Boulder County

Community Planning & Permitting

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PLANNING COMMISSION
PUBLIC HEARING

August 17, 2022 at 1:30 p.m.
Hearing to be Held Virtually due to COVID-19

STAFF RECOMMENDATION

STAFF PLANNER: Sam Walker

Docket SU-22-0004: Pivot Energy Solar Facility

Proposal:	Special Use Review to construct a 5 megawatt 24-acre solar energy facility on a 36-acre parcel
Location:	5980 N. 79th Street, approximately .25 miles south of the intersection of N. 79th Street and State Highway 52, in Section 6, Township 1N, Range 69W.
Zoning:	Agricultural (A) Zoning District
Applicant:	Kyle Sundman, c/o Pivot Energy
Owner:	Charles A. Rodgers

PACKET CONTENTS

SUMMARY

The subject application is for a Special Review and Site-Specific Development Plan to construct a solar garden with an approximate 24-acre area of disturbance on a 36-acre property within the Agricultural (A) Zoning District. With the recommended conditions of approval, staff finds the proposal can meet the Special Review Criteria in Article 4-601 of the Boulder County Land Use Code (the Code) and recommends conditional approval to the Planning Commission.

DISCUSSION

The subject property is an approximately 36-acre unsubdivided parcel which has been determined to be a legal building lot located and is located on the eastern side of N. 79th Street, approximately .2 miles south of the intersection of N. 79th Street and State Highway 52. It is currently developed with a single-family residence and a large agricultural outbuilding. Two unpermitted agricultural structures were also observed by staff during a site visit, but these structures do not require permits because they do not appear to have utilities and are below the size threshold past which the Land Use Code requires a building permit be obtained (See Art. 17-300.A.1.a). The property is accessed via a double driveway to N. 79th Street.

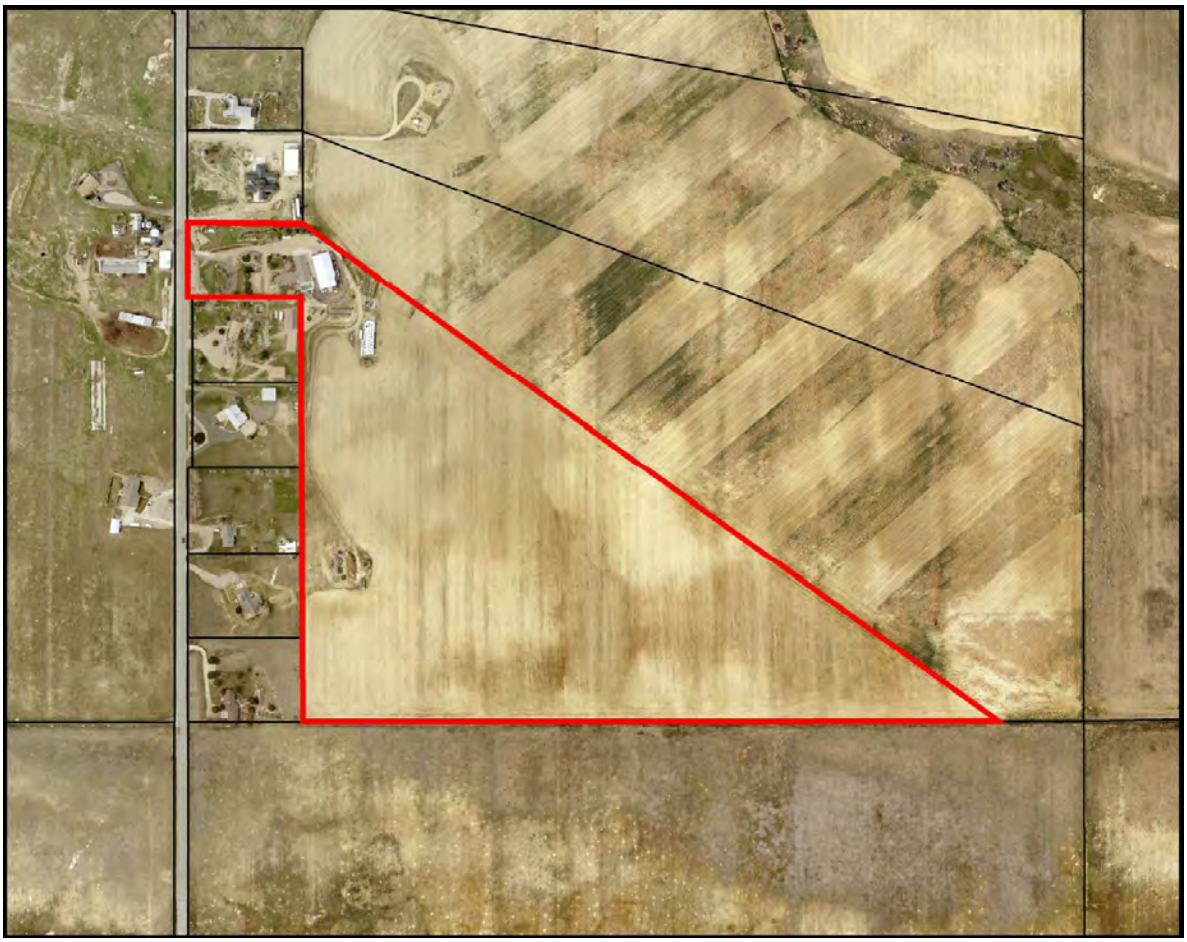


Figure 1: Aerial view of the subject parcel

The applicants propose to install a solar garden on the southeastern area of the property, encompassing an area of disturbance approximately 24 acres in size. For the purposes of staff review, the proposal has been addressed under Art. 4-514.M of the Code (which regulates Ground-Mounted Solar Energy Systems). The project is categorized as a Ground-Mounted Solar Energy System because the panels will be mounted on racking or poles that are attached to the ground and are not mounted to parking canopies as defined in Article 4-514.M.1.

Per the project narrative, this solar garden will be part of Xcel Energy's Solar*Rewards Program, and all of the generated energy will be donated to low-income Coloradans. The project is expected to sunset after 25-35 years, with the site to be remediated back to useful agricultural lands at the end of the useful life of the array.

As shown in Figure 2 below, the Boulder County Comprehensive Plan identifies important resources on and around the subject parcel. The parcel is entirely located within the White Rocks/Gunbarrel Hill Environmental Conservation Area, and Agricultural Lands of Local

Importance have been identified in the western and southern areas of the property. A View Protection Score of 2.06 has also been assigned to N. 79th Street in the area of the subject property. These resources and the potential impacts on them resulting from the proposed development are discussed in the criteria review below.

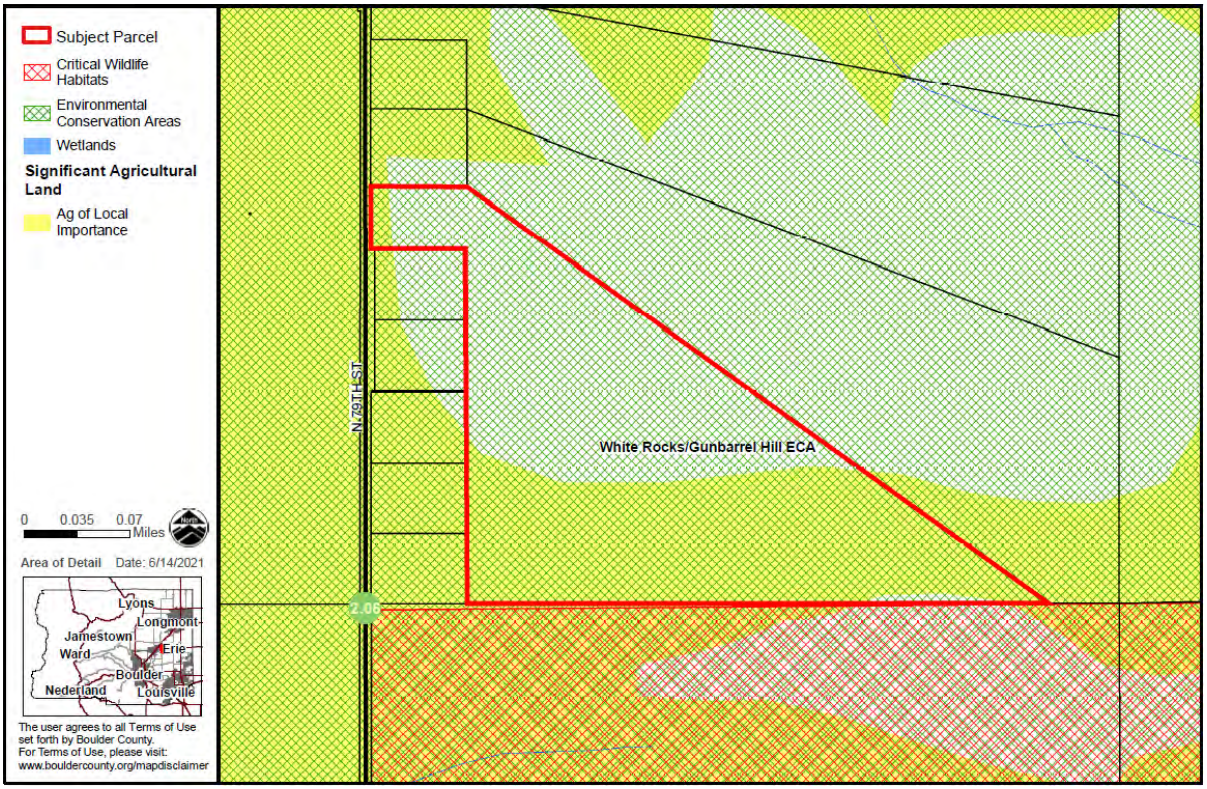


Figure 2: Comprehensive Plan map

The subject parcel is also nearly surrounded by public lands and open space properties, as illustrated by Figure 3, below.

