



Community Planning & Permitting

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**BOULDER COUNTY
BOARD OF COMMISSIONERS
PUBLIC HEARING**

March 28, 2024 at 1:30 p.m.

**Boulder County Courthouse, 3rd Floor,
1325 Pearl Street, Boulder
Virtual and in-person**

STAFF RECOMMENDATION

STAFF PLANNER: Pete L’Orange, Planner II

DATE ISSUED: March 21, 2024

Docket LU-24-0002: Old St. Vrain Road Reach Restoration

Request: Limited Impact Special Review request for approximately 12,000 cubic yards of earthwork/grading related to ecological restoration of the Old St. Vrain Road Reach at 530 Old St. Vrain Road, and 0 and 31074 S St. Vrain Road.

Location: 530 Old St. Vrain Road, 0 Old St. Vrain Road, and 31074 S St. Vrain Road, located on Old St. Vrain Road, approximately 1 mile south and west of the intersection of State Highway 7 and Old St. Vrain Road, in Section 24 and 25, Township 3N, Range 71W, and Section 19, Township 3N, Range 70W.

Zoning: Agricultural (A) Zoning District

Applicant: The Watershed Center, c/o Yana Sorokin

Applicant: Biohabitats, c/o Mike Lighthiser

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SUMMARY AND RECOMMENDATION

The applicant requests Limited Impact Special Use review for earthwork and grading in excess of 500 cubic yards related to the removal of excessive floodplain deposition that occurred during the 2013 flood, providing multiple elevational zones to support various riparian communities, and to create additional complexity for improved habitat. Limited Impact Special Use Review is required because the proposed non-foundational earthwork exceeds 500 cubic yards, and this earthwork is analyzed pursuant to the Special Use Standards outlined in Boulder County Land Use Code (Code) Art. 4-601.

With the recommended conditions, staff finds the proposal can meet the Limited Impact Special Review Criteria in Article 4-601 of the Boulder County Land Use Code (the Code) and recommends conditional approval of docket **LU-22-0002: Old St. Vrain Road Reach Restoration**.

DISCUSSION

The Old St. Vrain Road Reach area is located along South St. Vrain Creek, roughly between State Highway 7 (S. St. Vrain Drive) and Old St. Vrain Road, southwest of the Town of Lyons. The proposed work is located on four parcels, in two general locations: the up-stream area at 0 Old St. Vrain Road (parcels 12012500011 and 12012400005) and 31074 S St. Vrain Road (parcel 12012500010); and the down-stream area at 530 Old St. Vrain Road (see Figures 1 through 3 below). The project areas are generally accessed from either State Highway 7 (for work on the north side of South St. Vrain Creek) or Old St. Vrain Road (for work on the south side of South St. Vrain Creek). The subject parcels are mostly open space, with residential development on 31074 S St. Vrain Road (in the US area).

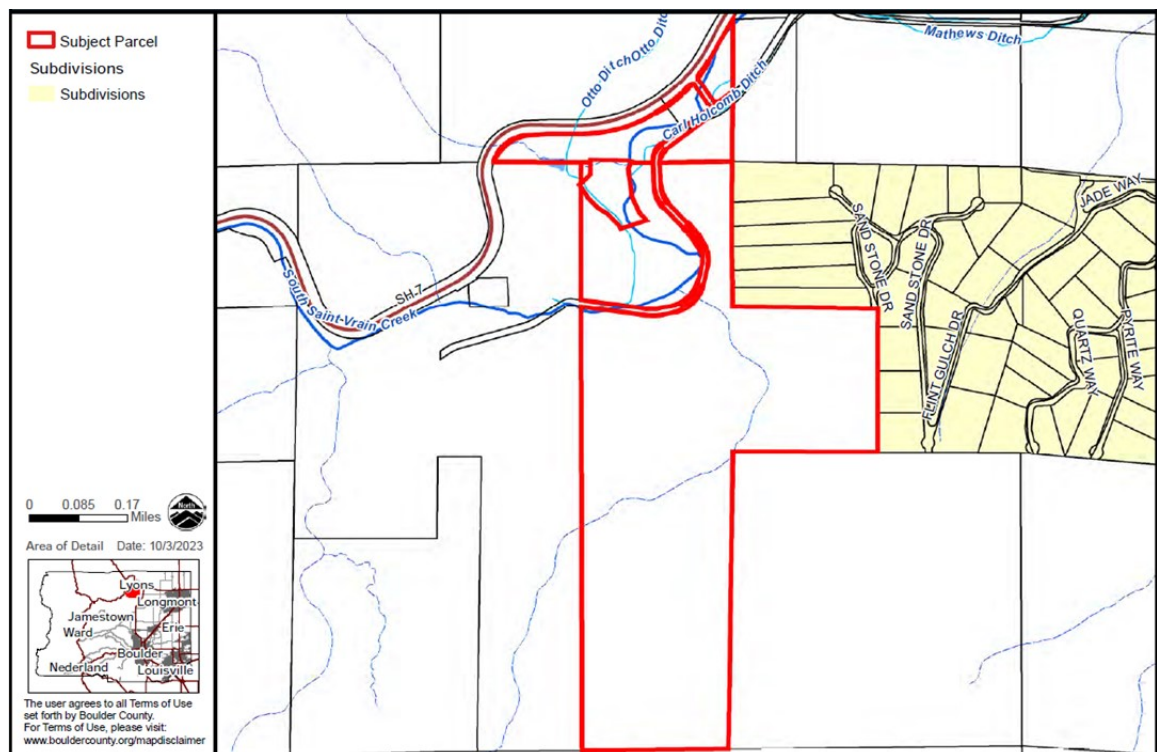


Figure 1. Location map, with US parcels indicated in red.

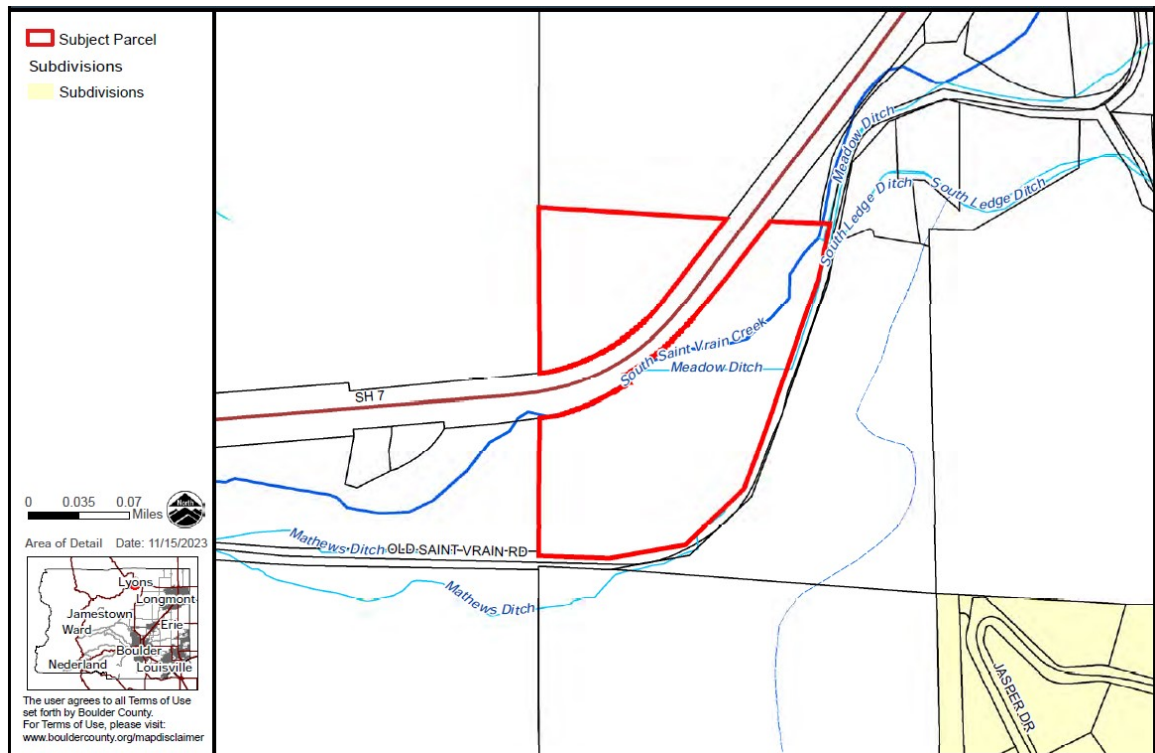


Figure 2. Location map, with DS parcel indicated in red.

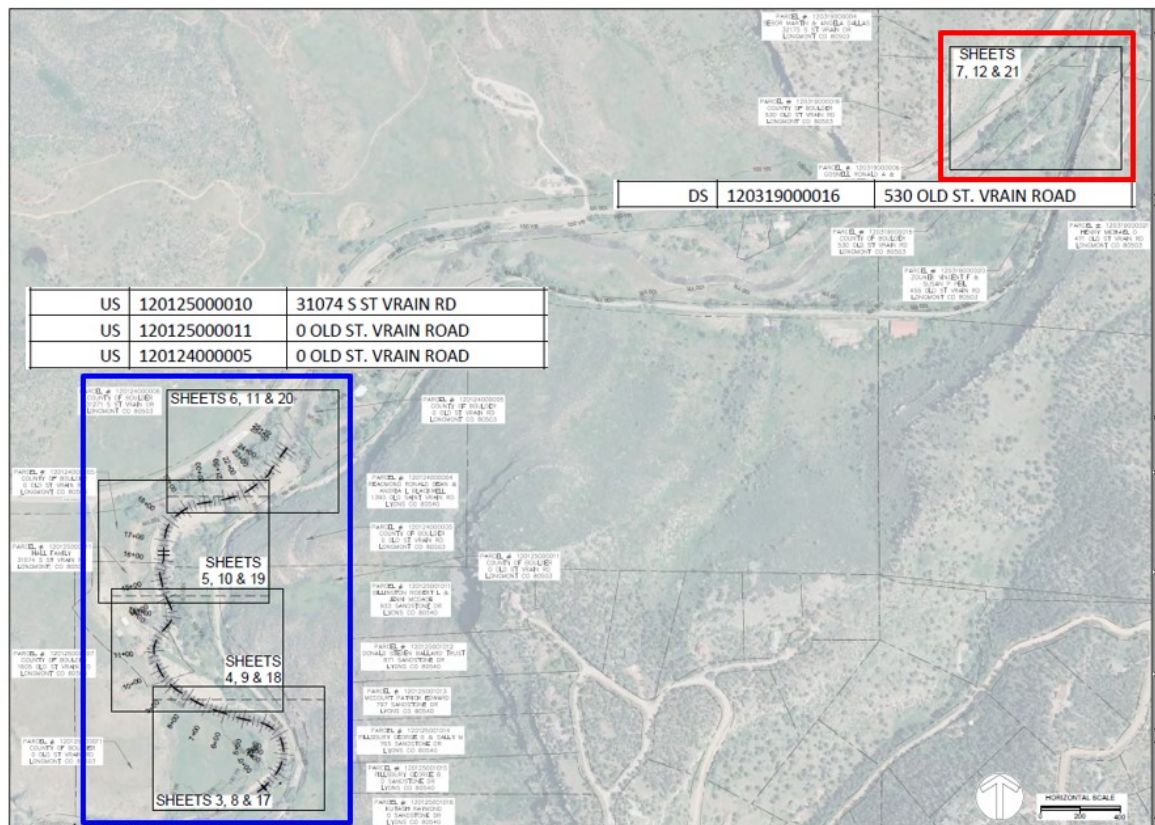


Figure 3. Project map, with US area indicated in blue and DS area indicated in red.

The work proposed for the up-stream area includes the removal of excess accumulated sediment from the 2013 flood down to elevations that promote channel connectivity and natural floodplain processes. Per the application materials, “the material to be excavated is a mixture of sand, gravel,

and cobble material and has a relatively sparse vegetative cover. It will be cut down to create a riparian floodplain that integrates with existing lower vegetated areas and creates additional low areas that allow for varying hydrologic regimes and habitat types.” Once the materials are removed, simple wooden structures will be installed to help slow flows that overtop the channel bank; additionally, log jams will be placed in several locations along the edge of the creek to help promote interaction between the creek and floodplain and creation of additional pool habitat in the creek.

The proposed work in the down-stream area will include grading around an existing outflow channel to promote any flows above bankfull, so that the area will be better able to handle any flooding which may occur. This will allow for more frequent interaction of the channel and floodplain, as well as natural processes such as deposition, infiltration, and support of a riparian plant community. Finally, random boulders, sourced from the project area, will be placed in the channel to facilitate increased habitat complexity that is lacking in this reach, as well as additional channel roughness.

The Boulder County Comprehensive Plan (see Figures 4 and 5 below) identifies a several resources within the project area, including:

- Archaeologically Sensitive Areas and Travel Routes
- Critical Wildlife Habitats
- Environmental Conservation Areas
- High Biodiversity Areas
- Natural Landmark/Natural Area (Red Hill)
- Riparian Areas
- Riparian Habitat Connectors
- Rare Plant Areas
- Significant Agricultural Areas
- Significant Natural Communities
- Wetlands

Potential impacts to these identified resources are addressed under Criteria 3 and 4 below.

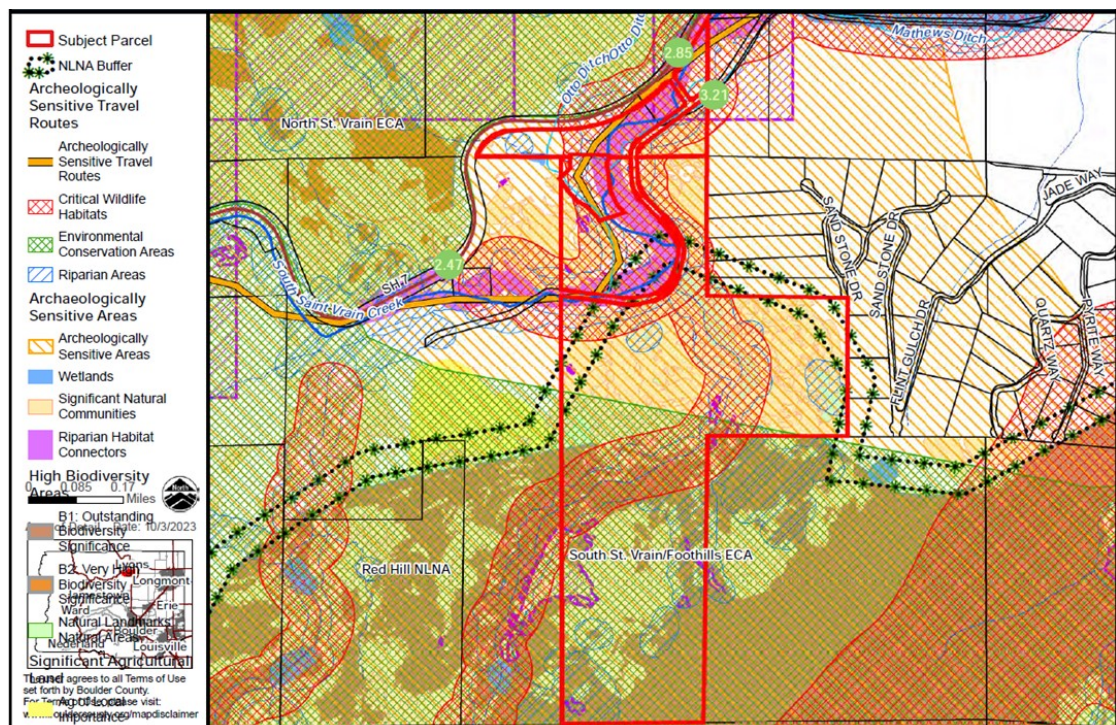


Figure 4. Comprehensive Plan map for US area.

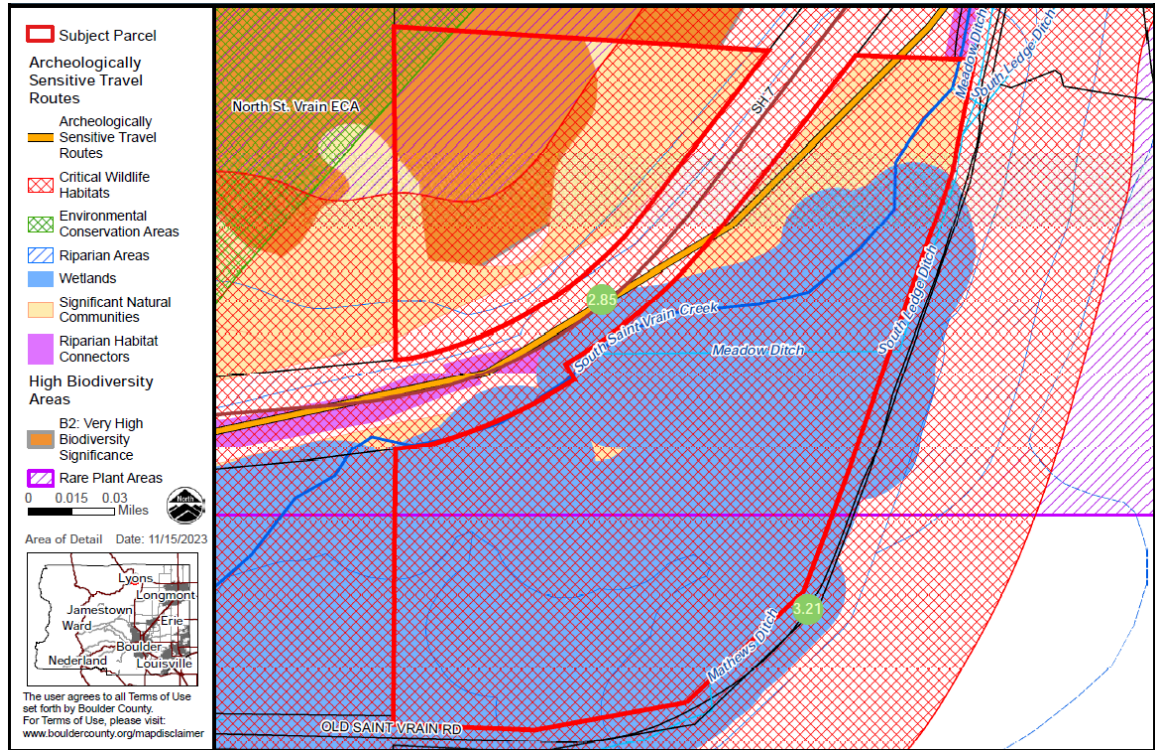


Figure 5. Comprehensive Plan map for DS area.

Additionally, there are identified Zone 1 and Zone 3 Preble’s Mountain Jumping Mouse management areas along the South St. Vrain Creek within the project areas (see Figure 6 below)

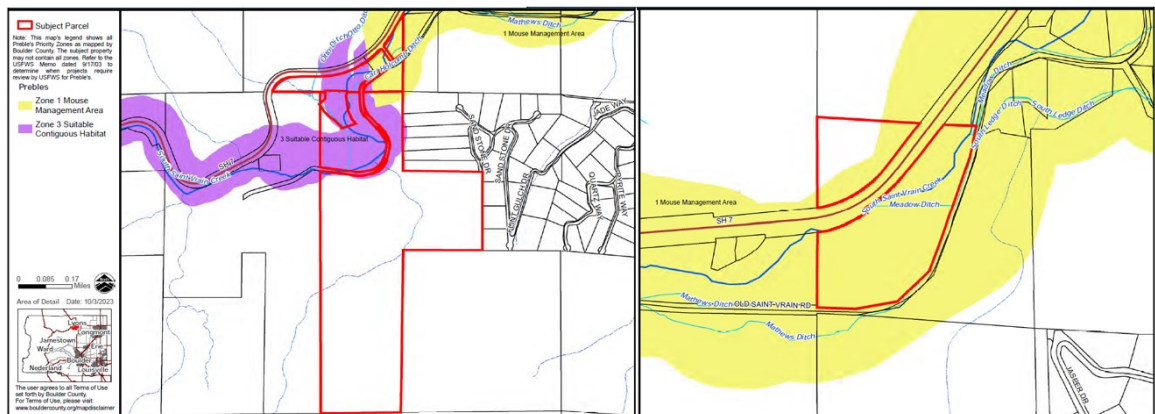


Figure 6. Preble’s Priority Zone maps, with Zone 1 indicated in yellow and Zone 3 indicated in purple; the US area is on the left and the DS area on the right.

Finally, the subject parcels are located within the Floodplain Overlay District (see Figure 7 below). The project area is located within the 100-year and 500-year floodplain areas. The South St. Vrain Creek is located within the designated floodway. The potential impacts related to the designated floodplain are discussed under Criterion 12 below.

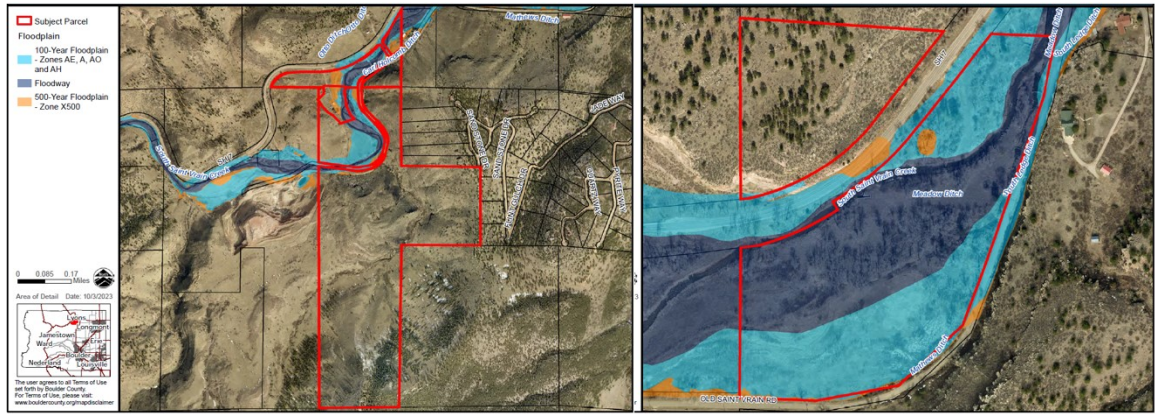


Figure 7. Floodplain Map, with the US area on the left and the DS area on the right.

The proposed work and improvements will require a significant amount of non-foundational earthwork and grading. Per the application materials, the project will require approximately 6,000 cubic yards of cut and 6,000 cubic yards of fill, for a total of approximately 12,000 cubic yards of earthwork. As the project will exceed 500 cubic yards of earthwork and grading, Limit Impact Special Review is required.

As detailed in the criteria review below, staff finds that the proposed non-foundational earthwork can meet the Special Review Criteria in Article 4-601 of the Code, with the recommended conditions of approval.

REFERRALS

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

Boulder County Building Safety & Inspection Services Team: The Building team referral response indicated that building and grading permits, plan review, and an observation report would be required for the implementation of trail restoration and construction efforts.

Boulder County Development Review Team – Access & Engineering: This team reviewed the proposal and determined that legal access to the subject parcels has been demonstrated. Additionally, this team provided recommendation conditions of approval to ensure the project will not have any adverse impacts on the county’s multimodal transportation system.

Boulder County Parks & Open Space – Natural Resource Planner: The Natural Resource Planner reviewed the application materials and identified a number of natural resources on the subject parcels. The Natural Resources Planner also provided comment on the proposed construction methods, fueling practices, and cleaning methods; they provided recommended conditions of approval related to the proposed work.

Boulder County Floodplain Program Team: This team reviewed the proposal and noted that the project area is located within the Floodplain Overlay District and that a Floodplain Development Permit is required. They also noted that the project must be covered under either a USACE Nationwide or Individual 404 permit.

Lumen Communication: This agency reviewed the application materials and noted that they have facilities within the proposed construction area. The plans are under review by LUMEN Field Engineer(s).

Adjacent Property Owners: Notices were sent to all property owners within a 1,500-foot radius of the proposed trail route. To date, staff have not received any public comments.

Agencies that responded with no conflict: Boulder County Public Health; Boulder County Conservation Easement Team; Boulder County Historic Preservation Team; Xcel Energy; and Lyons Fire Protection District.

Agencies that did not submit a response: Boulder County Long Range Planning; Carl Holcome Ditch Company; City of Boulder Planning & Development Services; and Boulder Valley & Longmont Conservation District.

LIMITED IMPACT SPECIAL REVIEW CRITERIA

The Community Planning & Permitting staff has reviewed the proposal of grading in excess of 500 cubic yards related to the improvements seeking to improve visitor experience and infrastructure sustainability pursuant to the Limited Impact Special Use Review criteria per Section 4-601.A of the Code, and finds the following:

(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 proposed improvements are located within the Agricultural (A) zoning district. Per Article 4-516.Q.1.b of the Code, grading in excess of 50 cubic yards is exempted from Limited Impact Special Use Review if it is normal grading activity associated with trail or road construction by a governmental entity on publicly acquired open space land in accordance with an open space management plan approved by the Board of County Commissioners. As confirmed by the Boulder County Parks & Open Space Department, this project has been developed and plan in coordination with Parks & Open Space.

In accordance with the additional provisions for grading of more than 50 cubic yards as set forth in Section 4-515.Q.5.b, any grading which impacts a floodplain is not exempt from applying for and receiving a Floodplain Development Permit. Therefore, staff recommends a condition of approval that the applicant must apply for and receive a Floodplain Development Permit in accordance with the provisions in Article 4-400.

The referral response provided by the Building Safety & Inspection Services team noted permitting requirements for the proposed non-foundational earthwork.

Per the application materials, there are several additional permits and approvals which will, or may, be required as part of the proposed project. These permits and approvals include:

- **United States Army Corps of Engineers** – the Army Corps of Engineers will determine whether the proposed work falls under a federal regulatory process. A federal regulatory process would include compliance with Section 7 of the Endangered Species Act, with concurrence from Colorado Parks and Wildlife, and compliance with Section 106 of the National Historic Preservation Act, with concurrence from History Colorado (Colorado State Historic Preservation Office).
- **Colorado Department of Public Health and Environment (CDPHE)** – a CDPHE Stormwater General Permit for Construction Activities will be required for the proposed project. The applicant stated that they do not anticipate dewatering will be necessary.
- **Boulder County Stormwater Management Plan** – the applicant has stated they will work with county staff to develop a Stormwater Management Plan (SWMP) and will coordinate monitoring of the project area to ensure adherence to the SWMP.

- **Boulder County Permits** – the applicant will acquire required Boulder County building and grading permits prior to work commencing.

To ensure that these additional permits and approvals are obtained, staff recommends the following conditions of approval: the applicant must provide documentation of clearance to proceed (approval or documentation that there is no federal nexus) from the Army Corps of Engineers prior to the issuance of any county grading permit; the applicant must provide a copy of the CDPHE Stormwater General Permit to the county at grading permit application; prior to the submission of a grading permit application, the applicant must submit a Stormwater Management Plan for review and approval by Boulder County Public Works Department; the applicant must will work with county staff to coordinate monitoring of stormwater management measures; and the applicant must obtain a Boulder County Grading Permit prior to commencement of work.

Therefore, as conditioned, staff finds 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 the purposes of this Limited Impact Special Use Review, staff considered the surrounding neighborhood to be the properties within 1,500 feet of the subject parcels. The area surrounding the subject parcels is characterized by open space, with a few residential properties. As all of the proposed work will be done at ground level, staff finds the proposed work will not have any increased visual impact over existing conditions.

Staff does not anticipate the proposed project to result in any impacts which would be out of character with the defined neighborhood. While the proposal does involve significant amounts of earthwork and grading on-site, staff does not find the proposed earthwork will change the existing character of the area.

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

- (3) ***Will be in accordance with the Boulder County Comprehensive Plan;***

The Boulder County Comprehensive Plan identifies many resources of note on the subject parcels and within the project area, including: Archaeologically Sensitive Areas and Travel Routes; Critical Wildlife Habitats; Environmental Conservation Areas; High Biodiversity Areas; Natural Landmark/Natural Area (Red Hill); Riparian Areas; Riparian Habitat Connectors; Rare Plant Areas; Significant Agricultural Areas; Significant Natural Communities; and Wetlands.

Staff has identified several goals, policies, and objectives of the Comprehensive Plan which are pertinent to the proposed project.

Natural Hazards Element Policy NH 1.04: Risk Reduction. This policy states: “*The level of risk from natural hazards should be reduced through positive county action such as guiding development away from areas prone to natural disturbances, mitigating existing development from hazards, and considering the impact on ability to provide emergency services.*”

Staff finds the proposed project is consistent with this policy as one of the stated goals of the work is to help mitigate and manage potential future flooding, which will serve to project existing development downstream from the project area.

Environmental Resources Element Goal 5: Enhance Environmental Health. This goal states, in part: “*Boulder County shall continue to protect air, water and soil resources and quality, as well as restore resources in a degraded condition to enhance overall environmental health.*”

Staff finds the proposal is consistent with this goal as another intended outcome of the project is help restore and enhance the overall environmental health of the South St. Vrain Creek area by addressing negative environmental impacts which resulted from the 2013 flood.

The Comprehensive Plan also indicates a View Protection Corridor associated with State Highway 7 (with scores ranging from 2.47 to 2.85 out of 5) and Old St. Vrain Road (with a score of 3.21 out of 5); visual impacts are discussed in Criterion 9 below.

Staff has not identified any goals or policies of the Comprehensive Plan with which the proposed project is in conflict.

Therefore, staff finds 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.***

Staff anticipates the proposed work will not result in an over-intensive use of land or an excessive depletion of natural resources. The proposed work will not change or alter the existing use (open space) or the intensity of that use on the subject parcels. Additionally, while the proposed project does involve a substantial amount of earthwork and grading, staff finds the scale of the proposed earthwork is necessary to address some of the lingering impacts from the 2013 flood and to improve the ecological health of the South St. Vrain Creek. In order to minimize impacts to the surrounding landscape, staff recommend a condition requiring the installation of clear limits to disturbance areas during construction. Limits to areas of disturbance must be included on the Revegetation and Erosion Control Plan submitted to the Community Planning & Permitting Department for permitting.

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

(5) Will not have a material adverse effect on community capital improvement programs;

There is no indication the proposal will have an adverse effect on community capital improvement programs, and no referral agency has responded with such a concern.

Therefore, staff finds this criterion is met.

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

Staff does not anticipate the proposal will have an adverse effect on community facilities and services, and no agencies submitted a response voicing any concerns about community facilities or services. The referral response from the Town of Lyons Fire Protection District stated they have no concerns about the proposed project Staff recommends as a condition of approval that the applicant work with the Fire Protection District to ensure compliance with their requirements.

Therefore, as conditioned, staff finds this criterion is met.

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

Legal access to the open space is demonstrated via adjacency Old St. Vrain Road. Per the referral response from the Access & Engineering team, Old St. Vrain Road is a paved Boulder County owned and maintained right-of-way (ROW) with a Functional Classification of Local.

The submitted site plans show a proposed access to the project area from State Highway 7. Per the Access & Engineering Team referral response, an access permit or other authorization from the Colorado Department of Transportation (CDOT) must be provided for all accesses occurring at the highway. Staff recommends as a condition of approval that such permit or authorization must be provided to the county as part of the permitting process. Additionally, the submitted site plans indicate the applicant intends to also access the construction areas from Old St. Vrain Road; however, the site plans submitted as part of the application do not include the specific locations of these access points. Staff recommends as a condition of approval that this information be provided at permitting.

Finally, as Old St. Vrain Road is a narrower road, staff finds it is appropriate to limit the hours of construction traffic to between 8:00 am and 3:30 pm, Monday through Friday. This will help to mitigate the impact of construction traffic using Old St. Vrain Road, especially during peak commuter periods. Additionally, to ensure that traffic on Old St. Vrain Road is not restricted, all construction vehicles and materials must be staged on the subject parcels and not on Old St. Vrain Road. As such, staff recommends these be included as conditions of approval.

As conditioned, staff does not anticipate any changes or long-term negative impacts to the existing transportation system.

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

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

Staff does 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 areas within the project area, however, staff have identified some potential impacts which must be minimized and mitigated under this criterion. As discussed above, the project is an environmentally important area and care must be taken to ensure that construction activities, equipment, and vehicles do not inadvertently cause pollution. To prevent the fueling of construction vehicles from resulting in pollution from fuel spills, staff recommends as a condition of approval that the applicant must verify the fueling practices that will be used during construction. If employing temporary above-ground storage tanks, a spill containment plan will be required at building permit and plans must identify sizes and locations of the tanks. If refueling from mobile trucks, spill kits must be kept in vehicles or on site. Biodegradable hydraulic fluids must be used in all equipment and machinery operating in surface waters. Finally, all equipment must be cleaned and disinfected in accordance with state Division of Parks and Wildlife protocols to prevent aquatic invasive species and noxious weeds before entering the construction site.

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

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

Although the proposed project areas will be visible from adjacent properties and the public rights of way, staff finds the proposed earthwork for the ecological restoration will have very minimal visual impacts. The Comprehensive Plan also indicates a View Protection Corridor associated with State Highway 7 (with scores ranging from 2.47 to 2.85 out of 5) and Old St. Vrain Road (with a score of 3.21 out of 5). These view protection scores are associated with the geological formations in the area. Given that all of the work is proposed to be at ground level, staff does not have concerns that the proposed earthwork will result in any undue visual impacts.

Revegetation of the area as required under Criterion 4 above will ensure there are no long-term undue visual impacts, and staff do not have concerns that the proposed improvements will change the existing visual character of the area.

Therefore, as conditioned in Criterion 4 above, staff finds this criterion can be met.

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

Staff do not anticipate that the proposed restoration will be detrimental to the health, safety, or welfare of present or future inhabitants of Boulder County. No departments or agencies have responded with any comments or concerns related to this criterion.

Therefore, staff finds this criterion is met.

(11) *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;*

While the proposed work involves a significant amount of earthwork, all of the proposed cut and fill are on the subject parcels (e.g. – no materials imported or exported). Additionally,

staff have not identified any excessive consumption and inefficient use of energy, materials, minerals, water, land, and other finite resources; no referral agencies have responded with any such concerns.

Therefore, staff finds this criterion is met.

- (12) ***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.***

Significant portions of the subject parcels are located in identified geological hazard areas (see Figure 8 below). However, all of the proposed work locations fall outside of these areas. As such, staff do not anticipate any unreasonable risk of harm to people or property – both onsite and in the surrounding area – from natural hazards as a result of this proposal.

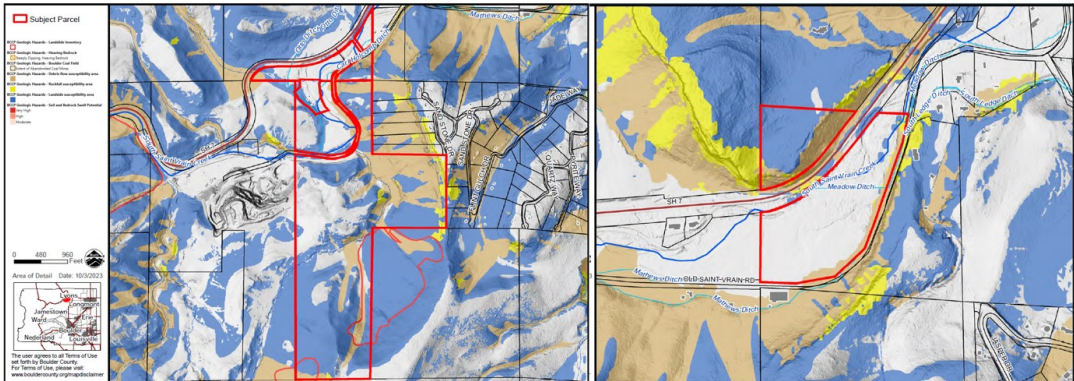


Figure 8. Geological Hazards map, with US area is on the left and the DS area on the right. Areas indicated in blue are Landslide Susceptibility Areas; areas indicated in tan are Debris Flow Susceptibility Areas; and areas in yellow are Rockfall Susceptibility Areas.

As discussed above, the subject parcels are located within the Floodplain Overlay District and, as conditioned in Criterion 1 above, must obtain a Floodplain Development Permit (FDP). The FDP process will help to ensure that the work being carried out does not result in any unreasonable risk of harm to people or property.

Therefore, as conditioned in Criterion 1 above, staff find that this criterion is 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 proposed project will alter the existing drainage patterns on the subject parcels; however, as discussed above, the changes are anticipated to be very minimal in nature and are intended to improve existing drainage patterns. Per the referral response from the Access & Engineering team, due to the project involving more than one acre of disturbance and the location of the construction activity to in relation to watercourses, the project will require a Stormwater Quality Permit (SWQP). Additionally, construction in watercourses require a high standard of care and must comply with Section 1302.1 of the Boulder County Storm Drainage Criteria Manual (SDCM). As such, staff recommends as a condition of approval that the applicants obtain the required SWQP prior to any work commencing and that the work comply with the SDCM.

Therefore, as conditioned, staff finds this criterion is met.

RECOMMENDATION

Staff has determined that the proposal can meet all the applicable criteria of the Boulder County Land Use Code for Limited Impact Special Use Review. Therefore, staff recommends that the Board of County Commissioners ***conditionally approve*** **Docket LU-24-0002: Old St. Vrain Road Reach Restoration** with 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 including but not limited to, building and grading permits, design wind and snow loads, ignition-resistant construction and defensible space, observation reports, and plan review.
2. ***During construction***, the design professional responsible for the design or a similarly qualified Colorado-licensed design professional must observe the grading and submit a stamped report to Building Safety & Inspection Services for review and approval. The final report must state that the work has been completed in substantial conformance with the approved engineered plans.
3. The proposed earthwork and grading related to the ecological restoration is located in the Floodplain Overlay (FO) District. A Floodplain Development Permit (FDP) is required.
 - a. ***Prior to Building/Grading Permit application submittal***, the applicant's engineer must contact FloodplainAdmin@bouldercounty.gov to obtain the effective model for South Saint Vrain Creek. The FDP application will require one of the following, which must be supported by a hydraulic model and report certified by a Colorado licensed Professional Engineer (P.E.) in accordance with Article 4-404.2.E of the Boulder county Land Use Code:
 - i. A letter certified by a Colorado registered Professional Engineer stating that the project will not cause any rise in regulatory 100-year water surface elevations;
 - ii. An approved Conditional Letter of Map Revision (CLOMR) from FEMA; or
 - iii. An approved Boulder County Floodway Review.
 - b. ***At the time of Building/Grading Permit application submittal***, the applicant must email a Floodplain Development Permit (FDP) application to FloodplainAdmin@bouldercounty.gov. The FDP application must contain the following:
 - i. A Signed FDP application form;

- ii. A Site Plan showing the proposed building and all staging/storage areas in relation to regulatory floodplain and property boundaries;
 - iii. Construction design, stamped, signed, and dated by a Colorado-licensed Professional Engineer (P.E.)
 - iv. A hydraulic model and P.E.-stamped report demonstrating floodplain impacts, as described above.
 - c. ***Prior to issuance of any Floodplain Development Permit***, the applicant must submit to Boulder County documentation demonstrating coverage under a USACE Nationwide or Individual 404 permit.
 - d. ***Prior to issuance of any Floodplain Development Permit***, the applicant must obtain a Colorado Department of Public Health and Environment Dewatering Permit, if required.
 - e. ***Prior to issuance of any Floodplain Development Permit***, the Community Planning & Permitting Department – Floodplain Management Program must review and approve the location of all construction staging and/or stockpiling areas. All staging and stockpiling areas must avoid the regulatory floodplain unless it is demonstrated that doing so is unavoidable. Construction staging and/or stockpiling in the regulatory floodway will not be permitted without an alternatives evaluation and an emergency evacuation plan approved by the Community Planning & Permitting Department – Floodplain Management Program.
4. ***At the time of Grading Permit application submittal***, the applicant must provide a copy of the Colorado Department of Public Health and Environment Stormwater General Permit to Community Planning & Permitting.
 5. The applicant shall work with county staff to coordinate monitoring of stormwater management measures.
 6. ***Prior to the issuance of any Grading Permit***, the applicant must provide documentation of clearance to proceed (approval or documentation that there is no federal nexus) from the Army Corps of Engineers.
 7. ***Prior to the submission of a Grading Permit application***, the applicant shall submit a Stormwater Management Plan for review and approval by Boulder County Public Works Department. The SWMP will include, but not be limited to, erosion and sediment control measures, stockpile and staging management practices, and general pollution prevention practices.
 8. ***Prior to earthwork commencing***, limits of disturbance must be clearly identified in the field. Areas of existing vegetation that are to be protected should be delineated in the field so that heavy machinery is prevented from entering the areas and disturbance is avoided. This is often accomplished with orange construction fencing, rather than silt fencing. The former is less expensive, easier to install, and reusable. If on-the-ground delineation is too extensive, a suitable alternative may be proposed for county approval. If individual mature trees are to be protected, the field technique to be used must be included in the final construction notes.
 9. ***At building or grading permit submittal***, a Revegetation and Erosion Control Plan must be submitted for approval. This plan must include native species to be used, an explanation of how topsoils will be stockpiled, mapped delineation of all disturbance areas (including all construction staging areas), locations of erosion control measures around disturbed areas,

procedures for monitoring and maintenance revegetation, weed control measures, and matting requirements, if necessary. If straw mulch or straw bale barriers are used, all straw must be certified weed-free. Hay may not be used as it contains aggressive pasture grass seed.

