the issuance of a Certificate of Occupancy, the CPP Department must verify that the drainage and permanent erosion control improvements have been installed according to the approved plan.

17. The approved size for the residential development is a maximum 2,990 square feet of residential floor area.

18. The design of the residence as shown on the submitted elevation drawings dated December 5, 2024, is approved as proposed.

19. The approved height for the residence is approximately 26 feet and two inches above existing grade.

20. ***At building permit submittal,*** submit a revised site plan that depicts the required relocation of the residence setback 100 feet east from the western most edge of the peninsula shoreline, with a minimum approximate setback of 25 feet from the shoreline for the southwest and northwest elevations from the area where the residence is required to be relocated to.

21. ***Prior to the foundation form inspection*** the completed Setback Survey Verification Form must be submitted to the CPP Department.

22. ***At building permit submittal,*** submit to the CPP Department for review and approval, revised elevation drawings that show the elevations for the residence in the required relocation area.

23. The development is subject to the requirements of the Boulder County Wildfire Mitigation Team and as outlined in the referral comments, including, but not limited to ignition resistant materials, defensible space, emergency vehicle access and emergency water supply.

24. ***Prior to issuance of building or grading permits,*** submit to the CPP Department, for review and approval, a Tree Preservation Plan that indicates which trees will be preserved. The maximum preservation of existing mature trees is required while also providing for fire safe defensible space requirements. The Tree Preservation Plan must be included as part of the building plan set required at the time of permit application.

    a. ***Prior to issuance of a Certificate of Occupancy,*** the full installation of the approved Tree Preservation Plan must be inspected and approved by the CPP Department.

25. Colors must be selected to minimize visual impacts of the development and help the development blend in with the natural environment and the neighborhood character of the surrounding area. These colors should be carefully selected from the dark to medium brown, gray, or green color range and have a matte finish to ensure that they are compatible with the policies and goals established by the BCCP and provisions of the Code and will not result in an adverse impact on surrounding properties.

    a. ***At building permit submittal,*** include samples of all proposed exterior colors and materials for the proposed residence as well as all retaining walls for staff approval.

    b. ***Prior to the issuance of a Certificate of Occupancy,*** the full installation of the approved colors and materials must be inspected and verified by the CPP Department.

    c. ***Prior to issuance of a Certificate of Occupancy,*** the CPP Department must inspect and verify that the approved exterior colors and materials are used on the new structure.

26. Exterior lighting on site is limited to one fixture for each exterior entrance and the use of landscape or driveway lighting is not allowed.
    a. ***Prior to issuance of building permits,*** one copy of a proposed lighting plan must be submitted to the CPP for review and approval. The lighting plan must be included as part of the building plan set required at the time of permit application.
    b. ***Prior to Certificate of Occupancy,*** CPP staff must verify that the exterior lighting has been added to the structure according to the approved plans.

    NOTE: Down lighting is required, meaning that all bulbs must be fully shielded to prevent light emissions above a horizontal plane drawn from the bottom of the fixture. All exterior light fixtures must be in conformance with Article 7-1600 and Article 18-162A of the Code.

27. ***Prior to issuance of building permits,*** submit to this office a narrative describing where excess foundation cut (other than that used for backfill within the foundation) will be transported.
    a. ***Prior to Certificate of Occupancy,*** the location and receipt for transport and dumping must be submitted to the CPP Department so that receipt of fill materials may be verified.

28. ***Prior to issuance of building and grading permits,*** submit to the CPP Department for review and approval a plan depicting the routing of all utility services. The utility routing plan must be included as part of the building plan set required at the time of permit application. To minimize disturbances to the site, all utility service lines must be routed underground (see Article 7-1200 of the Code) and should be located in areas already disturbed or proposed to be disturbed (e.g., along driveway).
    a. ***At the time of building inspections,*** full installation of the utilities per the approved plan must be inspected and confirmed by the CPP Department.

29. The Applicants shall be subject to the terms, conditions, and commitments of record and in the file for Docket LU-23-0019/SPR-23-0036: Orris/Big Lake LLC Residence & Driveway.

MEMO TO: Agencies and Adjacent Property Owners
FROM: Amber Knotts, Planner I
DATE: January 9, 2025
RE: Docket **LU-23-0019/SPR-23-0036**

Docket LU-23-0019/SPR-23-0036: Orris Residence

Request:	**REVISED:** Limited Impact Special Use Review to permit 4,023 cubic yards of non-foundational earthwork for the development of a driveway, and Site Plan Review for the construction of a new 2,990-square-foot residence with 220 square feet of covered porch area on an approximately 37.7-acre parcel with a presumptive size maximum of 2,500 square feet. **ORIGINAL:** Limited Impact Special Use Review to permit 1,585 cubic yards of non-foundational earthwork for the development of a driveway, and Site Plan Review for the construction of a new 2,990-square-foot residence with 220 square feet of covered porch area on an approximately 37.7-acre parcel with a presumptive size maximum of 2,500 square feet.
Location:	3310 County Road 96J, approximately 4.0 miles from Peak-to-Peak Highway in Section 22, Township 2N, Range 73W.
Zoning:	Forestry (F) Zoning District
Applicants/Owners:	Stapp Lakes Ranch LLC c/o Christine B. Orris
Agent:	Sam Nishek, Barrett Studio Architects

Limited Impact Special Review is required of proposed uses that may have greater impacts on services, neighborhoods, or the environment than those allowed by right under the Boulder County Land Use Code. This process will review conformance of the proposed use with the Boulder County Comprehensive Plan and the Land Use Code.

Site Plan Review by the Boulder County Land Use Director is required for new building/grading/access or floodplain development permits in the plain and mountainous areas of unincorporated Boulder County. The Review considers potential significant impact to the ecosystem, surrounding land uses and infrastructure, and safety concerns due to natural hazards.

This process includes a public hearing before the Board of County Commissioners. Adjacent property owners and holders of liens, mortgages, easements or other rights in the subject property are notified of this hearing.

The Community Planning & Permitting staff and County Commissioners value comments from individuals and referral agencies. Please check the appropriate response below or send a letter to the Community Planning & Permitting Department at P.O. Box 471, Boulder, Colorado 80306 or via email to planner@bouldercounty.gov. All comments will be made part of the public record and given to the applicant. Only a portion of the submitted documents may have been enclosed; you are welcome to call the Community Planning & Permitting Department at 303-441-3930 or

email planner@bouldercounty.gov to request more information. If you have any questions regarding this application, please contact me at 303-441-1709 or aknotts@bouldercounty.gov .

Please return responses by **January 24, 2025.**

_____ We have reviewed the proposal and have no conflicts.
_____ Letter is enclosed.

Signed _____ PRINTED Name_____

Agency or Address _____

Date_____

Boulder County Land Use Department
Courthouse Annex Building
2045 13th Street • PO Box 471 • Boulder, Colorado 80302
Phone: 303-441-3930
Email: planner@bouldercounty.org
Web: www.bouldercounty.org/lu
Office Hours: Mon., Wed., Thurs., Fri. 8 a.m. to 4:30 p.m.
Tuesday 10 a.m. to 4:30 p.m.

Shaded Areas for Staff Use Only
Intake Stamp

Planning Application Form

The Land Use Department maintains a submittal schedule for accepting applications. Planning applications are accepted on Mondays, by appointment only. Please call 303-441-3930 to schedule a submittal appointment.

Project Number		Project Name	
☐ Appeal ☐ Correction Plat ☐ Exemption Plat ☐ Final Plat ☒ Limited Impact Special Use ☐ Limited Impact Special Use Waiver ☐ Location and Extent	☐ Modification of Site Plan Review ☐ Modification of Special Use ☐ Preliminary Plan ☐ Resubdivision (Replat) ☐ Rezoning	☐ Road Name Change ☐ Road/Easement Vacation ☐ Site Plan Review ☐ Site Plan Review Waiver ☐ Sketch Plan ☐ Special Use/SSDP	☐ Special Use (Oil & Gas development) ☐ State Interest Review (1041) ☐ Subdivision Exemption ☐ Variance ☐ Other:

Location(s)/Street Address(es)	TBD CR 96 J, Ward CO 80481			
Subdivision Name				
Lot(s)	Block(s)	Section(s)	Township(s)	Range(s)
Area in Acres: 37.7	Existing Zoning: F	Existing Use of Property: residential		Number of Proposed Lots: 1
Proposed Water Supply: Well		Proposed Sewage Disposal Method: On site Waste Water		

Applicants:

Applicant/Property Owner: Big Lake, LLC			Email:
Mailing Address: C/O CHRISTINE B ORRIS, 101 MODEL T RD			
City: BOULDER	State: CO	Zip Code: 80302	Phone:
Applicant/Property Owner/Agent/Consultant			Email:
Mailing Address			
City	State	Zip Code	Phone
Agent/Consultant: Sam Nishek - Barrett Studio Architects			Email: sam@barrettstudio.com
Mailing Address: 3980 Broadway St, Suite 103-224			
City: Boulder	State: CO	Zip Code: 80304	Phone: 303-449-1141 ex 2

Certification (Please refer to the Regulations and Application Submittal Package for complete application requirements.)

I certify that I am signing this Application Form as an owner of record of the property included in the Application. I certify that the information and exhibits I have submitted are true and correct to the best of my knowledge. I understand that all materials required by Boulder County must be submitted prior to having this matter processed. I understand that public hearings or meetings may be required. I understand that I must sign an Agreement of Payment for Application processing fees, and that additional fees or materials may be required as a result of considerations which may arise in the processing of this docket. I understand that the road, school, and park dedications may be required as a condition of approval.

I understand that I am consenting to allow the County Staff involved in this application or their designees to enter onto and inspect the subject property at any reasonable time, without obtaining any prior consent.

All landowners are required to sign application. If additional space is needed, attach additional sheet signed and dated.

Signature of Property Owner: Christine B Orris	Printed Name: Christine B. Orris	Date: 12-27-23
Signature of Property Owner	Printed Name	Date

The Land Use Director may waive the landowner signature requirement for good cause, under the applicable provisions of the Land Use Code.

Community Planning & Permitting

2045 13th Street, Boulder, CO 80302 303-441-3930 www.bouldercounty.org

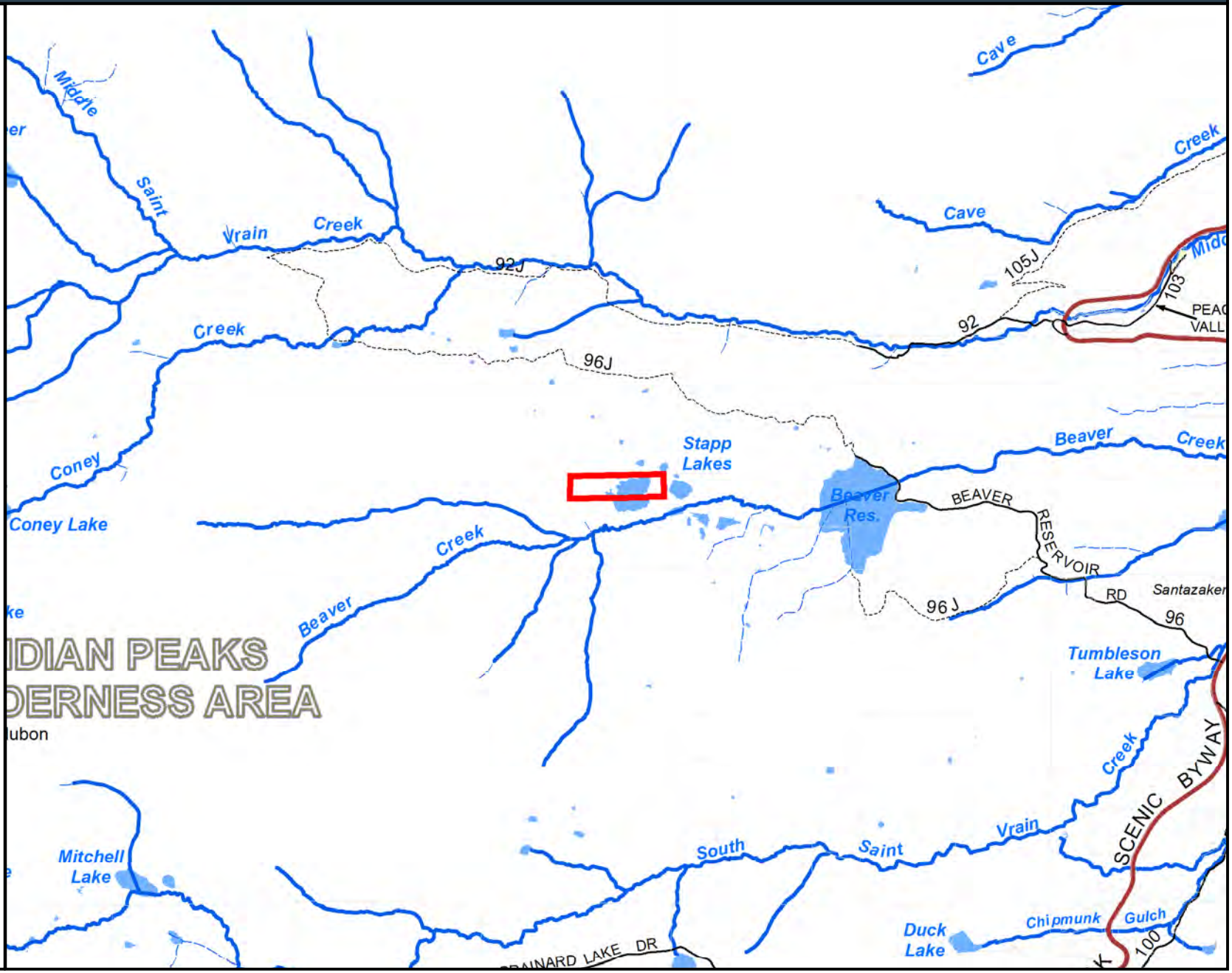
Vicinity

3310 COUNTY RD 96J

Subject Parcel

Subdivisions

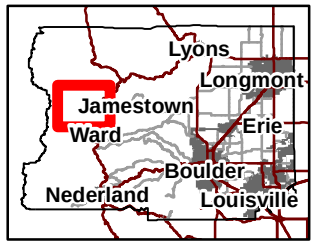
Subdivisions



0 0.35 0.7 Miles

North

Area of Detail Date: 1/8/2024



wtodacheene

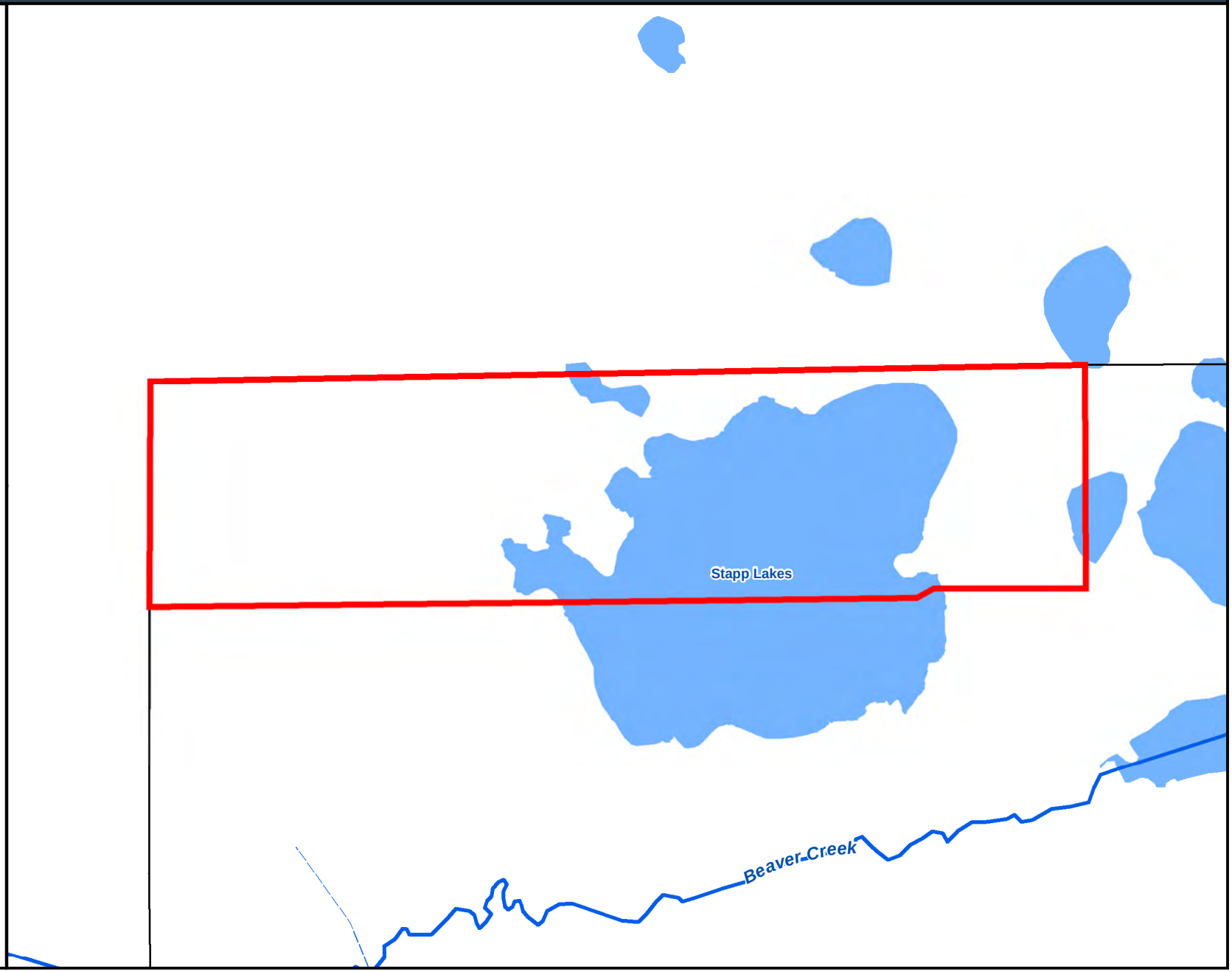
Community Planning & Permitting

2045 13th Street, Boulder, CO 80302 303-441-3930 www.bouldercounty.org

Location

3310 COUNTY RD 96J

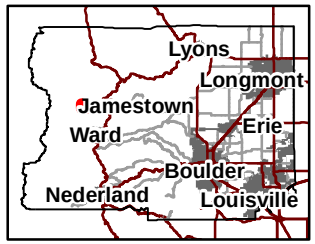
Subject Parcel



0 0.035 0.07 Miles

North

Area of Detail Date: 1/8/2024



wtodacheene

Community Planning & Permitting

2045 13th Street, Boulder, CO 80302 303-441-3930 www.bouldercounty.org

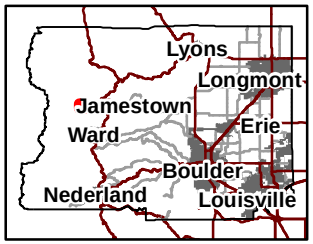
Aerial

3310 COUNTY RD 96J

0 0.035 0.07 Miles

North

Area of Detail Date: 1/8/2024



wtodacheene

Community Planning & Permitting

2045 13th Street, Boulder, CO 80302 303-441-3930 www.bouldercounty.org

Aerial

3310 COUNTY RD 96J

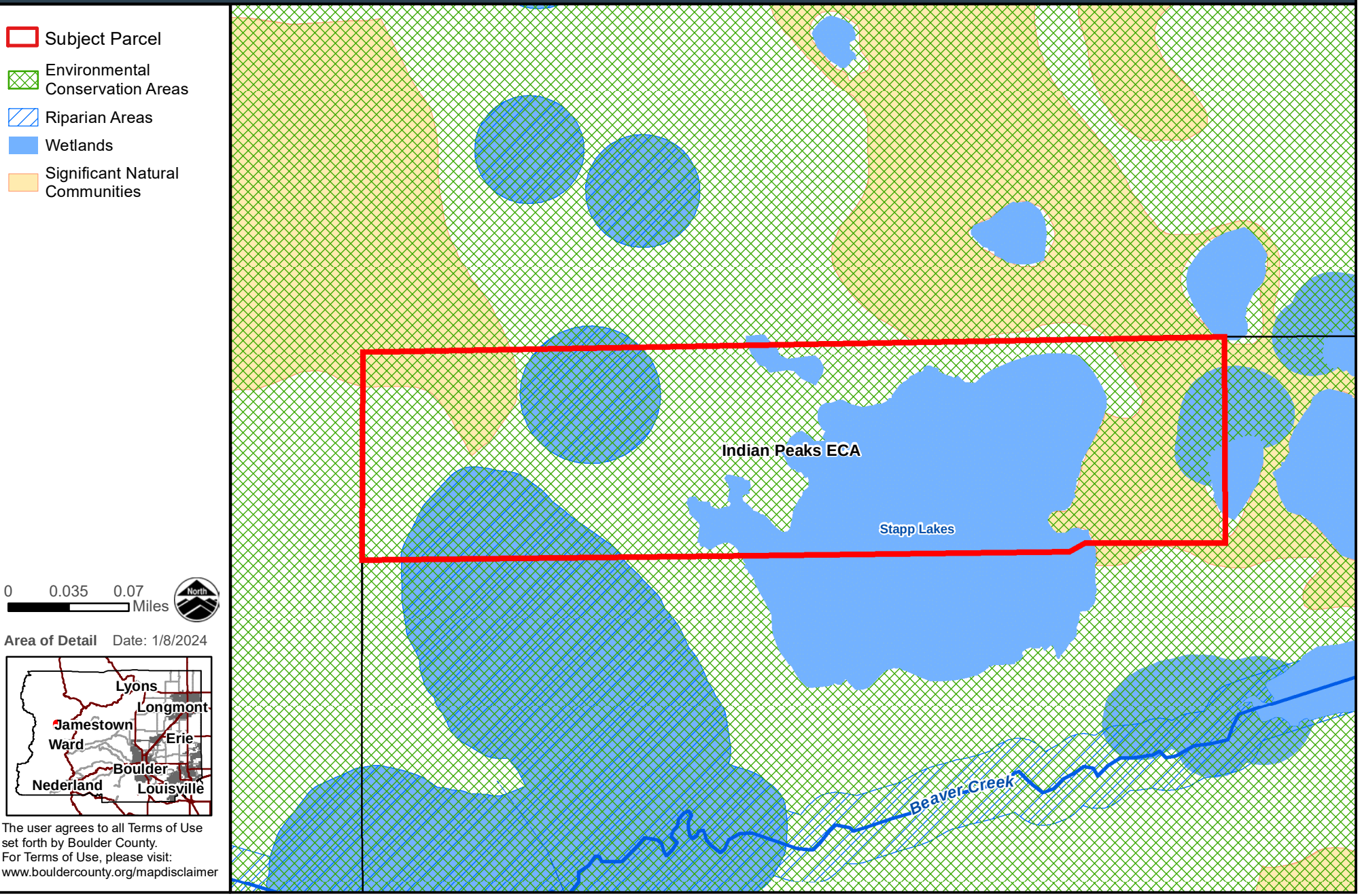
wtodacheene

Community Planning & Permitting

2045 13th Street, Boulder, CO 80302 303-441-3930 www.bouldercounty.org

Comprehensive Plan

3310 COUNTY RD 96J



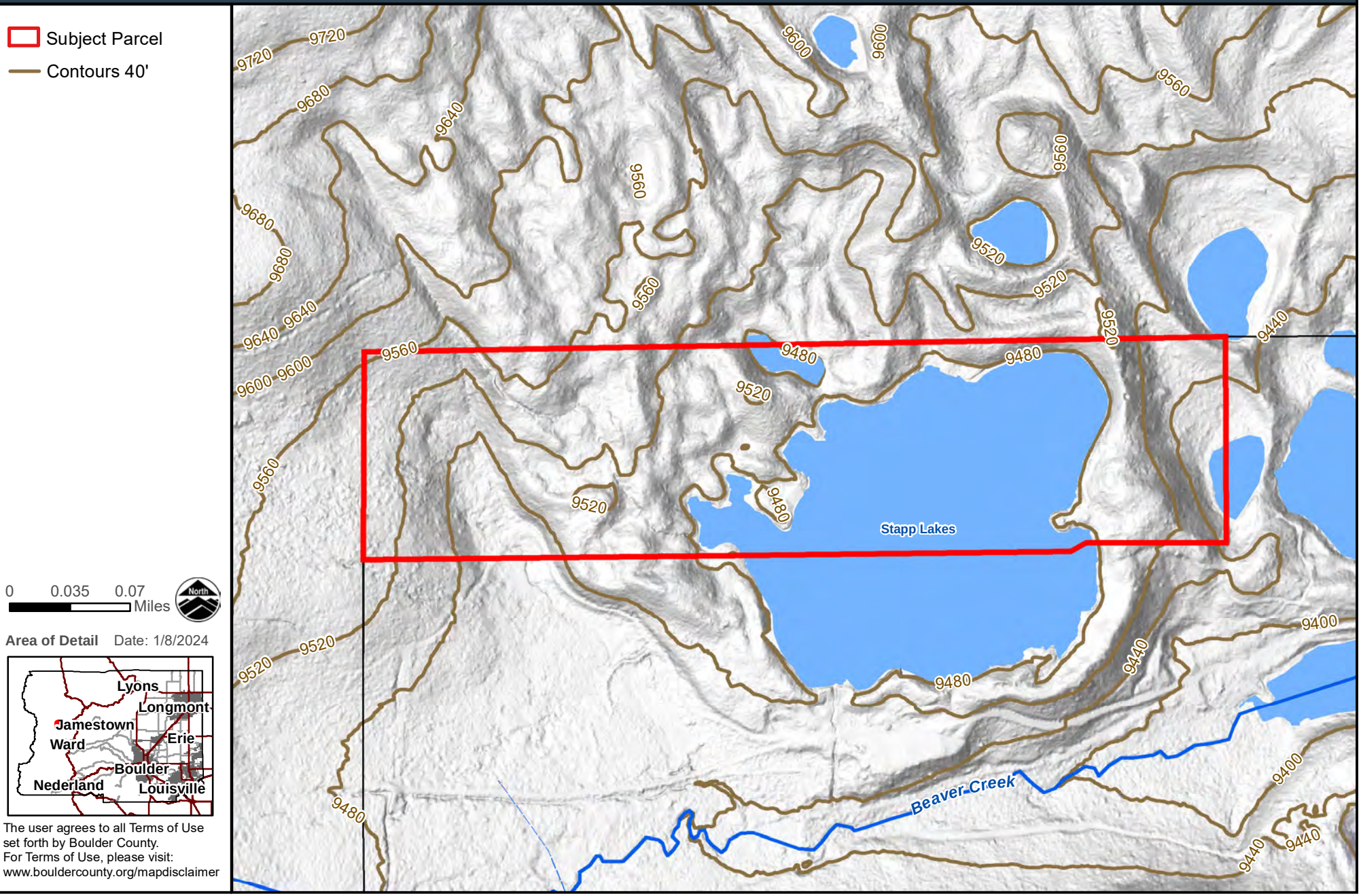
wtodacheene

Community Planning & Permitting

2045 13th Street, Boulder, CO 80302 303-441-3930 www.bouldercounty.org

Elevation Contours

3310 COUNTY RD 96J



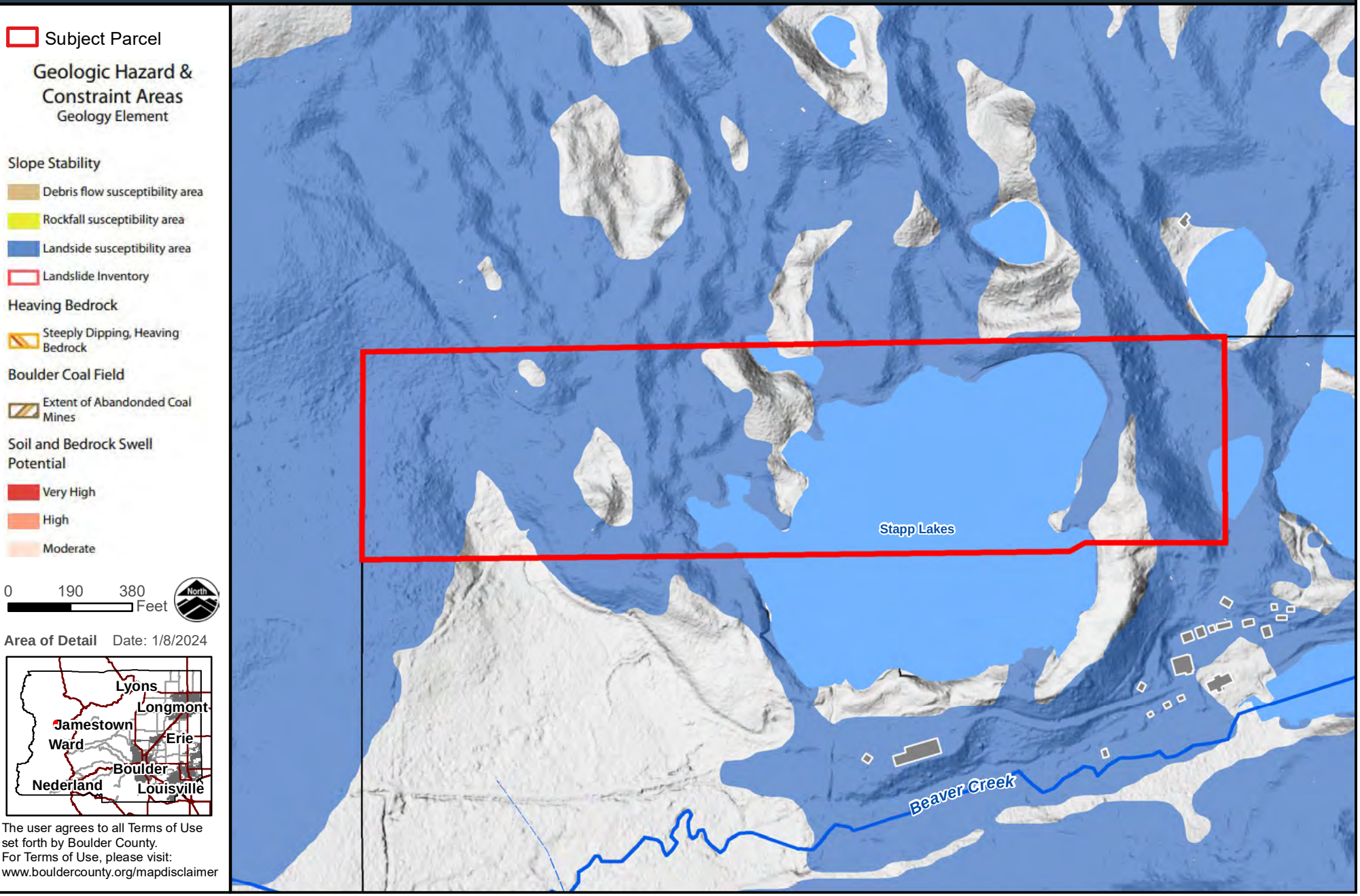
wtodacheene

Community Planning & Permitting

2045 13th Street, Boulder, CO 80302 303-441-3930 www.bouldercounty.org

Geologic Hazards

3310 COUNTY RD 96J



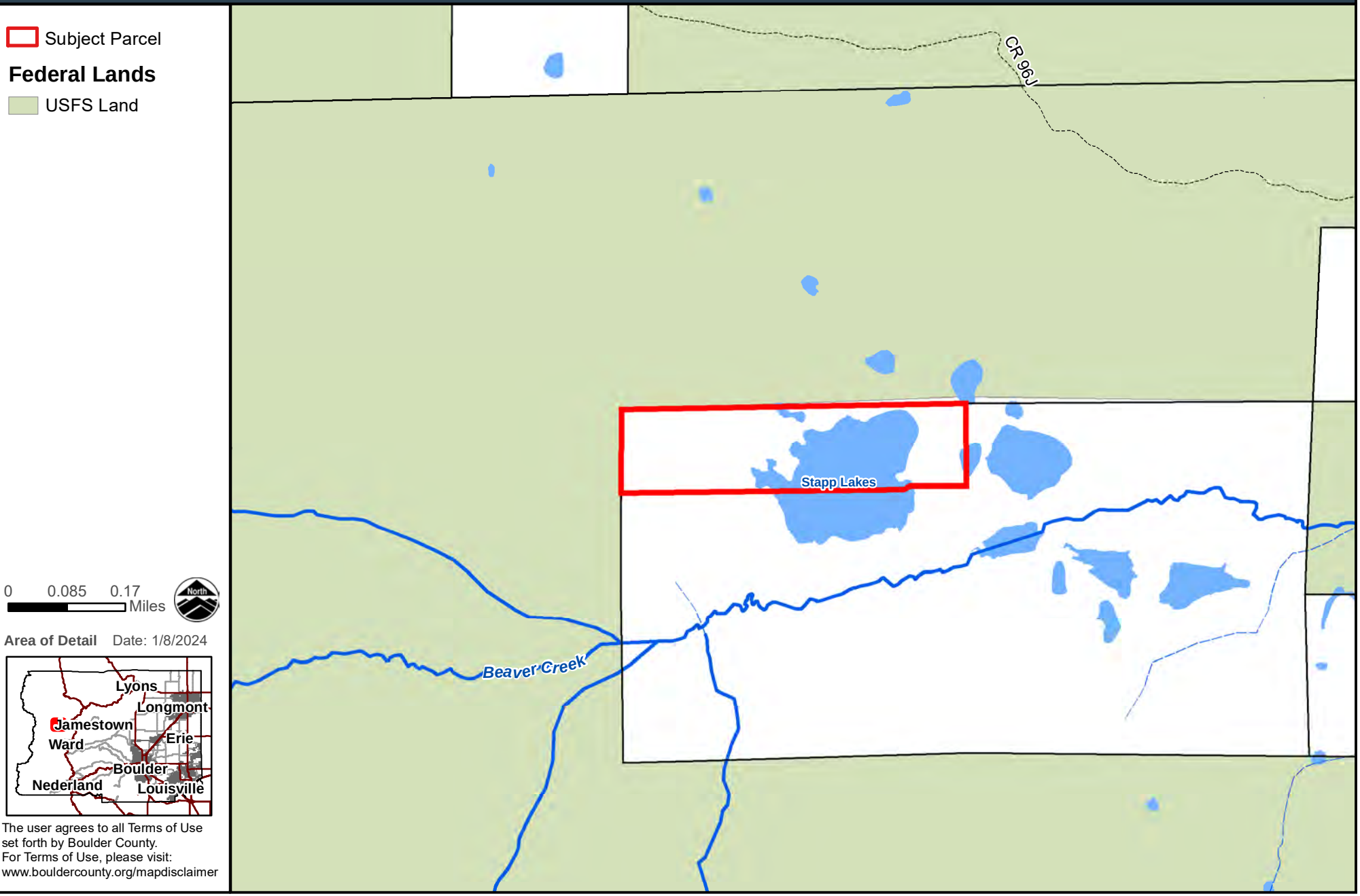
wtodacheene

Community Planning & Permitting

2045 13th Street, Boulder, CO 80302 303-441-3930 www.bouldercounty.org

Public Lands & CEs

3310 COUNTY RD 96J



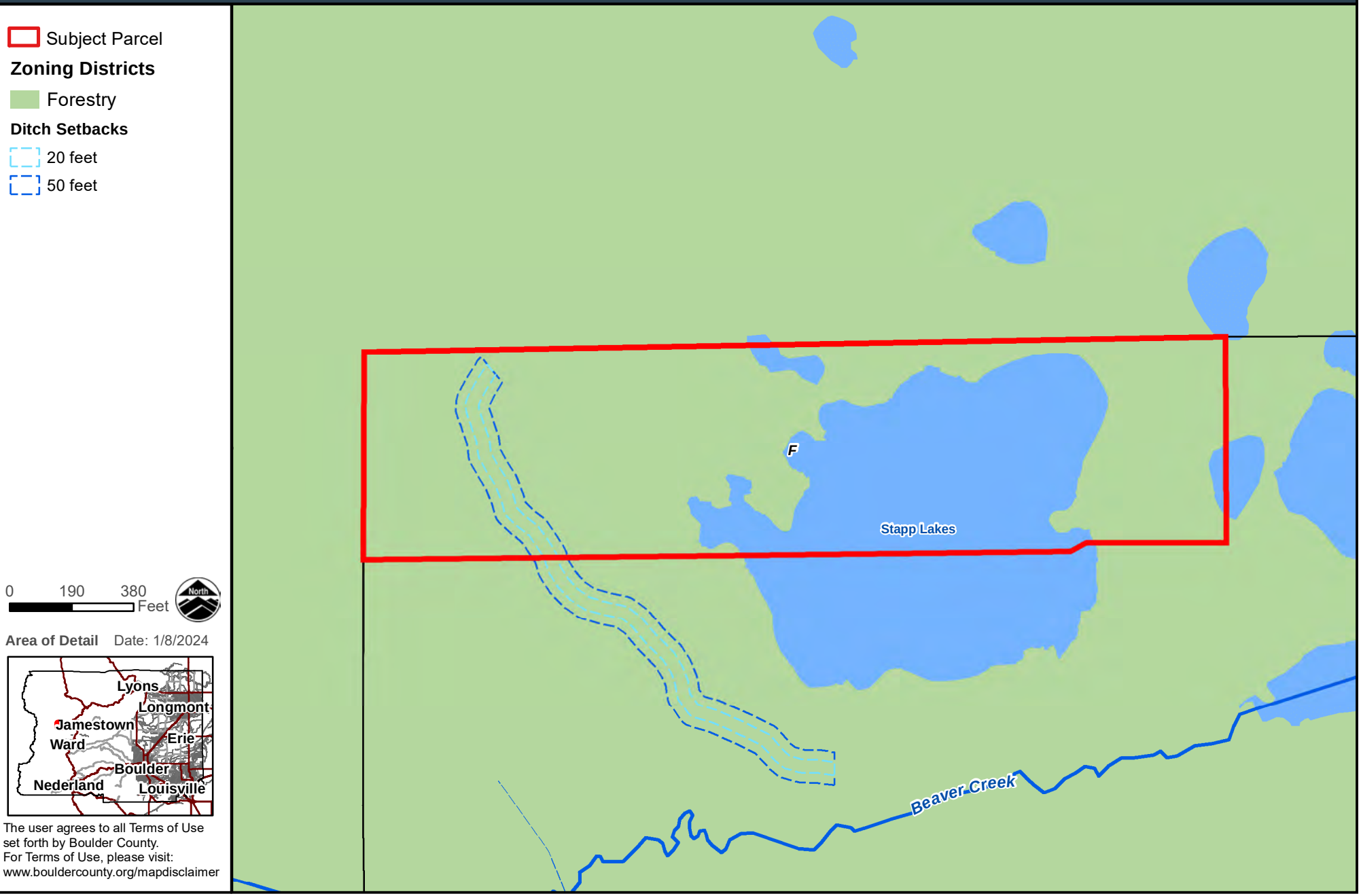
wtodacheene

Community Planning & Permitting

2045 13th Street, Boulder, CO 80302 303-441-3930 www.bouldercounty.org

Zoning

3310 COUNTY RD 96J



wtodacheene

Site Plan Review Fact Sheet

The applicant(s) is/are required to complete each section of this Site Plan Review (SPR) Fact Sheet even if the information is duplicated elsewhere in the SPR application. Completed Fact Sheets reduce the application review time which helps expedite the Director's Determination. Please make duplicates of this SPR Fact Sheet if the project involves more than two structures.

Project Identification:

Project Name:	Big Lake Residence
Property Address/Location:	TBD CR 96 J
Current Owner:	Big Lake LLC
Size of Property in Acres:	37.77

Structure #1 Information

Type of Structure: (e.g. residence, studio, barn, etc.)	Residence				
Total Existing Floor Area: (Finished + Unfinished square feet including garage if attached.)	0 sq. ft.		**Deconstruction:**	sq. ft.	
Are new floor areas being proposed where demolition will occur? ☒ **No** ☐ **Yes** (include the new floor area square footage in the table below)					
Proposed Floor Area (New Construction Only)				☐ Residential ☐ Non-Residential	
	Finished	**Unfinished**	**Total**		
Basement:	sq. ft.	sq. ft.	sq. ft.	**Height** (above existing grade)	26-2
First Floor:	2200 sq. ft.	sq. ft.	2200 sq. ft.	**Exterior Wall Material**	metal
Second Floor:	318 sq. ft.	sq. ft.	318 sq. ft.	**Exterior Wall Color**	grey
Garage: ☐ Detached ☐ Attached	472 sq. ft.	sq. ft.	472 sq. ft.	**Roofing Material**	metal
***Covered Porch:**	220 sq. ft.	sq. ft.	220 sq. ft.	**Roofing Color**	grey
Total:	3210 sq. ft.	sq. ft.	3210 sq. ft.	**Total Bedrooms**	2

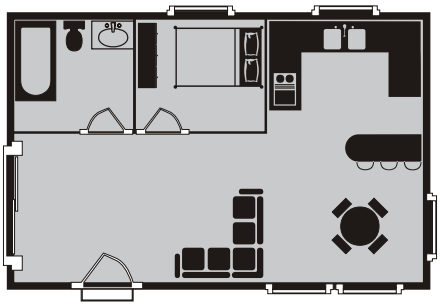
Structure #2 Information

Type of Structure: (e.g. residence, studio, barn, etc.)					
Total Existing Floor Area: (Finished + Unfinished square feet including garage if attached.)	sq. ft.		**Deconstruction:**	sq. ft.	
Are new floor areas being proposed where demolition will occur? ☐ **No** ☐ **Yes** (include the new floor area square footage in the table below)					
Proposed Floor Area (New Construction Only)				☐ Residential ☐ Non-Residential	
	Finished	**Unfinished**	**Total**		
Basement:	sq. ft.	sq. ft.	sq. ft.	**Height** (above existing grade)	
First Floor:	sq. ft.	sq. ft.	sq. ft.	**Exterior Wall Material**	
Second Floor:	sq. ft.	sq. ft.	sq. ft.	**Exterior Wall Color**	
Garage: ☐ Detached ☐ Attached	sq. ft.	sq. ft.	sq. ft.	**Roofing Material**	
***Covered Porch:**	sq. ft.	sq. ft.	sq. ft.	**Roofing Color**	
Total:	sq. ft.	sq. ft.	sq. ft.	**Total Bedrooms**	

*See Article 18-131A for definition of covered porch.

Determining Floor Area

Floor Area is measured in terms of square feet. The total square footage is as everything within the exterior face of the exterior walls including garages and basements. **Covered porch area that is attached to the principal structure is not included (see Article 18-131A).** The shaded area on the diagram indicates the area counted as square feet.



Residential vs. Non-Residential Floor Area

Residential Floor Area includes all attached and detached floor area (as defined in Article 18-162) on a parcel, including principal and accessory structures used or customarily used for residential purposes, such as garages, studies, pool houses, home offices and workshops. Gazebos and carports up to a total combined size of 400 square feet are exempt. Barns used for agricultural purposed are not considered residential floor area.

Note: If an existing wall(s) and/or roof(s) are removed and a new wall(s)/roof(s) are constructed, the associated floor area due to the new wall(s)/roof(s) are considered new construction and must be included in the calculation of floor area for the Site Plan Review and shown on this Fact Sheet.

If a Limited Impact Special Review is required, then call 303-441-3930 and ask for a new Pre-Application conference for the Limited Impact Special Review.

Grading Calculation

Cut and fill calculations are necessary to evaluate the disturbance of a project and to verify whether or not a Limited Impact Special Review is required. Limited Impact Special Review is required when grading for a project involves more than 500 cubic yards (minus normal cut/fill and backfill contained within the foundation footprint).

If grading totals are close to the 500 yard trigger, additional information may be required, such as a grading plan stamped by a Colorado Registered Professional Engineer.

Earth Work and Grading

This worksheet is to help you accurately determine the amount of grading for the property in accordance with the Boulder County Land Use Code. Please fill in all applicable boxes.

Note: Applicant(s) must fill in the shaded boxes even though foundation work does not contribute toward the 500 cubic yard trigger requiring Limited Impact Special Use Review. Also, all areas of earthwork must be represented on the site plan.

Earth Work and Grading Worksheet:

	Cut	Fill	Subtotal
Driveway and Parking Areas	2008	1478	3486
Berm(s)	na	na	na
Other Grading unpermitted	269	268	537
Subtotal	2277	1746	4023 Box 1

* If the total in Box 1 is greater than 500 cubic yards, then a Limited Impact Special Review is required.

	Cut	Fill	Total
Foundation	76.08	185.0	261.08
Material cut from foundation excavation to be removed from the property			0

Excess Material will be Transported to the Following Location:

Excess Materials Transport Location:
No excess material will be transported off site

Narrative

Use this space to describe any special circumstances that you feel the Land Use Office should be aware of when reviewing your application, including discussion regarding any factors (listed in Article 4-806.2.b.i) used to demonstrate that the presumptive size limitation does not adequately address the size compatibility of the proposed development with the defined neighborhood. If more room is needed, feel free to attach a separate sheet.

See attached

Is Your Property Gated and Locked?

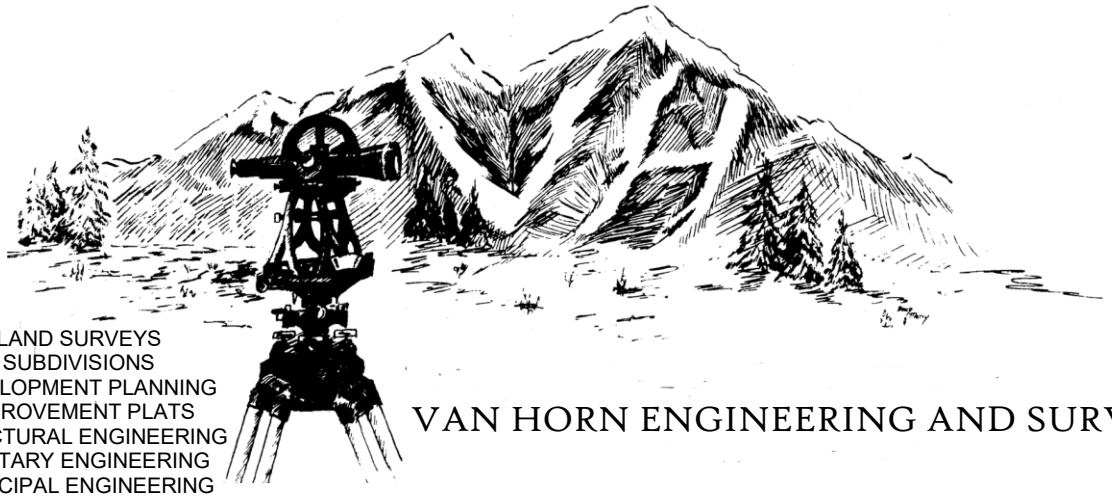
Yes, Contact me to schedule your visit. sam@barrettstudio.com

Note: If county personnel cannot access the property, then it could cause delays in reviewing your application.

Certification

I certify that the information submitted is complete and correct. I agree to clearly identify the property (if not already addressed) and stake the location of the improvements on the site within four days of submitting this application. I understand that the intent of the Site Plan Review process is to address the impacts of location and type of structures, and that modifications may be required. Site work will not be done prior to issuance of a Grading or Building Permit.

Signature	Print Name	Date
	Sam Nishek	12/19/2024



LAND SURVEYS
SUBDIVISIONS
DEVELOPMENT PLANNING
IMPROVEMENT PLATS
STRUCTURAL ENGINEERING
SANITARY ENGINEERING
MUNICIPAL ENGINEERING

VAN HORN ENGINEERING AND SURVEYING

Big Lake Earthwork Narrative
3310 County Road 96J,
Boulder County, Colorado

This letter, and the plan view driveway survey worksheet is submitted to provide an approximate value for the amount of earth disturbed on site, and to evaluate drainage on site and through the site. The existing driveway has been field surveyed, a surface created, and a profile has been developed based on the current (summer '24) condition. This driveway existed prior and aerial maps are included to show that this driveway (approximate alignment) and other driveways (access roads) that existed on site back to 1999 or earlier. There have been minor changes in horizontal and vertical alignment over the years. Aerial mapping prior to this that was available to Van Horn Engineering is not clear enough to adequately distinguish these travel paths on site.

Earthwork volumes were estimated utilizing tools provided by AutoCAD. When the base surface (existing grades) and comparison surface (proposed grades) are compared, there is a reported 2008 cubic yards of cut and 1478 cubic yards of fill, for a net of 530 cubic yards of cut. It should be noted that these estimates were made with cut and fill factors of 1.0. The real net volume may change depending on the swelling properties of the soil.

There was question about the unpermitted grading performed on site in 2022. When calculated using the average end area volume method, this unpermitted grading resulted in a total cut and fill of 537 CY. As was stated in the submitted drainage letter, this figure is both cut and fill combined. Not

only this, but no material was imported nor removed during the unpermitted grading, all material was relocated to other points along the driveway. See the cross sections on sheet 5 on the accompanying planset for better detail.

No guarantees of the accuracy of the numbers is given since no historic surveying quantification is available. We feel we have done the best we can with the information in hand on this application for the stated purpose.

Let me know if there are questions.

Sincerely,

_____

Lonnie A Sheldon, PLS #26974, for Van Horn Engineering and Surveying Inc., Cell: 970-443-3271,
Email: lonnie@vanhornengineering.com

Attachments:
*The plan view driveway survey worksheet is included in this submittal
*Aerial photos are included in the attached drainage letter to show the historic driveway back to Big Lake and the changes made in the alignment which was obtained by graphical overlay. Photos also show historic disturbed area which is larger than the current area of disturbance.
*There is an attached document of supplemental photos along the length of the driveway. Photos show extent of existing forest maintenance road and performed unpermitted grading.
*A Drainage Narrative is included.