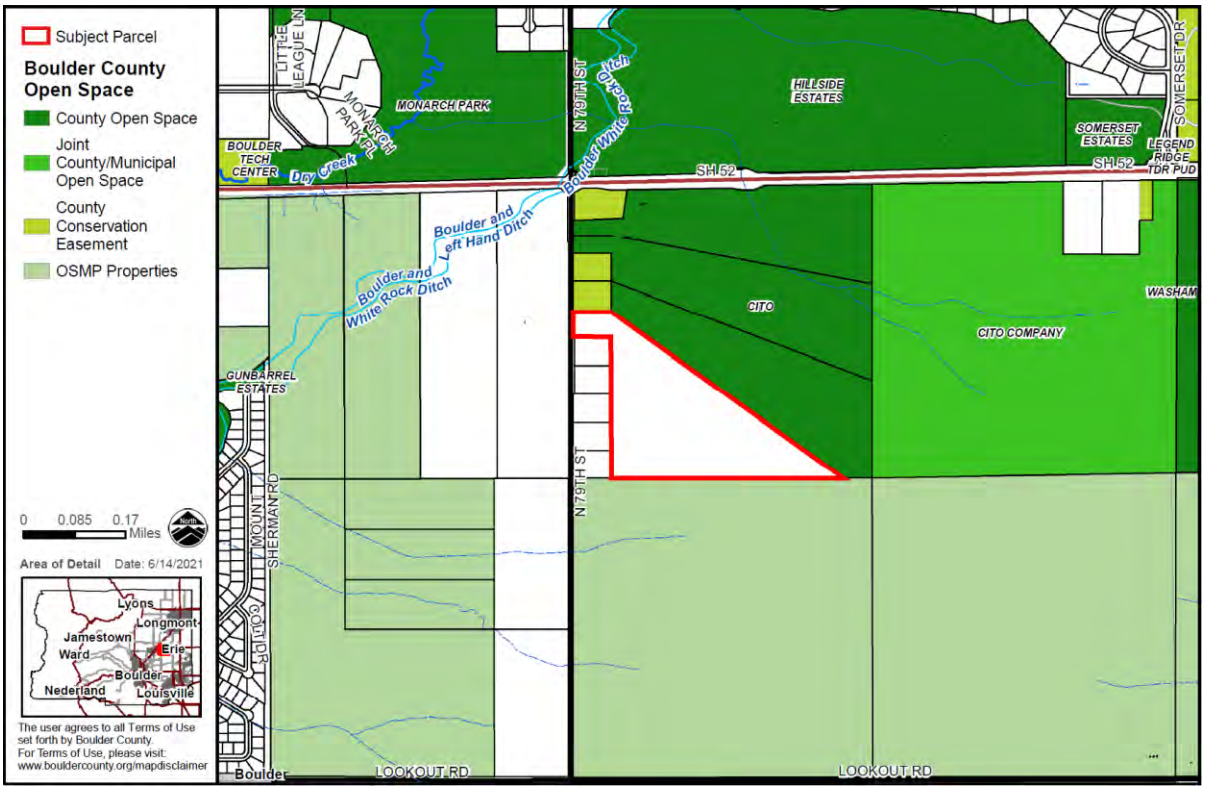


Figure 3: Public Lands map

As detailed in the criteria review below, staff finds that the proposed solar energy system can meet the Special Review Criteria in Article 4-601 of the Code and the additional provisions for Solar Energy Systems listed in Article 4-514.M 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.

County Development Review Team – Access & Engineering (DRT-A&E): This team reviewed the proposal and confirmed the subject parcel has legal access to N. 79th Street. This team also identified requirements for Access Permits and a Traffic Control Plan, and provided information about Hauler License requirements.

County Building Safety & Inspection Services Team: This team reviewed the proposal and stated that building permits will be required for the construction of the array and associated electrical equipment. It also noted the minimum wind and snow loading requirements. Finally, the Building Team noted the temporary pause on building permit issuance for new structures and certain additions in the areas of the County that are in Wildfire Zone 2 but were unaffected by the Marshall Fire, and indicated that a detailed plan review would be conducted at the permitting stage.

Boulder County Public Health: This team reviewed the request and responded that the existing septic system on the parcel is not appropriately sized for the number of bedrooms in the residence, a situation which must be rectified prior to any future sale of the parcel. They also noted that solar arrays and equipment must not be installed on top of the absorption field, and that damage to the septic system should be avoided during construction.

County Parks & Open Space: This department responded to the referral with limited concerns regarding potential environmental impacts of the development. BCPOS staff noted that there would likely be little impact to adjacent public lands, but recommended that preventative measures be taken to impede migration of prairie dogs OSMP lands to the south, across the subject parcel to BCPOS lands to the north. They also noted the limited agricultural utility of the impacted lands on the subject parcel, the potential for continued use of the land around the array, and the potential remediation of the site after the array is retired. Finally, BCPOS noted that scenic impacts of the array would likely be limited.

City of Boulder Open Space & Mountain Parks: This agency noted the close proximity of OSMP lands to the project site and indicated that access to or from these OSMP lands is prohibited. The OSMP referral response also noted potential impacts to the public viewshed, recommending landscaping to limit impacts. Native plants were recommended for use as both vegetative screening and for revegetation. OSMP also noted the close proximity of a prairie dog colony and the potential that prairie dogs would migrate onto the subject property. OSMP also submitted additional comments concerning impacts to Burrowing Owl habitat to the south and more general impacts on other raptor species that hunt in the area.

Mountain View Fire Protection District: This agency expressed no concerns with the proposal, but noted that they would review final site and construction plans prior to permit issuance, and that the plans submitted for permitting must show the location of the nearest fire hydrant.

Adjacent Property Owners: Notices were sent to 17 adjacent property owners, and staff received four public comments in response. All comments received expressed disapproval of the proposal. Commenters expressed concerns regarding the proximity of an "industrial type facility" to existing residential development, negative impacts to nearby public lands and environmental resources, negative visual impacts for nearby residents as well as drivers on nearby roads, lack of compatibility with the neighborhood, and increased noise and traffic resulting from construction and maintenance of the system. Staff also met with an adjacent property owner and Kyle Sundman on-site and discussed a variety of mitigation strategies.

Agencies that responded with no conflict: County Conservation Easement Team, XCEL Energy.

Agencies that did not respond: Boulder County Long Range Planning, Boulder County Assessor, Boulder County Attorney, Boulder County Office of Sustainability, Climate Action and Resilience, Boulder County Sheriff, Boulder County Treasurer, Boulder County Surveyor, Left Hand Water District, Northern Colorado Water Conservancy District, City of Boulder Planning & Development Services, Boulder Valley & Longmont Conservation Districts.

SPECIAL REVIEW CRITERIA

The Community Planning & Permitting staff has evaluated the review standards for approval of a Special Review for a ground-mounted solar energy system in the Agricultural Zoning District, per Article 4-601 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;

Ground-Mounted Solar Energy Systems with greater than 10 acres of disturbed area are an allowed use if approved through Special Review in the Agricultural Zoning District where the subject property is located, subject to the additional provisions outlined in Article 4-514.M.5 as outlined and addressed below.

:

a. This use is required to be located on a building lot, or an outlot platted for this purpose.

The subject parcel is over 35-acres in size and meets the definition of a legal building lot. Therefore, this provision is met.

b. The use may be allowed on right-of-way, as permitted by the right-of-way owner and if compatible with the use of the right-of-way. For right-of-way systems, further requirements may be stipulated by the Boulder County Public Works Department or the Colorado Department of Transportation to ensure compatibility with transportation-related uses of the right-of-way.

The use is not proposed to encroach into the right-of-way. Therefore, this provision is met.

c. The appropriateness of a site, the specific location on the site, and the extent of site disturbance will be determined through the applicable review process.

Staff find the proposed site appropriate for the use due to the limited agricultural utility of the land as described by the applicants' supplemental narrative and the referral response from the County Parks & Open Space Department. The BCPOS referral response noted that the site is "dryland" and likely only produces a single cutting of hay per year, while the applicants' supplemental narrative includes a letter from Western Environment and Ecology, Inc. stating that the soil making up the designated agricultural lands on the parcel has severe limitations and that crop production on the parcel is uneconomic and unsustainable.

The proposed location of the arrays on the site is found to be appropriate with the recommended condition described in response to Art. 4-514.M.5.h.i (below), which limit the allowed area of disturbance in designated agricultural lands. Staff does not anticipate a high level of permanent site disturbance because no changes to the site topography are proposed, the posts driven to mount individual panels will disturb a small area of the soil, and the site will be remediated at the end of the system's useful lifespan. Therefore, this provision is met.

d. Ground-mounted systems with disturbed area greater than 0.5 acre cannot be located on areas designated by the Boulder County Comprehensive Plan as Natural Landmarks, Natural Areas, Critical Wildlife Habitats, or Wildlife Migration Corridors.

Although the disturbed area proposed for the array is greater than .5 acres in size, the Boulder County Comprehensive Plan does not identify any Natural Landmarks, Natural Areas, Critical Wildlife Habitat, or Wildlife Migration Corridors within the boundaries of the subject property. Therefore, this provision is met.

e. Ground-mounted systems are allowed as a second Principal Use on parcels subject to the review process applicable for the proposed new ground-mounted system.

Currently, Open Agriculture (as defined in Art. 4-502.D) is the principal use of the property. The single-family dwelling that exists on the property is considered customary and incidental to the Open Agricultural use, making the proposed ground-mounted system a second principal use. Given this is specifically allowable, this provision is met.

f. Ground-mounted systems shall not exceed 15 feet in height, except to accommodate site specific needs and as approved through review. Systems exceeding 15 feet in height require an increased setback of 75 feet from all property lines, unless it is demonstrated

that a lesser setback or topographical or vegetative screening adequately mitigates visual impacts. In no case shall a system exceed 25 feet in height.

Plans submitted with the application materials indicate that the individual solar panels will be mounted to racking which will track the sun as it crosses the sky. At full tilt (or the maximum height of the variable height above grade during the day) the panel peak will be 8 feet above existing grade. Staff recommends a condition of approval limiting the maximum height of any given panel to 8 feet from existing grade. Therefore, as conditioned, this provision is met.

g. Ground-mounted systems with disturbed area greater than 2.5 acre are not permitted in the Forestry Zoning District unless the site has been previously contaminated or the soil otherwise damaged, making it unsuitable for agricultural or forestry uses. Qualifying areas may include properties that have previously undergone intensive development and where it is determined, through the review process, that installation of a ground-mounted system will not have additional significant impacts.

The property where the proposed system will be located is within the Agricultural zoning district. Therefore, this provision is met.

h. Ground-mounted systems with a disturbed area greater than 0.5 acre on lands designated as Significant Agricultural Lands under the Boulder County Comprehensive Plan, and located in the Agricultural, Estate Residential, or Rural Residential zone districts , require Special Review and are subject to the following additional requirements intended to preserve and maintain soil and agricultural integrity:

i. The total disturbed area associated with the ground-mounted system cannot exceed 7 acres on parcels smaller than 70 acres in size, or 14 acres on parcels larger than 70 acres in size.

The southern area of the subject parcel is designated as Agricultural Lands of Local Significance in the Comprehensive Plan. The total area proposed to be disturbed as part of the development is approximately 24 acres in size, of which 12.18 acres was originally proposed to be located within the locally significant agricultural lands (see supplemental site plan submitted by the applicants in Figure 4, below. A larger version can be found in Attachment D on page D6).