Prior to the final inspection, the full installation of the approved Revegetation and Erosion Control plan must be inspected and approved by the Community Planning & Permitting 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.
10. **At building permit**, submit revised plans that indicate the location of all construction accesses from Old St. Vrain Road.
 11. **At building permit**, submit proof of authorization from Colorado Department of Transportation for all accesses from State Highway 7.
 12. **During construction**, all construction equipment, materials, machinery, dumpsters, and other items must be staged on the subject property; no items are permitted to be stored or staged on State Highway 7 or Old St. Vrain Road.
 13. **During construction**, construction traffic to and from the subject parcels is limited to between 8:30 am and 4:00 pm, Monday through Friday, to avoid conflicting with peak travel times on State Highway 7 or Old St. Vrain Road.
 14. **At building or grading permit submittal**, the applicant must verify the fueling practices that will be used during construction. If employing temporary above-ground storage tanks, a spill containment plan will be required at building permit and plans must identify sizes and locations of the tanks. If refueling from mobile trucks, spill kits must be kept in vehicles or on site.
 15. Biodegradable hydraulic fluids must be used in all equipment and machinery operating in surface waters.
 16. All equipment must be cleaned and disinfected in accordance with state Division of Parks and Wildlife protocols to prevent aquatic invasive species and noxious weeds before entering the construction site.
 17. **Prior to building permit**, the applicant must obtain a Boulder County Stormwater Quality Permit (SMQP). Please visit the county's stormwater website <https://bouldercounty.gov/transportation/permits/stormwater-quality-permit/> or contact tdstormwater@bouldercounty.org for more information.

18. **At building permit**, plans submitted for permitting must demonstrate compliance with Section 1302.1 of the Boulder County Storm Drainage Criteria Manual.
19. The applicants are subject to the terms, conditions, and commitments of record and in the file for docket **LU-24-0002: Old St. Vrain Road Reach Restoration**.



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					
<input type="checkbox"/> Appeal <input type="checkbox"/> Correction Plat <input type="checkbox"/> Exemption Plat <input type="checkbox"/> Final Plat <input checked="" type="checkbox"/> Limited Impact Special Use <input type="checkbox"/> Limited Impact Special Use Waiver <input type="checkbox"/> Location and Extent		<input type="checkbox"/> Modification of Site Plan Review <input type="checkbox"/> Modification of Special Use <input type="checkbox"/> Preliminary Plan <input type="checkbox"/> Resubdivision (Replat) <input type="checkbox"/> Rezoning		<input type="checkbox"/> Road Name Change <input type="checkbox"/> Road/Easement Vacation <input type="checkbox"/> Site Plan Review <input type="checkbox"/> Site Plan Review Waiver <input type="checkbox"/> Sketch Plan <input type="checkbox"/> Special Use/SSDP		<input type="checkbox"/> Special Use (Oil & Gas development) <input type="checkbox"/> State Interest Review (1041) <input type="checkbox"/> Subdivision Exemption <input type="checkbox"/> Variance <input type="checkbox"/> Other:	
Location(s)/Street Address(es) 31074 S. St. Vrain Road, 0 Old St. Vrain Road, 0 Old St. Vrain Road							
530 Old St. Vrain Road							
Subdivision Name TR, NBR 962 Lyons Area							
Lot(s) na	Block(s) na	Section(s) 24, 25 19	Township(s) 3N 3N	Range(s) 71 70			
Area in Acres 15.5	Existing Zoning A-Agricultural	Existing Use of Property Open Space, Family Retreat		Number of Proposed Lots na			
Proposed Water Supply na			Proposed Sewage Disposal Method na				

Applicants:

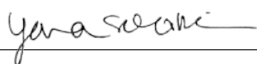
Applicant/ Property Owner Yana Sorokin / The Watershed Center			Email ysorokin@watershed.center		
Mailing Address P.O. Box 1074					
City Niwot	State CO	Zip Code 80544-1074	Phone 303.621.5780		
Applicant/Property Owner/Agent/Consultant not applicable			Email		
Mailing Address					
City	State	Zip Code	Phone		
Agent/Consultant Mike Lighthiser / Biohabitats			Email mlighthiser@biohabitats.com		
Mailing Address 383 Corona Street, Suite 580					
City Denver	State CO	Zip Code 80218	Phone 720.907.6558		

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 	Printed Name Yana Sorokin	Date 1-4-2024
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.



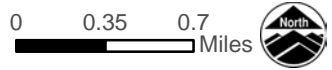
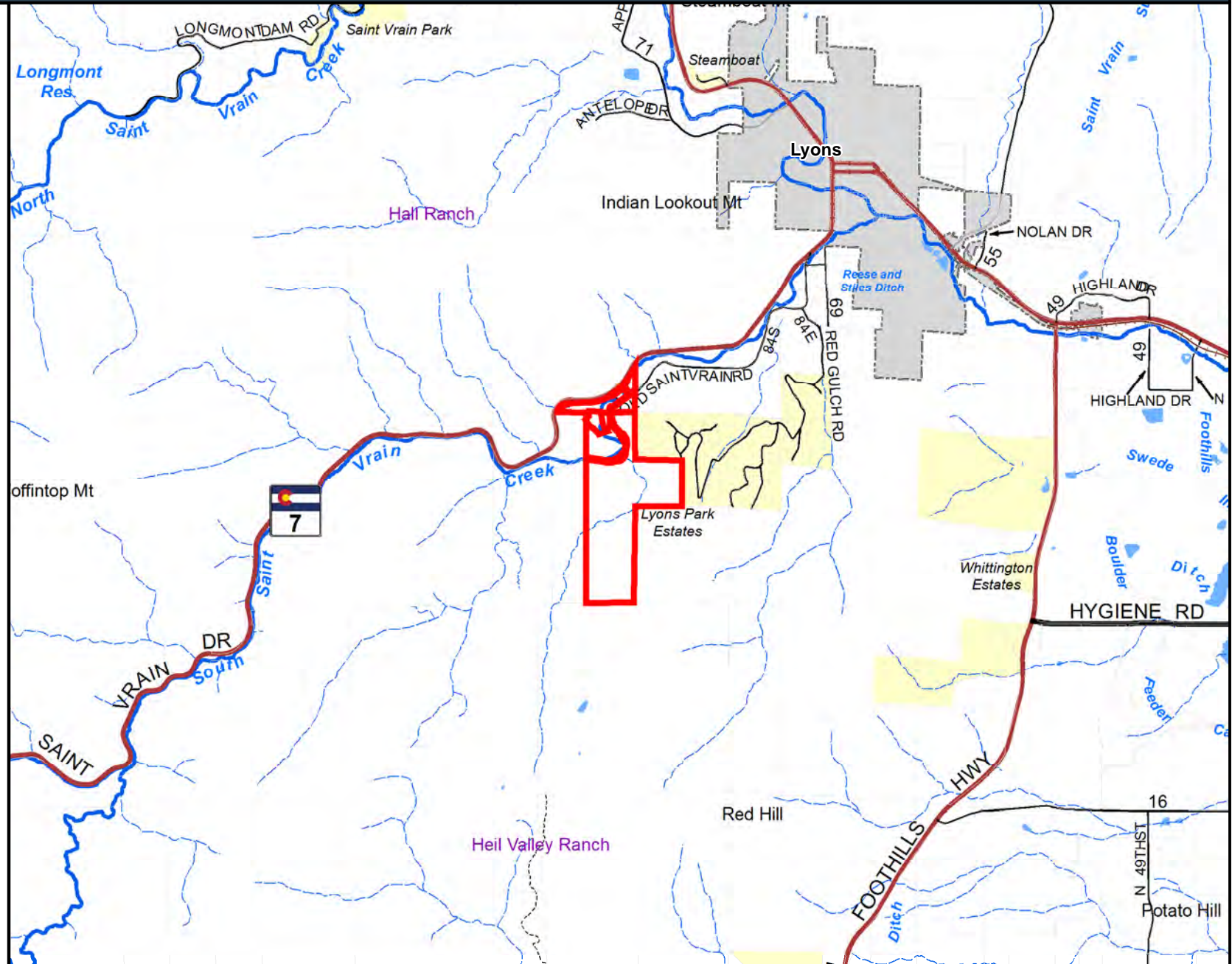
Community Planning & Permitting

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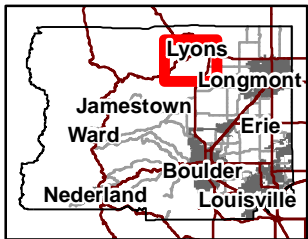
Vicinity

31074 ST VRAIN & 0 OLD ST VRAIN

- Subject Parcel
- Municipalities
- Subdivisions**
- Subdivisions



Area of Detail Date: 10/3/2023



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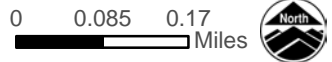
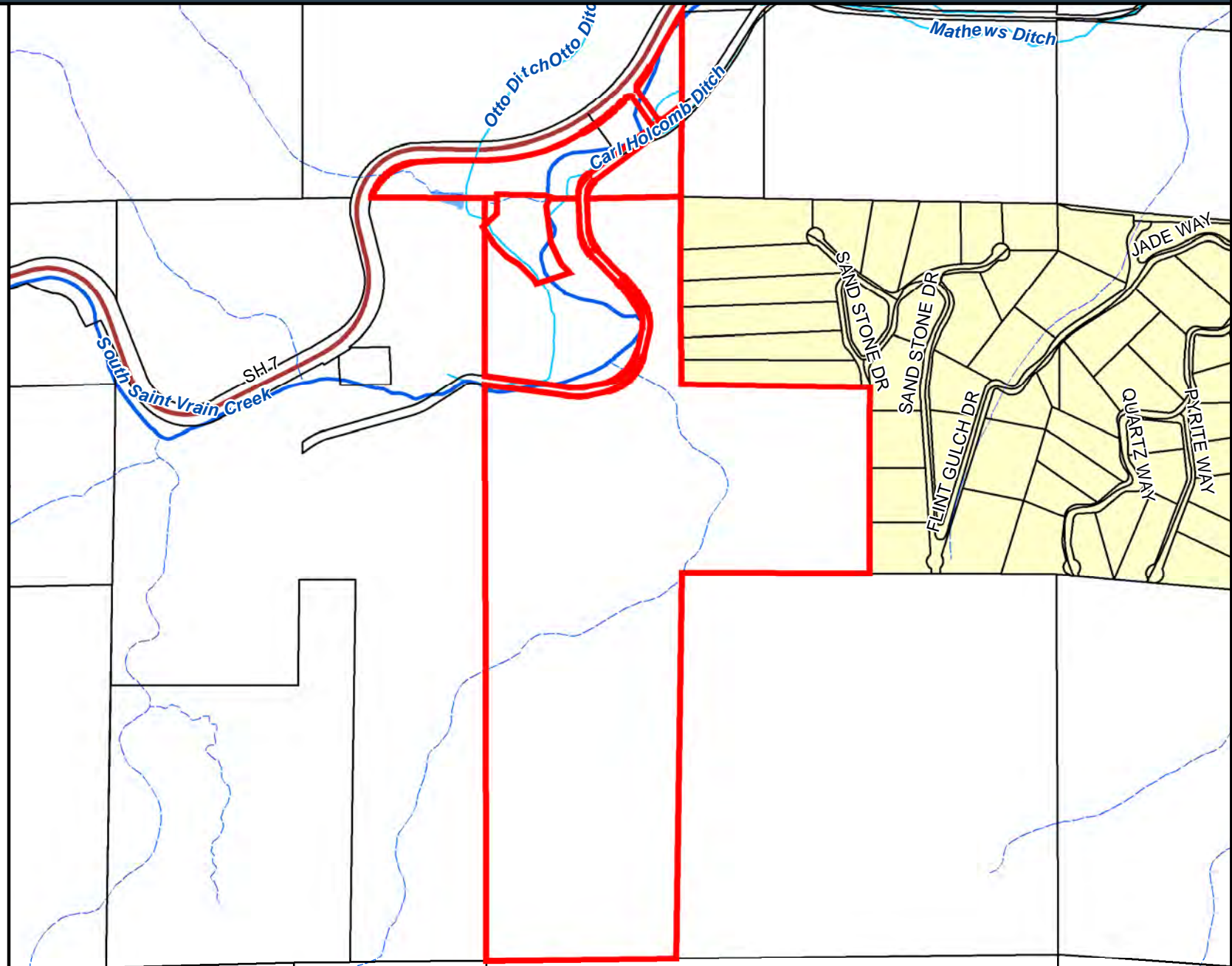
Location

31074 ST VRAIN & 0 OLD ST VRAIN

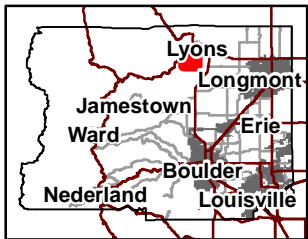
Subject Parcel

Subdivisions

Subdivisions



Area of Detail Date: 10/3/2023



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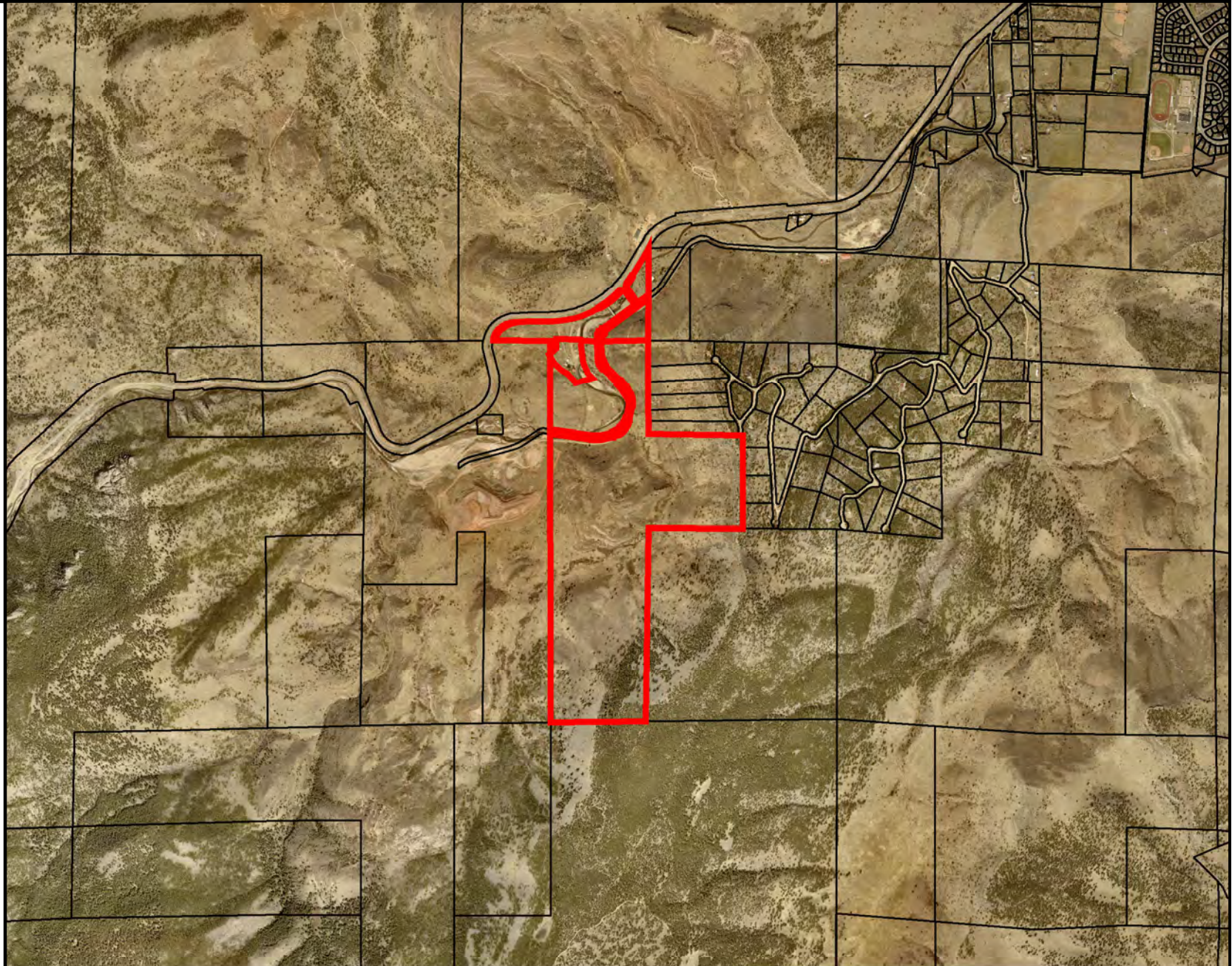
Community Planning & Permitting

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Aerial

31074 ST VRAIN & 0 OLD ST VRAIN

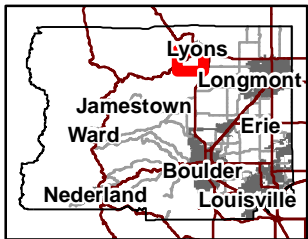
 Subject Parcel



0 0.15 0.3 Miles



Area of Detail Date: 10/3/2023



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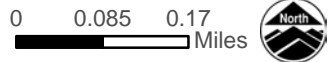
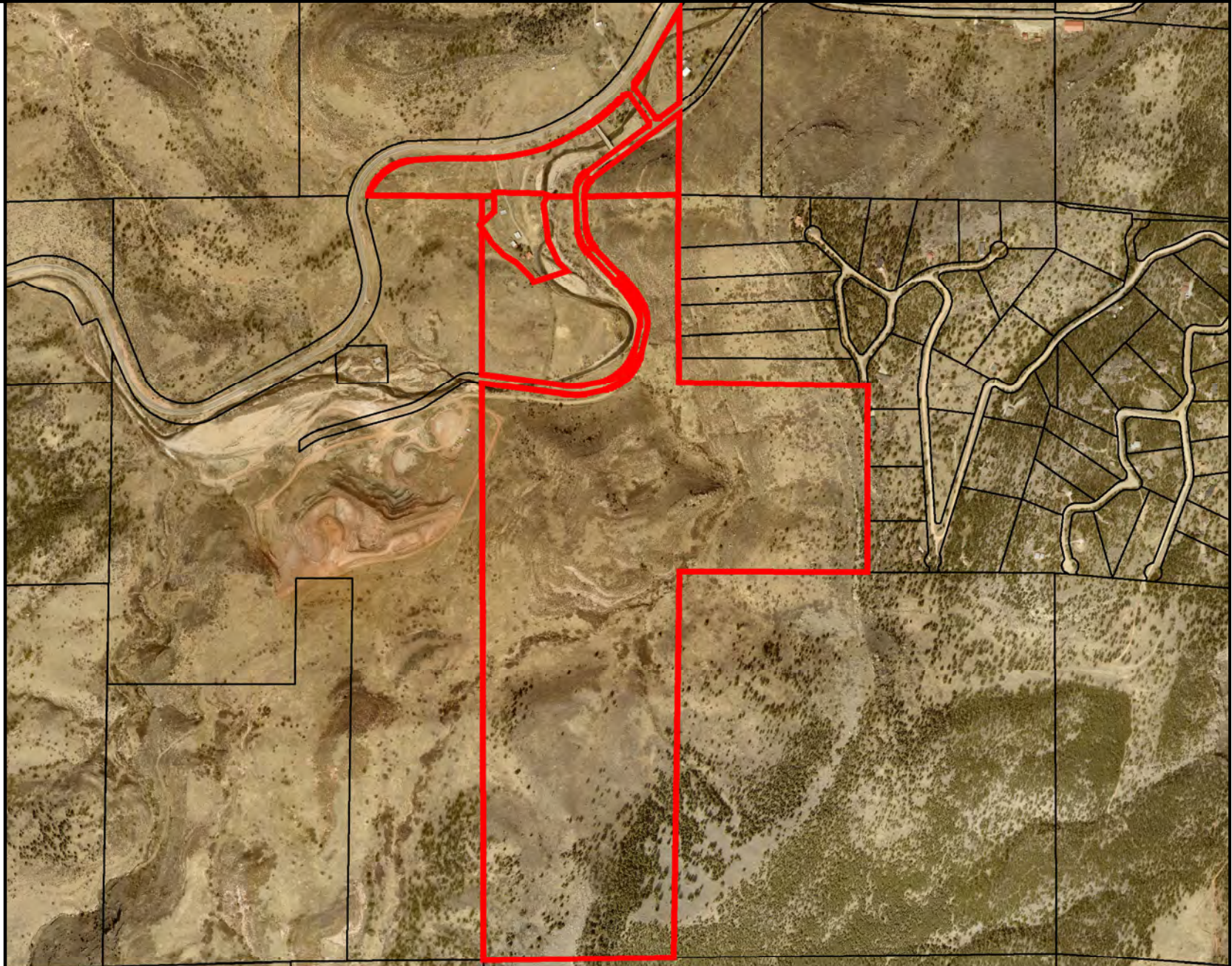
Community Planning & Permitting

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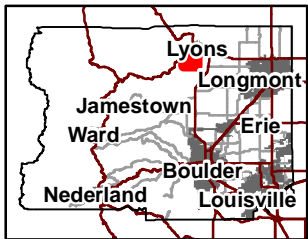
Aerial

31074 ST VRAIN & 0 OLD ST VRAIN

 Subject Parcel



Area of Detail Date: 10/3/2023



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Community Planning & Permitting

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Comprehensive Plan

31074 ST VRAIN & 0 OLD ST VRAIN

Subject Parcel

NLNA Buffer

Archeologically Sensitive Travel Routes

Archeologically Sensitive Travel Routes

Critical Wildlife Habitats

Environmental Conservation Areas

Riparian Areas

Archeologically Sensitive Areas

Archeologically Sensitive Areas

Wetlands

Significant Natural Communities

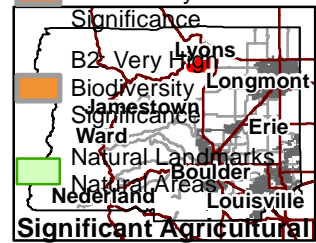
Riparian Habitat Connectors

High Biodiversity Areas

0 0.085 0.17 Miles

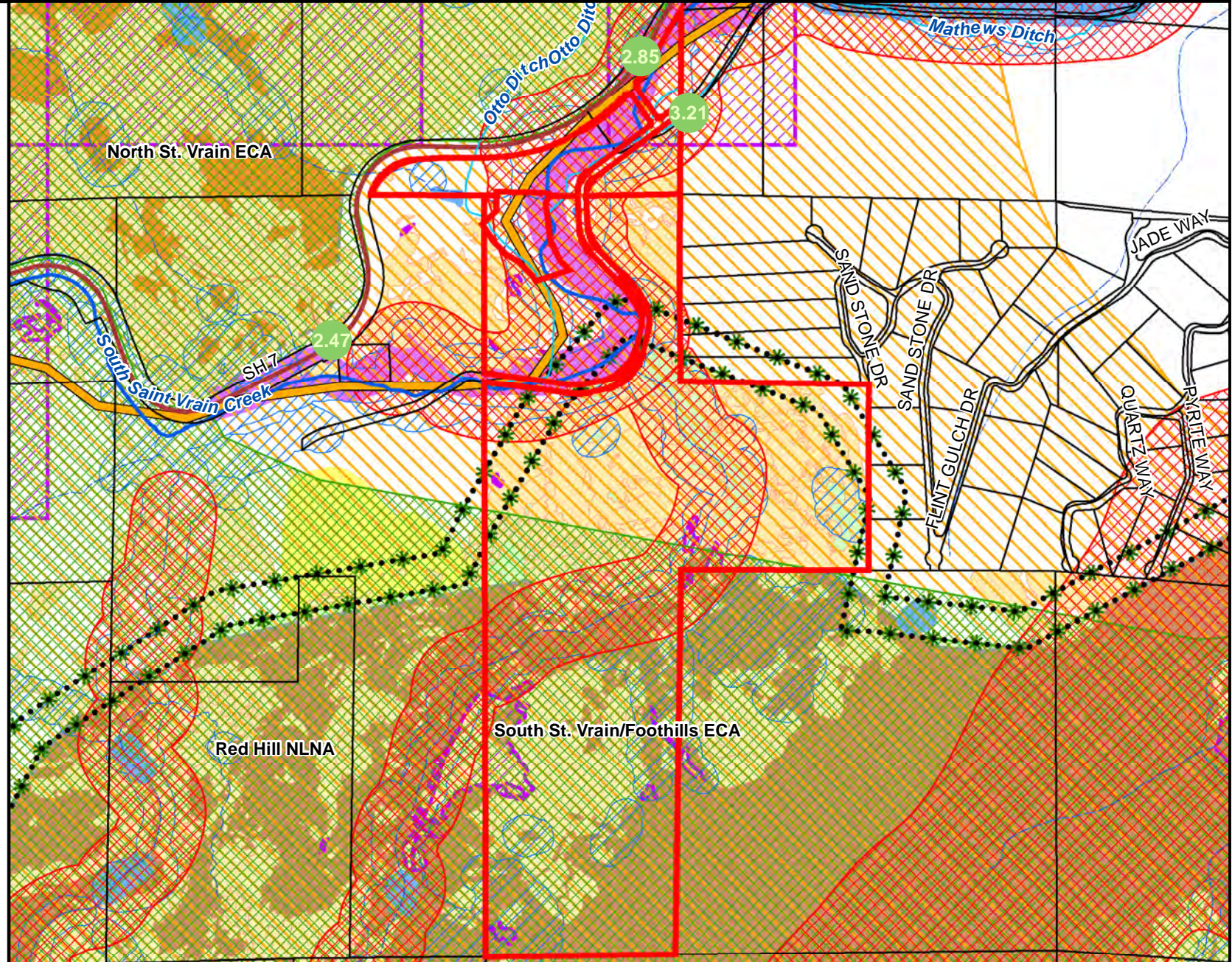


B1: Outstanding Biodiversity
Date: 10/3/2023



Significant Agricultural Land

Land agrees to all Terms of Use set forth by Boulder County. For Terms of Use please visit: www.bouldercounty.org/mapdisclaimer



Rare Plant Areas



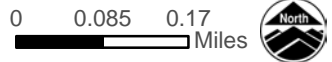
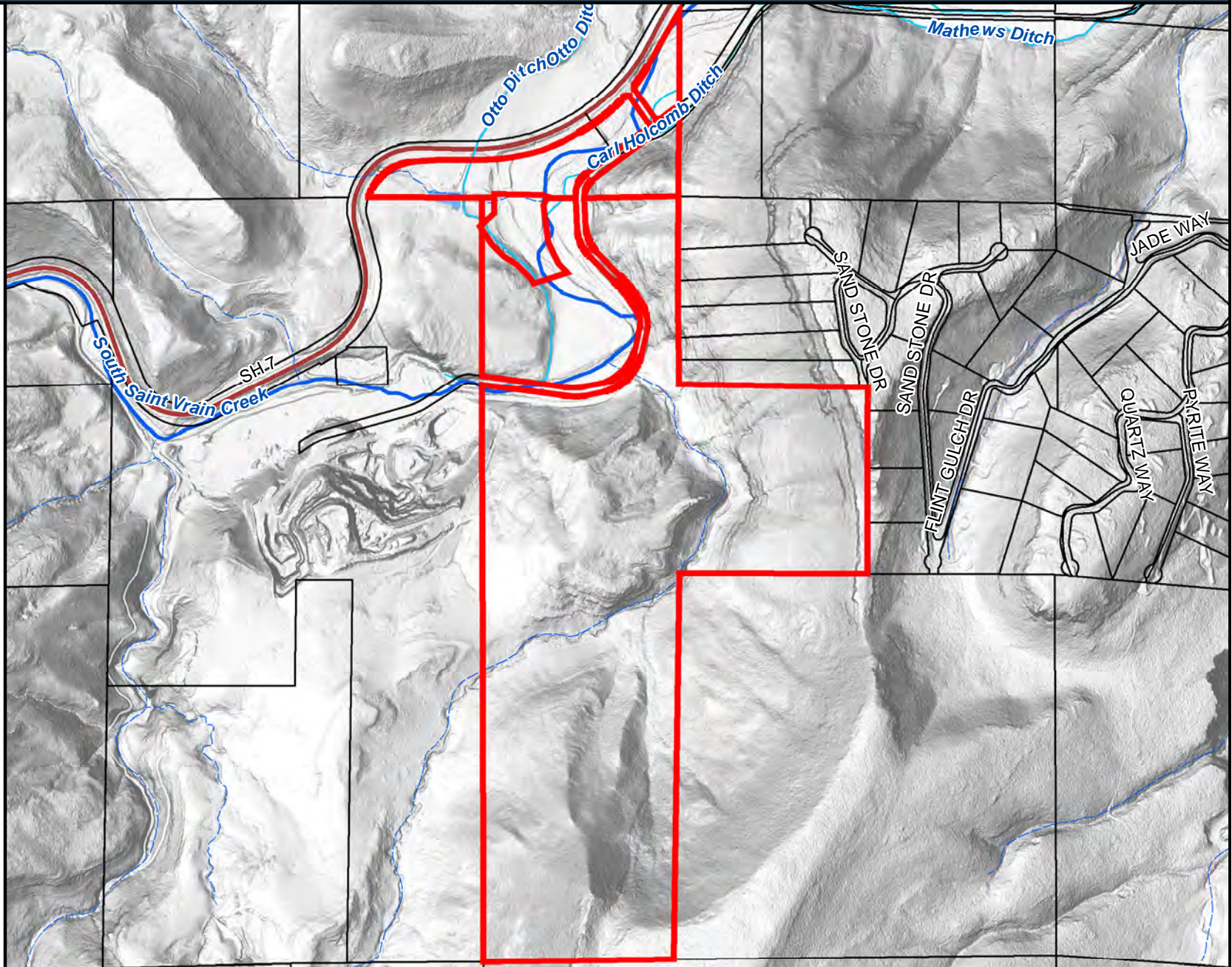
Community Planning & Permitting

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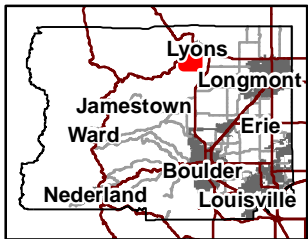
Elevation Contours

31074 ST VRAIN & 0 OLD ST VRAIN

Subject Parcel



Area of Detail Date: 10/3/2023



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Floodplain

31074 ST VRAIN & 0 OLD ST VRAIN

Subject Parcel

Floodplain

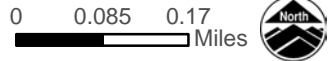
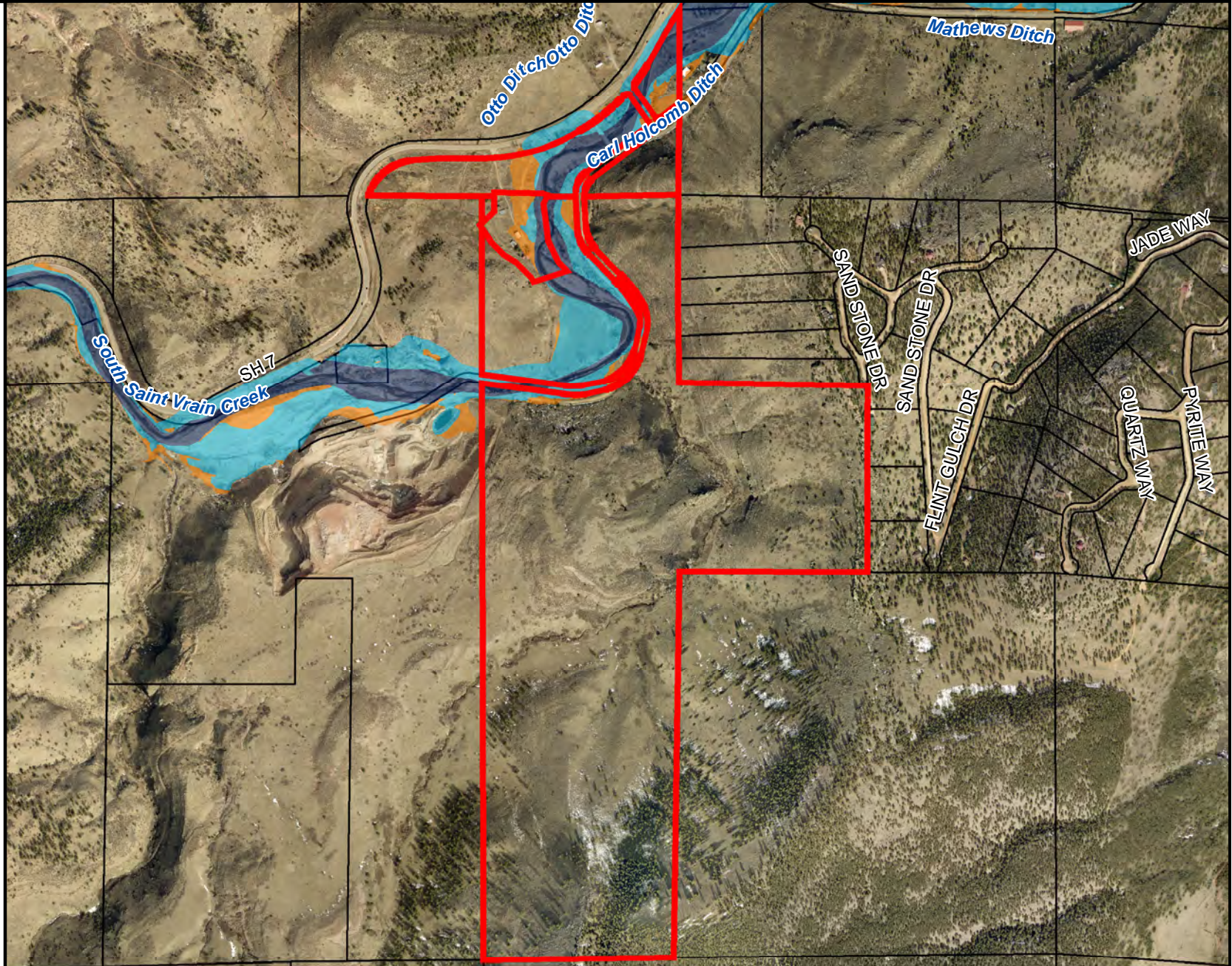
100-Year Floodplain

- Zones AE, A, AO and AH

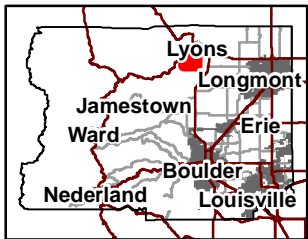
Floodway

500-Year Floodplain

- Zone X500



Area of Detail Date: 10/3/2023



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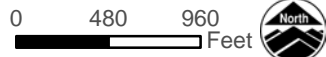
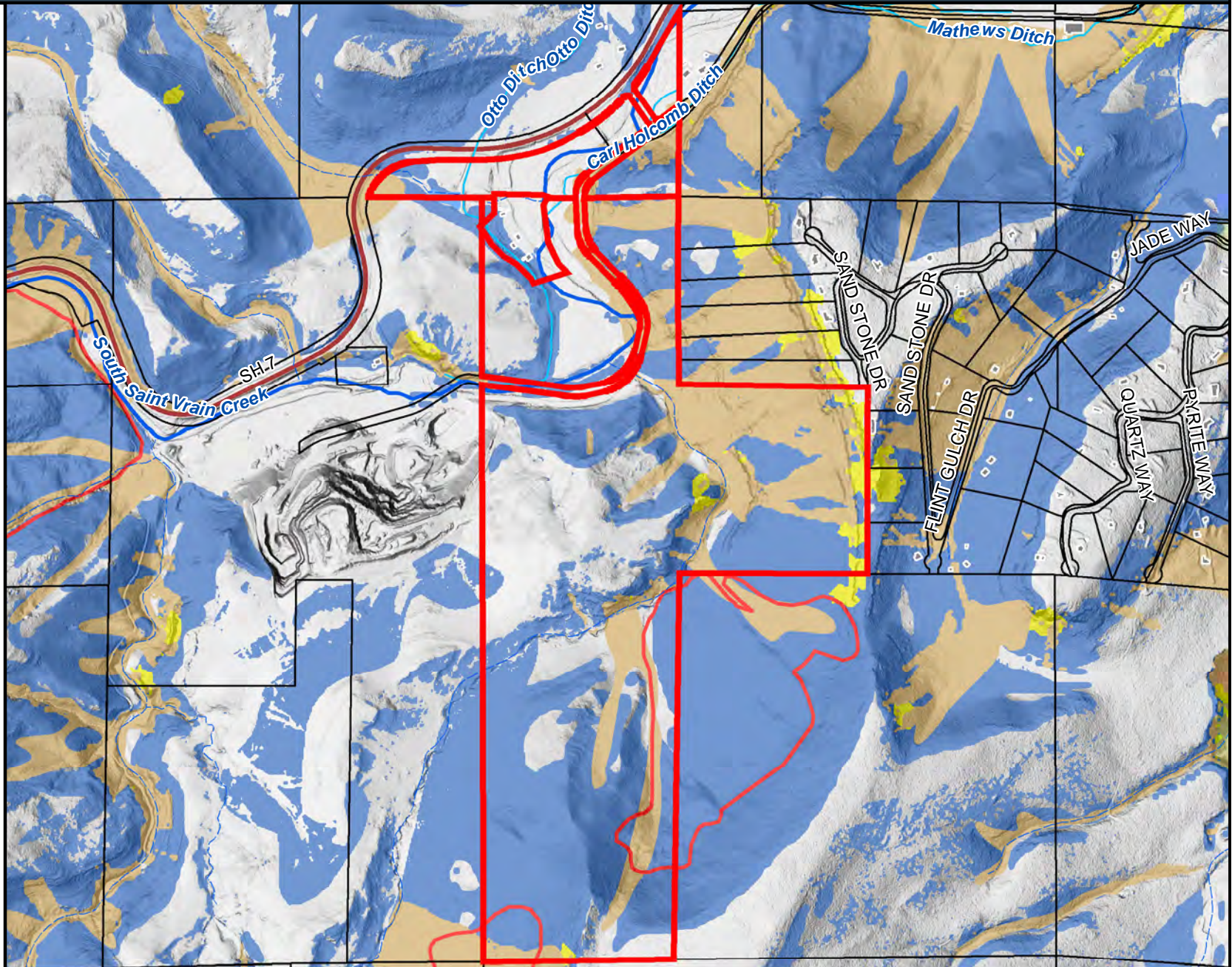
Community Planning & Permitting

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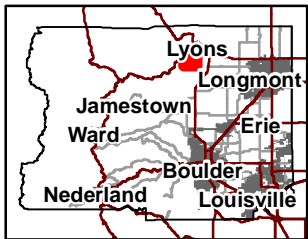
Geologic Hazards