Stapp Lakes Earthwork Quantities - Worksheet of approximate quantities. September 27, 2023

STATION increase	Description	CURRENT (SF)	HISTORIC (SF)	DIFFERENCE (SF)	Current Avg end area (SF)	Current Volume (CF)	Current Volume (CY)	Historic Avg end area (SF)	Historic Volume (CF)	Historic Volume (CY)
0= Begin	Control Pt. 101	121	60	61	92	3220	119	46.5	2135	79
35		63	31	32	40	1520	56	19.5	1216	45
38		17	10	7	26	962	36	7	259	10
37	PRC	35	28	7	21.5	860	32	4	280	10
40		8	7	1	9.5	323	12	2	34	1
34	PRC	11	8	3	10.5	420	16	2	120	4
40		10	9	1	14	560	21	1.5	40	1
40		18	16	2	13	819	30	2	126	5
63		8	6	2	25.5	1020	38	9	80	3
40		43	27	16	33.5	1340	50	15.5	640	24
40	CP 298	24	9	15	20	1100	41	10.5	825	31
55		16	10	6	15	750	28	4.5	300	11
50		14	11	3	18.5	925	34	5	150	6
50	Cabin	23	16	7	24.5	1078	40	7.5	308	11
44	CP 340	26	18	8	26.5	1325	49	8	400	15
50		27	19	8	26	1300	48	7	400	15
50		25	19	6	27.5	1705	63	9	372	14
62		30	18	12	43.5	3262.5	121	27.5	900	33
75		57	14	43	38.5	3157	117	25.5	3526	131
82	CP 399	20	12	8	24	1440	53	9.5	480	18
60		28	17	11	26	520	19	7.5	220	8
20		24	20	4	22.5	1012.5	38	5	180	7
45		21	15	6	23.5	470	17	8.5	120	4
20		26	15	11	19	1330	49	7.5	770	29
70		12	8	4	16	1216	45	4.5	304	11
76		20	15	5	20	1280	47	5	320	12
64		20	15	5	10	0	0	0	0	0
							1219			537

Note that cut and fill are summed collectively at each cross section.

BARRETT STUDIO architects

PROJECT NARRATIVE: Big Lake Residence Limited Impact Special Review 12/05/2024

Christy and Jay Orris, are planning to build a residence on their 37.7 acre property at 3310 CR 96J

We are submitting for a Limited Impact Special Review for this project due to the amount of grading required to improve the existing forest road into a driveway.

The proposed boundary of the 37.7 acre parcel is not within 1,500 feet of any other private parcel besides the Stapp Lake Ranch. The PSM is 2,500 square feet. However, the Adjacent Stapp lake Ranch has a residential floor area of 14,863 sq ft and the Adjacent government parcel has a residential floor area of 4,325 sq ft. The average of these two adjacent parcels is 9,548 sq feet which is the calculated size limit per the adjacency rule.

The proposed residential floor area for the 2 bedroom residence and attached garage is 2,990 sq feet.

The house is designed to follow the curved shoreline of the private lake. It is mostly a low slung single story home with a low pitched roof, there is a half level transition to the single car garage and a small second story guest suite. The highest part of the shed roof will be 26'-2" above existing grade.

Due to distance and terrain, the house will not be visible to any other private parcels, nor the original buildings of Stapp Lake Ranch, except for one cabin. The home will not be visible from any public roads. The home will be over 500' from the nearest adjacent property which is a government owned parcel.

The exterior materials of the house are exposed concrete foundation, corrugated painted grey metal siding, and standing seam painted grey metal roofing to visually blend in with the natural terrain, vegetation and the lake surface. The painted metal roofing and siding, the natural finish Ipe wood decking, the powder coated galvanized deck structure are all durable and stable materials that do not degrade the water or soil environments while also being considered ignition resistant for wildfire resistance.

The roof water drainage will be routed with gutters, downspouts and piping so that it will drain into rock lined infiltration swales that follow the slope and gives the rain water time to infiltrate into the pervious surface.

There is not an established County, State or Federal required setback distance between the lake shore and the perimeter of the house. We have sited the house on this relatively flat area near the lake rather than build it into the steep hillside that surrounds the other possible lake front sites.

Before and during construction, the Storm Water Quality Permit will be implemented and followed to minimize the impact of construction near the lake. Additional measures during construction will include the installation of a construction fence around the lake edge to capture wind borne debris. Recycling and construction waste dumpsters will have hinged covers to contain their contents. A daily round of

exterior cleanup will be required of the general contractor to keep any construction waste from entering the lake.

The lake will provide much of the wildfire defensible space around the house while selective thinning of trees and shrubs and the emergency turnaround will provide defensible space along the east side.

The house will be considered Off- Grid with solar PV panels and battery backup as well as a buried propane tank. A well will be drilled for domestic water. A sewer lift pump, septic tank and field will be installed to treat the waste water from the 2 bedroom home. This system will be designed and installed to comply with all Health Department requirements.

Access will be provided by building the driveway along the layout of the existing forest management road. A 30' wide access easement has been recorded with the subdivision of the property. Two emergency access pullouts along the driveway and an emergency turnaround will be provided near the residence. The driving surface will be 12' wide on the straight sections and 14' wide in the curves. Please see the Civil Engineering drawings and Drainage report for the design and layout of this road.

Please review the letter from the owners to understand their commitment to this land.
Please review the comment response letter, the ecology report and the revised submittal documents that address the previous staff comments.

Thank you for your review.
Best Regards,
Sam Nishek, Barrett Studio Architects.

To: Boulder County Planning
Re: Stapp Lakes Ranch/ Big Lake Residence
From: Jay and Christy Orris

To any who may read this as part of our application,

As the guardians of Stapp Lakes Ranch, we wanted to ensure that the County and its staff have an understanding of our intentions and how we see our role in being the stewards of the incredible property that comprises Stapp Lakes Ranch.

We were fortunate enough to hear of and purchase this piece of land 12 years ago. As Christy often says, the ranch found us, rather than us finding it. At that time, we were looking for a place in the high mountains that could be a retreat for our family and give us the opportunity to ensure our boys grew up with an appreciation of everything that Colorado offers. We were specifically looking for something simple that was within a reasonable drive (not up I-70!) of our permanent residence in Sunshine Canyon.

Little did we imagine that a gem like Stapp Lakes Ranch was within a 45 minute drive of our house, and actually (quietly) on the market. As you know from the County records, there are about 30 structures or remains of structures on the ranch, which covered 320 acres at the time of purchase. We were not seeking anything this large or complicated, but once it found us it was clear that it was in our future.

We were very fortunate that the fourth owner of the property, David Sellers, put his heart and soul, and his wallet into Stapp Lakes before we came along. He effectively rescued the remaining intact structures after the neglect at the end of the Jerry Henderson / Dawson Foundation ownership period and the ashram that followed him. Without David's dedication to the property, many structures would have fallen into complete disrepair or collapse. We have continued in that role, ensuring that buildings remain structurally sound, bringing water systems into compliance and performing forest mitigation work in accordance with the plan we develop every ten years with the US Forest Service.

We view ourselves more as *caretakers* than *owners* of this land, its structures and its history. We tell our kids that this ranch is not "ours" and neither will it be "theirs" and that we have a responsibility to manage this ranch into the future.

Our intention for Stapp Lakes Ranch is to continue stewarding this land as a contiguous property and use it in the vision mentioned above. Although by right we could, we have no intention to subdivide it to develop the property and sell parcels of it. And especially not into 9 homes centering around Big Lake (aka Stapp Lake), a possibility suggested in correspondence we received from the County. Our role is as stewards, not as developers.

We carved out the ± 38-acre parcel of land, the "Big Lake Property" which contains the proposed home site, only on the advice of County staff. The rationale for that was the

tremendous difficulty, if not sheer impossibility, of bringing the numerous structures on the ranch built more than 100 years ago up to modern code, as we were told would be required if we built on a single property. As you know, it is especially difficult to balance modern code requirements with the historical nature of the buildings.

Of anyone, we have the strongest interest in maintaining the natural beauty of this property. We practice catch and release, barbless-hook fishing, work with the Forest Service and contractors to mitigate fire risk and improve the health of the forest and allow no hunting on or through the ranch. We don't allow fossil-fuel powered boats on the lakes and ensure our trash is properly handled and removed from the ranch. We have no interest and gain no benefit from disrupting the nature and wildlife around us or compromising the natural environment. This property is a safe refuge for numerous moose and other animals, and it will remain that way as long as we are the custodians of its future.

We hope this helps explain our philosophy and our commitment to the stewardship of this land. It is in our best interest to protect its natural features tenaciously. Modern technologies like solar power and greatly improved building materials have enabled us to consider building in this new location while minimizing the environmental impact. And that is our intent for the ranch in general and for the project you now have in front of you.

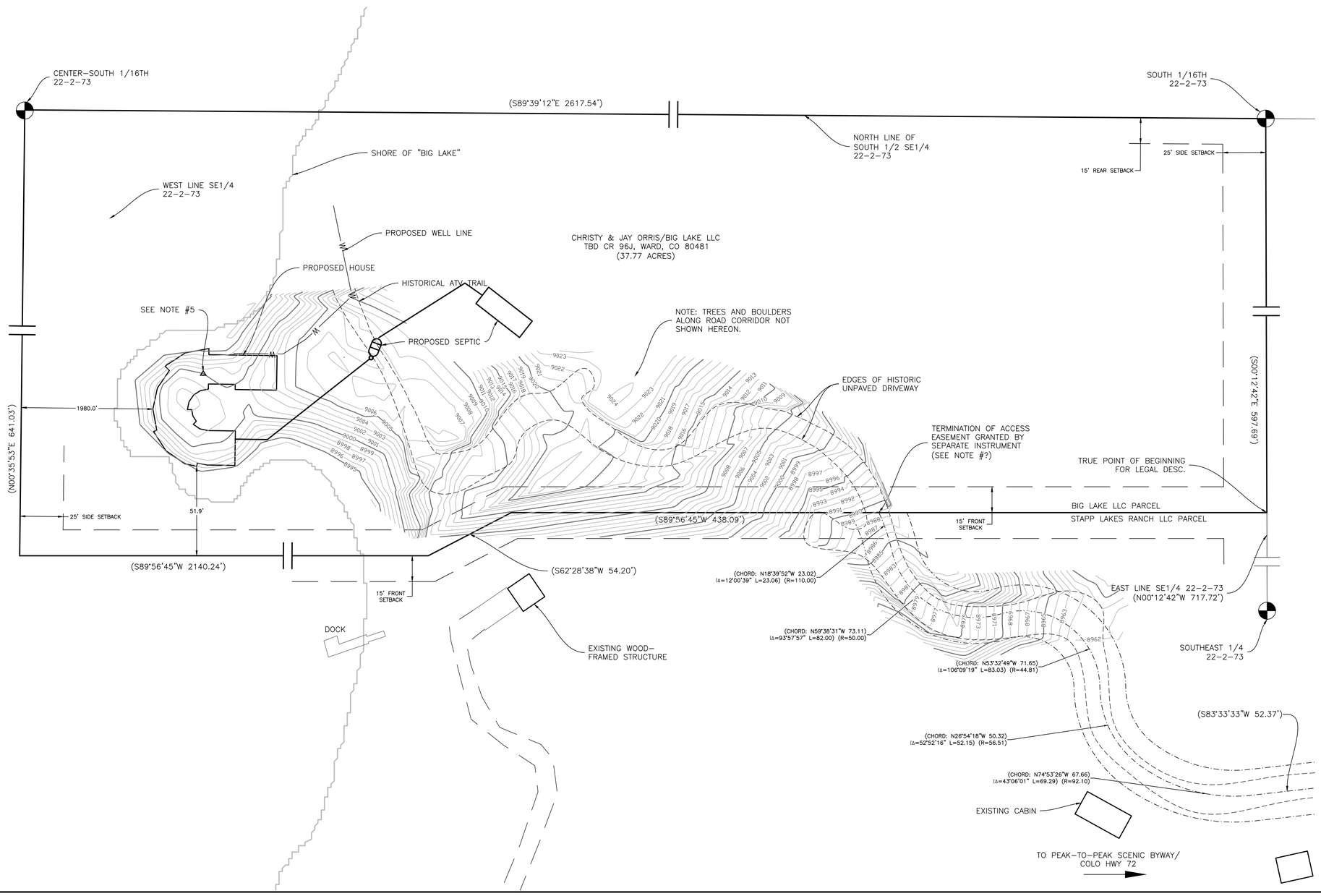
Thank you for your consideration of our application.

Jay and Christy Orris

EXISTING CONDITIONS SITE PLAN – BIG LAKE LLC (CHRISTY AND JAY ORRIS)

A TRACT OF LAND SITUATE IN THE S1/2 OF THE SE1/4 OF SECTION 22, TOWNSHIP 2 NORTH, RANGE 73 WEST OF THE 6TH P.M., MORE PARTICULARLY DESCRIBED AS FOLLOWS:

LEGAL DESCRIPTION (NO RECEP. NO. AS OF THE DATE SHOWN ON THIS SITE PLAN, SEE NOTE #??):
COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHEAST 1/4 OF SAID SECTION AND CONSIDERING THE EAST LINE OF THE SOUTHEAST 1/4 OF SAID SECTION TO BEAR N00°12'42"W WITH ALL BEARINGS HEREIN RELATIVE THERETO;
THENCE N00°12'42"W ALONG SAID EAST LINE 717.72' TO THE TRUE POINT OF BEGINNING;
THENCE DEPARTING SAID EAST LINE S89°56'45"W 438.09'; THENCE S62°28'38"W 54.20'; THENCE S89°56'45"W 2140.24' TO THE WEST LINE OF SAID SOUTHEAST 1/4; THENCE ALONG THE SAID WEST LINE N00°35'53"E 641.03' TO THE CENTER–SOUTH 1/16TH OF SAID SECTION; THENCE S89°39'12" ALONG THE NORTH LINE OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF SAID SECTION 2617.54' TO THE SOUTH 1/16TH OF SAID SECTION; THENCE S00°12'42"E 597.69' TO THE POINT OF BEGINNING. SAID PARCEL CONTAINS 37.77 ACRES, MORE OR LESS AND IS SUBJECT TO ALL EASEMENTS AND RIGHT OF WAYS OF RECORD. COUNTY OF BOULDER, STATE OF COLORADO.



N

SCALE: 1" = 30'

0 30 60 90

Legend

- ALIQUOT MONUMENTATION (AS NOTED)
- PROPERTY LINES
- BUILDING SETBACKS
- EDGE ACCESS EASEMENT
- S — PROPOSED SEPTIC LINE
- W — PROPOSED WELL LINE
- 9000 — EXISTING MAJOR CONTOUR (5')
- 9001 — EXITING MINOR CONTOUR (1')
- REFERENCE ELEVATION (SEE NOTE #5)

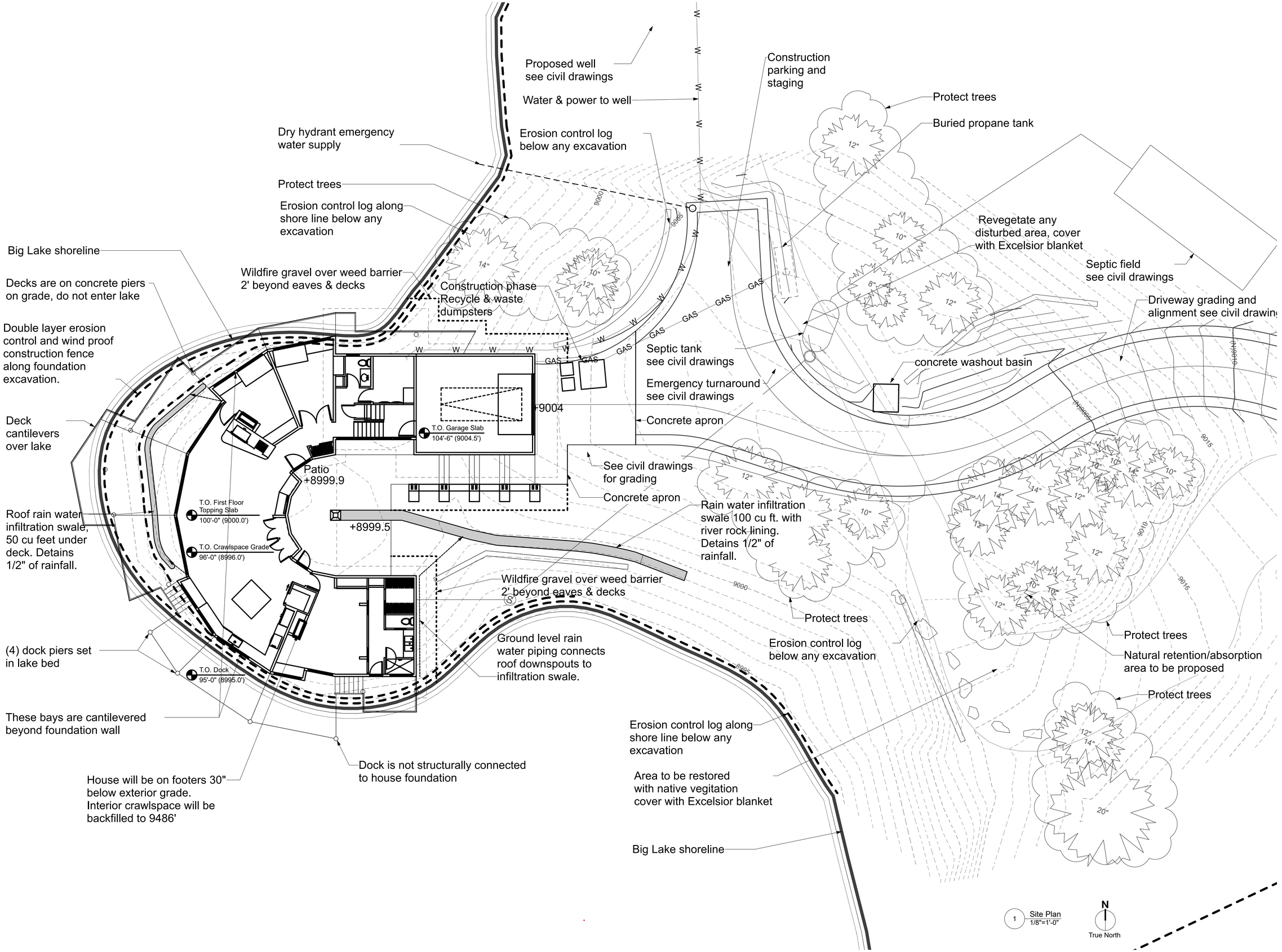
REVISION	DATE	BY
UPDATING SEPTIC LOCATION	10/24/2024	JTG

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. • ESTES PARK, COLORADO 80517
PHONE: (970) 586–9388 • FAX: (970) 586–8101

SHEET: SITE PLAN FOR BIG LAKE RESIDENCE

PROJECT: BIG LAKE RESIDENCE
3310 CR96J, UNINC. BOULDER COUNTY

DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=30'
DATE:	12–22–2023
SHEET	1
OF	1
PROJ. NO.	2012–06–18



ATTACHMENT A

File:

NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect from all consequences arising out of such changes.

REVISED LAND USE SUBMITTAL

Date: December 5, 2024

Revisions:

Big Lake Residence

3310 CR 96J, Ward CO 80481

BARRETT STUDIO architects

Architecture Community/Urban Design Interiors

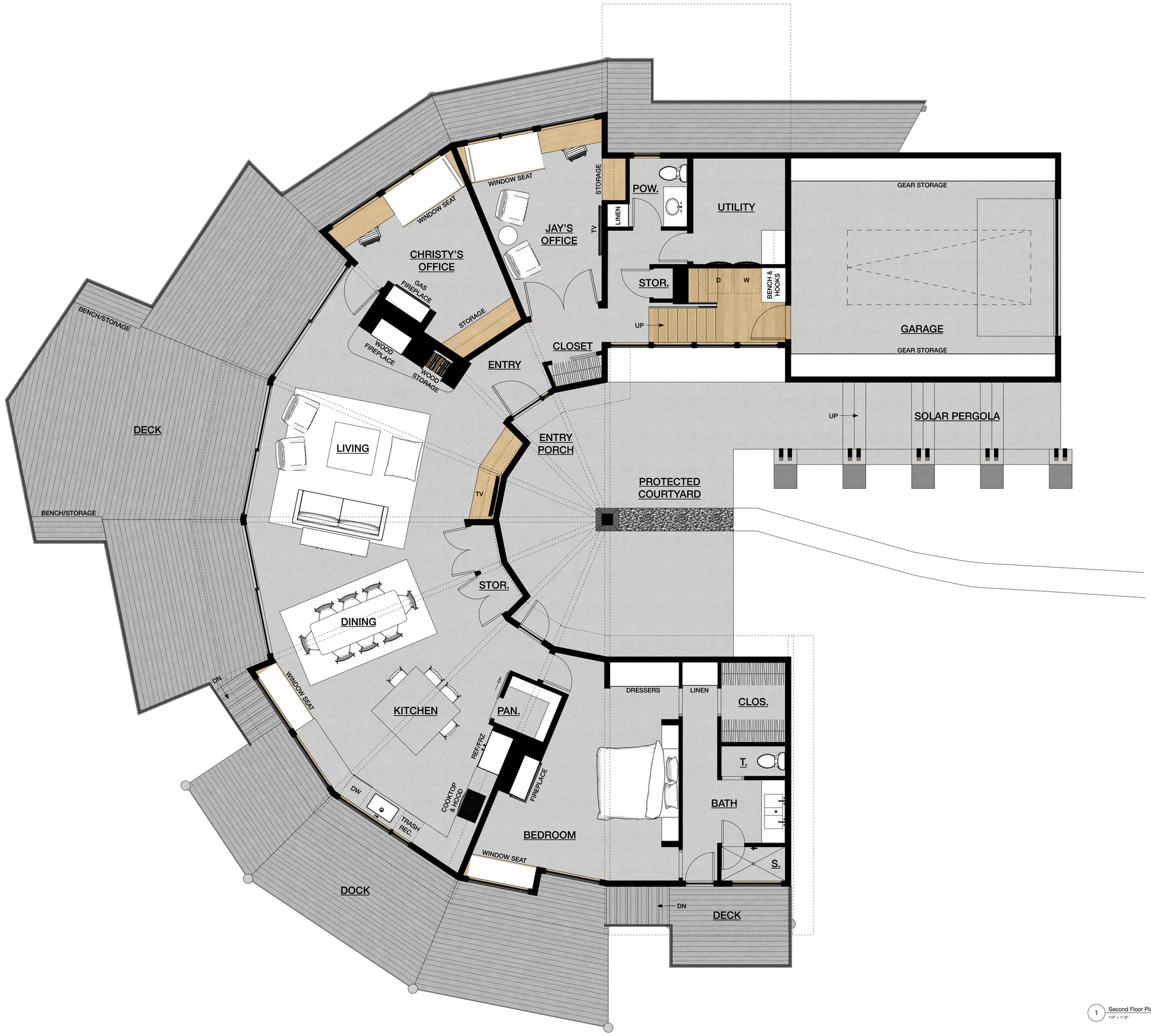
Mailing: 3980 N Broadway, Suite 103 PMB-224, Boulder, Colorado 80304 phone: 303-449-1141 email bsa@barrettstudio.com web www.barrettstudio.com

Site Plan

Drawing Number:

A1.1

Sheet: 1 of:



1 Second Floor Plan
1/4" = 1'-0"

N

ATTACHMENT A

NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect from all consequences arising out of such changes.

REVISED LAND USE SUBMITTAL

Date: December 5, 2024
Revisions:

Big Lake Residence
3310 CR 96J, Ward CO 80481

BARRETT STUDIO architects
Architecture Community/Urban Design Interiors
Mailing: 3980 N Broadway, Suite 103 PMB-224, Boulder, Colorado 80304 phone: 303.449.1141 email bsa@barrettstudio.com web www.barrettstudio.com

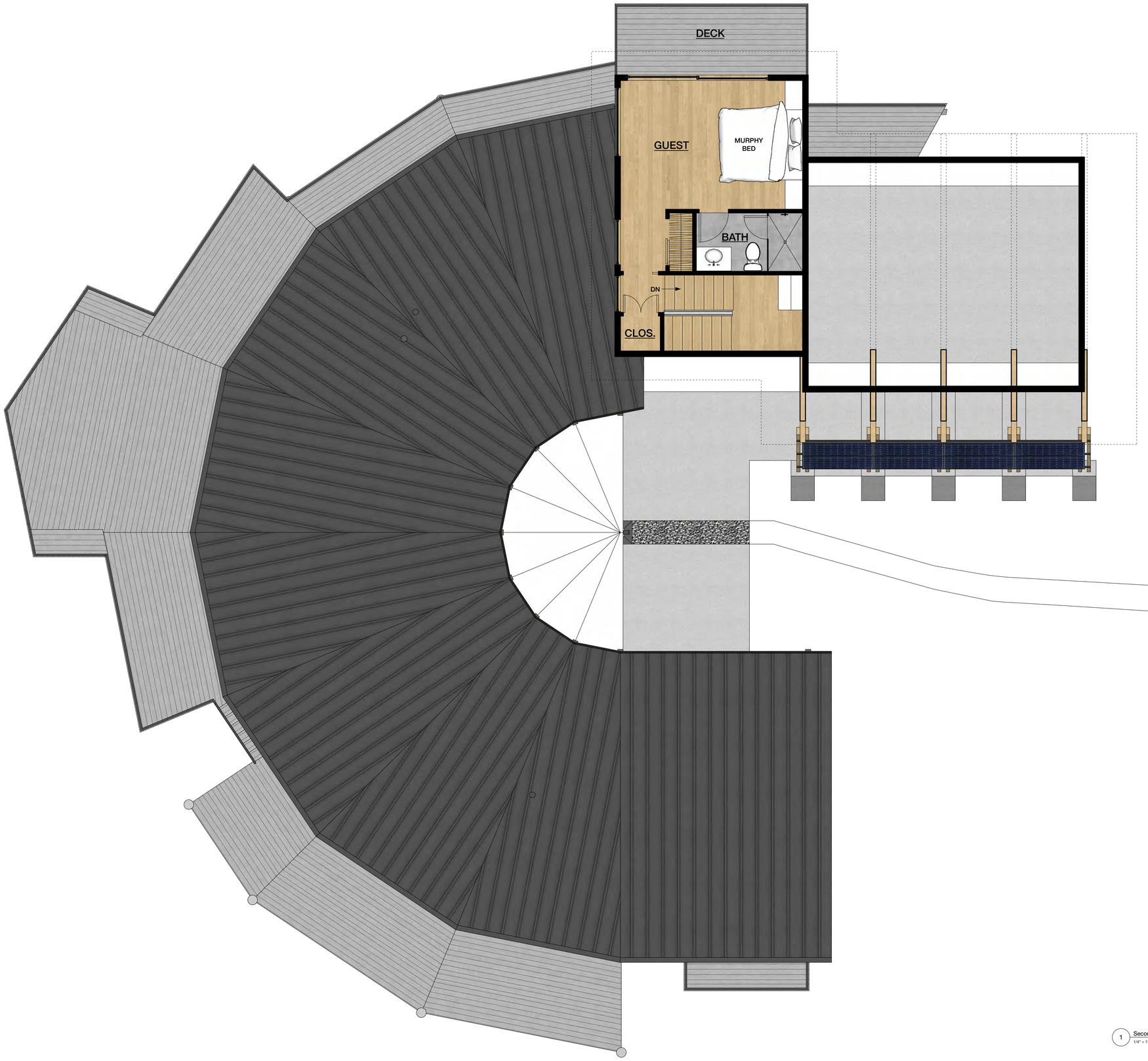
Preliminary Drawing Set Not for Construction

Plans

Drawing Number:

2.0

Sheet: of:



1 Second Floor Plan
1/4" = 1'-0"

N

REVISED LAND USE SUBMITTAL

Date: December 5, 2024
Revisions:

Big Lake Residence
3310 CR 96J, Ward CO 80481

BARRETT STUDIO architects
Architecture Community/Urban Design Interiors
Mailing: 3980 N Broadway, Suite 103 PMB-224, Boulder, Colorado 80304 **phone:** 303.449.1141 **email** bsa@barrettstudio.com **web** www.barrettstudio.com

Preliminary Drawing Set Not for Construction

Plans

Drawing Number:

2.1

Sheet: of:

ATTACHMENT A

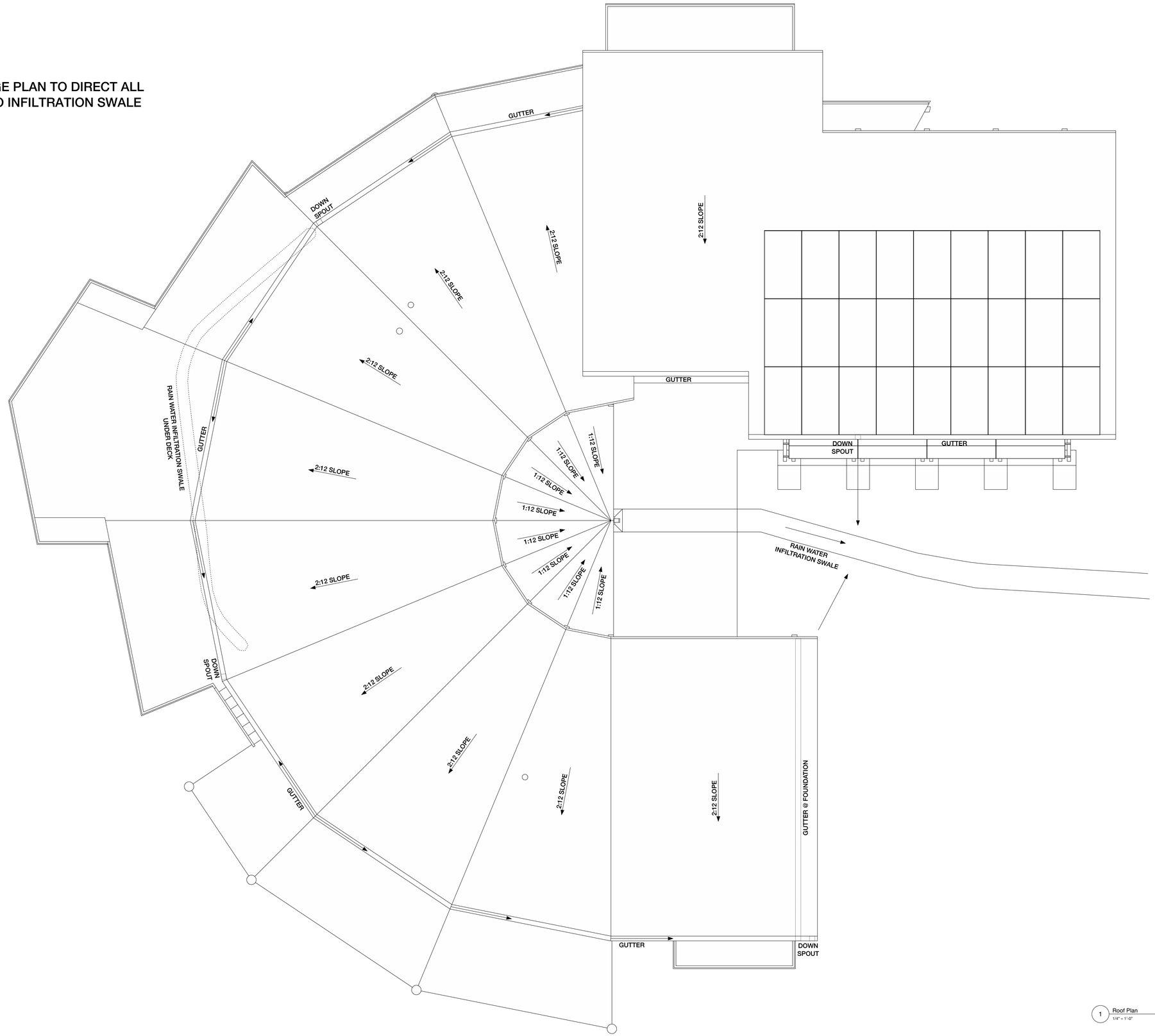
NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect from all consequences arising out of such changes.

REVISED LAND USE SUBMITTAL

Date: December 5, 2024
Revisions:

ROOF DRAINAGE PLAN TO DIRECT ALL RAIN WATER TO INFILTRATION SWALE



1 Roof Plan
1/4" = 1'-0"

N

BARRETT STUDIO architects
Architecture Community/Urban Design Interiors
Mailing: 3980 N Broadway, Suite 103 PMB 224, Boulder, Colorado 80304 phone: 303.449.1141 email bsa@barrettstudio.com web www.barrettstudio.com

Big Lake Residence
3310 CR 96J, Ward CO 80481

Preliminary Drawing Set Not for Construction

Plans

Drawing Number:

2.2

Sheet: of:

Material Key

- Standing Seam Metal Roof
- Corrugated Metal Siding
- Concrete - Clear Sealed Above Grade, Waterproof Below Grade

Elevation Keynotes

1. Powder Coated Galvanized Steel Deck & Dock Framing
2. Ipe E 84 Ignition Resistant Wood Deck & Dock Decking - Untreated
3. Painted Steel Guardrail
4. Aluminum Clad Windows
5. Solar Panels

1 South Elevation
1/4" = 1'-0"

2 North Elevation
1/4" = 1'-0"

NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect from all consequences arising out of such changes.

REVISED LAND USE SUBMITTAL

Date: December 5, 2024
Revisions:

Big Lake Residence
3310 CR 96J, Ward CO 80481

BARRETT STUDIO architects
Mailing: 3980 N Broadway, Suite 103 PMB-224, Boulder, Colorado 80304 phone: 303.449.1141 email bsa@barrettstudio.com web www.barrettstudio.com
Architecture Community/Urban Design Interiors

Preliminary Drawing Set Not for Construction

Elevations

Drawing Number:

4.0

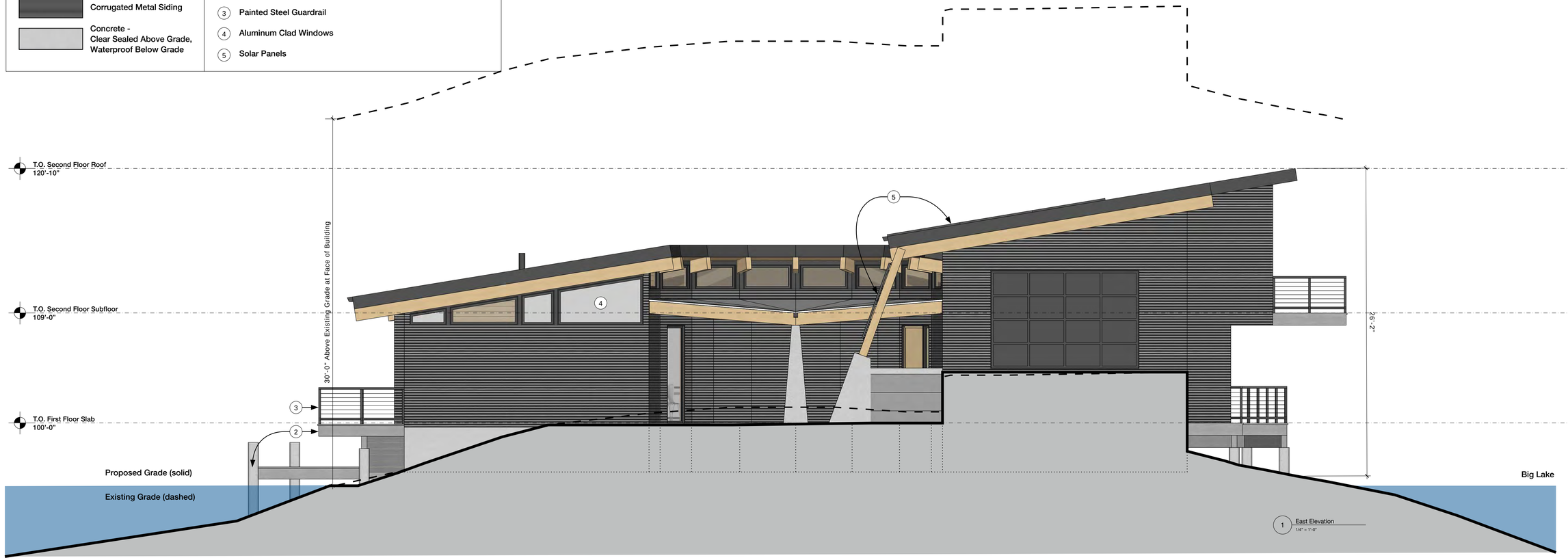
Sheet: of:

Material Key

- Standing Seam Metal Roof
- Corrugated Metal Siding
- Concrete - Clear Sealed Above Grade, Waterproof Below Grade

Elevation Keynotes

1. Powder Coated Galvanized Steel Deck & Dock Framing
2. Ipe E 84 Ignition Resistant Wood Deck & Dock Decking - Untreated
3. Painted Steel Guardrail
4. Aluminum Clad Windows
5. Solar Panels



1 East Elevation
1/4" = 1'-0"

2 West Elevation
1/4" = 1'-0"

REVISED LAND USE SUBMITTAL

Date: December 5, 2024
Revisions:

Big Lake Residence
3310 CR 96J, Ward CO 80481

BARRETT STUDIO architects
Mailing: 3980 N Broadway, Suite 103 PMB-224, Boulder, Colorado 80304 phone: 303.449.1141 email bsa@barrettstudio.com web www.barrettstudio.com
Architecture Community/Urban Design Interiors

Preliminary Drawing Set Not for Construction

Elevations

Drawing Number:

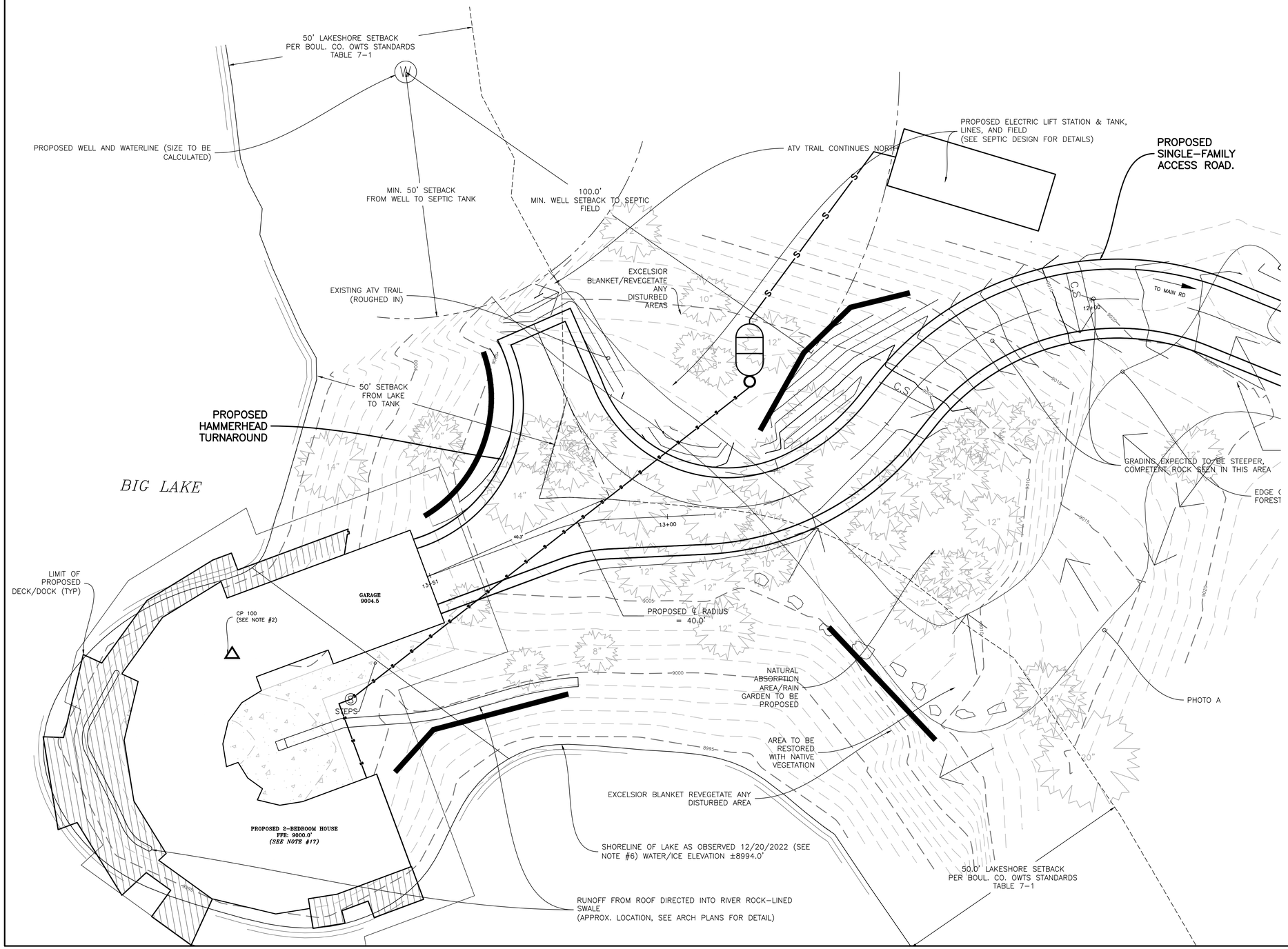
4.1

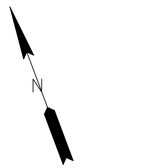
Sheet: of:

STAPP LAKES RANCH HOUSE LOCATION (PENINSULA)

3310 CR 96J, UNINCORPORATED BOULDER COUNTY

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO





SCALE: 1" = 10'

0 10 20 30

LEGAL DESCRIPTION

BIG LAKE LLC PARCEL (BOULDER COUNTY ASSESSOR PARCEL NO, 132300000040):
Legal Description per Special Warranty Deed at Recep. No. 04028784

A PORTION OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF SECTION 22, TOWNSHIP 2 NORTH, RANGE 73 WEST OF THE 6TH P.M., BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHEAST 1/4 OF SAID SECTION AND CONSIDERING THE EAST LINE OF THE SOUTHEAST 1/4 OF SAID SECTION TO BEAR N00°12'42"W WITH ALL BEARINGS HEREIN RELATIVE THERETO;
THENCE N00°12'42"W ALONG SAID EAST LINE 717.72' TO THE TRUE POINT OF BEGINNING;
THENCE DEPARTING SAID EAST LINE S89°56'45"W 438.09';
THENCE S62°28'38"W 54.20';
THENCE S89°56'45"W 2140.24' TO THE WEST LINE OF SAID SOUTHEAST 1/4;
THENCE ALONG THE SAID WEST LINE N00°35'53"E 641.03' TO THE CENTER-SOUTH 1/16TH OF SAID SECTION;
THENCE S89°39'12"E ALONG THE NORTH LINE OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF SAID SECTION 2617.54' TO THE SOUTH 1/16TH OF SAID SECTION;
THENCE S00°12'42"E 597.69' TO THE POINT OF BEGINNING.
SAID PARCEL CONTAINS 37.77 ACRES, MORE OR LESS, AND IS SUBJECT TO ALL EASEMENTS AND RIGHT OF WAYS OF RECORD.
COUNTY OF BOULDER, STATE OF COLORADO.

SURVEYOR'S/ENGINEER'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS 9000.00' BENCHMARK. A MORE REALISTIC ELEVATION FOR THIS PARCEL IS AROUND 9500' BASED ON GOOGLE EARTH.
3. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
5. THE POSTED ADDRESS FOR THIS PROPERTY IS 3310 CR 96J, BOULDER, CO
6. AT THE TIME OF THE ORIGINAL SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES, INCLUDING THE CABINS SHOWN ON THIS SITE PLAN.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.
8. NO EXTERNAL PARCEL LINES OR ASSOCIATED SETBACKS ARE SHOWN HEREON.
9. SEE SHEET C5 FOR EXISTING FOREST MAINTENANCE ROAD PROFILE.
10. NO UTILITIES TO CABINS ARE SHOWN ON THIS ROAD DESIGN.
11. THE PURPOSE OF THIS PLAN/DESIGN IS TO DEPICT THE EXISTING FOREST MAINTENANCE ROAD ON THE SUBJECT PROPERTY AS COMPARED TO A DESIGNED OR PROPOSED ROAD GENERALLY FOLLOWING THE SAME ALIGNMENT BUT BEING GEOMETRICALLY CORRECT IN WIDTH WITH RADIAL/CIRCULAR CURVES. THE PROPOSED ROAD IS NOT IN THE HISTORIC SAME ALIGNMENT FROM 11+50 TO 13+50
12. EARTHWORK QUANTITIES ARE SUMMARIZED ON A SEPARATE DOCUMENT.
13. PER BOULDER COUNTY, THE MAXIMUM GRADE FOR A DRIVEWAY IS 12% TO ENSURE ACCESS FOR EMERGENCY VEHICLES. IN THE MOUNTAINS THERE MAY BE A 14% GRADE FOR UP TO 200 FEET, AND 16% FOR 200 FEET IF SERVING A SINGLE DWELLING UNIT.
14. PER BOULDER COUNTY, THERE MUST BE A VERTICAL CLEARANCE OF 13.5' (13'-6"). THE REMOVAL OF SOME TREE LIMBS OR BRUSH MAY BE REQUIRED TO ATTAIN THIS.
15. THIS DESIGN PROFILE BASICALLY FOLLOWS THE VERTICAL PROFILE OF THE EXISTING FOREST MAINTENANCE ROAD, BOTH ARE SHOWN HEREON.
16. ALL-WEATHER SURFACING IS PROPOSED FOR THIS DRIVEWAY (4" THICK CLASS 5 ROAD BASE OR EQUIVALENT).
17. SEE GEOLOGIC REPORT PREPARED BY AMERICAN GEOSERVICES FOR SLOPE STABILITY ANALYSIS.

LEGEND

- SEWER CLEAN OUT
- WELL
- CONTROL POINT
- PROPOSED WELL WATER LINE
- PROPOSED SEPTIC LINE
- EX. MAJOR CONTOUR (5')
- EX. MINOR CONTOUR (1')
- PROP. MAJOR CONTOUR (5')
- PROP. MINOR CONTOUR (1')
- TREE (DIAM. AS NOTED)
- ROCK OUTCROPPING/BOULDER
- PROPOSED FLOW DIRECTIONS
- INTENDED CROSS-SLOPE DIRECTION
- PROPOSED EROSION LOG

BY	REVISION	DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. * ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 * FAX: (970) 586-8101

SHEET: FOREST MAINT. RD. DESIGN (WEST END)

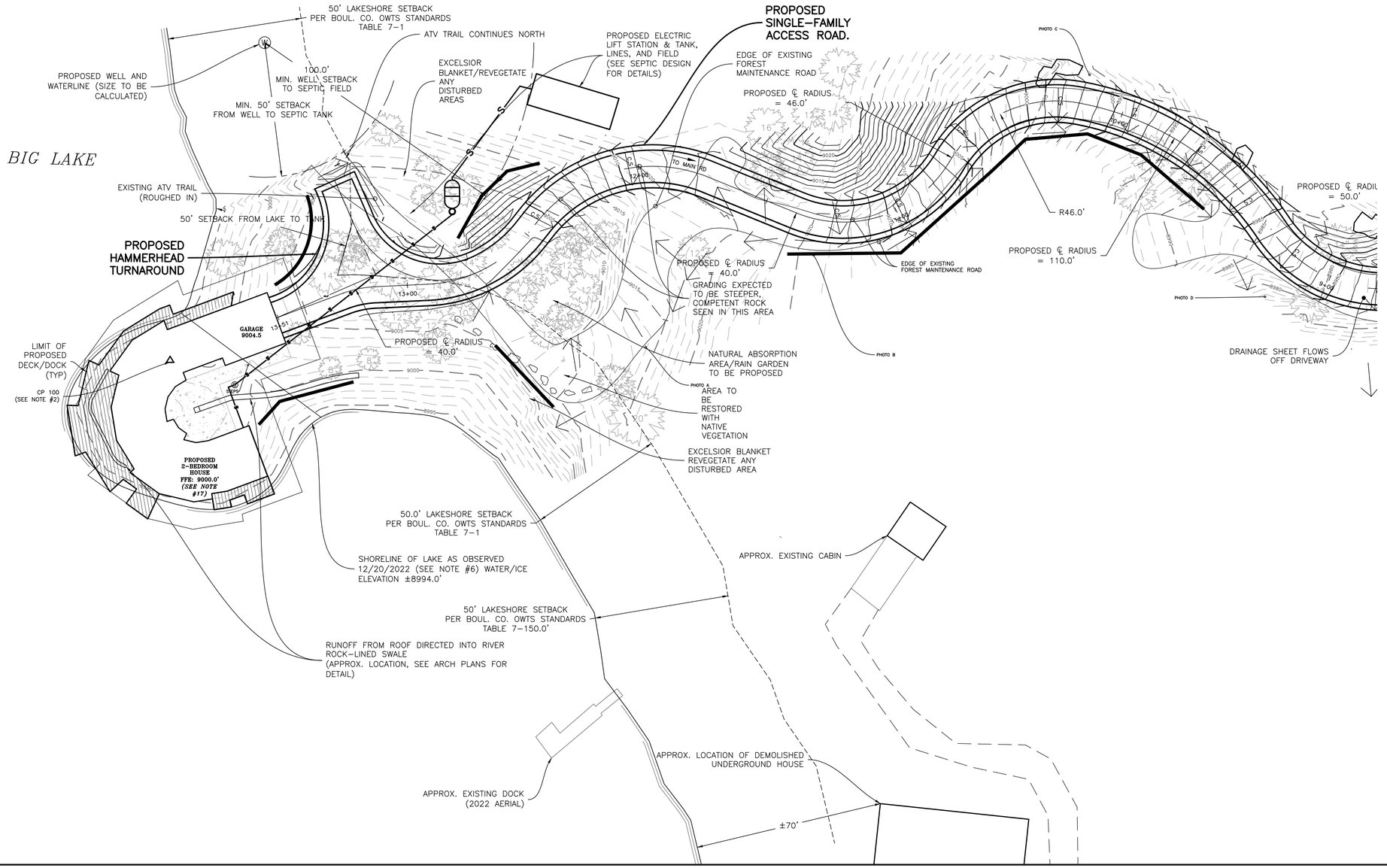
PROJECT: BIG LAKE RESIDENCE
3310 CR 96J, UNINC. BOULDER COUNTY

DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=10'
DATE:	12/17/2024
SHEET	C1
OF	7
PROJ. NO.	2012-06-18

STAPP LAKES RANCH DRIVEWAY DESIGN (WEST END)

3310 CR 96J, UNINCORPORATED BOULDER COUNTY

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO



LEGEND

- (S) SEWER CLEAN OUT
- (W) WELL
- △ CONTROL POINT
- W PROPOSED WELL WATER LINE
- S PROPOSED SEPTIC LINE
- 9000 EX. MAJOR CONTOUR (5')
- 9001 EX. MINOR CONTOUR (1')
- 9005 PROP. MAJOR CONTOUR (5')
- 9006 PROP. MINOR CONTOUR (1')
- TREE (DIAM. AS NOTED)
- ROCK OUTCROPPING/BOULDER
- PROPOSED FLOW DIRECTIONS
- CS INTENDED CROSS-SLOPE DIRECTION
- PROPOSED EROSION LOG

SURVEYOR'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS BENCHMARK 9000.00' BENCHMARK. A MORE REALISTIC ELEVATION FOR THIS PARCEL IS 9500' BASED ON GOOGLE EARTH.
3. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
5. THE POSTED ADDRESS FOR THIS PROPERTY IS 3310 CR 96J, BOULDER, CO
6. AT THE TIME OF SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.