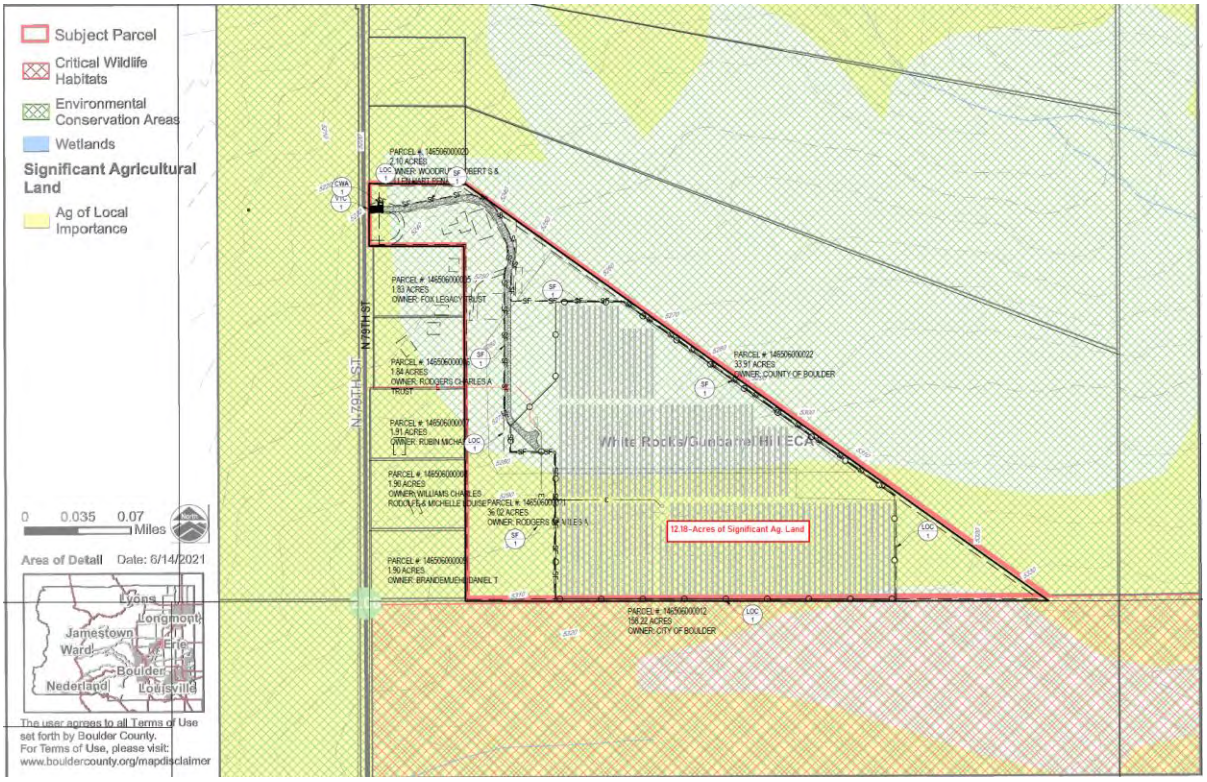


Figure 4: Applicants' original site plan overlaid on the Comprehensive Plan map

A revised plan set submitted by the applicants (dated August 2, 2022 and shown below in Figure 5, also included as part of Attachment E) indicates a maximum 7-acre area of disturbance within locally significant agricultural lands, although the specific layout of the proposed arrays is not shown. An additional 14.89-acre area of disturbance will be sited outside of the Significant agricultural lands.

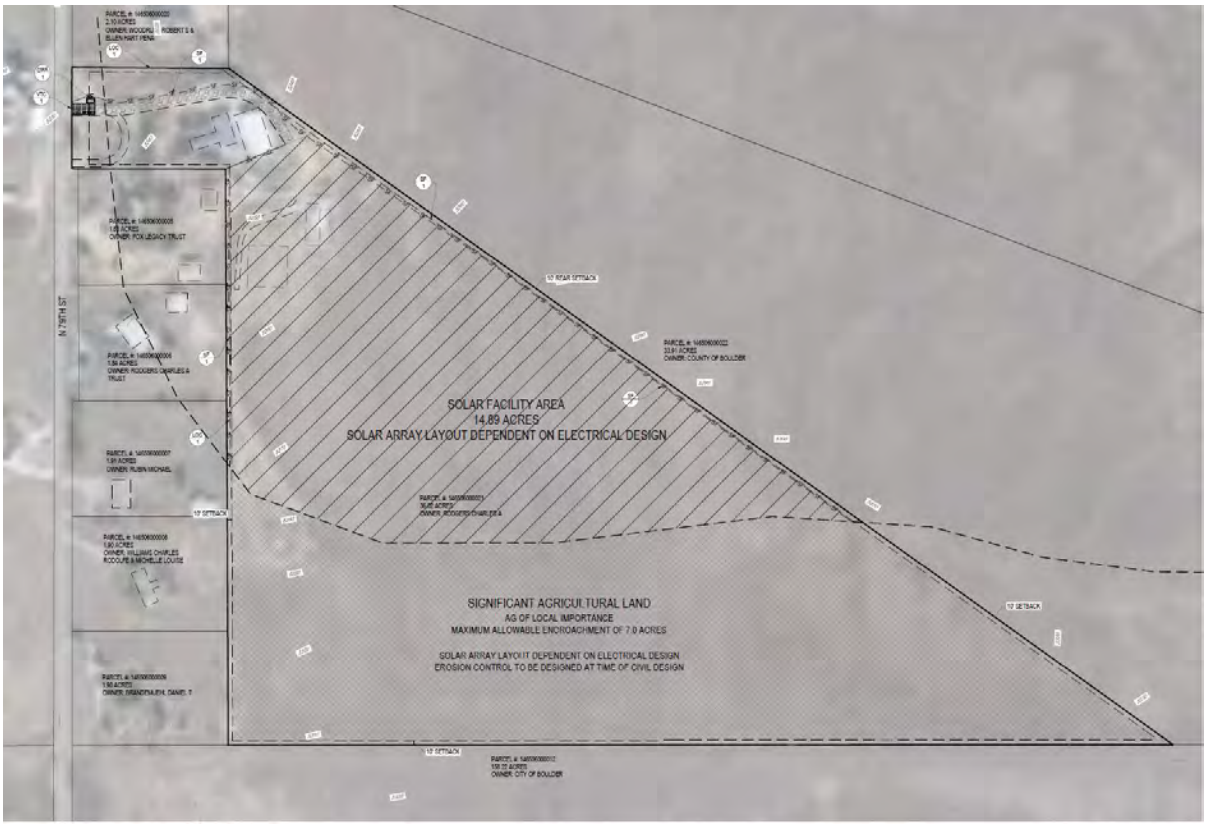


Figure 5: Applicants' amended site plan

The area of disturbance that is located within the Significant Agricultural Lands is what cannot exceed 7 acres per this provision. Consequently, staff recommends conditions of approval limiting disturbance of significant agricultural lands to a maximum of 7 acres, as well as the submittal of a revised site plan at permitting that shows the detailed layout of the solar energy system and associated equipment. As conditioned, this provision is met.

ii. Application for the ground-mounted system must contain a solar energy system development report as set forth in Article 3-203

The submitted application materials included a development report that meets the requirements of Article 3-203. Therefore, this provision is met.

The plans submitted with the application materials indicate the installation of an 8-foot fence around the system and associated equipment, but the fencing is not shown in the revised site plan included in Attachment E. Article 17-300.A.1.b of the Land Use Code allows the construction of a fence not over six feet high without a building permit. Conversely, fences more than 6 feet in height require a building permit and must meet setbacks. Staff recommends conditions of approval requiring that a revised site plan be submitted showing that the fence meets the applicable setbacks for the Agricultural Zoning District, and is issued a building permit.

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;

The system is proposed to be located on the southeastern portion of a large agricultural property in the plains area of the county. The proposed location provides excellent sun exposure the south on agricultural land that has been identified as having limited utility by both the applicants and county Parks & Open Space staff. Large solar energy systems are allowed if approved through Special Review and if they meet the additional provisions for this use, and although the greater context is rural and agricultural in nature, staff finds that there are several mitigating factors that indicate the array's compatibility with its surroundings.

The project narrative included with the application materials indicates that the individual panels will be uniformly distributed across the disturbed area to both maximize the solar efficiency of each panel and to allow the continued use of the underlying land for livestock grazing. Although this area of disturbance will be large, the actual ground disturbance will be minimal outside of post-driving for array installation and trenching for running conduits. Massing will also have limited impacts due to the low proposed height for the array, and no changes to the natural topography are proposed.

After construction is completed, the use will have little-to-no impacts on the surrounding area as traffic will be minimal and there will be no noise or daily activity.

As described under criteria 9 below, staff have limited concerns related to the visual impacts caused by the proposal.

The narrative also indicates that the array will be removed from the property once its useful lifespan has ended, approximately 25-35 years after construction is complete. Staff recommend conditions of approval requiring the decommissioning of the array after a maximum of 35 years as well as the submittal of a plan for the decommissioning and rehabilitation of the site prior to permitting.

Because of the mitigating factors described above, staff find the proposed solar energy system is compatible with the surrounding area and that, as conditioned, this criterion can be met.

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

As described in the discussion of Criteria 1 above, the Comprehensive Plan identifies agricultural lands of local significance in the southern area of the parcel. The entirety of the parcel is also located within the boundaries of the White Rocks/Gunbarrel Hill Environmental Conservation Area. Impacts to the designated agricultural lands are expected to be minimal considering the temporary nature of the array and the 7-acre limitation of disturbed area described under Criteria 1. Staff also have limited concerns regarding negative impacts on the Environmental Conservation Area due to the temporary nature of the array and the Parks &

Open Space referral response indicating that impacts to the conservation area would not be considered significant.

The Comprehensive Plan also identifies a View Protection Score of 2.08 along N. 79th Street in the area of the subject parcel. View Protection Scores can range from 0 to 5 (with higher numbers indicating more scenic roadways), and are intended to act as a tool for planning staff to use when assessing the potential visual impacts of a development on nearby public rights-of-way. Staff do not find that the proposed use is likely to negatively impact the view from N. 79th Street because the primary view from the road is to the west, toward the Indian Peaks and the Front Range, rather than east toward the proposed system's location. Further discussion of potential visual impacts can be found under criteria 9, below.

Therefore, staff finds this criterion can be 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.

Although the disturbed area for the proposed system will encompass approximately 22 acres of the 35-acre parcel where it will be located, staff do not have concerns regarding the over-intensive use of land or the excessive depletion of natural resources. Little of the proposed area of disturbance will be converted to impermeable surface. The vast majority of the disturbed area will remain permeable because the panels will be mounted to posts driven into the soil. No alteration of the natural topography is proposed, and staff do not have concerns relating to disturbance of on-site environmental resources. The project is also proposed to be decommissioned (as conditioned) and will include the continued grazing of the property while the system is in operation.

The referral response submitted by the City of Boulder's OSMP department raised concerns related to the impacts of system construction on Burrowing Owl habitat to the south. Burrowing Owls are a State Threatened Species in Colorado and have consistently been found nesting on the OSMP-owned property south of the subject parcel. Staff recommend a condition of approval limiting the allowed timeframe for construction to ensure that construction of the array meets Colorado Parks & Wildlife guidelines and does not disturb this critical habitat, and echo OSMP's recommendation that fencing or other installations on the parcel should be designed to minimize the potential for Burrowing Owls to become entangled or injured.

County Parks & Open Space staff noted potential impacts from prairie dogs on the adjacent parcel to the south. Staff recommend a condition of approval to eliminate these concerns by requiring the installation of a fence and prairie dog barrier along the shared boundary between the BCPOS and subject properties.

Parks & Open Space staff also expressed concerns regarding the permanent destruction of soil structure on the site if construction is performed during an inopportune time, eliminating

the potential for rehabilitation of the site for agriculture after the system is decommissioned. Staff recommend two conditions of approval intended to protect the soil during construction so that it can be effectively remediated in the future.

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 referral agency responded with such a concern. However, staff recommend a condition of approval requiring that plans submitted for permitting indicate the location of the nearest fire hydrant to meet the request of the Mountain View Fire Protection District.

Per the referral response from Public Health, the on-site OWTS is not sized appropriately for the number of bedrooms in the existing residence on the parcel. This discrepancy must be rectified if the parcel is sold but is not a requirement that precludes the installation of the proposed solar energy system if the subject request is approved.