31074 ST VRAIN & 0 OLD ST VRAIN

 Subject Parcel



Area of Detail Date: 10/3/2023



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Planning Areas

31074 ST VRAIN & 0 OLD ST VRAIN

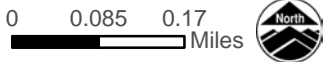
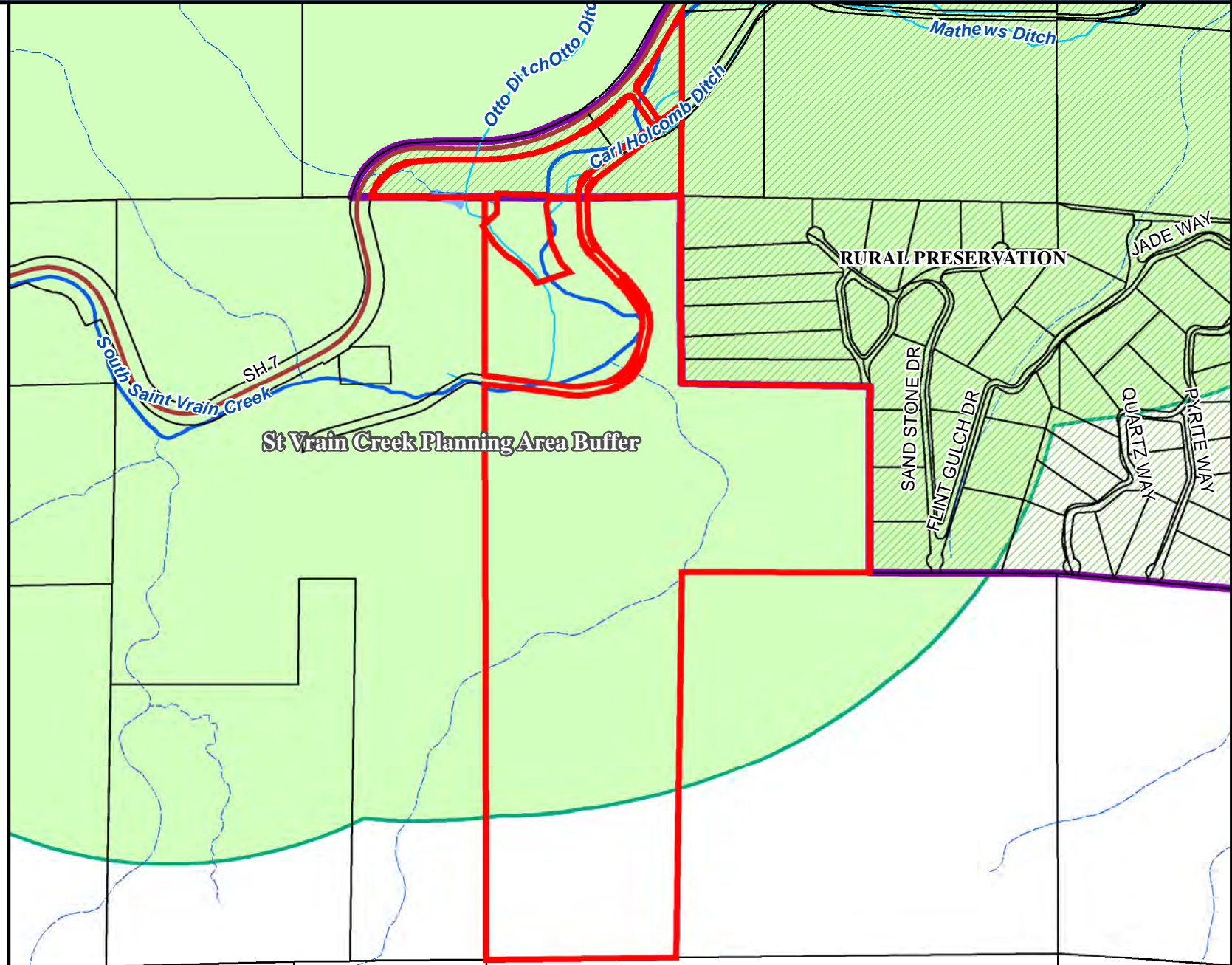
Subject Parcel

Active IGA Boundary

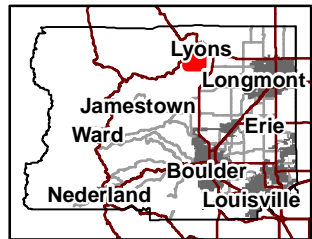
Active IGA Designation

RURAL PRESERVATION

Creek Planning Area



Area of Detail Date: 10/3/2023



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Prebles

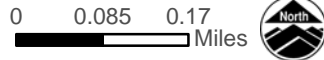
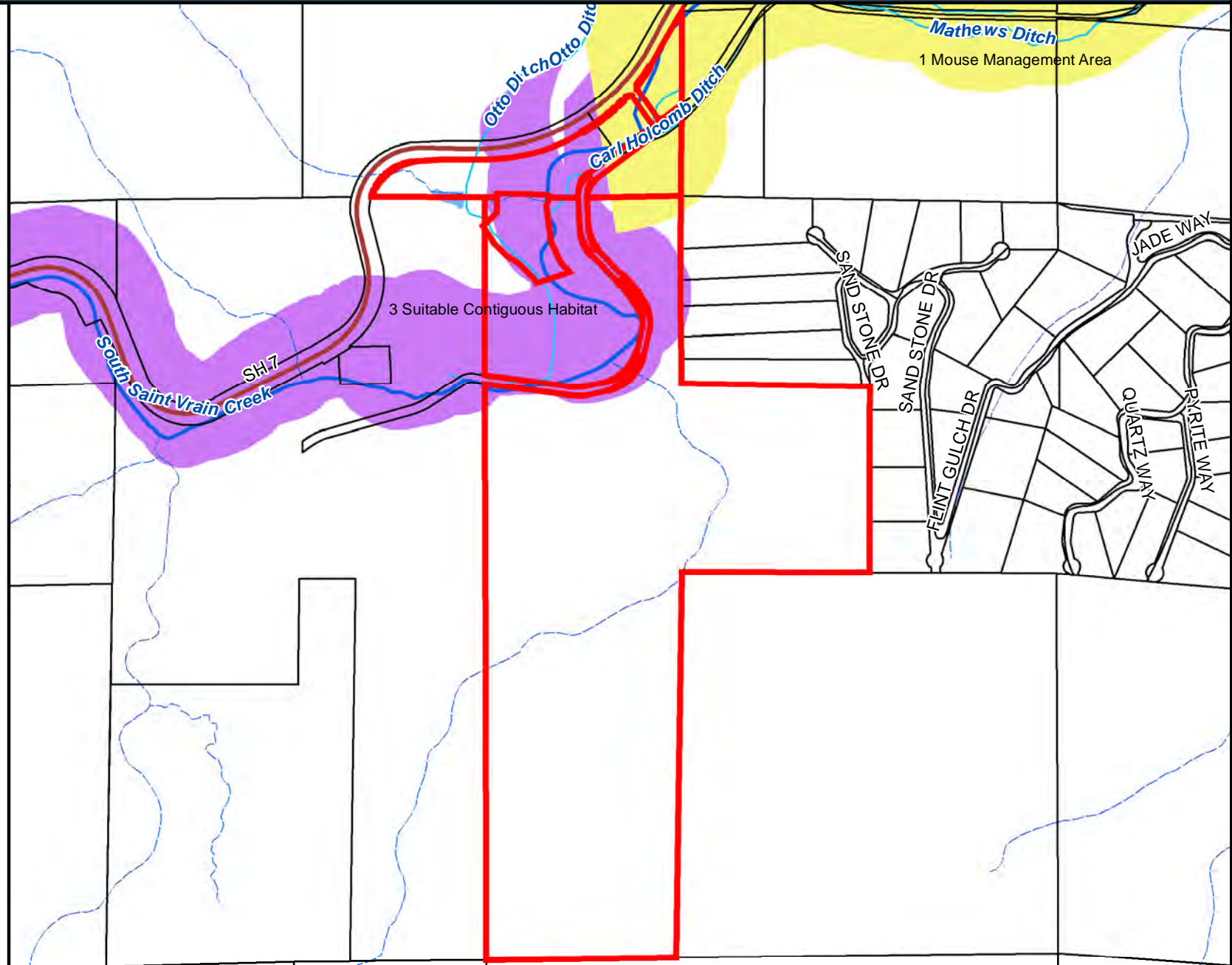
31074 ST VRAIN & 0 OLD ST VRAIN

Subject Parcel

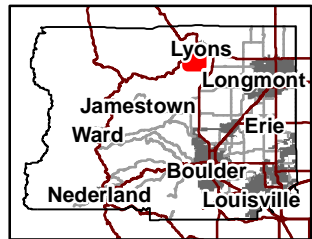
Note: This map's legend shows all Preble's Priority Zones as mapped by Boulder County. The subject property may not contain all zones. Refer to the USFWS Memo dated 9/17/03 to determine when projects require review by USFWS for Preble's.

Prebles

- Zone 1 Mouse Management Area
- Zone 3 Suitable Contiguous Habitat



Area of Detail Date: 10/3/2023



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Public Lands & CEs

31074 ST VRAIN & 0 OLD ST VRAIN

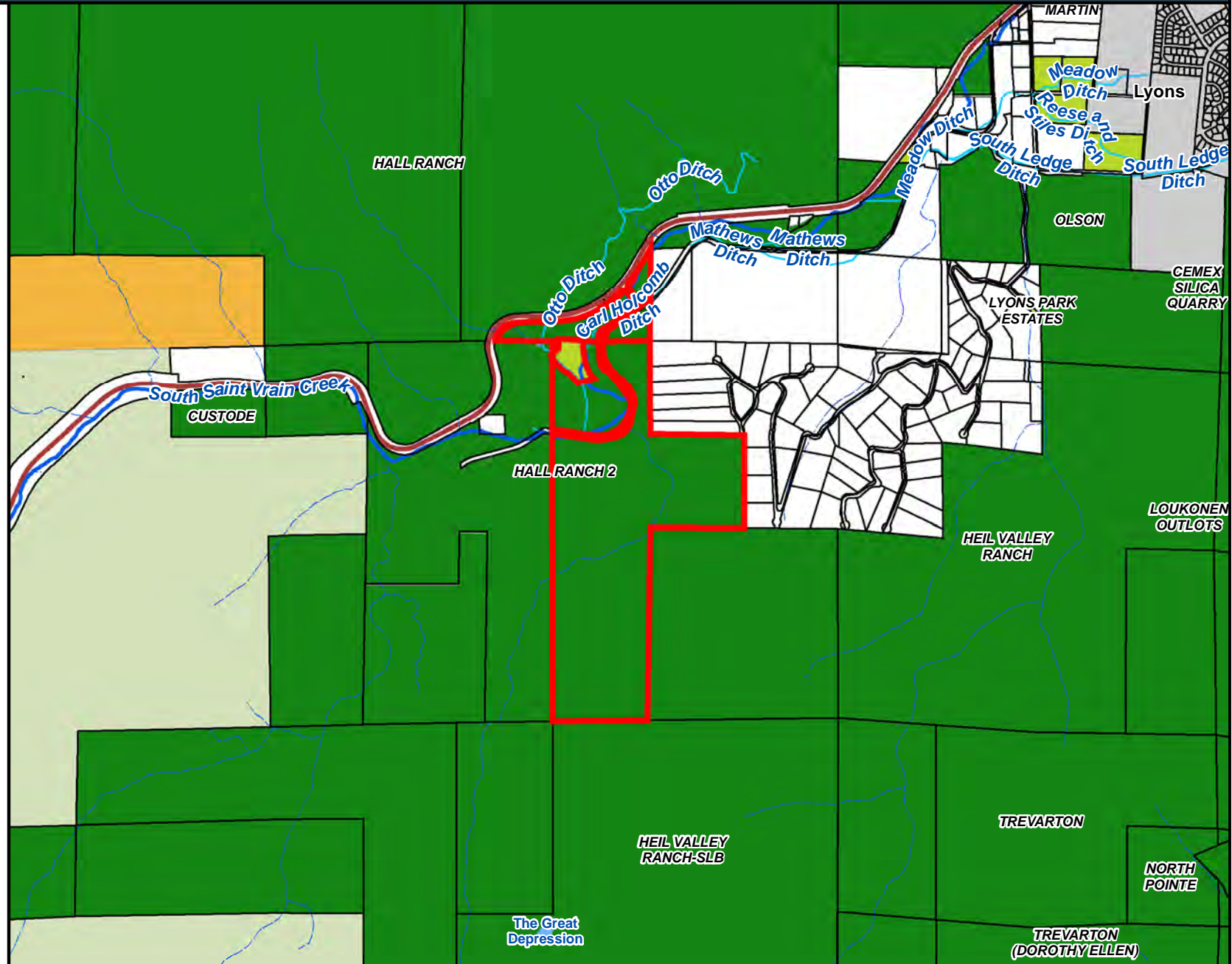
Subject Parcel

Boulder County Open Space

- County Open Space
- County Conservation Easement

Federal Lands

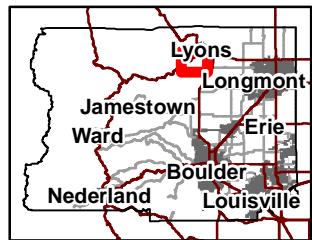
- USFS Land
- BLM Land



0 0.15 0.3 Miles



Area of Detail Date: 10/3/2023



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Community Planning & Permitting

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Zoning

31074 ST VRAIN & 0 OLD ST VRAIN

Subject Parcel

Zoning Districts

Agricultural

Forestry

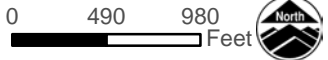
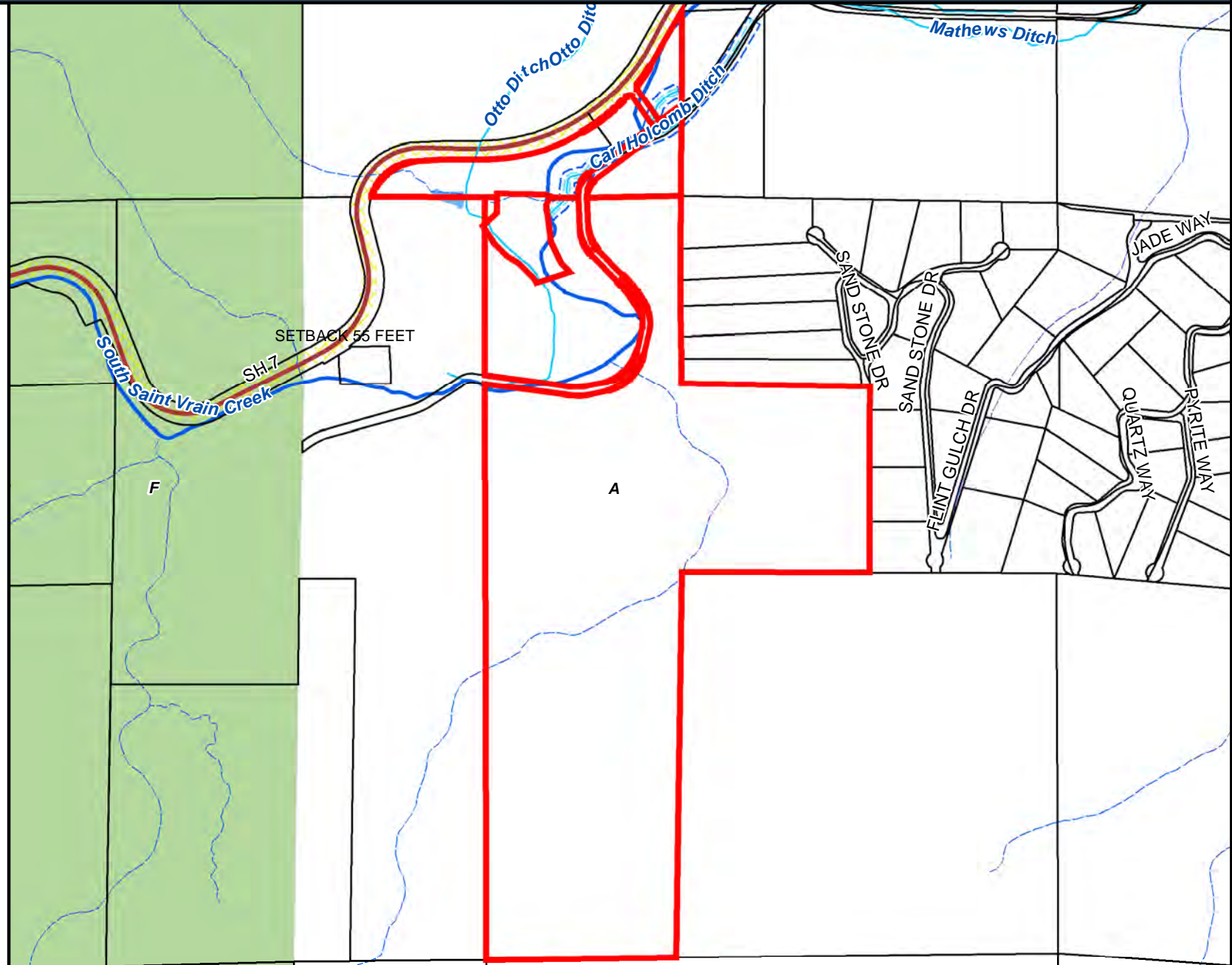
Ditch Setbacks

20 feet

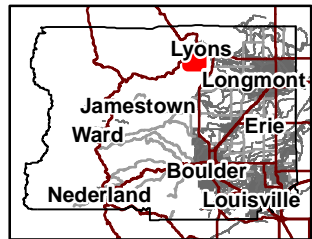
50 feet

Major Road Setbacks

55 feet



Area of Detail Date: 10/3/2023



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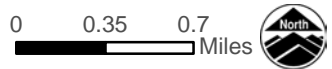
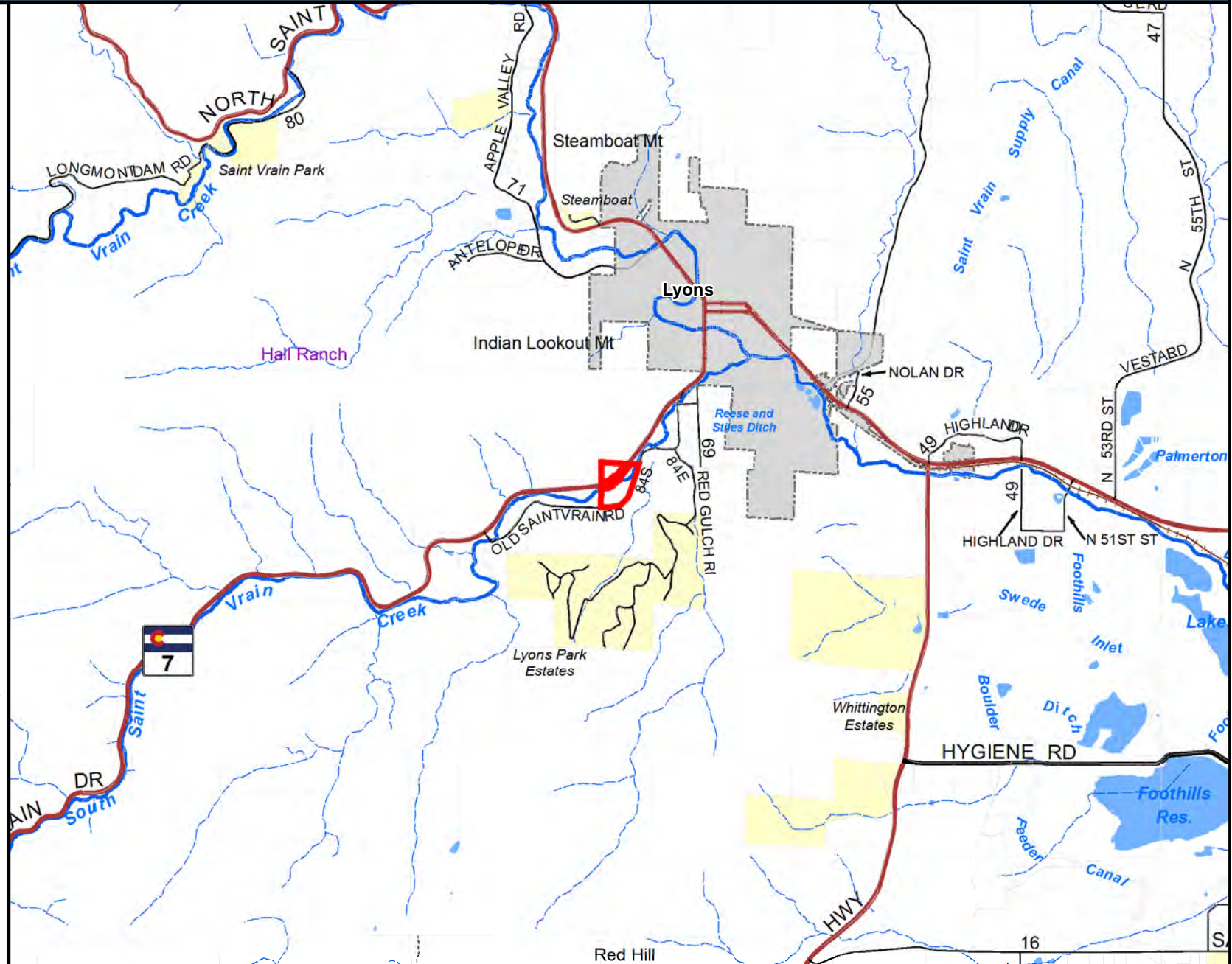
Community Planning & Permitting

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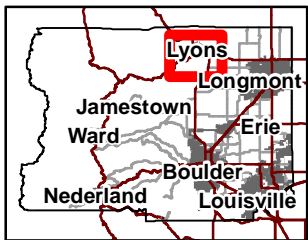
Vicinity

530 Old St Vrain Rd

- Subject Parcel
- Municipalities
- Subdivisions**
- Subdivisions



Area of Detail Date: 11/15/2023



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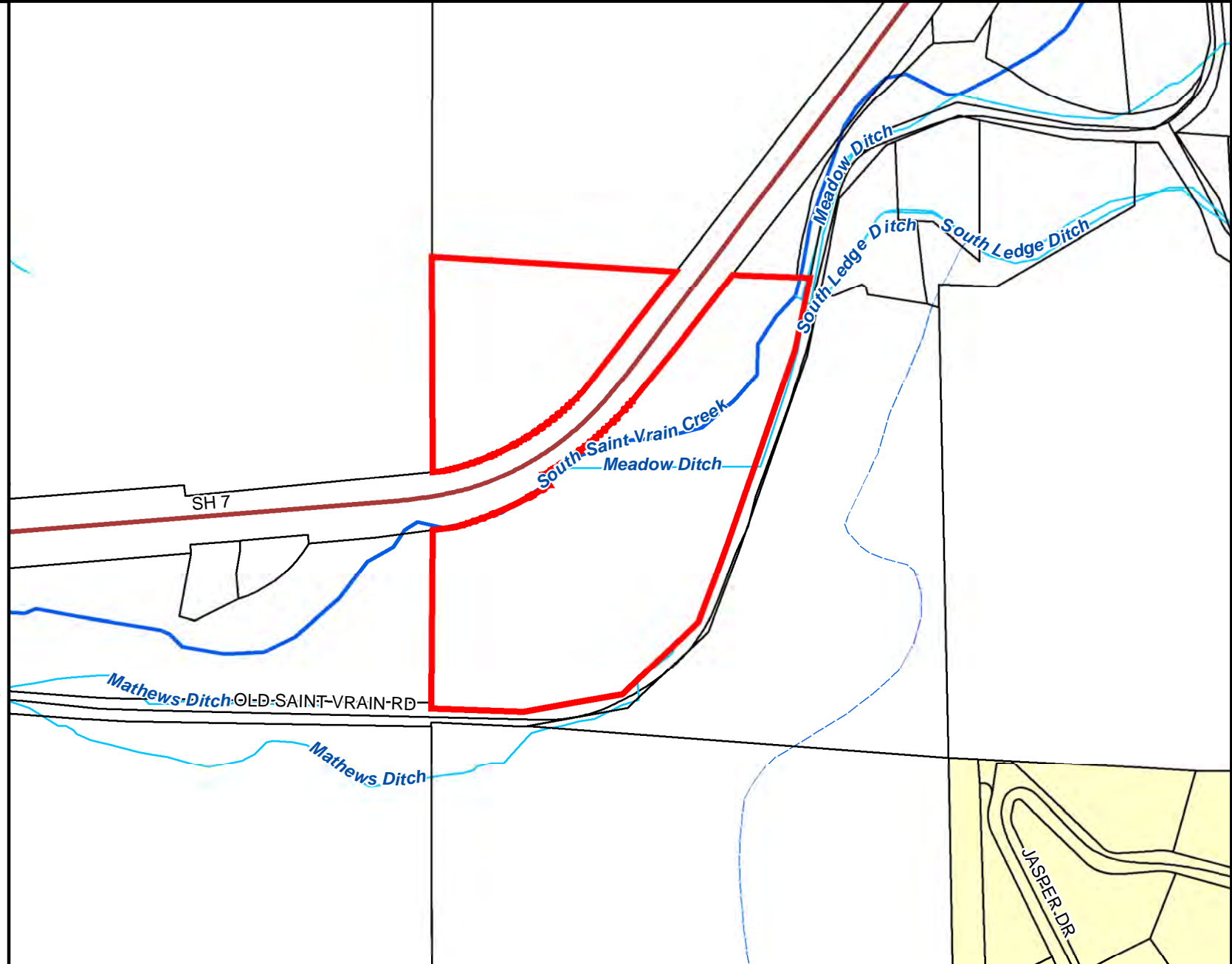
Location

530 Old St Vrain Rd

Subject Parcel

Subdivisions

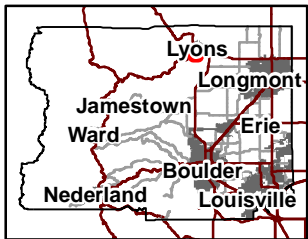
Subdivisions



0 0.035 0.07 Miles



Area of Detail Date: 11/15/2023



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Aerial

530 Old St Vrain Rd

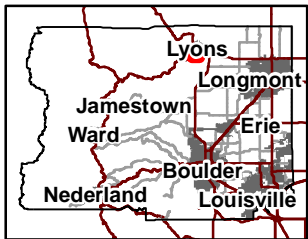
 Subject Parcel



0 0.05 0.1 Miles



Area of Detail Date: 11/15/2023



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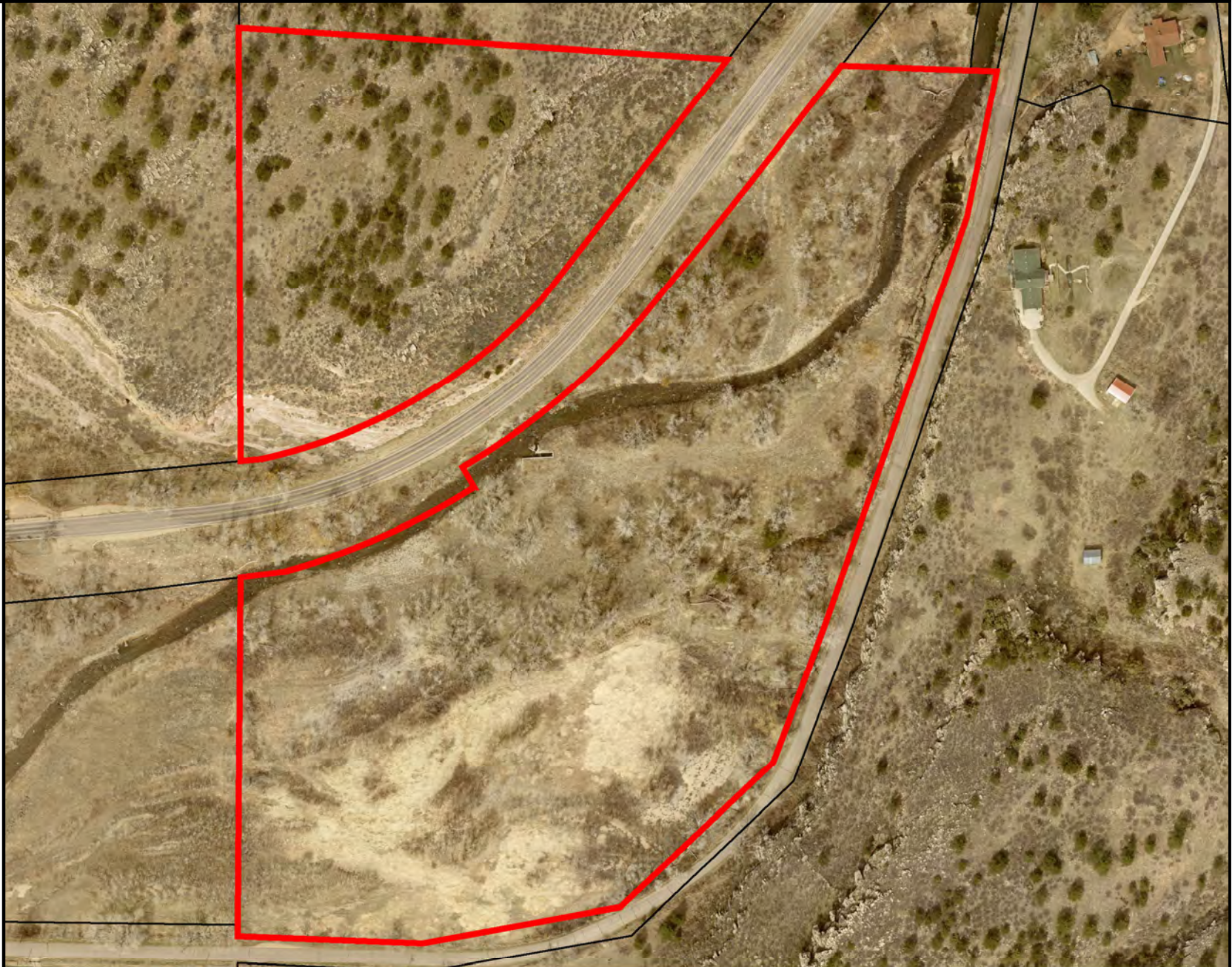
Community Planning & Permitting

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Aerial

530 Old St Vrain Rd

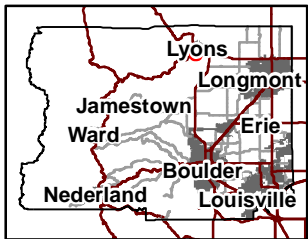
 Subject Parcel



0 0.015 0.03 Miles



Area of Detail Date: 11/15/2023



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Comprehensive Plan

530 Old St Vrain Rd

Subject Parcel

Archeologically Sensitive Travel Routes

Archeologically Sensitive Travel Routes

Critical Wildlife Habitats

Environmental Conservation Areas

Riparian Areas

Wetlands

Significant Natural Communities

Riparian Habitat Connectors

High Biodiversity Areas

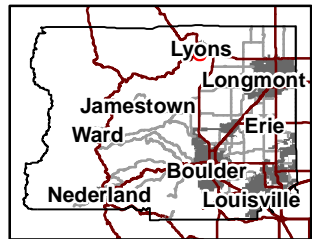
B2: Very High Biodiversity Significance

Rare Plant Areas

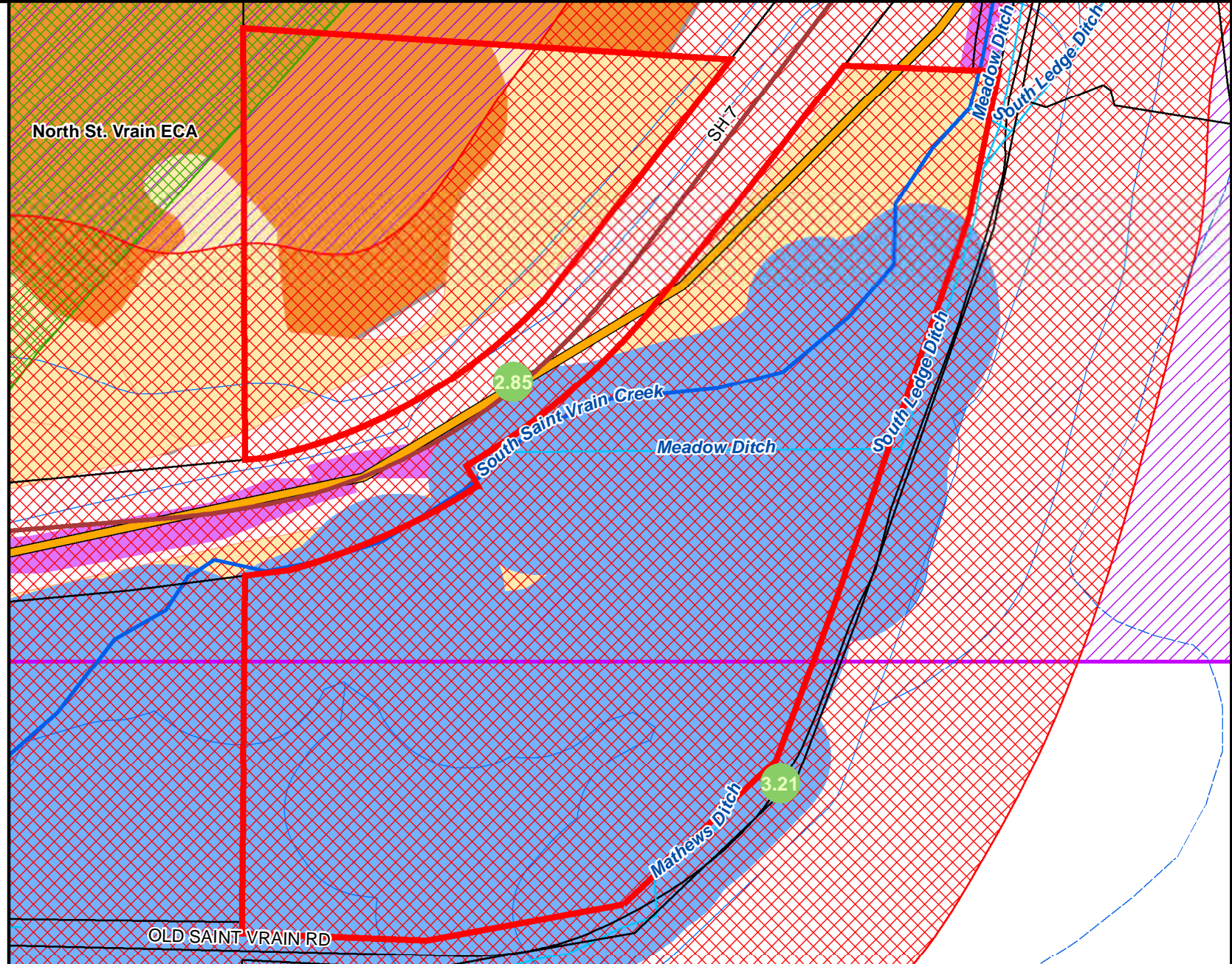
0 0.015 0.03 Miles



Area of Detail Date: 11/15/2023



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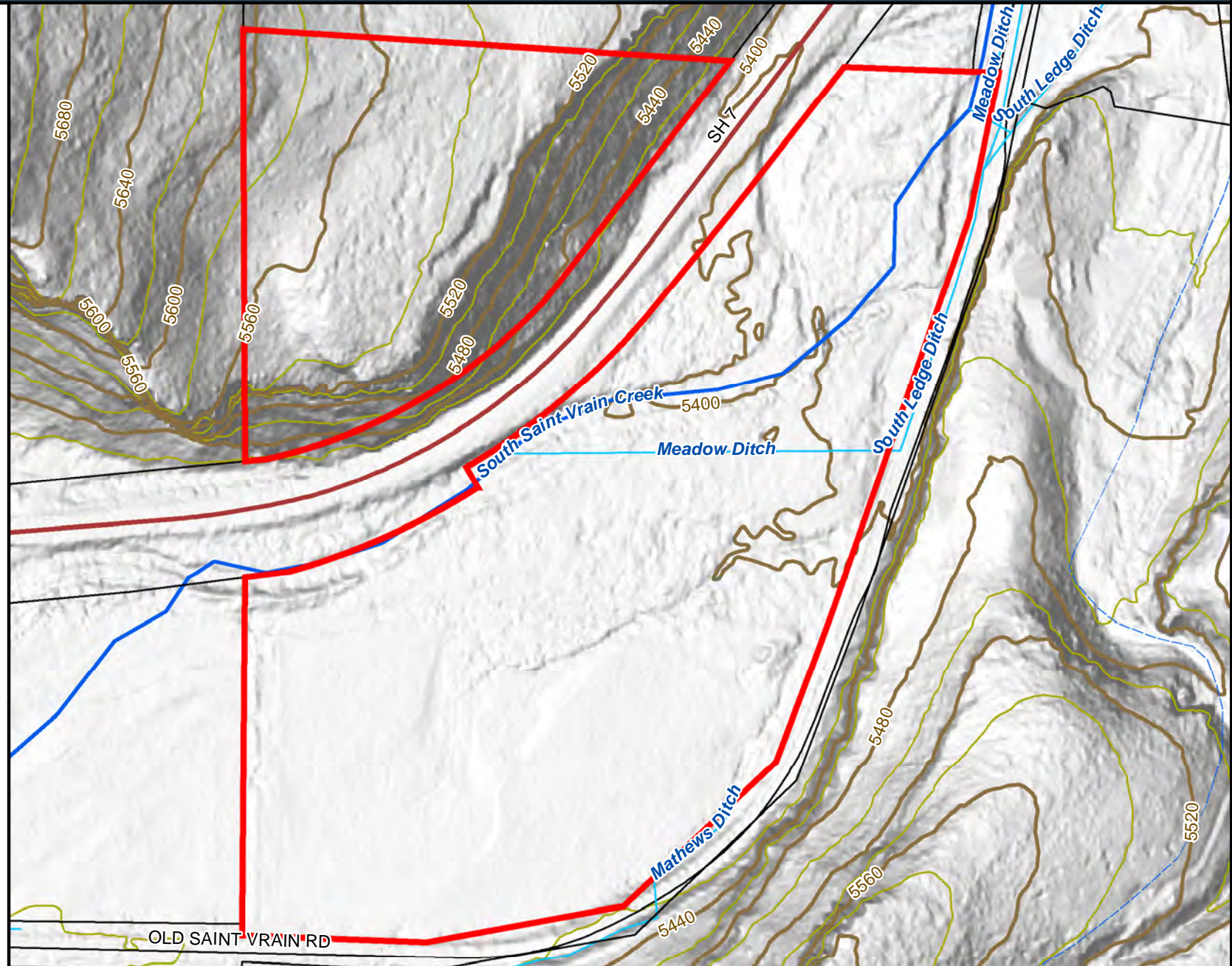
Community Planning & Permitting

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

Elevation Contours

530 Old St Vrain Rd

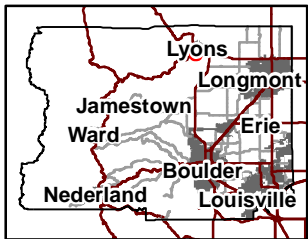
-  Subject Parcel
-  Contours 40'
-  Contours 20'



0 0.015 0.03 Miles



Area of Detail Date: 11/15/2023



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Community Planning & Permitting