BY	REVISION	DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. * ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 * FAX: (970) 586-8101

SHEET: FOREST MAINT. RD. DESIGN (WEST END)

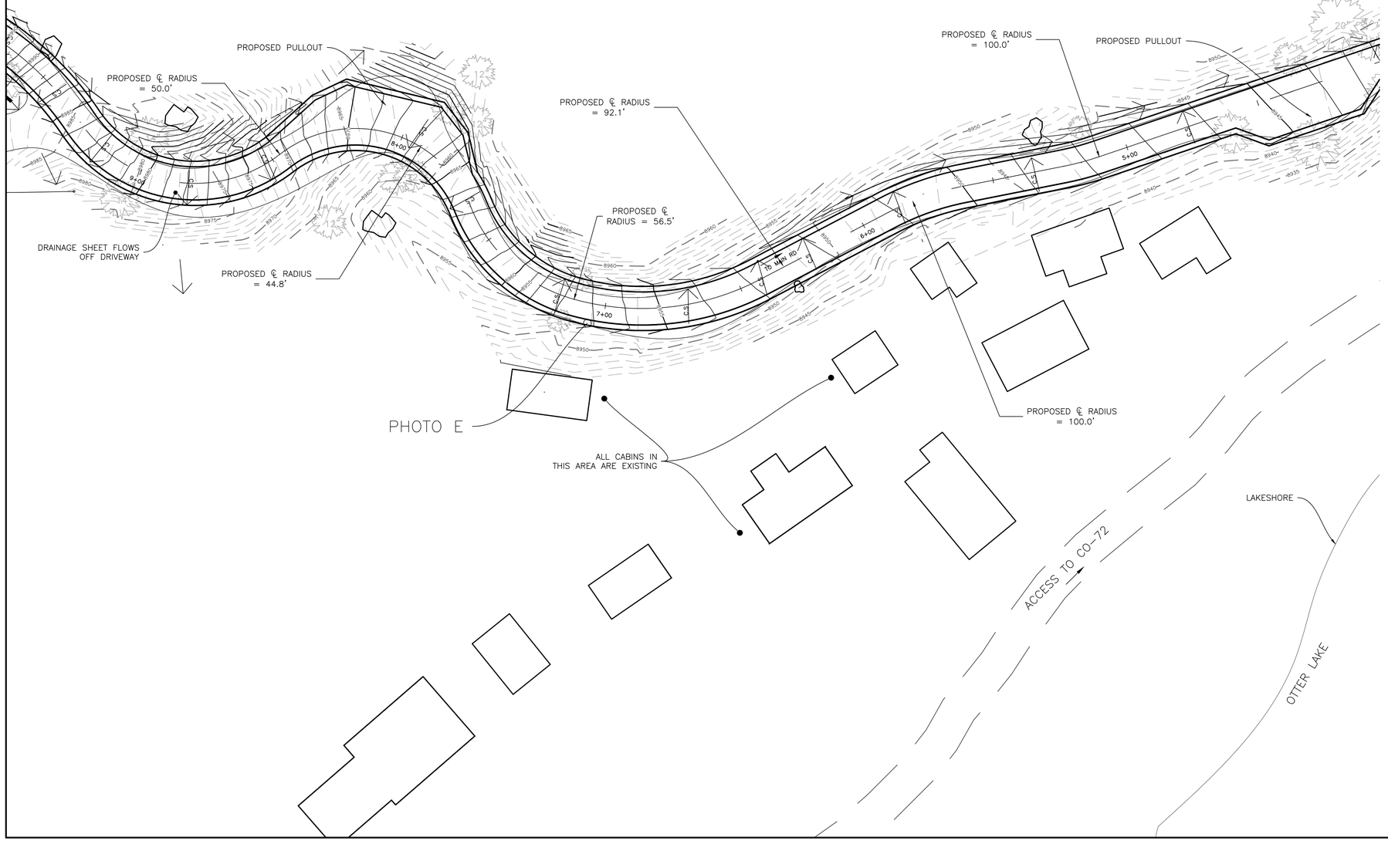
PROJECT: BIG LAKE RESIDENCE
3310 CR 96J, UNINC. BOULDER COUNTY

DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=20'
DATE:	12/17/2024
SHEET	C2
OF	7
PROJ. NO.	2012-06-18

STAPP LAKES RANCH DRIVEWAY DESIGN (MIDDLE SEGMENT)

3310 CR 96J, UNINCORPORATED BOULDER COUNTY

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO



N

SCALE: 1" = 20'

0 20 40 60

LEGEND

- (S) SEWER CLEAN OUT
- (W) WELL
- △ CONTROL POINT
- W PROPOSED WELL WATER LINE
- S PROPOSED SEPTIC LINE
- 9000 EX. MAJOR CONTOUR (5')
- 9001 EX. MINOR CONTOUR (1')
- 9005 PROP. MAJOR CONTOUR (5')
- 9006 PROP. MINOR CONTOUR (1')
- TREE (DIAM. AS NOTED)
- ROCK OUTCROPPING/BOULDER
- PROPOSED FLOW DIRECTIONS
- 6% INTENDED CROSS-SLOPE DIRECTION
- PROPOSED EROSION LOG

SURVEYOR'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS BENCHMARK.
3. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
5. THE POSTED ADDRESS FOR THIS PROPERTY IS 3310 CR 96J, BOULDER, CO
6. AT THE TIME OF SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.

BY	REVISION	DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. • ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 • FAX: (970) 586-8101

SHEET: FOREST MAINT. RD. DESIGN (MIDDLE)

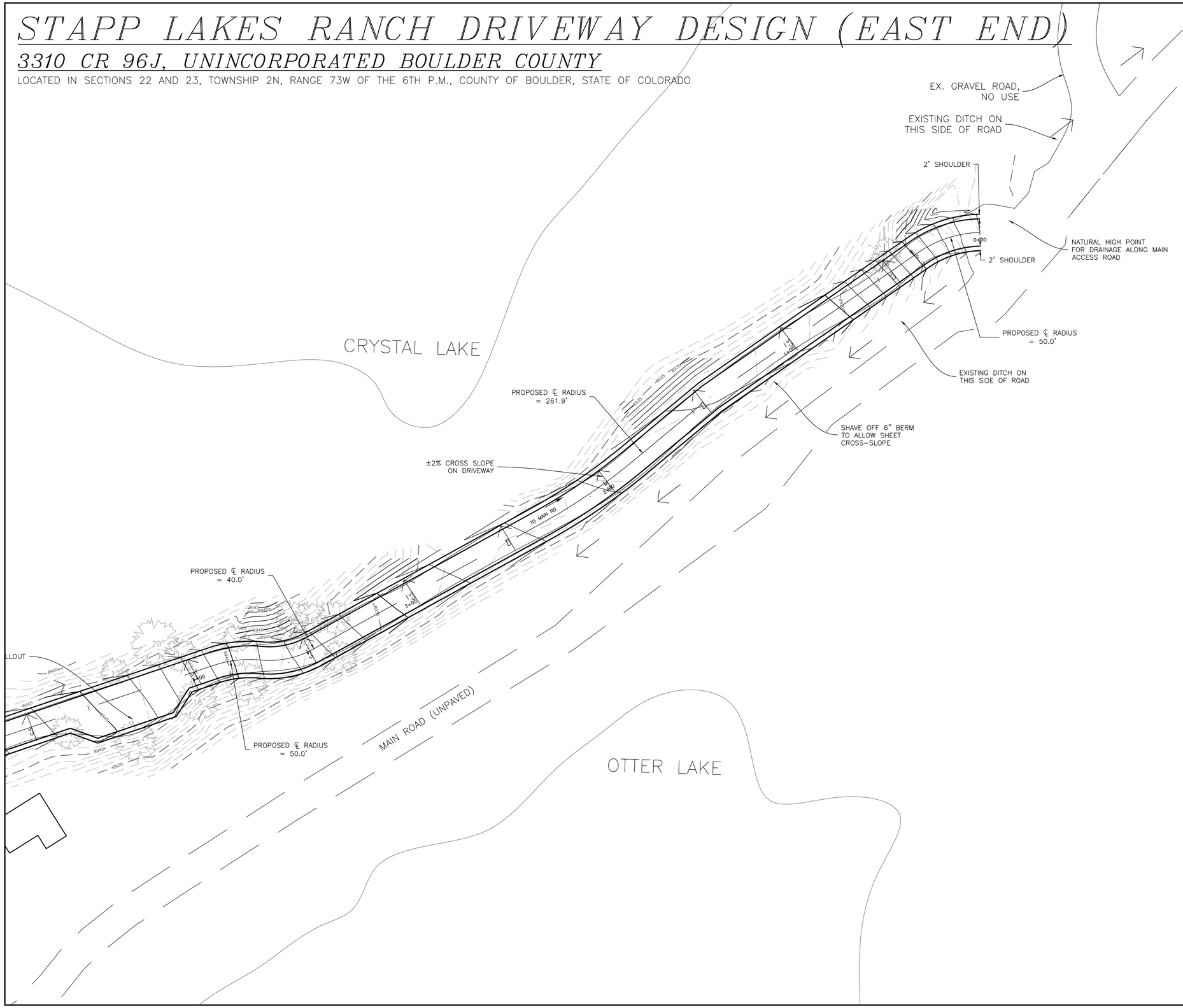
PROJECT: BIG LAKE RESIDENCE
3310 CR 96J, UNINC. BOULDER COUNTY

DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=20'
DATE:	12/17/2024
SHEET	C3
OF	7
PROJ. NO.	2012-06-18

STAPP LAKES RANCH DRIVEWAY DESIGN (EAST END)

3310 CR 96J, UNINCORPORATED BOULDER COUNTY

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO



N

SCALE: 1" = 20'

0 20 40 60

LEGEND

- SEWER CLEAN OUT
- WELL
- CONTROL POINT
- W — PROPOSED WELL WATER LINE
- S — PROPOSED SEPTIC LINE
- 9000 — EX. MAJOR CONTOUR (5')
- 9001 — EX. MINOR CONTOUR (1')
- 9005 — PROP. MAJOR CONTOUR (5')
- 9006 — PROP. MINOR CONTOUR (1')
- TREE (DIAM. AS NOTED)
- ROCK OUTCROPPING/BOULDER
- PROPOSED FLOW DIRECTIONS
- CS — INTENDED CROSS-SLOPE DIRECTION
- PROPOSED EROSION LOG

SURVEYOR'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS BENCHMARK.
3. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
5. THE POSTED ADDRESS FOR THIS PROPERTY IS 3310 CR 96J, BOULDER, CO
6. AT THE TIME OF SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.

BY	REVISION	DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. * ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 * FAX: (970) 586-8101

SHEET: FOREST MAIN. RD. DESIGN (EAST END)

PROJECT: BIG LAKE RESIDENCE
3310 CR 96J, UNINC. BOULDER COUNTY

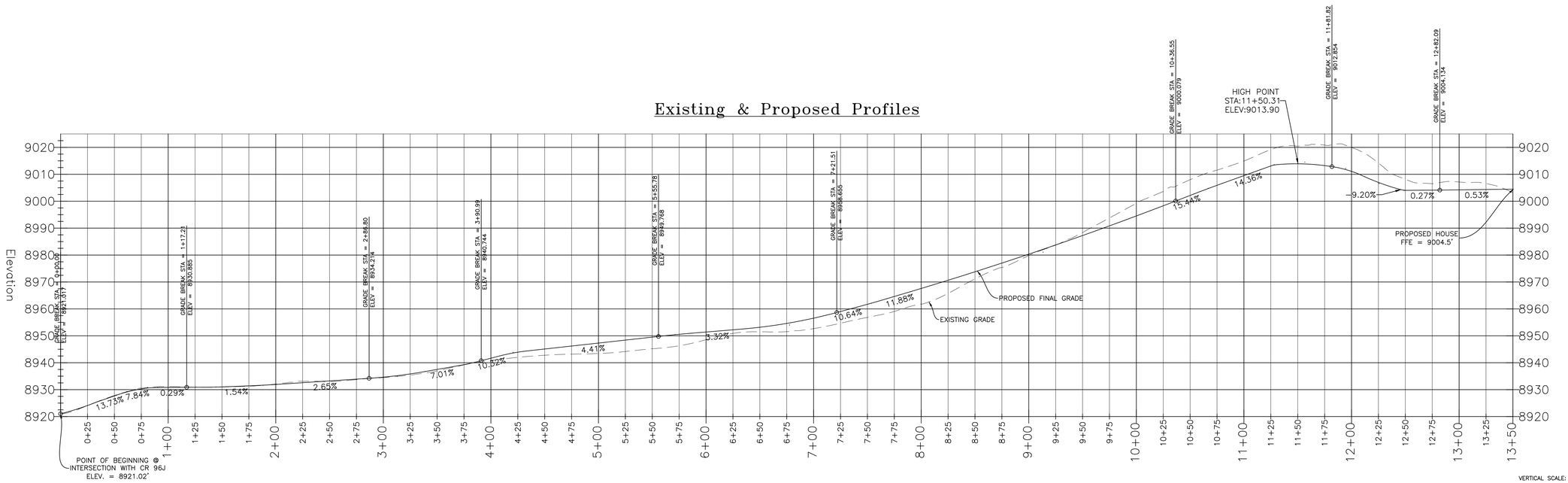
DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=20'
DATE:	12/17/2024
SHEET	C4
OF	7
PROJ. NO.	2012-06-18

BIG LAKE RESIDENCE ROAD PROFILE AND CROSS SECTIONS

3310 CR 96J, UNINCORPORATED BOULDER COUNTY, COLORADO

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO

Existing & Proposed Profiles

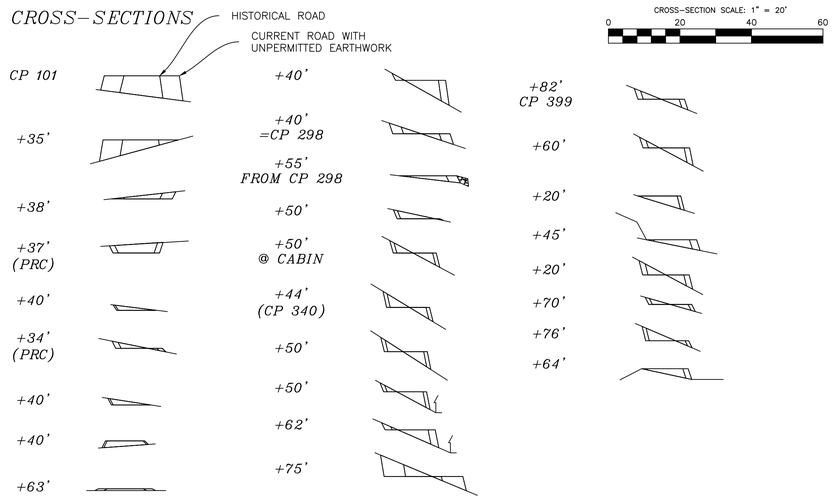


VERTICAL SCALE: 1"=25'
0 25 50 75

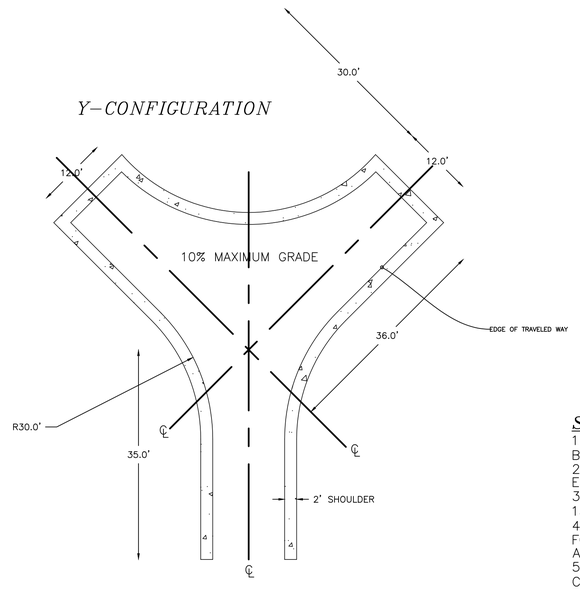
HORIZONTAL SCALE: 1"=50'
0 50 100 150

CROSS-SECTIONS

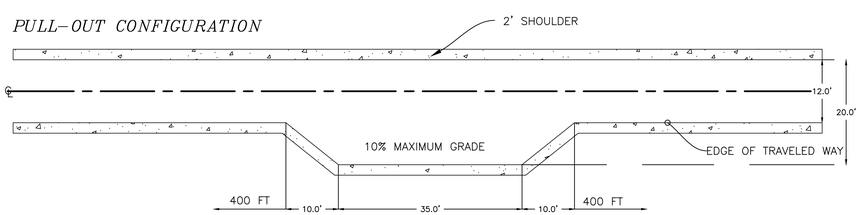
CROSS-SECTION SCALE: 1" = 20'
0 20 40 60

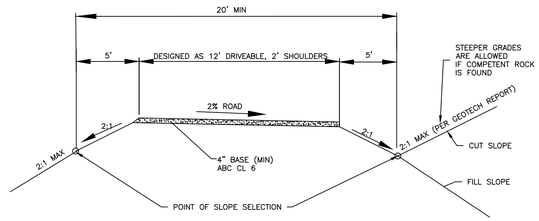


Y-CONFIGURATION



PULL-OUT CONFIGURATION





ONE-LANE PRIVATE ACCESS SECTION
PER STANDARD DRAWING 11, BOUL. CO.
MULTIMODAL DESIGN STANDARDS

SURVEYOR'S NOTES:

1. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
3. THE PROPOSED DRIVEWAY WILL SERVE THE NEWLY CREATED PARCEL (BOULDER COUNTY PARCEL NO. 132300000040) WITH THE ASSIGNED ADDRESS 3310 CR96J, WARD, CO 80481.
4. PER BOULDER COUNTY'S "DRIVEWAY ACCESS FOR EMERGENCY VEHICLES" DOCUMENT, THE MAXIMUM GRADE FOR A DRIVEWAY IS 12% TO ENSURE ACCESS FOR EMERGENCY VEHICLES. IN THE MOUNTAINS THERE MAY BE A 14% GRADE FOR UP TO 200 FEET, AND 16% FOR 200 FEET IF SERVING A SINGLE DWELLING UNIT.
5. PER BOULDER COUNTY'S "DRIVEWAY ACCESS FOR EMERGENCY VEHICLES", THERE MUST BE A VERTICAL CLEARANCE OF 13.5' (13'-6"). THE REMOVAL OF SOME TREE LIMBS OR BRUSH MAY BE REQUIRED TO ATTAIN THIS.
6. DIMENSIONS SHOWN FOR THE PULL-OUT AND HAMMERHEAD TURNAROUND WERE OBTAINED FROM BOULDER COUNTY'S "DRIVEWAY ACCESS FOR EMERGENCY VEHICLES" DOCUMENT.
7. A DESIGN WAIVER IS BEING REQUESTED TO ALLOW GRADES EXCEEDING 6% THROUGH CURVES, AS REQUIRED BY THE BOULDER COUNTY "DRIVEWAY ACCESS FOR EMERGENCY VEHICLES."

DATE	REVISION	BY

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. * ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 * FAX: (970) 586-8101

SHEET: CHRISTY AND JAY ORRIS/BIG LAKE LLC

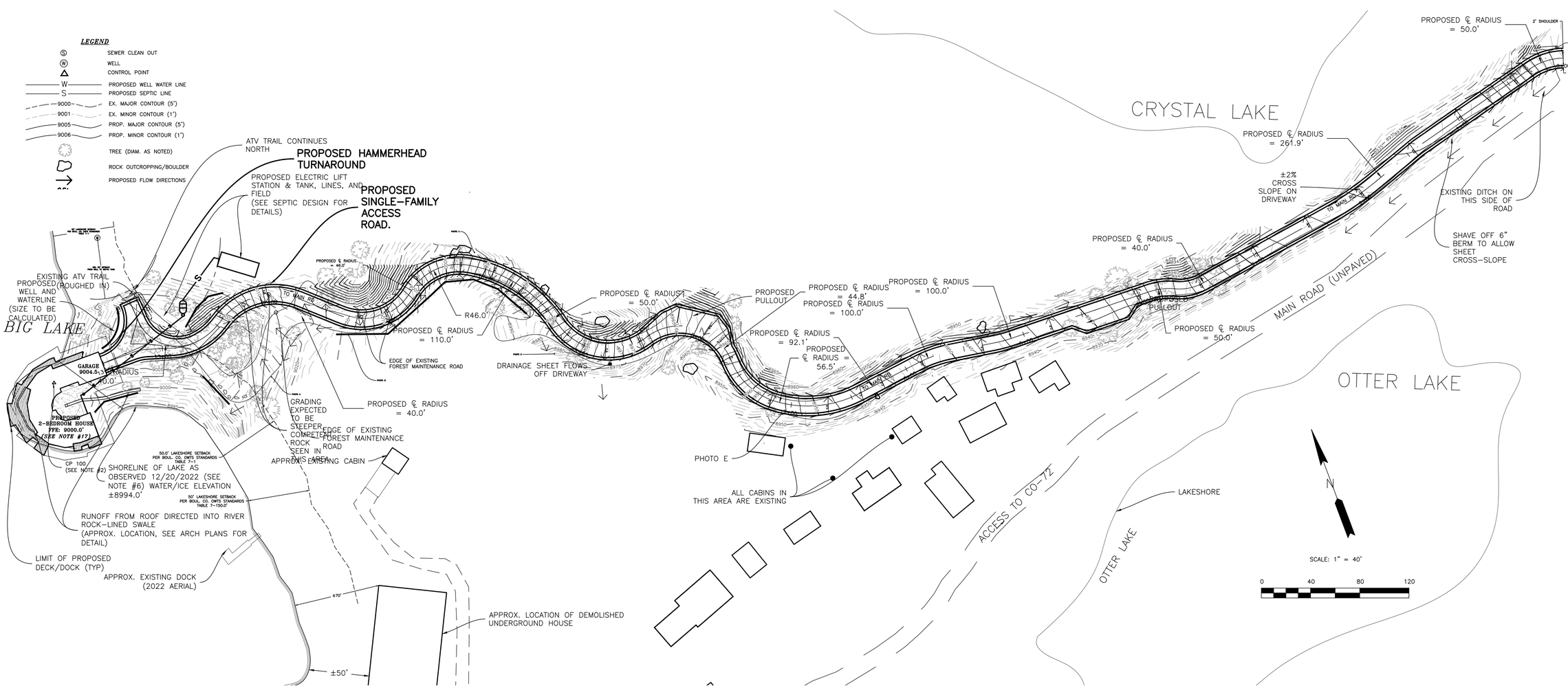
PROJECT: BIG LAKE RESIDENCE
3310 CR 96J, BOULDER COUNTY

DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	AS NOTED
DATE:	12/17/2024
SHEET	C5
OF	7
PROJ. NO.	2012-06-18

BIG LAKE RESIDENCE ROAD PLAN OVERVIEW NOTES

UNINCORPORATED BOULDER COUNTY, STATE OF COLORADO

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO



SURVEYOR'S/ENGINEER'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE INTENT OF THIS WORKSHEET IS TO ACCOMPANY SUBMITTED DRAINAGE/EARTHWORK REPORTS. ADDITIONAL DETAIL TO FOLLOW ON FINAL DRIVEWAY DESIGN SHEET #5
3. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS BENCHMARK.
4. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
6. THE NEWLY CREATED PARCEL WHERE THE BIG LAKE RESIDENCE IS TO BE CONSTRUCTED HAS AN ASSIGNED ADDRESS OF 3310 CR 96J, WARD, CO 80481.
7. AT THE TIME OF SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES, INCLUDING THE CABINS SHOWN ON THIS SITE PLAN.
8. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.
9. THE PROPERTY LINES FOR THE NEWLY CREATED BIG LAKE LLC PARCEL ARE NOT SHOWN HEREON. SAID PARCEL HAS A BOULDER COUNTY RECEPTION NO. OF 132300000040.
10. SEE SHEET C5 FOR EXISTING FOREST MAINTENANCE ROAD PROFILE.
11. EARTHWORK QUANTITIES ARE SUMMARIZED ON A SEPARATE DOCUMENT.
12. THE SHOWN LOCATIONS FOR THE PROPOSED CROSS-CULVERTS AND STILLING BASINS HEREON WERE OBTAINED FROM HANDWRITTEN NOTES. THE LOCATIONS WILL BE FINALIZED DURING CONSTRUCTION TO "BEST-FIT" THE NEEDED LOCATIONS FOR THIS DESIGN, 18" CORRUGATED STEEL CULVERTS, 20' LONG ARE SHOWN (SPECIFIC SIZE/LENGTH TO BE DETERMINED AT A LATER DATE BEFORE CONSTRUCTION). CULVERTS ARE TO COMPLY WITH AASHTO STANDARD M 36.
13. THE DISTURBED AREA WAS MEASURED TO BE ±0.75 ACRES. ALL DISTURBED AREA IS TO BE SEEDED/MULCHED/FABRIC COVERED.
14. ON SITE EROSION CONTROL TO BE PROVIDED AT THE DIRECTION OF THE ENGINEER
15. STRAW BALES OR EROSION LOGS ARE TO BE USED FOR ON SITE EROSION CONTROL AT THE DIRECTION OF THE ENGINEER.
16. PER BOULDER COUNTY, THE MAXIMUM GRADE FOR A DRIVEWAY IS 12% TO ENSURE ACCESS FOR EMERGENCY VEHICLES. IN THE MOUNTAINS THERE MAY BE A 14% GRADE FOR UP TO 200 FEET, AND 16% FOR 200 FEET IF SERVING A SINGLE DWELLING UNIT.
17. PER BOULDER COUNTY, THERE MUST BE A VERTICAL CLEARANCE OF 13.5' (13'-6"). THE REMOVAL OF SOME TREE LIMBS OR BRUSH MAY BE REQUIRED TO ATTAIN THIS.
18. THIS DESIGN PROFILE BASICALLY FOLLOWS THE VERTICAL PROFILE OF THE EXISTING FOREST MAINTENANCE ROAD, BOTH ARE SHOWN ON PAGE 5 OF THIS PLANSET.
19. ALL-WEATHER SURFACING IS PROPOSED FOR THIS DRIVEWAY (4" THICK CLASS 5 ROAD BASE OR EQUIVALENT).

BY | REVISION | DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. * ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 * FAX: (970) 586-8101

SHEET: ROAD PLAN OVERVIEW NOTES

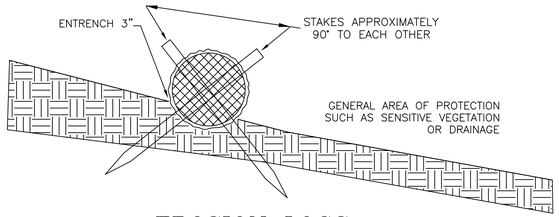
PROJECT: BIG LAKE RESIDENCE
3310 CR 96J, BOULDER COUNTY

DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=40'
DATE:	12/17/2024
SHEET	C6
OF	7
PROJ. NO.	2012-06-18

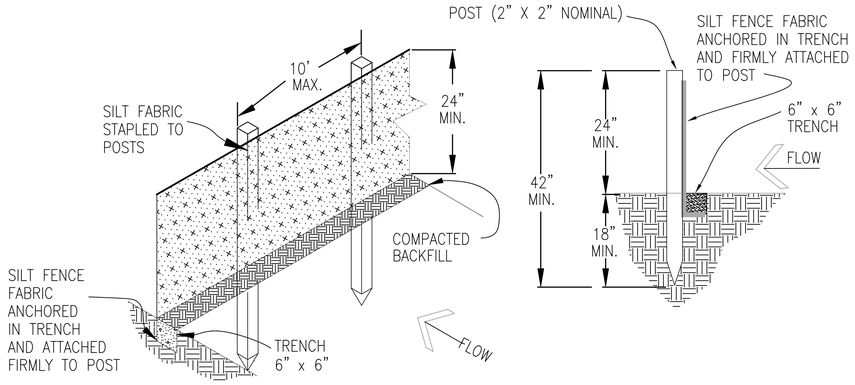
BIG LAKE RESIDENCE EROSION PLAN

UNINCORPORATED BOULDER COUNTY, STATE OF COLORADO

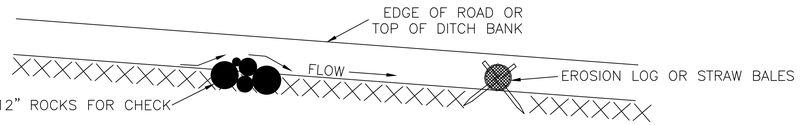
LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO



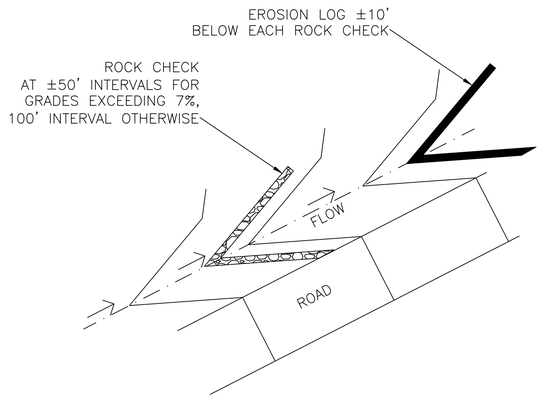
EROSION LOGS
TYPICAL STAKING PATTERN
NTS



SILT FENCE
NTS



ROCK CHECK STRUCTURE–PROFILE VIEW
NTS



ROCK CHECK STRUCTURE–PLAN VIEW
NTS

EROSION CONTROL NOTES

1. THIS DRIVEWAY DESIGN IS REPRESENTATIONAL ONLY AND IS NOT TO BE CONSTRUED AS A LAND SURVEY PLAT NOR AN IMPROVEMENT SURVEY PLAT.
2. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
3. ALL REQUIRED IMPROVEMENTS SHALL BE COMPLETED OR GUARANTEED IN ACCORDANCE WITH BOULDER COUNTY LAND USE CODE SECTION 9–903 AND BOULDER COUNTY STORM DRAINAGE CRITERIA MANUAL.
4. PROPOSED DRIVEWAY IS TO BE SURFACED WITH A MINIMUM 4" ABC CLASS 5 ROAD BASE.
5. TRASH DUMPSTERS SHALL BE SECURED AGAINST BEARS AND OTHER ANIMALS. TRASH DUMPSTERS DURING AND AFTER CONSTRUCTION ARE TO HAVE A METAL LID TO PREVENT TRASH FROM ENTERING THE BIG LAKE AND OTHER LOCAL WATERWAYS.
6. UTILITIES ARE SCHEMATIC. THE ACTUAL LOCATIONS WILL BE FIELD FIT AT THE TIME OF INSTALLATION.
7. LIMITS OF DISTURBANCE SHALL BE DESIGNATED IN THE FIELD PRIOR TO COMMENCEMENT OF EXCAVATION, GRADING, OR CONSTRUCTION WITH CONSTRUCTION BARRIER FENCING OR SOME OTHER METHOD APPROVED BY STAFF.
8. ALL AREAS DISTURBED SINCE 2020 ARE TO BE REVEGETATED USING EXCELSIOR BLANKETS.
9. SLOPES ARE NOT TO EXCEED 1.5:1 AT PULLOUTS AND THE HAMMERHEAD TURNAROUND, AS STATED IN 5.3.2.2 OF THE BOULDER COUNTY MULTIMODAL TRANSPORTATION STANDARDS.
10. THE TOP OF ALL CUT SLOPES ARE TO BE ROUNDED WITH A MINIMUM 10' RADIUS WHERE THE MATERIAL IS NOT SOLID ROCK. WHEN NOT SOLID ROCK, THE SLOPE IS TO BE REVEGETATED.
11. SILT FENCING AND STRAW BALES TO BE PLACED PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION. EROSION CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCING.
12. NO FUELS OR CHEMICALS SHALL BE STORED NEAR PROPOSED CONSTRUCTION AREAS.
13. EROSION CONTROL MEASURES WILL BE INSPECTED WEEKLY DURING CONSTRUCTION AND MAINTAINED IN WORKING ORDER.
14. ALL DISTURBED AREAS TO BE TOPSOILED AND SEEDED. SEED WILL BE DRILLED OR RAKED TO INSURE $\frac{1}{8}$" TO $\frac{1}{4}$" COVER.
15. ALL SLOPES STEEPER THAN 4:1 SHALL BE RESEEDED WITH GRASS MIXES WITH DEEP ROOTING CHARACTERISTICS.
16. AFTER SEEDING ENTIRE DISTURBED SITE WILL BE MULCHED USING CLEAN HAY AT A RATE OF 1.5 TONS/ACRE. SLOPES STEEPER THAN 2:1 SHALL BE BLANKETED WITH BIODEGRADABLE EXCELSIOR BLAKNET EROSION CONTROL FABRIC WITH A MINIMUM WEIGHT OF $\frac{1}{2}$#/sq.yd. INSTALLED PER MANUFACTURES SPECIFICATIONS.
17. ADDITIONAL SEEDING MAY BE NECESSARY IN THE FOLLOWING YEARS TO ENSURE ADEQUATE VEGETATIVE COVER TO STABILIZE SOILS. SILT FENCING OR EROSION LOGS SHALL REMAIN IN PLACE AND REGULARLY MAINTAINED UNTIL SOILS ARE STABILIZED WITH ESTABLISHED VEGETATION.
18. THE CONTRACTOR IS RESPONSIBLE FOR ALL ASPECTS OF EROSION CONTROL.

SURVEYOR'S/ENGINEER'S NOTES:

1. THIS DRIVEWAY DESIGN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE INTENT OF THIS WORKSHEET IS TO ACCOMPANY SUBMITTED DRAINAGE/EARTHWORK REPORTS.
3. THE CONTOURS SHOWN IN THIS PLANSET ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS BENCHMARK.
4. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
6. AT THE TIME OF SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES, INCLUDING THE CABINS SHOWN ON THIS SITE PLAN.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.
8. THE PROPERTY LINES FOR THE NEWLY CREATED BIG LAKE LLC PARCEL ARE NOT SHOWN HEREON. SAID PARCEL HAS A BOULDER COUNTY RECEPTION NO. OF 132300000040.
9. SEE SHEET C5 FOR EXISTING FOREST MAINTENANCE ROAD PROFILE.
10. EARTHWORK QUANTITIES ARE SUMMARIZED ON A SEPARATE DOCUMENT.
11. THE DISTURBED AREA WAS MEASURED TO BE ±0.7 ACRES. ALL DISTURBED AREA IS TO BE SEEDED/MULCHED/FABRIC COVERED.
12. ON SITE EROSION CONTROL TO BE PROVIDED AT THE DIRECTION OF THE ENGINEER
13. STRAW BALES OR EROSION LOGS ARE TO BE USED FOR ON SITE EROSION CONTROL AT THE DIRECTION OF THE ENGINEER.
14. PER BOULDER COUNTY, THE MAXIMUM GRADE FOR A DRIVEWAY IS 12% TO ENSURE ACCESS FOR EMERGENCY VEHICLES. IN THE MOUNTAINS THERE MAY BE A 14% GRADE FOR UP TO 200 FEET, AND 16% FOR 200 FEET IF SERVING A SINGLE DWELLING UNIT.
15. PER BOULDER COUNTY, THERE MUST BE A VERTICAL CLEARANCE OF 13.5' (13'–6"). THE REMOVAL OF SOME TREE LIMBS OR BRUSH MAY BE REQUIRED TO ATTAIN THIS.
16. ALL–WEATHER SURFACING IS PROPOSED FOR THIS DRIVEWAY (4" THICK CLASS 5 ROAD BASE OR EQUIVALENT).

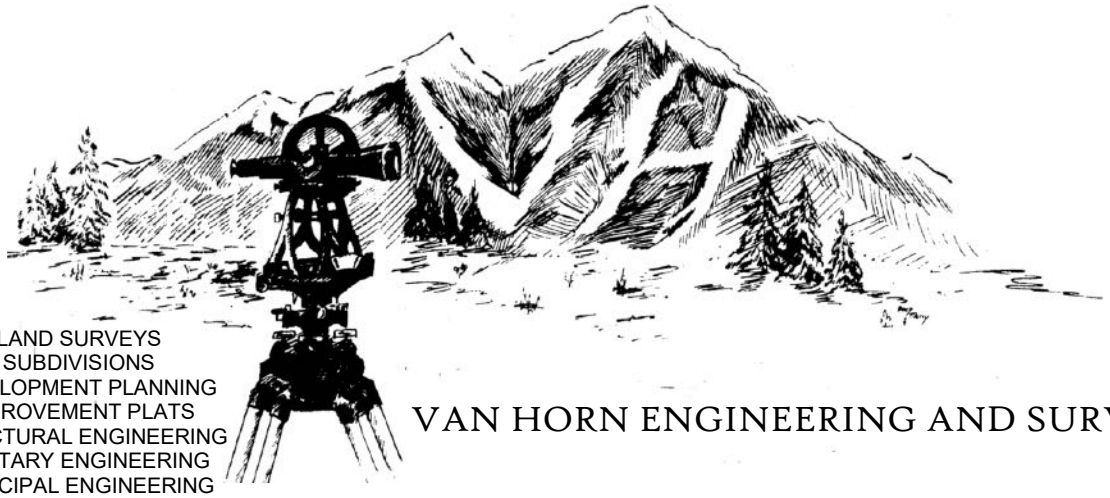
BY | REVISION | DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. • ESTES PARK, COLORADO 80517
PHONE: (970) 586–9388 • FAX: (970) 586–8101

SHEET: EROSION CONTROL PLAN

PROJECT: BIG LAKE RESIDENCE
3310 CR96J, BOULDER COUNTY

DRAWN BY: JTG
CHECKED BY: LAS
SCALE: NO SCALE
DATE: 12/05/2024
SHEET: C7
OF: 7
PROJ. NO. 2012–06–18



LAND SURVEYS
SUBDIVISIONS
DEVELOPMENT PLANNING
IMPROVEMENT PLATS
STRUCTURAL ENGINEERING
SANITARY ENGINEERING
MUNICIPAL ENGINEERING

VAN HORN ENGINEERING AND SURVEYING

Big Lake Drainage and Stormwater Narrative/Letter
3310 County Road 96J,
Boulder County, Colorado

The attached Worksheet is used to show the stormwater drainage plan across the portion of the subject property where a driveway has been upgraded-changed or widened. This letter follows Boulder County's 11-17-2021 Effective Date Memorandum for the allowance of the use of Drainage Letters on Private Development and Public Capital Projects as well as referral comments from Boulder County relating to a previous submittal of this land use project. This project is a private development (single use residential driveway to a 37+ acre parcel) in unincorporated Boulder County.

The bullet item from the required response Memo are abbreviated below followed by a narrative answer or information relative to the bullet topic. See also attached items relative to this analysis and narrative answers:

- Description of property location.
  - The property is located at 3310 County Road 96J in rural Boulder County. CR 96J comes off of Highway 72 near Camp Dick and runs through 3305 CR 96J. The property is west of Highway 72 approximately 2.5 miles past Beaver Reservoir and has a locked gate. The property is a 37 acre parcel that was recently subdivided from 3305 CR 96J. The property is located in parts of Sections 22, 23, 26 and 27 all in Township 2 North, Range 73 West of the 6th P.M.
- Description of proposed project. This is an evaluation for earth work quantities (at various stages), storm drainage and a proposed driveway vertical and horizontal alignment design with associated potential impacts.
- Site Plan showing entire property and disturbed area with distances to waterways.
  - The attached Land Survey Plat shows the overview of the project site including the lakes and section lines. The attached Road Worksheet

shows the driveway reconstruction area in relation to the ponds, cabins, and proposed single family structure at the west end of the proposed driveway. This project will add minimal impervious are to limit runoff.

- Effects on adjacent or nearby drainage features.
    - A proposed rain garden/drainage feature will capture sheet flows from the west end of the driveway. From station 7+09.65 to approximately 11+50, the flows sheet flow off the driveway, west of the existing historical cabins. Other flows for the majority of the driveway will be directed into the ditch on the upslope side of the proposed driveway, from station 0+00 to 7+09.65, and into the existing roadside ditch on the north side of CR 96J.
        - The ditch splits flow east and west approximately at the east terminus of the driveway. See plan set for better detail.
        - Materials for the driveway and house were selected to minimize potential adverse effects on Big Lake.
    - The house roof is to be constructed such that runoff will be directed to infiltrate into a pervious area.
        - Roof gutters direct flow towards an infiltration swale to be installed at the center of the protected courtyard.
        - Swale is to be lined with free-draining river rock.
        - Swale extends east past the edge of the house to allow sufficient infiltration.
        - Vegetation surrounding swale will be protected to the greatest extent possible.
    - Erosion control measures are to be taken to comply with the SWQP plan.
- Proposed flow directions.
    - Driveway will be superelevated such that the surface flow off the driveway flows towards the proposed ditch on the uphill side.
    - At the far northwest end of the driveway, surface runoff is to be directed to a proposed natural retention area/rain garden at the approximate apex of the existing forest maintenance road.
    - Flow directions proposed and other notes are given on the attached Road Plan Overview Worksheet.
- Peak Discharge for Minor/Major.
    - The largest contributing area proposed for the roadside has been roughed out at less than ½ Acre. The major storm (100 year) has a flow value of less than 2 c.f.s. which is easily contained in the proposed ditch.
- Roadside ditch design
    - Ditch capacity was calculated along the distance between the western beginning of the ditch and the eastern end where it intersects with existing CR 96J.
        - n = 0.020 for a smooth open channel with firm soil bed material
            - From USGS Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains
        - S ≈ 42.6/766 = 5.56%

        - Slope calculated between westernmost point of ditch and point of beginning at eastern end of driveway.
    - For a ditch with a depth of 1 foot and slopes of 2:1 on the sides, A = 2sqft
        - 2:1 in accordance with the recommendations found in the geotechnical report
    - For a fully flowing ditch (depth of one foot), hydraulic radius R = 2sqft/0.45ft = 4.44ft
    - So, $Q = (1.49/n)AR^{2/3}S^{1/2}$ = 96.6cfs when flowing at full capacity
        - Considering the 2cfs flow from the contributing basin in a 100-year storm event, the ditch as detailed here is more than sufficient to handle the flows.
- Demonstrate that detention is not required.
    - According to BCSD Section 1203.1, the first exemption applies which allows no detention. That is: the parcel is greater than 3 acres, it is for one single family dwelling and the total impervious area is less than 10%. The subject parcel has an area of 37.77 acres. 10% of this area would be approximately 164,500sqft, and the total impervious cover post construction will be drastically less than this amount.
- Potential impacts on downstream features.
    - There are cabins near the road in the middle of the driveway reach and a lake downstream (on each end of the driveway length). See notes on drainage worksheet. Sheet flow is promoted across the driveway where distributed flows will stay distributed and not concentrated and where there are no sensitive environmental features (ponds) downstream. All disturbed areas are proposed to be seeded and erosion control blanketed, or hydro-mulched.
- Disturbance of one acre or less, MS4 Area?
    - Considering the historic access at 10 to 12' wide, the area of historic, current and future disturbance is just less than one acre
    - Disturbance estimate includes all unpermitted grading performed in 2022 and 2023.
        - Unpermitted grading was calculated to be approximately 537 CY. This number is the sum of the both cut and fill, though it should be noted no material was imported nor removed from the site during this period of unpermitted grading.
        - Area of disturbance
            - Withholding the building site, well, and septic as exempted by Boulder County's "Earthwork & Grading" publication
            - Area of disturbance = ±31,000= 0.71 acres
- Lots within a Subdivision – associated drainage report?
    - This is for rural Boulder County – no subdivision, and therefore, no existing drainage report.
- Neighboring structures
    - There is an underground house that collapsed just along a roughed in road that follows, more or less, the eastern shore of the Big Lake.

        - At its closest point, the western edge of the underground house was approximately 50’ from the shore of the Big Lake.
        - See Sheet 6 of the plan set for better detail about the underground house’s location
    - Photography from the 1920’s-1930’s suggests a boat house and dock in the Big Lake, suggesting that the area immediately surrounding the lake has been developed in the past.
    - There has been question about the “forest maintenance” status of the existing roughed in road, the first picture attached below shows the general alignment has existed for some time.
        - The earliest aerial imagery available to this office suggest the road has been in its current location since at least 1999.
        - The second attached picture is from approximately the late 1980’s/early 1990’s, per the owner.
        - Two additional photos suggest that the forest maintenance road has existed in its approximate current location for some time.
    - While the proposed house will be closer than the underground house, there exists a common precedent at the ranch for building near the lake shore
        - Pictures suggest measures to mitigate runoff were not present in construction of the underground house, measures will be taken for the proposed house.
- P.E. Stamped Letter.
    - This is such a letter
- Other information.
    - A spreadsheet for earthwork quantities is included in this submittal.
    - The plan view driveway survey worksheet is included.
    - A sheet detailing measures to mitigate erosion into the Big Lake is included in this plan set.
    - Aerial photos are included to show the historic driveway back to Big Lake and the changes made in the alignment which was obtained by graphical overlay.
    - Van Horn has used the best available data available to us in preparing this report. Approximations have been made and noted. No guarantees are presented. We plan to stay plugged into the driveway changes with survey staking and as-built mapping if needed or requested. We are available for any questions.
    - Photos are included from various locations on site with narratives and descriptions provided.

Sincerely,

Lonnie A Sheldon, PLS #26974, for Van Horn Engineering and Surveying Inc., Cell: 970-443-3271,
Email: lonnie@vanhornengineering.com

Looking towards Indian Peaks, underground house visible on lake shore

Underground house and maintenance road, circa early 90's

Big Lake and old boat house/dock, circa 1920's-30's

Google Earth ~~2005~~ 4/2006

Google Earth 1999 (sept)

Stapp Lake Ranch Pictures Related to Road Overview Worksheet – September 2023

Picture #1

From “A” looking left (north) downhill

Picture #2

From “A” looking right/center (northeast) across driveway

Picture #3

From “A” looking right (southeast) across driveway

Picture #4

From “B” looking left (northeast) downhill

Picture #5

From “B” looking left/center (east) downhill

Picture #6

From “B” looking right (south) downhill

Picture #7

From “C” looking right/center (northeast) uphill

Picture #8

From “C” looking right (north) uphill

Picture #9

From “C” looking left (south) downhill

Picture #10

From “C” looking left (south) downhill

Picture #11

From “D” looking left (northwest) uphill

Picture #12

From “D” looking left (northwest) uphill

Picture #13

From “D” looking right (east) downhill

Picture #14

From “D” looking right (east) downhill

Picture #15

From “D” looking right (southeast) downhill

Picture #16

From “E” looking left (northwest) uphill

Picture #17

From “E” looking left (northwest) uphill

Picture #18

From “E” looking right (east) downhill

Picture #19

From “E” looking right (east) downhill

BARRETT STUDIO architects

December 19, 2024

TO: Amber Knotts, Planner I; Community Planning & Permitting, Development Review

FROM: Barrett Studio Architects

SUBJECT: Response to comments from access and engineering. Also, see separate Ecology report for response to Open Space letter.

Ian Brighton, Planner II; Community Planning & Permitting, Access & Engineering

Docket # LU-23-0019/SPR-23-0036

3305 County Road 96J

The Development Review Team – Access & Engineering (A&E) staff has reviewed the above referenced docket and has the following comments:

1. The subject property is accessed from County Road 96 (CR96), a Boulder County owned and maintained right-of-way (ROW) with a Functional Classification of Local, via a private gravel surfaced road within a 20-foot access easement. Legal access to the subject property has been demonstrated via the easement recorded on Apr. 2nd , 1998 at Reception 1787384, the easement recorded on Feb. 5th , 1999 at Reception 1902641 as well as the 30-foot access easement recorded on Nov. 20, 2023 at Reception 04028765.

2. The United States Forest Service (USFS) lists a portion of the access road west of Beaver Reservoir as Road Number 508.1 on the 2016 USFS Motor Vehicle Use Map (see image below). Prior to building permit, please contact the Boulder Ranger District at VisitARP@usda.gov for more information on what, if any USFS requirements must be met for the proposed development. Response: The Civil engineer has sent multiple queries to USFS and has not received a response. Perhaps when they are included on the referral, they will respond.

3. Materials submitted by the applicant include a 30-foot access easement recorded on 11/20/2023 at Reception 04028765 between Stapp Lake Ranch LLC and Big Lake LLC. The easement appears to follow an alignment of unpermitted grading that was noted on a hold request issued on June 26, 2023 (attached). Please be aware that the recently recorded legal easement does not constitute County approval for the unpermitted work or the proposed private access road. Response: Further grading on the project will only be done with an approved permit.