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

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

The subject parcel is accessed from N. 79th Street, a paved Boulder County owned and maintained right-of-way (ROW) with a Functional Classification of Collector. Legal access has been demonstrated via adjacency to this public ROW. There are two existing points of access to the subject parcel from N. 79th Street. Only the northern access shall be used to access the project site during construction. An Access Permit will be issued for both existing access points at N. 79th Street at the time of building permit review. No special application procedure is necessary, the Access Permits will be issued concurrently with the building permit.

The applicant provided a Traffic Impact Letter dated May 16, 2022 that outlined four project phases, phase duration, and an estimate of the maximum average daily trips (ADT) anticipated during each of the four project phases. The project is expected to generate up to 79 ADT during material and equipment delivery (anticipated to be up to one month at the beginning of the project and one month at the end of the project) and up to 64 ADT during solar garden installation (6-7 months). However, once construction is complete, the project is only expected to generate up to 2 vehicle trips per month during solar garden operation. The timeline projections included in the letter are based on a construction start date of August 2022. However, the project will be undergoing land use review through August 2022. An updated construction schedule and daily vehicle trip generation/ distribution estimates must be submitted at the time of building permit application.

At the time of building permit application, a Traffic Control Plan (TCP) must be submitted

that addresses flaggers and the locations and types of warning signs to be used during the material and equipment delivery and the installation phases of the project. Signage warning of heavy truck traffic on N. 79th Street must be included in the TCP and the TCP must be prepared by a certified Traffic Control Supervisor.

A Boulder County Hauler License is required for hauling of material off site, regardless of where the material is deposited. This applies to the prime contractor as well as any subcontractors that collect, transport or dispose of any materials (dirt, gravel, garbage, recyclables, or compostables, construction and demolition waste, or landscaping materials) anywhere except within the project site, including locations outside unincorporated Boulder County. Additional information can be found here: https://www.bouldercounty.org/environment/trash/hauler-license/

With the recommended conditions of approval described above, staff finds the proposal does not conflict with the multimodal transportation system and does not anticipate that the request will have a negative impact on the transportation system.

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

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

Staff have not identified any concerns that the proposed solar energy system would result in the creation of air, odor, water, or noise pollution. Although the mounting systems will be motorized to allow panels to maximize efficiency by following the sun throughout the day, the project narrative indicates that the motors are very quiet. Staff find that any incidental noise will be drowned out by road noise from vehicles on nearby public rights-of-way.

Therefore, 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 solar energy system will cover a large area of the subject property, staff have very little concern related to visual impacts that may be imposed on the surroundings.

Over the course of two site visits, staff determined that the array would not be visible from the Lookout Road right-of-way due to the sites downward south-to-north slope and the OSMP parcel to the south being at a higher elevation. The system will be visible from the SH 52 to the north, but will have minimal impact due to the intervening distance between the parcel and the SH 52 right-of-way (approximately 1000 feet at the closest point). It is unclear whether or not the system will be visible from N. 79th Street, but if so it would be broken up by the existing residential and agricultural development along the road, would be at set back approximately 300 feet from the roadway, and would have no impact on the west-facing view toward the Indian Peaks.

Several adjacent property owners expressed concerns relating to the visual impacts of the array on their eastern views. It is the understanding of staff that the applicants have offered a stipend to these property owners to facilitate the planting of vegetative screening or fence installation along their shared parcel boundaries. Staff, however, recommend conditions of approval requiring the submittal of a vegetative screening plan and the installation of that screening to limit imposition on properties not included as part of the proposal.

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

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

There is no indication the proposal will have detrimental effects on the health, safety, or welfare of the present or future inhabitants of Boulder County, and no referral agency has responded with such a concern. On the contrary, it is the express purpose of the proposed solar energy system that the energy produced will be donated to low-income Colorado residents as part of Xcel's Solar*Rewards program and will likely benefit the welfare of Boulder County inhabitants.

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;

With the recommended conditions of approval, the construction of the proposed solar energy system will minimize the consumption and inefficient use of resources by providing a sustainable source of energy generation on an underutilized agricultural property to the benefit of low-income members of the public. Inefficient use of land will also be minimized through the required remediation of the site after the system's life cycle has ended.

Therefore, staff finds this criterion can be 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.

The Comprehensive Plan identifies the entirety of the parcel as being located within an area of moderate swelling soil potential. Development in swelling soils is a common practice throughout the plains areas of the County, and staff do not have concerns relating to the creation of risks to people or property that would result from the construction and maintenance of the proposed solar energy system.

Therefore, as conditioned, staff finds 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 application materials do not indicate any site disturbance or alteration of topography, although some earthwork will be required for the installation of the proposed access road, driving of posts to mount panels, and trenching for the running of conduits. However, staff do not anticipate that these activities will result in alteration of historic drainage patterns or flow rates due to the extremely limited areas of impervious surface that will be created and the lack of major topographic alteration.

Therefore, 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 Special Review. Therefore, staff recommends that the Planning Commission ***conditionally approve docket SU-22-0004 Boulder County – Pivot Energy Solar Facility*** with the following conditions:

1. Prior to the issuance of any permits by the Boulder County Community Planning & Permitting Department and within one-year of the signing of the Resolution, the applicants shall provide a Development Agreement for review and approval by County staff. Once approved by County staff, the Development Agreement shall be signed and notarized by the applicant, and will be recorded by County staff.

2. The maximum height of any given panel in the system is not to exceed 8 feet above existing grade. The height of the proposed fence is also limited to 8 feet above existing grade.

3. The maximum allowed area of disturbance for the system (including panels and associated roads, fencing, trenching, structures, etc.) is not to exceed 7 acres within areas designated as Significant Agricultural Lands. The boundaries of the Significant Agricultural Lands and the area of disturbance within them must be shown on the plans submitted for permitting.

4. At permitting, a revised site plan is required for submittal. The plan must show individual array locations, the extent of fencing and other areas of disturbance, setbacks, and the location of the nearest fire hydrant.

5. The development must meet all requirements outlined in the Building Safety and Inspection Services Team referral response and the Building Code, including but not limited to:
    a. Building Permits;
    b. Design Wind and Snow Loads;
    c. Ignition-Resistant Construction, and;
    d. Plan Review

6. ***Prior to issuance of building or grading permits,*** details regarding the placement and construction of silt fencing or other appropriate erosion control measures must be submitted to, and approved by, the Community Planning & Permitting Department. The silt fence must be installed before construction commences and remain in place until vegetation is sufficiently established on the disturbed soil.

Prior to any grading or site disturbance, the silt barrier location and materials must be installed as required per the approved plans.

At the time of the footing foundation inspection and all subsequent inspections, the Community Planning & Permitting Department must confirm the silt barrier location and materials have been installed as required per the approved plans. Any other areas on site are subject to installation of silt fences, if needed.

7. ***At building or grading permit submittal,*** a Revegetation Plan must be submitted for approval. This plan should include grass species to be used, an explanation of how topsoils will be stockpiled and reused, mapped delineation of all disturbance areas (this includes construction staging areas, access road, and utility lines), and locations of silt fences or erosion control measures downslope of disturbed areas.

   The Revegetation Plan must also include provisions for vegetative screening along the western boundary of the disturbed area, including the location and species of all screening plants.

   Prior to any grading or site disturbance, the silt barrier location and materials must be installed as required per the approved plans.

   Prior to issuance of a final inspection, the full installation of the approved Revegetation 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.

8. ***Prior to the issuance of any building or grading permits,*** the appliance must submit a Decommissioning and Rehabilitation Plan for staff approval. The plan must include detail regarding decommissioning of the array and associated structures as well as detail regarding the proposed method of site remediation to restore agricultural production.

9. The system and its associated structures must be decommissioned and the site remediated within 35 years of the final inspection or at the end of the useful lifespan (as determined by the applicants), whichever is sooner.

10. To limit impacts on Burrowing Owl habitat to the south, no encroachment or construction may take place on the subject property between March 15 and August 31.

11. The applicant must construct a fence and prairie dog barrier along the joint boundary of the subject parcel and the BCPOS Cito property to the north. The location of the fence and barrier must be shown on the plans submitted for permitting.

    At the final inspection, the full installation of the approved fencing and prairie dog barrier must be verified by the Community Planning & Permitting Department.

12. Construction must not occur under moist or wet soil conditions, or during rain.

13. Areas of the subject parcel outside of those approved for disturbance as part of the revised site plan are not to be disturbed. Staging areas must be kept within the approved area of disturbance.

14. Only the northern access point to N. 79th Street shall be used to access the project site during construction.

15. At permitting, a revised construction schedule and daily vehicle trip generation/distribution estimates must be submitted.

16. At the time of building permit application, a Traffic Control Plan (TCP) must be submitted that addresses flaggers and the locations and types of warning signs to be used during the material and equipment delivery and the installation phases of the project. Signage warning of heavy truck traffic on N. 79th Street must be included in the TCP and the TCP must be prepared by a certified Traffic Control Supervisor.

17. A Boulder County Hauler License is required for hauling of material off site, regardless of where the material is deposited. This applies to the prime contractor as well as any subcontractors that collect, transport or dispose of any materials (dirt, gravel, garbage, recyclables, or compostables, construction and demolition waste, or landscaping materials) anywhere except within the project site, including locations outside unincorporated Boulder County.

18. The applicants shall be subject to the terms, conditions, and commitments of record and in the file for docket ***SU-22-0004 Pivot Energy Solar Facility.***

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: Pivot Solar 34 LLC	
❑ Appeal ❑ Correction Plat ❑ Exemption Plat ❑ Final Plat ❑ Limited Impact Special Use ❑ Limited Impact Special Use Waiver ❑ Location and Extent	❑ Modification of Site Plan Review ❑ Modification of Special Use ❑ Preliminary Plan ❑ Resubdivision (Replat) ❑ Rezoning	❑ Road Name Change ❑ Road/Easement Vacation ❑ Site Plan Review ❑ Site Plan Review Waiver ❑ Sketch Plan ☒ Special Use/SSDP	❑ Special Use (Oil & Gas development) ❑ State Interest Review (1041) ❑ Subdivision Exemption ❑ Variance ❑ Other:

Location(s)/Street Address(es): 5980 N. 79th St., Boulder, CO 80503				
Parcel ID: 146506000021				
Subdivision Name: TR, NBR 501 NIWOT AREA - RESIDENTIAL				
Lot(s)	Block(s)	Section(s): 06	Township(s): 1N	Range(s): 69
Area in Acres: 36.01	Existing Zoning: A- Agricultural	Existing Use of Property: A- Agricultural		Number of Proposed Lots: 1
Proposed Water Supply: N/A		Proposed Sewage Disposal Method: N/A		

Applicants:

Applicant/Property Owner: Charles Rodgers			Email
Mailing Address: 5980 N. 79th St.			
City: Boulder	State: CO	Zip Code: 80503	Phone: 303-974-0461
Applicant/Property Owner/Agent/Consultant: Kyle Sundman, Pivot Energy			Email: ksundman@pivotenervy.net
Mailing Address: 1750 1`5th St, Suite 400			
City: Denver	State: CO	Zip Code: 80202	Phone: 7192334322

Agent/Consultant: Kyle Sundman, Pivot Energy			Email: ksundman@pivotenergy.net
Mailing Address: 1750 15th St, Suite 400			
City: Denver	State: CO	Zip Code: 80202	Phone: 719-233-4322