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

Floodplain

530 Old St Vrain Rd

Subject Parcel

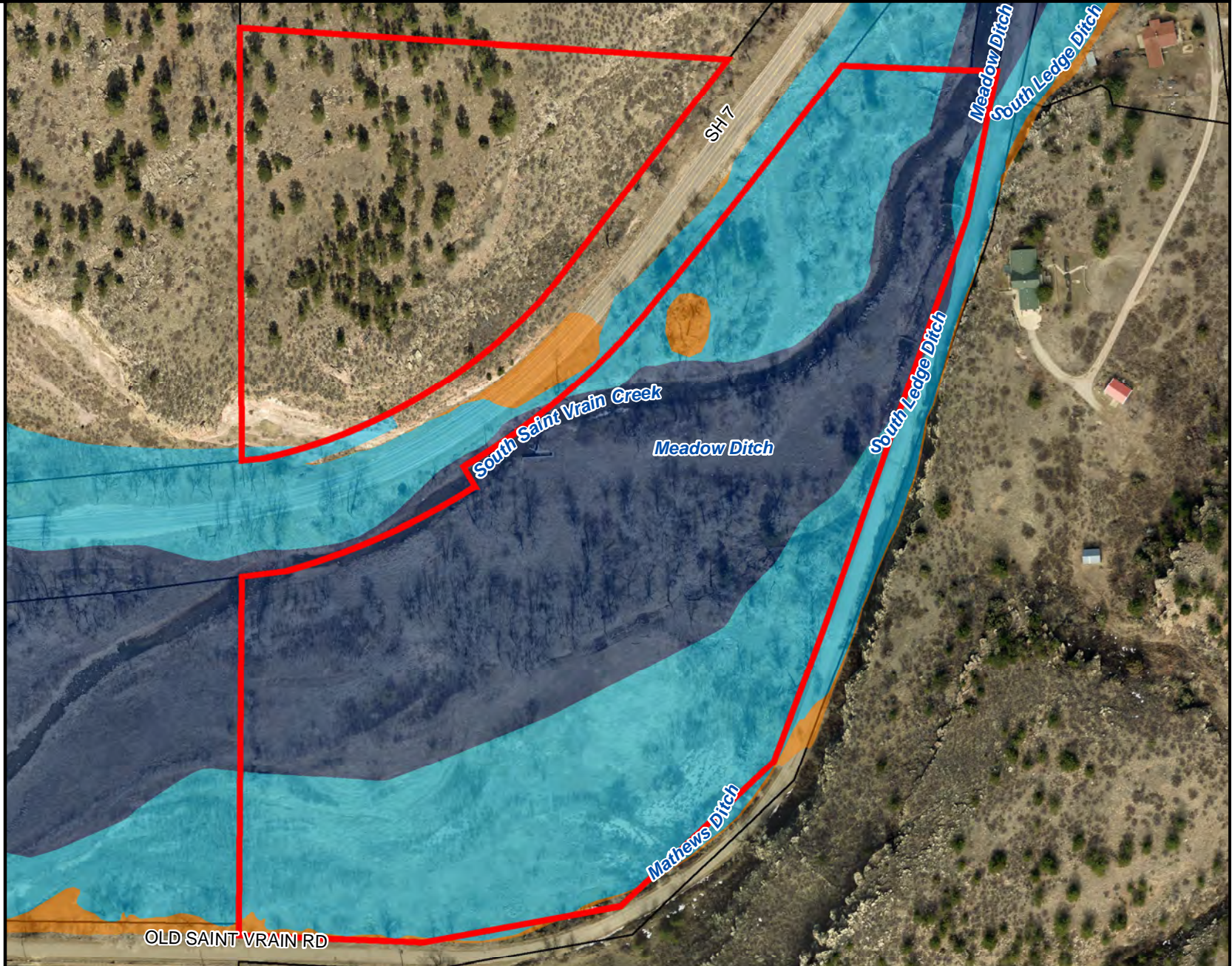
Floodplain

100-Year Floodplain

- Zones AE, A, AO and AH

Floodway

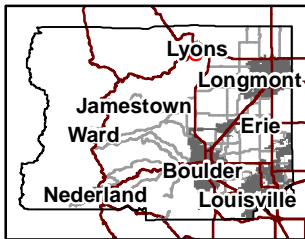
500-Year Floodplain
- Zone X500



0 0.015 0.03 Miles



Area of Detail Date: 11/15/2023



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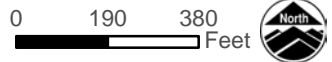
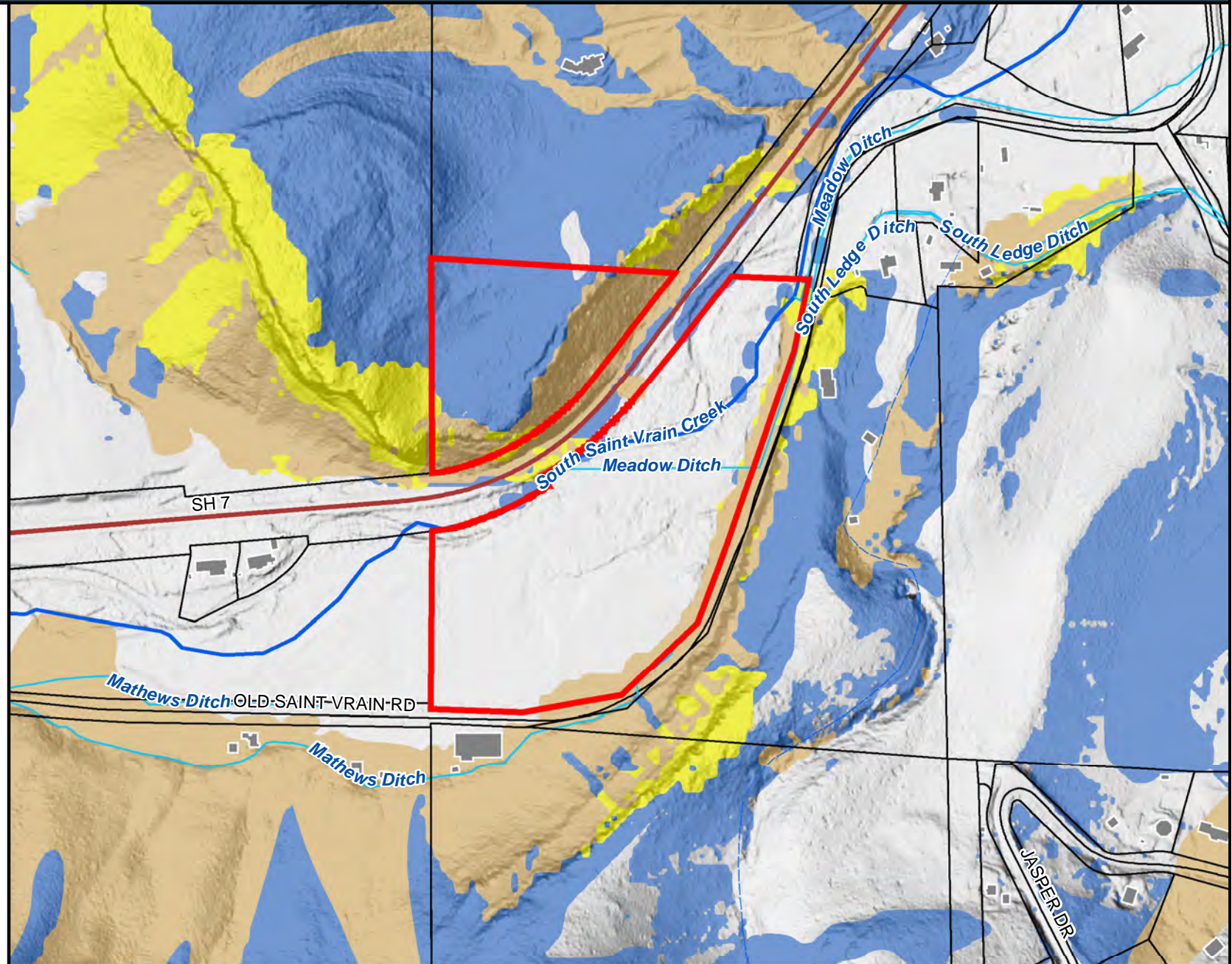
Community Planning & Permitting

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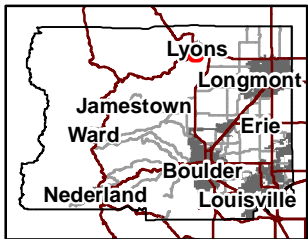
Geologic Hazards

530 Old St Vrain Rd

Subject Parcel



Area of Detail Date: 11/15/2023



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Planning Areas

530 Old St Vrain Rd

Subject Parcel

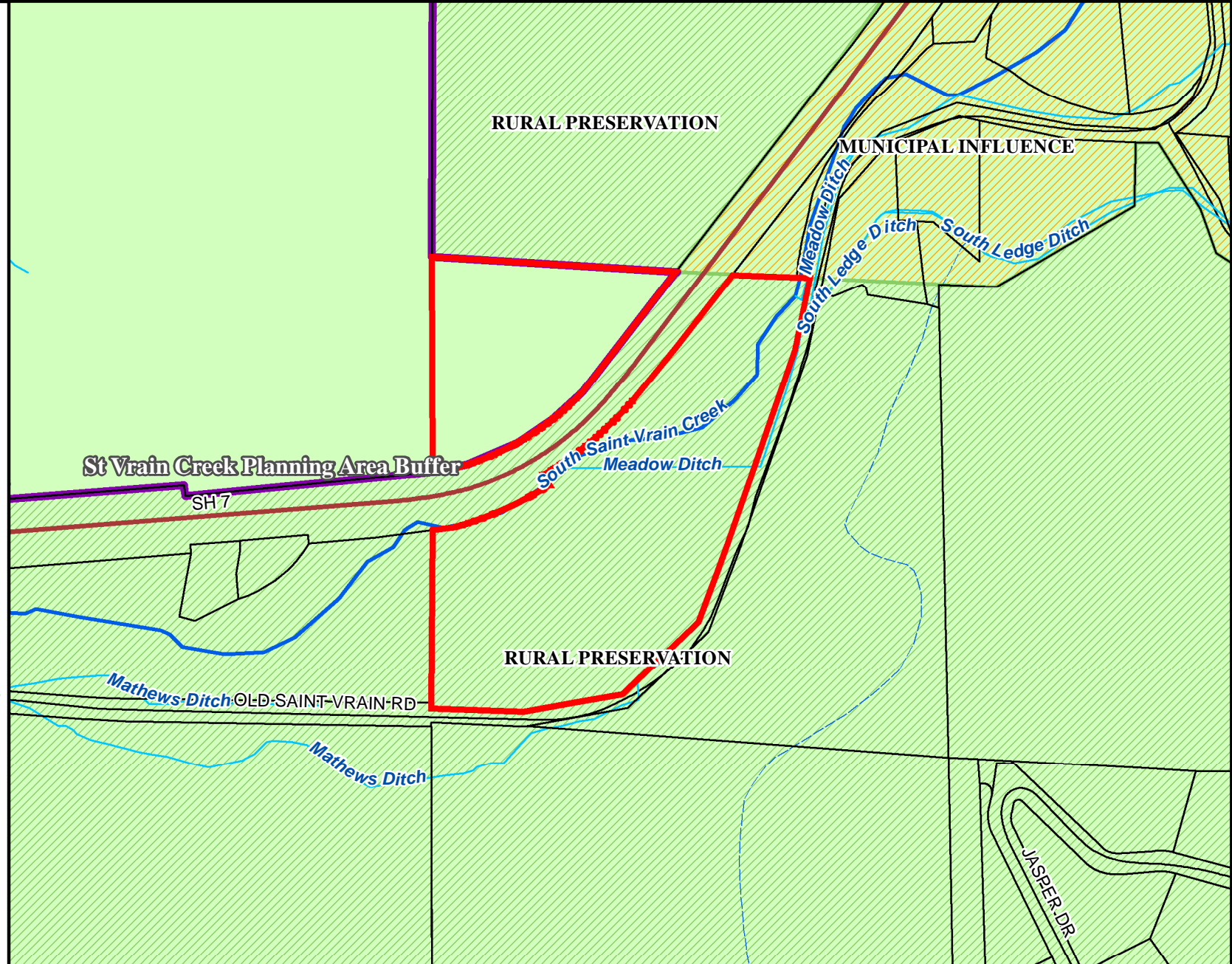
Active IGA Boundary

Active IGA Designation

RURAL PRESERVATION

MUNICIPAL INFLUENCE

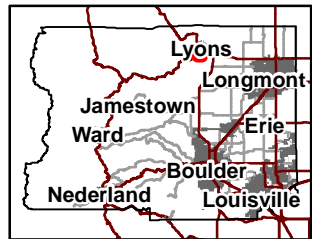
Creek Planning Area



0 0.035 0.07 Miles



Area of Detail Date: 11/15/2023



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Prebles

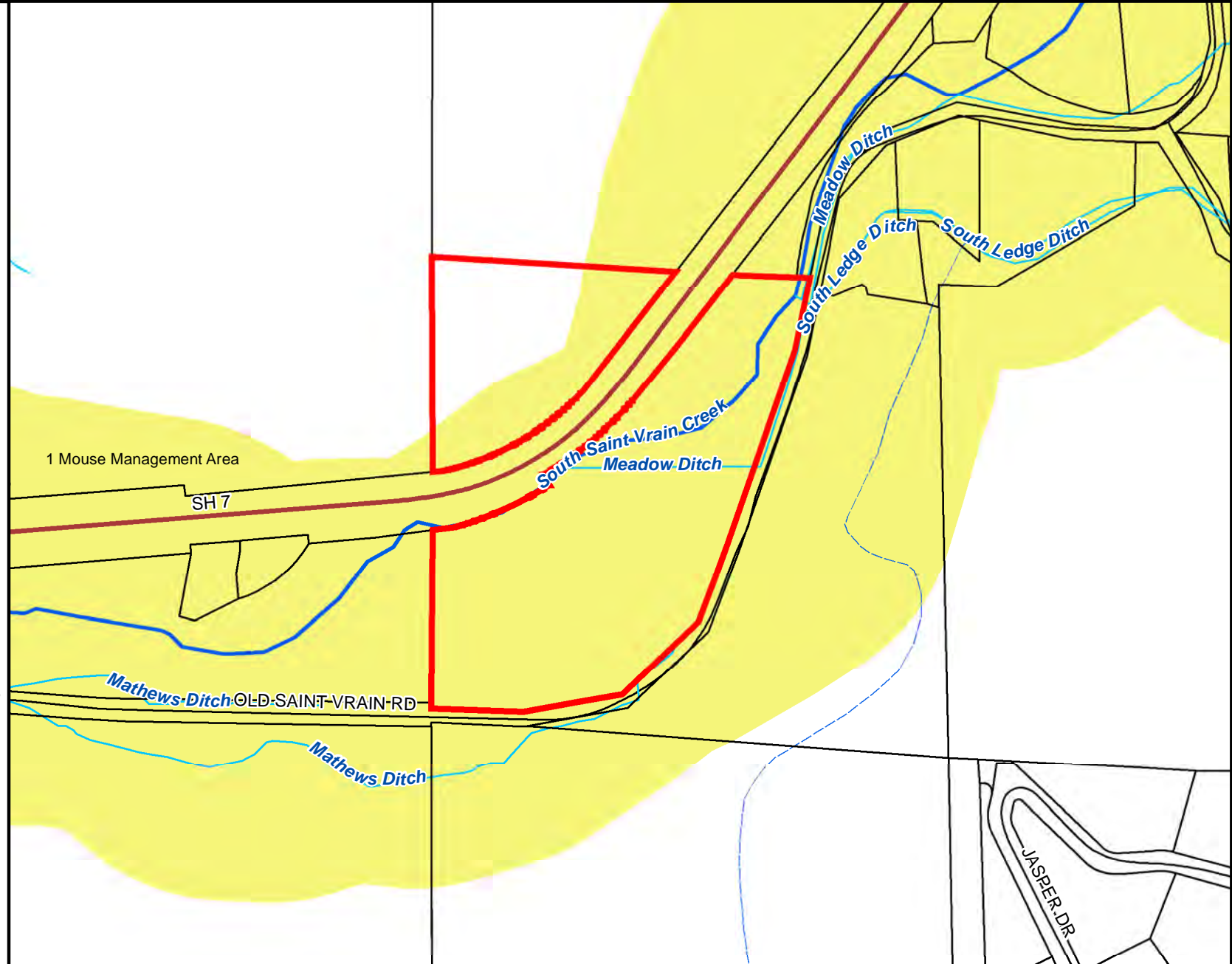
530 Old St Vrain Rd

Subject Parcel

Note: This map's legend shows all Preble's Priority Zones as mapped by Boulder County. The subject property may not contain all zones. Refer to the USFWS Memo dated 9/17/03 to determine when projects require review by USFWS for Preble's.

Prebles

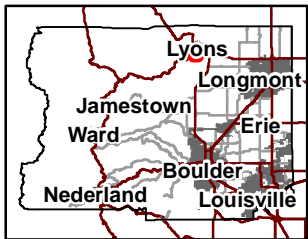
Zone 1 Mouse Management Area



0 0.035 0.07 Miles



Area of Detail Date: 11/15/2023



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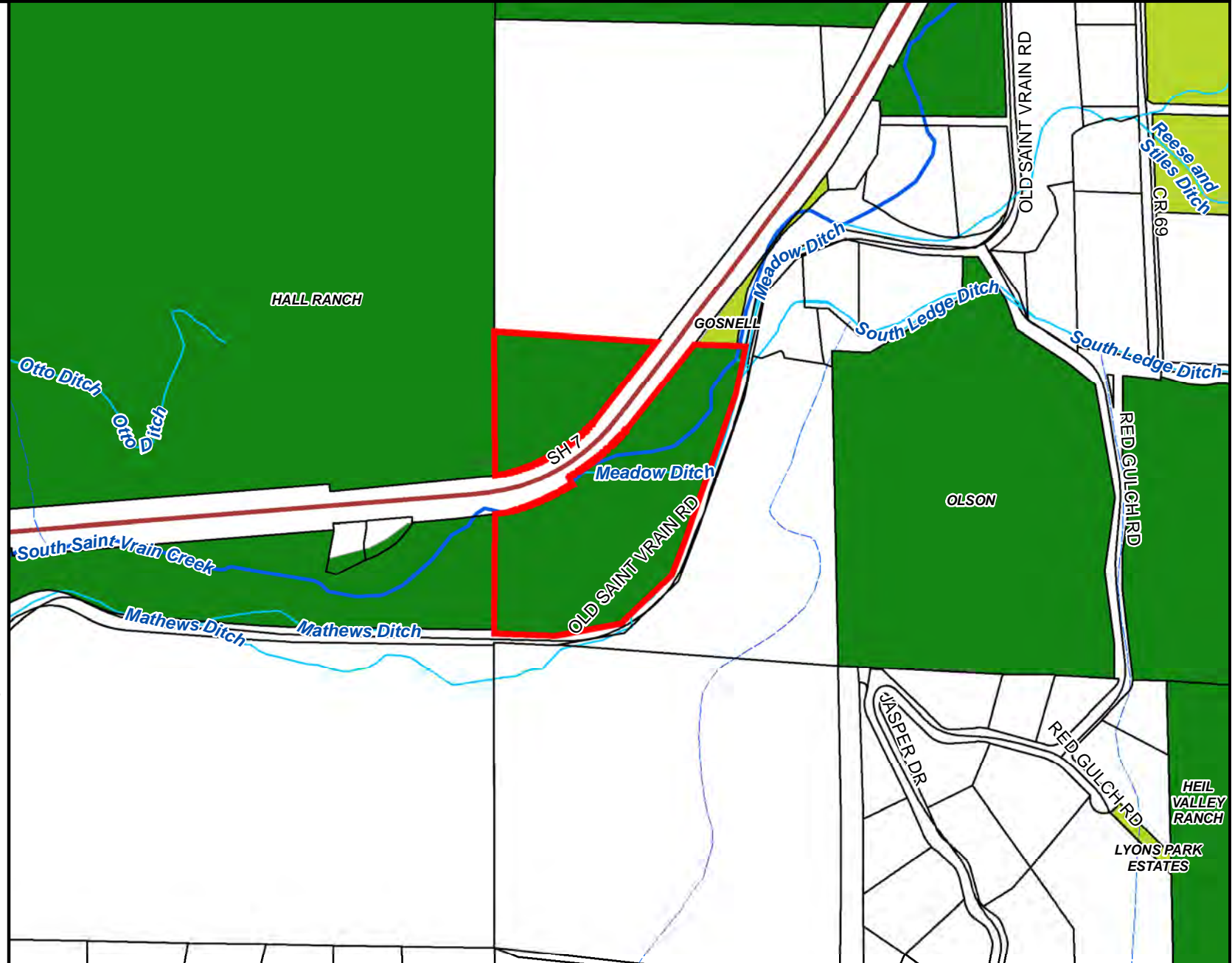
Public Lands & CEs

530 Old St Vrain Rd

Subject Parcel

Boulder County Open Space

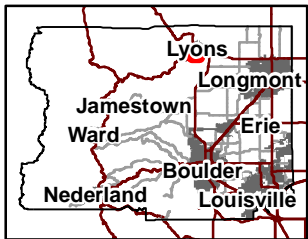
- County Open Space
- County Conservation Easement



0 0.05 0.1 Miles



Area of Detail Date: 11/15/2023



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Zoning

530 Old St Vrain Rd

Subject Parcel

Zoning Districts

Agricultural

Rural Residential

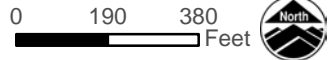
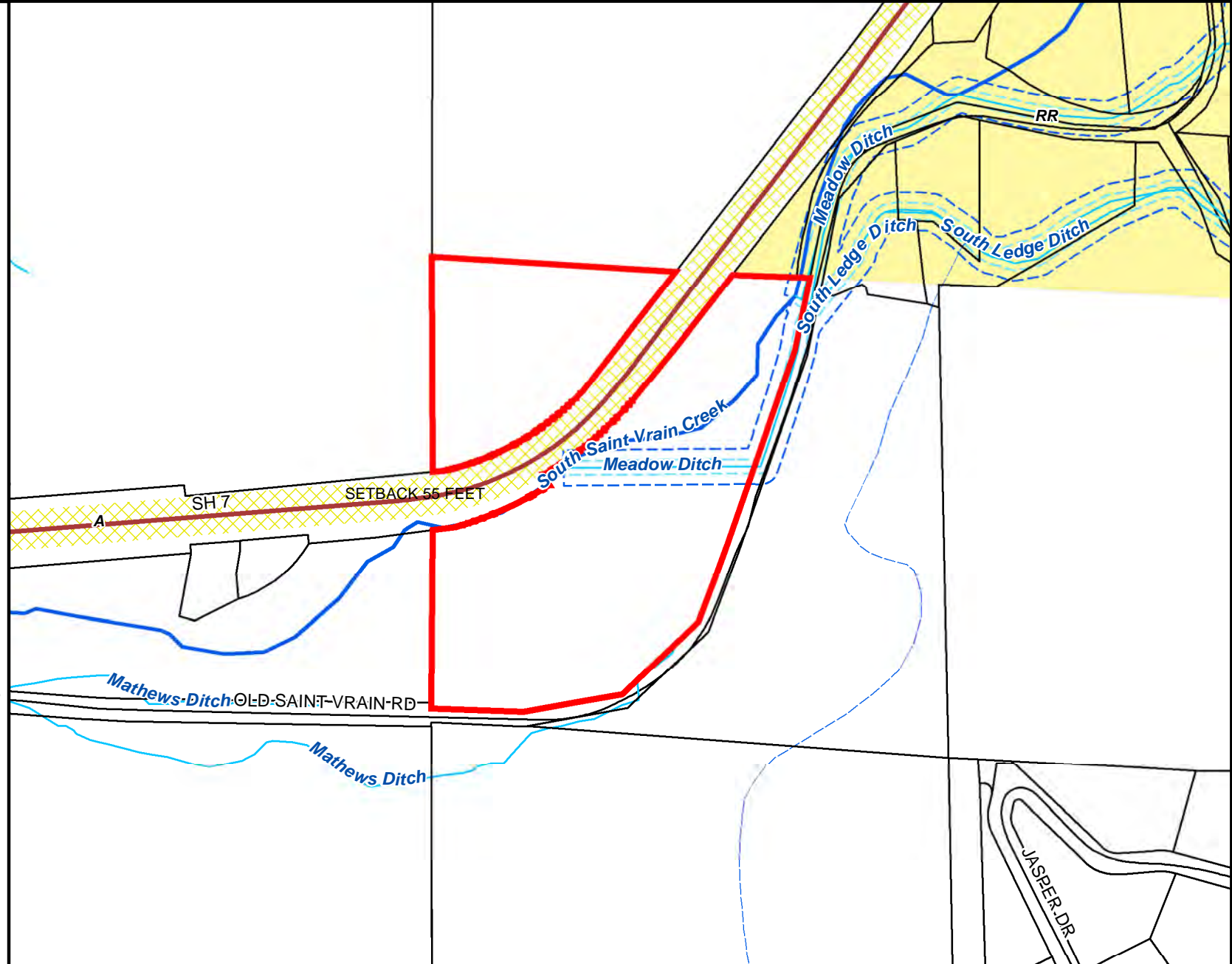
Ditch Setbacks

20 feet

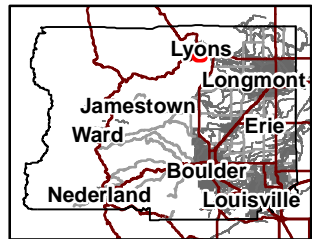
50 feet

Major Road Setbacks

55 feet



Area of Detail Date: 11/15/2023



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Boulder County Limited Impact Special Use Application

Old St. Vrain Road Reach Restoration Project

February 5, 2024

Prepared for:



The Watershed Center
6800 Nimbus Road
Longmont, CO 80503

Prepared by:



Boulder County Limited Impact Special Use Application

Old St. Vrain Road Reach Restoration Project

February 5, 2024

Prepared for:



The Watershed Center
6800 Nimbus Road
Longmont, CO 80503

Prepared by:



Old St. Vrain Road Reach Restoration Project

Introduction

The Watershed Center is implementing a design/build ecological restoration project for the Old St. Vrain Road Reach on South St. Vrain Creek and hired Left Hand Excavating and their team, including Biohabitats, to design and construct the project. Following the September 2013 flood, multiple projects have occurred on South St. Vrain Creek to address damage and improve ecological conditions and resiliency. This project is the result of coordination between The Watershed Center (TWC) and Boulder County. While the County has focused on restoration projects upstream and downstream of the site, TWC was able to obtain grant funding to address this section of the creek through a design/build project. This project also includes minor work on one of the overflow channels that was part of the County Parks and Open Space's completed restoration project. (Throughout this document, we refer to the overflow channel work site as the downstream area.)

This project is funded by the CDPHE 319 Nonpoint Source Project Grant and CWCB Watershed Restoration Program Special Release Grant. These grants support the following activities:

- control nonpoint source pollution, including post-fire sedimentation
- achieve and maintain beneficial uses of waters such as ecological conditions for fish and wildlife and water quality
- improve watershed health in areas impacted by 2020 fires (i.e., Calwood Fire)
- reduce hazards and increase flood safety by reconnecting (lowering) the floodplain and allowing the river to move during high flow events

The overall goal of this project is to increase ecological and geomorphological resilience in an unconfined river reach to maintain beneficial uses of waters and improve watershed resilience at a site located downstream of high severity fire and upstream of communities. Resilience will be attained through a process-based design approach that focuses on overall corridor function, particularly floodplain processes. The project will remove the excessive floodplain deposition that occurred during the 2013 flood, provide multiple elevational zones that support various riparian communities and activate during different flood events, and create additional complexity for improved habitat. An additional goal is to complete the project as efficiently and cost effectively as possible within the established timeframe.

The project's interaction with Boulder County Land Use Planning started with the LISU Pre-Application conference meeting that was held on November 13, 2023. Representatives from Boulder County Land Use Department, The Watershed Center, and members of the design/build team (Left Hand Excavating and Biohabitats) were in attendance. Dana Yelton is the County Planner assigned to this project. Following the November 13 meeting, she confirmed that all fees would be waived for the Limited Use application and for the Floodplain Development Permit, including the deposit fee and review fees. More recently, on January 9, 2024, she agreed that Signed Participation Agreements were acceptable in lieu of title work; the agreements are attached to this submittal.

We submitted the PAMS form to the County Development Review Team on December 22, 2023, and the Historic Preservation Request form to the Historic Preservation Planner on February 1, 2024. In addition, we talked with Liz Northrup, Boulder County Conservation Easement Program Supervisor, who reviewed the concept drawings and provided a letter that is attached to this submittal.

At this phase of the project, The Watershed Center and the design/build team has completed field visits, held a community meeting, and coordinated with project stakeholders, including Boulder County Parks and Open Space (BCPOS). BCPOS and local landowners have reviewed both the concept drawings and draft plans and provided input and recommendations. Construction is expected to begin in October 2024 with an estimated duration of 12 weeks. Additional planting will likely occur in Spring 2025.

This packet includes the required LISU Application components including the LISU Submittal Checklist, Grading Fact Sheet, Application Form, Fee Agreement, and other applicable forms as well as this Narrative and Attachments, as listed below.

- A. LISU Pre-Application Map Set (All Pre-Application Conference [PAC] maps) and Parcel Reports
- B. Construction Drawings – Including:
 - a. Cover Sheet
 - b. Sheet Index
 - c. Existing Conditions
 - d. Proposed Conditions
 - e. Details
 - f. Planting Plans
- C. Basis of Design Technical Memorandum (Engineering Report)
- D. Letter from Boulder County Conservation Easement Program Supervisor
- E. Landowner Access Agreement and MOU

Background Information

In September 2013, a prolonged, heavy rain event caused severe flooding on South St. Vrain Creek resulting in severe bank erosion and heavy deposition that degraded the geomorphic function and ecological condition of the Old St. Vrain reach project areas. Subsequently in 2020, the Calwood fire severely burned over 10,000 acres in the South St. Vrain and Left Hand Watersheds resulting in increased surface runoff, high flows, and sedimentation that further reduced geomorphic and ecological function at these reaches. Along with the impacts of recent flood and fire, the Old St. Vrain reaches are listed on the Colorado’s Section 303(d) List of Impaired Waters for temperature.

The project area was part of a larger reach of South St. Vrain Creek that was identified and prioritized for restoration following the 2013 flood by the Emergency Watershed Protection Program (EWP)¹. This early post-flood planning and design underwent a public engagement process and resulted in a preliminary restoration design. Other parts of this larger reach have been constructed or are in the final design phase. For this project, there are two focus areas: the upstream (US) area and the downstream (DS) area (Attachment A). The US area, which has not been restored since the 2013 flood, experienced

¹ Preliminary Basis of Design Report for South St. Vrain Creek Restoration at Hall Ranch by Matrix Design Group, 2016

heavy deposition resulting in limited geomorphic and ecological function. Through continued stakeholder collaboration, this section was identified as a priority area for river restoration that addresses impacts of recent flood and fire and improves geomorphic function and ecological conditions now and into the future. The DS area is an overflow channel that was part of the 2019 project by BCPOS under the EWP Program flood recovery efforts. Through stakeholder and landowner collaboration, this area was prioritized as an opportunity for adaptive management to improve floodplain connection and habitat.

Project Description

Impacted Parcel Information

The parcels that will be impacted by this project are listed below in Table 1. Per directive from the Boulder County Land Use Department, Ownership and Encumbrance (O&E) reports are not required and have not been included for this project. Instead, we have included landowner access agreement and MOU.

TABLE 1

Old St. Vrain Reach Parcels

LOCATION	PARCEL ID	PHYSICAL ADDRESS	OWNER ID
US	120125000010	31074 S ST VRAIN RD	HALL, JOHN A. ET AL
US	120125000011	0 OLD ST. VRAIN ROAD	COUNTY OF BOULDER
US	120124000005	0 OLD ST. VRAIN ROAD	COUNTY OF BOULDER
DS	120319000016	530 OLD ST. VRAIN ROAD	COUNTY OF BOULDER

The upstream area (“US” in table above) is where most of the work will occur. There is a neighboring parcel to the County property at the downstream area (“DS”, ID 120319000006) owned by GOSNELL RONALD A & JOALEEN D. Ron Gosnell is an active stakeholder in this project. However, no impacts are planned for that property.

Project Design Description

Upstream Area

The focus of this project is to lower the excess accumulated sediment from the 2013 flood down to elevations that promote channel connectivity and natural floodplain processes. The material to be excavated is a mixture of sand, gravel, and cobble material and has a relatively sparse vegetative cover. It will be cut down to create a riparian floodplain that integrates with existing lower vegetated areas and creates additional low areas that allow for varying hydrologic regimes and habitat types. Relatively simple wood structures such as post and wattle and post-assisted structures will be placed in the lowest areas to add roughness that helps slow flows that overtop the channel bank and trap sediment. Proposed waste areas for the material are shown in the plans and described further in the Grading Discussion, below.

Additional limited and strategic grading will occur at several locations to better connect the channel with existing floodplain swales that are at a higher elevation.

To further enhance habitat, log jams will be placed in several locations along the edge of the creek. These features will add hydraulic complexity that will help promote interaction between the creek and floodplain and creation of additional pool habitat in the creek.

Downstream Area

At the entrance into Overflow Channel F, strategic grading will occur to promote access for flows above bankfull. By lowering the connection to a bankfull elevation, the overflow area will be able to better function as intended, providing additional room for flood flows to spread out and allowing more frequent interaction of the channel and floodplain and natural processes such as deposition, infiltration, and support of a riparian plant community. Excavated material will be placed along the toe of slope of State Highway 7 (S. St. Vrain Drive). Coordination with CDOT will occur soon now that this draft design has been developed.

In addition to this grading, random boulders for habitat are proposed in the nearby channel using material that is available on-site. They will be partially buried in the channel bed to provide habitat complexity that is lacking in this reach, as well as additional channel roughness. The habitat boulders will only be for habitat improvement at lower flows and will not impact flood flows.

It is intended for the work in this downstream area to take only a few days, at most, to construct. Grading quantities and transport distances are relatively low.

Revegetation Plan

We anticipate two riparian zones, upper and lower, for our revegetation planting plan. Both are native, multi-tiered communities and will have an associated native seed component to support short term soil stabilization. There are also wetland and upland seeding zones. The list of species reflects the preliminary revegetation plan, which will be further developed as the plans are finalized. See plan sheet 22 in Attachment B for a list of species to be used in the revegetation.

The planting plan will balance active seeding and planting with natural plant establishment that is anticipated in the lower parts of the graded floodplain. The planting design approach is to provide soil stability and a natural level of diversity without being overly crowded or complex. Also, we anticipate that field adjustments to the planting zones and plant placement will be necessary to best fit the restored areas.

The project team will selectively harvest and transplant willow clumps to help start establishment. We have had good results transplanting willows for other design/build restoration projects along the Front Range.

Any uplands disturbance, such as staging areas, will be seeded and mulched with appropriate upland seed mix. The Watershed Center will conduct maintenance, including weed control and monitoring of vegetation, for three years.

Erosion Control

Work will take place October through December, when creek flows are low. Sediment control BMP's will be used. Erosion control logs will be placed along the creek and at the downgradient edge of grading areas and soil stockpiles, and a vehicle tracking pad will be placed at the entrance to the site. Tracking onto the road will be monitored and cleaned if needed. Also, staging and stockpile areas will be located outside of the regulatory floodplain.

Grading Discussion

It is the project team's intention to balance the site work and minimize material transport as much as possible. The Grading Fact Sheet for the project is included in the permit application forms. Overall, the design team anticipates a total of approximately 6,000 cubic yards of cut material and 6,000 cubic yards of fill material. We will not import any fill material and will not export any cut material. (All fill material will be repurposed cut material.) We anticipate placing excess cut material in designated areas on- or near-site in a manner that blends with the existing topography. The designated spoil areas are represented by the proposed grading shown on plan sheets 8, 10, and 12 in Attachment B. They will be covered with soil and reseeded. In addition to the above earthwork, we anticipate using approximately 12 cubic yards of existing on-site boulders for the random habitat boulders. Any trees on site proposed for removal will be repurposed in the installation of wood structures.

Traffic Control, Haul Routes, Access Points & Staging Areas

The main project access and staging area will be off the private road that goes to the old quarry, accessible from Old St. Vrain Road. The downstream area will be accessed from a wide part of the shoulder off State Highway 7, near the proposed work. The access points and staging areas that are under consideration have been included on the Proposed Conditions sheets (sheets 10 and 12) in Attachment B.

As mentioned above, on December 22, 2023, we submitted a Pre-Application Methodology Statement (PAMS) to the County for review.

Permitting in Progress

The project team has initiated coordination with the U.S. Army Corps of Engineers for the Section 404 permitting process and is in the process of scheduling a pre-application meeting with them. We are also in the process of reaching out to the U.S. Fish and Wildlife Service (USFWS) and the State Historic Preservation Office (SHPO).

Closer to construction, the project team will obtain a Colorado Department of Public Health & Environment (CDPHE) stormwater permit for the project.

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 Use Review (LISR) is required. A Limited Impact Special Use 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	Not Applicable		na
Berm(s)	Not Applicable		na
Other Grading	6,000 CY	6,000 CY	12,000 CY
Subtotal			12,000 CY 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	Not Applicable		na
Material cut from foundation excavation that will be removed from the property			na

Excess Material will be Transported to the Following Location:

Excess Materials Transport Location:	No excess material is anticipated; all material will stay on site.

Is Your Property Gated and Locked?