4. An Access Improvement and Maintenance Agreement (AIMA), which is an agreement for future maintenance responsibility, will be issued for the shared driveway during building permit review. The shared driveway crosses parcel number 132300000039, 132300000037, and USFS property and connects to CR96J adjacent to the outlet of Beaver Reservoir. The AIMA will be prepared by the Access & Engineering staff, signed by the property owner and notarized, and approved as part of the building permit process. Response: The owner will sign the AIMA when it is issued.

5. The Boulder County Geologic Hazards and Constraint Areas Map indicates the area is susceptible to landslides. Grading plans submitted by the applicant indicate several areas of proposed grading exceed a 2:1 slope as well. Additionally, during a site visit on June 16, 2023, unconsolidated soils and loose boulders were observed on and adjacent to the unpermitted road improvements as well as adjacent to existing structures. Response: See Civil drawings for the design of the driveway and the areas of revegetation.

Please submit a geotechnical report certified by a qualified Colorado-licensed Professional Engineer that identifies geologic hazards and potential adverse impacts to the proposed development and existing buildings. Response: See attached Geotechnical Report that addresses possible geologic hazards.

At building permit, submit grading plans that align with the findings and recommended mitigations found within the geotechnical report. Response: See Civil drawings for the design of the driveway and the areas of revegetation.

6. As noted above, the construction of unpermitted road improvements appears to be incomplete, as proper compaction of the grading and surface materials are both absent. Please note that all areas of unpermitted grading not approved as part of this review must be restored to previous conditions or better. Response: The revised civil plans indicate the areas of grading to finish the driveway and the areas that will be revegetated.

At building permit, applicant must submit revised plans that includes the methods for properly completing the driveway construction. Response: The revised civil plans indicate the areas of grading to finish the driveway and the areas that will be revegetated.

At building permit, should any part of the proposed alignment be modified, the applicant must provide revised plans indicating how all disturbed areas will be restored and revegetated. Response: The revised civil plans indicate the areas of grading to finish the driveway and the areas that will be revegetated.

7. The civil plans, submitted by the applicant and dated 4/10/23, do not meet the Boulder County Multimodal Transportation Standards (Standards) in the following ways: Response: The revised civil plans indicate the areas of grading to finish the driveway and the areas that will be revegetated. The design has been modified to address the points below.

a. The proposed driveway design does not indicate a consistent 2% cross slope that conveys stormwater runoff to a borrow ditch located on the upslope side of the driveway, as required by Standard Drawing 11 of the Standards.

b. The centerline radius of the curve at Station 12+50 is 34 feet. Table 5.5.1 of the Standards requires a minimum centerline radius of 40 feet.

c. Pullouts at Stations 8+00 and 12+50 do not meet the dimension requirements outlined in Standard Drawing 17.

d. Slopes exceed 1.5:1 at the northeast corner of the proposed hammerhead turnaround at Station 12+75, as well as the northwest corner of the proposed garage, which does not comply with Section 5.3.2.2 of the Standards.

e. The driveway profile does not indicate the location or depth of proposed cross culverts.

At building permit, provide revised plans demonstrating a driveway design that is compliant with the Standards, including without limitation: Response: The revised civil plans indicate the areas of grading to finish the driveway and the areas that will be revegetated. The design has been modified to address the points below.

a. Section 5.3.2.2 Cut & Fill Slopes

b. Table 5.5.1 – Parcel Access Design Standards (1-Lane Mountain Access)

c. Standard Drawing 11 – 12 Private Access

d. Standard Drawing 14 – Access with Roadside Ditch

e. Standard Drawing 15 – Access Profiles Detail

2 f. Standard Drawing 16 – Access Grade & Clearance

g. Standard Drawing 17 – Access Pullouts

h. Standard Drawing 18 – Access Turnaround

i. Standard Drawing 19 – Typical Turnaround & Pullout Locations

Where a Standard cannot be met, submit to the County a design exception form, completed by a qualified Colorado-licensed Professional Engineer, that includes an explanation as to why the Standard cannot be met. Be aware that an application for a design exception does not guarantee approval.

Also note that retaining walls or a series of retaining walls over four feet tall, as measured from the bottom of the footing to the top of the wall, must be stamped by a qualified Colorado-licensed Professional Engineer. Calculations shall be submitted for any retaining walls over six feet in height.

8. The application contains some materials that appear to contradict one another, including:

a. The grading plans indicate a 14-foot width along the length of the driveway, whereas the narrative states that a 14-foot width will be used at the curves of the alignment and 12 foot width will be used at the straightaways.

b. The grading plans indicate centerline grades of of up to 18% between Stations 6+25 and 9+50, however the Proposed Driveway Profile sheet submitted by the applicant indicates centerline grades of 15.4%. The profile sheet proposes the addition of up to 10 feet of fill to overcome sections that exceed maximum grade requirements in the Standards, however the additional fill is not shown on the grading plans. Retaining walls or significant additional grading of adjacent slopes will be required to achieve the design depicted in the driveway profile.

Please provide revised plans and earthwork calculations that correct any inconsistencies and provide a design compliant with the Standards. Response: The revised civil plans indicate the areas of grading to finish the driveway and the areas that will be revegetated. The design has been modified to address the points above.

9. The earthwork calculations provided by the applicant differentiate between new and historic grading. Staff disagrees with this differentiation based on aerial imagery indicating that significant grading occurred between July 2022 and August 2023. Please provide revised earthwork calculations that include all grading quantities. Response: The attached Earthworks letter clarifies the amount of unpermitted grading that was done since 2022 as well as the amount of grading that will be required to complete the driveway and residence.

10. A third-party consultant reviewed the drainage letter dated 9/27/2023. A summary of the review is below:

a. All temporary and permanent proposed features such as well construction, septic construction, pipelines, staging areas, parking areas, etc. must be identified on plans submitted at building permit. Response: The permanent site features and the temporary construction dumpster, washout, and staging areas are shown on the site plan.

b. More detail and drainage calculations are required for for culverts, stilling basins, and roadside ditches. Additional energy dissipation, such as check dams, may be needed in some areas depending on the results of the calculations. Plans submitted by the applicant must align with the findings in the drainage report. Response: See the Drainage letter and civil drawings for clarity.

c. Roofing materials, galvanized sizing materials, and pressure treated lumber may negatively impact Stapp Lake. Direct discharges to the lake must be avoided to the extent possible, and runoff must be routed over pervious areas such as a swale or vegetated buffer prior to discharge to a sensitive receiving water. Redirecting the runoff 3 follows low impact development (LID) and County water quality concerns consistent with the requirements in Storm Drainage Criteria Manual (SDCM) Section 1200. Response: There are no direct discharges into the lake from the residence roof – see architectural roof plan and site plan. There is no pressure treated framing material used in the deck or dock construction. See Architectural plans,project narrative and ecological report.

d. The Colorado Department of Public Health and Environment (CDPHE) requires notification of dredge and fill activities for projects impacting State Waters. Please contact CDPHE to determine applicable requirements. More information can be found at https://cdphe.colorado.gov/dredge-and-fill. Response: CDPHE will be contacted before permitting to approve the 4 dock piers and the dry hydrant pipe which will be the only construction activity that contacts the water.

At building permit, provide a revised drainage letter demonstrating how storm runoff from the proposed development meets the requirements in the SDCM. Response: See the attached Civil drawings and Architectural site plan for drainage and revegetation measures.

11. Plans submitted by the applicant indicate an area of disturbance exceeds an acre in size. As a part of Boulder County's water quality protection program, a stormwater quality permit (SWQP) is required.

At building permit, submit a SWQP and revised plans identifying all areas of disturbance including construction areas, staging areas, temporary access areas, and parking areas. The total area of disturbance must be clearly labeled. Response: A SWQP will be submitted during the building permitting phase.

NOTE: The SWQP must be issued prior to work beginning on the project. Please visit Boulder County's stormwater website at https://bouldercounty.gov/transportation/permits/stormwaterquality-permit/ or contact tdstormwater@bouldercounty.org for more information. Response: A SWQP will be submitted during the building permitting phase.

This concludes our comments at this time.

ECOLOGICAL ASSESSMENT & RESPONSE TO COMMENTS

BIG LAKE RESIDENCE

BOULDER COUNTY, COLORADO

prepared for:

JAY AND CHRISTY ORRIS
101 MODEL T ROAD, BOULDER CO 80302

prepared by:

BIRCH ECOLOGY, LLC
710 TENACITY DRIVE, SUITE 101, LONGMONT, CO 80504

BIRCH ECOLOGY

DECEMBER 2024

TABLE OF CONTENTS

Section/Title **Page**

1.0 INTRODUCTION & BACKGROUND 1

2.0 SITE ASSESSMENT 4
- 2.1 Environmental Setting 4
  - 2.1.1 Geology 4
  - 2.1.2 Hydrology 8
  - 2.1.3 Vegetation 8
  - 2.1.4 Land Use 9
- 2.2 Project Details 10
  - 2.2.1 Proposed Residence 10
  - 2.2.2 Deck and Dock 10
  - 2.2.3 Homesite Drainage Plan 10
  - 2.2.4 Utilities 17
  - 2.2.5 Driveway Access 17
  - 2.2.6 Stormwater 17
- 2.3 Construction Site Management 28
- 2.4 Alternatives Analysis 29
  - 2.4.1 Alternate Driveway Access Location 29
- 2.5 Summary Points 31
  - 2.5.1 Environmental Characteristics that Reduce Impact 31
  - 2.5.2 Mitigation Measures 31

3.0 COMMENT RESPONSES 32
- 3.1 Landscape-Level Geology 32
- 3.2 Landscape-Level Ecology 32
  - 3.2.1 High Biodiversity Areas 32
  - 3.2.2 Critical Wildlife Habitat 32
  - 3.2.3 Significant Natural Community 33
  - 3.2.4 Elevation 34
- 3.3 Access & Already-Completed Impacts 34
- 3.4 Cumulative Impacts 35
- 3.5 Habitat Fragmentation 35
- 3.6 Riparian Areas and Wetlands 35
- 3.7 Environmental Conservation Area & Protection of Biodiversity 36
- 3.8 Lynx Habitat 36
- 3.9 Conclusion 37

4.0 PHOTOS 38

LIST OF FIGURES

Number/Title **Page**

Figure 1. Project Location Map....2
Figure 2. Aerial Photo....3
Figure 3. Oblique Aerial Photo....5
Figure 4. Geology Map....6
Figure 5. NRCS Soil Map....7
Figure 6. Architectural Design, Sheet 1 of 6....11
Figure 6. Architectural Design, Sheet 2 of 6....12
Figure 6. Architectural Design, Sheet 3 of 6....13
Figure 6. Architectural Design, Sheet 4 of 6....14
Figure 6. Architectural Design, Sheet 5 of 6....15
Figure 6. Architectural Design, Sheet 6 of 6....16
Figure 7. Civil Design, Sheet 1 of 7....18
Figure 7. Civil Design, Sheet 2 of 7....19
Figure 7. Civil Design, Sheet 3 of 7....20
Figure 7. Civil Design, Sheet 4 of 7....21
Figure 7. Civil Design, Sheet 5 of 7....22
Figure 7. Civil Design, Sheet 6 of 7....23
Figure 7. Civil Design, Sheet 7 of 7....24
Figure 8. Aerial with Proposed Plan....25
Figure 9. West Aerial with Proposed Plan....26
Figure 10. East Aerial with Proposed Plan....27
Figure 11. Alternatives Analysis: Driveway Access....30

LIST OF PHOTOS

Number/Title **Page**

Photo 1. The rocky shoreline of the peninsula is formed by glacial till. (6/17/24). 39

Photo 2. The moraine rises steeply above the shoreline of Big Lake. (6/17/24). 39

Photo 3. The peninsula is a steep, rocky mound comprised of glacial till. (6/17/24). 40

Photo 4. The rocky shoreline of the peninsula. (6/17/24). 40

Photo 5. Higher-quality wetlands occur at the Reflection Pond. (6/17/24). 41

Photo 6. Stream channel above the Elk Meadows Wetland Complex. (6/17/24). 42

Photo 7. Engelmann spruce, subalpine fir, and limber pine grow. (6/17/24).....43

Photo 8. Panoramic view of Big Lake from the peninsula. (6/17/24).....43

Photo 9. Common juniper, golden banner, and kinnikinnick are common. (6/17/24).....44

Photo 10. Wetlands are more developed on the south side of Big Lake. (6/17/24). 44

Photo 11. Panoramic view from the moraine south of Big Lake. (6/17/24).....45

Photo 12. Historic boat house in Big Lake. (ASK CHRISTY FOR DATE).....45

Photo 13. Panoramic view over the location. (6/17/24). 46

Photo 14. Google Earth aerial of Beaver Reservoir. (10/2023).....46

Photo 15. Google Earth aerial of Beaver Reservoir when it is nearly full in July. (7/2016). 47

Photo 16. A zoomed-in view of the Google Earth aerial. (10/2023). 47

Photo 17. The partially improved road follows the alignment of an old road. (6/17/24). 48

1.0 INTRODUCTION & BACKGROUND

Jay and Christy Orris acquired the 320-acre Stapp Lakes Property in 2012. In June 2023, they submitted plans to build a single-family residence and driveway. In consultation with the County, to streamline permitting for a single-family residence, they subsequently subdivided the original property to create the 37.7-acre Big Lake property, which is the subject of this application.

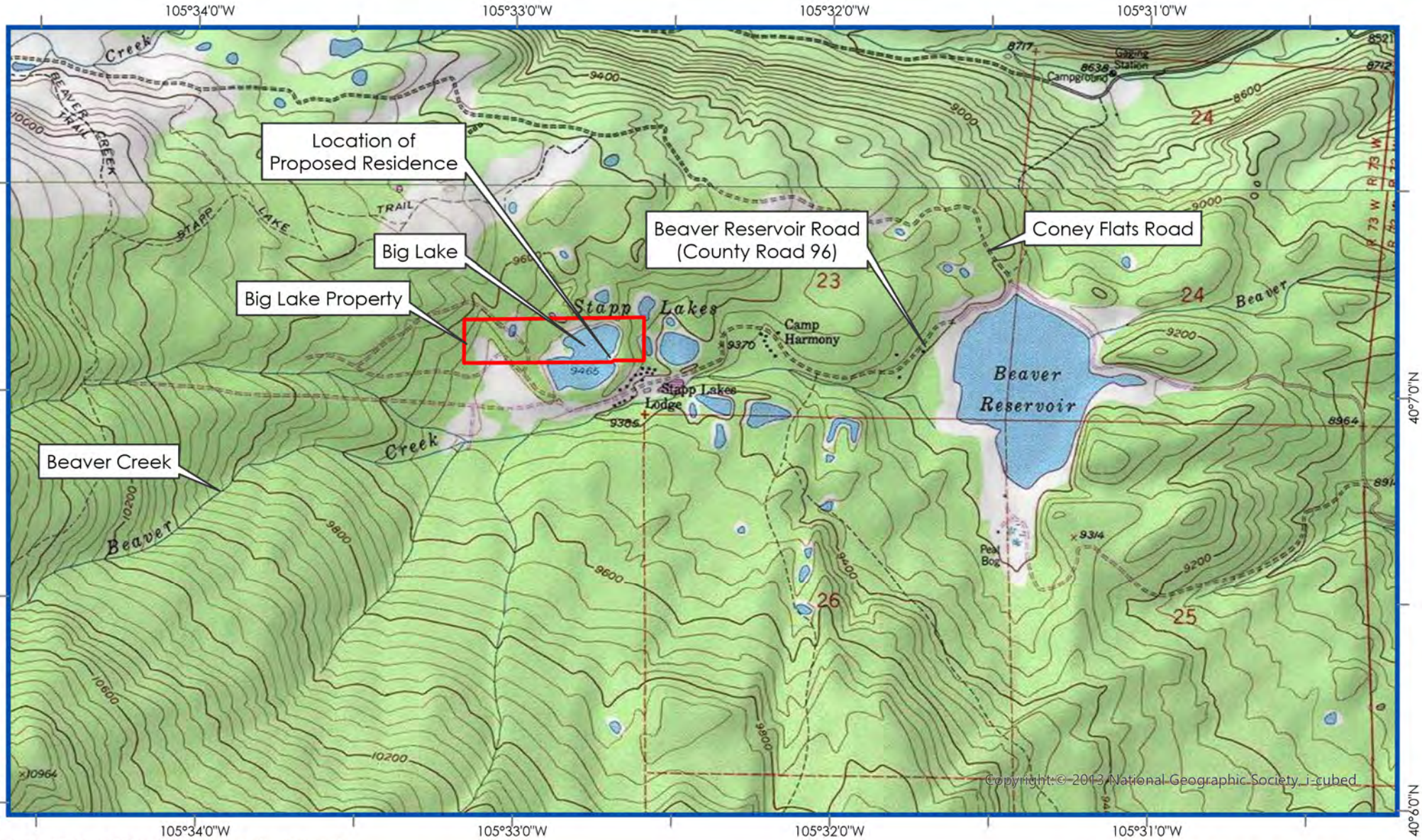
The current proposal is the Big Lake LLC Residence and Driveway. The property is located at 3310 County Road 96J, in Section 22 of Township 2 North and Range 73 West (Figures 1 & 2). The project will require a Limited Impact Special Use Review to permit earthwork for the driveway and a Site Plan Review for the construction of a new 2,900 square foot residence with an attached garage.

Two comment letters have been received in response to the January 12, 2024 submittal. The first was a January 31, 2024 letter from Ian Brighton from the Community Planning & Permitting department. Mr. Brighton's letter provided comments specific to access and engineering.

- The Design Team, including the project architects and engineers, are providing a response memo to Ian Brighton's letter.
    - Please refer to the Project Narrative for the Big Lake Residence Limited Impact Special Review prepared by Sam Nishek of Barrett Studio Architects, dated 12/5/24; the Big Lake Drainage and Stormwater Narrative prepared by Lonnie Sheldon of Van Horn Engineering and Surveying; the Big Lake Earthwork Narrative prepared by Lonnie Sheldon of Van Horn Engineering and Surveying; and the associated plan sets dated 12/17/24.
    - Additionally, property owners Christy and Jay Orris have provided a personal statement regarding their vision for the property which has been included as a part of the submittal documents to the County.

The following Ecological Assessment Report responds to the second comment letter dated February 4, 2023, from Boulder County Parks and Open Space Natural Resource Planner Ron West. Please note, although dated in 2023, this date is a typographical error as the letter was transmitted to the project team on February 20, 2024.

Mr. West's letter identifies several concerns related to the proposed residence and its potential to disturb sensitive habitats. In response to these concerns, we conducted background research, performed on-site analysis, and gathered additional site and design information from the project team. We then worked with the Orris Family and their architects and engineers to refine their plan and develop ways to reduce the potential impacts. This memo provides details of the project background, environmental setting, proposed design, mitigation measures, BMPs for project construction and alternatives analysis which are relevant for project review. Section 3 specifically addresses each of the comments provided in Mr. West's letter.



BASE: USGS 7.5' Granby Quadrangle, Colorado

N

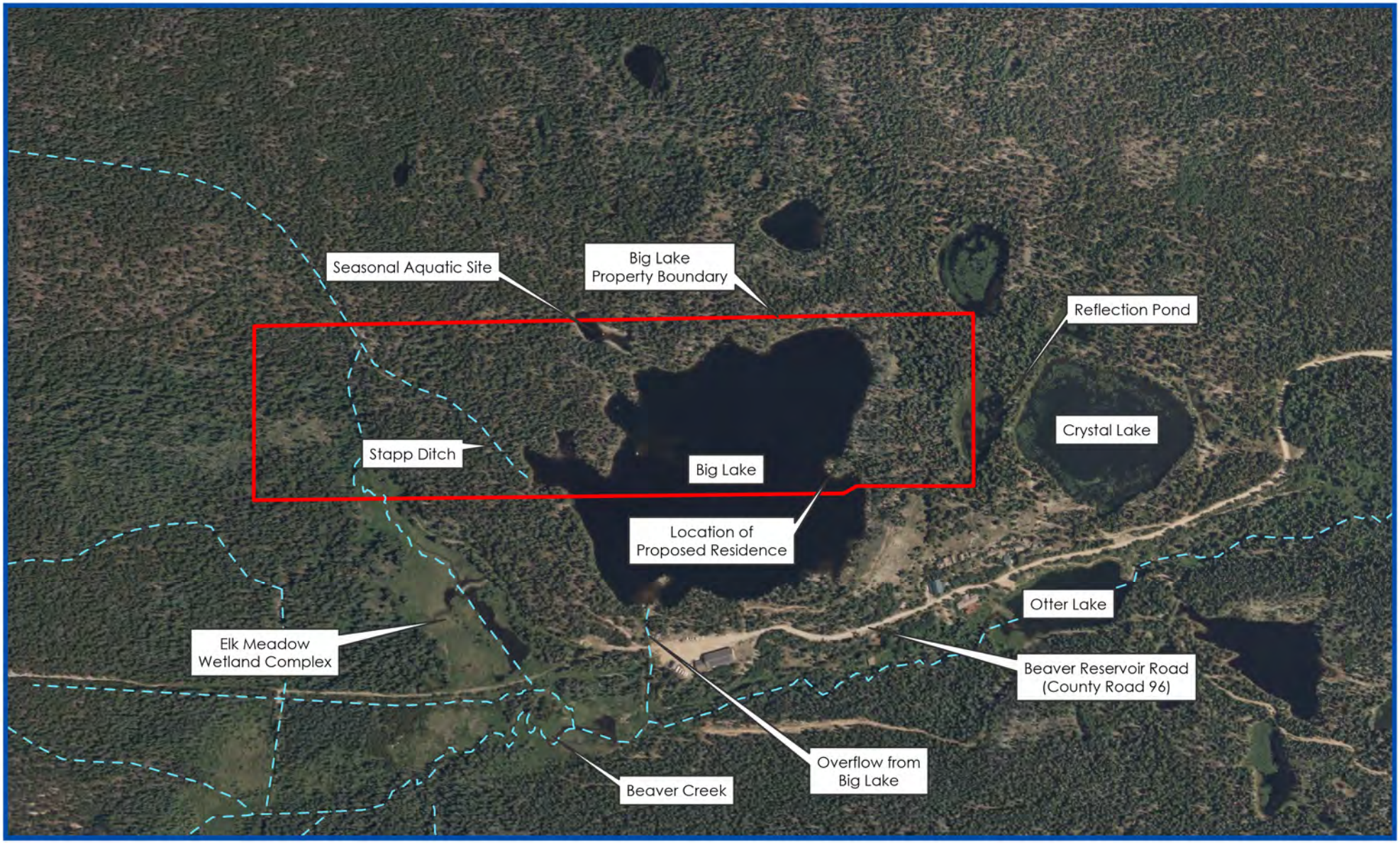
1:24,000

0 500 1,000 2,000
Feet

FIGURE 1. PROJECT LOCATION MAP
Big Lake Property, Colorado

DECEMBER 2024

Prepared by:
Birch Ecology LLC
710 Tenacity Drive
Suite 101
Longmont, CO 80504
(720) 350-2530
www. birchecology.com



LEGEND

Streams & Ditches

Big Lake Property

N

1:6,000

0 150 300 600

Feet

FIGURE 2. AERIAL PHOTO & HYROLOGY MAP

Big Lake Property, Colorado

DECEMBER 2024

Prepared by:

Birch Ecology LLC

710 Tenacity Drive
Suite 101
Longmont, CO 80504
(720) 350-2530
www. birchecology.com

2.0 SITE ASSESSMENT

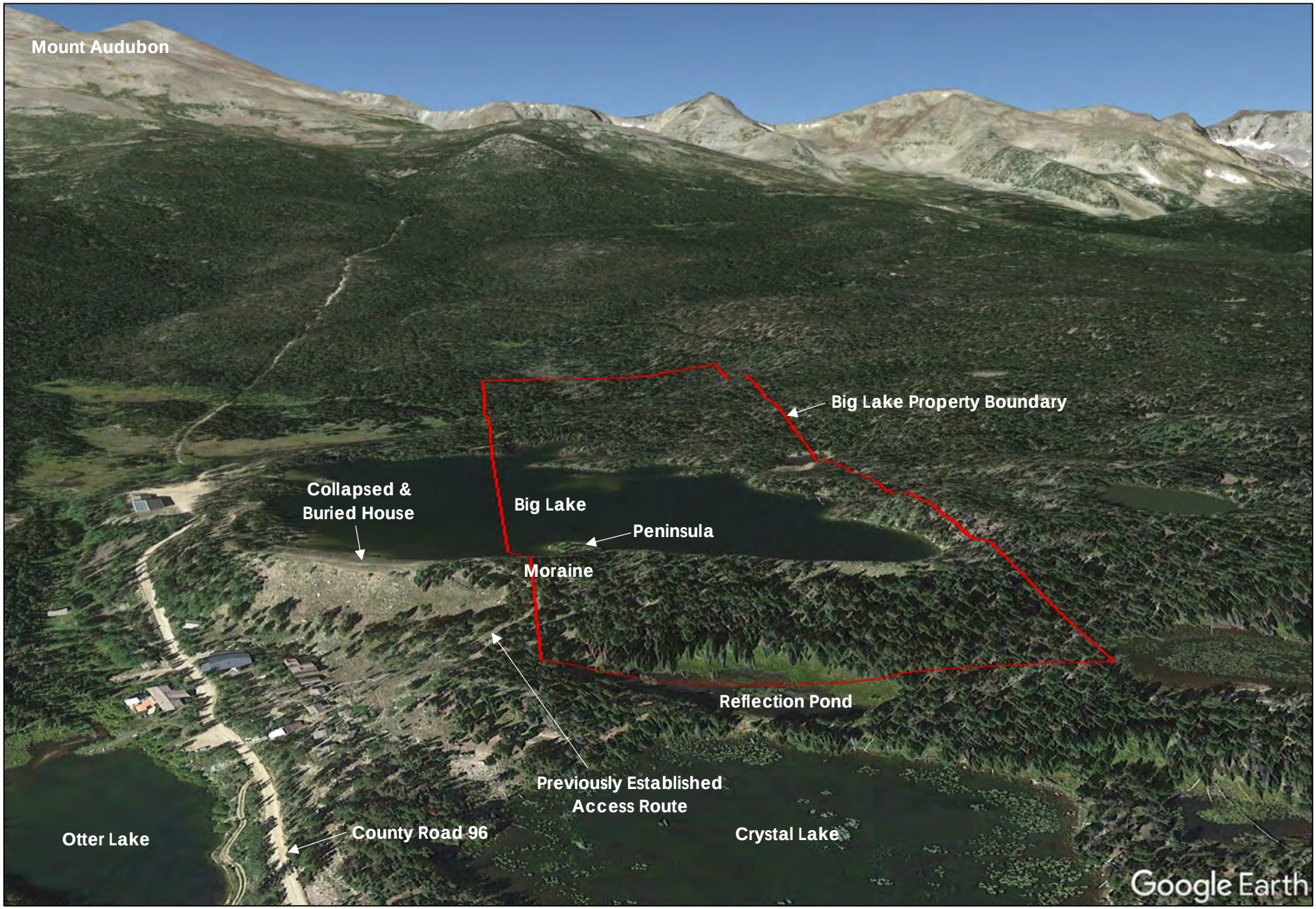
2.1 Environmental Setting

The 37.7-acre Big Lake Property is situated near the continental divide above Ward, CO (Figure 1). The rectangular project site is bounded by the Arapaho-Roosevelt Forest on the north and west sides, and by the Stapp Lakes property to the south and east (Figure 2).

2.1.1 Geology

Elevations range from a high of ± 9,600 feet in the northwest corner, to a low of ± 9,430 feet in the east, near the Reflection Pond (Figure 3). The landscape in this area has been shaped by moraines deposited during the last glaciation.

Big Lake was formed by a glacier that pushed up a mounded terminal moraine to the south, receded, and then pushed slightly more material forward to create a secondary moraine (Figure 4). The center of this secondary moraine appears to have been removed by a subsequent minor glacial advance. Water filled the depression behind the terminal moraine to form Big Lake; while the secondary moraine creates two small peninsulas along the east and west sides of the lake. The moraine rises steeply from the shoreline of Big Lake on the north and east sides (Photos 1 & 2).

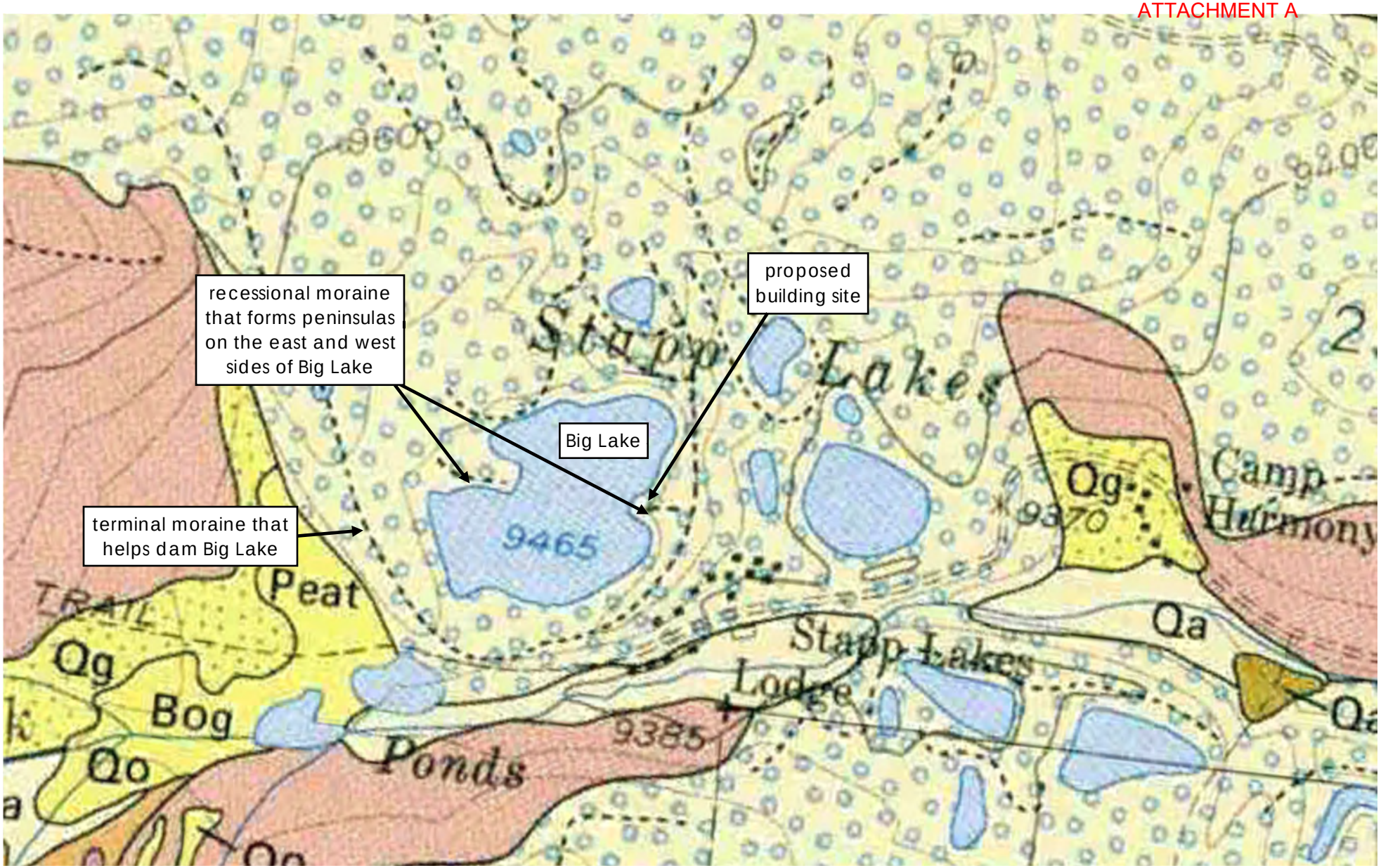


Prepared by:
Birch Ecology LLC
710 Tenacity Drive
Suite 101
Longmont, CO 80504
(720) 350-2530
www. birchecology.com

Google Earth
mapping from 2018

FIGURE 3. OBLIQUE AERIAL PHOTO
BIG LAKE RESIDENCE

DECEMBER 2024



Geologic Map of the Ward Quadrangle, Boulder County, Colorado
1976, Gable and Madole

GEOLOGIC UNITS

------ Trend of lateral and terminal moraines

Qo – Organic-Rich Sediment (Holocene & Upper Pleistocene)

Qp – Glacial Till of Pinedale Age (Upper Pleistocene)

Qg – Outwash Gravel (Upper Pleistocene)

Qbl – Till of Bull Lake Age (Upper Pleistocene)

Ysp – Silver Plume Quartz Monzonite (Precambrian)

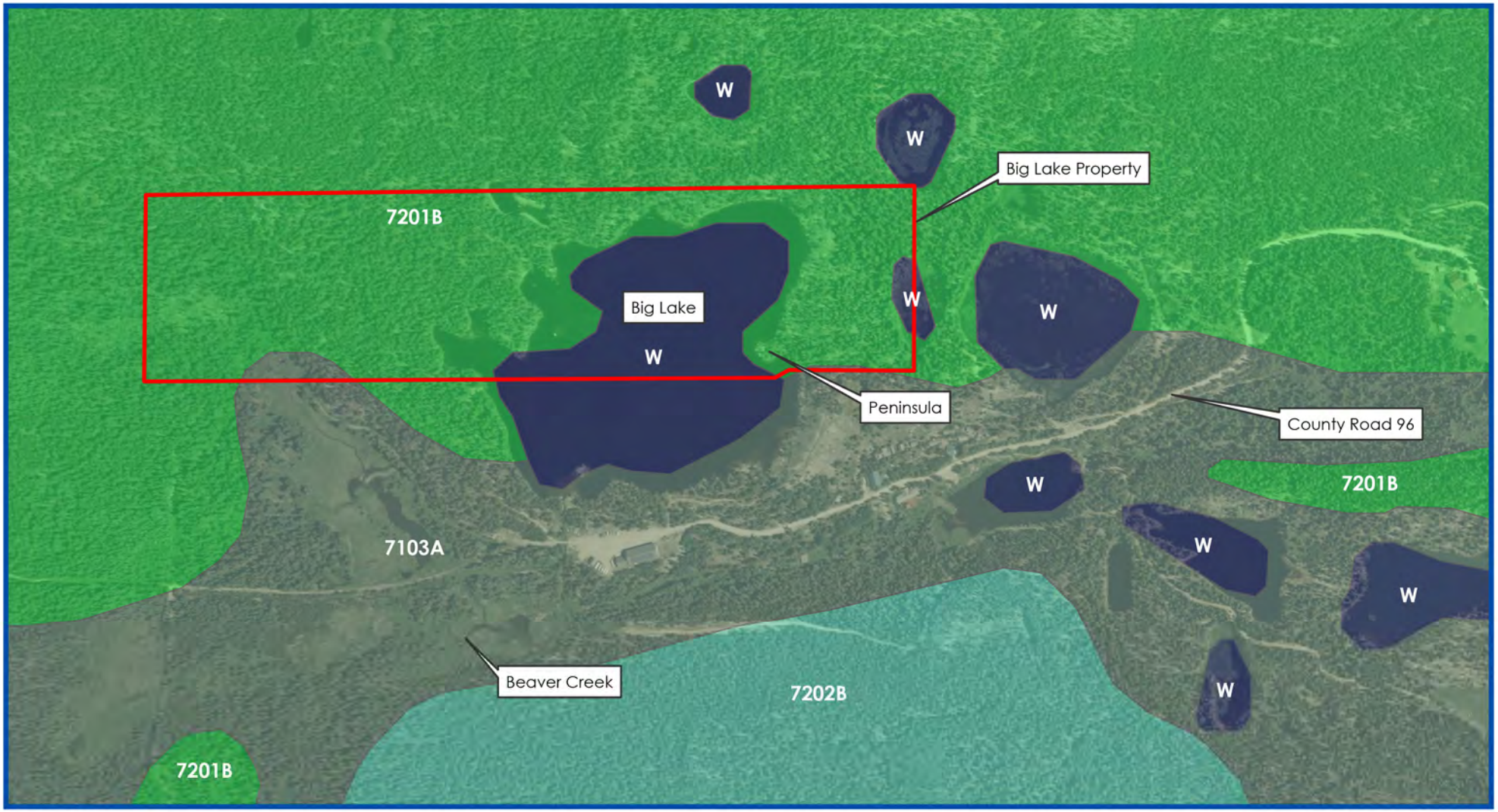
Glacial till underlies much of the Big Lake Property.

N

FIGURE 4. GEOLOGY MAP
BIG LAKE RESIDENCE

DECEMBER 2024

Prepared by:
Birch Ecology
Birch Ecology LLC
710 Tenacity Drive
Suite 101
Longmont, CO 80504
(720) 350-2530
www. birchecology.com



LEGEND

Big Lake Property

Soil Types

7103A* - Cryaquolls-Leigh

7201B - Leighcan family, till substratum, 5-40% slopes

7202B - Leighcan family, till substratum-Cryaquolls complex, 5-40% slopes

W - Water

*Hydric Soil Rating

N

1:6,000

0 150 300 600

Feet

FIGURE 5. NRCS SOIL MAP
BIG LAKE RESIDENCE

DECEMBER 2024

Prepared by:

Birch Ecology LLC
710 Tenacity Drive
Suite 101
Longmont, CO 80504
(720) 350-2530
www. birchecology.com

The proposed location for the single-family residence is on the eastern peninsula, which covers ± 6,500 ft². Because it is a moraine, the soil on the peninsula is comprised of glacial till (Figure 5). The physical mounding of the moraine forms steep banks at the lake margin with rocky soil that supports little to no wetland development on the peninsula (Photos 3 & 4).

2.1.2 Hydrology

Big Lake has a total surface area of ± 17.5 acres, of which ± 11.4 acres is within the Big Lake Property (Figure 2). Snowmelt, precipitation and groundwater are naturally dammed by the moraine. In addition, water is diverted into Big Lake via the Stapp Ditch on the west side. Big Lake spills over the southern moraine down a small channel into North Beaver Creek. Beaver Creek continues east to Otter Lake, and then flows to Beaver Reservoir (Figure 2).

The Reflection Pond on the east side of the property is separated from Big Lake by a tall, forested moraine (Photo 5). This pond drains to the east into Crystal Lake. To the northwest of Big Lake, there is a small seasonal aquatic site, less than ¼ acre in size, which is fed by high groundwater and snowmelt.

To the west of Big Lake, the property is crossed by an unnamed intermittent stream that flows south through The Elk Meadow Wetland Complex to join Beaver Creek (Photo 6). This area is fed by groundwater discharge and occasional overflows from the Stapp Ditch that occur during spring runoff.

2.1.3 Vegetation

The forested hillsides surrounding Big Lake are dominated by subalpine fir *(Abies lasiocarpa)* and Engelmann spruce *(Picea engelmannii)*, with limber pine *(Pinus flexilis),* lodgepole pine (*Pinus contorta*) and aspen *(Populus tremuloides)* (Photo 7).

On the peninsula where the residence is proposed, the vegetation is characterized by primarily subalpine fir trees with some Engelmann spruce, limber pine, lodgepole pine, a few small aspens, and one ponderosa pine *(Pinus ponderosa)* (Photo 8). In the shrub layer, common juniper *(Juniperus communis)* is abundant, where it grows with kinnikinnik *(Arctostaphylos uva-ursi)* and Woods' rose *(Rosa woodsii)*. The rocky and mounded ground supports an herbaceous understory dominated by elk sedge *(Carex geyeri)* and abundant forbs, including golden banner *(Thermopsis divaricarpa)*, dwarf bilberry *(Vaccinium caespitosum),* whole-leaf paintbrush *(Castilleja integra)*, and fireweed *(Epilobium angustifolium)* (Photo 9). Wetlands are very limited along the bank of the peninsula due to the steep grade and rocky soil at the shoreline (Photos 3 & 4). Wetlands are more developed on the south, west and northwest sides of Big Lake (Photo 10).

High quality wetlands occur at the Reflection Pond to the east, where yellow pond lilly *(Nuphar lutea)* grows in the aquatic habitat (Photo 5). Wetlands also occur in association with a small, seasonal pond to the northwest of Big Lake and along the intermittent stream to the west of Big Lake, the upper reach of the Elk Meadow Wetland Complex.

2.1.4 Land Use

The project area has a rich land use history that has shaped the surrounding landscape. In 1893, Issac and Mattie Stapp created a homestead on the adjacent Stapp Lakes parcel and opened a guest ranch (Photo 11). At that time, out-of-town visitors frequented the site to enjoy the natural beauty of the mountains, ride horses, hunt in the area, and fish in several of the lakes, including Big Lake (Photo 12).

Over the years, the adjacent Stapp Lakes property has been a home to summer camps and schools. In 1958, Jerry and Mary Henderson purchased the Stapp Lakes property, began a school, and constructed an underground house along the south shore of Big Lake (See photo on Page 29). The underground house has since collapsed and remains buried on the southeast shore within the Stapp Lakes Parcel (Photo 13).

Jay and Christy Orris purchased the property in 2012 and now oversee the land. Visitation has been and continues to be much reduced from its peak use as a guest ranch. Jay and Christy intend to steward the land and protect its resources; they have stated they have no intention of further subdividing the land. They are requesting to build one single-family residence, with only limited use during the winter months.

2.2 Project Details

2.2.1 Proposed Residence

The proposed residence is designed to fit with the shape and radius of the peninsula (Figure 6). The residential floor area and attached garage total 2,990 square feet with a footprint of 2,465 square feet. The project will consist of a two-bedroom house with no basement, a small one-room second story on the north side of the building, and an attached one-car garage that is a half-level higher than the main building to fit with the natural slope of the land. The highest part of the roof would be 26'-2" above the existing grade. A standing seam metal roof and corrugated metal siding would limit degradation.

2.2.2 Deck and Dock

The deck and dock are the only elements that would extend beyond the perimeter of the peninsula. These features cover a total of 1,117 ft^2. The concrete footings for the house are all located on the peninsula, such that only the deck forms a cantilevered surface over 171 ft^2 of water. The dock would not be structurally connected to the house foundation and would be supported by four dock piers set in the lake bed. The deck and dock would be constructed of powder-coated galvanized steel deck and dock framing and untreated Ipe E 84 Ignition Resistant Wood Deck and Dock Decking; these materials are specially designed for use in docks and were selected because they do not present a water quality risk from chemical leaching (Figure 6, Sheet 5 of 6).

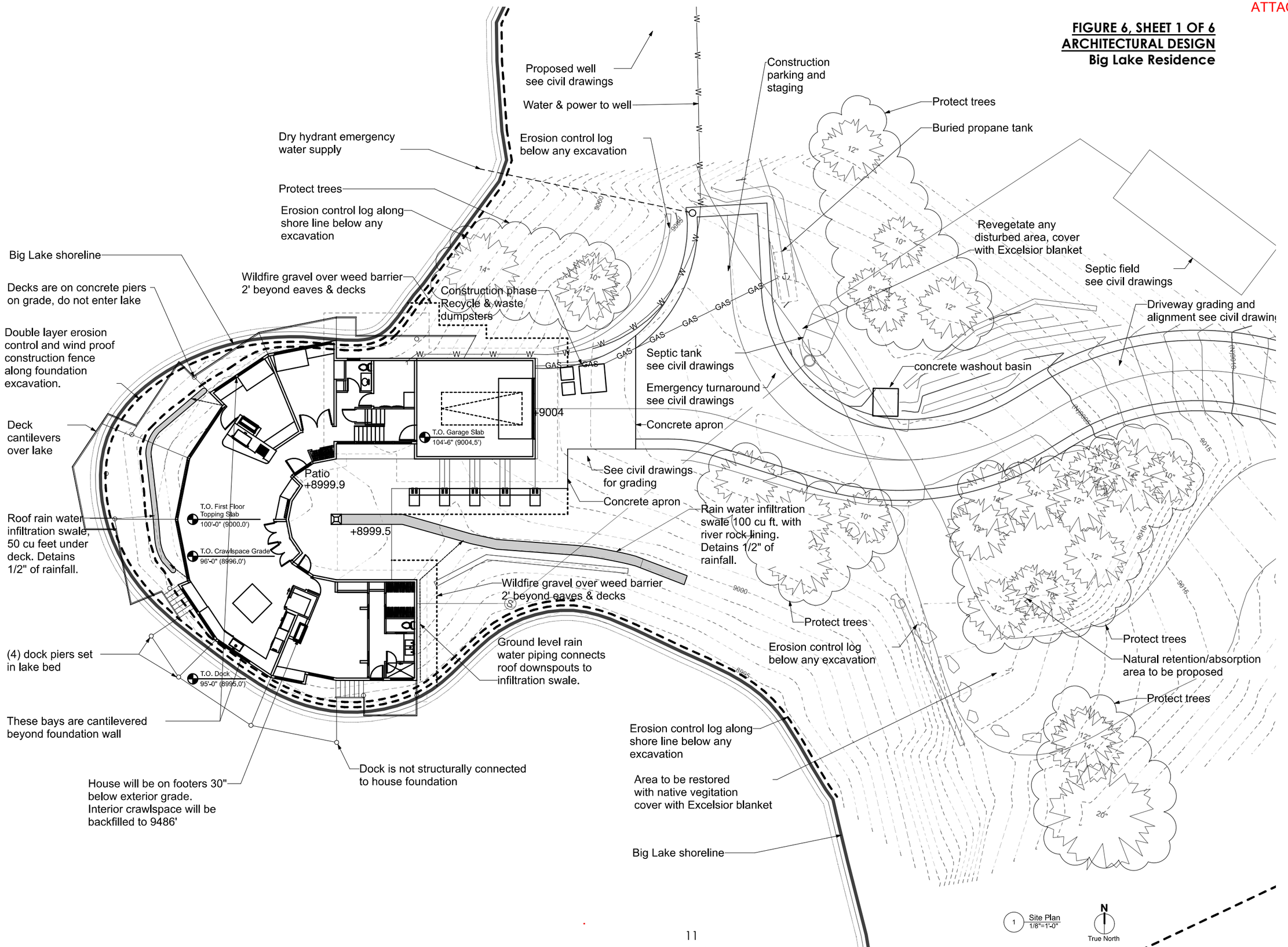
2.2.3 Homesite Drainage Plan

The drainage plan for the house has been designed to limit the potential for water quality impacts to Big Lake by limiting the cover of impervious surfaces and promoting infiltration, rather than directing runoff into Big Lake. As shown by Figure 6, Sheets 1 and 4, runoff from the roof will be collected in rain gutters, then would flow through downspouts to a rainwater infiltration swale to be located beneath the cantilevered deck. The swale below the deck will hold 50 cubic feet of water. This will retain the first ½ inch of a heavy rain event on the roof. Pending the final percolation tests, this is being designed to infiltrate the runoff within 12 hours. Due to the careful selection of building materials, this runoff should not contain harmful contaminants. The glacial till soil on the peninsula is not prone to erosion and should not wash down into the lake if the swale is overtopped.

As shown by Figure 6, Sheet 4, the runoff from the remainder of the roof and the concrete patio / courtyard will be directed away from Big Lake and will be routed into another rainwater infiltration swale lined by river rock. Additionally, the foundation on this interior side of the peninsula will have a gravel base over weed barrier, extending 2 feet out from the eaves and decks.

ATTACHMENT A

FIGURE 6, SHEET 1 OF 6
ARCHITECTURAL DESIGN
Big Lake Residence



1 Site Plan 1/8"=1'-0"

N True North

BARRETT STUDIO architects
Architecture Community/Urban Design Interiors
Mailing: 3380 N Broadway, Suite 209 PMB-224, Boulder, Colorado 80304 phone: 303.449.1541 email bsa@barrettstudio.com web www.barrettstudio.com

File:

REVISED LAND USE SUBMITTAL
Date: December 5, 2024
Revisions:

Big Lake Residence
3310 CR 96J, Ward CO 80481

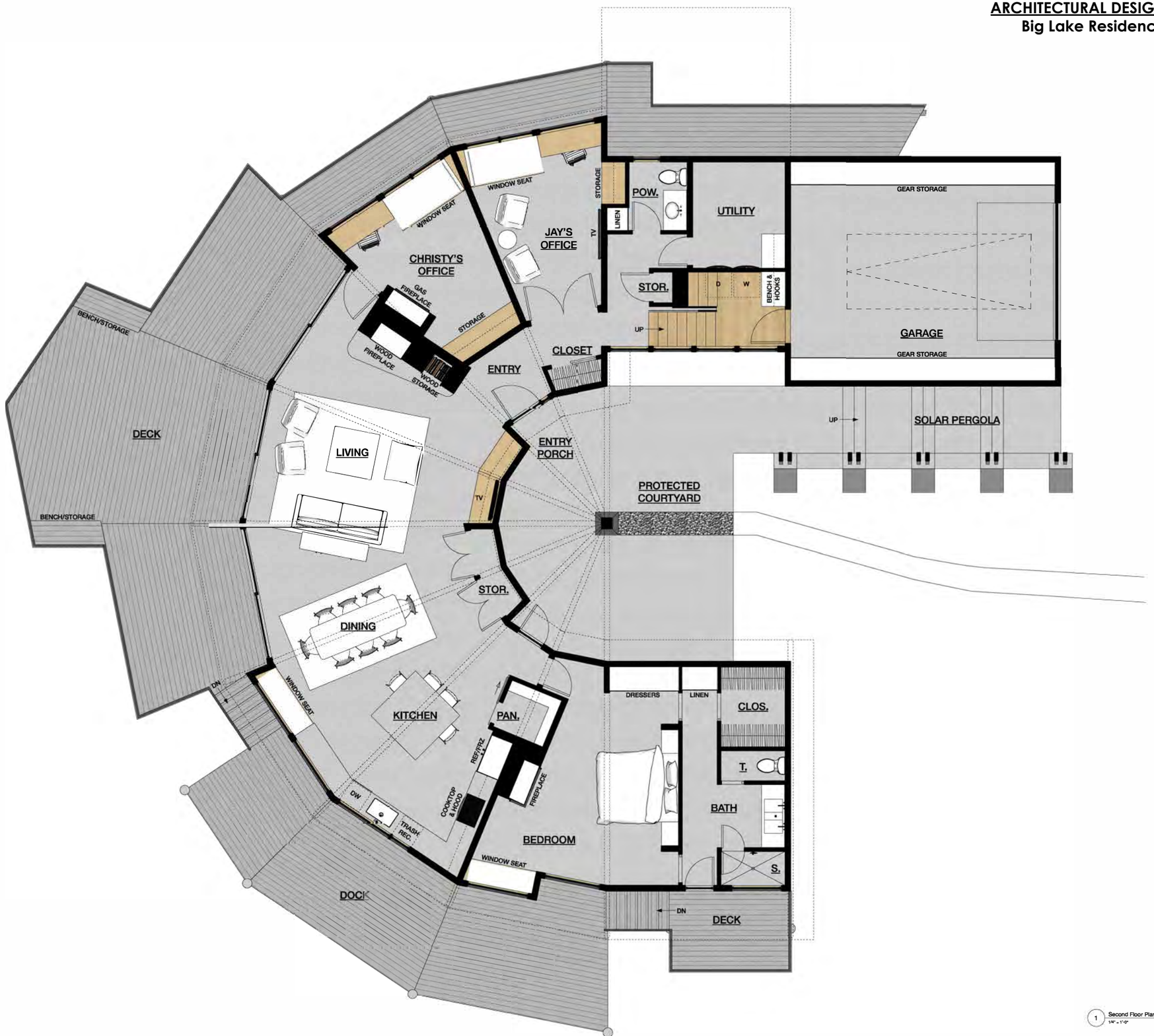
Site Plan

Drawing Number:
A1.1

Sheet: 1 of:

ATTACHMENT A

FIGURE 6, SHEET 2 OF 6
ARCHITECTURAL DESIGN
Big Lake Residence



1 Second Floor Plan
1/4" = 1'-0"

N

NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect from all consequences arising out of such changes.