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	Date
charles rodgers (May 16, 2022 11:34 MDT)	charles rodgers	May 16, 2022
Signature of Property Owner	Printed Name	Date

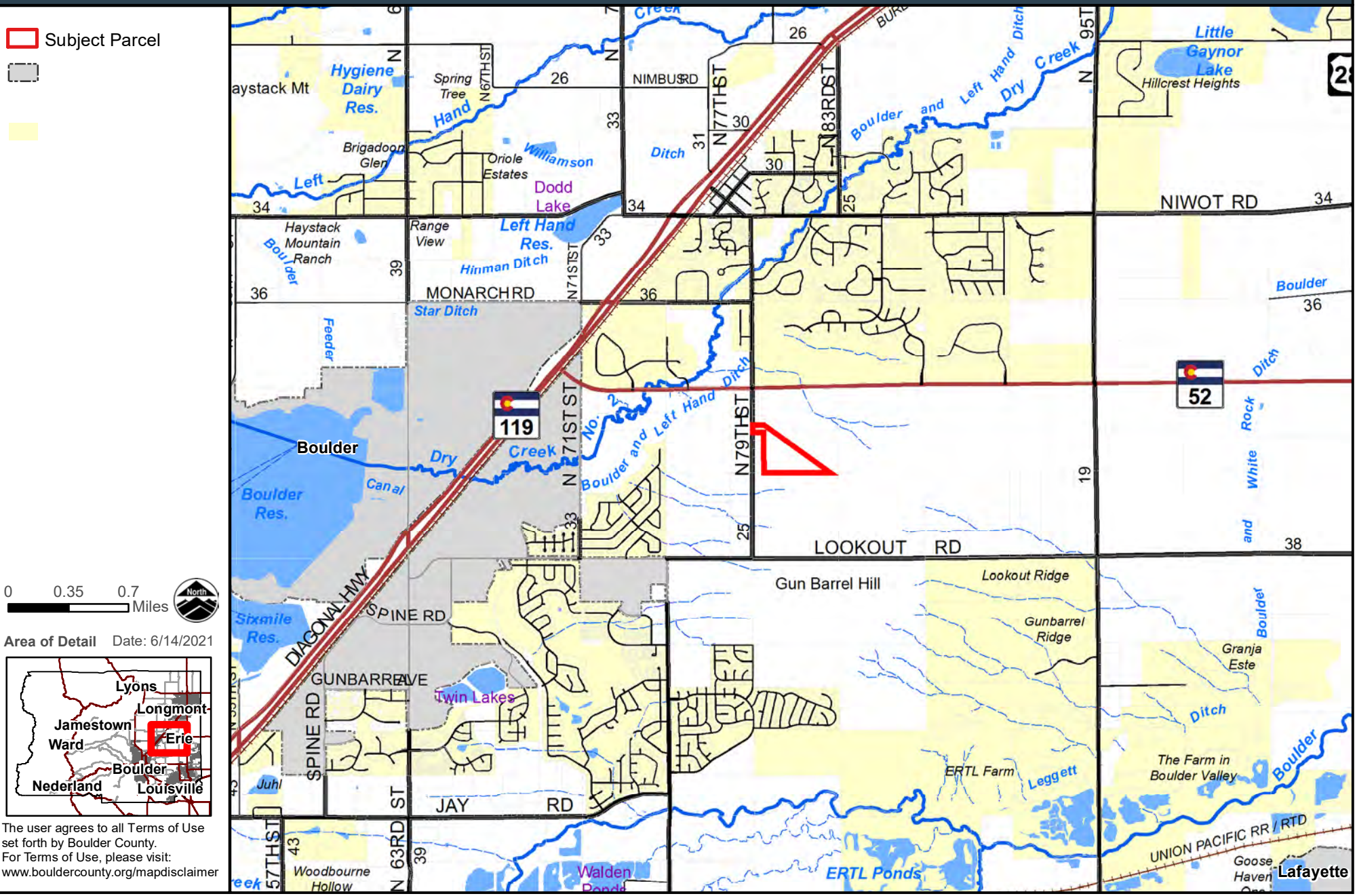
The Land Use Director may waive the landowner signature requirement for good cause, under the applicable provisions of the Land Use Code.