Note: If county personnel cannot access the property, 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 <i>Michael Scott Lighthiser</i>	Date 01/10/2024
--	------------------------

OLD ST. VRAIN ROAD REACH RESTORATION DRAFT DESIGN / BUILD PLANS

CLIENT

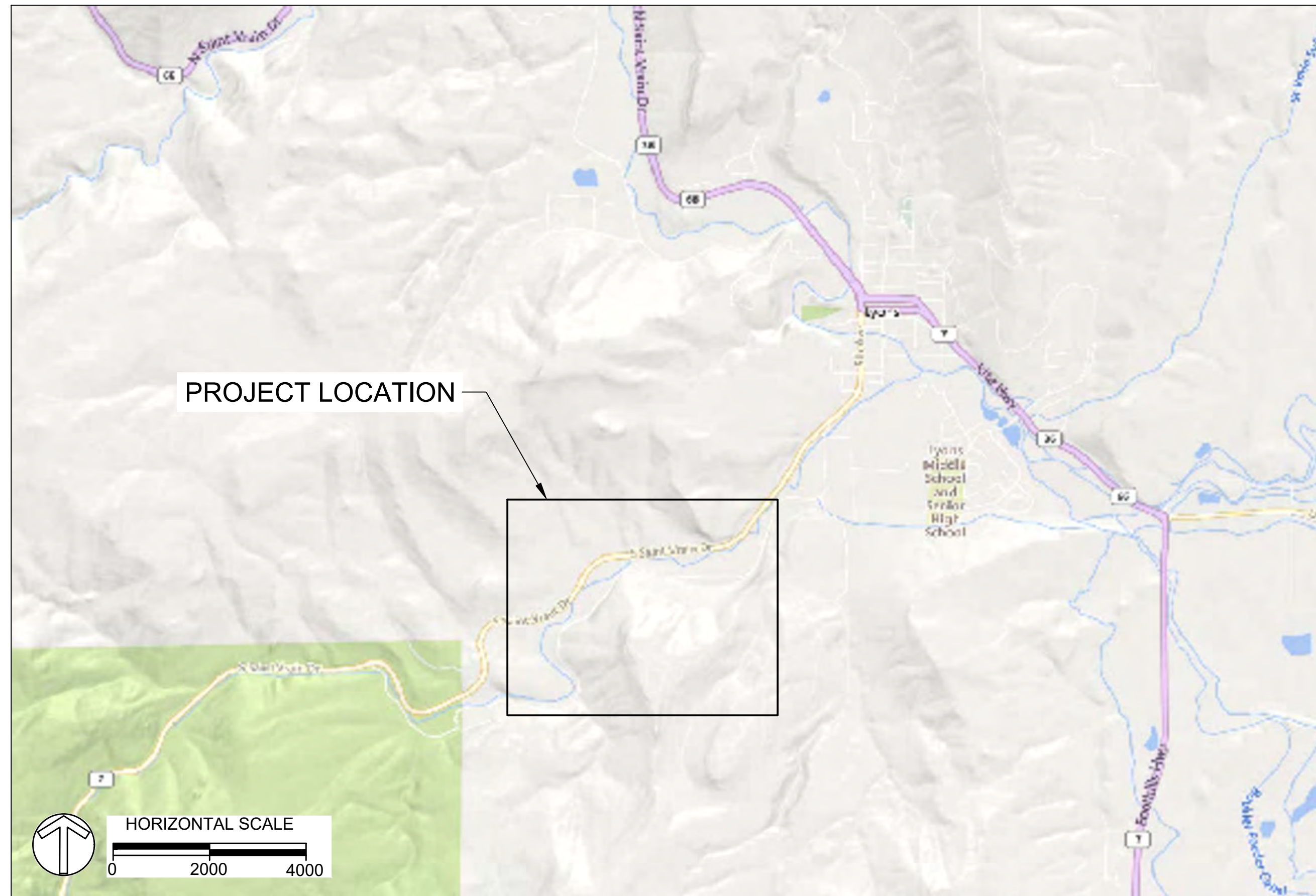


DATE:	ISSUES / REVISIONS
01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
02/05/2024	DRAFT PLANS FOR COUNTY LISU REVIEW - NOT FOR CONSTRUCTION

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	SHEET INDEX
3	EXISTING CONDITIONS
4	EXISTING CONDITIONS
5	EXISTING CONDITIONS
6	EXISTING CONDITIONS
7	EXISTING CONDITIONS
8	PROPOSED CONDITIONS
9	PROPOSED CONDITIONS
10	PROPOSED CONDITIONS
11	PROPOSED CONDITIONS
12	PROPOSED CONDITIONS
13	DETAILS
14	DETAILS
15	DETAILS
16	DETAILS
17	PLANTING PLAN
18	PLANTING PLAN
19	PLANTING PLAN
20	PLANTING PLAN
21	PLANTING PLAN
22	PLANTING DETAILS

VICINITY MAP



LEGENDS

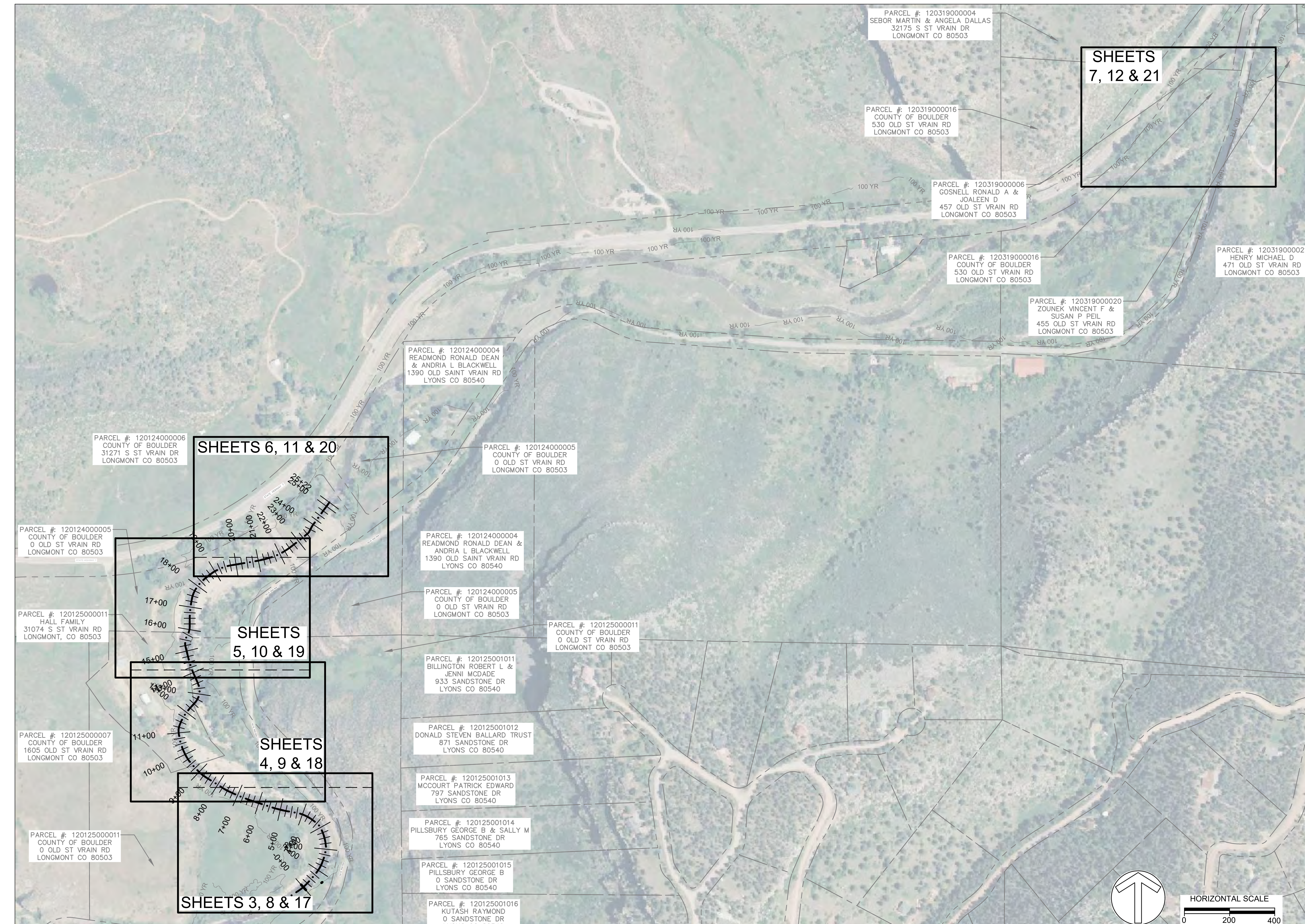
EXISTING	
— — — — —	MAJOR CONTOUR
- - - - -	MINOR CONTOUR
— — — — —	SURVEY CONTOUR BOUNDARY
- - - - -	GIS PROPERTY LINE
— 100 YR —	FLOODPLAIN
— WUS —	WATERS OF THE US
[Grey Box]	BUILDING
[Stippled Box]	RIP RAP
PROPOSED	
— 425 —	MAJOR CONTOUR
— 424 —	MINOR CONTOUR
— . . . —	BASELINE
— SW — SW —	STRAW WATTLE (SEDIMENT CONTROL LOG)
— LOD —	LIMIT OF DISTURBANCE
[Circle Pattern]	TEMPORARY STONE CHECK DAM
[Hatched Box]	STAGING AREA
[Truss Pattern]	VEHICLE TRACKING PAD SITE ACCESS
[Stick Pattern]	LARGE WOOD
[Log Pattern]	WATTLE STRUCTURE
[Grid Pattern]	POST ASSISTED LOG STRUCTURE
[Triangle Pattern]	BRUSH TRENCH
PLANTING	
[Diagonal Hatched]	UPPER RIPARIAN ZONE
[Cross Hatched]	LOWER RIPARIAN ZONE
[Square Grid]	UPLAND SEEDING ZONE
[Dashed Grid]	HERBACEOUS WETLAND ZONE

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Denver, CO 80218 / ph: 303.477.0660
fx: 303.477.4648 / www.biohabitats.com
Restore the Earth & Inspire Ecological Stewardship

OLD ST. VRAIN ROAD REACH RESTORATION

COVER SHEET

PROJECT NO. :	23913.01	SCALE:	AS SHOWN
SEAL:		BY:	SS
		CHECK:	ML



CLIENT



DATE:	ISSUES / REVISIONS
01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
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Restore the Earth & Inspire Ecological Stewardship

OLD ST. VRAIN ROAD REACH RESTORATION

SHEET INDEX

PROJECT NO.:	23913.01	SCALE:	1" = 200'
SEAL:	BY: SS	CHECK:	ML
DWG. NO.:		2 OF 22	

MATCHLINE - SEE SHEET 4



PARCEL #: 12012500011
 COUNTY OF BOULDER
 0 OLD ST VRRAIN RD
 LONGMONT CO 80503

PARCEL #: 12012500011
 COUNTY OF BOULDER
 0 OLD ST VRRAIN RD
 LONGMONT CO 80503

CLIENT



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**OLD ST. VRRAIN ROAD
 REACH RESTORATION**

**EXISTING
 CONDITIONS**

PROJECT NO.:	23913.01	SCALE:	1" = 30'
SEAL:	BY: SS	CHECK:	ML
DWG. NO.:			



MATCHLINE - SEE SHEET 5



MATCHLINE - SEE SHEET 3

DATE:	ISSUES / REVISIONS
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OLD ST. VRRAIN ROAD REACH RESTORATION

EXISTING CONDITIONS

PROJECT NO.:	23913.01	SCALE:	1" = 30'
SEAL:		BY:	SS
		CHECK:	ML
		DWG. NO.:	

CLIENT



MATCHLINE - SEE SHEET 6

PARCEL #: 12012400005
COUNTY OF BOULDER
0 OLD ST VRAIN RD
LONGMONT CO 80503

HIGH WATER
LINE
MARK

WATER SURFACE
Z:5465.3'

EDGE
OF
WATER

OLD ST. VRAIN ROAD

WATER SURFACE
Z:5468.2'

PARCEL #: 12012400005
COUNTY OF BOULDER
0 OLD ST VRAIN RD
LONGMONT CO 80503

THALWEG

WATER SURFACE
Z:5469.6'

HIGH
WATER
LINE
MARK

MATCHLINE - SEE SHEET 4

DATE:	ISSUES / REVISIONS
01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
02/05/2024	DRAFT PLANS FOR COUNTY LISU REVIEW - NOT FOR CONSTRUCTION

Biohabitats
SOUTHERN ROCKY MOUNTAIN BIOREGION

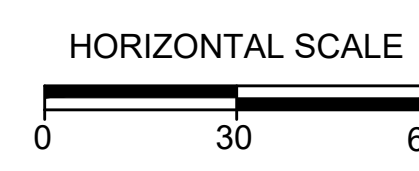
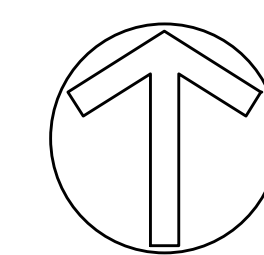
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Restore the Earth & Inspire Ecological Stewardship

OLD ST. VRAIN ROAD REACH RESTORATION

EXISTING CONDITIONS

PROJECT NO.:	23913.01	SCALE:	1" = 30'
SEAL:		BY:	SS
		CHECK:	ML
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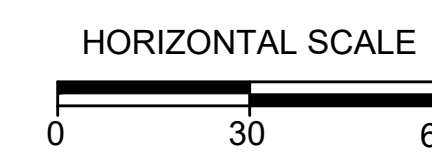
CLIENT



DATE:	ISSUES / REVISIONS
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02/05/2024	DRAFT PLANS FOR COUNTY LISU REVIEW - NOT FOR CONSTRUCTION



MATCHLINE - SEE SHEET 5



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OLD ST. VRAIN ROAD REACH RESTORATION

EXISTING CONDITIONS

PROJECT NO.:	23913.01	SCALE:	1" = 30'
SEAL:		BY:	SS
		CHECK:	ML
		DWG. NO.:	



PARCEL #: 120319000004
SEBOR MARTIN & ANGELA DALLAS
32175 S ST VRAIN DR
LONGMONT CO 80503

PARCEL #: 120319000006
GOSNELL RONALD A &
JOALEEN D
457 OLD ST VRAIN RD
LONGMONT CO 80503

PARCEL #: 120319000020
ZOUNEK VINCENT F &
SUSAN P PERE
455 OLD ST VRAIN RD
LONGMONT CO 80503

PARCEL #: 120319000016
COUNTY OF BOULDER
530 OLD ST VRAIN RD
LONGMONT CO 80503

PARCEL #: 120319000021
HENRY MICHAEL D
471 OLD ST VRAIN RD
LONGMONT CO 80503

PARCEL #: 120319000016
COUNTY OF BOULDER
530 OLD ST VRAIN RD
LONGMONT CO 80503

CLIENT

DATE:	ISSUES / REVISIONS
01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
02/05/2024	DRAFT PLANS FOR COUNTY LISU REVIEW - NOT FOR CONSTRUCTION

SOUTHERN ROCKY MOUNTAIN BIOREGION

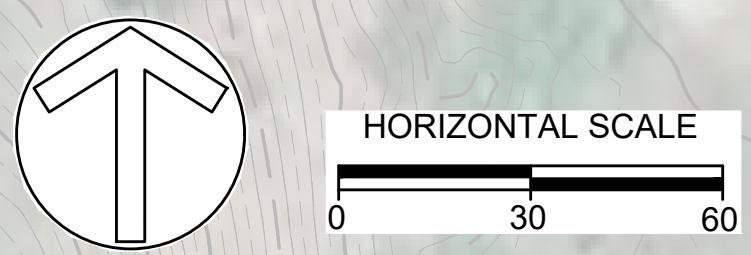
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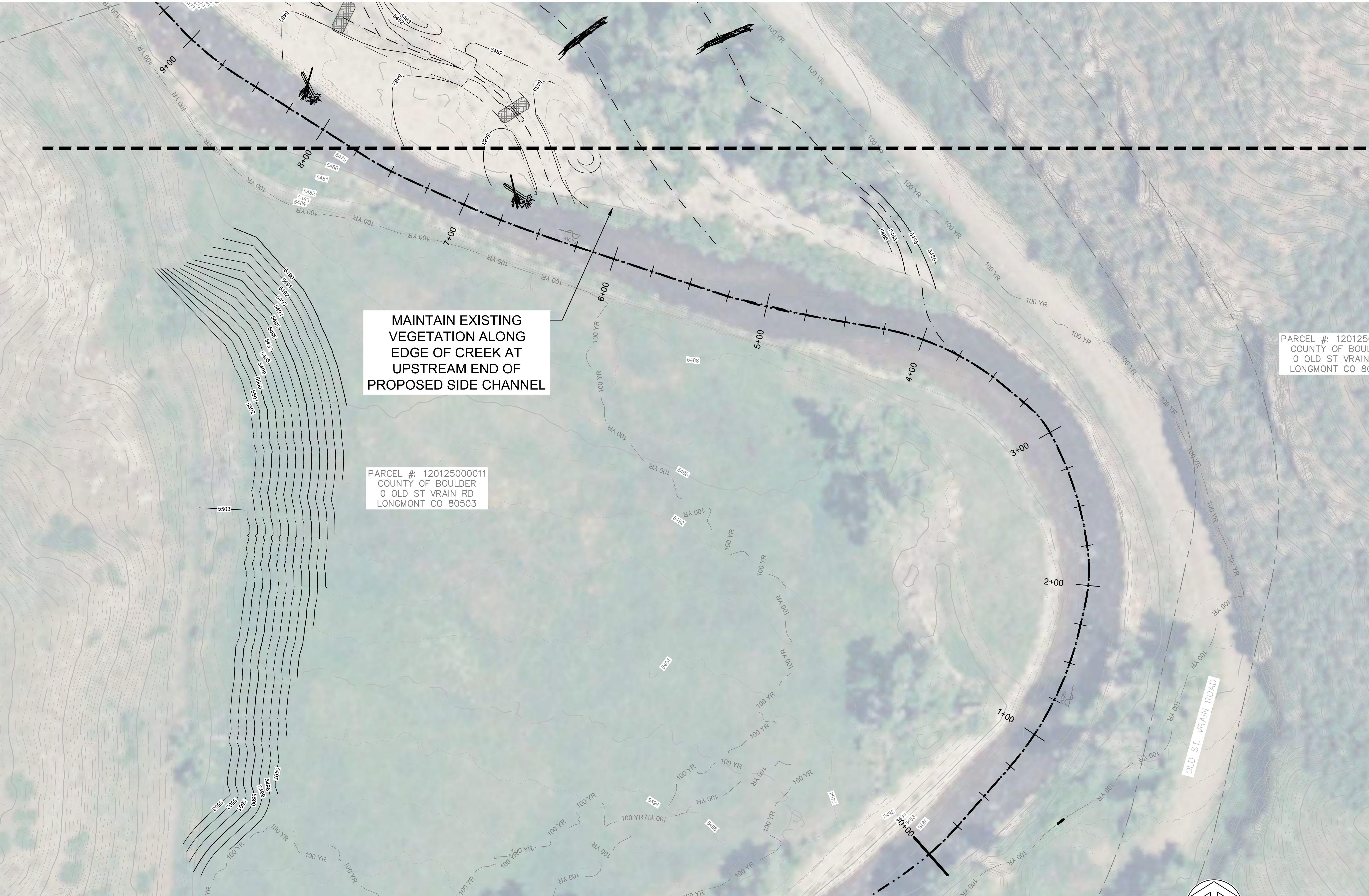
OLD ST. VRAIN ROAD REACH RESTORATION

EXISTING CONDITIONS

PROJECT NO.:	23913.01	SCALE:	AS NOTED
SEAL:	BY: SS	CHECK:	ML
DWG. NO.:		7 OF 22	



MATCHLINE - SEE SHEET 9



CLIENT

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01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
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PARCEL #: 12012500000
 COUNTY OF BOULDER
 0 OLD ST VRRAIN
 LONGMONT CO 80503

MAINTAIN EXISTING
 VEGETATION ALONG
 EDGE OF CREEK AT
 UPSTREAM END OF
 PROPOSED SIDE CHANNEL

PARCEL #: 12012500011
 COUNTY OF BOULDER
 0 OLD ST VRRAIN RD
 LONGMONT CO 80503

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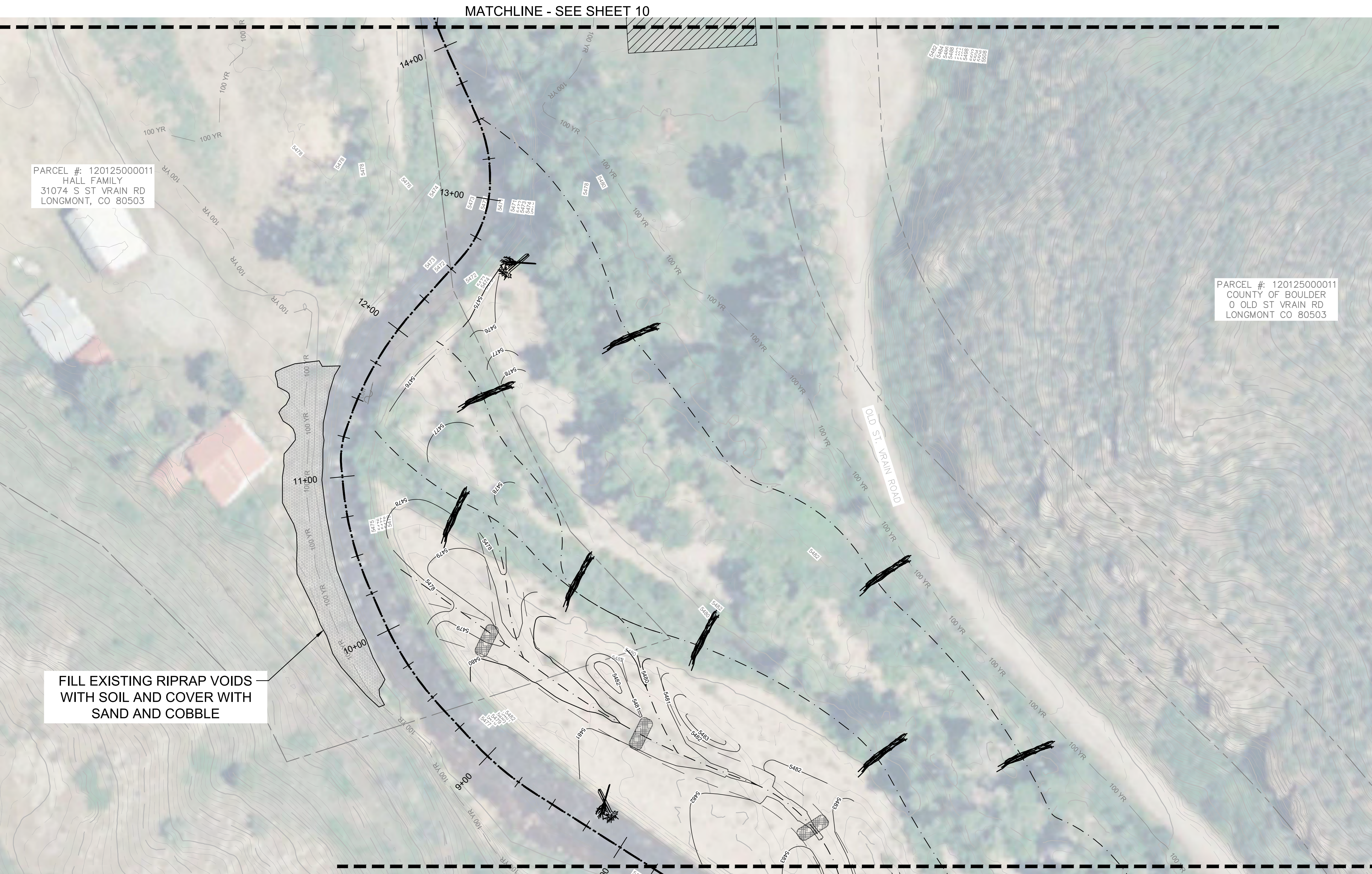
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**OLD ST. VRRAIN ROAD
 REACH RESTORATION**

TITLE:
**PROPOSED
 CONDITIONS**

PROJECT NO.:	23913.01	SCALE:	1" = 30'
SEAL:		BY:	SS
		CHECK:	ML
		DWG. NO.:	

CLIENT



MATCHLINE - SEE SHEET 10

MATCHLINE - SEE SHEET 8

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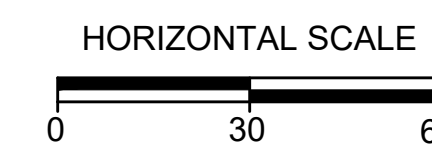
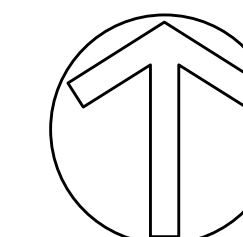
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OLD ST. VRAIN ROAD REACH RESTORATION

PROPOSED CONDITIONS

PROJECT NO.:	23913.01	SCALE:	1" = 30'
SEAL:		BY:	SS
		CHECK:	ML
		DWG. NO.:	



CLIENT



MATCHLINE - SEE SHEET 11

PARCEL #: 12012400005
 COUNTY OF BOULDER
 0 OLD ST VRAIN RD
 LONGMONT CO 80503

PARCEL #: 12012400005
 COUNTY OF BOULDER
 0 OLD ST VRAIN RD
 LONGMONT CO 80503

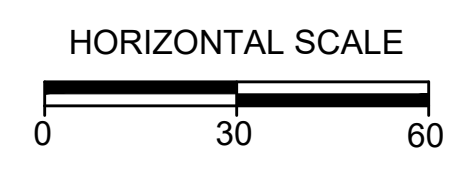
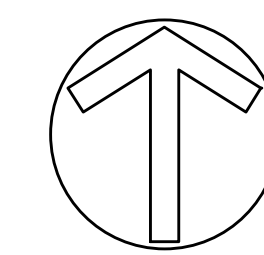
MAINTAIN EXISTING
 VEGETATION ALONG
 EDGE OF CREEK AT
 UPSTREAM END OF
 PROPOSED SIDE CHANNEL

ACCESS ROUTE

STAGING AND STOCKPILING AREA

50' MINIMUM

MATCHLINE - SEE SHEET 9



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**OLD ST. VRAIN ROAD
 REACH RESTORATION**

**PROPOSED
 CONDITIONS**

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DO NOT DISTURB EXISTING RIFFLE STRUCTURE

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		DWG. NO.:	

MATCHLINE - SEE SHEET 10

PARCEL #: 120124000005

HORIZONTAL SCALE



PARCEL #: 120319000004
 SEBOR MARTIN & ANGELA DALLAS
 32175 S ST VRAIN DR
 LONGMONT CO 80503

PARCEL #: 120319000006
 GOSNELL RONALD A &
 JOALEEN D
 457 OLD ST VRAIN RD
 LONGMONT CO 80503

PARCEL #: 120319000020
 ZOUNEK VINCENT F &
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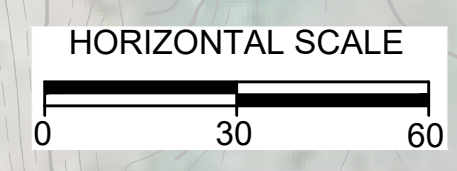
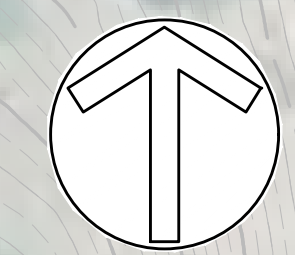
INSTALL RANDOM
 BOULDERS; TO BE
 DETERMINED IN FIELD

ACCESS

STATE HIGHWAY 7

OLD ST. VRAIN CREEK

OLD ST. VRAIN ROAD



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OLD ST. VRAIN ROAD
 REACH RESTORATION

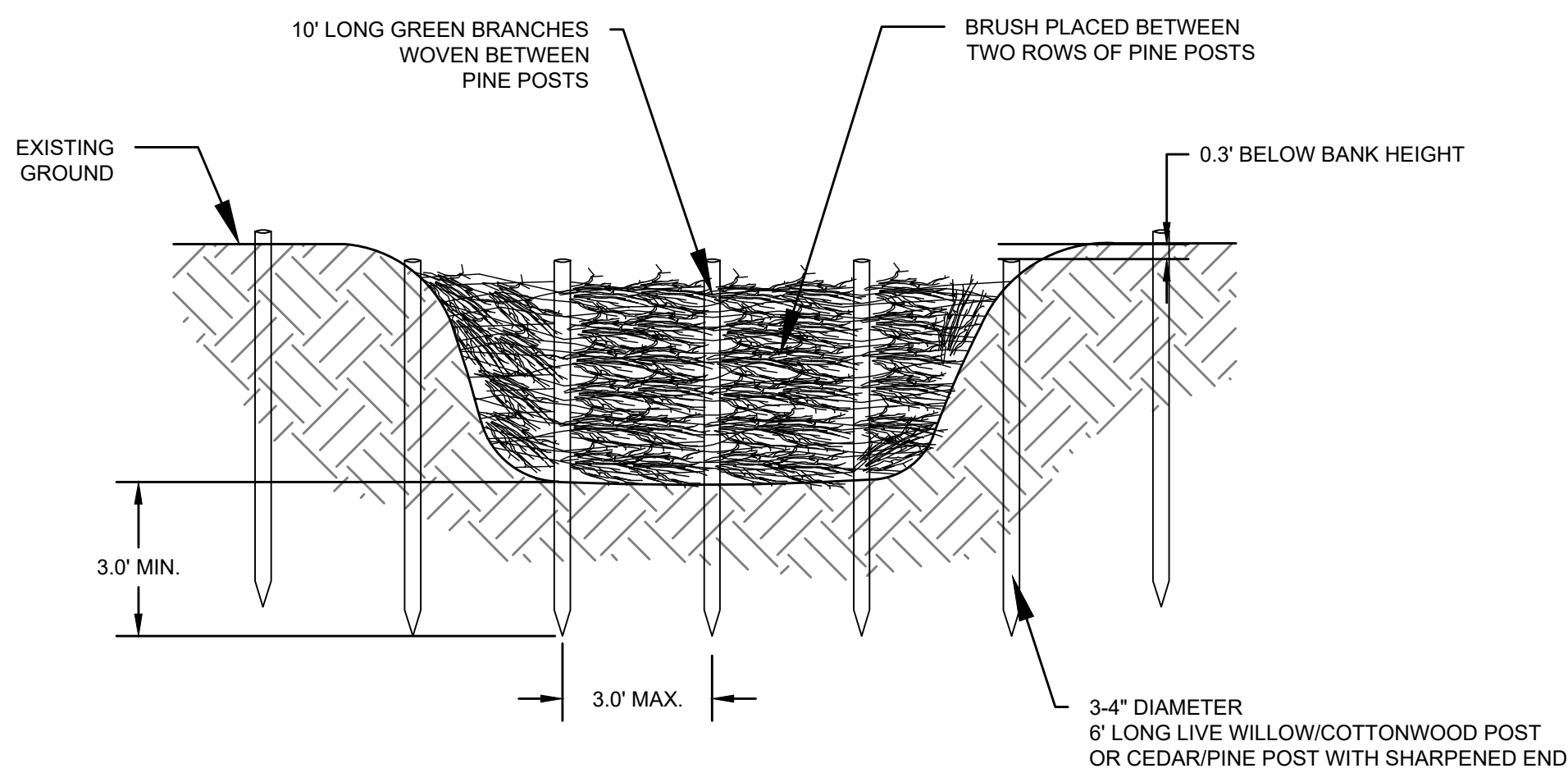
PROPOSED
 CONDITIONS

PROJECT NO.:	23913.01	SCALE:	AS NOTED
SEAL:	BY: SS	CHECK:	ML
DWG. NO.:		12 OF 22	

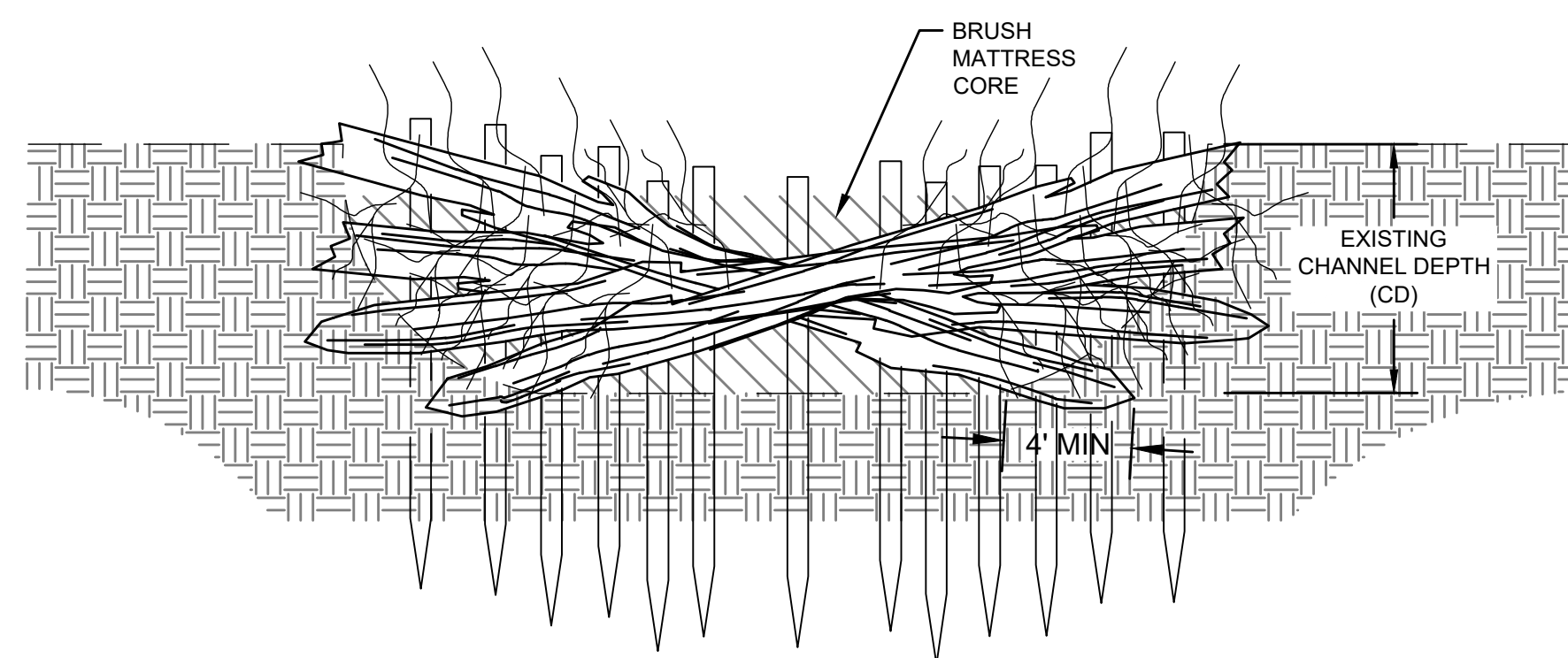
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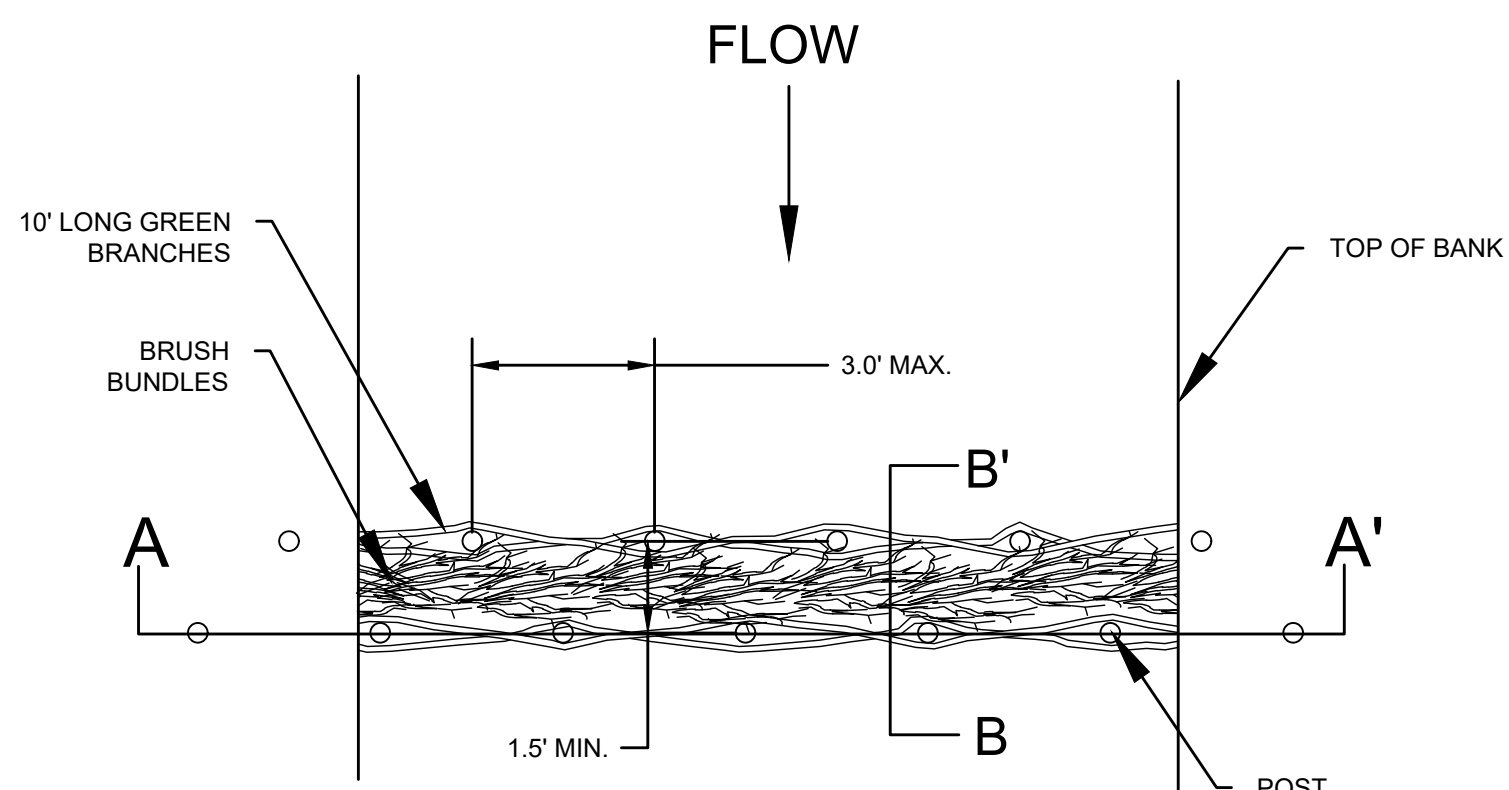
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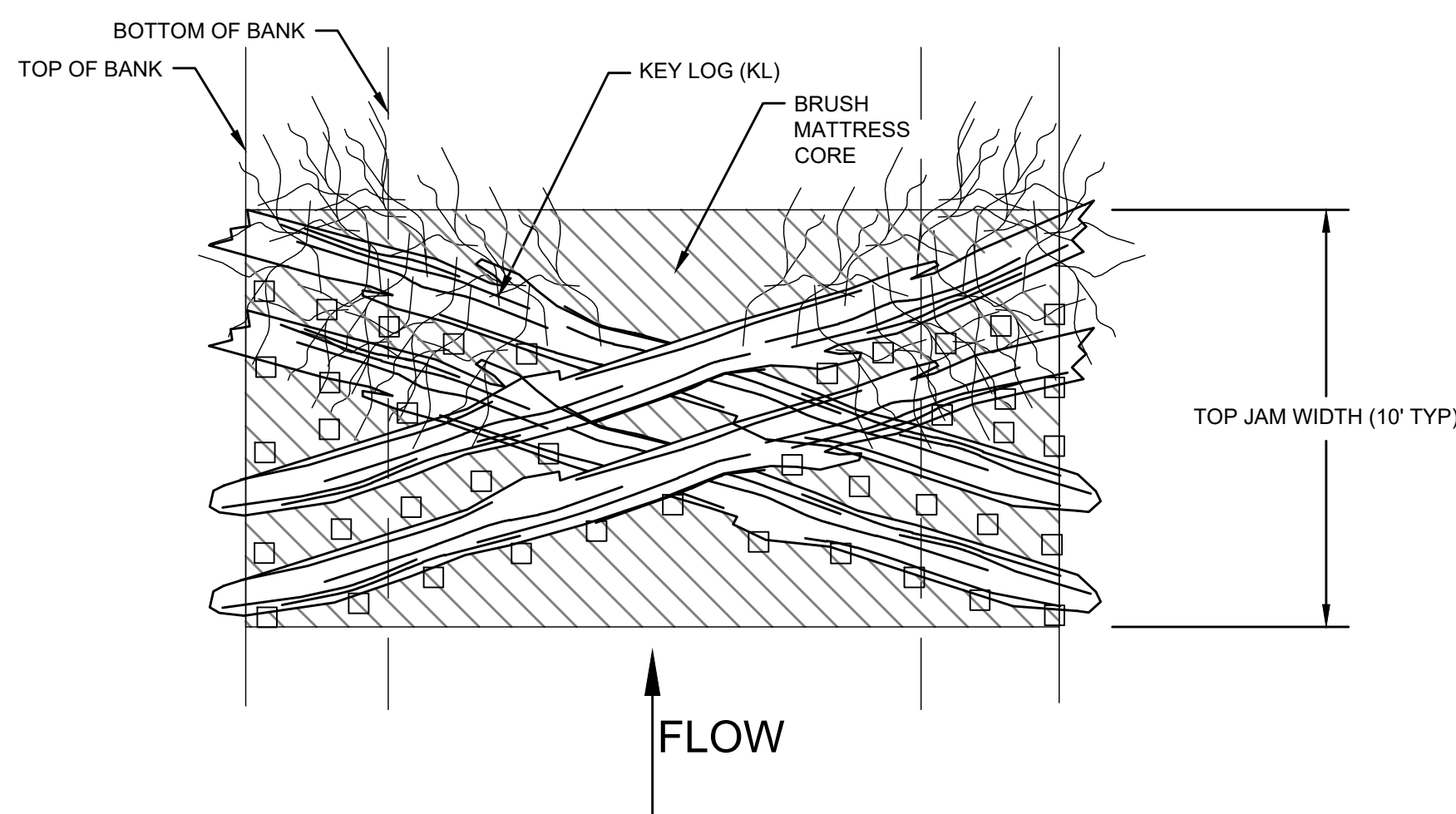
WATTLE STRUCTURE SECTION A-A'
NOT TO SCALE