REVISED LAND USE SUBMITTAL

Date: December 5, 2024
Revisions:

Big Lake Residence
3310 CR 96J, Ward CO 80481

BARRETT STUDIO architects
Architecture Community/Urban Design Interiors
Mailing: 3980 N Broadway, Suite 103 PMB-224, Boulder, Colorado 80304 phone: 303.449.1141 email bsa@barrettstudio.com web www.barrettstudio.com

Preliminary Drawing Set Not for Construction

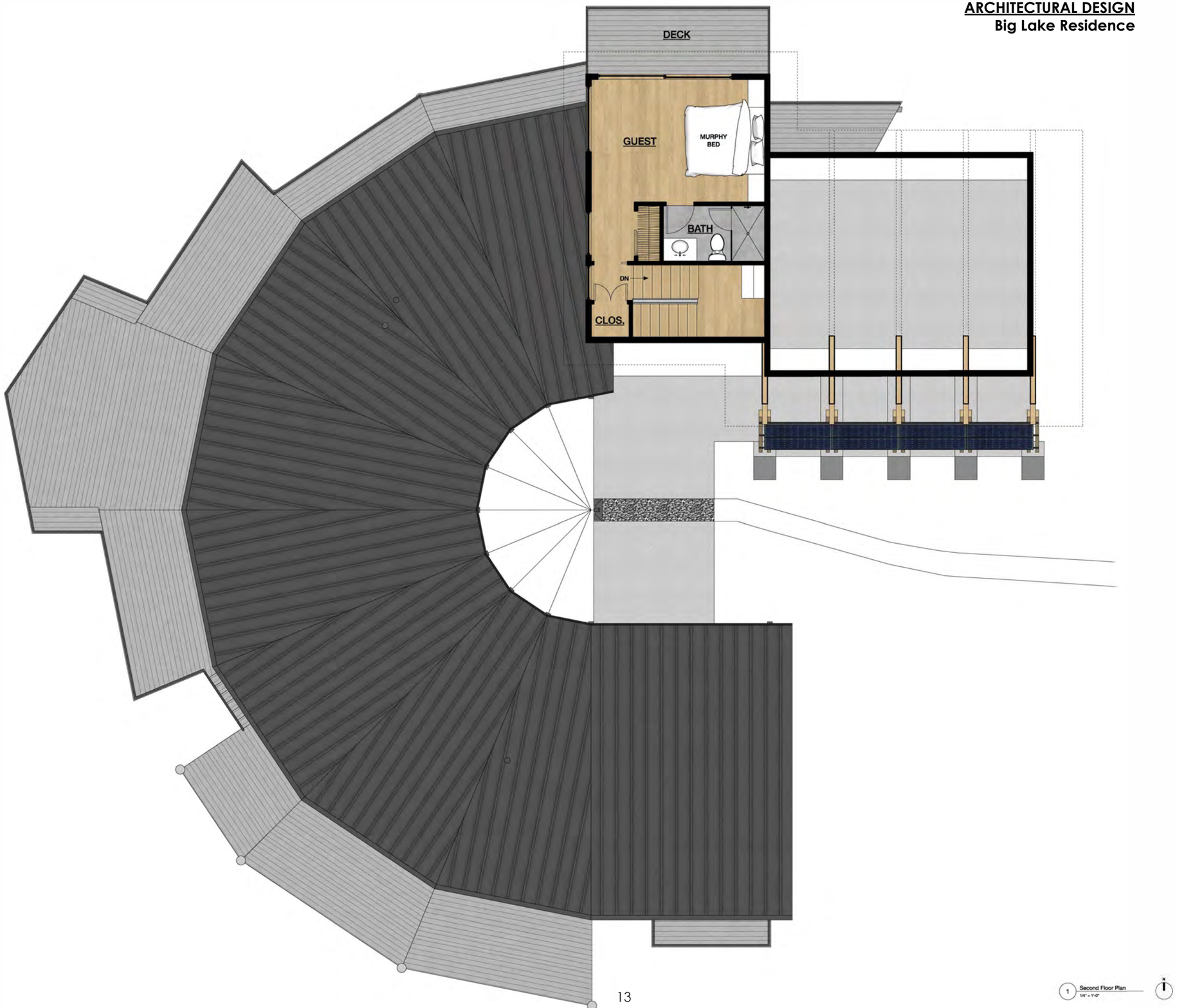
Plans

Drawing Number:

2.0

Sheet: of:

FIGURE 6, SHEET 3 OF 6
ARCHITECTURAL DESIGN
Big Lake Residence



1 Second Floor Plan
1/4" = 1'-0"

NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect from all consequences arising out of such changes.

REVISED LAND USE SUBMITTAL

Date: December 5, 2024
Revisions:

Big Lake Residence
3310 CR 96J, Ward CO 80481

BARRETT STUDIO architects
Architecture Community/Urban Design Interiors
Mailing: 3980 N Broadway, Suite 103 PMB #324, Boulder, Colorado 80304 phone: 303.449.1141 email bsa@barrettstudio.com web www.barrettstudio.com

Preliminary Drawing Set Not for Construction

Plans

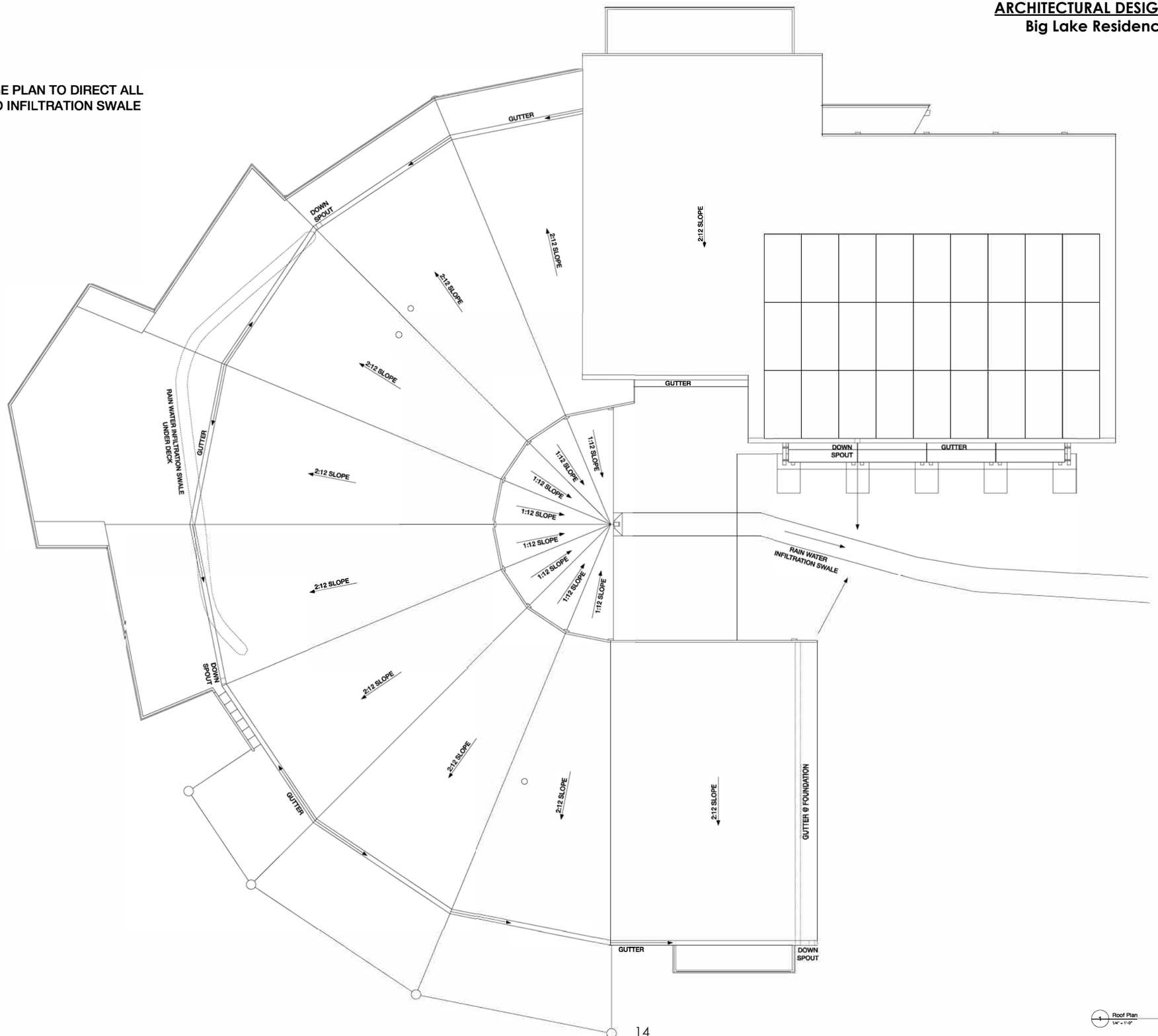
Drawing Number:

2.1

Sheet: of:

FIGURE 6, SHEET 4 OF 6
ARCHITECTURAL DESIGN
Big Lake Residence

ROOF DRAINAGE PLAN TO DIRECT ALL RAIN WATER TO INFILTRATION SWALE



Roof Plan
1/4" = 1'-0"

REVISED LAND USE SUBMITTAL

Date: December 5, 2024
Revisions:

Big Lake Residence
3310 CR 96J, Ward CO 80481

BARRETT STUDIO architects
Mailing: 3980 N Broadway, Suite 103 PMB #224, Boulder, Colorado 80304 phone: 303-449-1141 email bsa@barrettstudio.com web www.barrettstudio.com
Architecture Community/Urban Design Interiors

Preliminary Drawing Set Not for Construction

Plans

Drawing Number:

2.2

Sheet: of:

Material Key

- Standing Seam Metal Roof
- Corrugated Metal Siding
- Concrete - Clear Sealed Above Grade, Waterproof Below Grade

Elevation Keynotes

1. Powder Coated Galvanized Steel Deck & Dock Framing
2. Ipe E 84 Ignition Resistant Wood Deck & Dock Decking - Untreated
3. Painted Steel Guardrail
4. Aluminum Clad Windows
5. Solar Panels

FIGURE 6, SHEET 5 OF 6
ARCHITECTURAL DESIGN
Big Lake Residence

REVISED LAND USE SUBMITTAL

Date: December 5, 2024
Revisions:

Big Lake Residence
3310 CR 96J, Ward CO 80481

BARRETT STUDIO architects
Architecture Community/Urban Design Interiors
Mailing: 3980 N Broadway, Suite 103 PMB-234, Boulder, Colorado 80304 phone: 303.449.1141 email bsa@barrettstudio.com web www.barrettstudio.com

Preliminary Drawing Set Not for Construction

Elevations

Drawing Number:

4.0

Sheet: of:

Material Key

- Standing Seam Metal Roof
- Corrugated Metal Siding
- Concrete - Clear Sealed Above Grade, Waterproof Below Grade

Elevation Keynotes

1. Powder Coated Galvanized Steel Deck & Dock Framing
2. Ipe E 84 Ignition Resistant Wood Deck & Dock Decking - Untreated
3. Painted Steel Guardrail
4. Aluminum Clad Windows
5. Solar Panels

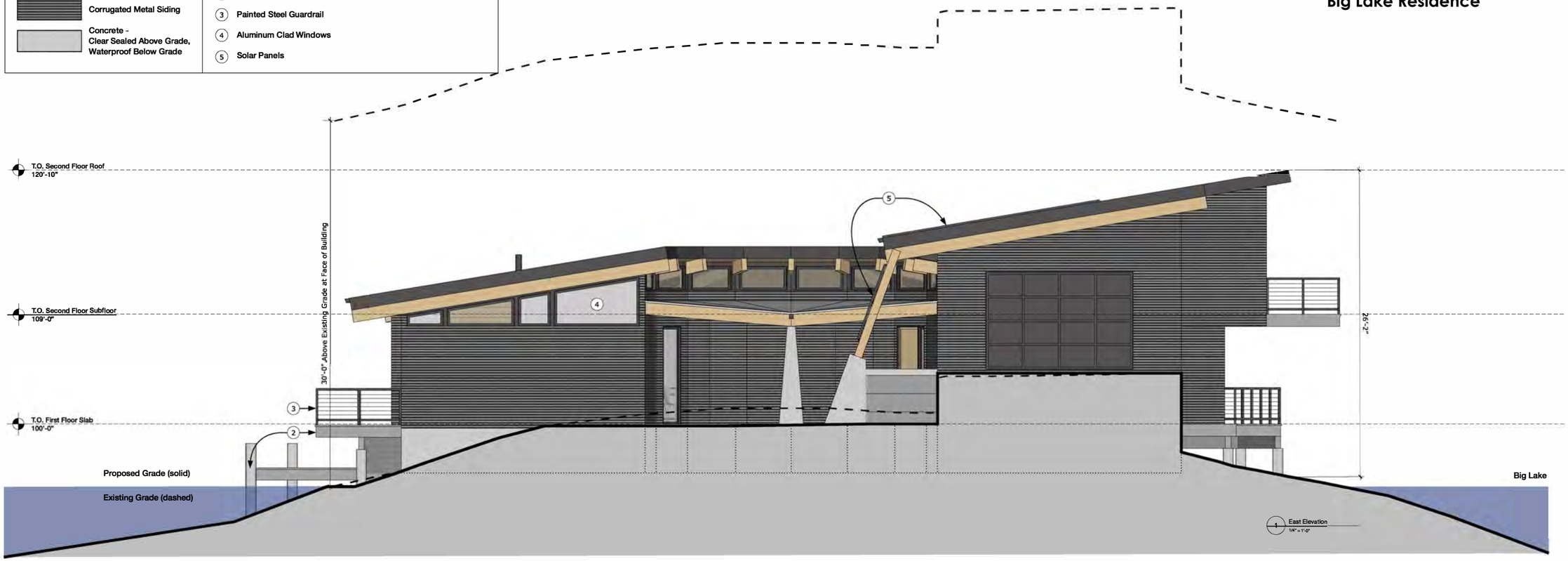


FIGURE 6, SHEET 6 OF 6
ARCHITECTURAL DESIGN
Big Lake Residence

NOTICE: DUTY OF COOPERATION

Release of these plans constitutes further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect from all consequences arising out of such changes.

REVISED LAND USE SUBMITTAL

Date: December 5, 2024
Revisions:

Big Lake Residence
3310 CR 96J, Ward CO 80481

BARRETT STUDIO architects
Architecture Community/Urban Design Interiors
Mailing: 3980 N Broadway, Suite 103 PMB #224, Boulder, Colorado 80304 phone: 303.449.1141 email bse@barrettstudio.com web www.barrettstudio.com

Preliminary Drawing Set
Not for Construction

Elevations

Drawing Number:

4.1

Sheet: of:

2.2.4 Utilities

The residence would be equipped as an Off-Grid house. Solar PV panels with a battery backup and a buried propane tank would provide power and heat. A well would be located north of the house along the existing ATV trail, and the water tank would be within the house. Sewer services would be provided via an electric lift pump, septic tank, and septic field and would be installed according to all regulations to protect water quality. Each of these features would follow the designated setbacks from other structures and the lake. The house will be designed with dark-sky lighting to limit light pollution.

2.2.5 Driveway Access

Access to the homesite would be provided via a 1,348-foot-long driveway with a road base surface. Figure 7, Sheets 1 to 7 contain the civil drawings prepared by Van Horn Engineering; Figure 8 is an overview of the proposed road on an aerial photo base which shows the relationship to Big Lake and other water bodies on the property. Figures 9 and 10 are more detailed views of the plan on the aerial photo base. For Figures 8-10, the yellow arrows show the direction of flow for runoff, which is further discussed below in Section 2.2.6, Stormwater.

Most of the initial road grading has already been completed and follows an old forest road for much of its length. The proposed driveway would be 12' wide in straight sections and 14' wide along curves, with 2' shoulders. Two emergency access pullouts and a hammerhead turnaround would be provided. Figure 7, Sheet 2 of 7 shows where the final approach to the house was redesigned to pull the driveway away from Big Lake, better manage runoff, reduce grading, and preserve key trees near the peninsula (Figures 7 -9). In this location, the area that was initially graded will be restored with native vegetation and proper erosion control BMPs will be installed.

2.2.6 Stormwater

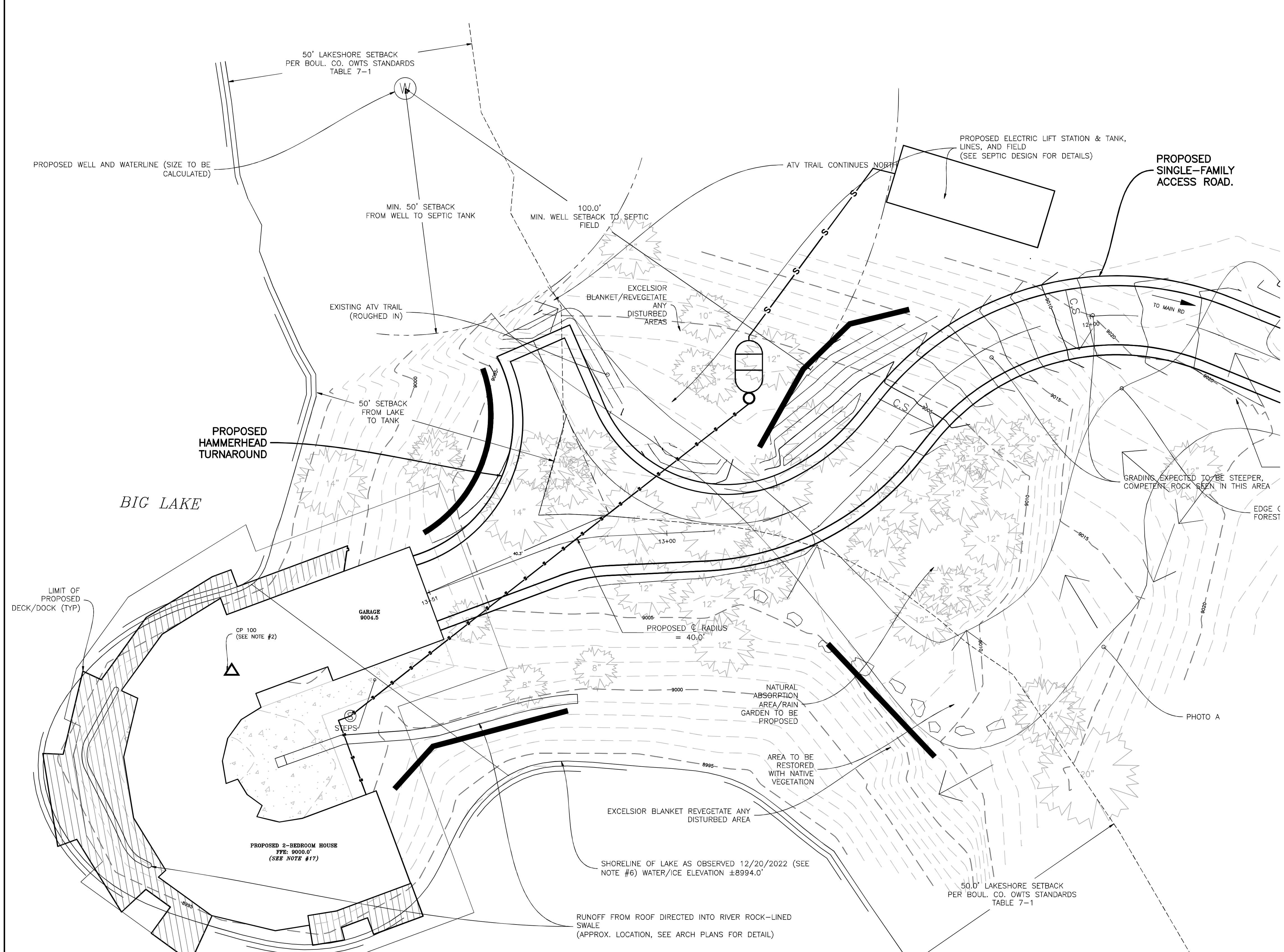
The proposed driveway and stormwater management plan have been carefully designed to limit the potential for erosion and water quality impacts. Through the design process, all culverts have been eliminated and there would be no direct surface discharge to Big Lake or any of the adjacent water bodies. The road will have a road base surface, which is more pervious than a standard asphalt road, and due to its limited size, there should not be a large increase in runoff as a result of this project. As shown by the yellow drainage arrows, runoff will flow to the uphill side of the road, or to roadside ditches or vegetated areas far away from the lakes. This should allow runoff to be naturally filtered through vegetation, as it is today. Figure 9 and Figure 7, Sheet 2 of 7 illustrate the drainage plan near the residence and peninsula. As shown by these figures, the graded areas will slope and drain away from Big Lake into rain gardens which are designed to promote infiltration.

Figures 6 and 7 also illustrate the erosion control BMPs which are to be implemented during and after project construction. These include erosion control logs placed downslope of the driveway and around the foundation of the residence.

STAPP LAKES RANCH HOUSE LOCATION (PENINSULA)

3310 CR 96J, UNINCORPORATED BOULDER COUNTY

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO



LEGAL DESCRIPTION

BIG LAKE LLC PARCEL (BOULDER COUNTY ASSESSOR PARCEL NO. 132300000040):
Legal Description per Special Warranty Deed at Recep. No. 04028764

A PORTION OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF SECTION 22, TOWNSHIP 2 NORTH, RANGE 73 WEST OF THE 6TH P.M., BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHEAST 1/4 OF SAID SECTION AND CONSIDERING THE EAST LINE OF THE SOUTHEAST 1/4 OF SAID SECTION TO BEAR N00°12'42"W WITH ALL BEARINGS HEREIN RELATIVE THERETO;

THENCE N00°12'42"W ALONG SAID EAST LINE 717.72' TO THE TRUE POINT OF BEGINNING;

THENCE DEPARTING SAID EAST LINE S89°56'45"W 438.09';

THENCE S62°28'38"W 54.20';

THENCE S89°56'45"W 2140.24' TO THE WEST LINE OF SAID SOUTHEAST 1/4;

THENCE ALONG THE SAID WEST LINE N00°35'53"E 641.03' TO THE CENTER-SOUTH 1/16TH OF SAID SECTION;

THENCE S89°39'12"E ALONG THE NORTH LINE OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF SAID SECTION 2617.54' TO THE SOUTH 1/16TH OF SAID SECTION;

THENCE S00°12'42"E 597.69' TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 37.77 ACRES, MORE OR LESS, AND IS SUBJECT TO ALL EASEMENTS AND RIGHT OF WAYS OF RECORD.

COUNTY OF BOULDER, STATE OF COLORADO.

SURVEYOR'S/ENGINEER'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS 9000.00' BENCHMARK. A MORE REALISTIC ELEVATION FOR THIS PARCEL IS AROUND 9500' BASED ON GOOGLE EARTH.
3. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
5. THE POSTED ADDRESS FOR THIS PROPERTY IS 3310 CR 96J, BOULDER, CO
6. AT THE TIME OF THE ORIGINAL SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES, INCLUDING THE CABINS SHOWN ON THIS SITE PLAN.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.
8. NO EXTERNAL PARCEL LINES OR ASSOCIATED SETBACKS ARE SHOWN HEREON.
9. SEE SHEET C5 FOR EXISTING FOREST MAINTENANCE ROAD PROFILE.
10. NO UTILITIES TO CABINS ARE SHOWN ON THIS ROAD DESIGN.
11. THE PURPOSE OF THIS PLAN/DESIGN IS TO DEPICT THE EXISTING FOREST MAINTENANCE ROAD ON THE SUBJECT PROPERTY AS COMPARED TO A DESIGNED OR PROPOSED ROAD GENERALLY FOLLOWING THE SAME ALIGNMENT BUT BEING GEOMETRICALLY CORRECT IN WIDTH WITH RADIAL/CIRCULAR CURVES. THE PROPOSED ROAD IS NOT IN THE HISTORIC SAME ALIGNMENT FROM 11+50 TO 13+50
12. EARTHWORK QUANTITIES ARE SUMMARIZED ON A SEPARATE DOCUMENT.
13. PER BOULDER COUNTY, THE MAXIMUM GRADE FOR A DRIVEWAY IS 12% TO ENSURE ACCESS FOR EMERGENCY VEHICLES. IN THE MOUNTAINS THERE MAY BE A 14% GRADE FOR UP TO 200 FEET, AND 16% FOR 200 FEET IF SERVING A SINGLE DWELLING UNIT.
14. PER BOULDER COUNTY, THERE MUST BE A VERTICAL CLEARANCE OF 13.5' (13'-6"). THE REMOVAL OF SOME TREE LIMBS OR BRUSH MAY BE REQUIRED TO ATTAIN THIS.
15. THIS DESIGN PROFILE BASICALLY FOLLOWS THE VERTICAL PROFILE OF THE EXISTING FOREST MAINTENANCE ROAD, BOTH ARE SHOWN HEREON.
16. ALL-WEATHER SURFACING IS PROPOSED FOR THIS DRIVEWAY (4" THICK CLASS 5 ROAD BASE OR EQUIVALENT).
17. SEE GEOLOGIC REPORT PREPARED BY AMERICAN GEOSERVICES FOR SLOPE STABILITY ANALYSIS.

LEGEND

Symbol	Description
Ⓢ	SEWER CLEAN OUT
Ⓦ	WELL
△	CONTROL POINT
—W—	PROPOSED WELL WATER LINE
—S—	PROPOSED SEPTIC LINE
—9000—	EX. MAJOR CONTOUR (5')
—9001—	EX. MINOR CONTOUR (1')
—9005—	PROP. MAJOR CONTOUR (5')
—9006—	PROP. MINOR CONTOUR (1')
	TREE (DIAM. AS NOTED)
	ROCK OUTCROPPING/BOULDER
→	PROPOSED FLOW DIRECTIONS
C.S.	INTENDED CROSS-SLOPE DIRECTION
▬	PROPOSED EROSION LOG

FIGURE 7, SHEET 1 OF 7
CIVIL DESIGN
Big Lake Residence

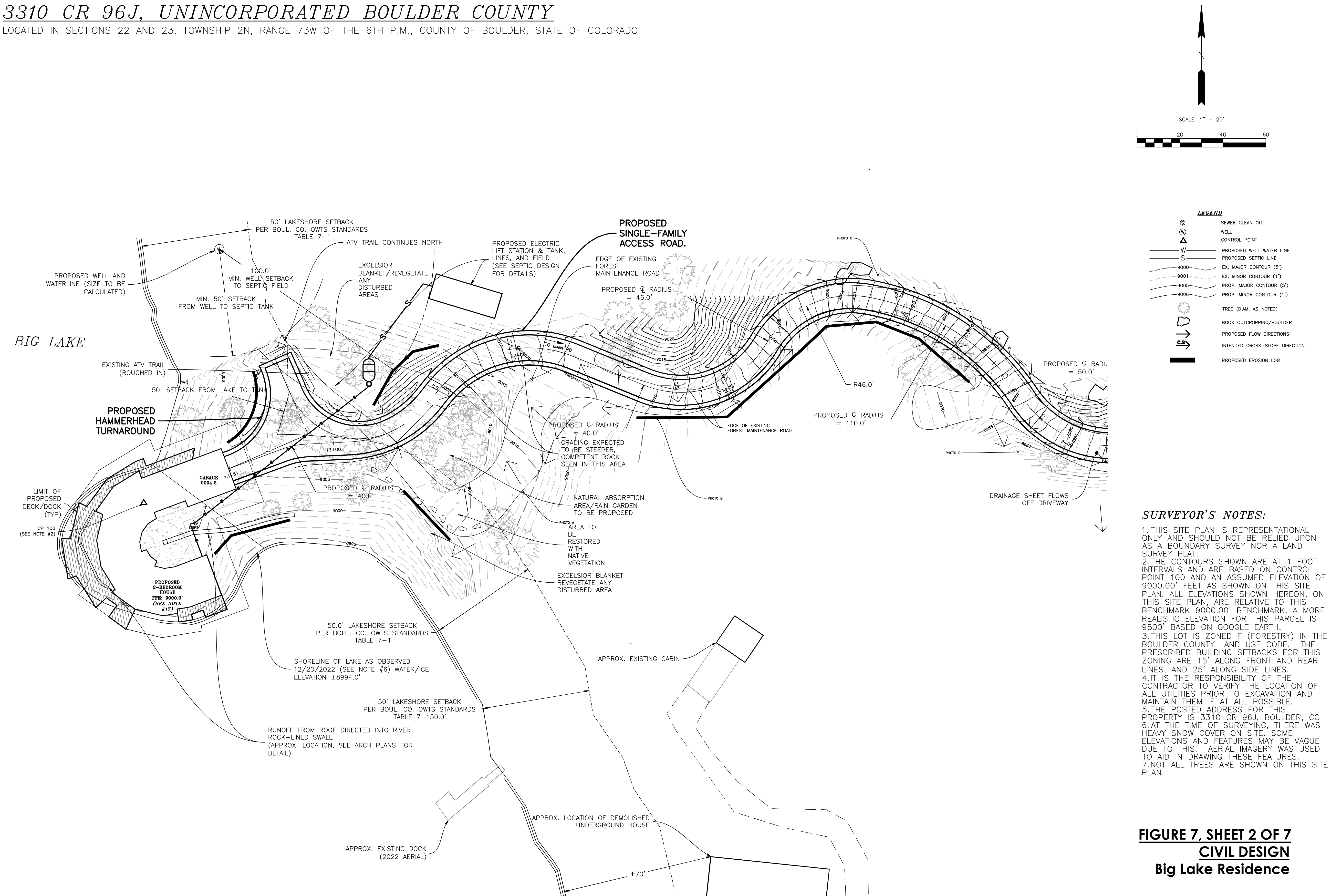
VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. * ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 * FAX: (970) 586-8101

BY	
REVISION	
DATE	
SHEET	FOREST MAINT. RD. DESIGN (WEST END)
PROJECT	BIG LAKE RESIDENCE 3310 CR 96J, UNINC. BOULDER COUNTY
DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=10'
DATE:	12/17/2024
SHEET	C1
OF	7
PROJ. NO.	2012-06-18

STAPP LAKES RANCH DRIVEWAY DESIGN (WEST END)

3310 CR 96J, UNINCORPORATED BOULDER COUNTY

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO



SURVEYOR'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS BENCHMARK 9000.00' BENCHMARK. A MORE REALISTIC ELEVATION FOR THIS PARCEL IS 9500' BASED ON GOOGLE EARTH.
3. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
5. THE POSTED ADDRESS FOR THIS PROPERTY IS 3310 CR 96J, BOULDER, CO
6. AT THE TIME OF SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.

FIGURE 7, SHEET 2 OF 7
CIVIL DESIGN
Big Lake Residence

BY	
REVISION	
DATE	

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. • ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 • FAX: (970) 586-8101

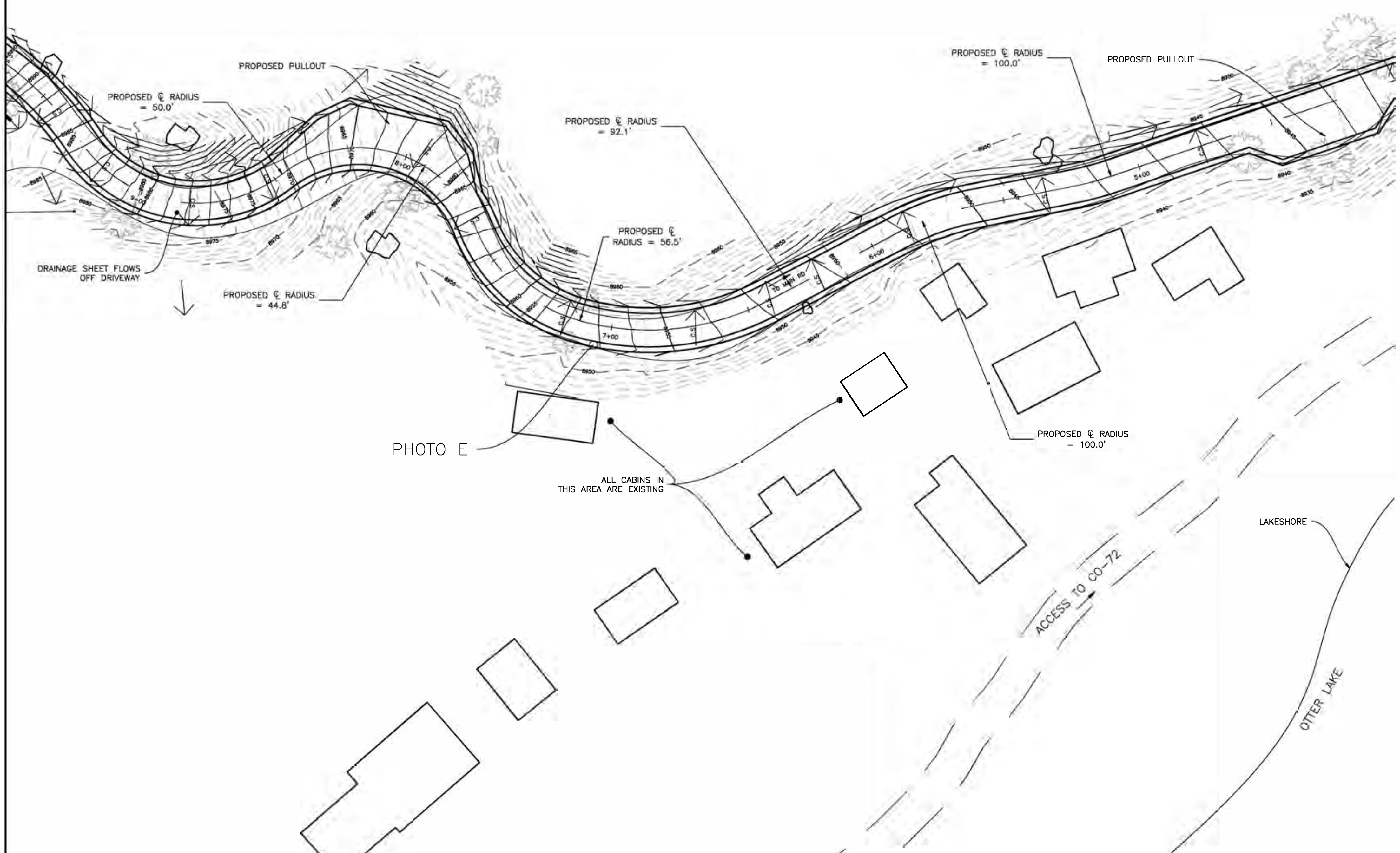
SHEET: FOREST MAINT. RD. DESIGN (WEST END)
PROJECT: BIG LAKE RESIDENCE 3310 CR 96J, UNINC. BOULDER COUNTY

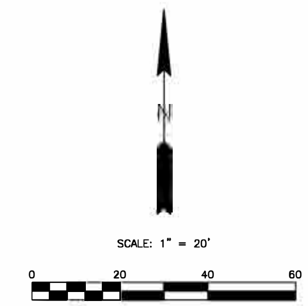
DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=20'
DATE:	12/17/2024
SHEET	C2
OF	7
PROJ. NO.	2012-06-18

STAPP LAKES RANCH DRIVEWAY DESIGN (MIDDLE SEGMENT)

3310 CR 96J, UNINCORPORATED BOULDER COUNTY

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO





LEGEND

- SEWER CLEAN OUT
- WELL
- CONTROL POINT
- PROPOSED WELL WATER LINE
- PROPOSED SEPTIC LINE
- EX. MAJOR CONTOUR (5')
- EX. MINOR CONTOUR (1')
- PROP. MAJOR CONTOUR (5')
- PROP. MINOR CONTOUR (1')
- TREE (DIAM. AS NOTED)
- ROCK OUTCROPPING/BOULDER
- PROPOSED FLOW DIRECTIONS
- INTENDED CROSS-SLOPE DIRECTION
- PROPOSED EROSION LOG

SURVEYOR'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS BENCHMARK.
3. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
5. THE POSTED ADDRESS FOR THIS PROPERTY IS 3310 CR 96J, BOULDER, CO
6. AT THE TIME OF SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.

FIGURE 7, SHEET 3 OF 7
CIVIL DESIGN
Big Lake Residence

BY	REVISION	DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. * ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 * FAX: (970) 586-8101

SHEET: FOREST MAINT. RD. DESIGN (MIDDLE)

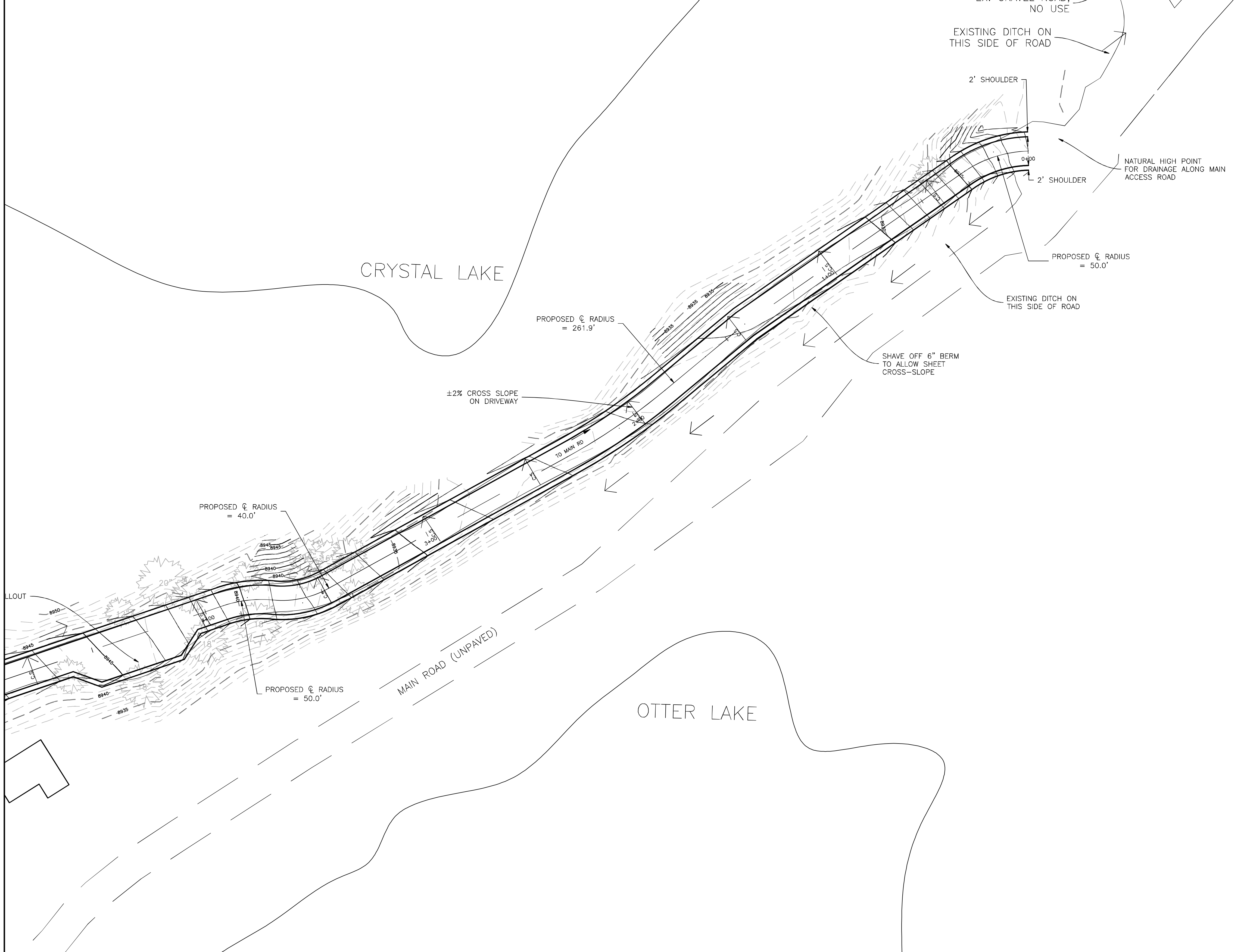
PROJECT: BIG LAKE RESIDENCE 3310 CR 96J, UNINC. BOULDER COUNTY

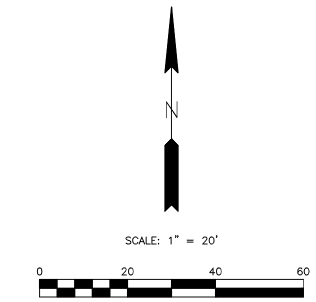
DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=20'
DATE:	12/17/2024
SHEET	C3
OF	7
PROJ. NO.	2012-06-18

STAPP LAKES RANCH DRIVEWAY DESIGN (EAST END)

3310 CR 96J, UNINCORPORATED BOULDER COUNTY

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO





LEGEND

Symbol	Description
Ⓢ	SEWER CLEAN OUT
Ⓦ	WELL
△	CONTROL POINT
——W——	PROPOSED WELL WATER LINE
——S——	PROPOSED SEPTIC LINE
9000	EX. MAJOR CONTOUR (5')
9001	EX. MINOR CONTOUR (1')
9005	PROP. MAJOR CONTOUR (5')
9006	PROP. MINOR CONTOUR (1')
	TREE (DIAM. AS NOTED)
	ROCK OUTCROPPING/BOULDER
→	PROPOSED FLOW DIRECTIONS
C.S →	INTENDED CROSS-SLOPE DIRECTION
▬	PROPOSED EROSION LOG

SURVEYOR'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS BENCHMARK.
3. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
5. THE POSTED ADDRESS FOR THIS PROPERTY IS 3310 CR 96J, BOULDER, CO
6. AT THE TIME OF SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.

FIGURE 7, SHEET 4 OF 7
CIVIL DESIGN
Big Lake Residence

BY	REVISION	DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. • ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 • FAX: (970) 586-8101

SHEET: FOREST MAIN. RD. DESIGN (EAST END)

PROJECT: BIG LAKE RESIDENCE, 3310 CR 96J, UNINC. BOULDER COUNTY

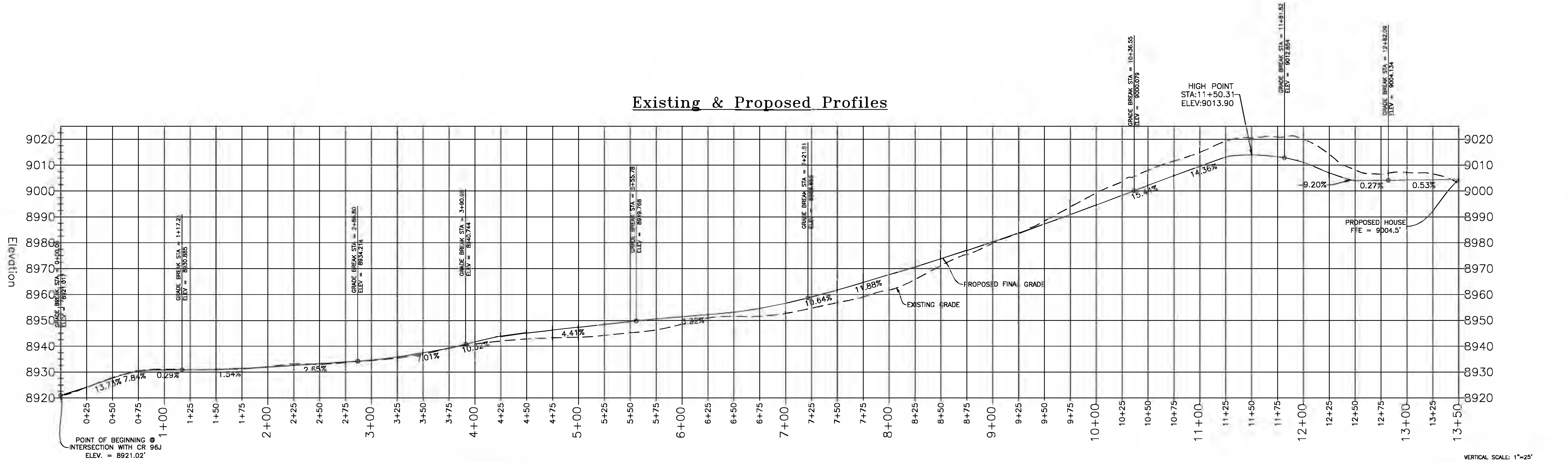
DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=20'
DATE:	12/17/2024
SHEET	C4
OF	7
PROJ. NO.	2012-06-18

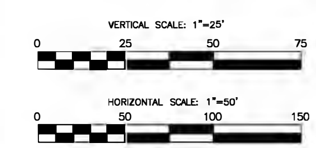
BIG LAKE RESIDENCE ROAD PROFILE AND CROSS SECTIONS

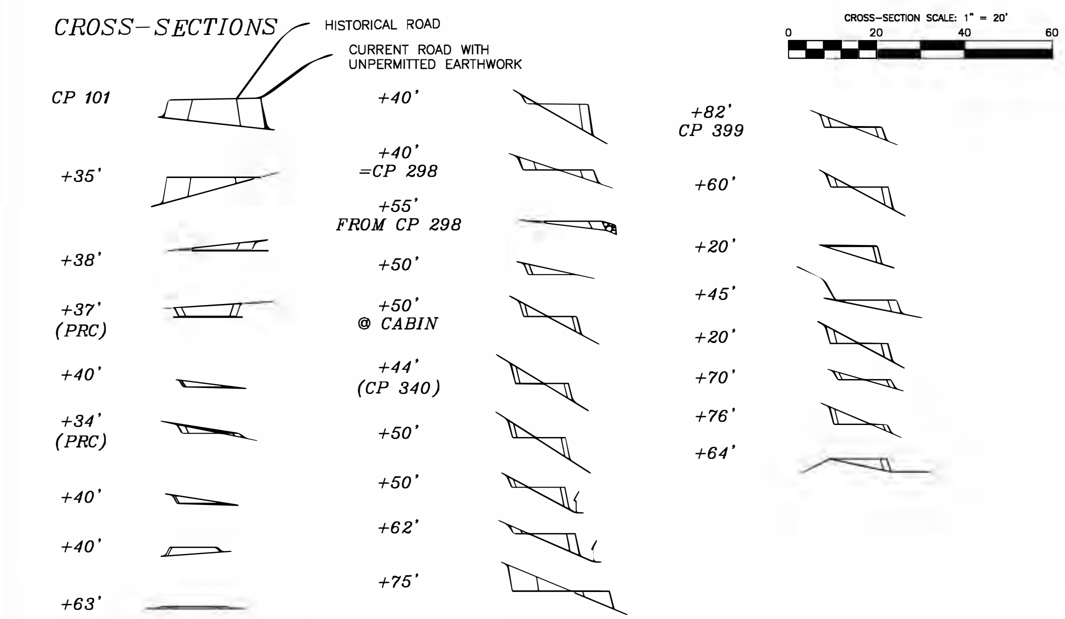
3310 CR 96J, UNINCORPORATED BOULDER COUNTY, COLORADO

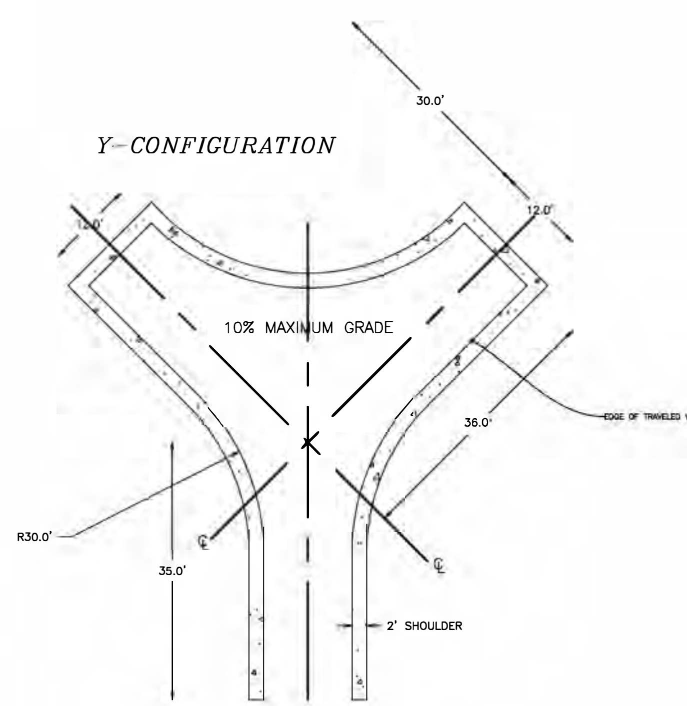
LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO

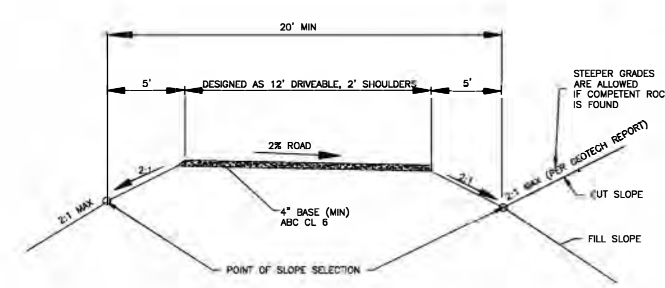
FIGURE 7, SHEET 5 OF 7
CIVIL DESIGN
Big Lake Residence



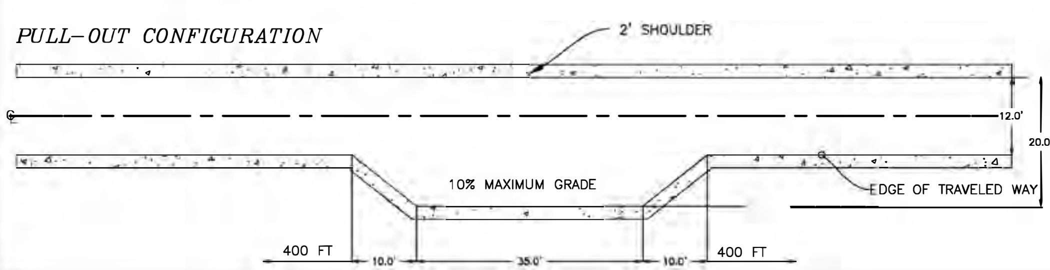








ONE-LANE PRIVATE ACCESS SECTION
PER STANDARD DRAWING 11, BOUL. CO. MULTIMODAL DESIGN STANDARDS



SURVEYOR'S NOTES:

1. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
3. THE PROPOSED DRIVEWAY WILL SERVE THE NEWLY CREATED PARCEL (BOULDER COUNTY PARCEL NO. 132300000040) WITH THE ASSIGNED ADDRESS 3310 CR96J, WARD, CO 80481.
4. PER BOULDER COUNTY'S "DRIVEWAY ACCESS FOR EMERGENCY VEHICLES" DOCUMENT, THE MAXIMUM GRADE FOR A DRIVEWAY IS 12% TO ENSURE ACCESS FOR EMERGENCY VEHICLES. IN THE MOUNTAINS THERE MAY BE A 14% GRADE FOR UP TO 200 FEET, AND 16% FOR 200 FEET IF SERVING A SINGLE DWELLING UNIT.
5. PER BOULDER COUNTY'S "DRIVEWAY ACCESS FOR EMERGENCY VEHICLES", THERE MUST BE A VERTICAL CLEARANCE OF 13.5' (13'-6"). THE REMOVAL OF SOME TREE LIMBS OR BRUSH MAY BE REQUIRED TO ATTAIN THIS.
6. DIMENSIONS SHOWN FOR THE PULL-OUT AND HAMMERHEAD TURNAROUND WERE OBTAINED FROM BOULDER COUNTY'S "DRIVEWAY ACCESS FOR EMERGENCY VEHICLES" DOCUMENT.
7. A DESIGN WAIVER IS BEING REQUESTED TO ALLOW GRADES EXCEEDING 6% THROUGH CURVES, AS REQUIRED BY THE BOULDER COUNTY "DRIVEWAY ACCESS FOR EMERGENCY VEHICLES."