Community Planning & Permitting

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

Vicinity

5980 79TH



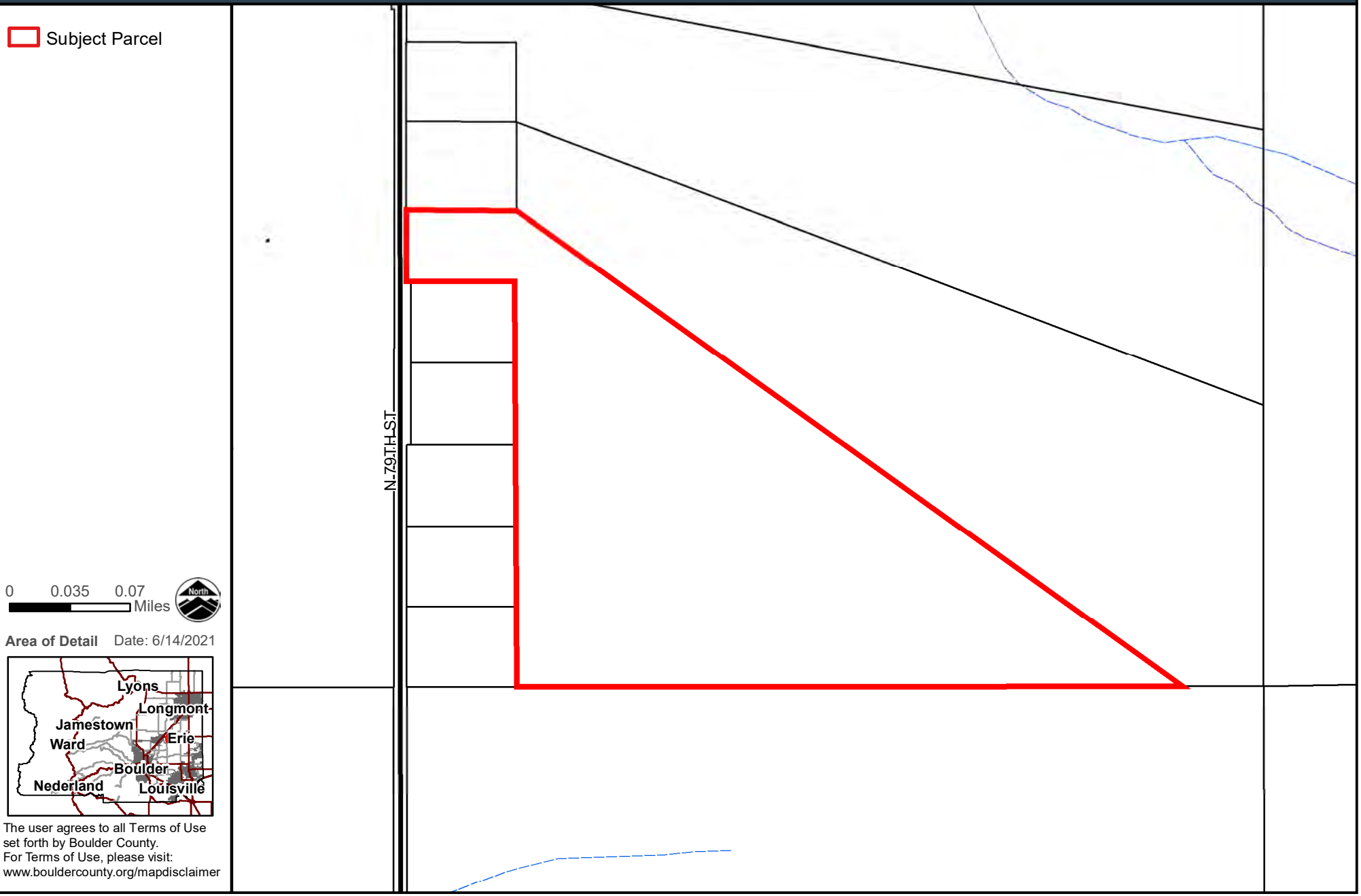
sgambrel

Community Planning & Permitting

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

Location

5980 79TH



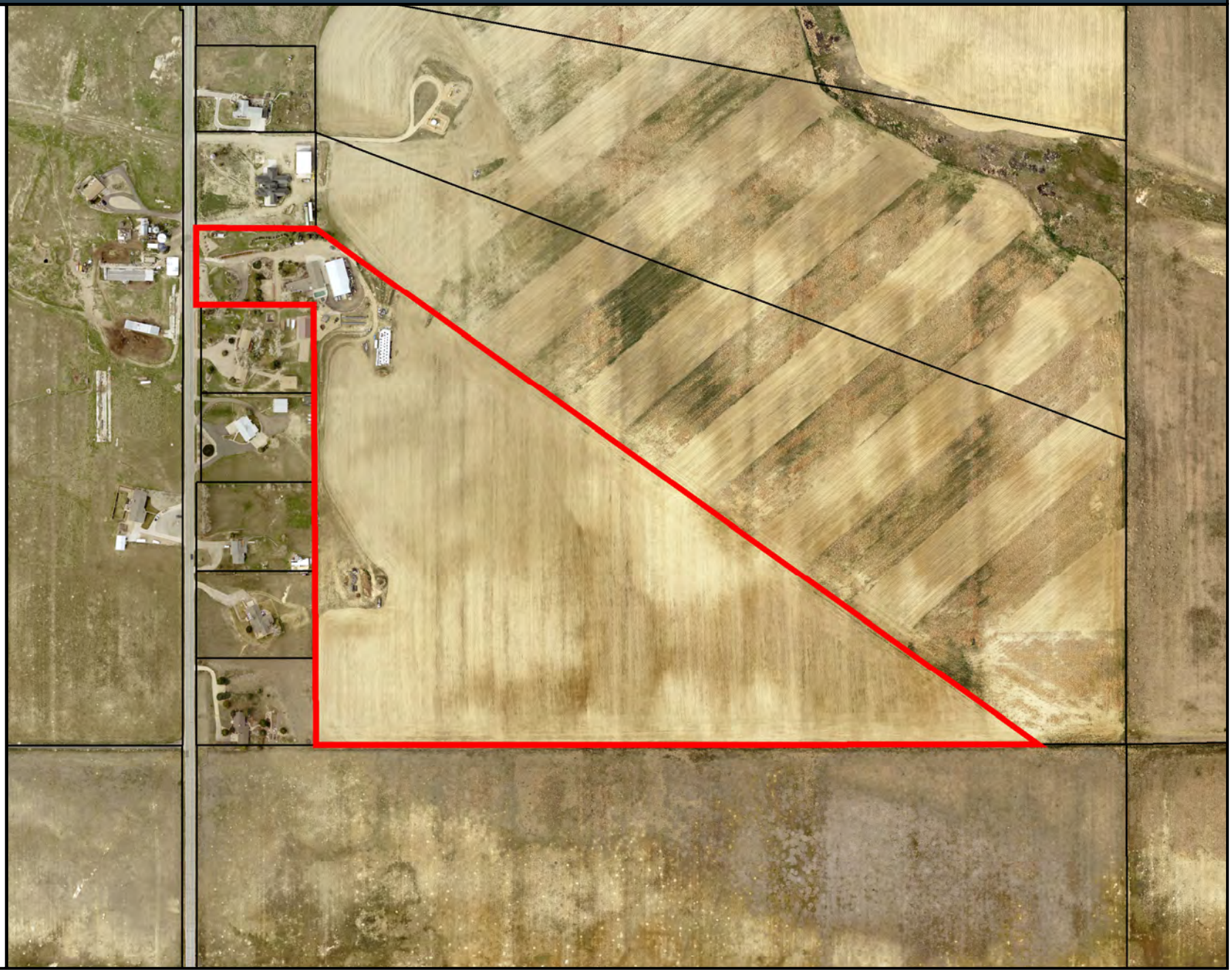
sgambrel

Community Planning & Permitting

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

Aerial

5980 79TH



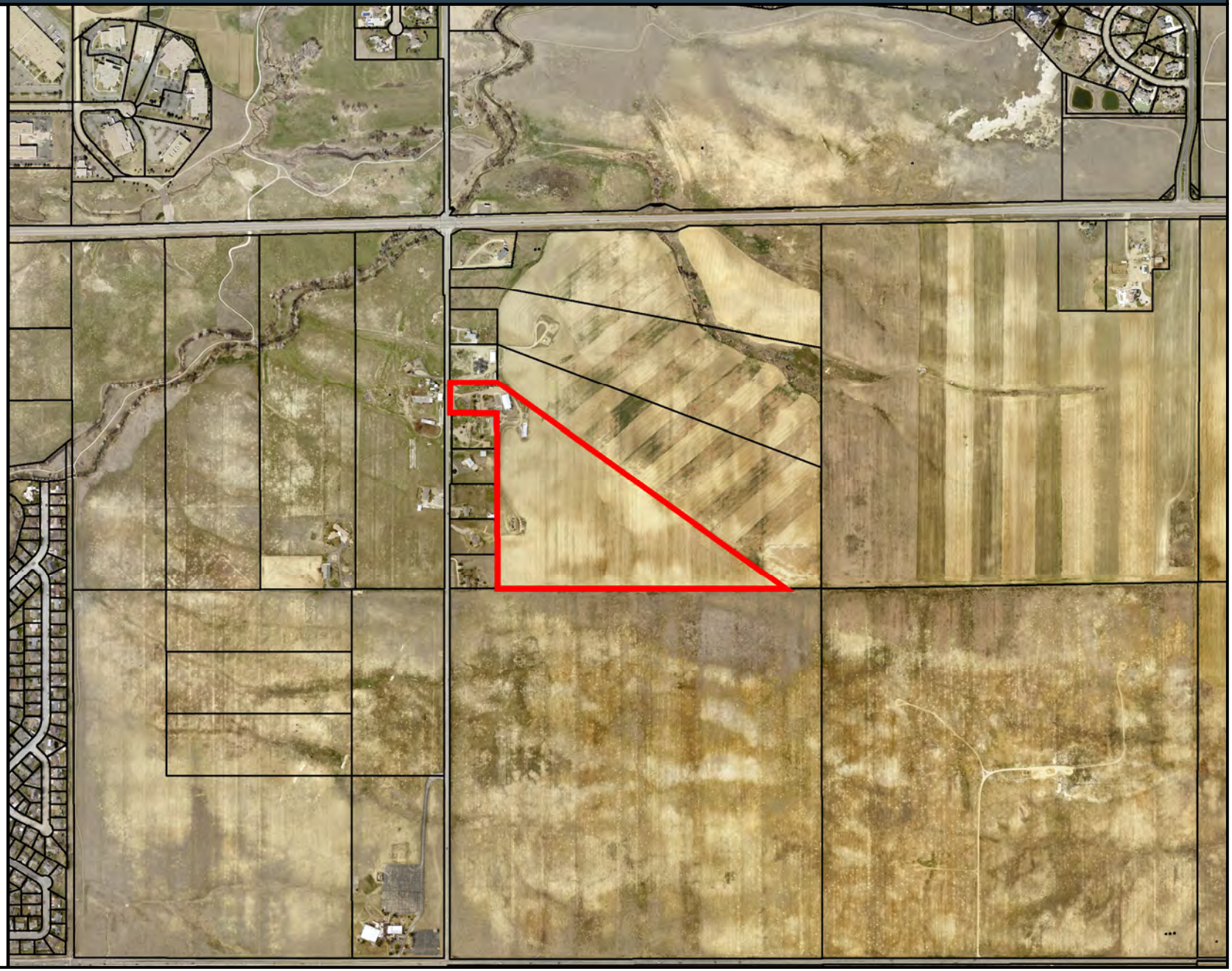
sgambrel

Community Planning & Permitting

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

Aerial

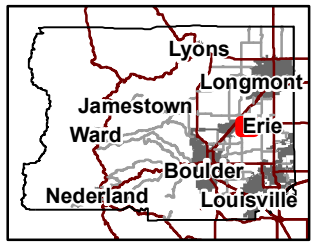
5980 79TH



0 0.085 0.17 Miles

North

Area of Detail Date: 6/14/2021



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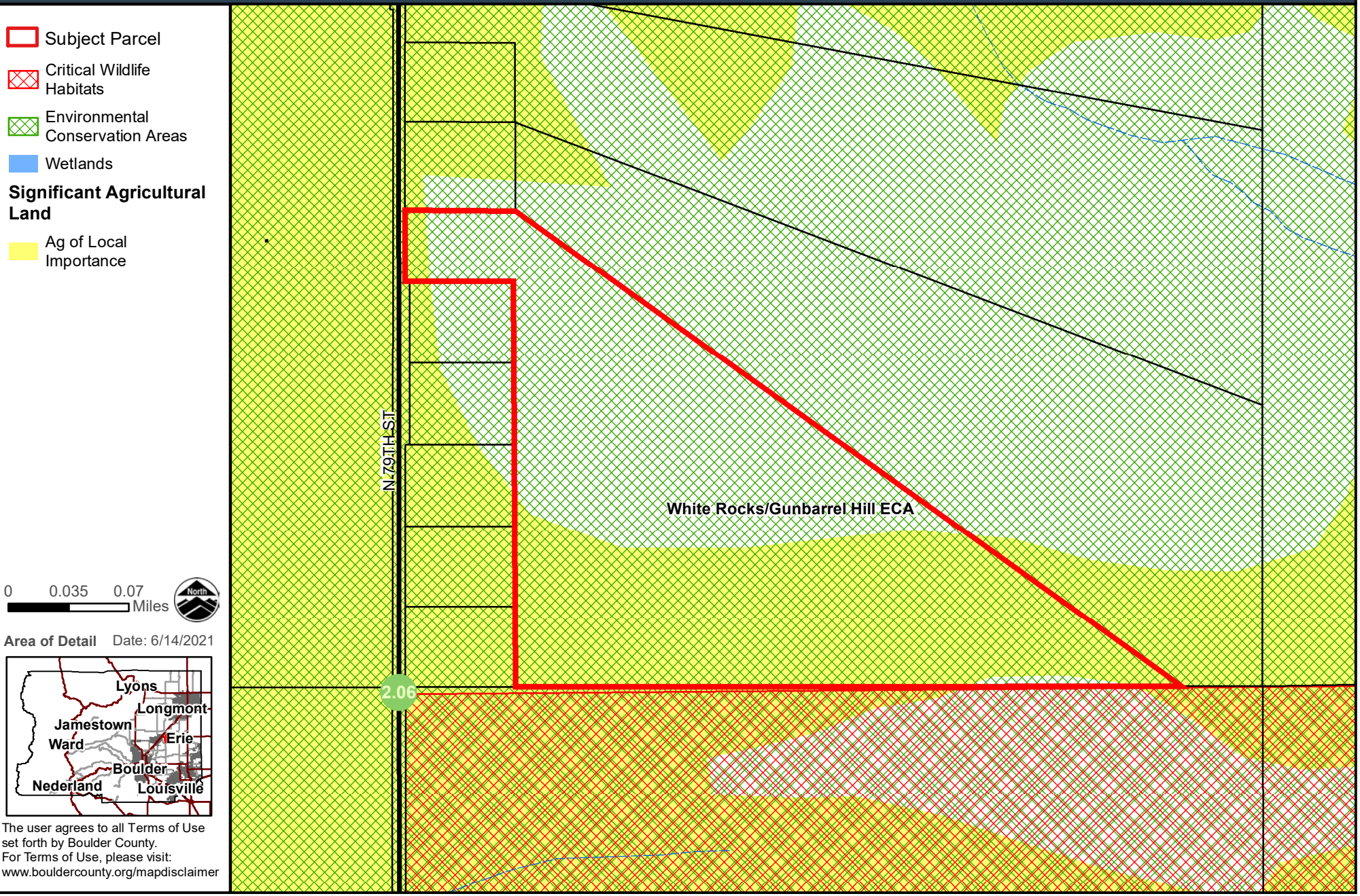
Community Planning & Permitting

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

Comprehensive Plan

5980 79TH



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Community Planning & Permitting

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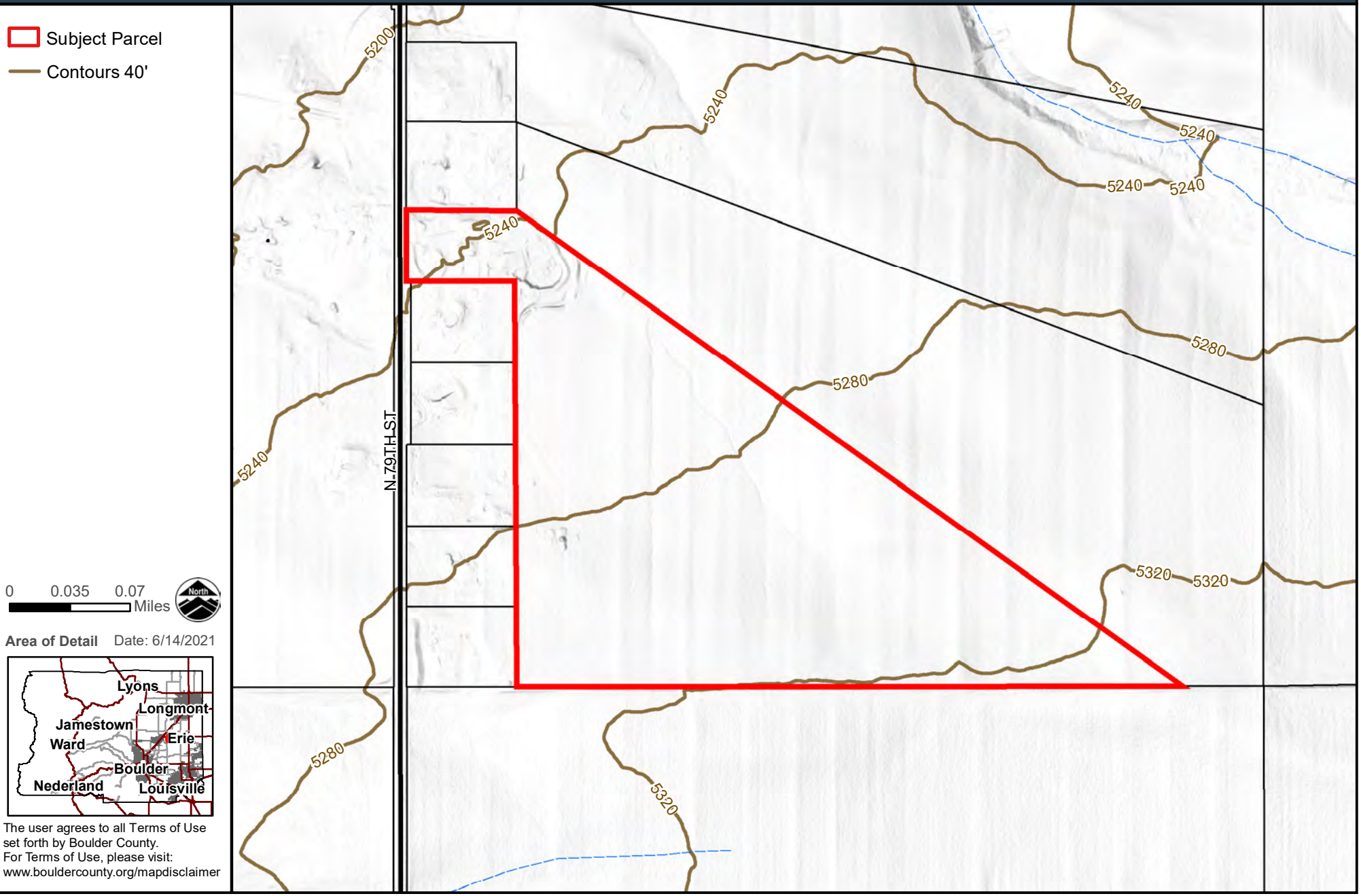
Elevation Contours