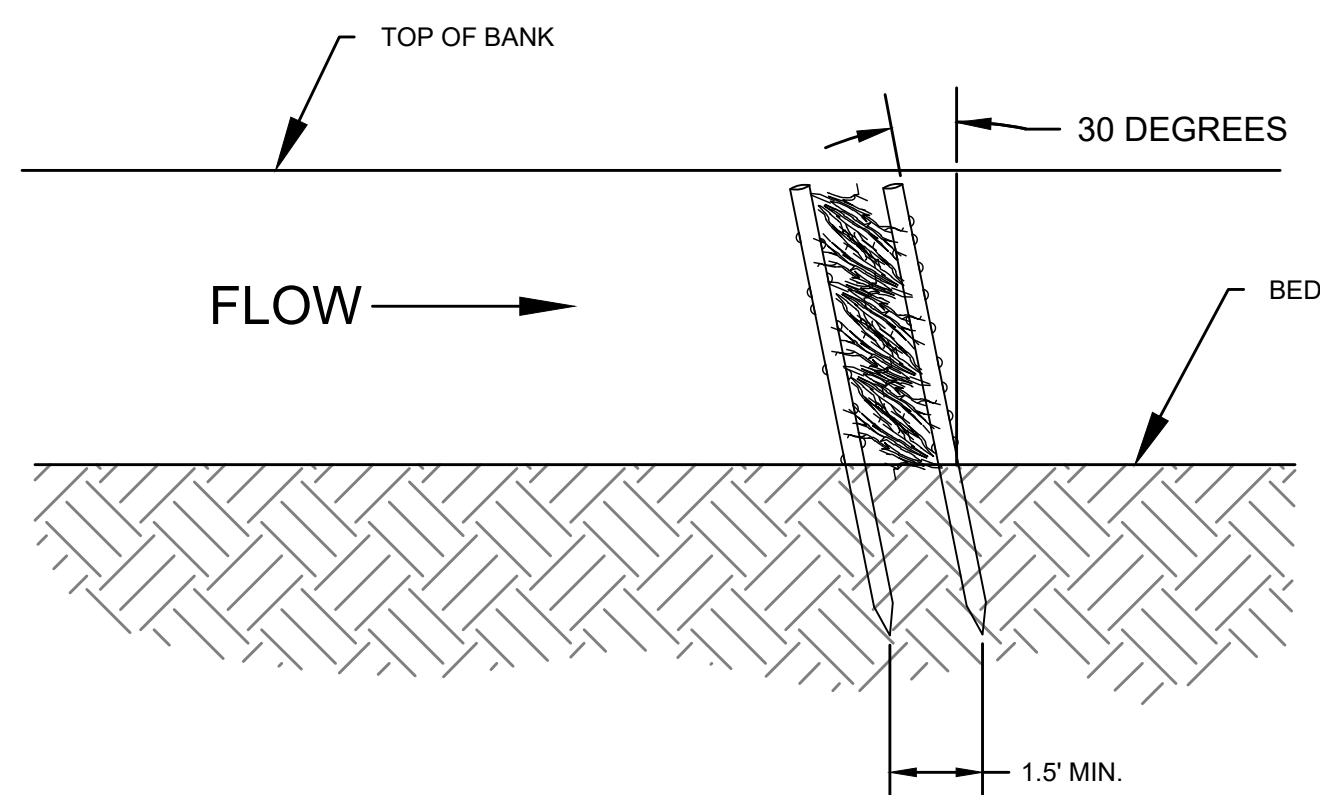
SECTION VIEW



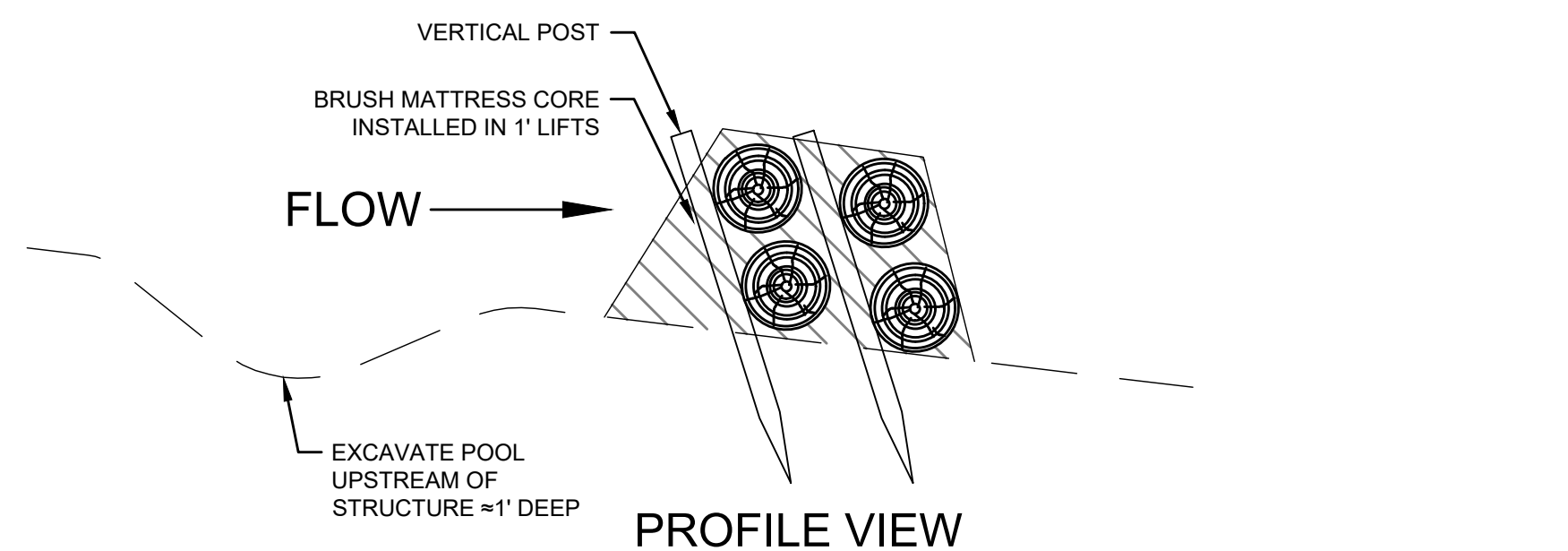
WATTLE STRUCTURE PLAN
NOT TO SCALE



PLAN VIEW



WATTLE STRUCTURE PROFILE: SECTION B-B'
NOT TO SCALE



POST-ASSISTED LOG STRUCTURE 1. INSTALL KEY LOGS AND BRUSH MATTRESS CORE
NOT TO SCALE

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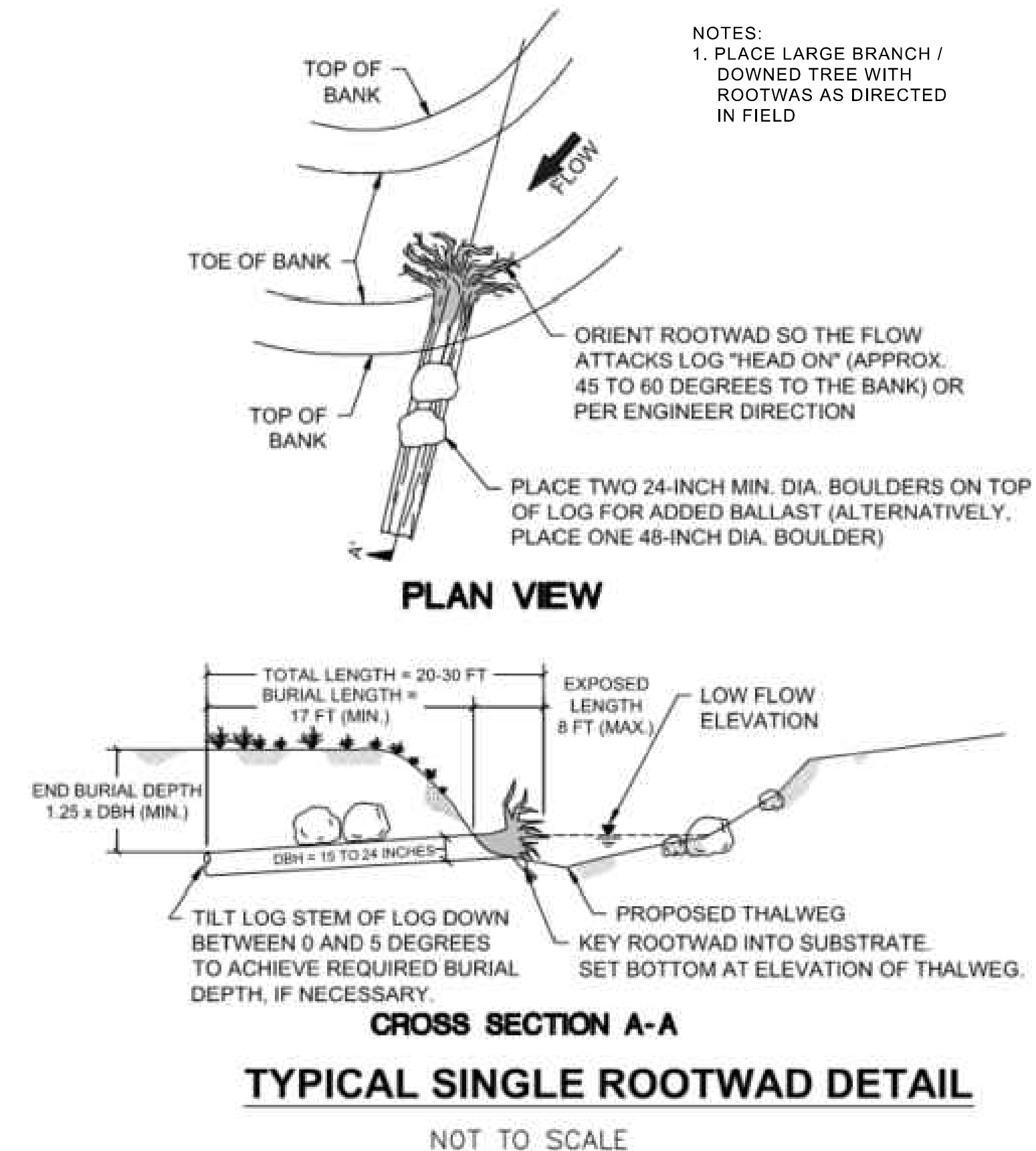
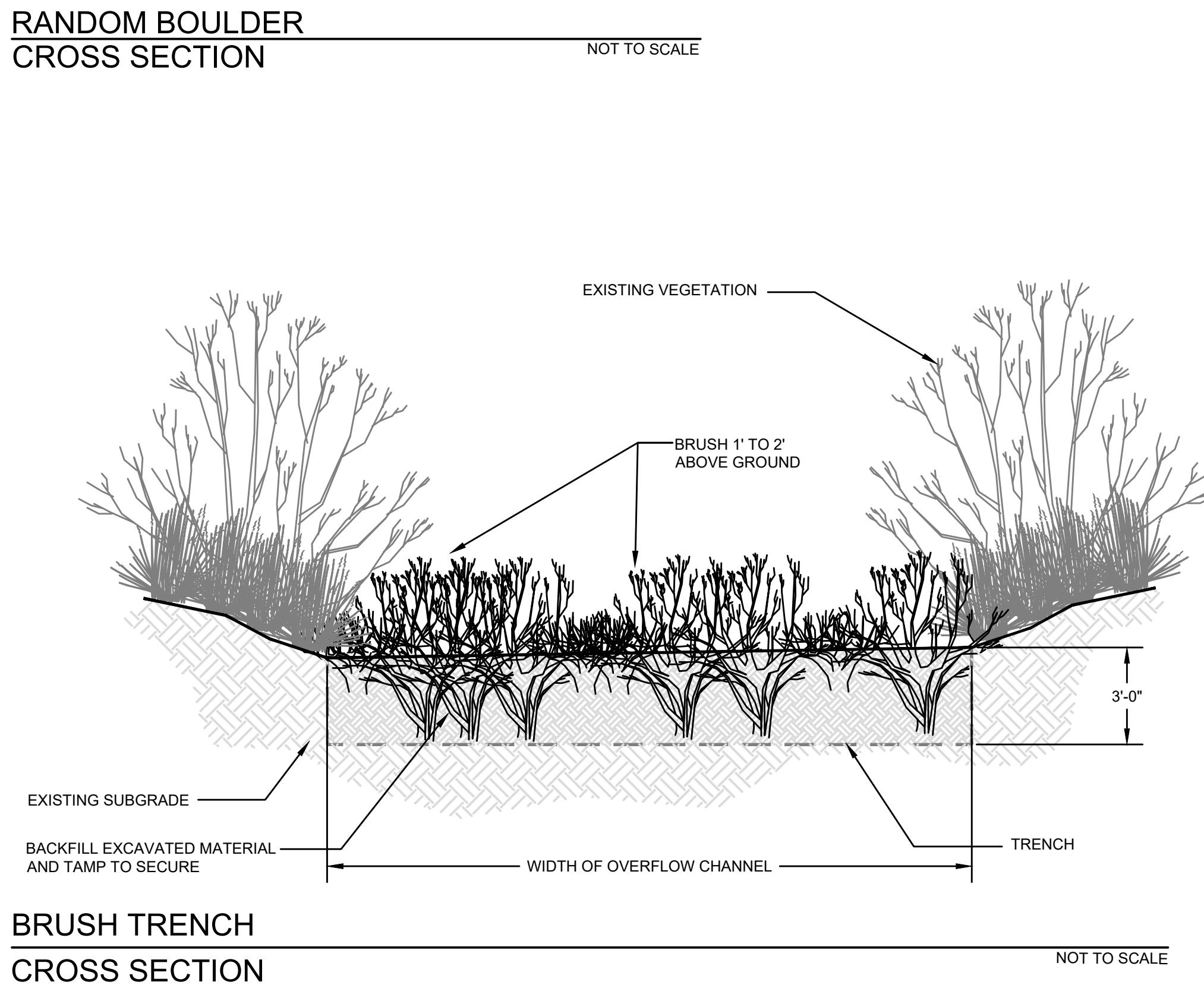
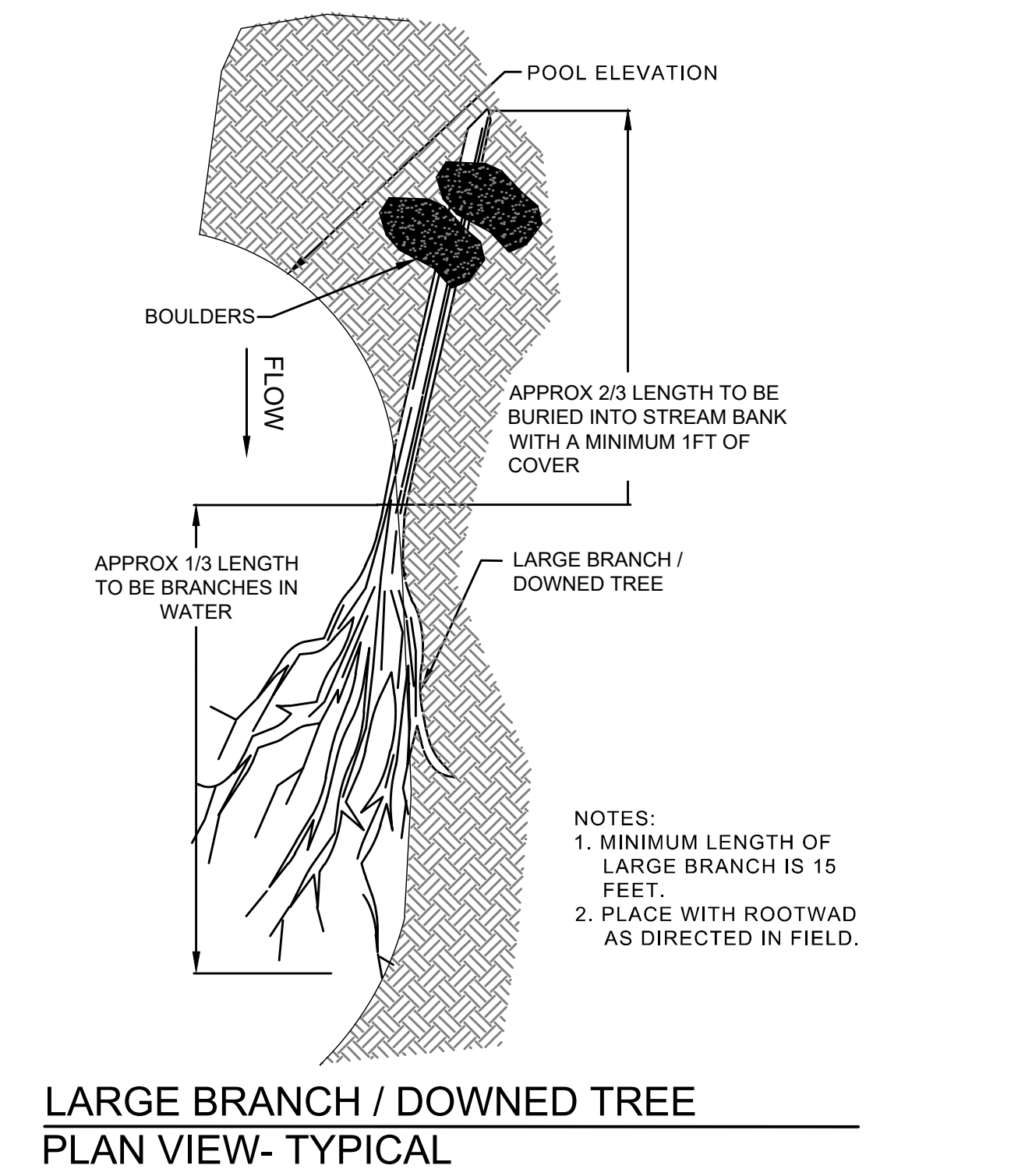
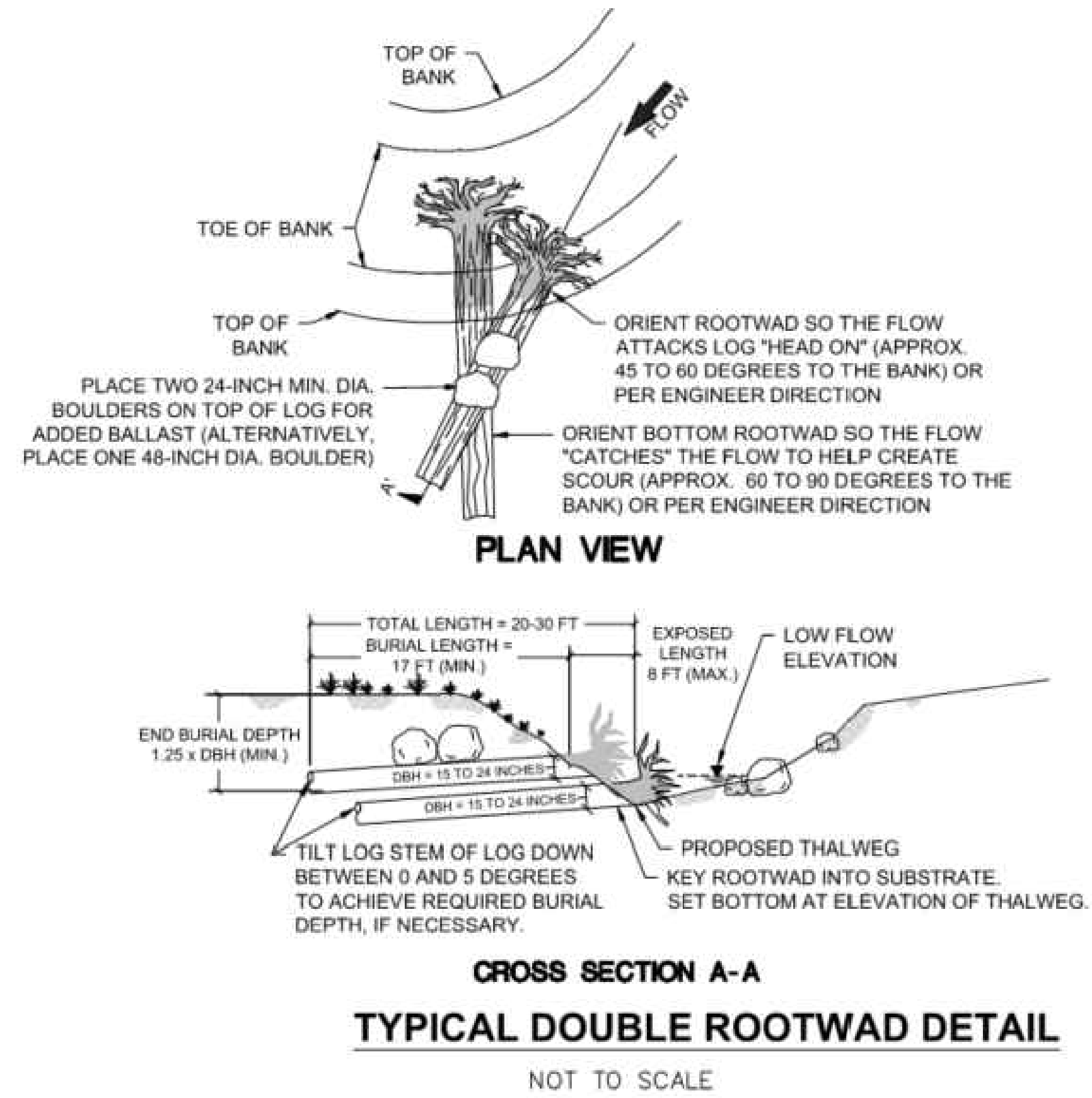
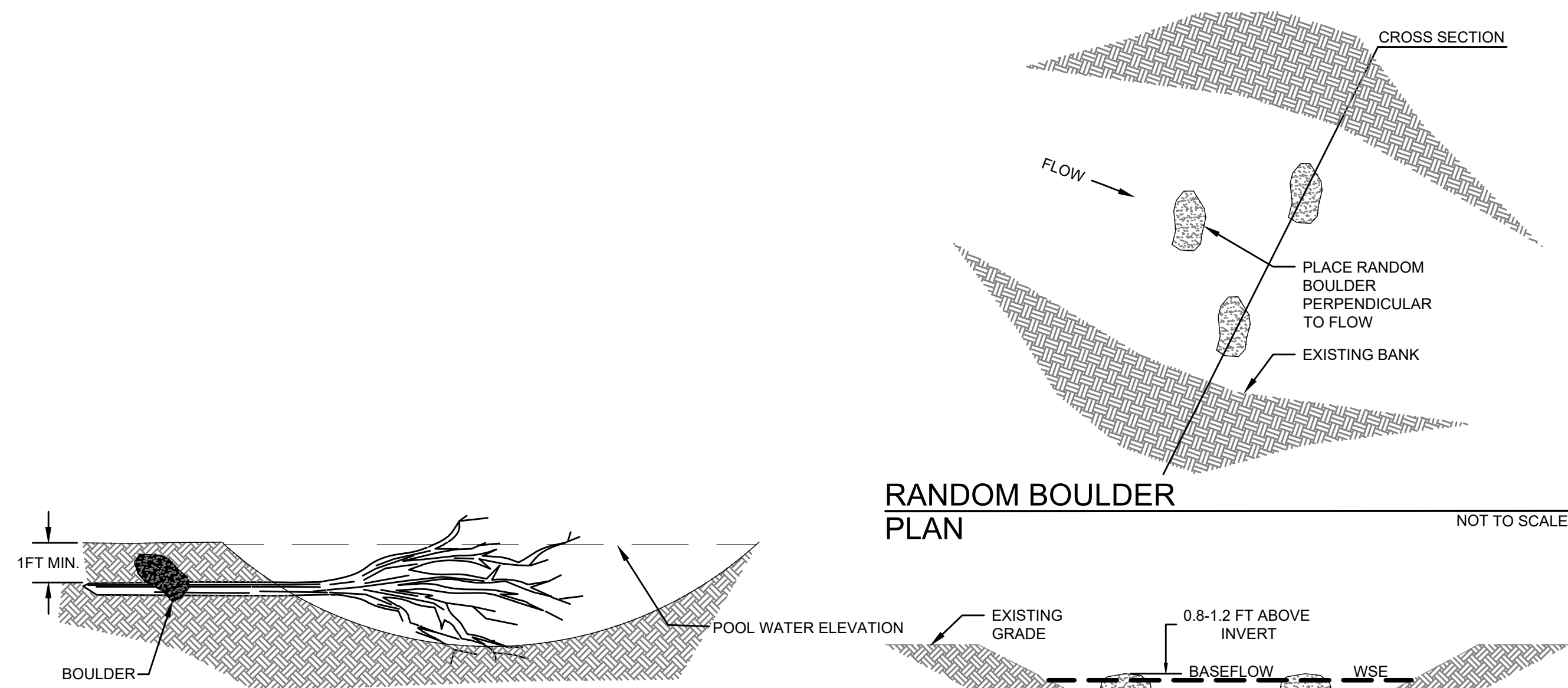
OLD ST. VRAIN ROAD REACH RESTORATION

DETAILS

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REACHES 1 - 2 STORMWATER MANAGEMENT PLAN

ALL DISTURBED AREAS WILL BE VEGETATED WITH APPROPRIATE NATIVE PLANT COMMUNITIES AS SHOWN ON THE RESTORATION PLAN.

THE MAIN TYPE OF ACTIVITY THAT MAY IMPACT STORMWATER IS SOIL DISTURBANCE DUE TO FLOODPLAIN GRADING ACTIVITIES. DURING FLOODPLAIN GRADING, SEDIMENT CONTROL LOGS (STRAW WATTLES) WILL BE USED TO INTERCEPT SEDIMENT THAT MAY BE TRANSPORTED IN RUNOFF FROM UPGRADIENT AREAS. FOR EROSION CONTROL FOLLOWING GRADING ACTIVITIES AND DURING PLANT ESTABLISHMENT, CRIMPED STRAW WILL BE INSTALLED OVER THE SITE; AREAS DIFFICULT FOR DRILL SEEDING WILL RECEIVE HYDROSEED AND MULCH. OTHER POTENTIAL IMPACTS TO STORMWATER MAY INCLUDE FUELING AND MATERIAL DELIVERY AND STORAGE. OVERALL, CONSTRUCTION ACTIVITIES WILL BE CARRIED OUT TO MINIMIZE SITE DISTURBANCE. SOUTH ST. VRAIN CREEK.

DISTURBANCE ACTIVITIES AND CORRESPONDING BEST MANAGEMENT PRACTICES ARE AS FOLLOWS:

- EXISTING VEGETATION AND EARTHWORK - EXISTING VEGETATION SHALL BE PROTECTED AND RETAINED WHEREVER POSSIBLE. THE SOIL WITHIN THE LIMITS OF DISTURBANCE IS MAINLY ALLUVIAL DEPOSITS COMPOSED OF GRAVEL AND COBBLE. THE DENSITY OF EXISTING VEGETATION WITHIN THE LIMITS OF DISTURBANCE IS ONLY ABOUT 20% BASED ON AERIAL PHOTOGRAPHY. THE LOW VEGETATION DENSITY IS DUE TO LARGE ALLUVIAL DEPOSITS FROM THE EXTREME FLOOD EVENT IN 2013. THIS PROJECT WILL REMOVE MUCH OF THE ALLUVIAL DEPOSITS PROVIDING MORE CONDUCIVE CONDITIONS FOR NATIVE WILLOWS AND COTTONWOOD. REMOVAL OR DISTURBANCE OF EXISTING VEGETATION WILL BE LIMITED TO NON-NATIVE TREES OR TO THE AREA REQUIRED TO ACCOMPLISH THE RESTORATION GOALS OF THE PROJECT. CONTIGUOUS AREAS OF PROTECTED EXISTING VEGETATION WILL BE MARKED WITH CAUTION TAPE.
- SEDIMENT CONTROL DURING EARTHWORK - STRAW WATTLES WILL BE USED TO CONTROL SEDIMENT IN RUNOFF FROM DISTURBED AREAS THAT CAN FLOW DIRECTLY INTO THE RIVER. BEFORE GRADING OCCURS, WE WILL PLACE WATTLES JUST OUTSIDE (DOWN-GRADIENT) OF THE EXTENT OF GRADING IN LOCATIONS NEAR THE RIVER. AT THE END OF THE DAY, WE WILL COMPACT NEWLY-GRADED AREAS ADJACENT TO THE STREAM USING THE BUCKET OR BY TRACKING WITH EQUIPMENT.
- WORK NEAR EDGE OF RIVER - CONSTRUCTION IS PLANNED TO OCCUR DURING LOW-FLOW CONDITIONS TO MINIMIZE SEDIMENT TRANSPORT DOWNSTREAM. FLOW WILL BE DIVERTED BY CREATING A BERM OUT OF EXISTING COBBLE MATERIAL.
- FOLLOWING GRADING, DISTURBED AREAS WILL BE COVERED IN STRAW AND CRIMPED OR, FOR STEEPER SLOPES, HYDROSEEDED AND MULCHED. PERMANENT REVEGETATION WITH NATIVE SPECIES, BOTH LIVE PLANTING AND SEEDING, WILL OCCUR FOLLOWING GRADING ACTIVITIES. GRADED SLOPES WILL TYPICALLY BE FLATTER THAN 3:1.
- FUELING - FUELING WILL OCCUR IN THE STAGING AREAS. IN CASE OF FUEL SPILL, SOIL WITH ABSORBED FUEL WILL BE EXCAVATED, PLACED IN PLASTIC BAGS, AND DISPOSED OF IN AN APPROPRIATE MANNER.
- MATERIAL STORAGE - STOCKPILES AND EQUIPMENT WILL BE LOCATED OUTSIDE OF THE 100-YEAR FLOODPLAIN.
- MATERIAL DELIVERY AND EQUIPMENT OPERATION - ACCESS TO THE SITES WILL OCCUR FROM OLD ST. VRAIN ROAD USING EXISTING DRIVEWAYS WHERE AVAILABLE. ANY DISTURBED AREAS WILL BE SMOOTHED AND SEEDED AT THE END OF CONSTRUCTION. ANY EXCESS MATERIALS, GARBAGE, AND DEBRIS FROM CONSTRUCTION ACTIVITIES WILL BE REMOVED FROM THE SITE AND APPROPRIATELY DISPOSED.
- VEHICLE TRACKING MANAGEMENT - VEHICLE ENTRANCE/EXIT WILL BE LIMITED AND WILL MAINLY CONSIST OF PERSONAL VEHICLES AND OCCASIONAL DELIVERY TRUCKS. A VEHICLE TRACKING CONTROL PAD WILL BE INSTALLED AT THE ENTRANCE/EXIT. CONSTRUCTION EQUIPMENT WILL PARK ON-SITE OVERNIGHT. PARKING WILL OCCUR IN THE STAGING AREA DESCRIBED ABOVE. VEHICLE TRACKING OF SEDIMENT ONTO FRONTAGE ROAD WILL BE MONITORED AND STREET SWEEPING INITIATED IF DEEMED NECESSARY.
- MANAGEMENT OF CONTAMINATED SOIL - NO CONTAMINATED SOIL IS ANTICIPATED TO BE ENCOUNTERED. IF THERE IS ANY INDICATION OF POSSIBLE CONTAMINATION, WORK WILL STOP AND THE APPROPRIATE COUNTY DEPARTMENT WILL BE CONTACTED TO VISIT THE SITE.

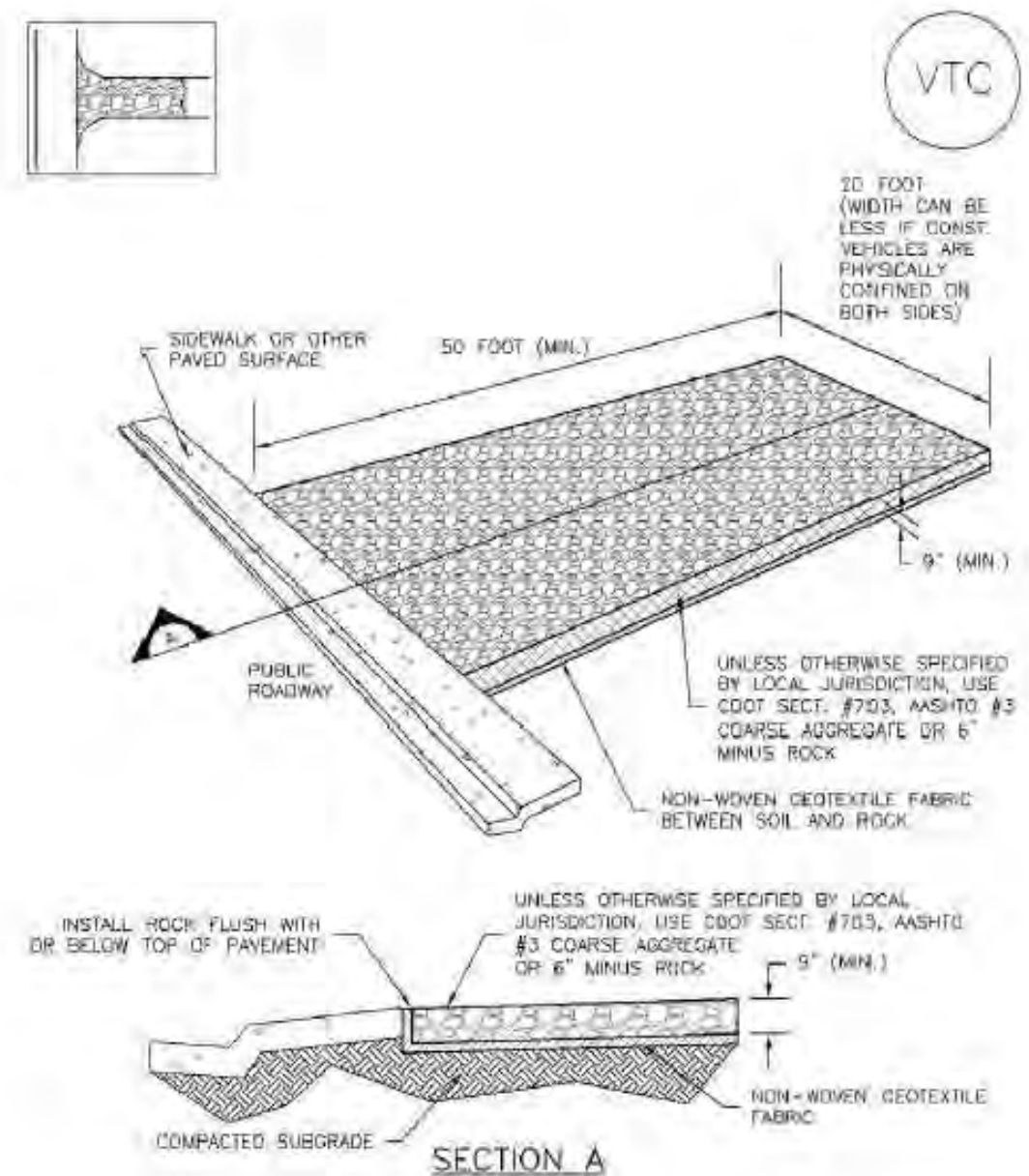
- SIGNIFICANT DUST OR PARTICULATE GENERATION - GRADING ACTIVITIES HAVE THE POTENTIAL TO GENERATE DUST DURING HIGH WINDS. WE DO NOT ANTICIPATE GENERATING DUST DURING CONSTRUCTION AS MOST OF THE SOILS IN THE PROJECT AREAS CONSIST OF LARGE SAND, GRAVEL, AND COBBLE.
- SANITARY WASTE - A PORTABLE TOILET WILL BE PROVIDED ON SITE. IT WILL BE LOCATED IN A STAGING AREA ON LEVEL GROUND AWAY FROM WATERWAYS AND STORM DRAINS AND SERVICED WEEKLY.
- ROUTINE MAINTENANCE ACTIVITIES - NO ROUTINE MAINTENANCE ACTIVITIES ARE PLANNED TO OCCUR ON SITE.
- CONCRETE WASHOUT -THERE WILL BE NO CONCRETE USED IN THIS PROJECT.
- DEDICATED ASPHALT OR CONCRETE BATCH PLANT - THERE WILL BE NO ASPHALT OR CONCRETE BATCH PLANT USED IN THIS PROJECT.
- FINAL STABILIZATION WILL BE ACHIEVED THROUGH ESTABLISHMENT OF VEGETATION. REFER TO RESTORATION PLAN AND PLANTING SCHEDULES FOR DETAILED INFORMATION ON LONG-TERM PERMANENT VEGETATION.

SEQUENCE OF CONSTRUCTION

- INSTALL APPLICABLE CONSTRUCTION BMPs AND SAFETY FENCE, AS APPROPRIATE.
- STAKE LIMITS OF DISTURBANCE AND PROPOSED GRADES, AS NEEDED.
- EXCAVATE TO ELEVATIONS SHOWN ON PLANS AND HAUL MATERIAL TO DESIGNATED FILL AREAS.
- SEED DISTURBED AREAS. INSTALL COIR MATTING ON DESIGNATED SLOPES.
- INSTALL HYDROMULCH OR CRIMPED STRAW IN APPROPRIATE AREAS.
- INSTALL TREES AND SHRUBS.

Vehicle Tracking Control (VTC)

SM-4



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

November 2010 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3

VTC-3

SM-4

Vehicle Tracking Control (VTC)

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
 - TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR FIRM).
- CONSTRUCTION MAT OR FIRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
- STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
- SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM URBAN DRAG. STANDARD DETAILS CONFLICT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO; NOT AVAILABLE IN AUTOCAD)

VTC-6

November 2010 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3

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OLD ST. VRAIN ROAD REACH RESTORATION

DETAILS

PROJECT NO.: 23913.01 SCALE: NTS

SEAL: BY: SS CHECK: ML
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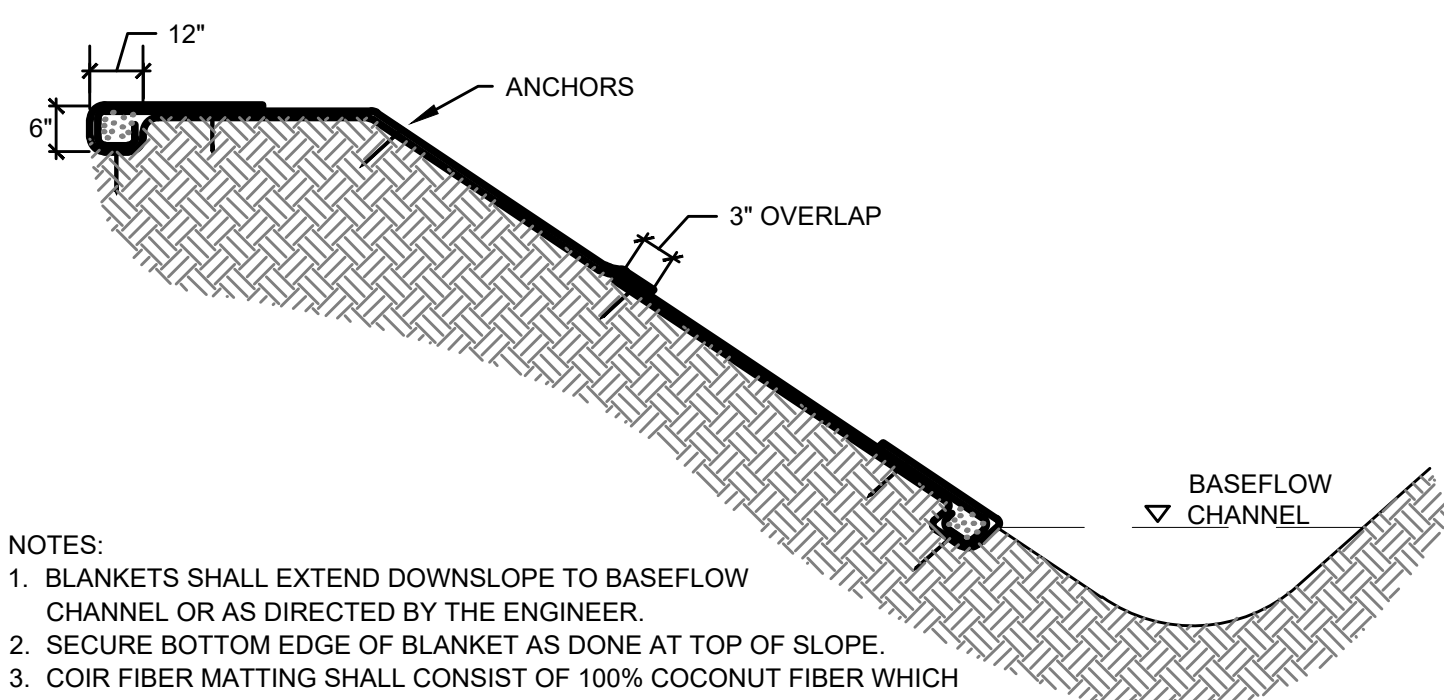
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STANDARD EROSION AND SEDIMENT CONTROL NOTES

- INSTALL ALL REQUIRED BMPs **PRIOR** TO ANY LAND DISTURBING ACTIVITY (STOCKPILING, STRIPPING, GRADING, ETC). INSTALL ALL REQUIRED EROSION CONTROL MEASURES AT THE APPROPRIATE TIME IN THE CONSTRUCTION SEQUENCE AS INDICATED IN THE APPROVED PROJECT SCHEDULE, CONSTRUCTION PLANS, AND EROSION CONTROL REPORT.
- PROTECT AND RETAIN PRE-DISTURBANCE VEGETATION WHEREVER POSSIBLE. LIMIT REMOVAL OR DISTURBANCE OF EXISTING VEGETATION TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS AND THE SHORTEST PRACTICAL PERIOD OF TIME.
- KEEP IN A ROUGHENED CONDITION ALL SOILS EXPOSED DURING LAND DISTURBING ACTIVITY (STRIPPING, GRADING, UTILITY INSTALLATIONS, STOCKPILING, FILLING, ETC.) BY RIPPING OR DISKING ALONG LAND CONTOURS UNTIL MULCH, VEGETATION, OR OTHER PERMANENT EROSION CONTROL IS INSTALLED. DO NOT LEAVE EXPOSED ANY SOILS IN AREAS OUTSIDE PROJECT STREET RIGHTS OF WAY BY LAND DISTURBING ACTIVITY FOR MORE THAN THIRTY (30) DAYS BEFORE INSTALLING REQUIRED TEMPORARY OR PERMANENT EROSION CONTROL (E.G. SEED/MULCH, LANDSCAPING, ETC.), UNLESS OTHERWISE APPROVED BY THE STORMWATER DEPARTMENT.
- WATER AND MAINTAIN THE PROPERTY **AT ALL TIMES** DURING CONSTRUCTION ACTIVITIES SO AS TO PREVENT WIND-CAUSED EROSION. IMMEDIATELY DISCONTINUE ALL LAND DISTURBING ACTIVITIES WHEN FUGITIVE DUST IMPACTS ADJACENT PROPERTIES.
- INSPECT, REPAIR, AND/OR RECONSTRUCT ALL TEMPORARY (STRUCTURAL) EROSION CONTROL MEASURES AS NECESSARY AFTER EACH RUNOFF EVENT AND EVERY 14 DAYS IN ORDER TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. REMOVE AND DISPOSE ALL RETAINED SEDIMENTS, PARTICULARLY THOSE ON PAVED ROADWAY SURFACES, IN A MANNER AND LOCATION SO AS NOT TO CAUSE THEIR RELEASE INTO ANY DRAINAGEWAY.
- DO NOT EXCEED SOIL STOCKPILE HEIGHT OF TEN (10) FEET. PROTECT ALL SOIL STOCKPILES FROM SEDIMENT TRANSPORT BY SURFACE ROUGHENING, WATERING, AND PERIMETER SILT FENCING. SEED AND MULCH ANY SOIL STOCKPILE REMAINING AFTER 30 DAYS.
- IMMEDIATELY CLEAN ANY INADVERTENTLY DEPOSITED MATERIAL FROM ROADWAYS.