BY | REVISION | DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. • ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 • FAX: (970) 586-8101

SHEET: CHRISTY AND JAY ORRIS/BIG LAKE LLC
PROJECT: BIG LAKE RESIDENCE 3310 CR 96J, BOULDER COUNTY

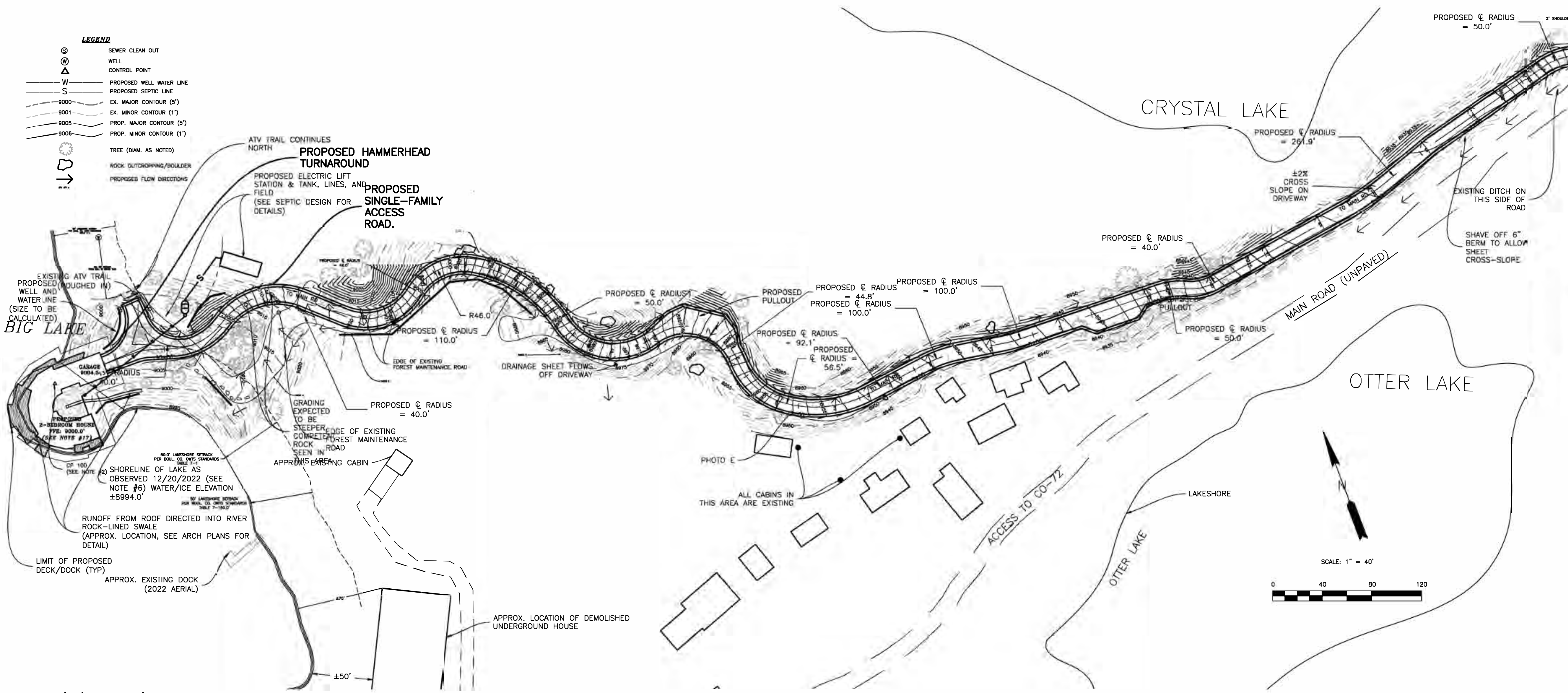
DRAWN BY: JTG
CHECKED BY: LAS
SCALE: AS NOTED
DATE: 12/17/2024
SHEET C5
OF 7
PROJ. NO. 2012-06-18

BIG LAKE RESIDENCE ROAD PLAN OVERVIEW NOTES

UNINCORPORATED BOULDER COUNTY, STATE OF COLORADO

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO

FIGURE 7, SHEET 6 OF 7
CIVIL DESIGN
Big Lake Residence



SURVEYOR'S/ENGINEER'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE INTENT OF THIS WORKSHEET IS TO ACCOMPANY SUBMITTED DRAINAGE/EARTHWORK REPORTS. ADDITIONAL DETAIL TO FOLLOW ON FINAL DRIVEWAY DESIGN SHEET #5
3. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS BENCHMARK.
4. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
6. THE NEWLY CREATED PARCEL WHERE THE BIG LAKE RESIDENCE IS TO BE CONSTRUCTED HAS AN ASSIGNED ADDRESS OF 3310 CR 96J, WARD, CO 80481.
7. AT THE TIME OF SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES, INCLUDING THE CABINS SHOWN ON THIS SITE PLAN.
8. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.
9. THE PROPERTY LINES FOR THE NEWLY CREATED BIG LAKE LLC PARCEL ARE NOT SHOWN HEREON. SAID PARCEL HAS A BOULDER COUNTY RECEPTION NO. OF 132300000040.
10. SEE SHEET C5 FOR EXISTING FOREST MAINTENANCE ROAD PROFILE.
11. EARTHWORK QUANTITIES ARE SUMMARIZED ON A SEPARATE DOCUMENT.
12. THE SHOWN LOCATIONS FOR THE PROPOSED CROSS-CULVERTS AND STILLING BASINS HEREON WERE OBTAINED FROM HANDWRITTEN NOTES. THE LOCATIONS WILL BE FINALIZED DURING CONSTRUCTION TO "BEST-FIT" THE NEEDED LOCATIONS FOR THIS DESIGN, 18" CORRUGATED STEEL CULVERTS, 20' LONG ARE SHOWN (SPECIFIC SIZE/LENGTH TO BE DETERMINED AT A LATER DATE BEFORE CONSTRUCTION). CULVERTS ARE TO COMPLY WITH AASHTO STANDARD M 36.
13. THE DISTURBED AREA WAS MEASURED TO BE ±0.75 ACRES. ALL DISTURBED AREA IS TO BE SEEDED/MULCHED/FABRIC COVERED.
14. ON SITE EROSION CONTROL TO BE PROVIDED AT THE DIRECTION OF THE ENGINEER
15. STRAW BALES OR EROSION LOGS ARE TO BE USED FOR ON SITE EROSION CONTROL AT THE DIRECTION OF THE ENGINEER.
16. PER BOULDER COUNTY, THE MAXIMUM GRADE FOR A DRIVEWAY IS 12% TO ENSURE ACCESS FOR EMERGENCY VEHICLES. IN THE MOUNTAINS THERE MAY BE A 14% GRADE FOR UP TO 200 FEET, AND 16% FOR 200 FEET IF SERVING A SINGLE DWELLING UNIT.
17. PER BOULDER COUNTY, THERE MUST BE A VERTICAL CLEARANCE OF 13.5' (13'-6"). THE REMOVAL OF SOME TREE LIMBS OR BRUSH MAY BE REQUIRED TO ATTAIN THIS.
18. THIS DESIGN PROFILE BASICALLY FOLLOWS THE VERTICAL PROFILE OF THE EXISTING FOREST MAINTENANCE ROAD, BOTH ARE SHOWN ON PAGE 5 OF THIS PLANSET.
19. ALL-WEATHER SURFACING IS PROPOSED FOR THIS DRIVEWAY (4" THICK CLASS 5 ROAD BASE OR EQUIVALENT).

BY	REVISION	DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. * ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 * FAX: (970) 586-8101

SHEET: ROAD PLAN OVERVIEW NOTES

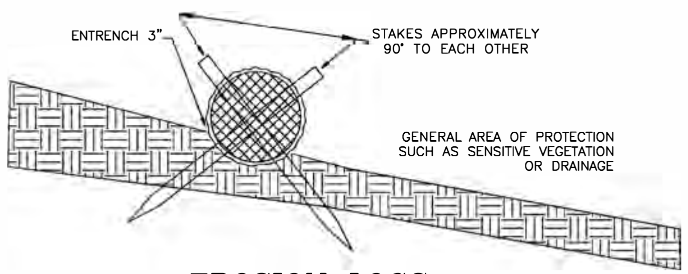
PROJECT: BIG LAKE RESIDENCE, 3310 CR 96J, BOULDER COUNTY

DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=40'
DATE:	12/17/2024
SHEET	C6
OF	7
PROJ. NO.	2012-06-18

BIG LAKE RESIDENCE EROSION PLAN

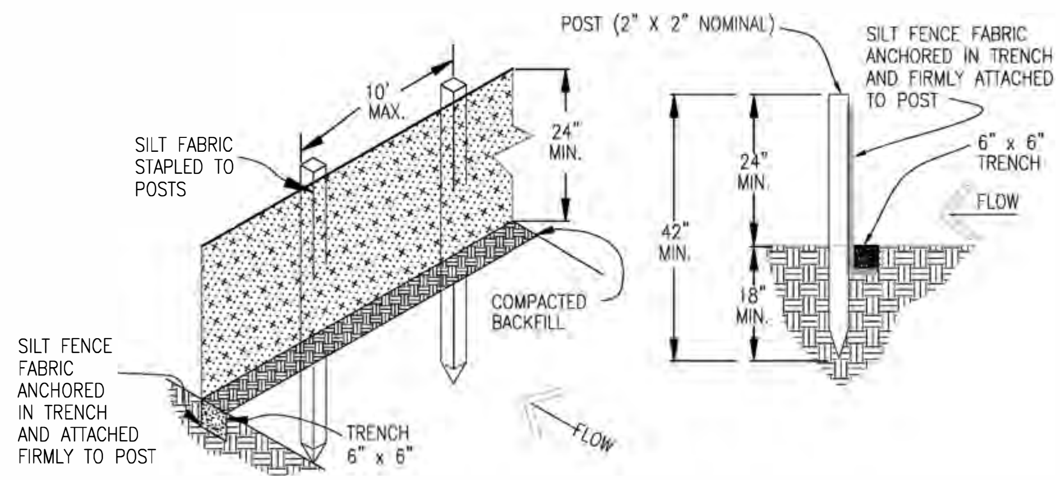
UNINCORPORATED BOULDER COUNTY, STATE OF COLORADO

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO



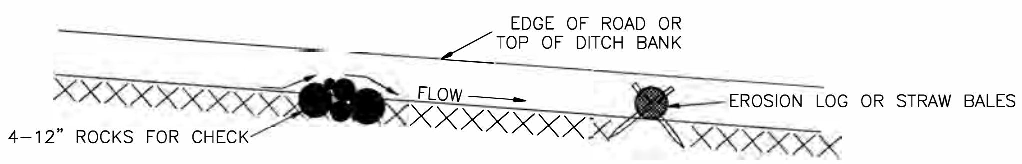
EROSION LOGS TYPICAL STAKING PATTERN

NTS



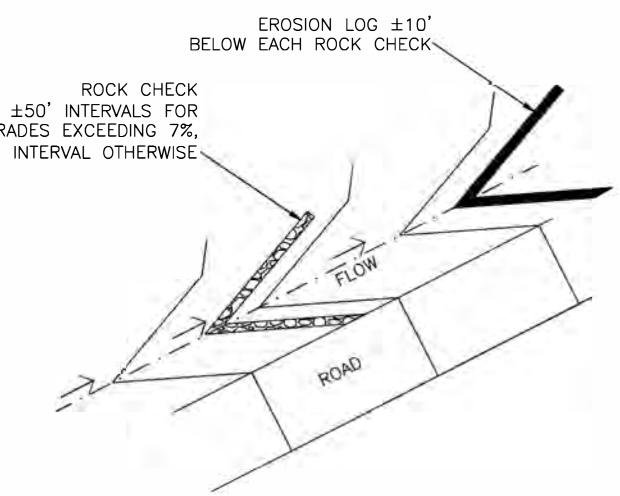
SILT FENCE

NTS



ROCK CHECK STRUCTURE–PROFILE VIEW

NTS



ROCK CHECK STRUCTURE–PLAN VIEW

NTS

EROSION CONTROL NOTES

1. THIS DRIVEWAY DESIGN IS REPRESENTATIONAL ONLY AND IS NOT TO BE CONSTRUED AS A LAND SURVEY PLAT NOR AN IMPROVEMENT SURVEY PLAT.
2. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
3. ALL REQUIRED IMPROVEMENTS SHALL BE COMPLETED OR GUARANTEED IN ACCORDANCE WITH BOULDER COUNTY LAND USE CODE SECTION 9–903 AND BOULDER COUNTY STORM DRAINAGE CRITERIA MANUAL.
4. PROPOSED DRIVEWAY IS TO BE SURFACED WITH A MINIMUM 4" ABC CLASS 5 ROAD BASE.
5. TRASH DUMPSTERS SHALL BE SECURED AGAINST BEARS AND OTHER ANIMALS. TRASH DUMPSTERS DURING AND AFTER CONSTRUCTION ARE TO HAVE A METAL LID TO PREVENT TRASH FROM ENTERING THE BIG LAKE AND OTHER LOCAL WATERWAYS.
6. UTILITIES ARE SCHEMATIC. THE ACTUAL LOCATIONS WILL BE FIELD FIT AT THE TIME OF INSTALLATION.
7. LIMITS OF DISTURBANCE SHALL BE DESIGNATED IN THE FIELD PRIOR TO COMMENCEMENT OF EXCAVATION, GRADING, OR CONSTRUCTION WITH CONSTRUCTION BARRIER FENCING OR SOME OTHER METHOD APPROVED BY STAFF.
8. ALL AREAS DISTURBED SINCE 2020 ARE TO BE REVEGETATED USING EXCELSIOR BLANKETS.
9. SLOPES ARE NOT TO EXCEED 1.5:1 AT PULLOUTS AND THE HAMMERHEAD TURNAROUND, AS STATED IN 5.3.2.2 OF THE BOULDER COUNTY MULTIMODAL TRANSPORTATION STANDARDS.
10. THE TOP OF ALL CUT SLOPES ARE TO BE ROUNDED WITH A MINIMUM 10' RADIUS WHERE THE MATERIAL IS NOT SOLID ROCK. WHEN NOT SOLID ROCK, THE SLOPE IS TO BE REVEGETATED.
11. SILT FENCING AND STRAW BALES TO BE PLACED PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION. EROSION CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCING.
12. NO FUELS OR CHEMICALS SHALL BE STORED NEAR PROPOSED CONSTRUCTION AREAS.
13. EROSION CONTROL MEASURES WILL BE INSPECTED WEEKLY DURING CONSTRUCTION AND MAINTAINED IN WORKING ORDER.
14. ALL DISTURBED AREAS TO BE TOPSOILED AND SEEDED. SEED WILL BE DRILLED OR RAKED TO INSURE $\frac{1}{8}$" TO $\frac{1}{4}$" COVER.
15. ALL SLOPES STEEPER THAN 4:1 SHALL BE RESEEDED WITH GRASS MIXES WITH DEEP ROOTING CHARACTERISTICS.
16. AFTER SEEDING ENTIRE DISTURBED SITE WILL BE MULCHED USING CLEAN HAY AT A RATE OF 1.5 TONS/ACRE. SLOPES STEEPER THAN 2:1 SHALL BE BLANKETED WITH BIODEGRADABLE EXCELSIOR BLAKNET EROSION CONTROL FABRIC WITH A MINIMUM WEIGHT OF $\frac{1}{2}$#/sq.yd. INSTALLED PER MANUFACTURES SPECIFICATIONS.
17. ADDITIONAL SEEDING MAY BE NECESSARY IN THE FOLLOWING YEARS TO ENSURE ADEQUATE VEGETATIVE COVER TO STABILIZE SOILS. SILT FENCING OR EROSION LOGS SHALL REMAIN IN PLACE AND REGULARLY MAINTAINED UNTIL SOILS ARE STABILIZED WITH ESTABLISHED VEGETATION.
18. THE CONTRACTOR IS RESPONSIBLE FOR ALL ASPECTS OF EROSION CONTROL.

SURVEYOR'S/ENGINEER'S NOTES:

1. THIS DRIVEWAY DESIGN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE INTENT OF THIS WORKSHEET IS TO ACCOMPANY SUBMITTED DRAINAGE/EARTHWORK REPORTS.
3. THE CONTOURS SHOWN IN THIS PLANSET ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS BENCHMARK.
4. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
6. AT THE TIME OF SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES, INCLUDING THE CABINS SHOWN ON THIS SITE PLAN.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.
8. THE PROPERTY LINES FOR THE NEWLY CREATED BIG LAKE LLC PARCEL ARE NOT SHOWN HEREON. SAID PARCEL HAS A BOULDER COUNTY RECEPTION NO. OF 13230000040.
9. SEE SHEET C5 FOR EXISTING FOREST MAINTENANCE ROAD PROFILE.
10. EARTHWORK QUANTITIES ARE SUMMARIZED ON A SEPARATE DOCUMENT.
11. THE DISTURBED AREA WAS MEASURED TO BE ±0.7 ACRES. ALL DISTURBED AREA IS TO BE SEEDED/MULCHED/FABRIC COVERED.
12. ON SITE EROSION CONTROL TO BE PROVIDED AT THE DIRECTION OF THE ENGINEER
13. STRAW BALES OR EROSION LOGS ARE TO BE USED FOR ON SITE EROSION CONTROL AT THE DIRECTION OF THE ENGINEER.
14. PER BOULDER COUNTY, THE MAXIMUM GRADE FOR A DRIVEWAY IS 12% TO ENSURE ACCESS FOR EMERGENCY VEHICLES. IN THE MOUNTAINS THERE MAY BE A 14% GRADE FOR UP TO 200 FEET, AND 16% FOR 200 FEET IF SERVING A SINGLE DWELLING UNIT.
15. PER BOULDER COUNTY, THERE MUST BE A VERTICAL CLEARANCE OF 13.5' (13'–6"). THE REMOVAL OF SOME TREE LIMBS OR BRUSH MAY BE REQUIRED TO ATTAIN THIS.
16. ALL–WEATHER SURFACING IS PROPOSED FOR THIS DRIVEWAY (4" THICK CLASS 5 ROAD BASE OR EQUIVALENT).

FIGURE 7, SHEET 7 OF 7
CIVIL DESIGN
Big Lake Residence

VAN HORN ENGINEERING AND SURVEYING

BY	REVISION	DATE

SHEET: EROSION CONTROL PLAN

PROJECT: BIG LAKE RESIDENCE 3310 CR96J, BOULDER COUNTY

DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	NO SCALE
DATE:	12/05/2024
SHEET	C7
OF	7
PROJ. NO.	2012-06-18

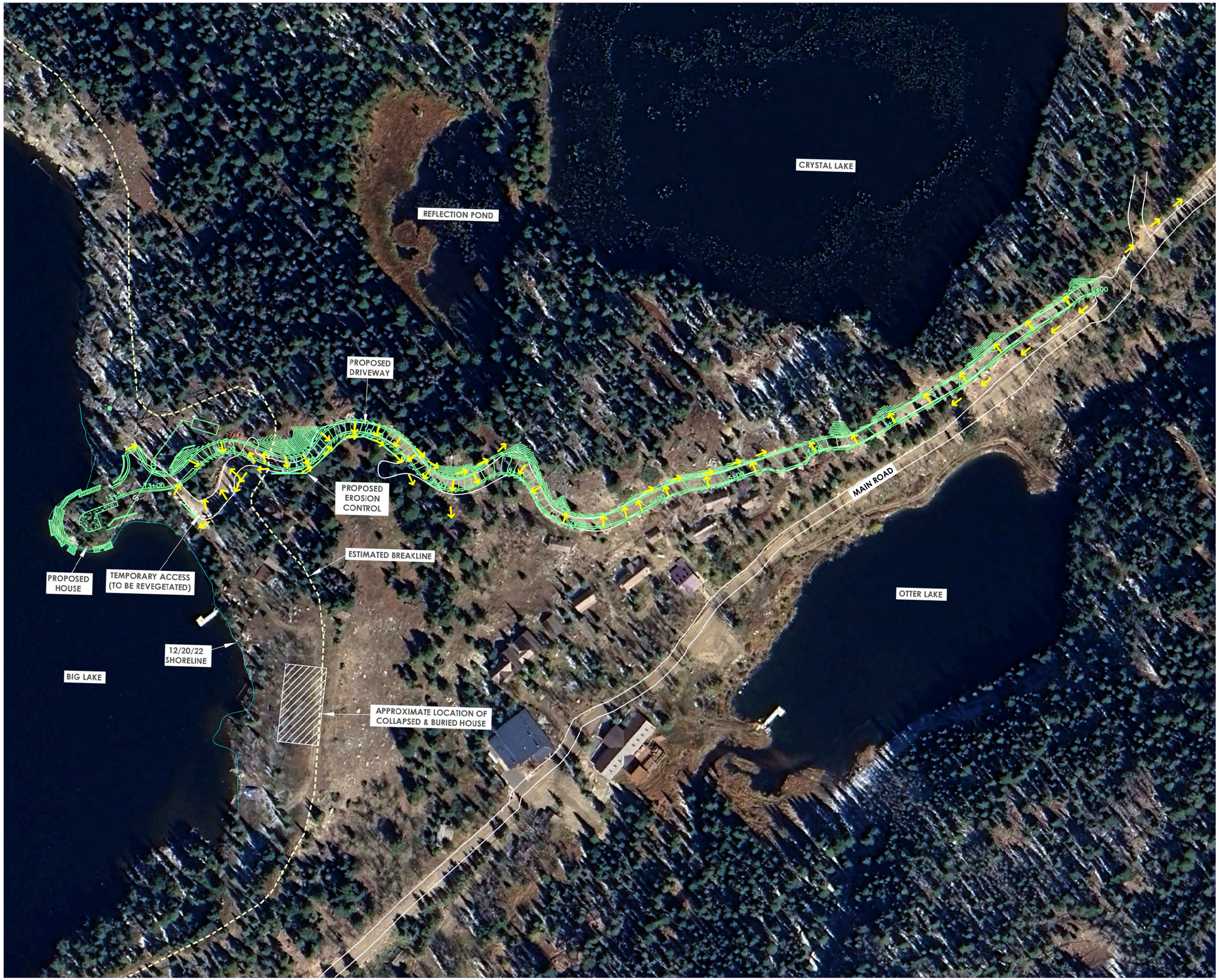


FIGURE 8.
AERIAL WITH PROPOSED PLAN
Big Lake Residence

LEGEND:

- Direction of Flow
- Proposed Driveway, House, & Utilities
- Proposed Contours
- Existing Access Route
- Estimated Breakline
- Shoreline Surveyed 12/20/22

Date: December 2024
Contour Interval = 2 ft
Scale: 1 in = 115 ft

Survey & Road Design by Van Horn Engineering & Surveying of Estes Park, CO.

Architectural design by Barrett Studio Architects of Boulder, CO.

prepared by:
Birch Ecology LLC
710 Tenacity Drive
Suite 101
Longmont, Colorado 80504
(720) 350-2530
www.birchecology.com

FIGURE 9.
WEST AERIAL WITH PROPOSED PLAN
Big Lake Residence

LEGEND:

- Direction of Flow
- Proposed Driveway, House, & Utilities
- Proposed Contours
- Existing Access Route
- Estimated Breakline
- Shoreline Surveyed 12/20/22

Date: December 2024
Contour Interval = 2 ft
Scale: 1 in = 60 ft

Survey & Road Design by Van Horn Engineering & Surveying of Estes Park, CO.

Architectural design by Barrett Studio Architects of Boulder, CO.

prepared by:
Birch Ecology LLC
710 Tenacity Drive
Suite 101
Longmont, Colorado 80504
(720) 350-2530
www.birchecology.com

FIGURE 10.
EAST AERIAL WITH PROPOSED PLAN
Big Lake Residence

LEGEND:

- Direction of Flow
- Proposed Driveway, House, & Utilities
- Proposed Contours
- Existing Access Route

Date: December 2024
Contour Interval = 2 ft
Scale: 1 in = 60 ft

Survey & Road Design by Van Horn Engineering & Surveying of Estes Park, CO.

Architectural design by Barrett Studio Architects of Boulder, CO.

prepared by:

Birch Ecology LLC

710 Tenacity Drive
Suite 101
Longmont, Colorado 80504
(720) 350-2530
www.birchecology.com

2.3 Construction Site Management

The construction team will follow strict protocols to limit the potential for trash and debris to degrade the habitat quality surrounding the proposed home. The General Contractor and subcontractors will be vetted and hired with environmental sensitivity in mind.

Construction Site Best Management Practices to limit the potential ecological impacts will include the following:

- **Rock check dams**, **erosion control logs**, and **silt fences** will mitigate and contain erosion along the road.
- **Double layer erosion control** would be placed along the foundation excavation.
- **Construction fence** will surround the entire periphery of the construction site. This fence will be made of weather-resistant materials with a screen to contain any wind-blown trash.
- **Enclosed portable storage containers** will be used to protect building materials delivered to the site from wind and keep packaging from being dislodged.
- The **garage space will be enclosed** as soon as practicable to provide a protected indoor work area.
- **Construction dumpsters will be equipped with metal lids** which will be secured each night to prevent trash from blowing away.
- A **designated, contained washout area** will be provided for all contractors. Rinsate will be collected in enclosed drums which will be collected by a waste disposal service and properly disposed of offsite. The storage area will be lined to prevent contamination from seepage, in the event of a spill.
- The construction supervisor will conduct **daily site inspections** to ensure compliance with Best Management Practices.
- **Daily cleanup** will be a requirement for all contractors.

2.4 Alternatives Analysis

2.4.1 Alternate Driveway Access Location

The comment letter proposes that an old driveway along the south side of the lake could have been used rather than the existing route that has been partially graded. Figure 11 illustrates the potential alternative route on an aerial photo base, along with the proximity to the lake shoreline, buried house, and existing cabins. The historic aerial photo below shows the outline of the buried house and the old access route along the lakeshore.

As shown by Figure 11, the alternative route would begin near the existing maintenance building, then traverse up a steep hill. This hill presents a design challenge which was acknowledged in Mr. West's letter. At the top of the slope, a 40-foot-radius turn is required, then the route continues around parallel to the lake edge, continuing east and then north to connect to existing road grading near the peninsula.

The south access alternative would traverse along the shoreline for more than 800 feet. As shown by the photo at left and on Figure 11, the road could not be feasibly pulled further from the lakeshore due to the proximity of the collapsed underground house. Disturbing this structure could risk contamination from unknown building materials that could be excavated during road construction. Routing over the top of the buried house presents additional challenges and is not a feasible option. North of the underground house, an existing cabin prevents the road from being routed farther uphill and away from Big Lake (Figure 11). The steep slope near this cabin would necessitate additional grading to bench in the road.

When comparing access alternatives between the southern route and the partially constructed route proposed by the design team, it is our assessment that the least environmentally impactful alternative is to use the partially constructed driveway.

FIGURE 11.
ALTERNATIVES ANALYSIS: DRIVEWAY ACCESS
Big Lake Residence

LEGEND:

- South Access Alternative
- Proposed Driveway, House, & Utilities
- Estimated Breakline
- Existing Access Route
- Shoreline Surveyed 12/20/22

Date: December 2024
Contour Interval = 2 ft
Scale: 1 in = 100 ft

Survey & Road Design by Van Horn Engineering & Surveying of Estes Park, CO.

Architectural design by Barrett Studio Architects of Boulder, CO.

prepared by:

BIRCH ECOLOGY

Birch Ecology LLC
710 Tenacity Drive
Suite 101
Longmont, Colorado 80504
(720) 350-2530
www.birchecology.com

2.5 Summary Points

Field reconnaissance has revealed site- and project-specific characteristics that make the proposed Big Lake Residence less impactful than may be apparent through a desktop review.

2.5.1 Environmental Characteristics that Reduce Impact

- The glacial till that comprises the peninsula is resistant to erosion.
- The steep and rocky shoreline of the peninsula lacks wetland development.
- Limited impacts to use the existing access route that is already partially improved. Most of this route was already in existence prior to the grading work completed for this project.
- This site is not pristine and has been used in the past as a guest ranch. Since the Orris family acquired the property, visitation has been and continues to be much reduced from its peak use as a guest ranch.
- The Orris Family has no intention of further subdividing or developing the Big Lake property. They have a primary interest in retaining the natural character and beauty.
- The proposed residence will be off-grid.

2.5.2 Mitigation Measures

- Use of powder-coated galvanized steel deck and dock framing and untreated Ipe E 84 Ignition Resistant Wood Deck and Dock Decking. These materials are specially designed for use in docks and were selected because they do not present a water quality risk from chemical leaching.
- Limited increase in stormwater runoff due to the small area of impervious surfaces and the use of a road base driveway instead of asphalt.
- Stormwater will be routed to swales and rain gardens that will promote infiltration. No culverts will be used and there will be no direct discharge of runoff to Big Lake or any of the other water bodies onsite.
- The residence will use dark-sky lighting.
- Construction site BMPs with daily inspections and daily site cleanup.
- Disturbances will be restored with native vegetation.
- Primarily seasonal use due to limited winter access.
- Compliance with required setbacks and percolation testing for the septic system.

3.0 COMMENT RESPONSES

3.1 Landscape-Level Geology

Mr. West's letter notes that the geological context is a region covered by Pleistocene recessional/terminal moraines.

Big Lake is a moraine-dammed lake, and a recessional moraine forms the peninsula where the residence is proposed to be built (Figure 4). In this case, the geology facilitates project construction on the peninsula because it dramatically rises out of Big Lake forming the vertical separation between the lake and building site (Photo 3). The coarse, rocky shoreline lacks wetland development and is resistant to erosion.

As noted in the letter, this is one of the only private, developable lots in this area. The other moraines and kettle lakes located in the surrounding area will not be affected by the project and they are protected from future development. These surrounding moraines and lakes are common on the surrounding landscape, and the impact from the single proposed residence upon the overall geologic context is minimal.

3.2 Landscape-Level Ecology

The comment letter notes the relationship of the project site within its ecological context by pointing out surrounding High Biodiversity Areas and Critical Wildlife Habitats as well as showing that the site is within a Significant Natural Community—an Engelmann spruce/subalpine fir forest.

3.2.1 High Biodiversity Areas

The comment letter states the site is bracketed by High Biodiversity Areas. The small disturbance associated with the construction of one single family residence on Big Lake should have no measurable effect on these High Biodiversity Areas which are more than a mile away. The nearest high biodiversity area is Middle Saint Vrain Creek at Peaceful Valley which is just over one mile to the northeast of the peninsula. Tumblesom Lake is approximately 1.5 miles southeast of the peninsula. The area designated around Mount Audubon is 2.25 miles to the southwest. It should be noted that all three of these areas see high levels of recreational use. Big Lake does not drain into any of these High Biodiversity Areas.

3.2.2 Critical Wildlife Habitat

The letter discusses potential impacts to lake chub *(Couesius plumbeus)* as well as river otter *(Lontra canadensis)*.

The lake chub is an "S1" species that was thought to be extirpated in Boulder County until 1989 when it was re-discovered in Barker Reservoir. Since then, Beaver Reservoir was designated as a Critical Wildlife Habitat due to the potential presence of Lake Chub. The US Forest Service specifies the primary threats to lake chub are "habitat alteration, declining water quality and quantity, and the introduction of non-native fishes." (2006). Specifically, trout and other large predatory fishes are known to be particularly harmful to lake chub:

> "*The presence of non-native species can also negatively affect lake chubs and other native fishes through the combined pressures of predation, competition, potential for addition of new parasites and disease, and altering behavioral components of the native fish assemblage. Introduction of large predatory fish species such as largemouth bass (Micropterus salmoides), rock bass (Ambloplites rupestris), northern pike (Esox lucius), or trout (Oncorhynchus or Salvelinus) could have an especially significant impact on lake chub populations" (USFS, 2006).*

While only six known populations exist within Colorado, lake chub are prevalent in Canada and some northern states. Colorado marks the southern extent of lake chub.

It should be noted that Beaver Reservoir is impacted by highly variable water levels with a large seasonal drawdown, as well as numerous buildings, boats, fishing, a road, and land disturbance along a significant area of the shoreline (Photos 14 -16), yet it has been known to support lake chub. Considering the nature of the proposed activities and volume of water + physical separation of these water bodies, it is highly unlikely that the construction of one residence at Big Lake would have any impact on the lake chub at Beaver Reservoir.

Lake chub are not known to occur on the Stapp Lakes property. Non-native fish were introduced to Big Lake many years ago and would have already preyed upon any previously existing population, if they were ever present here. At least two prior owners, dating back to the Stapp family in 1899, stocked trout in Big Lake. A 2001 fish inventory conducted at the site identified Brook Trout, Longnose Sucker, Lake Trout, and Longnose Dace as the most abundant species. Currently, several trout species inhabit Big Lake.

The other species of concern mentioned is the river otter which is found at Beaver Reservoir. River otters have been increasing in Colorado following re-introductions conducted between 1976-1991. These reintroductions have been very successful, and otters are now found in nearly every major river basin in Colorado. Their status has been downlisted by the State from Endangered to Threatened (and they do not have a federally protected status).

Our personal sightings of river otters have been in the Eagle River adjacent to active river construction projects, and in the years thereafter near the Eagle River Park, just off I-70. These heavily used areas are known to support healthy otter populations.

The proposed residence and driveway will not impact wetlands or riparian habitats, and the project is limited in scope across a large tract of land. The project has been designed to protect the water quality of Big Lake with careful selection of building materials and the stormwater management plan that diverts water away from the lake. The proposed single-family residence and driveway should not impact the continued existence and spread of river otters in the area.

3.2.3 Significant Natural Community

The project site is mapped as a Significant Natural Community, and the comment letter notes this is due to the presence of an old-growth Engelmann spruce/subalpine fir forest. As noted in the letter, this plant community is locally abundant. The location on the peninsula is not in the heart of the forested area, which occurs on the higher topography of the moraine. The trees in this location have a smaller stature on the rocky, mounded soil of the peninsula, and

include primarily subalpine fir trees with some Engelmann spruce, limber pine, lodgepole pine and a few small aspens, as described in more detail in Section 2.1.3 (Photo 8). One ponderosa pine *(Pinus ponderosa)* was also found on the peninsula.

To access the peninsula, the road followed sections of an old alignment for at least half of its length (Photo 16). Although it did require some additional grading and loss of trees, it allowed sections of an existing road to be connected up to provide a more direct route to the peninsula at a safer grade for access. Changing this route would require additional tree removal.

3.2.4 Elevation

The letter expresses the opinion of Boulder County staff that "developments at this elevation should be discouraged." This is a high elevation area, however the land use code does not prohibit private development at this elevation; the nearby town of Ward is located at 9,450 feet, a similar elevation to the site which sits at 9,480 feet. The fact that this is one of the remaining private areas that could be developed means that the county's goal of limiting development at high elevation will be achieved independent of what occurs on this property. When considering the property itself, only one single-family residence is proposed to be constructed on the 38-acre property, thereby preserving many acres of land through a large lot size.

3.3 Access & Already-Completed Impacts

The comment letter suggests that instead of the proposed driveway, there is another existing driveway that begins at the large maintenance building, crosses flat terrain near the lake, and continues past and existing cabin about 200 feet away from the proposed home site. The letter acknowledges that there are grade changes that make this route difficult, but suggests this alternative route was improved about 10 years ago.

While this alternative driveway access appears to be a reasonable alternative, it comes with some significant environmental drawbacks as discussed in Section 2.4. In addition to the steep grade needed to navigate from the maintenance building up to the moraine surrounding Big Lake, this route then parallels a section of the shoreline of Big Lake. This route has a higher potential to impact water quality and wetlands, which are more developed on this side of the lake. Additionally, the road could not be moved further from the water because the collapsed underground house is located along this area and it could subside further if driven over (Photo 13 and Figure 11). Even if the road was constructed closer to the shoreline, there is a chance that the buried house could be disturbed. This disturbance could open up further environmental concerns which could have the potential to enter Big Lake.

Our recommendation is to leave the collapsed underground house undisturbed and route the driveway along the proposed alignment.

The second access-related item is that the County has identified that 750 linear feet of road was constructed without permits on land that had not previously served as an access road. We concur that permits should have been obtained prior to this initial grading work. However, the route that exists today is the least environmentally damaging way to access the peninsula. It can be argued how much of this road previously existed, but even the comment letter states that at least half of the road follows an alignment that already existed. The initial grading work for the driveway diverges from the old forest road in two areas to decrease the slope to meet Boulder County standards. The grading work removed several trees but did not disturb wetlands or sensitive riparian habitats. Given that the initial road grading has been completed, the least ecologically damaging alternative is to utilize that route, rather than create an additional disturbance (Photo 17).

3.4 Cumulative Impacts

Boulder County staff is concerned about cumulative impacts from additional houses that could be constructed around the lake. They hope to limit development of this area by any further subdivision of the original Stapp Lakes Ranch.

The ± 38-acre Big Lake property was divided from the remaining 282-acre adjacent Stapp Lakes parcel based on guidance from the county. Based upon this approach, which follows the county's previous guidance, this report will consider the Big Lake LLC ± 38-acre property independently from the 282-acre Stapp Lakes parcel.

The proposed construction is for one single-family residence within the ± 38-acre parcel. The Orris family is seeking to construct a residence for their own private use. As expressed in the included letter from the Orrises, they wish to maintain the character and beauty of the land. Additional residences along Big Lake would be inconsistent with their long-term vision for the land.

3.5 Habitat Fragmentation

The comment letter states that Boulder County staff believes construction of the house would contribute to landscape-level habitat fragmentation. As noted in the comment letter, the 12,000-acre area surrounding and containing the property has limited development.

The location of the proposed residence and road limit habitat fragmentation. The proposed residence is on the southeast side of the ±38-acre property near existing structures on the parcel immediately to the south, rather than further north, away from existing structures. The proposed land use is a low-density, low impact project for overall habitat fragmentation, considering the parcel size and large tracts of undeveloped USFS lands to the north and west. Additionally, the majority of the 37.7-acre parcel will be preserved in a natural state.

3.6 Riparian Areas and Wetlands

The project would not have any direct vegetation impacts to riparian/wetland plant communities. Riparian and wetland vegetation are sparse along the shoreline of the peninsula. The zone of saturated soil along the shore is limited by the steep rise in topography

and presence of dense, rocky till material which limits the development of hydrophytic plant communities (Photos 3 & 4). The access road, as it is already graded in, did not cross any wetlands or riparian areas based on our site reconnaissance visit. The higher-quality wetlands in the Reflection Pond to the east of the moraine that forms Big Lake will not be disturbed (Photo 5). Likewise, the wetlands on the western side of the parcel that feed into the Elk Meadows Wetland Complex would not be disturbed (Photo 6).

Mr. West's letter suggests a 100-foot setback from Big Lake; however there is no existing regulation that specifies this setback for the residence. Given the water quality protections in the stormwater management plan, the low amount of expected runoff, and low-impact design of the home with dock-approved materials, plus the lack of riparian/wetland vegetation in the area of the peninsula, a 100-foot setback may not be necessary. Additionally, the septic system must be designed and installed in accordance with Boulder County regulations following a percolation test. The septic design will follow all the required setbacks which have been established to protect water quality, as shown by Figure 7.

3.7 Environmental Conservation Area & Protection of Biodiversity on a Landscape Level

We affirm that the ecological quality of this property should be valued and maintained. Staff are concerned that further development of private land will result in habitat fragmentation.

The letter particularly expresses concern that the project may result in further road development. However, the road that accesses the site is already of sufficient quality for construction and on-going use of the proposed house.

The letter also comments that the size of the house is irrelevant to habitat fragmentation and that impacts may be much more far-reaching than simply the house itself to include forestry and outbuildings as well as impacts from the presence of dogs or cats from future owners.

A minimal amount of habitat loss will result from the proposed single-family residence and driveway. On a landscape scale, this represents a minimally impactful activity since it is small in size, preserves a majority of the parcel in its natural state, and would utilize an existing road and be closer to disturbances associated with prior land uses on the Stapp Lakes Ranch property. Since the ranch passed into private ownership with the Henderson's purchase, use has been less impactful than its initial use as a guest ranch. The Orrises plan to continue its use as a private residence and are not considering commercial use. Both the Stapp Lakes parcel and the Big Lake parcel will continue to be owned by them.

3.8 Lynx Habitat

Modeling of lynx habitat indicates that this area is moderate to high lynx habitat and is part of a larger migratory corridor. The proposed location of the house reduces habitat fragmentation by situating the residence on the south side of the property near County Road 96 and existing cabins, thereby leaving the large majority of the site natural, connected habitat. Locating the residence on the peninsula with a steep hill beside it makes it less likely to inhibit migration. There are vast undisturbed areas surrounding the small area of proposed disturbance where animals can freely pass, and the proposed residence will not significantly decrease these passable areas. The west side of the property, which is more important for

migration according to Figure 7 of Mr. West's letter, will remain undisturbed. It should be noted that due to limited access, the home will be used seasonally and is expected to be largely unoccupied during the winter months, reducing potential disturbances to lynx.

3.9 Conclusion

The proposed project has been designed to limit visual impacts and disturbances to the historic Stapp Lakes Ranch property by utilizing a mostly-constructed old forest road to access the site; avoiding steep areas that would increase grading; locating the proposed home in the southeastern corner of the Big Lake property closest to existing structures and road access; and minimizing shoreline disturbance at the homesite. The construction of one home still represents a decrease in overall land use / impact from the historic use of Stapp Lakes as a guest ranch, school camp, and retreat center. Additionally, the landowners, architect, and builder are attempting to conscientiously minimize the environmental impact and promote land stewardship by carefully addressing concerns raised by the County with practical design modifications as discussed in this report.

4.0 PHOTOS

Photo 1. The rocky shoreline of the peninsula is formed by glacial till. (6/17/24).

Photo 2. The moraine rises steeply above the shoreline of Big Lake on the north and west sides. Big Lake is shown on the left, and the right side of the moraine slopes down to the Reflection Pond. (6/17/24).

Photo 3. The peninsula is a steep, rocky mound comprised of glacial till. This area lacks wetland development. (6/17/24).

Photo 4. The rocky shoreline of the peninsula only has very limited patchy areas of wetland plants. (6/17/24).

Photo 5. Higher-quality wetlands occur at the Reflection Pond to the east of Big Lake. This area would not be disturbed by the proposed house construction, and it is on the other side of the moraine. (6/17/24).

Photo 6. Stream channel above the Elk Meadows Wetland Complex to the west of Big Lake. (6/17/24).

Photo 7. Engelmann spruce, subalpine fir, and limber pine grow with lodgepole pine and aspen on the forested hillsides above Big Lake. (6/17/24).

Photo 8. Panoramic view of Big Lake from the peninsula, with limber pine, lodgepole pine and aspen. (6/17/24).

Photo 9. Common juniper, golden banner, and kinnikinnick are common understory plants on the peninsula. (6/17/24).

Photo 10. Wetlands are more developed on the south side of Big Lake near the overflow channel. (6/17/24).

Photo 11. Panoramic view from the moraine south of Big Lake, showing the historic Stapp Lakes Ranch buildings surrounding Otter Lake. (6/17/24).

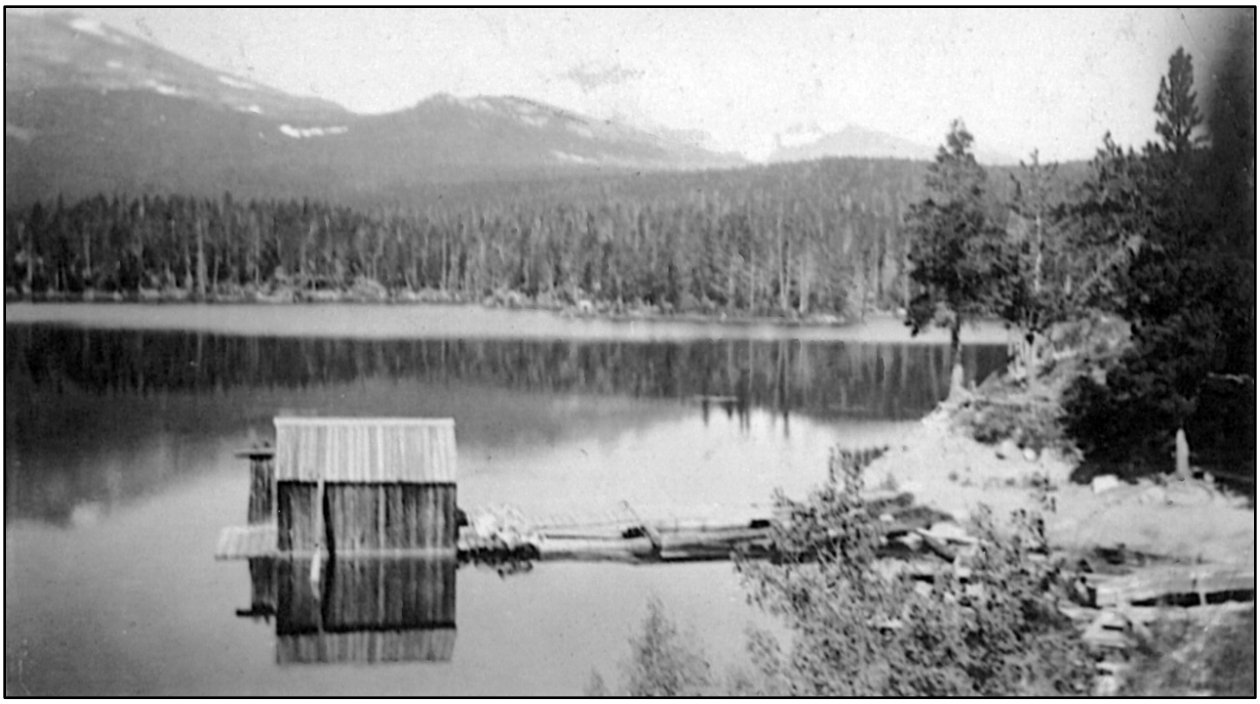


Photo 12. Historic boat house in Big Lake. Undated photo from 1940's or earlier.