5980 79TH



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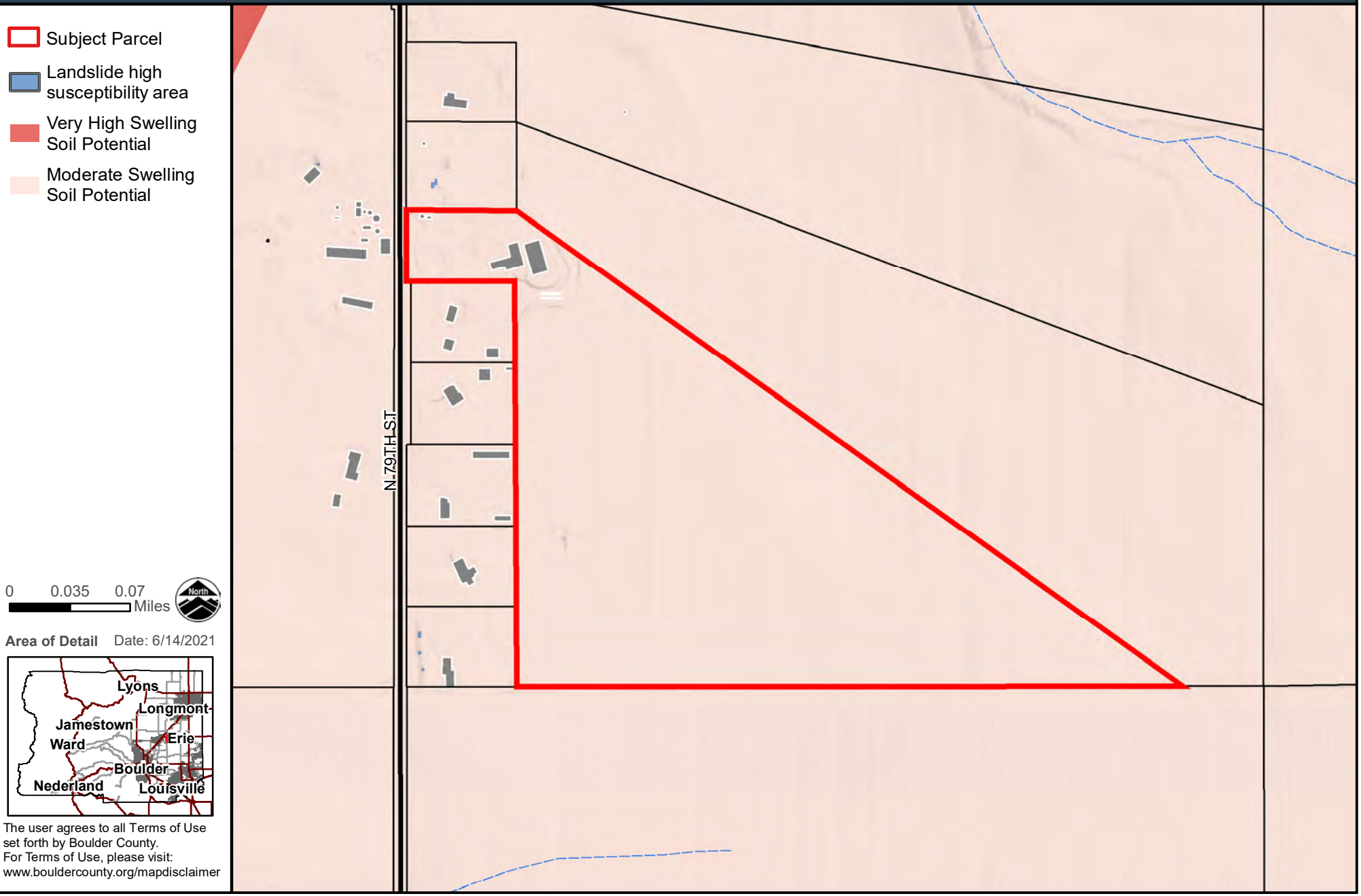
Geologic Hazards

5980 79TH



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Community Planning & Permitting

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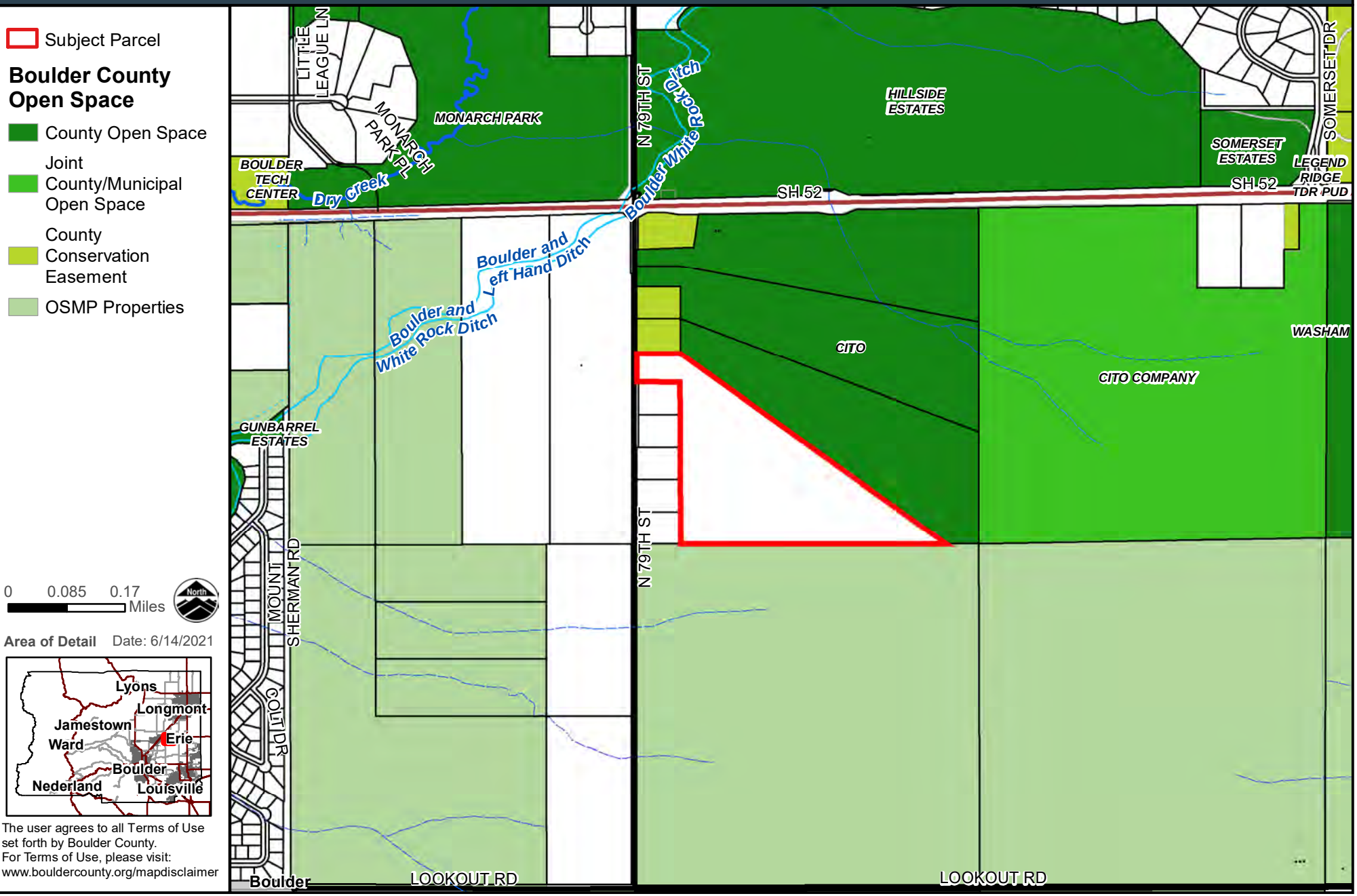
Public Lands & CEs