CRIMPED STRAW

- AFTER SEEDING HAS BEEN COMPLETED, UNIFORMLY APPLY MULCH AT A RATE OF 1.5 TONS/ACRE (3,000 LBS/ACRE).
- MECHANICALLY CRIMP MULCH TO A DEPTH OF 2 INCHES USING A CRIMPER. CRIMP ALL MULCH SUCH THAT THE INDIVIDUAL PIECES OF STRAW OR HAY FORM EXAGGERATED V-SHAPES PROTRUDING OUT OF THE GROUND SEVERAL INCHES.
- DO NOT ACCEPT STRAW OR HAY IN A STAGE OF DECOMPOSITION (DISCOLORED, BRITTLE, ROTTEN, OR MOLDY) OR OLD, DRY MULCH WHICH BREAKS DURING THE APPLICATION OR CRIMPING PROCESS.

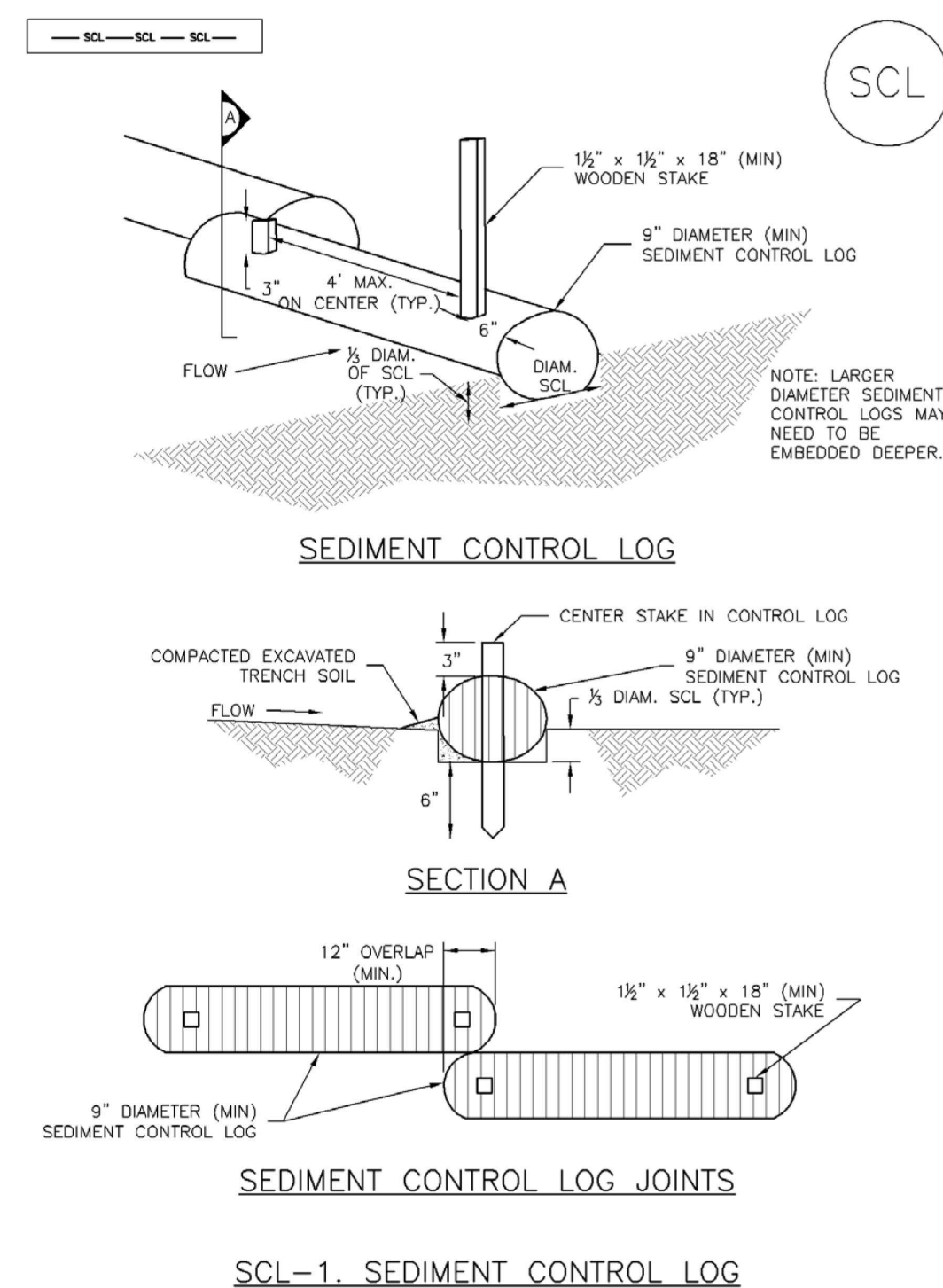


- NOTES:
- BLANKETS SHALL EXTEND DOWNSLOPE TO BASEFLOW CHANNEL OR AS DIRECTED BY THE ENGINEER.
 - SECURE BOTTOM EDGE OF BLANKET AS DONE AT TOP OF SLOPE.
 - COIR FIBER MATTING SHALL CONSIST OF 100% COCONUT FIBER WHICH MUST HAVE A WEIGHT OF 700 GRAMS PER SQUARE METER (G/M2 [E.G., BIOD-MAT70 BY ROLANKA INTERNATIONAL OR COIR FIBER MATS 700 BY PINELANDS NURSERY]). INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - STAKES USED WITH THE MATTING SHOULD BE 18-INCHES LONG, MADE OF WOOD, AND NOTCHED AT THE TOP TO MORE SECURELY HOLD THE MATTING IN PLACE.

COIR FIBER MATTING TYPICAL SLOPE CROSS SECTION

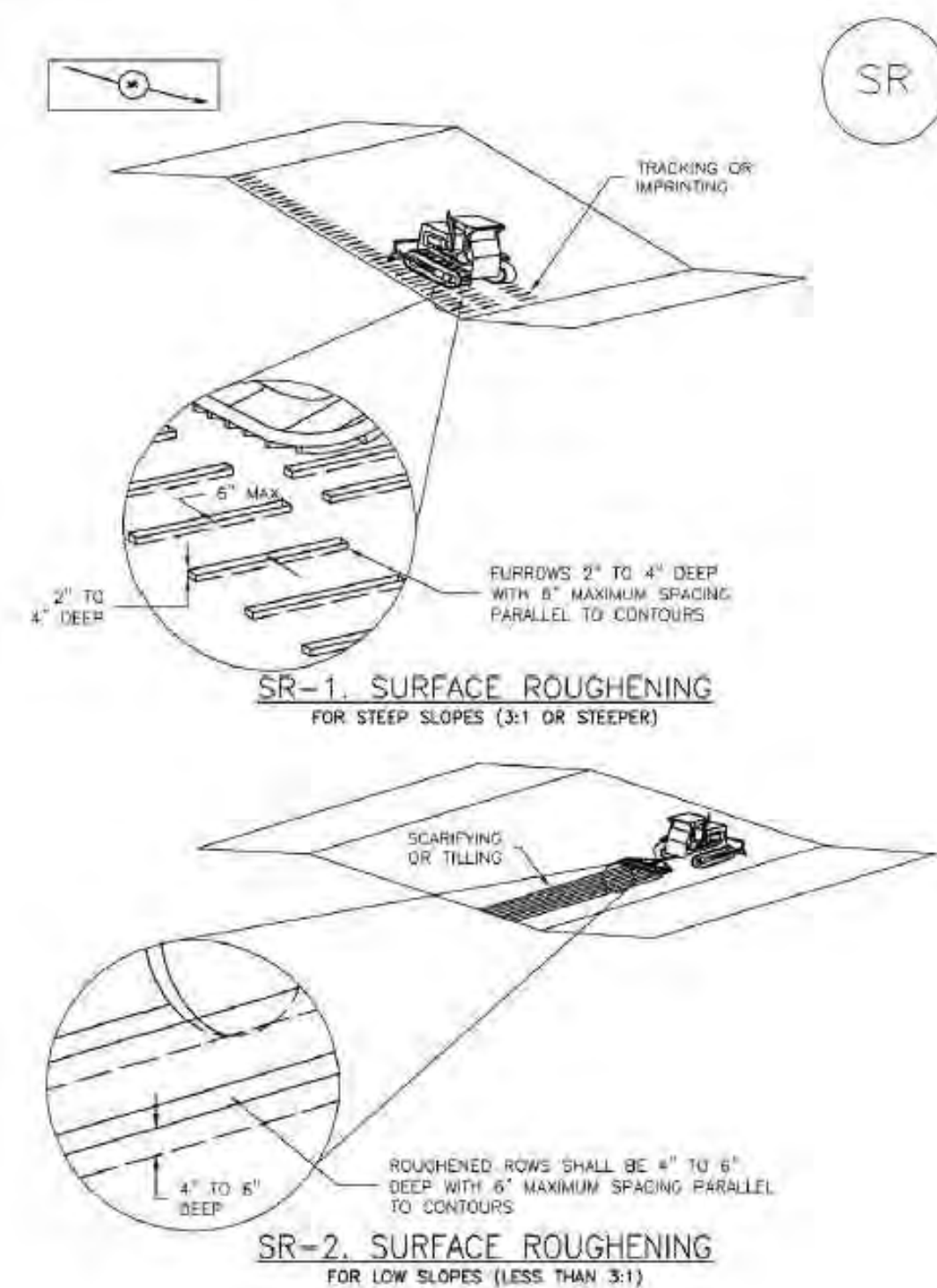
Not To Scale

Sediment Control Log (SCL) SC-2



November 2010 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 SCL-3

Surface Roughening (SR) EC-1



November 2010 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 SR-3

Sediment Control Log (SCL) SC-2

SEDIMENT CONTROL LOG INSTALLATION NOTES

- SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
- SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.
- SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELISOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
- SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS OR HIGH VELOCITY DRAINAGE WAYS.
- IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/2 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING.
- THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER.
- FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
- SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION, IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

November 2010 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 SCL-5

Surface Roughening (SR) EC-1

SURFACE ROUGHENING INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION(S) OF SURFACE ROUGHENING.
- SURFACE ROUGHENING SHALL BE PROVIDED PROMPTLY AFTER COMPLETION OF FINISHED GRADING (FOR AREAS NOT RECEIVING TOPSOIL) OR PRIOR TO TOPSOIL PLACEMENT OR ANY FORECASTED PAVE EXIST.
- AREAS WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOIL WILL BE PLACED WITHOUT DELAY IN THE CONSTRUCTION SEQUENCE, SURFACE ROUGHENING IS NOT REQUIRED.
- DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OR TILLING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.
- A FARMING DISK SHALL NOT BE USED FOR SURFACE ROUGHENING.

SURFACE ROUGHENING MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACE UPON DISCOVERY OF THE FAILURE.
- VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.
- IN NON-TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FIRST SMOOTHING OUT THE SURFACE.
- IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER RILL EROSION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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Urban Storm Drainage Criteria Manual Volume 3 SR-4

CLIENT



DATE:	ISSUES / REVISIONS
01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
02/05/2024	DRAFT PLANS FOR COUNTY LISU REVIEW - NOT FOR CONSTRUCTION



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Denver, CO 80218 / ph: 303.477.0660
fx: 303.477.4648 / www.biohabitats.com
Restore the Earth & Inspire Ecological Stewardship

OLD ST. VRAIN ROAD REACH RESTORATION

DETAILS

PROJECT NO.:	23913.01	SCALE:	NTS
SEAL:	BY: SS	CHECK:	ML
DWG. NO.:		16 OF 22	

MATCHLINE - SEE SHEET 18

NOTES:
1. PLANTING PLAN IN DEVELOPMENT



DATE:	ISSUES / REVISIONS
01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
02/05/2024	DRAFT PLANS FOR COUNTY LISU REVIEW - NOT FOR CONSTRUCTION

PARCEL #: 12012500011
COUNTY OF BOULDER
0 OLD ST VRAIN RD
LONGMONT CO 80503

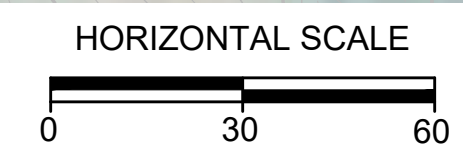
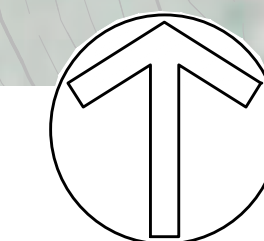
PARCEL #: 12012500011
COUNTY OF BOULDER
0 OLD ST VRAIN RD
LONGMONT CO 80503



OLD ST. VRAIN ROAD REACH RESTORATION

PLANTING PLAN

PROJECT NO.:	23913.01	SCALE:	1" = 30'
SEAL:		BY:	SS
		CHECK:	ML
		DWG. NO.:	

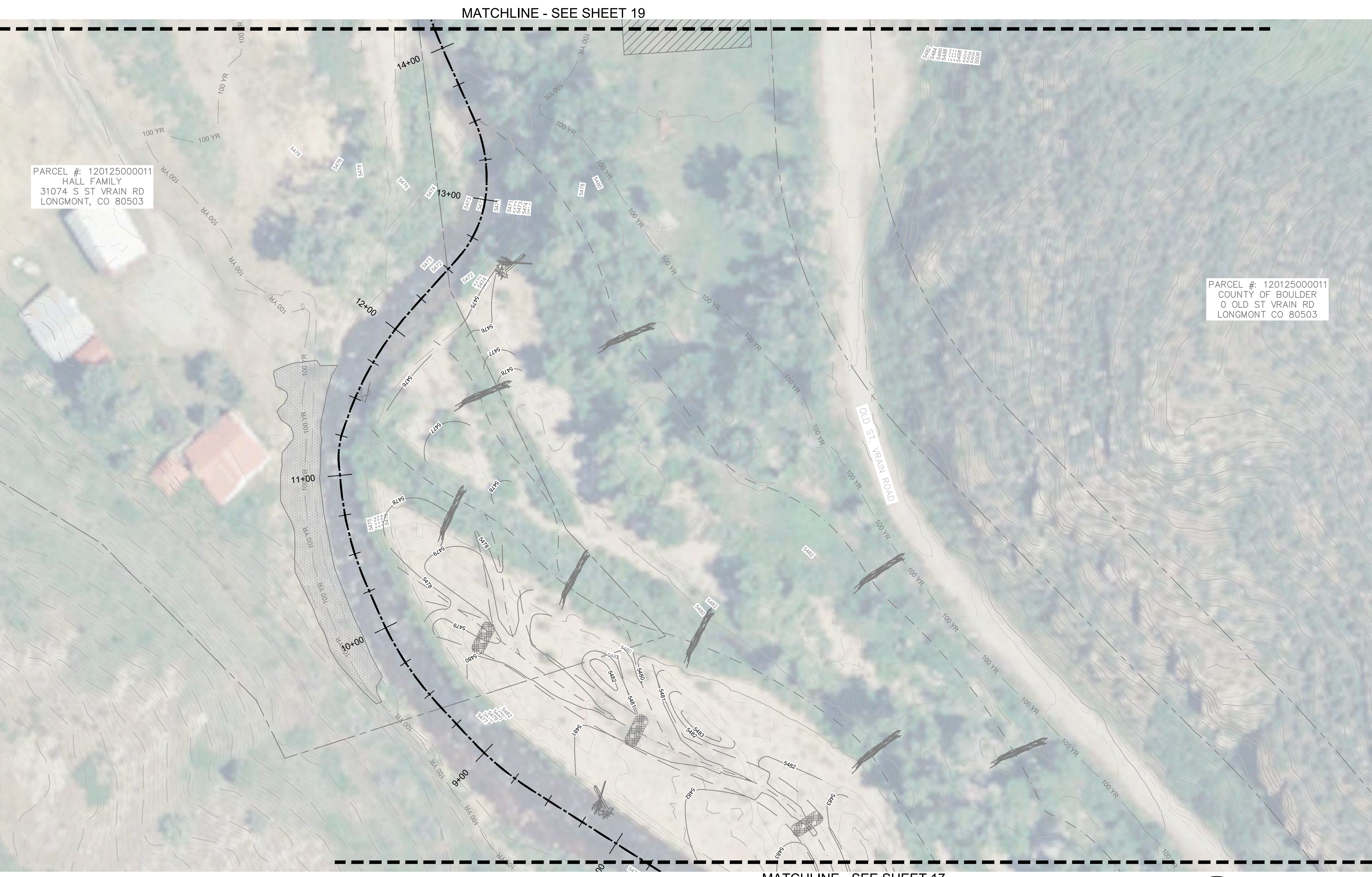


NOTES:
1. PLANTING PLAN IN DEVELOPMENT

CLIENT



DATE:	ISSUES / REVISIONS
01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
02/05/2024	DRAFT PLANS FOR COUNTY LISU REVIEW - NOT FOR CONSTRUCTION



PARCEL #: 12012500011
COUNTY OF BOULDER
0 OLD ST VRRAIN RD
LONGMONT CO 80503

PARCEL #: 12012500011
HALL FAMILY
31074 S ST VRRAIN RD
LONGMONT, CO 80503

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SOUTHERN ROCKY MOUNTAIN BIOREGION

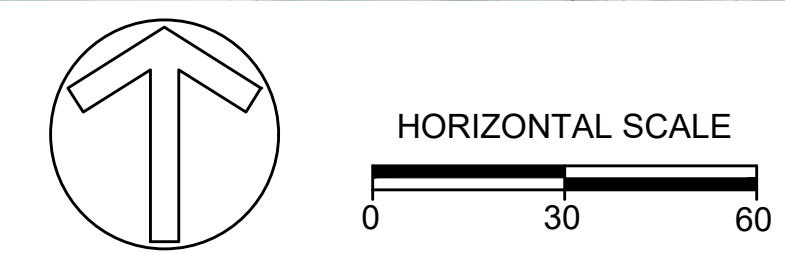
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Restore the Earth & Inspire Ecological Stewardship

OLD ST. VRRAIN ROAD REACH RESTORATION

PLANTING PLAN

PROJECT NO.:	23913.01	SCALE:	1" = 30'
SEAL:		BY:	SS
		CHECK:	ML
		DWG. NO.:	



NOTES:
1. PLANTING PLAN IN DEVELOPMENT

CLIENT



DATE:	ISSUES / REVISIONS
01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
02/05/2024	DRAFT PLANS FOR COUNTY LISU REVIEW - NOT FOR CONSTRUCTION

PARCEL #: 12012400005
COUNTY OF BOULDER
0 OLD ST VRAIN RD
LONGMONT CO 80503

PARCEL #: 12012400005
COUNTY OF BOULDER
0 OLD ST VRAIN RD
LONGMONT CO 80503

MATCHLINE - SEE SHEET 20

MATCHLINE - SEE SHEET 18

Biohabitats
SOUTHERN ROCKY MOUNTAIN BIOREGION

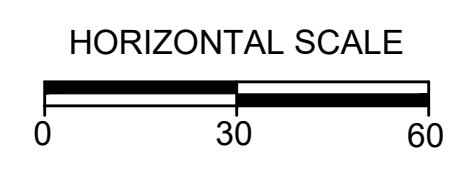
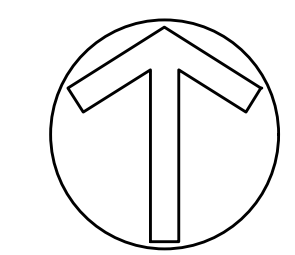
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fx: 303.477.4648 / www.biohabitats.com

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OLD ST. VRAIN ROAD REACH RESTORATION

PLANTING PLAN

PROJECT NO.:	23913.01	SCALE:	1" = 30'
SEAL:		BY:	SS
		CHECK:	ML
		DWG. NO.:	



NOTES:
 1. PLANTING PLAN IN DEVELOPMENT

CLIENT



DATE:	ISSUES / REVISIONS
01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
02/05/2024	DRAFT PLANS FOR COUNTY LISU REVIEW - NOT FOR CONSTRUCTION



MATCHLINE - SEE SHEET 19

PARCEL #: 120124000005

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**OLD ST. VRAIN ROAD
 REACH RESTORATION**


PLANTING PLAN

PROJECT NO.:	23913.01	SCALE:	1" = 30'
SEAL:		BY:	SS
		CHECK:	ML
		DWG. NO.:	



NOTES:
1. PLANTING PLAN IN DEVELOPMENT

CLIENT



DATE:	ISSUES / REVISIONS
01/10/2024	DRAFT PLANS - NOT FOR CONSTRUCTION
02/05/2024	DRAFT PLANS FOR COUNTY LISU REVIEW - NOT FOR CONSTRUCTION



SOUTHERN ROCKY MOUNTAIN BIOREGION

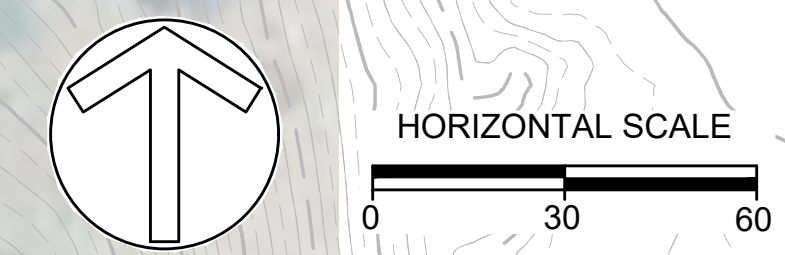
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fx: 303.477.4648 / www.biohabitats.com

Restore the Earth & Inspire Ecological Stewardship

OLD ST. VRAIN ROAD REACH RESTORATION

PLANTING PLAN

PROJECT NO.:	23913.01	SCALE:	AS NOTED
SEAL:	BY: SS	CHECK:	ML
DWG. NO.:		21 OF 22	





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Restore the Earth & Inspire Ecological Stewardship.



DATE: February 5, 2024

TO: Deb Hummel, The Watershed Center

FROM: Michael Lighthiser, Biohabitats

SUBJECT: Old St. Vrain Road Reach Restoration Project: Draft Basis of Design Technical Memorandum

This memorandum provides a summary of the draft restoration design for the Old St. Vrain Road Reach Restoration Project lead by a project team consisting of The Watershed Center, Left Hand Excavating, Biohabitats, OTAK, Wright Water Engineer, and GEI. It is a technical supplement to the project narrative developed for the Boulder County Limited Impact Special Use (LISU) permit application¹. Refer to that narrative for general project information and to the plan set for the draft design.

SITE OVERVIEW AND RELATED PAST PROJECTS

The project consists of two areas, referred to as the upstream and downstream areas (Map 1). Most of the restoration work is in the upstream area. It consists of South St. Vrain Creek and floodplain extending approximately 1,900 feet upstream to 250 feet downstream from the bridge crossing for the connector road joining State Highway 7 and Old St. Vrain Road. The downstream area consists of the upstream end of an overflow channel from an earlier restoration project that was called "Overflow Channel F" and the adjacent creek.

Numerous projects have occurred in this general area following the 2013 flood:

- Riprap placement on the Hall property along the left bank (within the upstream area).
- Construction of a new diversion structure for South Ledge and Meadows Ditches.
- Rebuild of the road bend and associated creek channel just upstream of this project along the quarry access road.
- Creek assessment and 30% restoration design encompassing the entire reach from approximately the canyon mouth downstream to Lyons.
- Final restoration design and construction of the creek from approximately the connector road bridge crossing (connecting Highway 7 and Old St. Vrain Road) downstream to Old St. Vrain Road, which included Overflow Channel F.
- Construction of the connector road bridge and the creek below the bridge.

Associated with these post-flood projects, numerous assessments, analyses, and other related information exist that are relevant and useful for this project and that the project team has incorporated into the restoration design process.

For a good overview of watershed, geomorphic, hydrologic, and vegetative characteristics for this reach of South St. Vrain Creek, refer to the Preliminary Basis of Design Report for South St. Vrain Creek Restoration at Hall Ranch².

WORK SUMMARY

Various members of the project team visited the site from October to December 2023 to complete the following work:

- General field walks to discuss project.
- Wetland delineation and vegetation assessment.
- Pebble counts.
- Aquatic habitat and fisheries observations.
- Ordinary High Water flagging.
- Land survey of creek channel.

The project team developed a conceptual design, and The Watershed Center coordinated outreach activities, including a community meeting and concept review meetings with landowners to discuss the project and receive input. As part of the outreach, the project team has monthly meetings with Boulder County Parks and Open Space (BCPOS) staff.

Biohabitats used the results of these activities and the available information from previous projects to evaluate water surface elevations, their associated frequencies, and the resulting floodplain interaction for existing conditions. Based on this evaluation, Biohabitats designed modifications to floodplain elevations that would improve connectivity between the channel and floodplain and promote natural creek/floodplain processes. Further discussion of key items for the development of this draft restoration design is provided below.

HYDROLOGIC EVALUATION

SOUTH ST. VRAIN CREEK PEAK FLOWS

There has been a lot of hydrologic analysis completed for South St. Vrain Creek. Based on this work, the following flows are applicable to the project site:

Table 1. Site Discharges

Frequency	Discharge (cfs)
Qbase	24
Q1	222
Q1.5	450
Q2	653
Q5	1019
Q10	1554
Q25	3085
Q50	4789
Q100	7036

Biohabitats also reviewed discharges generated from StreamStats³, which resulted in significantly lower flows, particularly for the higher flood events (Q10 and higher). Considering that StreamStats is based on empirical data that pre-dates the 2013 flood, it would be expected to underestimate peak flows. The values in the table above come from well-established studies specific to this watershed and are the most appropriate to use. The focus of design is on the lower, more frequent events and their interaction with the floodplain.

FLOWS AND WATER LEVELS AT SITE

Biohabitats observed water levels at the site and estimated corresponding discharge. The first observation point was during the pre-proposal field meeting during the middle of the day on June 14, which was the highest flow that the project team was able to observe in 2023. During that visit, the water level appeared to almost reach the higher limit of the band of willows that are present along parts of the channel edge. This level is slightly below where we eventually identified Ordinary High Water. While there is no stream gage on South St. Vrain Creek near the site, there are upstream and downstream gages that can be used to estimate a possible range of flow for any given time. Using this information, Biohabitats estimates that the discharge during that visit was approximately 250 cfs, slightly above a 1-year event, which seems reasonable. The second observation point was low-flow conditions from December 5 to December 8 during the site survey. The survey included the water edge that we estimate corresponds to a flow of approximately 4 cfs.

This exercise associating more frequent flows to water level, while somewhat approximate, provides real-world observations that are very helpful in ground truthing the hydraulic model, which is further discussed below.

HYDRAULIC MODELING

Biohabitats developed a draft two-dimensional (2D) model of the upstream area existing conditions using HEC-RAS (v6.3). HEC-RAS software was developed by the United States Army Corp of Engineers (UASCE) to estimate channel hydraulic variables such as velocity, shear stress, and water surface elevations within the riverine environment. We used the 2D capabilities of HEC-RAS since they provide more detailed and accurate modeling of the floodplain and associated features. Using the survey results combined with USGS light detection and ranging (lidar) data⁴, Biohabitats created a digital elevation model (DEM) of the upstream area in AutoCAD Civil 3D 2023 and imported this surface into the 2D model.

For roughness, we initially used the values that were documented in the Preliminary Basis of Design Report mentioned above². These values were applied to the vegetation mapping that was completed by the project team. We made slight increases to roughness for some of the vegetated areas to account for the increase in plant growth that has occurred since the earlier modeling effort.

For draft design of the **upstream** area, the model provided estimates of water surface elevations for different discharges that we double checked using the observed levels described previously. Modeling results that pertain to the design include the following items:

- Surface flow into the existing side channel that was the pre-flood location of the main channel happens around a 2-year event. The project team has not directly observed flows this high, which corresponds to the fact that we have not seen surface water flowing into that side channel. There is typically water in the channel, but it seeps in from subsurface flow.
- The line of existing vegetation that grows along the channel edge appears to be at or below the water elevation from an approximately 1.5-year flow event. We used this elevation for the average height of the proposed floodplain surface.
- There are existing back channels further from the main creek channel that are at a higher elevation. The draft design includes minor excavation to better connect these higher channels to the creek. While they vary, the elevations of the connections tend to correspond to approximately a 5-year event.

For the **downstream** area, which involves minor grading to better connect the overflow channel to the main channel, Biohabitats made use of the post-construction HEC-RAS model developed for the previous restoration project LOMR, which analyzed down to a 10-year flow event. We added lower flows and slightly increased bed roughness to account for the lower depths. The results indicate that the control elevation of the existing overflow channel (5398.4 feet) would not be overtopped until approximately a 10-year event. The design uses the water surface from

a 1.5-year event for the proposed control elevation, which the model estimates to be 5396.5 feet.

DESIGN FEATURES

Using the information gathered from past project review, site observations, and modeling results, Biohabitats determined proposed floodplain and side channel elevations for excavation, other minor excavation areas to further improve connectivity, and additional features to increase habitat complexity. These items are described below.

FLOODPLAIN EXCAVATION

There are two main floodplain excavation areas in the **upstream** area where significant sediment deposition occurred during the 2013 flood. The proposed average elevation for these areas is at an approximately 1.5-year flow event. During construction, the proposed floodplain surface will be graded with topographic variability consisting of slightly higher and lower elevations to provide complexity and microhabitat.

There are also smaller excavation areas near the creek edge to better connect existing higher flow paths to the main channel. The proposed elevation for these connections depends on the existing feature and varies but tends to be approximately at a 5-year event.

At the **downstream** area, the proposed elevation to better connect the overflow channel to the creek is at a 1.5-year event as well, like the proposed floodplain for the upstream area. Similarly, the proposed floodplain surface is not uniform but instead will be graded with topographic variability consisting of slightly higher and lower elevations to provide complexity and microhabitat.

SIDE CHANNELS

Within the floodplain excavation areas of the **upstream** area, side channels will be created that mimic remnant meander scrolls and oxbows that were likely present prior to the agriculture and settlement that occurred over the last century and a half. The remnant pre-flood channel location serves as a reference. The thalweg of the proposed channels is 1 foot below the average floodplain elevation, which puts it close to a 1-year flow event. The upstream end of the thalweg will be adjusted to work around existing vegetation along the edge of the creek. The side channels have an average width of 20 feet. They will be graded with some irregularity for additional microhabitat.

At the very downstream end of the **upstream** area, just below the bridge on the right side, there is a floodplain area that was created as part of the bridge construction. However, the elevation of this area is high for a floodplain; based on the draft modeling, a 5-year event does

not fully inundate this area. Due to the past work and planting that has already occurred, we do not want to grade the entire area. Instead, we are proposing a modified side channel that limits disturbance. Accordingly, the channel is narrower (15 feet) and does not go as low as the other side channels. In addition, BCPOS has requested that the right bank of the creek be cut back to make the channel wider to better match the upstream and downstream cross sections.

There are no proposed side channels for the **downstream** area of the project.

WATTLE STRUCTURE/POST ASSISTED LOG STRUCTURE/BRUSH TRENCH

The design (for both **upstream** and **downstream** areas) proposes wood structures in the floodplain (mainly the side channels in the upstream area) to promote process-based restoration, provide roughness, help slow flow, promote sediment deposition, and add habitat features. There are three types of floodplain wood structures: Brush Trenches, Wattle structures, and Post-Assisted Log structures (PALS). The Brush Trench is the simplest of the structures and is proposed for only the **downstream** area to minimize obstruction to flows through the overflow channel while also providing habitat and promoting sediment deposition. For the **upstream** area, the Wattle structure is also relatively simple and is mainly proposed for existing vegetated side channels due to the limited disturbance required to build them. The PALS are more robust and are proposed for the new side channels, where excavation will already be occurring. Some Wattle structures are also proposed for the new side channels to supplement the PALS. The exact types and location of these structures will be refined for the final design.

LARGE WOOD

Large Wood structures are proposed for the edge of the main channel in the **upstream** area. They improve aquatic habitat by creating local hydraulic conditions that form and maintain pools and are placed to help promote activation of the side channels. They will consist of large branches and rootwads.

There are no proposed large wood structures in the **downstream** area of the project.

EXISTING RIPRAP TOP DRESSING

We plan to place excavated material on the existing riprap, filling the large voids with soil and covering with sand and gravel to provide a surface that can support plant growth. The area will be seeded. This item applies only to the **upstream** area.

RANDOM BOULDERS

On the bank across the creek from the **downstream** area overflow channel, there are large rocks that were quarried nearby and used to stabilize the ditch diversion that was located here

before the 2013 flood. To improve aquatic habitat, the project proposes placement of this rock as random habitat boulders in the section of creek near the overflow channel. They would be partially buried in the channel bed to provide habitat complexity that is lacking in this reach, as well as additional channel roughness. The habitat boulders will only be for habitat improvement at lower flows and will not impact flood flows.

Random boulders are not proposed for the **upstream** area but may be considered during construction if good boulders are uncovered during floodplain excavation.

REVEGETATION

The planting plan is still under development and will be developed for the final design. The draft plans show preliminary species lists on a per acre basis for the expected vegetation zones. As part of the process-based design, the floodplain grading will maximize connectivity and create areas that we expect to re-vegetate naturally. The Watershed Center and project team prefer to allow this natural revegetation in these specific areas to occur without spending a high amount of cost and effort on plant material and installation. We will be leveraging the list of existing native plant species so that we can bolster those populations through planting and natural establishment and supplement them with other native species to create more site diversity.

GRADING CUT/FILL

The draft design for the entire project results in 6,000 cubic yards of material being excavated. We used the ground surface data to estimate the volume of material that can be placed in designated spoil areas, and the areas shown on the draft plans can accommodate this volume of material. For volume of material transported, we use a swell factor of 25% to account for the decrease in density that occurs when in-situ material is excavated, which approximately corresponds with published values for gravel⁵ and, in our experience, has provided good results for other floodplain excavation projects along the Front Range.

WORK REMAINING FOR FINAL DESIGN

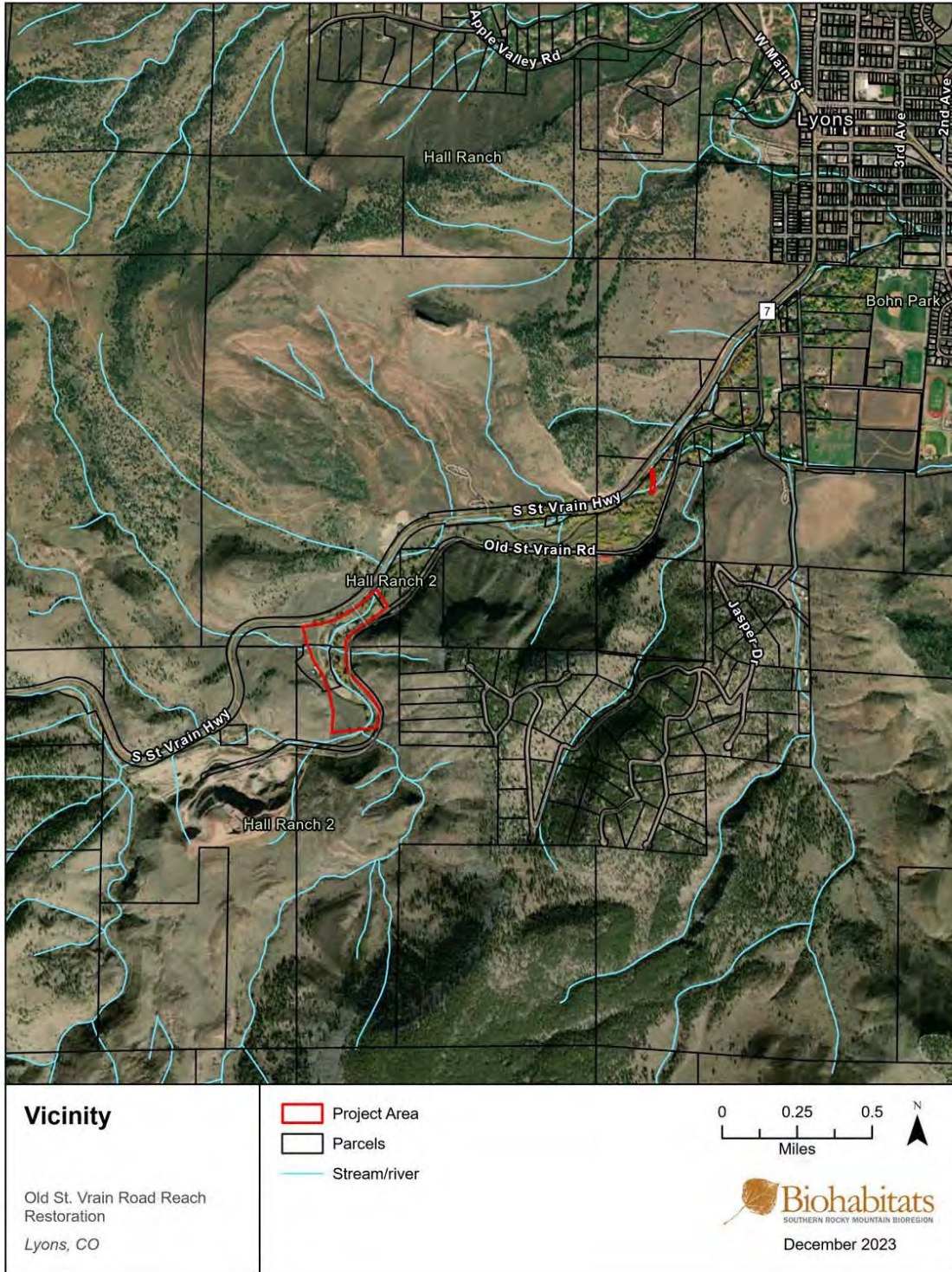
The design is being reviewed and discussed by the project team, The Watershed Center, BCPOS, other landowners, and interested stakeholders. The comments that have been received will be incorporated into the final design. In addition, there are items that need to be worked through and finalized in the final design, such as the following:

- Further analysis of shear stress by overbank flows and incorporation of methods to protect against excessive floodplain erosion
- Further refinement of floodplain and spoil area grading
- Further refinement of access and determination of disturbance limits

- Development of planting plan

In addition, this technical memorandum will be updated to reflect refinements to the design.

Map 1. Project Location Map Showing Upstream (Larger) and Downstream (Smaller) Areas.



REFERENCES

1. Boulder County LISU Permit Application for OSV Project.
2. Matrix Design Group. Preliminary Basis of Design Report for South St. Vrain Creek Restoration at Hall Ranch. (*website link to be added*) (2016).
3. StreamStats. <https://www.usgs.gov/streamstats>.
4. United States Geological Survey. <https://www.usgs.gov/programs/national-geospatial-program/national-map>.
5. Office of Federal Lands Highway. <https://highways.dot.gov/federal-lands/pddm/dpg/earthwork-design> (March 2022).