Photo 13. Panoramic view over the location of the collapsed underground house. Prior owners worked to restore the area by re-grading the site to bury the entrance and then planting trees near the shoreline. (6/17/24).

Photo 14. Google Earth aerial of Beaver Reservoir showing the disturbed shoreline. This view shows the low water level in fall. (10/2023).

Photo 15. Google Earth aerial of Beaver Reservoir when it is nearly full in July. (7/2016).

Photo 16. A zoomed-in view of the Google Earth aerial showing disturbances near Beaver Reservoir. (10/2023).

Photo 17. The partially improved road follows the alignment of an old forest road for most of its length. (6/17/24).

Boulder County

Community Planning & Permitting

Courthouse Annex • 2045 13th Street • Boulder, Colorado 80302 • Tel: 303.441.3930 • Fax: 303.441.4856
Mailing Address: P.O. Box 471 • Boulder, Colorado 80306 • **www.bouldercounty.gov**

Building Safety & Inspection Services Team

M E M O

TO: Amber Knotts, Planner I
FROM: Michelle Huebner, Plans Examiner Supervisor
DATE: January 13, 2025

RE: Referral Response, LU-23-0019/SPR-23-0036: Orris Residence.
REVISED: Limited Impact Special Use Review to permit 4,023 cubic yards of non-foundational earthwork for the development of a driveway, and Site Plan Review for the construction of a new 2,990-square-foot residence with 220 square feet of covered porch area on an approximately 37.7-acre parcel with a presumptive size maximum of 2,500 square feet.
ORIGINAL: Limited Impact Special Use Review to permit 1,585 cubic yards of non-foundational earthwork for the development of a driveway, and Site Plan Review for the construction of a new 2,990-square-foot residence with 220 square feet of covered porch area on an approximately 37.7-acre parcel with a presumptive size maximum of 2,500 square feet.

Location: 3310 County Road 96J

Thank you for the referral. We have the following comments for the applicants:

1. **Building Permit.** A building permit, plan review, inspection approvals, and a Certificate of Occupancy ("C.O.") are required for the proposed residence. Separate building permits are required for the: solar photovoltaic system and work / repairs to the historic structures.

   Stairs are not permitted or approvable in crawlspaces. The crawlspace must be less than 6'-8" or will count as basement area. The **2015 Building Code Adoption & Amendments** definitions:
   CRAWL SPACE. An under floor space below the first story floor of the building that does not meet the definition of story above grade plane, that has a ceiling height measured from the crawlspace grade or floor to the bottom of the floor joists above of less than six feet 8 inches, and that does not contain interior stairs, windows, wall, and ceiling finish materials, trim or finished flooring

   Floor area is measure to the outside of outside walls and includes the stairs on each level. The **2015 Building Code Adoption & Amendments** definitions:
   AREA, FLOOR. The area of the building, existing or new, under consideration including basements and attached garages calculated without deduction for

corridors, stairways, closets, the thickness of interior walls, columns, or other features as measured from the exterior face of the exterior walls.

2015 Building Code Adoption & Amendments

We are in the process of **updating the building code**. Please review the draft amendments - Board of Review - 2021 BCBC Amendments Draft

2. **Automatic Fire Sprinkler System.** Under the 2015 International Residential Code ("IRC") as adopted by Boulder County, all new one- and two-family dwellings and townhouses are required to be equipped with an automatic fire sprinkler system that is designed and installed in accordance with NFPA 13D or IRC Section P2904.

3. **BuildSmart.** Please refer to the county's adoption and amendments to Chapter 11 of the IRC, the county's "BuildSmart" program, for the applicable requirements for energy conservation and sustainability for residential additions and new residential buildings. Please be aware that there are energy related requirements of this code that may require the use of renewable energy systems (such as rooftop solar systems) that will also need to be approved by your electric utility provider. In some cases, there may be limitations on the size of on-site systems allowed by your utility provider that could constrain the project design. We strongly encourage discussions between the design team and the utility company as early in the process as possible in order to identify these constraints.

4. **Design Wind and Snow Loads.** The design wind and ground snow loads for the property are 175 mph (Vult) and 75 psf, respectively.

5. **Electric vehicle charging outlet**. Boulder County Building Code requires:
    a. R329.1 Electric vehicle charging pre-wire option. In addition to the one 125-volt receptacle outlet required for each car space by NEC Section 210.52(G)(1.), every new garage or carport that is accessory to a one- or two-family dwelling or townhouse shall include at least one of the following, installed in accordance with the requirements of Article 625 of the Electrical Code:
        i. A Level 2 (240-volt) electric vehicle charging receptacle outlet, or
        ii. Upgraded wiring to accommodate the future installation of a Level 2 (240-volt) electric vehicle charging receptacle outlet, or
        iii. Electrical conduit to allow ease of future installation of a Level 2 (240-volt) electric vehicle charging receptacle outlet.

6. **Grading Permit.** The grading permit must be submitted with the building permit for the dwelling. The inspections approvals are required for the proposed non-foundational grading. Please refer to the county's adopted 2015 editions of the International Codes and code amendments, including IBC Appendix Chapter J for grading.

7. **Observation Reports.** The design professional responsible for the design or a similarly qualified Colorado-licensed design professional is to observe the grading and submit a stamped report to Building Safety & Inspection Services for review and approval. The final report is to state that the work has been completed in substantial conformance with the approved engineered plans.

8. **Electric vehicle charging outlet**. Boulder County Building Code requires:
    a. R329.1 Electric vehicle charging pre-wire option. In addition to the one 125-volt receptacle outlet required for each car space by NEC Section 210.52(G)(1.), every new garage or carport that is accessory to a one- or two-family dwelling or townhouse shall include at least one of the following, installed in accordance with the requirements of Article 625 of the Electrical Code:
        i. A Level 2 (240-volt) electric vehicle charging receptacle outlet, or
        ii. Upgraded wiring to accommodate the future installation of a Level 2 (240-volt) electric vehicle charging receptacle outlet, or
        iii. Electrical conduit to allow ease of future installation of a Level 2 (240-volt) electric vehicle charging receptacle outlet.

9. **Ignition-Resistant Construction and Defensible Space.** Please refer to Section R327 of the Boulder County Building Code for wildfire hazard mitigation requirements, including ignition-resistant construction and defensible space.

10. **Plan Review.** The items listed above are a general summary of some of the county's building code requirements. A much more detailed plan review will be performed at the time of building permit application, when full details are available for review, to assure that all applicable minimum building codes requirements are to be met. Our Residential Plan Check List and other Building Safety publications can be found at: Building Publications, Applications and Forms - Boulder County

If the applicants should have questions or need additional information, we'd be happy to work with them toward solutions that meet minimum building code requirements. Please call (720) 564-2640 or contact us via e-mail at building@bouldercounty.org

Public Health
Environmental Health Division

June 2, 2023

TO: Staff Planner, Land Use Department

FROM: Jessica Epstein, Environmental Health Specialist

SUBJECT: LU-23-0019/SPR-23-0036: Orris Residence project

OWNER: STAPP LAKES RANCH LLC

PROPERTY ADDRESS: 3305 County Road 96J

SEC-TOWN-RANGE: 22 -2N -73

The Boulder County Public Health (BCPH) – Environmental Health division has reviewed the submittals for the above referenced docket and has the following comments.

OWTS:

1. This property is listed on the assessor's record of as having 8 buildings with bathrooms and multiple other buildings without bathrooms. Only one approved OWTS permit exists for a workshop on this property. All other OWTS are not permitted and Public Health has no record of them.
2. The OWTS for the workshop was installed without a permit in 1988. In 2013, BCPH issued a permit for the workshop and backdated it to 6/10/88 as an approval date to show how old the system actually was at the time. The installation was verified by an OWTS engineer and the verification was approved by BCPH.
3. **This property was purchased on 7/9/12 without issuance of the required Conditional Property Transfer Certificate for all of the unapproved OWTS. The owner must now apply for the certificate and sign the repair agreement form before Public Health can approve this project. (https://assets.bouldercounty.gov/wp-content/uploads/2018/05/repair-agreement-form.pdf).**
4. For the proposed home, an onsite wastewater treatment system (OWTS) permit has not been issued by Boulder County Public Health. The owner or their agent (e.g., contractor) must apply for an OWTS permit, and the OWTS permit must be issued prior to installation and before a building permit can be obtained. The OWTS components must be installed, inspected and approved before a Certificate of Occupancy or Final Building Inspection approval will be issued by Community Planning and Permitting (CP&P).
5. Boulder County Public Health must conduct an onsite investigation and review percolation rates, soil conditions and any design plans and specifications prior to OWTS permit issuance. The OWTS absorption field must be located a minimum distance of 100' from all wells, 25' from waterlines, 50' from waterways and 10' from property lines.
6. Setbacks between all buildings and the OWTS serving this property and OWTS serving neighboring properties, must be in accordance with the Boulder County OWTS Regulations, Table 7-1.

This concludes comments from the Public Health – Environmental Health division at this time. For additional information on the OWTS application process and regulations, refer to the following

website: **www.SepticSmart.org**. If you have additional questions about OWTS, please do not hesitate to email HealthOWS@bouldercounty.org.

Cc: OWTS file, owner, Community Planning and Permitting

Community Planning & Permitting
Courthouse Annex • 2045 13th Street • Boulder, Colorado 80302
Mailing Address: P.O. Box 471 • Boulder, Colorado 80306
303-441-3930 • www.BoulderCounty.gov

Feb. 5, 2025

TO: Amber Knotts, Planner I; Community Planning & Permitting, Development Review

FROM: Ian Brighton, Planner II; Community Planning & Permitting, Access & Engineering

SUBJECT: Docket LU-23-0019/SPR-23-0036: Orris Residence at 3310 County Road 96J (RE-REFERRAL)- ADDENDUM

Access & Engineering (AE) staff has reviewed the above re-referenced docket and has the following comments in addition to comments provided on Jan. 24, 2025 (Attached):

1. Velocity calculations for the proposed roadside ditches were not provided in the revised drainage letter. Plans submitted at building permit must demonstrate that ditch velocities are adequate to ensure stability of the ditch lining. Portions of the drainage ditch may need energy dissipation.

2. Applicants submitted an ecological assessment dated December of 2024 that identifies an alternate driveway to the south of the proposed residence. The narrative and analysis from the ecological assessment notes site constraints with the alternative route including an existing collapsed underground house, an existing cabin and steep grades. Staff finds that more details for the alternative alignment would be needed to make an assessment.

3. The proposed driveway is located above historic cabins as well as adjacent to a pristine high-alpine lake. Runoff from the driveway diverts sand, silt, and other debris that can obstruct drainage features such as rip-rap and culverts. Staff recommends applicants develop an annual maintenance plan describing recurring operations required to ensure drainage and water quality infrastructure continues to function as intended.

This concludes our comments at this time.

Community Planning & Permitting
Courthouse Annex • 2045 13th Street • Boulder, Colorado 80302
Mailing Address: P.O. Box 471 • Boulder, Colorado 80306
303-441-3930 • www.BoulderCounty.gov

Jan. 24, 2025

TO: Amber Knotts, Planner I; Community Planning & Permitting, Development Review

FROM: Ian Brighton, Planner II; Community Planning & Permitting, Access & Engineering

SUBJECT: Docket LU-23-0019/SPR-23-0036: Orris Residence at 3310 County Road 96J (RE-REFERRAL)

A referral for LU-23-0019 was submitted on Jan. 31st, 2024 (attached). Access & Engineering (AE) staff has reviewed the above re-referenced docket and has the following comments in addition to previously provided comments:

1. Comments #1-4, and #11 on the AE referral dated Jan.31st 2024 remain valid to the re-referred docket.

2. Applicants have submitted a geotechnical report in response to comment # 5. Although the report addresses geologic hazards associated with the proposed residence, staff finds the report does not address the area associated with the proposed driveway improvements. Of particular concern are the historic cabins directly below areas of unpermitted grading. Please note Comment #6 requests revised plans demonstrating proper compaction and grading of the road improvements.

   At building permit, provide a revised Geotechnical report that addresses the area associated with the proposed driveway to the residence. The revised geotechnical report must note any remediations or mitigations necessary for proper construction of the driveway. Grading plans must align with the findings and recommended mitigations found in the revised geotechnical report.

3. Revised plans submitted by the applicant demonstrate adequate restoration and revegetation of disturbed areas.

4. Staff finds the revised plans dated Dec. 17th, 2024 don't meet the Standards in the following ways:
   a. The proposed driveway is shown as outsloped between Station 7+50 and 11+50. Standard Drawing 11 of the Standards requires an insloped driveway with a 2% grade.
   b. The distance between the Access Pull-Out at Station 8+00 and the emergency turnaround at the proposed residence was measured to be approximately 440 feet, which is not in

compliance with Standard Drawing 17 of the Standards. Access Pull-Outs must be located at intervals of 400 feet.

c. The emergency turnaround is located within 50 feet of the proposed residence. Per Standard Drawing 18 and 19 of the Standards, the emergency access turnaround must be located a minimum of 50 feet from the front of the residence and no greater than 150 feet from the rear of the residence. The 50-foot distance shall be met if both distances cannot be simultaneously achieved due to the shape of the structure.

At building permit, provide revised plans demonstrating compliance with the Standards.

5. Comment #7 in the AE referral lists portions of the proposed driveway that do not meet the Boulder County Multimodal Standards (the Standards) for residential construction in the Mountains. Comments 7a, 7b, 7c, and 7d have been addressed. Comment 7e regarding cross culverts will need to be addressed in revised plans submitted at the time of Building Permit review.

6. A third party consultant is reviewing the revised drainage letter. Further comments will be provided upon completion of the review.

This concludes our comments at this time.

Boulder County

Community Planning & Permitting

Courthouse Annex • 2045 13th Street • Boulder, Colorado 80302
Mailing Address: P.O. Box 471 • Boulder, Colorado 80306
303-441-3930 • www.BoulderCounty.gov

Jan. 31, 2024

TO: Amber Knotts, Planner I; Community Planning & Permitting, Development Review

FROM: Ian Brighton, Planner II; Community Planning & Permitting, Access & Engineering

SUBJECT: Docket # LU-23-0019/SPR-23-0036

3305 County Road 96J

The Development Review Team – Access & Engineering (A&E) staff has reviewed the above re-referenced docket and has the following comments:

1. The subject property is accessed from County Road 96 (CR96), a Boulder County owned and maintained right-of-way (ROW) with a Functional Classification of Local, via a private gravel-surfaced road within a 20-foot access easement. Legal access to the subject property has been demonstrated via the easement recorded on Apr. 2nd, 1998 at Reception 1787384, the easement recorded on Feb. 5th, 1999 at Reception 1902641 as well as the 30-foot access easement recorded on Nov. 20, 2023 at Reception 04028765.

2. The United States Forest Service (USFS) lists a portion of the access road west of Beaver Reservoir as Road Number 508.1 on the 2016 USFS Motor Vehicle Use Map (see image below). Prior to building permit, please contact the Boulder Ranger District at VisitARP@usda.gov for more information on what, if any USFS requirements must be met for the proposed development.

3. Materials submitted by the applicant include a 30-foot access easement recorded on 11/20/2023 at Reception 04028765 between Stapp Lake Ranch LLC and Big Lake LLC. The easement appears to follow an alignment of unpermitted grading that was noted on a hold request issued on June 26, 2023 (attached). Please be aware that the recently recorded legal easement does not constitute County approval for the unpermitted work or the proposed private access road.

4. An Access Improvement and Maintenance Agreement (AIMA), which is an agreement for future maintenance responsibility, will be issued for the shared driveway during building permit review. The shared driveway crosses parcel number 132300000039, 132300000037, and USFS property and connects to CR96J adjacent to the outlet of Beaver Reservoir. The AIMA will be prepared by the Access & Engineering staff, signed by the property owner and notarized, and approved as part of the building permit process.

5. The Boulder County Geologic Hazards and Constraint Areas Map indicates the area is susceptible to landslides. Grading plans submitted by the applicant indicate several areas of proposed grading exceed a 2:1 slope as well. Additionally, during a site visit on June 16, 2023, unconsolidated soils and loose boulders were observed on and adjacent to the unpermitted road improvements as well as adjacent to existing structures.

   Please submit a geotechnical report certified by a qualified Colorado-licensed Professional Engineer that identifies geologic hazards and potential adverse impacts to the proposed development and existing buildings.

   At building permit, submit grading plans that align with the findings and recommended mitigations found within the geotechnical report.

6. As noted above, the construction of unpermitted road improvements appears to be incomplete, as proper compaction of the grading and surface materials are both absent. Please note that all areas of unpermitted grading not approved as part of this review must be restored to previous conditions or better.

   At building permit, applicant must submit revised plans that includes the methods for properly completing the driveway construction.

   At building permit, should any part of the proposed alignment be modified, the applicant must provide revised plans indicating how all disturbed areas will be restored and revegetated.

7. The civil plans, submitted by the applicant and dated 4/10/23, do not meet the Boulder County Multimodal Transportation Standards (Standards) in the following ways:

   a. The proposed driveway design does not indicate a consistent 2% cross slope that conveys stormwater runoff to a borrow ditch located on the upslope side of the driveway, as required by Standard Drawing 11 of the Standards.

   b. The centerline radius of the curve at Station 12+50 is 34 feet. Table 5.5.1 of the Standards requires a minimum centerline radius of 40 feet.

   c. Pullouts at Stations 8+00 and 12+50 do not meet the dimension requirements outlined in Standard Drawing 17.

   d. Slopes exceed 1.5:1 at the northeast corner of the proposed hammerhead turnaround at Station 12+75, as well as the northwest corner of the proposed garage, which does not comply with Section 5.3.2.2 of the Standards.

   e. The driveway profile does not indicate the location or depth of proposed cross culverts.

   At building permit, provide revised plans demonstrating a driveway design that is compliant with the Standards, including without limitation:

   a. Section 5.3.2.2 Cut & Fill Slopes

   b. Table 5.5.1 – Parcel Access Design Standards (1-Lane Mountain Access)

   c. Standard Drawing 11 – 12 Private Access

   d. Standard Drawing 14 – Access with Roadside Ditch

   e. Standard Drawing 15 – Access Profiles Detail

f. Standard Drawing 16 – Access Grade & Clearance

g. Standard Drawing 17 – Access Pullouts

h. Standard Drawing 18 – Access Turnaround

i. Standard Drawing 19 – Typical Turnaround & Pullout Locations

Where a Standard cannot be met, submit to the County a design exception form, completed by a qualified Colorado-licensed Professional Engineer, that includes an explanation as to why the Standard cannot be met. Be aware that an application for a design exception does not guarantee approval.

Also note that retaining walls or a series of retaining walls over four feet tall, as measured from the bottom of the footing to the top of the wall, must be stamped by a qualified Colorado-licensed Professional Engineer. Calculations shall be submitted for any retaining walls over six feet in height.

8. The application contains some materials that appear to contradict one another, including:

   a. The grading plans indicate a 14-foot width along the length of the driveway, whereas the narrative states that a 14-foot width will be used at the curves of the alignment and 12-foot width will be used at the straightaways.

   b. The grading plans indicate centerline grades of of up to 18% between Stations 6+25 and 9+50, however the Proposed Driveway Profile sheet submitted by the applicant indicates centerline grades of 15.4%. The profile sheet proposes the addition of up to 10 feet of fill to overcome sections that exceed maximum grade requirements in the Standards, however the additional fill is not shown on the grading plans. Retaining walls or significant additional grading of adjacent slopes will be required to achieve the design depicted in the driveway profile.

   Please provide revised plans and earthwork calculations that correct any inconsistencies and provide a design compliant with the Standards.

9. The earthwork calculations provided by the applicant differentiate between new and historic grading. Staff disagrees with this differentiation based on aerial imagery indicating that significant grading occurred between July 2022 and August 2023. Please provide revised earthwork calculations that include all grading quantities.

10. A third-party consultant reviewed the drainage letter dated 9/27/2023. A summary of the review is below:

    a. All temporary and permanent proposed features such as well construction, septic construction, pipelines, staging areas, parking areas, etc. must be identified on plans submitted at building permit.

    b. More detail and drainage calculations are required for for culverts, stilling basins, and roadside ditches. Additional energy dissipation, such as check dams, may be needed in some areas depending on the results of the calculations. Plans submitted by the applicant must align with the findings in the drainage report.

    c. Roofing materials, galvanized sizing materials, and pressure treated lumber may negatively impact Stapp Lake. Direct discharges to the lake must be avoided to the extent possible, and runoff must be routed over pervious areas such as a swale or vegetated buffer prior to discharge to a sensitive receiving water. Redirecting the runoff

follows low impact development (LID) and County water quality concerns consistent with the requirements in Storm Drainage Criteria Manual (SDCM) Section 1200.

d. The Colorado Department of Public Health and Environment (CDPHE) requires notification of dredge and fill activities for projects impacting State Waters. Please contact CDPHE to determine applicable requirements. More information can be found at https://cdphe.colorado.gov/dredge-and-fill.

At building permit, provide a revised drainage letter demonstrating how storm runoff from the proposed development meets the requirements in the SDCM.

11. Plans submitted by the applicant indicate an area of disturbance exceeds an acre in size. As a part of Boulder County's water quality protection program, a stormwater quality permit (SWQP) is required.

    At building permit, submit a SWQP and revised plans identifying all areas of disturbance including construction areas, staging areas, temporary access areas, and parking areas. The total area of disturbance must be clearly labeled.

    NOTE: The SWQP must be issued prior to work beginning on the project. Please visit Boulder County's stormwater website at https://bouldercounty.gov/transportation/permits/stormwater-quality-permit/ or contact tdstormwater@bouldercounty.org for more information.

This concludes our comments at this time.

Boulder County

Community Planning & Permitting

Courthouse Annex • 2045 13th Street • Boulder, Colorado 80302
Mailing Address: P.O. Box 471 • Boulder, Colorado 80306
303-441-3930 • www.BoulderCounty.gov

June 26, 2023

TO: Amber Knotts, Planner I; Community Planning & Permitting, Development Review

FROM: Ian Brighton, Planner II; Community Planning & Permitting, Access & Engineering

SUBJECT: Docket # LU-23-0019/SPR-23-0036 HOLD REQUEST

3305 County Road 96J

Pursuant to Article 4-805.C.2 of the Boulder County Land Use Code, Access & Engineering staff requests the review be placed on hold for the following reasons:

1. During a site visit conducted on June 16th, 2023, staff observed recent grading on the site. Subsequent review of aerial imagery indicate that the work may constitute a re-alignment and be considered unpermitted grading.

   All unpermitted earthwork/grading must cease until the grading violation is resolved. Please contact Martin Laws at mlaws@bouldercounty.org for more information.

2. Plans submitted by the applicant have wide ranging storm drainage implications, including storm flows directly into the adjacent lake and potential adverse impacts from unconsolidated soils that have been placed on the property from unpermitted grading on the property.

   Please submit a drainage letter stamped by a Colorado-licensed professional Engineer. The drainage letter must identify potential impacts to adjacent down-gradient structures as well as the lake adjacent to the proposed residence. See attached Memorandum dated November 9th, 2021 detailing specific items to include in the letter.

3. The driveway profile on plans submitted by the applicant indicate grades over 18%, which is not in compliance with the Standards for residential development in the mountains.

   Please provide revised plans indicating driveway grades compliant with the Standards. Grades may not exceed 16% for 200 feet for accesses serving one dwelling unit. Revised plans should include updated grading calculations and reflect any changes to the road alignment should there be any changes to the proposed structure locations.

4. The existing road from the terminus of County Road 96 to and through the subject property varies in width from 17 feet up to 22 feet in width. The maximum width of a private road is 18 feet according to the Standards. Additionally, the drive exceeds the boundaries of the 20-foot easement at multiple points.

   Please provide updated plans demonstrating that the existing access drive and associated improvements such as ditches, culverts, and shoulders are within the legal bounds of the easement.

Additional comments will be provided once the requested materials are submitted.

Public Works Department

Memorandum

Date: **February 3, 2025**

To: **Amber Knotts, Planner I, Community Planning & Permitting**

From: **Jennifer Keyes, Boulder County Stormwater Quality Coordinator**

Subject: **LU-23-0019/SPR-23-0036: Orris Residence at 3310 County Road 96J**

The Public Works Department and its drainage consultant have reviewed the above-referenced project, and have the following comments:

1. As a part of Boulder County's water quality protection and Municipal Separate Storm Sewer System (MS4) Construction Program, a Stormwater Quality Permit (SWQP) is required for this project based on the disturbance illustrated in the submitted materials.
    a. ***At building permit***, provide a complete SWQP submittal to stormwater@bouldercounty.gov.
2. The proposed residence is immediately adjacent to a natural alpine lake, a unique and sensitive ecosystem in Boulder County. Per Article 4-806.6 of the Land Use Code (the Code), the proposed development shall not alter historic drainage patterns and must include acceptable mitigation measures to compensate for anticipated drainage impacts. Additionally, the drainage report must conform to Boulder County Storm Drainage Criteria Manual (SDCM). The drainage letter does not meet these requirements. The SDCM follows Mile High Flood District (MHFD), Urban Storm Drainage Criteria Manual (USDCM) Volume 3, Chapter 4. MHFD does not recognize infiltration trenches as a stormwater control measure (SCM) due to inadequate surface area. Acceptable stormwater control measures may include bioretention or other SCMs described in MHFD USDCM, Volume 3, Chapter 4. Design details, calculations, and worksheets must be submitted demonstrating the water quality capture volume is infiltrated or treated using an SCM identified in the MHFD USDCM Criteria Manual, Volume 3, Chapter 4. The drainage report must also adequately address the road drainage and velocities. It is not understood based on the submitted materials whether the drainage requirements will affect the residential design drawings.
    a. ***At building permit***, provide a revised drainage report to stormwater@bouldercounty.gov
3. Additional comments are provided on the attached submitted drainage report.
    a. ***At building permit***, provide a revised drainage report to stormwater@bouldercounty.gov

Commissioner Claire Levy • Commissioner Marta Loachamin • Commissioner Ashley Stolzmann

Boulder County Courthouse • 1325 Pearl Street • Boulder, Colorado 80302

Mailing Address: P.O. Box 471 • Boulder, CO 80306 • www.BoulderCounty.gov

Commissioners@bouldercounty.gov • Telephone: 303.441.3500 • Fax: 303.441.4525

Public Works Department

4. Additional information on the decking is required. Treated lumber or metal may not be approved if there is a potential impact to water quality.

    a. ***At building permit***, provide detailed information about decking to stormwater@bouldercounty.gov

This concludes Public Works' comments at this time. Questions may be submitted to stormwater@bouldercounty.gov. Applicants are encouraged to review the information on the Boulder County Stormwater Quality Permit website: https://www.bouldercounty.org/transportation/permits/stormwater-quality-permit/

Storm Drainage Criteria Manual website:

https://bouldercounty.gov/transportation/floodplain-management/storm-drainage-criteria-manual/

Commissioner Claire Levy • Commissioner Marta Loachamin • Commissioner Ashley Stolzmann

Boulder County Courthouse • 1325 Pearl Street • Boulder, Colorado 80302

Mailing Address: P.O. Box 471 • Boulder, CO 80306 • www.BoulderCounty.gov

Commissioners@bouldercounty.gov • Telephone: 303.441.3500 • Fax: 303.441.4525

Orris' Big Lake Residence – Stapp Lakes
Drainage & Water Quality Comments
Date: 1-29-2025

See Drainage Letter and Civil Plans. Major comments include:
1.The River-Rock lined swale presents several issues:
a.MHFD does not recommend rock-lined infiltration trenches as SCMs because they frequently clog and are difficult to maintain. MHFD recommends vegetated swales.
b.No sizing information is provided to demonstrate that the area is sufficient for infiltration. If this stormwater control measure (SCM) is allowed, the applicant should provide sizing using the Runoff Reduction worksheet in the MHFD SCM workbook.
c.The plans do not appear to include a design detail for the trench. If Boulder County chooses to allow this SCM, a design detail should be provided. The trench should not contain any geotextile layers as this will increase susceptibility to clogging.
d.A bioretention area sized to infiltrate the WQCV would be a more appropriate SCM.
e.WWE recommends using a SCM meeting the requirements of Chapter 4 of Volume 3 of the MHFD Manual. The current plan does not meet these requirements and lacks sufficient detail.
2.The applicant still as not provided velocity calculations for the ditches along the road. Provide velocity calculations and analysis to show that ditch will not be susceptible to erosion due to high velocities. See permissible velocities in Chow's Open Channel Hydraulics.
3.Please provide details related to the "Natural Absorption Area/ Rain Graden to be Proposed." How much volume will this area contain? How will it drain? If this is a buffer rather than a rain garden, quantify ratio of UIA:RPA and compare to MHFD V3C4 criteria.
4.I did not see discussion of deck materials in the drainage letter. If all or portions of the deck will drain directly to the lake, it should be constructed of materials that will not leach pollutants. Pressure treated lumber and traditional decking surfaces have potential to leach many pollutants. Please specify materials that will be used for the deck and verify that they are substantially inert to leaching of pollutants.
5.I disagree with their interpretation of the area of disturbance relative to the MS4 permit. The MS4 permit states:
Applicable Construction Activity: Construction activities with land disturbance (surface disturbing and associated activities) of one or more acres, or disturbing less than one acre if that construction activity is part of a larger common plan of development or sale that would disturb, or has disturbed one or more acres, unless excluded in Part I.E.3.a.i. Applicable construction activities include the land disturbing activity and all activities and materials associated with the construction site and located at, or contiguous to, the land disturbing activities.
a.This definition does not exempt the building site or grading related to the well or septic from the definition of disturbance.
b.Site could potentially meet large lot single family site exemption, but need to demonstrate that WQCV is infiltrated, which applicant has not yet shown.
c.Regardless of MS4 status, this project is in a pristine area immediately next to the lake, necessitating SCMs.
6.I recommend an enforceable maintenance plan for all drainage and water quality infrastructure.

LAND SURVEYS
SUBDIVISIONS
DEVELOPMENT PLANNING
IMPROVEMENT PLATS
STRUCTURAL ENGINEERING
SANITARY ENGINEERING
MUNICIPAL ENGINEERING

VAN HORN ENG

Big Lake Drainage and Stormwater M
3310 County Road 96J
Boulder County, Colora

The attached Worksheet is used to show the stormwater
of the subject property where a driveway has been upgra
This letter follows Boulder County's 11-17-2021 Effecti
allowance of the use of Drainage Letters on Private Dev
Projects as well as referral comments from Boulder Cou
submittal of this land use project. This project is a privat
residential driveway to a 37+ acre parcel) in unincorpora

The bullet item from the required response Memo are ab
narrative answer or information relative to the bullet top
relative to this analysis and narrative answers:

- Description of property location.
  - The property is located at 3310 County R
    CR 96J comes off of Highway 72 near
    3305 CR 96J. The property is west of
    miles past Beaver Reservoir and has a l
    acre parcel that was recently subdivided
    property is located in parts of Sections 2
    2 North, Range 73 West of the 6th P.M.
- Description of proposed project. This is an evalu
  (at various stages), storm drainage and a proposed driveway vertical and horizontal alignment design with associated potential impacts.
- Site Plan showing entire property and disturbed area with distances to waterways.
  - The attached Land Survey Plat shows the overview of the project site including the lakes and section lines. The attached Road Worksheet

1043 Fish Creek Road • Estes Park, CO 80517 • 970-586-9388 • Fax: 970-586-8101 • E-mail: vhe@airbits.com

shows the driveway reconstruction area in relation to the ponds, cabins, and proposed single family structure at the west end of the proposed driveway. This project will add minimal impervious are to limit runoff.

- Effects on adjacent or nearby drainage features.
  - A proposed rain garden/drainage feature will capture sheet flows from the west end of the driveway. From station 7+09.65 to approximately 11+50, the flows sheet flow off the driveway, west of the existing historical cabins. Other flows for the majority of the driveway will be directed into the ditch on the upslope side of the proposed driveway, from station 0+00 to 7+09.65, and into the existing roadside ditch on the north side of CR 96J.
    - The ditch splits flow east and west approximately at the east terminus of the driveway. See plan set for better detail.
    - Materials for the driveway and house were selected to minimize potential adverse effects on Big Lake.
  - The house roof is to be constructed such that runoff will be directed to infiltrate into a pervious area.
    - Roof gutters direct flow towards an infiltration swale to be installed at the center of the protected courtyard.
    - Swale is to be lined with free-draining river rock.
    - Swale extends east past the edge of the house to allow sufficient infiltration.
    - Vegetation surrounding swale will be protected to the greatest extent possible.
  - Erosion control measures are to be taken to comply with the SWQP plan.
- Proposed flow directions.
  - Driveway will be superelevated such that the surface flow off the driveway flows towards the proposed ditch on the uphill side.
  - At the far northwest end of the driveway, surface runoff is to be directed to a proposed natural retention area/rain garden at the approximate apex of the existing forest maintenance road.
  - Flow directions proposed and other[illegible]he attached Road Plan Overview Worksheet.
- Peak Discharge for Minor/Major.
  - The largest contributing area propo[illegible]as been roughed out at less than ½ Acre. The major storm (100 year) has a flow value of less than 2 c.f.s. which is easily contained in the proposed ditch.
- Roadside ditch design
  - Ditch capacity was calculated along [illegible] the western beginning of the ditch and the easte[illegible]sects with existing CR 96J.
    - n = 0.020 for a smooth open channel with firm soil bed material
      - From USGS Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains
    - S ≈ 42.6/766 = 5.56%

Please provide a map that shows drainage areas, should not be "roughed out" - define based on topographic maping and show drainage basins on plans.

What is the velocity? The ditch is steep. Can you show that the velocity is less than the permissible velocity for the ditch lining?

1043 Fish Creek Road • Estes Park, CO 80517 • 970-586-9388 • Fax: 970-586-8101 • E-mail: vhe@airbits.com

        - Slope calculated between westernmost point of ditch and point of beginning at eastern end of driveway.
    - For a ditch with a depth of 1 foot and slopes of 2:1 on the sides, A = 2sqft
        - 2:1 in accordance with the recommendations found in the geotechnical report
    - For a fully flowing ditch (depth of one foot), hydraulic radius R = 2sqft/0.45ft = 4.44ft
    - So, $Q = (1.49/n)AR^{2/3}S^{1/2}$ = 96.6cfs when flowing at full capacity
        - Considering the 2cfs flow from the contributing basin in a 100-year storm event, the ditch as detailed here is more than sufficient to handle the flows.
- Demonstrate that detention is not required.
    - According to BCSD Section 1203.1, the first exemption applies which allows no detention. That is: the parcel is greater than 3 acres, it is for one single family dwelling and the total impervious area is less than 10%. The subject parcel has an area of 37.77 acres. 10% of this area would be approximately 164,500sqft, and the total impervious cover post construction will be drastically less than this amount.
- Potential impacts on downstream features.
    - There are cabins near the road in the middle of the driveway reach and a lake downstream (on each end of the driveway length). See notes on drainage worksheet. Sheet flow is promoted across the driveway where distributed flows will stay distributed and not concentrated and where there are no sensitive environmental features (ponds) downstream. All disturbed areas are proposed to be seeded and erosion control blanketed, or hydro-mulched.
- Disturbance of one acre or less, MS4 Area?
    - Considering the historic access at 10 to 12' wide, the area of historic, current and future disturbance is just less than one acre
    - Disturbance estimate includes all unpermitted grading performed in 2022 and 2023.
        - Unpermitted grading was calculated to be approximately 537 CY. This number is the sum of the both cut and fill, though it should be noted no material was imported to the site during this period of unpermitted grading.
        - Area of disturbance
            - Withholding the building site, well, and septic as exempted by Boulder County's "Earthwork & Grading" publication
            - Area of disturbance = ±31,000= 0.71 acres
- Lots within a Subdivision – associated drainage report?
    - This is for rural Boulder County – no subdivision, and therefore, no existing drainage report.
- Neighboring structures
    - There is an underground house that collapsed just along a roughed in road that follows, more or less, the eastern shore of the Big Lake.

I do not think this is how the MS4 regulations work.

        - At its closest point, the western edge of the underground house was approximately 50' from the shore of the Big Lake.
        - See Sheet 6 of the plan set for better detail about the underground house's location
    - Photography from the 1920's-1930's suggests a boat house and dock in the Big Lake, suggesting that the area immediately surrounding the lake has been developed in the past.
    - There has been question about the "forest maintenance" status of the existing roughed in road, the first picture attached below shows the general alignment has existed for some time.
        - The earliest aerial imagery available to this office suggest the road has been in its current location since at least 1999.
        - The second attached picture is from approximately the late 1980's/early 1990's, per the owner.
        - Two additional photos suggest that the forest maintenance road has existed in its approximate current location for some time.
    - While the proposed house will be closer than the underground house, there exists a common precedent at the ranch for building near the lake shore
        - Pictures suggest measures to mitigate runoff were not present in construction of the underground house, measures will be taken for the proposed house.
- P.E. Stamped Letter.
    - This is such a letter
- Other information.
    - A spreadsheet for earthwork quantities is included in this submittal.
    - The plan view driveway survey worksheet is included.
    - A sheet detailing measures to mitigate erosion into the Big Lake is included in this plan set.
    - Aerial photos are included to show the historic driveway back to Big Lake and the changes made in the alignment which was obtained by graphical overlay.
    - Van Horn has used the best available data available to us in preparing this report. Approximations have been made and noted. No guarantees are presented. We plan to stay plugged into the driveway changes with survey staking and as-built mapping if needed or requested. We are available for any questions.
    - Photos are included from various locations on site with narratives and descriptions provided.

County should consider requiring this.

Sincerely,

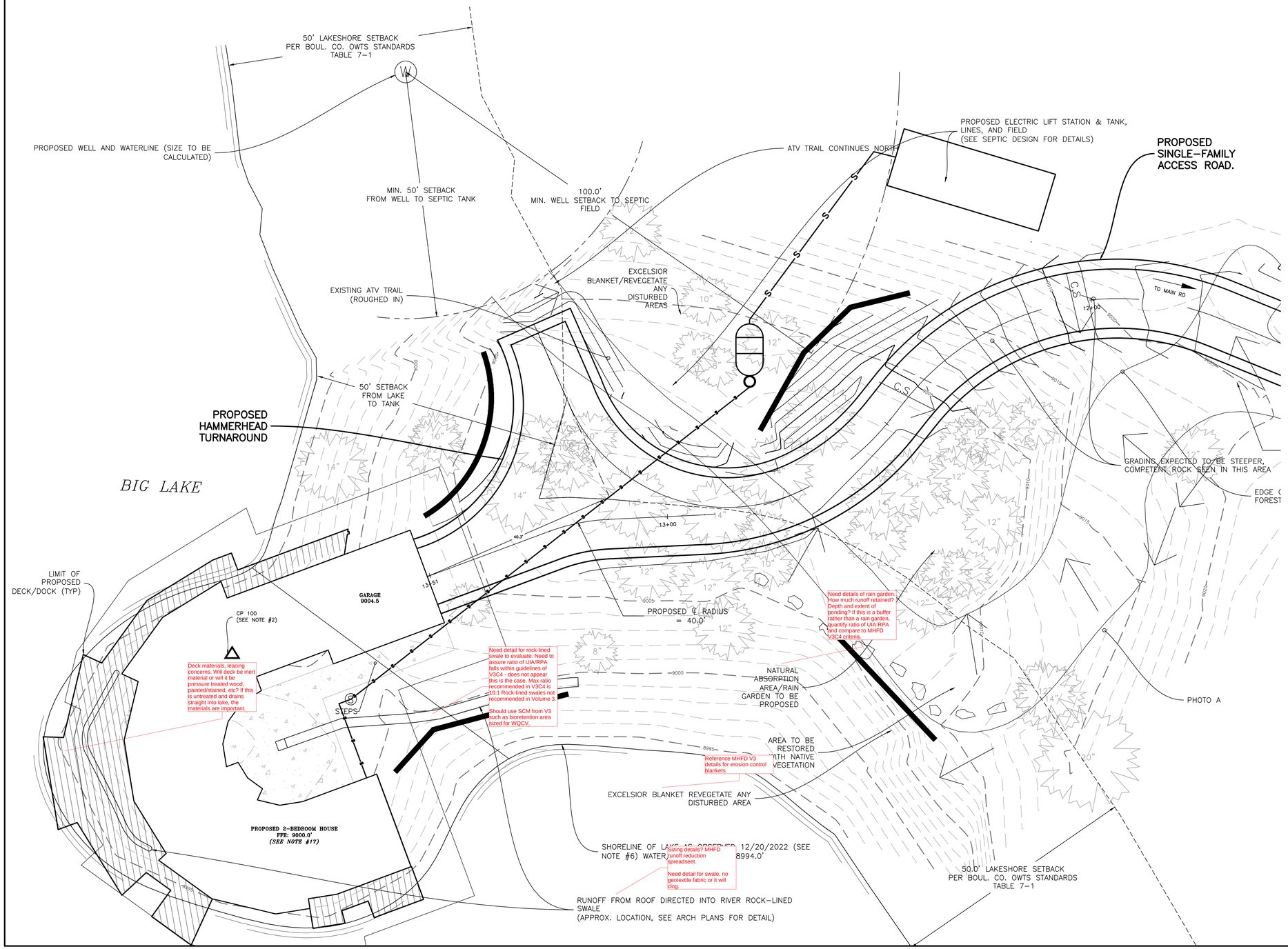
1043 Fish Creek Road • Estes Park, CO 80517 • 970-586-9388 • Fax: 970-586-8101 • E-mail: vhe@airbits.com

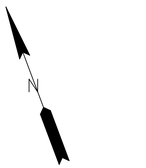
Lonnie A Sheldon, PLS #26974, for Van Horn Engineering and Surveying Inc., Cell: 970-443-3271,
Email: lonnie@vanhornengineering.com

STAPP LAKES RANCH HOUSE LOCATION (PENINSULA)

3310 CR 96J, UNINCORPORATED BOULDER COUNTY

LOCATED IN SECTIONS 22 AND 23, TOWNSHIP 2N, RANGE 73W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO





SCALE: 1" = 10'

0 10 20 30

LEGAL DESCRIPTION

BIG LAKE LLC PARCEL (BOULDER COUNTY ASSESSOR PARCEL NO, 132300000040):
Legal Description per Special Warranty Deed at Recep. No. 04028784
A PORTION OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF SECTION 22, TOWNSHIP 2 NORTH, RANGE 73 WEST OF THE 6TH P.M., BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHEAST 1/4 OF SAID SECTION AND CONSIDERING THE EAST LINE OF THE SOUTHEAST 1/4 OF SAID SECTION TO BEAR N00°12'42"W WITH ALL BEARINGS HEREIN RELATIVE THERETO;
THENCE N00°12'42"W ALONG SAID EAST LINE 717.72' TO THE TRUE POINT OF BEGINNING;
THENCE DEPARTING SAID EAST LINE S89°56'45"W 438.09';
THENCE S62°28'38"W 54.20';
THENCE S89°56'45"W 2140.24' TO THE WEST LINE OF SAID SOUTHEAST 1/4;
THENCE ALONG THE SAID WEST LINE N00°35'53"E 641.03' TO THE CENTER-SOUTH 1/16TH OF SAID SECTION;
THENCE S89°39'12"E ALONG THE NORTH LINE OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF SAID SECTION 2617.54' TO THE SOUTH 1/16TH OF SAID SECTION;
THENCE S00°12'42"E 597.69' TO THE POINT OF BEGINNING.
SAID PARCEL CONTAINS 37.77 ACRES, MORE OR LESS, AND IS SUBJECT TO ALL EASEMENTS AND RIGHT OF WAYS OF RECORD.
COUNTY OF BOULDER, STATE OF COLORADO.

SURVEYOR'S/ENGINEER'S NOTES:

1. THIS SITE PLAN IS REPRESENTATIONAL ONLY AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY NOR A LAND SURVEY PLAT.
2. THE CONTOURS SHOWN ARE AT 1 FOOT INTERVALS AND ARE BASED ON CONTROL POINT 100 AND AN ASSUMED ELEVATION OF 9000.00' FEET AS SHOWN ON THIS SITE PLAN. ALL ELEVATIONS SHOWN HEREON, ON THIS SITE PLAN, ARE RELATIVE TO THIS 9000.00' BENCHMARK. A MORE REALISTIC ELEVATION FOR THIS PARCEL IS AROUND 9500' BASED ON GOOGLE EARTH.
3. THIS LOT IS ZONED F (FORESTRY) IN THE BOULDER COUNTY LAND USE CODE. THE PRESCRIBED BUILDING SETBACKS FOR THIS ZONING ARE 15' ALONG FRONT AND REAR LINES, AND 25' ALONG SIDE LINES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION AND MAINTAIN THEM IF AT ALL POSSIBLE.
5. THE POSTED ADDRESS FOR THIS PROPERTY IS 3310 CR 96J, BOULDER, CO
6. AT THE TIME OF THE ORIGINAL SURVEYING, THERE WAS HEAVY SNOW COVER ON SITE. SOME ELEVATIONS AND FEATURES MAY BE VAGUE DUE TO THIS. AERIAL IMAGERY WAS USED TO AID IN DRAWING THESE FEATURES, INCLUDING THE CABINS SHOWN ON THIS SITE PLAN.
7. NOT ALL TREES ARE SHOWN ON THIS SITE PLAN.
8. NO EXTERNAL PARCEL LINES OR ASSOCIATED SETBACKS ARE SHOWN HEREON.
9. SEE SHEET C5 FOR EXISTING FOREST MAINTENANCE ROAD PROFILE.
10. NO UTILITIES TO CABINS ARE SHOWN ON THIS ROAD DESIGN.
11. THE PURPOSE OF THIS PLAN/DESIGN IS TO DEPICT THE EXISTING FOREST MAINTENANCE ROAD ON THE SUBJECT PROPERTY AS COMPARED TO A DESIGNED OR PROPOSED ROAD GENERALLY FOLLOWING THE SAME ALIGNMENT BUT BEING GEOMETRICALLY CORRECT IN WIDTH WITH RADIAL/CIRCULAR CURVES. THE PROPOSED ROAD IS NOT IN THE HISTORIC SAME ALIGNMENT FROM 11+50 TO 13+50
12. EARTHWORK QUANTITIES ARE SUMMARIZED ON A SEPARATE DOCUMENT.
13. PER BOULDER COUNTY, THE MAXIMUM GRADE FOR A DRIVEWAY IS 12% TO ENSURE ACCESS FOR EMERGENCY VEHICLES. IN THE MOUNTAINS THERE MAY BE A 14% GRADE FOR UP TO 200 FEET, AND 16% FOR 200 FEET IF SERVING A SINGLE DWELLING UNIT.
14. PER BOULDER COUNTY, THERE MUST BE A VERTICAL CLEARANCE OF 13.5' (13'-6"). THE REMOVAL OF SOME TREE LIMBS OR BRUSH MAY BE REQUIRED TO ATTAIN THIS.
15. THIS DESIGN PROFILE BASICALLY FOLLOWS THE VERTICAL PROFILE OF THE EXISTING FOREST MAINTENANCE ROAD, BOTH ARE SHOWN HEREON.
16. ALL-WEATHER SURFACING IS PROPOSED FOR THIS DRIVEWAY (4" THICK CLASS 5 ROAD BASE OR EQUIVALENT).
17. SEE GEOLOGIC REPORT PREPARED BY AMERICAN GEOSERVICES FOR SLOPE STABILITY ANALYSIS.

LEGEND

- S — SEWER CLEAN OUT
- W — WELL
- △ — CONTROL POINT
- W — PROPOSED WELL WATER LINE
- S — PROPOSED SEPTIC LINE
- 9000 — EX. MAJOR CONTOUR (5')
- 9001 — EX. MINOR CONTOUR (1')
- 9005 — PROP. MAJOR CONTOUR (5')
- 9006 — PROP. MINOR CONTOUR (1')
- TREE (DIAM. AS NOTED)
- ROCK OUTCROPPING/BOULDER
- PROPOSED FLOW DIRECTIONS
- CS — INTENDED CROSS-SLOPE DIRECTION
- PROPOSED EROSION LOG

BY	REVISION	DATE

VAN HORN ENGINEERING AND SURVEYING
1043 FISH CREEK RD. * ESTES PARK, COLORADO 80517
PHONE: (970) 586-9388 * FAX: (970) 586-8101

SHEET: FOREST MAINT. RD. DESIGN (WEST END)

PROJECT: BIG LAKE RESIDENCE
3310 CR 96J, UNINC. BOULDER COUNTY

DRAWN BY:	JTG
CHECKED BY:	LAS
SCALE	1"=10'
DATE:	12/17/2024
SHEET	C1
OF	7
PROJ. NO.	2012-06-18

Boulder County

Parks & Open Space

5201 St. Vrain Road • Longmont, CO 80503
303-678-6200 • POSinfo@bouldercounty.org
www.BoulderCountyOpenSpace.org

TO: Amber Knotts, Community Planning & Permitting Department

FROM: Ron West, Natural Resource Planner

DATE: March 5, 2025

SUBJECT: Docket LU-23-0019/SPR-23-0036, Big Lake LLC, 3310 County Road 36J, re-referral

Staff has reviewed the newly submitted materials, and will limit discussion to select subjects; the original POS referral memo is appended below.

The Ecological Assessment is largely well-done, however it does not add much to the discussion of the proposal. With the small exception of the final approach of the driveway, very little has changed from the original application. The house is proposed in the exact same location, with the same access route. Most of the "added" mitigation is either already a requirement for any project of this kind or was already included in the original submittal. For example, silt fences, construction fences, dark-sky lighting, native seed revegetation, a designated washout area, leach field setbacks, site inspections and clean-ups are *all* standard BMPs or are county requirements for a construction project.

Staff does not understand how a "double" silt fence along the lake edge would improve control of runoff. Is there even room for such a fence along the lake edge? Excavation is proposed essentially *on* the lake shore. Figures 1A and 1B show construction stakes at the site. How would a single silt fence even be located? Drawing 4.0 shows deck pilings literally on the water's edge. Figure 4.1 shows the house foundation about 6 feet from the water. And *under* the deck, a new infiltration swale is proposed, which of course needs to be constructed. Machinery cannot work and maneuver with a silt fence here, let alone two silt fences.

Staff notes that this swale would retain ½-inch of rain. What happens in the swale when a 1-inch thunderstorm develops -- a rain event which is rather common?

Staff also asks how accurate are the drawings? On Drawing C1, under Surveyor's/Engineer's Notes, #6 states that, "At the time of the original surveying, there was heavy snow cover on site. Some elevations and features may be vague due to this."

Is the existing cabin, southeast of the proposed house site, on the subject parcel, and if so, how is it to be used? Will the associated dock on the lake shore be removed?

Is the large maintenance structure on the larger parcel to be used for construction staging and/or long-term maintenance of the proposed house?

Figure 1A -- A construction stake at the site – "Edge of House"

Figure 1B – Another stake

The application repeatedly states that the driveway was essentially there before it was improved. Staff has no doubt that parts of it existed as a two-track and/or graded in the

historic past. However, at least one section, shown in Figures 2A and 2B, certainly appears to not show an old road bed. This section is about 250 feet long.

Figure 2A -- 2022

Figure 2B -- 2024

That there is currently “no intention” of further subdivision of the larger parcel is not germane. Cumulative impacts need to consider the reasonably foreseeable future. Although the applicants have no intention to do so, properties change ownership all the time. It is certainly relevant that the larger parcel could be divided in the foreseeable future into 8 additional 35-acre parcels, and subsequently 8 more large houses scattered over the kettle lakes.

Drawing C-7, Erosion Control Notes:

Note 4 – "Trash dumpsters shall be secured against bears." The specific type of bear-proof dumpster to be used should be reviewed.

Note 11 calls for straw bales. If straw mulch or straw bale barriers are used, all straw must be certified weed-free. *Hay* (as called out in Note 16) cannot be used as it contains seeds of aggressive, non-native grass species.

Note 12 – "No fuels or chemicals shall be stored near construction areas." Where would machinery be fueled and where would construction staging occur?

Drawing C-7, Surveyor's and Engineer's Notes:

Note 11 states that, "The disturbed area was measured to be +/- 0.7 acres." Is this the proposed construction site for the house? Or is it the already completed road work, or both? For example, just the road bed and shoulders for a 1300-foot-long driveway would be almost 0.5 acres, and this is without cut and fill slopes, and without the proposed house site area.

Possible disturbance of the buried underground house site is part of the justification to not use the top-of-the-moraine access alternative. It's stated that, "Disturbing this structure could risk contamination from unknown building materials that could be excavated during road construction." If this is a concern, then the buried house *should* be entirely excavated, regardless of driveway alternative, and the contamination hauled off-site. Staff considers this to be a basic stewardship-of-the-land management. *Whatever* is underground will certainly be leaching into the groundwater that percolates through the moraine from Stapp Lake to Beaver Creek and lower ponds.

That the proposed residence would be less disturbing than past use as a guest ranch is not germane to the development review.

Given the pristine nature of the water in Stapp/Big Lake, all construction machinery must be cleaned prior to transportation to the parcel. It must be cleaned to remove aquatic nuisance species (ANS) and weed seeds in accordance with State of Colorado ANS regulations. This involves either steam (heat) or chemical cleaning, not just power washing.

Staff did not know that Stapp Ditch feeds into Big/Stapp Lake. What is the status of the water in the ditch? Does it have a water right associated with it? Who owns it, and how often is the ditch maintained? Without this ditch water, would the lake be "drawn down" in late season or in dry years. (The Ecological Assessment notes that Peterson Lake has large fluctuations, and thus affects its ecology.)

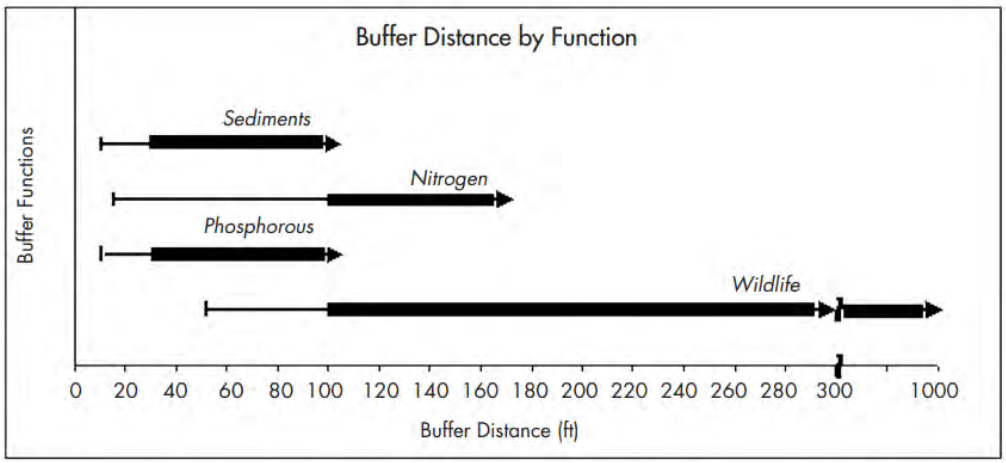
The letter from the applicants, to Boulder County Planning, states that they steward the subject parcel and the larger parcel as a contiguous property. Although management of the larger property is not the subject of this review, what are the specific techniques being used to do so? How are the historic buildings preserved? How is forest management completed? How are non-native weed species controlled? How is the ditch maintained? (The ditch is on the subject parcel.) In other words, are there any commitments of record to this stewardship?

Building a road without permits and then arguing that, since it's "already there," it must be the route with the least environmental impact, is fallacious. The driveway route with the least environmental impact is certainly one that isn't 1300-feet long.

Concerning a setback from the lake, the Environmental Assessment's conclusion is rather ambivalent -- "…a 100-foot setback may not be necessary." This is based on mitigating measures, many of which have be discussed above.

There is a great deal of research about "adequate" buffers between a development and a wetland or river riparian or a lake/pond riparian – water bodies. Hundreds of counties and municipalities across the country have regulations for this. Currently, Boulder County does not have a system for buffers. Figure 3 shows one summary graph for four functions, from "Planner's Guide to Wetland Buffers for Local Governments," 2008, Environmental Law Institute. Other summaries show distances for up to nine functions. The City of Longmont, even in an urban setting, has recently adopted 150 feet for a standard buffer, with increases depending on situations.

Figure 3 – Summary by four functions; note that these distances are in feet



Effective buffer distance for water quality and wildlife protection functions. The thin arrow represents the range of potentially effective buffer distances for each function as suggested in the science literature. The thick bar represents the buffer distances that may ***most*** *effectively accomplish each function (30 - > 100 feet for sediment and phosphorous removal; 100 - > 160 feet for nitrogen removal; and 100 - >300 feet for wildife protection. Depending on the species and the habitat characteristics, effective buffer distances for wildlife protection may be either small or large.*

Conclusion

Although not part of review, does a "retreat" that would have "only limited use" in the winter need a garage? Does it have to be 3000 square feet and require a new 1300-foot driveway? Does it need three bathrooms, two offices, an electric sewage lift pump (instead of a gravity-feed), and a walk-in closet?

Aldo Leopold – one of our greatest conservationists – was a professor in Madison Wisconsin. In 1935 he also wanted a retreat for his family, with five children. They bought an

abandoned/neglected farm and, being the only structure on the property, moved into a cleaned-out chicken coop. Well beyond Leopold's death in 1948, the family stayed in the now-famous "Shack."

The Sustainability Element of the county's Comprehensive Plan states that, "…concern has grown from the global to the local level about whether the social, economic and physical resources we have come to depend on will be sufficient or available to future generations to meet their needs and aspirations…and what we in the present intend to do about it."

Indeed, what do we intend to do about it?

TO: Amber Knotts, Community Planning & Permitting Department
FROM: Ron West, Natural Resource Planner
DATE: February 4, 2023 [correction -- 2024]
SUBJECT: Docket LU-23-0019/SPR-23-0036, Orris/Big Lake LLC, 3310 CR 96J

Site Conditions

The 38-acre parcel is dominated by upper montane/lower subalpine forest, with small lakes and wetlands. Additional details are presented below. A driveway was recently constructed/improved to the proposed house site, before this review of the proposal.

County Comprehensive Plan Designations

The parcel has the following designations in the Boulder County Comprehensive Plan, or from other resource inventories.

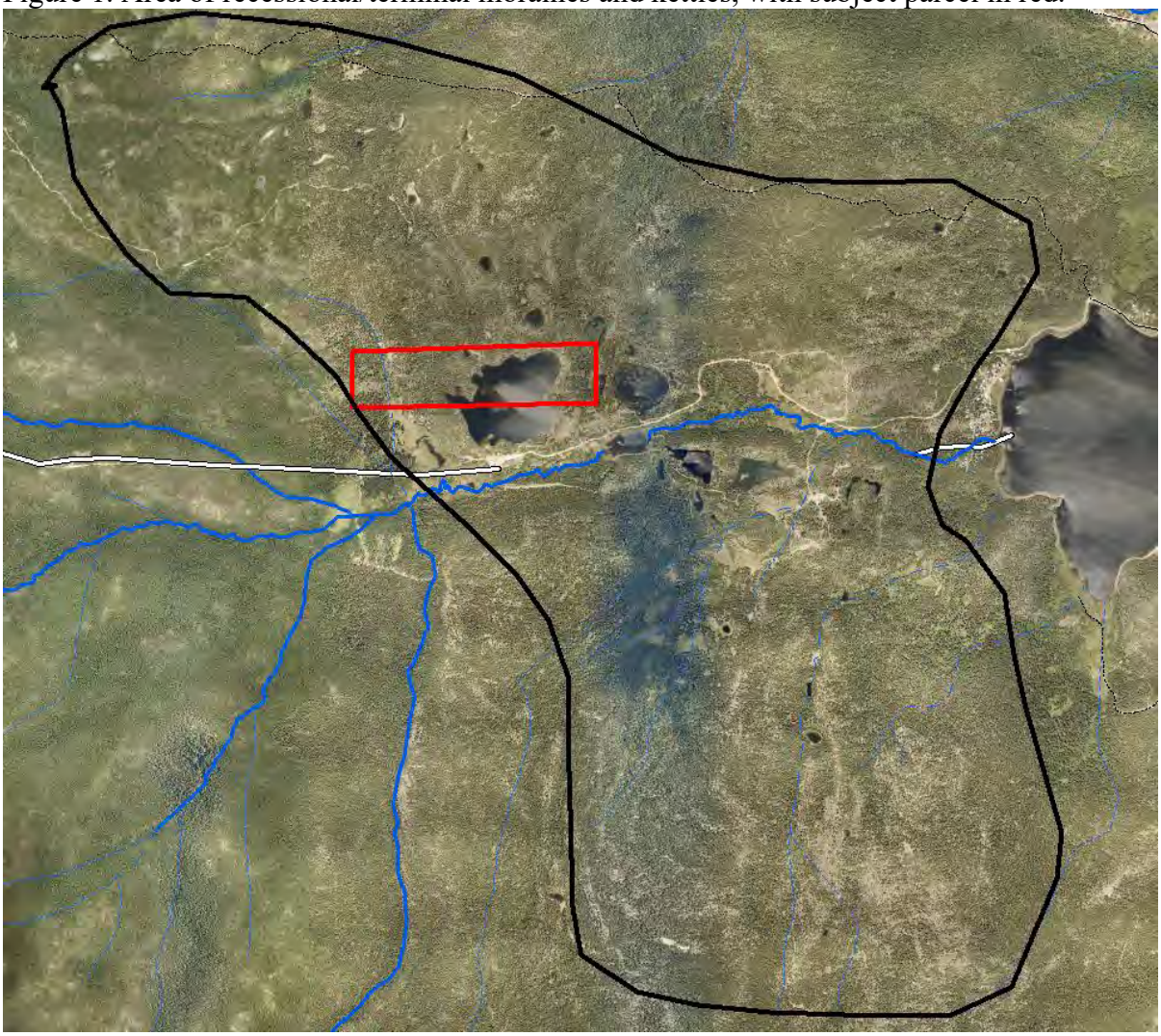
- Environmental Conservation Area (ECA) – Indian Peaks
- Significant Natural Community – old growth spruce/fir forest
- Riparian Areas
- Wetlands
- Lynx Habitat
- Adjacent to Public Lands – US Forest Service, on north
- Proximity to Critical Wildlife Habitats and High Biodiversity Areas -- see below

Discussion

Staff has reviewed the submitted materials. From a natural resource perspective, this is a very complex docket.

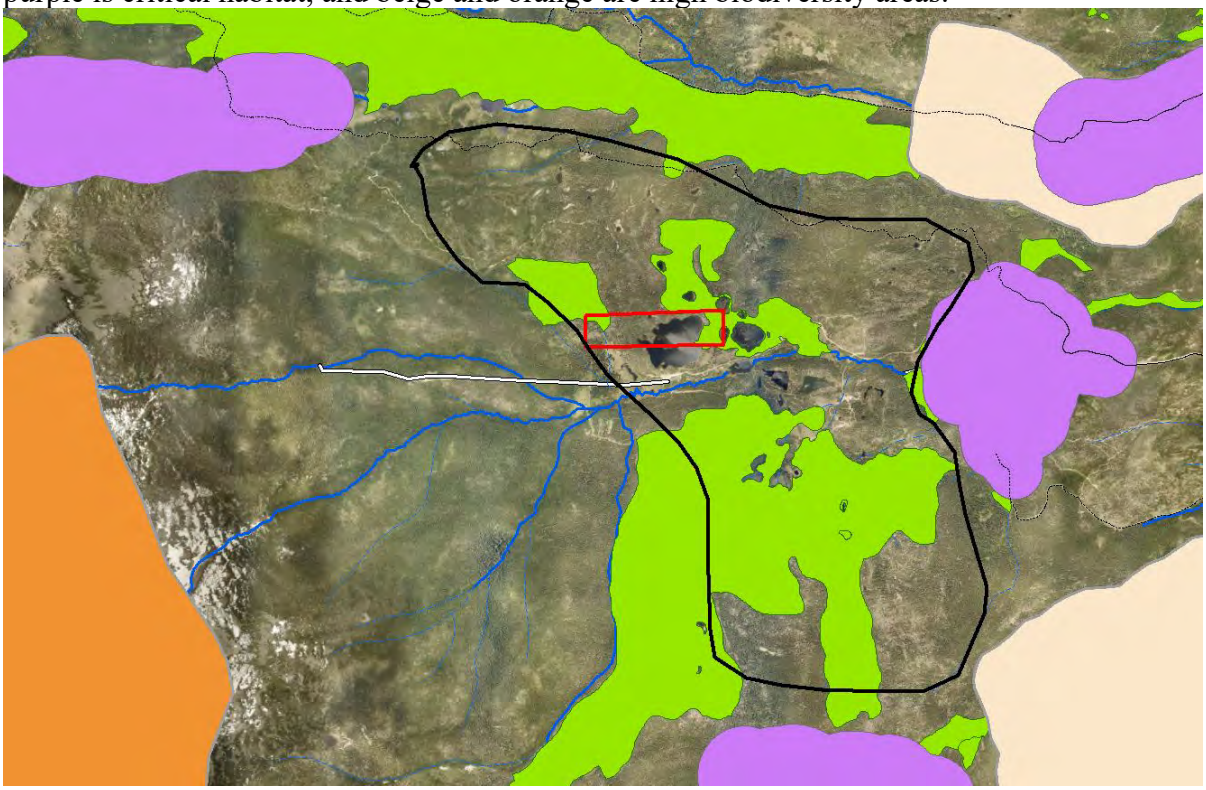
The most important natural resource aspect of the subject parcel is its landscape-level geological and ecological context. Geologically, it is in a large, relatively rare area of Pleistocene recessional/terminal moraines, as shown in Figure 1. These moraines are visible in aerial photographs as well as their associated kettle lakes and ponds. Most or all of the Stapp Lakes are glacial kettles, formed by isolated glacier ice melting out under morainal deposits.

Figure 1. Area of recessional/terminal moraines and kettles, with subject parcel in red.



Ecologically, the subject parcel is “bracketed” by High Biodiversity Areas and Critical Wildlife Habitats, and the proposed house site itself is within a Significant Natural Community – Figure 2. This latter community type is old-growth, Engelmann spruce/subalpine fir forest. Although locally abundant near the site, any old-growth forest type is rare, especially in the Front Range.

Figure 2. Subject parcel in the context of Significant Natural Communities, and nearby Critical Wildlife Habitats and High Biodiversity Areas. Green is significant communities, purple is critical habitat, and beige and orange are high biodiversity areas.



The nearest Critical Wildlife Habitat – less than a mile to the east – is Beaver Reservoir. Its primary county-species-of-concern is lake chub, which was thought to be extinct in the county until re-discovered in 1989. The local stream system and the various Stapp Lakes may support this rare species. Lake chub is: an "S1" species, with less than six known populations in the state (CSU Natural Heritage Program); is officially endangered in Colorado; is a US Forest Service sensitive species; and is a "Tier 1" species -- of most critical needs -- in the State Wildlife Action Plan. The parcel is also only about one mile from the Indian Peaks Wilderness area, to the west.

Beaver Reservoir -- and likely the Stapp Lakes -- is also known as a river otter concentration area, and supports beaver as well. Once abundant, river otter and beaver are species that are slowly making a recovery in the county.

At 9480 feet in elevation, this is one of the highest private areas of the county with the potential for continued developments -- see cumulative impacts below. In general, staff believes that developments at this elevation should be discouraged.

Access, and Already-Completed Impacts

Instead of the proposed 1370-foot driveway, there is an existing driveway access that starts at the large maintenance building, crosses flat terrain near the lake, and continues past an existing cabin, which is only about 200 feet away from the proposed house site. (There are

grade changes from this point that would still have to be negotiated.) This existing drive appears to have been improved about 10 years ago, long before the proposed alignment was improved.

On the latter improvements, completed without permits, staff estimates that only about one-half of the alignment existed beforehand -- as a 4X4 road. (Whether or not parts of it had been used as a "forest maintenance" road is debatable.) In other words, about 750 linear feet of the new access road was recently constructed on undisturbed ground. These new road sections are shown in Figure 3.

Figure 3. New road segments, constructed without permit.

Cumulative Impacts

Staff is also concerned with potential cumulative impacts from other future houses, possibly on the same lake. The "remaining" Stapp Lake Ranch parcel is about 288 acres. Divided into additional 35-acre parcels, this could result in eight more developable parcels. Given the existing other cabins and the historic structures, it is not known how many of such parcels could be developed with new houses.

However, given some "creative" parceling (which staff has seen before), several more parcels could be configured to allow other houses on the main Stapp Lake, and/or simply scattered around the 288 acres. The resulting, up-to-eight-more dwellings and their individual access driveways, would result in significantly more cumulative impacts to Stapp Lake itself, or other smaller lakes, or on waterways on the larger parcel. As noted above, staff believes this area is one of the highest and largest privately-owned parcels in the county that still could see significant future developments.

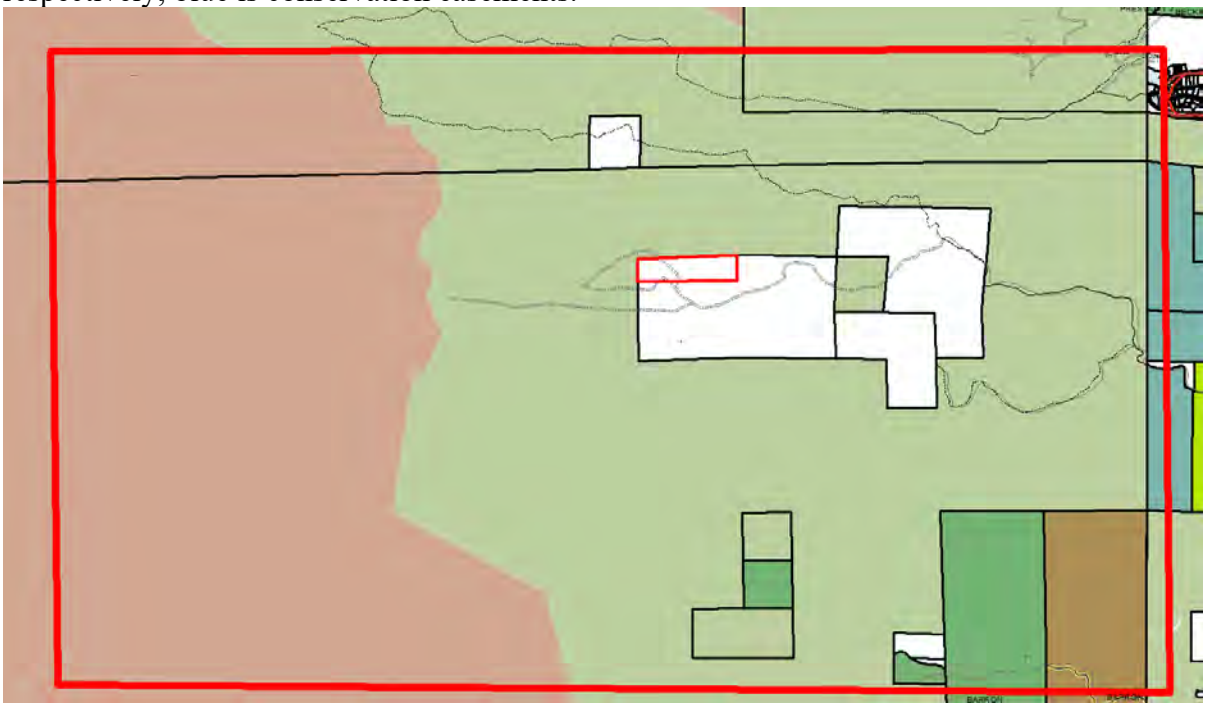
Habitat Fragmentation

Staff believes that the new house would contribute to landscape-level, habitat fragmentation in the county.

The simplest way to present habitat fragmentation is through aerial photography. Figure 4 shows an area drawn around the "wildest" portion of this landscape, mostly centered on the subject parcel. Within this *12,000-acre* area, the only existing developments are: the historic cabins and a few other structures on the large Stapp Lakes parcel; the "seasonal encampments" at and near Beaver Reservoir; and the two-wheel drive and 4X4 routes shown in the figure as thin black lines. These 12,000 acres represent one of the least-fragmented landscape areas in the county.

A basic premise of conservation biology and landscape ecology is to protect "core habitats" – large-acreage areas that are undeveloped or minimally developed.

Figure 4. A "regional" look at the area. The large red box is about 12,000 acres in size; small red box is the subject parcel; lighter green and brick red are USFS and USFS wilderness, respectively; blue is conservation easements.



Riparian Areas and Wetlands

Although riparian and wetland areas are often associated with streams and rivers, lakeshores are also a component of riparian habitats. The riparian and wetlands on the subject parcel, as mapped in the Comprehensive Plan, are incomplete. For example, a very obvious wetland -- a shallow kettle pond -- can be seen in aerial photographs on the eastern boundary of the subject parcel. Similarly, the shorelines of all of these kettles, including Stapp Lake itself, should be mapped as riparian. The proposed house site is immediately adjacent to Stapp Lake

– in fact, two to six feet away from the shoreline in locations. Decks and dock extend into and over the lake.

Boulder County has been attempting to define a "standard" set-back -- for houses and structures -- from wetland and riparian areas. (Even irrigation ditches on the plains have a standard 50-foot set-back required.) Numerous local governments across the country have established various set-back distances for structures from water bodies. These vary by the associated local conditions of rivers, streams, lakes, vegetation, resources, and terrain. However, the consensus in the ecological literature is for a 250-foot set-back, to minimize all impacts associated with a house near a waterbody.

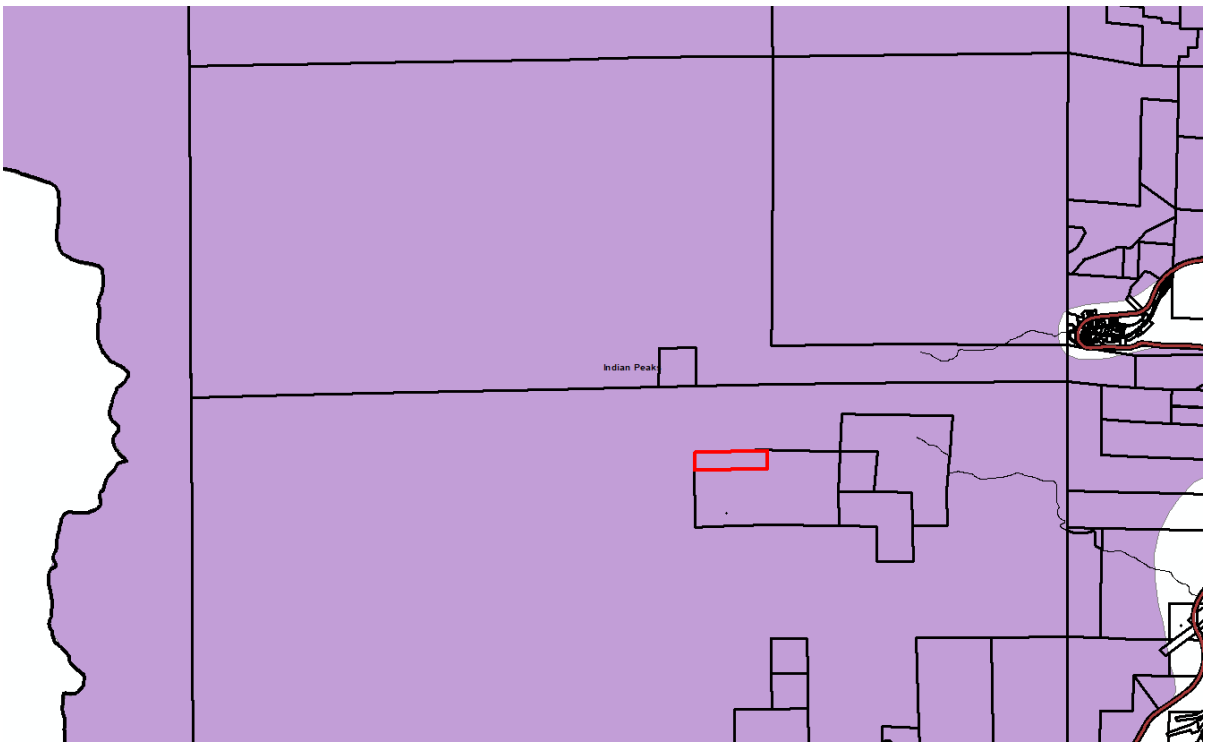
Such impacts would include direct runoff into the lake from the house and driveway. These include oil drippings, grease, salts and other deicers, radiator coolant, fertilizers, pesticides, pet waste, and mud, sand, and gravel. Other household products, chemicals, and litter can enter the lake from the area of outdoor garbage bins, while construction materials and liquids can enter during the months-long construction phase. Intense summer thunderstorms can repeatedly deliver an inch of precipitation, from one storm. All of this local rain flows into the lake.

Since the county has not yet established a standard set-back from waterbodies, staff suggests at least 100 feet be required for this proposal. This would also help to reduce negative impacts to wildlife use of the lake, both during the day and at night when windows throw a "beacon effect."

Environmental Conservation Area and the Protection of Biodiversity on a Landscape Level

For years, one of staff's main concerns is the ongoing development of the county's most remote mountain roads. In the subject case, this is one of a handful of private holdings on County Road 96J, and is located about 3.6 miles from the Peak to Peak Highway. From a natural resource perspective, it is highly undesirable that these most-remote parcels are being developed. Such developments significantly increase habitat fragmentation in the county. See Figure 5.

Figure 5. The subject parcel within the context of part of the Environmental Conservation Area.



Habitat fragmentation in core habitat landscapes is a primary cause of biodiversity loss. This is a significant negative impact to the county's largest, and in some ways most important, Environmental Conservation Area – the Indian Peaks ECA.

In the Boulder County Comprehensive Plan, the first Goal for Environmental Management is that, "Unique or distinctive…ecosystems…should be conserved and preserved in recognition of the irreplaceable character of such resources and their importance to the quality of life in Boulder County" (page 2, Goals). Further, "Boulder County's overarching intention is to maintain the overall health and integrity of our rich and diverse environment *to the greatest extend possible*… (page 2, Environmental Resources Element; emphasis added).

Specific to ECA's, policies state that "ECA's are a planning tool…for analyzing land use[s]…in the context of the cumulative effects of developments, roads, trails, and increased human presence at a landscape-scale on these large and complex ecosystems. This land use decision-making tool is used as a strategy for maintaining the wide-ranging animal species, native plant communities, and natural ecological processes that operate at this landscape scale."

When considering habitat fragmentation, whether the proposed residence is "large" or "small" is unimportant; there are unavoidable human impacts that result from any residence. Staff is also concerned with the long-term possibilities on the subject parcel. If the proposal is constructed, a subsequent landowner could easily propose additional outbuildings if the use is for agriculture or forestry. This is a large parcel – about 38 acres.

Impacts to wildlife from wide-ranging, free-roaming dogs are a likely result of residential

development in an area that currently has minimal developments. Even if such roaming does not occur with the current landowner, it could be a daily occurrence via a future owner. Domestic cats have also consistently been identified as major predators of native bird and small mammal species (Loss et.al. 2013).

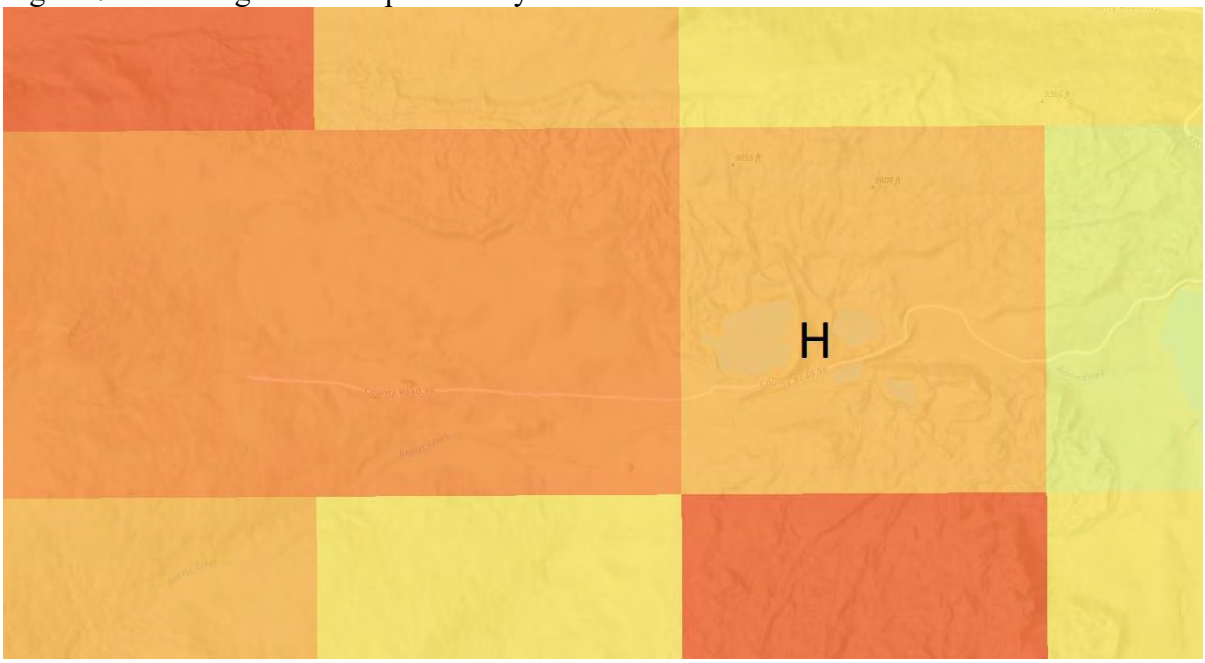
Lynx Habitat

Canada lynx have been a Boulder County "species of concern" for about 30 years (BOCO 1994). Colorado's population is the southernmost in the country (Armstrong, et. al, 2011). Lynx are federally listed as a threatened species, and state-listed as endangered. Radio and satellite-collared lynx have been repeatedly found in Boulder County during the state's reintroduction program, over the years 1999 to 2010 (Theobald and Shenk, 2010). The subject parcel is surrounded by a large area of potential lynx habitat, as mapped by Colorado Parks and Wildlife– Figure 6.

Figure 6. Mapped potential lynx habitat. Red box is subject parcel.

More precise modeling results by Parks and Wildlife show that the "probability of observing" lynx (within the study's parameters) varies from 53 to 67 percent in the summer, while in the winter it is 40 to 60 percent. These are high figures – the highest cohort starts at 68 percent. Figure 7 shows summer modeling. The data are "pixelated," and the darker the color, the higher the probability of observing.

Figure 7. Modeling results of probable lynx use – summer. "H" is house site.



On the state level, the longest and perhaps most important, landscape-level wildlife *movement linkage* in Colorado stretches from Kenosha Pass on the south, north to the Wyoming border, spanning the Continental Divide (SREP 2005). The subject locale is nearly in the middle of this linkage – by both latitude and elevation. Among other wide-ranging species such as wolverine and wolf, this linkage is centered on the landscape movement requirements of lynx. Lynx are a species that require large undeveloped areas to persist. The proposal would further fragment such habitat.

Recommendation

- The above discussions should be considered during review.

Literature Cited

Armstrong, David M., James P. Fitzgerald and Carron A. Meaney, 2011, Mammals of Colorado, Denver Museum of Nature and Science and University Press of Colorado, second edition, 620 pp.

Boulder County Parks and Open Space (BOCO), 1994, Animal Species of Special Concern in Boulder County, 8 pp.

Loss, Scott R., Tom Will and Peter P. Marra, 2013, The impact of free-ranging domestic cats on wildlife of the United States, Smithsonian Conservation Biology Institute & U.S. Fish & Wildlife Service, published online, Nature Communications, January 23.

Southern Rockies Ecosystem Project (SREP), 2005, Linking Colorado's Landscapes – A Statewide Assessment of Wildlife Linkages, Phase I, in collaboration with Colorado Department of Transportation, U.S. Department of Transportation, The Nature Conservancy, and Colorado State University,

Theobald, David M. and Tanya M. Shenk, 2011, Areas of high habitat use from 1999-2010 for radio-collared Canada lynx reintroduced to Colorado, Colorado Division of Wildlife, Denver.

Boulder County

Community Planning & Permitting

Courthouse Annex • 2045 13th Street • Boulder, Colorado 80302
Mailing Address: P.O. Box 471 • Boulder, Colorado 80306
303-441-3930 • www.BoulderCounty.gov

Wildfire Mitigation Team

M E M O

TO: Amber Knotts, Planner I
FROM: Kyle McCatty, Wildfire Mitigation Specialist
DATE: June 13, 2023
RE: Referral Packet and Public Notice for LU-23-0019/SPR-23-0036: Orris Residence project at 3305 County Road 96J

Thank you for the referral. We have the following comments for the applicants:

Decades of catastrophic wildfires, research, and case studies have shown that extreme wildfires are inevitable in the forests of Boulder County and across the Western US. Still, the loss of life and homes does not have to be inevitable. The conditions that principally determine if a house ignites occur within 100 feet of the house, including the house itself. That is why Boulder County has such strong wildfire mitigation requirements in our Land Use and Building Code. Boulder County encourages all homeowners to voluntarily take responsibility to mitigate their own home's risk of igniting in a wildfire through Wildfire Partners.

Wildfire Mitigation is required; the proposed project is in Wildfire Zone 1 (the foothills or mountains—approximately west of highways 7, 36, or 93) of the unincorporated portion of Boulder County. The Boulder County Wildfire Mitigation requirements are composed of site location, ignition-resistant materials and construction, defensible space, emergency water supply, and emergency vehicle access.

Site Location

A Boulder County Wildfire Mitigation Specialist has reviewed the site location as part of the Site Plan Review process, and no conflicts have been identified.

Ignition-Resistant Materials and Construction

Since the proposed development is located within a potentially hazardous area, all exterior building materials (including any proposed decking) must be ignition-resistant construction or better.

For additional ignition-resistant construction information, please contact the Building Safety & Inspection Services Team at 303-441-3926. Refer to the Boulder County publication: Building with Ignition Resistant Materials for specific requirements. All exterior materials must be clearly noted on the building plans and must be reviewed and approved as "ignition resistant" by the Building Safety & Inspection Services Team.

Defensible Space

Adequate defensible space is required for all structures on the property with any utilities to prevent the spread of fire to and from structures. This requires limbing and/or removal of trees and shrubs to provide necessary vertical and horizontal fuel separation within a minimum of 100 ft. from the home and within 30 ft. along both sides of a driveway. More information can be found by referring to the Colorado State Forest Service publication *Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones – 2012 Quick Guide*.

Follow the Colorado State University FireWise Plant Materials – 6.305, Fire-Resistant Landscaping – 6.303, and Colorado State Forest Service *Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones – 2012 Quick Guide* publications when choosing plants and designing revegetation and landscaping.

Emergency Water Supply

An emergency water supply is required to aid in the defense of the structures from a wildfire and assist in firefighting efforts. The Indian Peaks Fire Protection District typically requires an individual cistern in lieu of contributing to a community cistern fund. Contact Chief Sequoia Zahn of the Indian Peaks Fire Protection District for their individual cistern requirements at sequoiazahn@gmail.com; 303-459-9062; or 303-618-1579. If installing an individual cistern and the Fire Protection District does not have its own installation requirements follow the Boulder County publication: Emergency Water Supply for Firefighting.

Emergency Vehicle Clearance

Emergency vehicle clearance is required to allow for safe ingress and egress of emergency vehicles. Emergency personnel try their best to respond to calls in a timely manner, often while negotiating difficult terrain. Planning for access by emergency vehicles improves safety for homeowners and their families by providing for a more efficient response by firefighters and other emergency personnel arriving on the scene. This is especially important in rural and mountainous areas where response times may be considerably longer than in cities, where emergency services are closer by. Refer to the Boulder County publication: Driveway Access for Emergency Vehicles for specific clearance-related requirements.

Timeline

After applying for, but prior to issuance of any permits, a Boulder County Wildfire Mitigation Specialist will contact you to schedule a Wildfire Partners or Regulatory Wildfire Mitigation assessment and defensible space marking. Based upon the compliance path selected, either a Wildfire Partners Assessment report or a Wildfire Mitigation Plan will be created to describe the wildfire mitigation requirements.

Before scheduling rough framing inspections, the plan's defensible space and water supply portion must be implemented and inspected by the Community Planning & Permitting Department. All trees marked for removal must be cut, and all slash, cuttings, and debris must be removed and/or properly disposed of. The Fire Sprinkler or Fire Cistern Approval Form must be submitted to the Boulder County Building Safety & Inspection Services at ezbp@bouldercounty.org (or P.O. Box 471, Boulder, Colorado, 80306) after the fire protection district completes the applicable portion of the form. If an individual cistern was required, it must be located on-site in an appropriate location (subject to approval by the fire protection district), fitted with an appropriate dry hydrant connection, and be filled, and tested by the local fire protection district.

At the time of final inspection, all remaining required items in the Wildfire Partners Assessment report or the Wildfire Mitigation Plan are to be fully implemented and inspected. Ground surfaces within three feet of both existing and new structures, and at least 2 feet beyond the driplines of decks, bay windows, and other eaves and overhangs, must be covered with an allowable non-combustible ground cover over a weed barrier material. The driveway vertical and horizontal vegetation clearance must be in place and conform to the Parcel Access Design Standards in the Boulder County Multimodal Transportation Standards.

If the applicants should have questions or need additional information, we'd be happy to work with them toward solutions that meet minimum land use and building code requirements. I can be reached at 720-564-2625 or via e-mail at kmccatty@bouldercounty.org.

From: McCatty, Kyle
To: Knotts, Amber; #WildfireMitigation
Subject: RE: Referral Inquiry-LU-23-0019/SPR-23-0036
Date: Tuesday, January 30, 2024 1:52:37 PM
Attachments: image001.png

Yes, it will. In that case, I'd add if there are wildland fuels within at least 75 feet of the residence, the residence either needs to be at least 75 feet away from all property lines, or the following more restrictive increased ignition-resistant exterior materials are required:

- Double pane tempered glass is required within at least 50 feet of property lines.
- Wood and fire-retardant-treated wood are not allowed.
- Heavy timber (IBC Section 602.4) and log wall construction (see definition in R327) are allowed.
- Deck surface must be an ASTM E84 (UL 723) flame-spread index no greater than 75.

Please let me know if that will work or if you need a new referral response. If it is the latter, I can get it to you by the end of the day.

Thanks,
Kyle

From: Kryszczuk, Lauren - FS, CO
To: Knotts, Amber
Subject: [EXTERNAL] 07/25/2023 Following Up Referral Packet and Public Notice for LU-23-0019/SPR-23-0036: Orris Residence project at 3305 County Road 96J
Date: Tuesday, July 25, 2023 11:18:57 AM
Attachments: image002.png
image003.png
image004.png
image005.png
image006.png

Good afternoon Amber,

I am getting myself caught up on Boulder County inquiry emails this morning. In your working with these applicants, can you kindly remind them to have their private property surveyed by a licensed surveyor to avoid any/all encroachments on the federal taxpayer's land. Also, if they need to apply for a road permit I am the person to reach out to at the Boulder Ranger District.

Thank you for passing this information along. Have a nice day!

Lauren Kryszczuk
Realty and Land Specialist

Forest Service
Arapaho and Roosevelt National Forests and
Pawnee National Grassland
Boulder Ranger District

c: 720-708-0988
o: 303-541-2534
lauren.kryszczuk@usda.gov

2140 Yarmouth Avenue
Boulder, CO 80301
www.fs.fed.us

Caring for the land and serving people

From: Milner, Anna <amilner@bouldercounty.org>
Sent: Friday, May 26, 2023 10:08 AM
To: #WildfireMitigation <WildfireMitigation@bouldercounty.org>; Historic <historic@bouldercounty.org>; #CodeCompliance <codecompliance@bouldercounty.org>; !LongRange <longrange@bouldercounty.org>; nfishbein@tnc.org; office@svlhwcd.org; scott.griebling@svlhwcd.org; BDRCO@xcelenergy.com; Donna.L.George@xcelenergy.com; Vanessa McCracken <bldrvalleyandlongmontcds@gmail.com>; CSFS_Boulder@mail.colostate.edu; hc_filesearch@state.co.us; Kryszczuk, Lauren - FS, CO <Lauren.Kryszczuk@usda.gov>; sequoiazahn@gmail.com; Atherton-Wood, Justin <jatherton-wood@bouldercounty.org>; Moline, Jeffrey <jmoline@bouldercounty.org>; Flax, Ron <rflax@bouldercounty.org>; Frederick, Summer <sfrederick@bouldercounty.org>; Goldstein, Andrew <agoldstein@bouldercounty.org>; HealthWaterQuality-EnvironmentalBP LU <HealthWQ-EnvironBPLU@bouldercounty.org>; Huebner,

Michelle <mhuebner@bouldercounty.org>; Northrup, Elizabeth (Liz) <enorthrup@bouldercounty.org>; Sanchez, Kimberly <ksanchez@bouldercounty.org>; Transportation Development Review <TransDevReview@bouldercounty.org>; West, Ron <rowest@bouldercounty.org>
Cc: Knotts, Amber <aknotts@bouldercounty.org>
Subject: [External Email]Referral Packet and Public Notice for LU-23-0019/SPR-23-0036: Orris Residence project at 3305 County Road 96J

Please find attached the electronic public notice and referral packet for ***LU-23-0019/SPR-23-0036: Orris Residence*** project at ***3305 County Road 96J***.

Please return responses and direct any questions to ***Amber Knotts*** by ***January 30, 2023.*** (Boulder County internal departments and agencies: Please attach the referral comments in Accela.)

Best Regards,
Anna

Anna Milner | **Admin. Lead Tech.**
Boulder County Community Planning & Permitting
Pronouns: she/her/hers
Physical address: 2045 13th St., Boulder CO 80302
Mailing address: PO Box 471, Boulder, CO 80306
(720) 564-2638 (Direct)
amilner@bouldercounty.org
Service hours are 8 a.m.-4:30 p.m. Monday, Wednesday, Thursday, Friday, and 10 a.m.-4:30 p.m. Tuesday
*My core working hours are 7am-5:30pm Tues - Fri

New: Boulder County has a new website: BoulderCounty.gov! Bookmark it today. Email addresses will transition at a later date.

www.bouldercounty.gov

recipients. Any unauthorized interception of this message or the use or disclosure of the information it contains may violate the law and subject the violator to civil or criminal penalties. If you believe you have received this message in error, please notify the sender and delete the email immediately.

COLORADO
Division of Water Resources
Department of Natural Resources

January 29, 2024

Amber Knotts, Planner I
Boulder County Community Planning & Permitting
Transmission via email: aknotts@bouldercounty.gov

Re: LU-23-0019/SPR-23-0036, Orris Residence
Pt. SE¼ of Sec. 22, Twp. 2 N, Rng. 73 W, 6th P.M.
Water Division 1, Water District 5

Dear Ms. Knotts:

We have reviewed the above-referenced Site Plan Review to construct a 2,990-square foot residence on a vacant approximately 37.7-acre parcel and Limited Impact Special Use Review to permit 1,585 cubic yards of earthwork for driveway development. The submitted material does not appear to qualify as a "subdivision" as defined in section 30-28-101(10)(a), C.R.S. Therefore, pursuant to the State Engineer's March 4, 2005 and March 11, 2011 memorandums to county planning directors, this office will only perform a cursory review of the referral information and provide comments regarding the proposed water supply. The comments will not state an opinion on the adequacy of the water supply or the ability of the water supply plan to satisfy any County regulations or requirements, and cannot be used to guarantee the physical availability of water.

The proposed source of water supply for the subject property is a well to be constructed. The parcel is greater than 35 acres in size, therefore it is anticipated that this office could issue a permit to construct a new well on the parcel that could be used for fire protection, ordinary household purposes inside not more than three single-family dwellings, the watering of poultry, domestic animals and livestock on a farm or ranch, and the irrigation of not more than one acre of home gardens and lawns. A final determination of the ability of the lot owner to obtain a permit to construct a new well and the allowed use of the well will be made at the time a well permit application is received by this office.

This office has no concerns with the proposed Site Plan Review and Limited Impact Special Review. Should you or the applicants have any questions regarding this matter, please contact Kate Fuller of this office at 303-866-3581 ext. 8245 or kathleen.fuller@state.co.us.

Sincerely,

Kate Fuller, P.E.
Water Resources Engineer

Cc: Applicants' Agent (Sam Nishek, sam@barrettstudio.com)
Referral file no. 31168

COLORADO GEOLOGICAL SURVEY

1801 Moly Road
Golden, Colorado 80401

Matthew L. Morgan
State Geologist and
Director

January 23, 2025

Amber Knotts
Boulder County Community Planning & Permitting
aknotts@bouldercounty.gov

Location:
0.1182, -105.5451

Subject: **LU-23-0019/SPR-23-0036: Big Lake LLC Residence & Driveway at 3310 County Road 96J Boulder County, CO; CGS Unique No. BO-24-0009-2**

Dear Amber:

At your request (January 9, 2025), the Colorado Geological Survey has reviewed the LU-23-0019/SPR-23-0036: Big Lake LLC Residence & Driveway (aka Orris Residence) at 3310 County Road 96J resubmittal. The available referral documents include:

- Geotechnical Evaluation Report, 3305 Co Rd 96J, Ward, CO 80481 (American Geoservices Project No. 0206-B24, July 23, 2024)

Provided the recommendations in American Geoservices' Geotechnical Evaluation Report are adhered to, the Colorado Geological Survey has no objection to approval of LU-23-0019 and SPR-23-0036.

Thank you for the opportunity to review and comment on this project. If you have questions or need further review, please call me at (303) 384-2643, or e-mail carlson@mines.edu.

Sincerely,

Jill Carlson, C.E.G.
Engineering Geologist

Longmont and Boulder Valley Conservation Districts

Planner

Boulder County Planning and Permitting

Re: Docket LU-23-0019/SPR-23-0036

To Whom it May Concern:

Thank you for allowing us the opportunity to comment on the Orris Residence docket. The Conservation Districts conducted an extensive review. Since the new house proposed is along the shoreline of Stapp Lake, care should be taken to ensure there is no stormwater/snowmelt runoff directly into the pristine lake waters and any disturbed areas for the building site and the new access road should be monitored and controlled for invasive weeds as the landscape recovers.

Regards,

Vanessa McCracken

Vanessa McCracken
District Manager
Boulder Valley & Longmont Conservation Districts

Right of Way & Permits

1123 West 3rd Avenue
Denver, Colorado 80223
Telephone: **303.571.3306**
Facsimile: 303.571.3284
Donna.L.George@xcelenergy.com

January 14, 2025

Boulder County Community Planning and Permitting
PO Box 471
Boulder, CO 80306

Attn: Amber Knotts

Re: Orris Residence - Revised, Case # SPR-23-0036 and LU-23-0019

Public Service Company of Colorado's Right of Way & Permits Referral Desk has **no apparent conflict** with **Orris Residence – Revised**.

Donna George
Right of Way and Permits
Public Service Company of Colorado dba Xcel Energy
Office: 303-571-3306 – Email: donna.l.george@xcelenergy.com

From: Wufoo
To: LU Land Use Planner
Subject: [EXTERNAL] Ask a Planner - Judy Ward - LU-23-0019 - 3310 County Rd 96J
Date: Tuesday, March 11, 2025 10:02:50 PM

Boulder County Property Address : 3310 County Rd 96J
If your comments are regarding a specific Docket, please enter the Docket number: LU-23-0019
Name: Judy Ward
Email Address: jward2452@me.com
Phone Number: (303) 521-8741
Please enter your question or comment: We have a cabin adjacent to this property. It was built by my husband Tom Ward's mother one hundred years ago, The Oris family are the best neighbor we have ever had. Even though there will be noise to deal with and perhaps some traffic connection, we have no objections to this project.
Public record acknowledgement:
I acknowledge that this submission is considered a public record and will be made available by request under the Colorado Open Records Act.