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

MEMO

TO: Pete L'Orange, Planner II
 FROM: Michelle Huebner, Plans Examiner Supervisor
 DATE: February 26, 2024

RE: Referral Response, LU-24-0002: Old St. Vrain Road Reach Restoration. Limited Impact Special Review request for approximately 12,000 cubic yards of earthwork/grading related to ecological restoration of the Old St.

Location: 530 Old St. Vrain Road, 0 Old St. Vrain Road, and 31074 S St. Vrain Road, located on Old St. Vrain Road, approximately 1 mile south and west of the intersection of State Highway 7 and Old St. Vrain Road, in Section 24 and 25, Township 3N, Range 71W, and Section 19, Township 3N, Range 70W

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

1. **Building Permit.** A grading permit, plan review, and inspection approvals are required for the grading. The construction documents must be Stamped, signed and sealed by the Colorado design.

Please refer to the county's adopted 2015 editions of the International Codes and code amendments, which can be found via the internet under the link:

2015 Building Code Adoption & Amendments, at the following URL:

<https://assets.bouldercounty.org/wp-content/uploads/2017/03/building-code-2015.pdf>

2. **Grading Permit.** A separate grading permit and plan review and 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.
3. **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.

4. **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 grading permit application.

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



Community Planning & Permitting

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February 20, 2024

To: Pete L'Orange, Planner II
 From: Sarah Heller, Floodplain Program Planner

Subject: Docket LU-24-0002: Old St. Vrain Road Reach Restoration
Request: Limited Impact Special review request for approximately 12,000 cubic yards of earthwork/grading related to ecological restoration of the Old St. Vrain Road Reach at 530 Old St. Vrain Road, and 0 and 31074 S St. Vrain road.
Location: 530 Old St. Vrain road, 0 Old St. Vrain Road, and 31074 S St. Vrain Road, located on Old St. Vrain Road, approximately 1 mile south and west of the intersection of State Highway 7 and Old St. Vrain road, in Section 24 and 25, Township 3N, Range 71W, and Section 19, Township 3N, Range 70W.

The Community Planning & Permitting Department – Floodplain Management Program has reviewed the above referenced docket and has the following comments:

1. The proposed earthwork and grading related to the ecological restoration is located in the Floodplain Overlay (FO) District. A Floodplain Development Permit (FDP) is required.
2. ***Prior to Building/Grading Permit application submittal***, the applicant's engineer must contact FloodplainAdmin@bouldercounty.gov to obtain the effective model for South Saint Vrain Creek. The FDP application will require one of the following, which must be supported by a hydraulic model and report certified by a Colorado licensed Professional Engineer (P.E.) in accordance with Article 4-404.2.E of the Boulder county Land Use Code:
 - a. A letter certified by a Colorado registered Professional Engineer stating that the project will not cause any rise in regulatory 100-year water surface elevations;
 - b. An approved Conditional Letter of Map Revision (CLOMR) from FEMA; or
 - c. An approved Boulder County Floodway Review.
3. ***At the time of Building/Grading Permit application submittal***, the applicant must email a Floodplain Development Permit (FDP) application to FloodplainAdmin@bouldercounty.gov. The FDP application must contain the following:
 - a. A Signed FDP application form;
 - b. A Site Plan showing the proposed building and all staging/storage areas in relation to regulatory floodplain and property boundaries;
 - c. Construction design, stamped, signed, and dated by a Colorado-licensed Professional Engineer (P.E.)

- d. A hydraulic model and P.E.-stamped report demonstrating floodplain impacts, as described above.
4. The applicant must demonstrate coverage under a USACE Nationwide or Individual 404 permit is required prior to FDP issuance.
5. The applicant must obtain a Colorado Department of Public Health and Environment Dewatering Permit, if required.
6. Construction staging and/or stockpiling areas must be reviewed and approved by the Community Planning & Permitting Department – Floodplain Management Program. All staging and stockpiling areas must avoid the regulatory floodplain unless it is demonstrated that doing so is unavoidable. Construction staging and/or stockpiling in the regulatory floodway will not be permitted without an alternatives evaluation and an emergency evacuation plan approved by the Community Planning & Permitting Department – Floodplain Management Program.
7. The proposed development is within a known fluvial hazard zone, which is the area a stream has occupied in recent history, could occupy, or could physically influence as it stores and transports water, sediment and debris. Parts of the property that are outside the regulatory FO District are still within the fluvial hazard zone and may be subject to excessive erosion, sedimentation, and/or wholesale changes in the location of the stream channel. The Floodplain Management Program strongly encourages the applicant to consider flood protection measures above and beyond the minimum requirements of the Land Use Code.

Please contact Sarah Heller, Floodplain Program Planner, at sheller@bouldercounty.gov to discuss this referral.

This concludes our comments at this time.



Parks & Open Space

5201 St. Vrain Road • Longmont, Colorado 80503
303.678.6200 • Fax: 303.678.6177 • www.BoulderCountyOpenSpace.org

TO: Pete L'Orange, Community Planning & Permitting Department
FROM: Ron West, Natural Resource Planner
DATE: March 8, 2024
SUBJECT: Docket LU-24-0002, Watershed Center, South St. Vrain

Site Conditions

I have reviewed the submitted materials, and have visited the area many times in the past. The project area totals about 2200 linear feet along South St. Vrain Creek. The 2013 flood heavily disturbed this reach, as well as impacts from runoff from the 2020 Calwood Fire, as described in the application.

County Comprehensive Plan Designations

The parcels have the following designations in the Boulder County Comprehensive Plan, and from other resource inventories.

- Prebles Meadow Jumping Mouse Habitat – Zones 1 and 3
- Riparian Areas
- Critical Wildlife Habitats – St. Vrain Corridor, and Hall II
- Riparian Habitat Connector
- Wetlands
- Natural Area – Red Hill
- Significant Natural Communities
- Rare Plant Areas
- View Protection Corridor – associated with State Highway 7
- Archeologically Sensitive Area, and Travel Route
- Floodplain

Discussion

This project would restore a heavily flood-impacted stream section. None of the above-listed resources should be significantly impacted, and many would be improved in the long-term.

The following discussion is organized by: 1) general comments relevant to all stream projects; with 2) each general comment followed immediately with comments specific to the subject proposal. Comments are also divided into: A) planning and construction concerns; and B) revegetation. Finally, drawing-specific questions and comments are offered.

Planning and Construction

Areas of existing vegetation that are to be protected shall be delineated in the field so that heavy machinery is prevented from entering the areas and disturbance is avoided. This is often accomplished with orange construction fencing, rather than silt fencing. The former is less expensive, easier to install, and reusable. If on-the-ground delineation is too extensive, a suitable alternative could be proposed. If individual mature trees are to be protected, the field technique to be used shall be included in the construction notes shown on the final plans. Young cottonwood seedlings that have naturally sprouted since the flood should be avoided; if not possible, transplanting such seedlings back into the site is highly encouraged.

*This application: Page 7 of the Draft Basis of Design Technical Memorandum states that, "Further refinements of access and determination of disturbance limits" still needs to be completed. The contours shown on Drawings 9, 10, and 11 are confusing. These are proposed conditions, but it is unclear if all contours shown are to be newly graded, or not. Specific machinery access corridors, **within** the project site, need to be delineated if all areas are not to be graded. Note 1 of Drawing 15 states that, "Existing vegetation shall be protected and retained wherever possible." The same Drawing notes to "stake limits of disturbance."*

The source of any wood used as tree/root wads for toe protection, or for log vanes, must be reviewed, along with drawing details.

This application: The source of wood/brush for structures is not defined. There are three for floodplain areas: Brush Trenches, Wattle structures, and Post-Assisted Log structures; and Large Wood structures for channel edges. How would "harvested" materials be determined and is there enough on-site? The channel boulders would be harvested on-site.

Soil riprap (instead of rock-only riprap) shall be used in all cases; this is also called void-filled riprap. Fines need to be included within the riprap to allow for natural germination and establishment of plant roots in the long term. Some fines near the water line would unavoidably be washed away in high water events, but without fines, riprap would remain barren for decades. Existing, previously-placed riprap could be mitigated by adding fines. The source of structure rock, if imported, must be reviewed.

This application: No new riprap is proposed, and some existing riprap is to be covered by fines, improving its long-term habitat value.

As called for in the county's 2016 Storm Drainage Criteria Manual, biodegradable hydraulic fluids must be used in equipment and machinery used in the water.

This application: Not addressed; this should be a condition of approval.

Prior to transporting equipment to the site, all machinery 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.

This application: Not addressed; this should be a condition of approval.

A “spill kit” for emergency pollutant isolation, and written clean-up procedures, must be onsite at all times during construction activity. The use of floating downstream booms during construction is strongly recommended.

This application: Not addressed; a spill kit should be a condition of approval.

If already on-site, some large downed woody material should remain, particularly if embedded in stream deposits. Such material plays a critically important ecological role in the riparian community. Additionally, some standing dead trees (snags) should remain on-site, and not all removed simply because they are dead. Any trees removed should be done so between September 1 and March 31, the non-nesting season for migratory birds, based on the federal Migratory Bird Treaty Act.

This application: It is unclear if downed woody material and dead trees are on-site. The narrative does state that, “Any trees on site proposed for removal will be repurposed in the installation of wood structures.” Some of these would be used, but some should also remain

Staging areas and stream-access corridors must be shown on the final plans and approved by the county prior to initiation of construction. Fueling areas must be located in upland sites, as far away from the stream edge as possible, and preferably in areas without porous stream deposits such as sand or cobble. Such areas should be at least 50 feet from the creek, and preferably 100 feet. County road ROWs can be used if approved by the county Transportation Department. Appropriate BMPs for fueling areas must be utilized.

This application: The proposed staging area is over 100 feet from the channel, and is out of the 100-year floodplain. Fueling is also proposed here, but staff suggests fueling at the road “turn-out” in the same area, on the east side of the road instead. It is likely that the proposed fueling/staging site is composed of porous stream deposits.

Final US Fish & Wildlife Service clearance needs to be obtained prior to initiation of construction; the USFWS letter shall be submitted for Community Planning and Permitting files.

This application: The applicants are “...in the process of reaching out to the U.S. Fish and Wildlife Service....” This needs to be finalized.

Revegetation

A complete list of graminoids, forbs, shrubs and trees must be approved by the county before permitting. All species must include scientific names of plants. The use of plantings – containers and/or cuttings – is strongly encouraged, rather than simply grasses.

This application: Although the Revegetation Plan is “preliminary,” the species list is adequate. See additional comments below.

Tree/shrub cuttings and container plantings should be monitored for three years. Who is responsible for monitoring, and what is the protocol if plantings die? Will temporary irrigation be used?

This application: The narrative states that, “The Watershed Center will conduct maintenance, including weed control and monitoring of vegetation, for three years.” What is the protocol for plantings that die? Will irrigation be used?

If willow or cottonwood cuttings are proposed, who will gather them and from what location – public or private?

This application: The narrative states that, “The project team will selectively harvest and transplant willow clumps to help start establishment.” Staff assumes this is only on/from the project site.

Staff encourages beaver protection for tree plantings, and vole/small mammal protection for shrub plantings. This is often accomplished using mesh collars. Alternatively, a replacement plan for planting mortalities could be included.

This application: This needs to be addressed.

Weed management needs to be incorporated into the project, both pre- and post-construction. Pre-construction, dense stands can be sprayed or mowed. Post-construction, weed control should continue for the three-year monitoring period. Weed species targeted could be either: 1) those listed on the county’s noxious weed list (a sub-set of the state list); or 2) all species on the state’s noxious weed Lists (A, B, and C).

This application: See above, on weed management.

If straw mulch or straw bale barriers are used, all straw must be certified weed-free. Hay cannot be used as it contains aggressive pasture grass seed.

*This application: Straw is mentioned for both wattles and crimping, but certified weed-free is not delineated. Drawing 16, Note 2 (Crimped Straw) states, “straw or **hay**.” Hay cannot be used, and certified weed-free straw must be a condition of approval.*

Would topsoil be imported, or would seeding occur on existing fines? If topsoil is to be imported, where will it come from and how will the introduction of weed seeds be prevented? If used, how deep is the topsoil layer?

This application: No material is to be imported. Revegetation will occur on existing fines.

Hydroseeding should not be used; it is often unsuccessful in our climate. Grass seeds can be either broadcast or drilled, but rates doubled if broadcast. Hydromulching, after seeding, is encouraged.

This application: Broadcast seeding and hydromulching is proposed.

Further Comments Specific to the Proposal and Drawings

The Technical Memo states that “aquatic habitat and fisheries observations” were conducted from October to December 2022. What type of data was collected?

Drawing 9, 10, and 11: The icons for the channel bank structures show one root wad and one large branch, combined. Yet there is no corresponding detail drawing for such a structure; they are composed of either root wad(s) **or** a large branch. This needs to be clarified. There also is no icon legend/key for the drawings.

Drawing 9: A Note states, “Fill existing riprap voids with soil and cover with sand and cobble.” Yet page 6 of the Technical Memo states, fill riprap “...with soil and covering with sand and gravel.” Staff’s understanding is that there is no “soil” in the areas to be graded, rather sand, gravel, cobble, and boulders. Is it gravel or cobble covering?

Drawing 12: Why is the area to receive random boulders so short? It’s only about 60 feet of the channel?

Drawing 13: Wattle structure detail – Where would the “long green branches and brush” be sourced? The posts are to be “willow/cottonwood or cedar[juniper?]/pine. Which is it? The first pair would sprout, while the second pair would be purely structural.

Drawing 14: Large branch/downed tree detail – Wouldn’t this design be dangerous for kayakers and tubers, essentially creating “sweepers?” Double and single rootwad details – why is the thalweg in a different location for these two? For the double it is “under” the lower rootwad, while for the single it is in the channel away from the rootwad.

Drawing 15, Stormwater Management Plan: Note 2 states that, “At the end of the day, we will compact newly-graded areas adjacent to the stream using the bucket or by tracking with equipment.” However, Drawing 16, Note 3 states to “Keep in a roughened condition all soils exposed during land disturbing activity.” Note 10 states that, “We do not anticipate generating dust during construction as most of the soils in the project areas consist of a large sand, gravel, and cobble.” However, Drawing 16, Note 4 states, “Water and maintain the property **at all times** during construction activities so as to prevent wind-caused erosion.”

Drawings 17 to 20 – the Planting Plan -- currently show no information.

Recommendations

- All items discussed above should be responded to, and questions resolved.
- Who is responsible for seeing that the conditions of approval, and commitments of record, are incorporated into the construction specifications for the project?



Community Planning & Permitting

Courthouse Annex • 2045 13th Street • Boulder, Colorado 80302

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Tel: 303-441-3930 • www.BoulderCounty.gov

March 6, 2024

TO: Pete L'Orange, Planner II; Community Planning & Permitting, Development Review Team - Zoning

FROM: Anita Riley, Principal Planner; Community Planning & Permitting, Development Review Team – Access & Engineering

SUBJECT: Docket # LU-24-0002: Old St. Vrain Road Reach Restoration – 530 Old St. Vrain Road, 0 Old St. Vrain Road, and 31074 S. St. Vrain Road

The Development Review Team – Access & Engineering has reviewed the above referenced docket and has the following comments:

1. The subject properties are accessed by Old St. Vrain Road, a paved Boulder County owned and maintained right-of-way (ROW) with a Functional Classification of Local. Legal access has been demonstrated via adjacency to this ROW.
2. Access points on Old St. Vrain Road that will be used during construction have not been identified on the submitted plans. Please include them on plans submitted for building permit review. New accesses for construction will require temporary access permits and must be restored upon project completion, unless approved as a permanent access by the County Engineer.

An access from SH 7 is indicated on the plans. An access permit, or other authorization from CDOT, must be provided for all accesses occurring at the highway.

At building permit, submit revised plans that indicate the location of all construction accesses.

At building permit, submit proof of authorization for all accesses at SH 7.

3. As the proposal involves more than one acre of site disturbance, as well as work within a watercourse, it triggers the requirement for a Boulder County Stormwater Quality Permit (SWQP). A Stormwater Management Plan (SWMP) will be required as part of the SWQP application. The SWMP will include, but will not be limited to, erosion and sediment control measures, stockpile and staging management practices, and general pollution prevention practices.

Additionally, construction in watercourses require a high standard of care and must comply with Section 1302.1 of the Boulder County Storm Drainage Criteria Manual.

Prior to building permit, obtain a Stormwater Quality Permit (SMQP). Please visit the county's stormwater website <https://bouldercounty.gov/transportation/permits/stormwater-quality-permit/> or contact tdstormwater@bouldercounty.org for more information.

At building permit, demonstrate that plans comply with Section 1302.1 of the Boulder County Storm Drainage Criteria Manual.

4. During construction, all materials, machinery, dumpsters, and other items shall be staged on the subject property; no items shall be stored or staged on Old St. Vrain Road.
5. During construction (i.e. during the day while work is being performed), all vehicles shall be parked on site or to one side of Old St. Vrain Road so as to not impede the travel way.

This concludes our comments at this time.



Community Planning & Permitting

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MEMO TO: Agencies and Adjacent Property Owners
FROM: Pete L'Orange, Planner II
DATE: February 16, 2024
RE: Docket LU-24-0002

Docket LU-24-0002: Old St. Vrain Road Reach Restoration

Request: Limited Impact Special Review request for approximately 12,000 cubic yards of earthwork/grading related to ecological restoration of the Old St. Vrain Road Reach at 530 Old St. Vrain Road, and 0 and 31074 S St. Vrain Road.

Location: 530 Old St. Vrain Road, 0 Old St. Vrain Road, and 31074 S St. Vrain Road, located on Old St. Vrain Road, approximately 1 mile south and west of the intersection of State Highway 7 and Old St. Vrain Road, in Section 24 and 25, Township 3N, Range 71W, and Section 19, Township 3N, Range 70W.

Zoning: Agricultural (A) Zoning District

Applicant: The Watershed Center, c/o Yana Sorokin

Applicant: Biohabitats, c/o Mike Lighthiser

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.

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 303-441-1418 or plorange@bouldercounty.gov.

Please return responses by **March 4, 2024**.

We have reviewed the proposal and have no conflicts.

Letter is enclosed.

Signed  PRINTED Name Liz Northrup

Agency or Address Conservation Easement Program at Boulder County Parks & Open Space

Date March 4, 2024

Claire Levy County Commissioner **Marta Loachamin** County Commissioner **Ashley Stolzmann** County Commissioner



Parks & Open Space

5201 St. Vrain Road • Longmont, CO 80503
303-678-6200 • POSinfo@bouldercounty.gov
www.BoulderCountyOpenSpace.gov

March 4, 2024

Delivery by email

Pete L'Orange, Planner II
2045 13th St.
Boulder, CO 80302
plorange@bouldercounty.gov

RE: LU-24-0002 Proposed Stream Restoration Work involving the Hall Ranch 2-House Lot Conservation Easement Property at 31074 S. St. Vrain Road

Dear Pete,

The property described above is encumbered by a conservation easement recorded on 3/31/2011 at Reception # 3141211 in the Real Estate Records of Boulder County, Colorado.

The Watershed Center proposes a variety work that is designed to enhance ecological resilience along the stretch of the South St. Vrain Creek where it traverses through the property and neighboring parcels. The restoration work involves excavating excess sediment accumulated in the 2013 flood down to elevations that promote channel connectivity. All material excavated from the site is proposed to remain within the restoration area and will be repurposed. The proposal also includes a comprehensive revegetation plan consisting of native vegetation.

Lastly, another conservation easement property owned by Ron and Joaleen Gosnell is located directly adjacent to the downstream area. Although there is no work planned on this parcel, it will benefit from the adjacent work by seeing increased flows in an overflow channel, enhancing the riparian features of this additional conservation easement property.

The Conservation Easement Program supports the work outlined in this plan as it will greatly increase the ecological resilience of the creek. Thank you for the opportunity to review and comment on this docket.

Sincerely,

Liz Northrup
Conservation Easement Program Supervisor
303-678-6253
enorthrup@bouldercounty.gov



Community Planning & Permitting

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MEMO TO: Agencies and Adjacent Property Owners
FROM: Pete L'Orange, Planner II
DATE: February 16, 2024
RE: Docket **LU-24-0002**

Docket LU-24-0002: Old St. Vrain Road Reach Restoration

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Zoning: Agricultural (A) Zoning District

Applicant: The Watershed Center, c/o Yana Sorokin

Applicant: Biohabitats, c/o Mike Lighthiser

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.

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.

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Please return responses by **March 4, 2024**.

We have reviewed the proposal and have no conflicts.

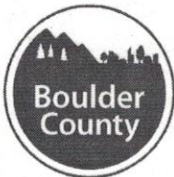
Letter is enclosed.

Signed  PRINTED Name Jessica Fasick

Agency or Address CP&P Historic Review

Date 2/28/24

Claire Levy County Commissioner **Marta Loachamin** County Commissioner **Ashley Stolzmann** County Commissioner



Community Planning & Permitting

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FROM: Pete L'Orange, Planner II
DATE: February 16, 2024
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Zoning: Agricultural (A) Zoning District
Applicant: The Watershed Center, c/o Yana Sorokin
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Please return responses by **March 4, 2024**.

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

Signed [Signature] PRINTED Name STEVEN R. FISCHKE

Agency or Address LYONS FIRE

Date 02-16-2024

Claire Levy County Commissioner Marta Loachamin County Commissioner Ashley Stolzmann County Commissioner

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



Right of Way & Permits

1123 West 3rd Avenue
Denver, Colorado 80223
Telephone: **303.571.3306**
Facsimile: 303.571.3284
Donna.L.George@xcelenergy.com

February 28, 2024

Boulder County Community Planning and Permitting
PO Box 471
Boulder, CO 80306

Attn: Pete L'Orange

Re: Old St. Vrain Road Reach Restoration, Case # LU-24-0002

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the limited impact special use for **Old St. Vrain Road Reach Restoration** and has **no apparent conflict**.

As a safety precaution, PSCo would like to remind the developer to call the Utility Notification Center by dialing 811 for utility locates prior to construction.

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: [Morgan, Heather](#)
To: [L"Orange, Pete](#)
Subject: FW: LYNSCOMA - Under Review: Referral Packet for Docket LU-24-0002: Old St. Vrain Road Reach Restoration at 530 Old St. Vrain Road, 0 Old St. Vrain Road, and 31074 S St. Vrain Road
Date: Wednesday, March 20, 2024 2:31:40 PM
Attachments: [image004.png](#)
[Utility Map 1.pdf](#)
[Utility Map 2.pdf](#)

Hi Pete, please see below/attached.

From: Boyden, Holden <Holden.Boyden@lumen.com>
Sent: Wednesday, March 20, 2024 2:11 PM
To: Morgan, Heather <hmorgan@bouldercounty.gov>
Subject: [EXTERNAL] LYNSCOMA - Under Review: Referral Packet for Docket LU-24-0002: Old St. Vrain Road Reach Restoration at 530 Old St. Vrain Road, 0 Old St. Vrain Road, and 31074 S St. Vrain Road

Date: 03/11/2024

Attn: Heather Morgan

Thank you for your project notification. LUMEN has reviewed your utility notice regarding **P-535497 CO** | LU-24-0002 - Old St. Vrain Road Reach Restoration at 530 Old St. Vrain Road, 0 Old St. Vrain Road, and 31074 S St. Vrain Road ("Project"). In response to your inquiry please find the enclosed drawings indicating the approximate location of the project limits.

X LUMEN has facilities within your proposed construction area. The plans submitted are under review by our LUMEN Field Engineer(s). Currently, the estimated completion date of review is 04/03/2024.

- **LUMEN has facilities within your proposed construction area. Please find the enclosed drawings indicating the location of the LUMEN facilities. Once you have completed your review, please respond back if LUMEN facilities appear to be in conflict. A LUMEN engineer will be assigned when engineering plans are ready for review.**
- **LUMEN does not have facilities within your proposed construction area.**
- **LUMEN has facilities within your proposed construction zone, but it has been determined that no relocation will be necessary. However, due to the proximity of your project to our facilities, a LUMEN representative will be required on-site when construction begins.**
- **The information provided in your initial request is insufficient to determine if the location of your proposed construction will conflict with LUMEN facilities. Please provide additional detailed location maps, drawings (PDF preferred), and description for further conflict review.**

Please contact your [State One Call](#) prior to construction.

Any changes or additions to the project plans or parameters should be submitted to relocations@lumen.com. Note: the location(s) of facilities shown on drawings you receive from us, are only approximate. LUMEN hereby disclaims any responsibility for the accuracy of this information. Please contact relocations@lumen.com regarding the above-mentioned project if you should have any questions. Please reference the file number **P-535497 CO** with any future communications.

Important Notice - For the States listed below, please add relocations@brightspeed.com to your distribution list for inquiries and updates regarding local facilities.
(AL, AR, GA, IL, IN, KS, LA, MI, MO, MS, NC, NJ, OH, OK, PA, SC, TN, TX, VA, WI)

Thank you for your cooperation!

Holden Boyden (*He/Him*)
Business Analyst
Relocations Department
Holden.Boyden@lumen.com

****We have combined!!** To better serve everyone, there is now a single email inbox for LUMEN. One team is monitoring both national and local network relocations & road moves. Please add relocations@lumen.com to your contacts list for inquiries, updates, and use it for all future notifications.*

From: Hester, Renee <Renee.Hester@lumen.com>
Sent: Monday, March 11, 2024 10:33 AM
To: Morgan, Heather <hmorgan@bouldercounty.gov>; Atherton-Wood, Justin <jatherton-wood@bouldercounty.gov>; Moline, Jeffrey <jmoline@bouldercounty.gov>; !LongRange <longrange@bouldercounty.gov>; Historic <historic@bouldercounty.gov>; Floodplain Admin <floodplainadmin@bouldercounty.gov>; #WildfireMitigation <WildfireMitigation@bouldercounty.org>; Transportation Development Review <TransDevReview@bouldercounty.gov>; #AssessorReferral <AssessorReferral@bouldercounty.org>; #CAreferral <CAreferral@bouldercounty.gov>; #Cerefferral <CEreferral@bouldercounty.gov>; Oehlkers, Jason <joehlkers@bouldercounty.gov>; Allshouse, Alycia <aallshouse@bouldercounty.gov>; Kelly, Allison <akelly@bouldercounty.gov>; Stadele, Lee <leestadele@bouldercounty.gov>; Stadele, Lee <leestadele@flagstaffsurveying.com>; jstruble@northernwater.org; bflockhart@northernwater.org; office@svlhwcd.org; scott.griebing@svlhwcd.org; morgan@pvrea.coop; BDRCO@xcelenergy.com; Donna.L.George@xcelenergy.com; relocations <relocations@centurylink.com>; Beck, Darren <dbeck@bouldercounty.gov>; ggorman22@gmail.com; vzounek@msn.com; cdryden@bouldercolorado.gov; communitydevelopment@townoflyons.com; Vanessa McCracken <bldrvalleyandlongmontcads@gmail.com>; hc_filesearch@state.co.us; cdphe_localreferral@state.co.us; coloradoes@fws.gov; DenverRegulatoryMailbox@usace.army.mil; spischke@lyonsfire.org; plans@lyonsfire.org; Flax, Ron <rflax@bouldercounty.gov>; Frederick, Summer <sfrederick@bouldercounty.gov>; HealthWaterQuality-EnvironmentalBP LU <HealthWQ-EnvironBPLU@bouldercounty.gov>; Huebner, Michelle <mhuebner@bouldercounty.gov>; Milner,

Anna <amilner@bouldercounty.gov>; Sanchez, Kimberly <ksanchez@bouldercounty.gov>; Skufca, Erika <eskufca@bouldercounty.gov>; West, Ron <rowest@bouldercounty.gov>

Cc: L'Orange, Pete <plorange@bouldercounty.gov>; Bowers, James <jbowers@bouldercounty.gov>

Subject: RE: Referral Packet for Docket LU-24-0002: Old St. Vrain Road Reach Restoration at 530 Old St. Vrain Road, 0 Old St. Vrain Road, and 31074 S St. Vrain Road

+relocations

Thanks...

Renee Hester

Network Implementation Engineer

5325 Zuni St.

Denver, CO 80221

Tel: 720-738-2778

renee.hester@lumen.com

From: Morgan, Heather <hmorgan@bouldercounty.gov>

Sent: Friday, February 16, 2024 10:24 AM

To: Atherton-Wood, Justin <jatherton-wood@bouldercounty.gov>; Moline, Jeffrey <jmoline@bouldercounty.gov>; LongRange <longrange@bouldercounty.gov>; Historic <historic@bouldercounty.gov>; #WildfireMitigation <WildfireMitigation@bouldercounty.org>; Floodplain Admin <floodplainadmin@bouldercounty.gov>; Transportation Development Review <TransDevReview@bouldercounty.gov>; #AssessorReferral <AssessorReferral@bouldercounty.org>; #CAreferral <CAreferral@bouldercounty.gov>; #Cerefferral <CEreferral@bouldercounty.gov>; Oehlkers, Jason <joehlkers@bouldercounty.gov>; Allshouse, Alycia <aallshouse@bouldercounty.gov>; Kelly, Allison <akelly@bouldercounty.gov>; Stadele, Lee <leestadele@bouldercounty.gov>; Stadele, Lee <leestadele@flagstaffsurveying.com>; jstruble@northernwater.org; bflockhart@northernwater.org; office@svlhwcd.org; scott.griebing@svlhwcd.org; morgan@pvrea.coop; BDRCO@xcelenergy.com; Donna.L.George@xcelenergy.com; Hester, Renee <Renee.Hester@lumen.com>; Beck, Darren <dbeck@bouldercounty.gov>; ggorman22@gmail.com; vzounek@msn.com; cdryden@bouldercolorado.gov; communitydevelopment@townoflyons.com; Vanessa McCracken <bldrvalleyandlongmontcads@gmail.com>; hc_filesearch@state.co.us; cdphe_localreferral@state.co.us; coloradoes@fws.gov; DenverRegulatoryMailbox@usace.army.mil; spischke@lyonsfire.org; plans@lyonsfire.org; Flax, Ron <rflax@bouldercounty.gov>; Frederick, Summer <sfrederick@bouldercounty.gov>; HealthWaterQuality-EnvironmentalBP LU <HealthWQ-EnvironBPLU@bouldercounty.gov>; Huebner, Michelle <mhuebner@bouldercounty.gov>; Milner, Anna <amilner@bouldercounty.gov>; Sanchez, Kimberly <ksanchez@bouldercounty.gov>; Skufca, Erika <eskufca@bouldercounty.gov>; West, Ron <rowest@bouldercounty.gov>

Cc: L'Orange, Pete <plorange@bouldercounty.gov>; Bowers, James <jbowers@bouldercounty.gov>

Subject: Referral Packet for Docket LU-24-0002: Old St. Vrain Road Reach Restoration at 530 Old St. Vrain Road, 0 Old St. Vrain Road, and 31074 S St. Vrain Road

CAUTION: This email originated outside of Lumen Technologies. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Please see the attached public notice and [click here](#) for the referral packet for Docket **LU-24-0002: Old St. Vrain Road Reach Restoration at 530 Old St. Vrain Road, 0 Old St. Vrain Road, and 31074 S St. Vrain Road.**

Please return responses and direct any questions to [Pete L'Orange](#) by **March 4, 2024**. (Boulder County internal departments and agencies: Please attach the referral comments in Accela.)

Heather Morgan | Lead Administrative Technician

Planning Division | Boulder County Community Planning & Permitting

P.O. Box 471, Boulder, CO 80306 | Courthouse Annex—2045 13th St., Boulder, CO 80302

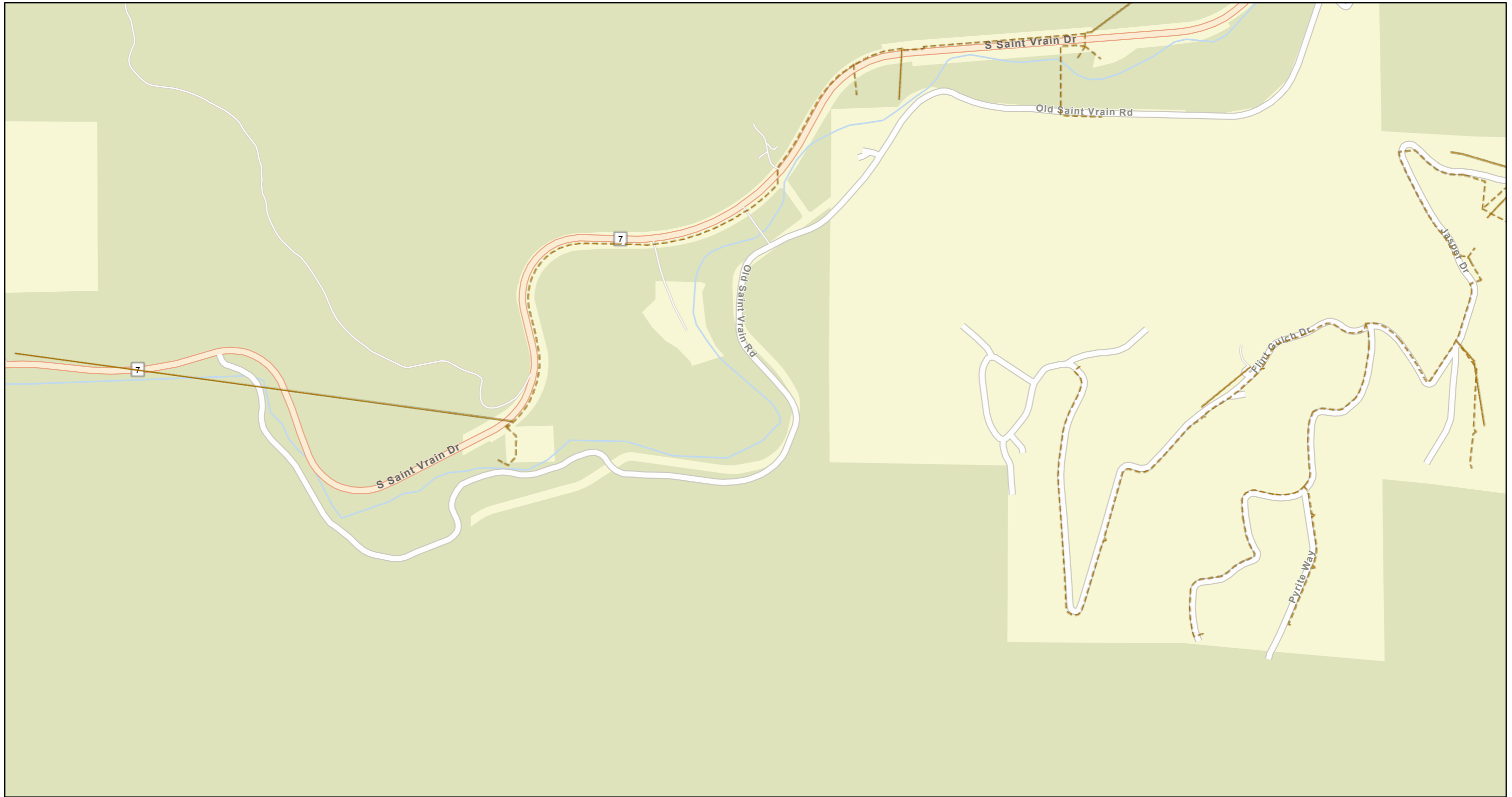
hmorgan@bouldercounty.gov | (720) 864-6510 | www.boco.org/cpp

My usual working hours are Monday-Friday, 7:30 a.m.-4:00 p.m.

*Boulder County has migrated all email to the .gov domain. Please update your contact lists to reflect the change from hmorgan@bouldercounty.org to hmorgan@bouldercounty.gov. **Emails sent to both .org and .gov addresses will continue to work.** This work is part of the migration to the .gov domain that began in July 2022 when the Boulder County website moved to www.bouldercounty.gov. This move to the .gov domain provides a higher level of cybersecurity protection.*

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Lumen Facility Map



3/20/2024, 2:38:35 PM

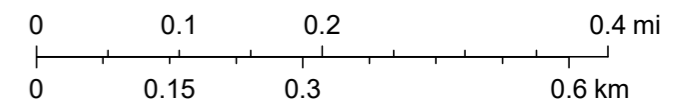
Local Copper Aerial Route

— Aerial, In Service

Local Copper UG Route

- - - - - Underground, In Service

1:11,137

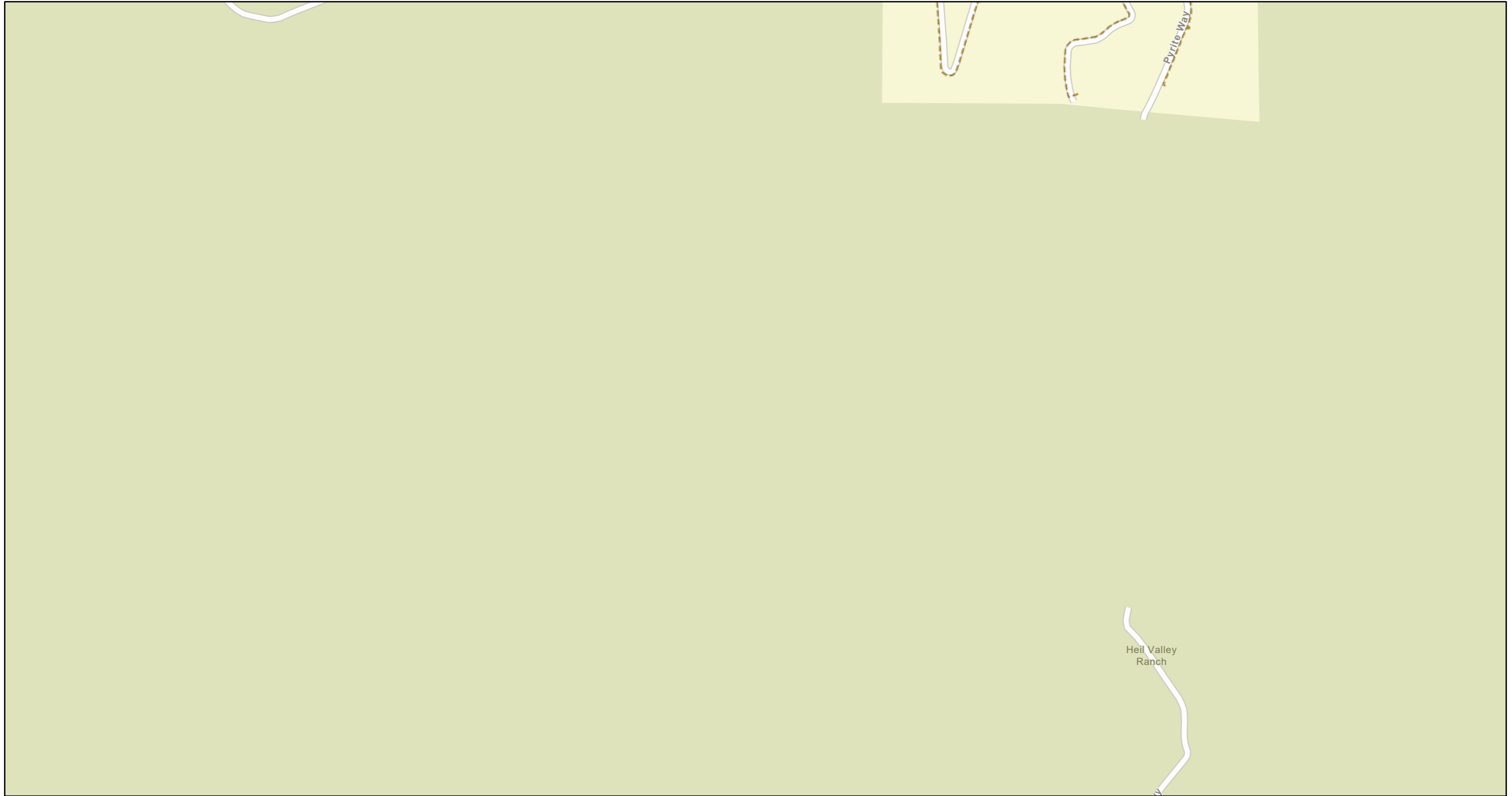


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Lumen Facility Map

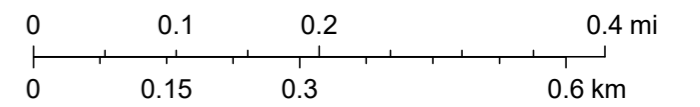


3/20/2024, 2:38:45 PM

Local Copper UG Route

--- Underground, In Service

1:11,137



Esri Community Maps Contributors, Boulder County, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

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