5980 79TH



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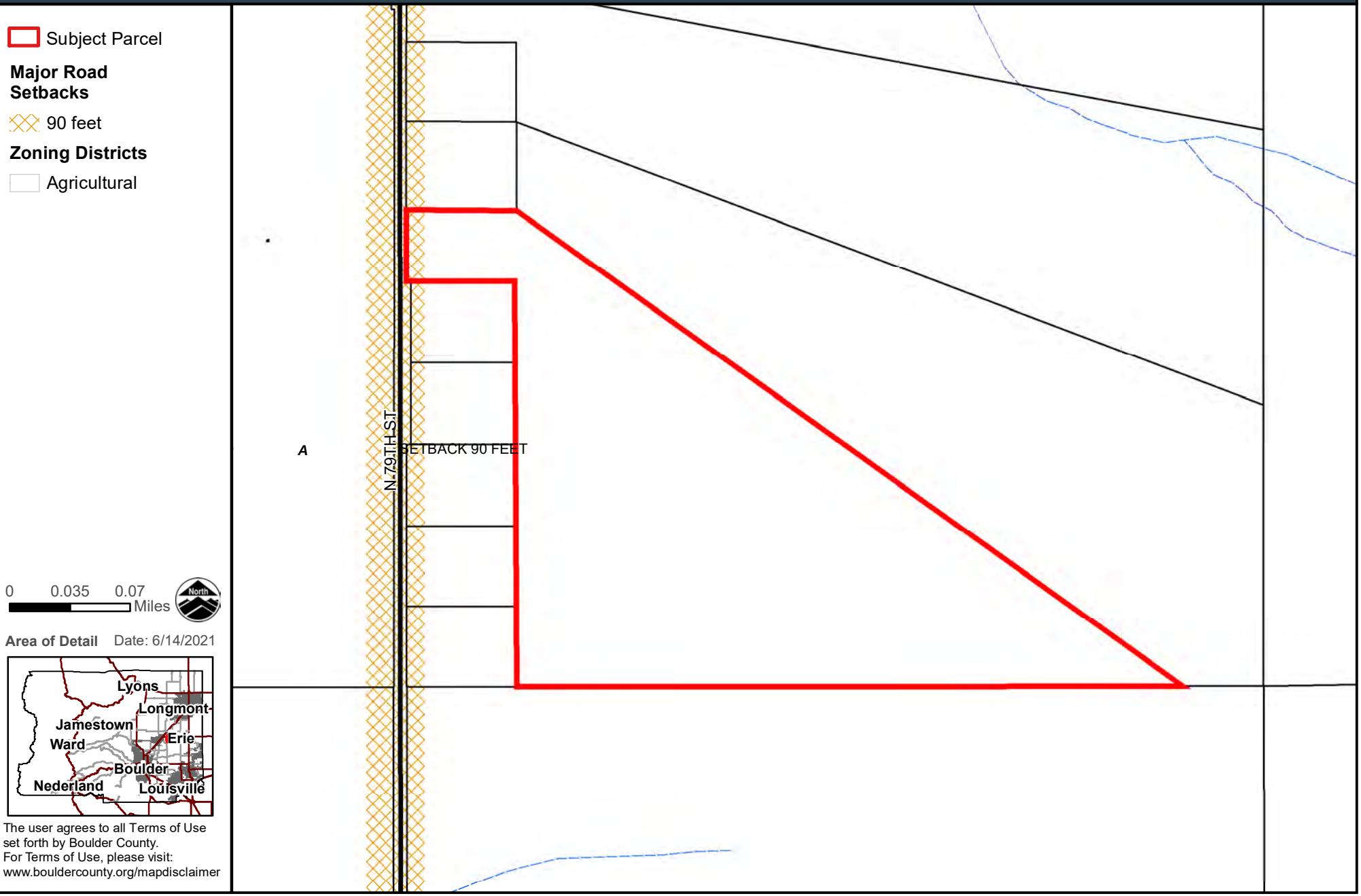
Community Planning & Permitting

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

Zoning

5980 79TH

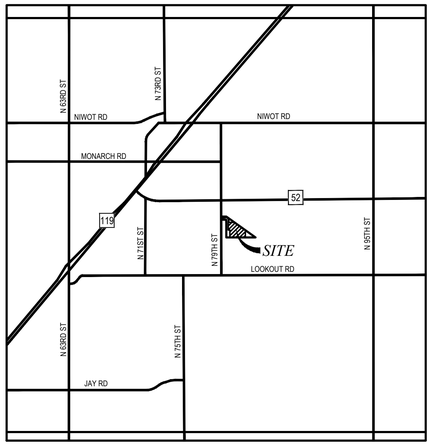


sgambrel

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



VICINITY MAP
SCALE 1" = 5000'

OVERALL SITE AREA
SCALE 1" = 1000'

N

SITE DATA

PARCEL AREA: ±36.02 ACRES
PROJECT AREA: ±23.62 ACRES
FENCED AREA: ±20.92 ACRES
INDUSTRY STANDARD PV MODULES
INDUSTRY STANDARD STRING INVERTERS
INDUSTRY STANDARD SINGLE-AXIS TRACKING SYSTEM
ACCESS PERMIT NUMBER: EXISTING
ZONING: A_AGRICULTURAL

15,000 MODULES

Sheet List Table

LEGEND

- EX. MAJOR CONTOUR (-5350-)
- EX. MINOR CONTOUR (-5340-)
- 8' HIGH GAME FENCE
- SETBACK LINE
- PROJECT BOUNDARY
- PV ARRAY
- INVERTER PAD
- TRANSFORMER PAD
- GRAVEL FIRE LANE & ACCESS ROAD

LEGAL DESCRIPTION:

36.17 ACS M/L IN NW 1/4 6-1N-69 PER DEED 1706934
SPLIT FROM ID 56420 PER DEED 1706934

BENCHMARK:

BASED ON SURVEY COMPLETED AT THE TIME OF BUILDING PERMIT

APPLICANT

PIVOT ENERGY
1750 15TH ST, SUITE 400
DENVER, CO 80202
CONTACT: KYLE SUNDMAN
(888) 734-3033

ENGINEER

ENERTIA CONSULTING GROUP, LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202
CONTACT: RICK HAGMAYER, PE
(720)792-3917

CASE NUMBER: _____

NO.	DATE	DSGN	DR	SK	REVISION	CHK	RH	APVD	RH
		PIVOT							

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST, SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

COVER SHEET

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE MAY 16, 2022
FILE
DWG
SHEET 1 OF 7

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO

LEGEND

- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- 8' HIGH GAME FENCE
- SETBACK LINE
- PROJECT BOUNDARY
- PV ARRAY
- INVERTER PAD
- TRANSFORMER PAD
- GRAVEL FIRE LANE & ACCESS ROAD

NOTES

1. A LAYOUT OF THE SOLAR FACILITY IS NOT YET CONCEPTUALIZED. FINAL LOCATIONS FOR EQUIPMENT AND ALL OTHER FACILITY COMPONENTS MAY BE ANYWHERE WITHIN THE SOLAR SITING ENVELOPE HATCHED ON THESE PLANS.
2. TREES WERE NOT OBSERVED WITHIN THE MAJORITY OF PROPOSED SOLAR ARRAY AREAS. IF NECESSARY, TREES AND SHRUBS ARE TO BE REMOVED TO ALLOW FOR THE INSTALLATION OF THE ARRAYS AND TO ELIMINATE SHADING.
3. ENERTIA CONSULTING GROUP, LLC ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. ANY UTILITIES SHOWN ON THIS DRAWING HAVE BEEN LOCATED PER CURSORY VISUAL OBSERVATION AND NOT BASED ON SURVEY DATA. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO MOBILIZATION.
4. AN 8 FT GAME FENCE WILL BE INSTALLED TO SURROUND THE SOLAR ARRAYS. GATES WILL BE PROVIDED FOR ACCESS.

N

0' 50 100 200

SCALE: 1"=100'

FOR BURIED UTILITY INFORMATION
THREE (3) BUSINESS DAYS BEFORE YOU DIG CALL 811
(OR 1-800-922-1987)
UTILITY NOTIFICATION CENTER OF COLORADO (UNCC)
WWW.UNCC.ORG

NO.	DATE	REVISION	DR	SK	CHK	RH	APVD	RH
DSGN	PIVOT							

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST. SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

EXISTING CONDITIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE	MAY 16, 2022
FILE	
DWG	
SHEET	2 OF 7

CASE NUMBER: _____

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO

LEGEND

- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- 8' HIGH GAME FENCE
- SETBACK LINE
- PROJECT BOUNDARY
- PV ARRAY
- INVERTER PAD
- TRANSFORMER PAD
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0' 50 100 200

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UTILITY NOTIFICATION CENTER OF COLORADO (UNCC)
WWW.UNCC.ORG

CASE NUMBER: _____

NO.	DATE	REVISION	DR	CHK	APVD
DSGN	PIVOT		SK	RH	RH

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST. SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

SITE PLAN

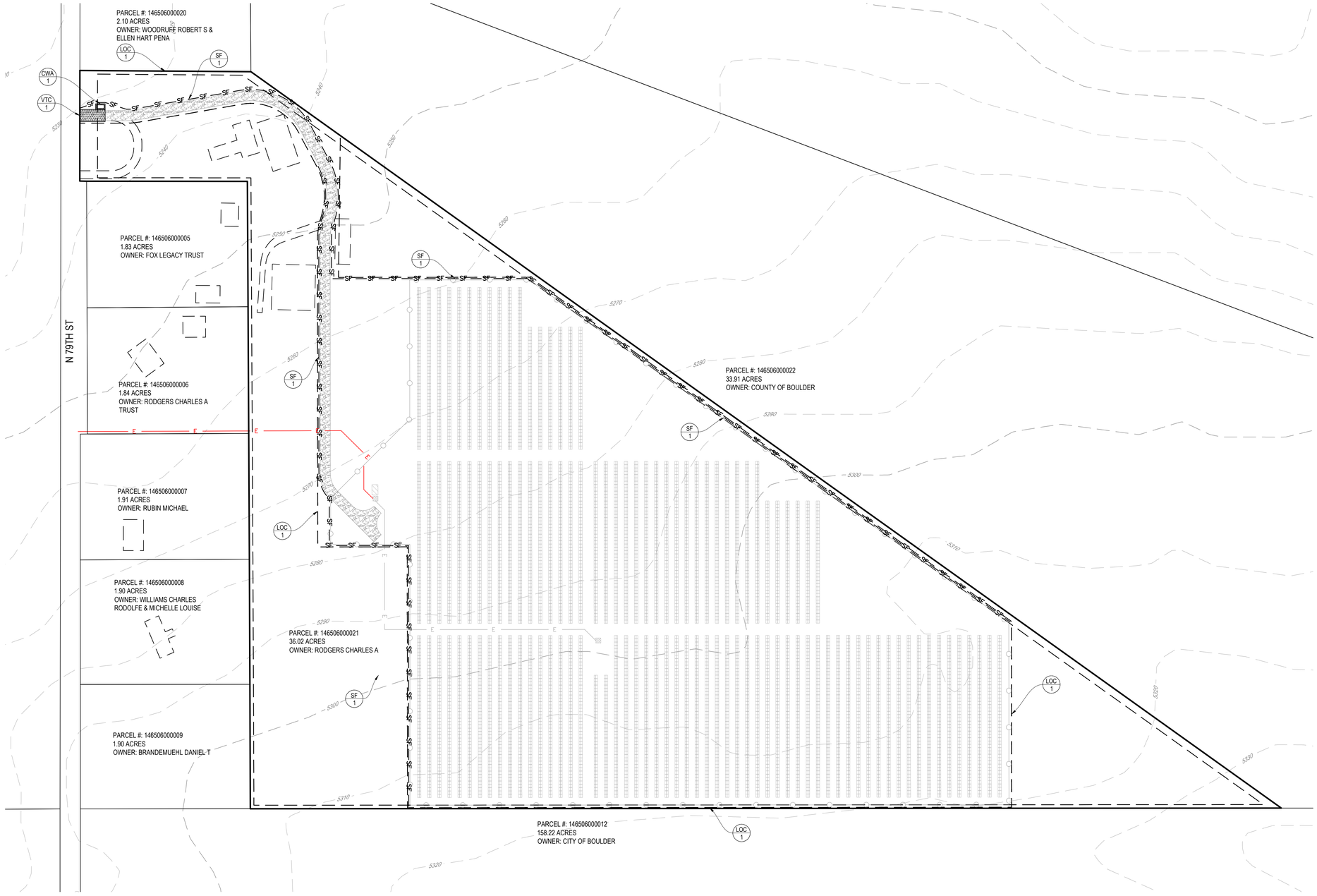
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE	MAY 16, 2022
FILE	
DWG	
SHEET	3 OF 7

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



LEGEND

- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- 8' HIGH GAME FENCE
- SETBACK LINE
- PROJECT BOUNDARY
- PV ARRAY
- INVERTER PAD
- TRANSFORMER PAD
- GRAVEL FIRE LANE & ACCESS ROAD

GEC LEGEND

SILT FENCE	SF	SF
LIMITS OF CONSTRUCTION	LOC	
VEHICLE TRACKING CONTROL	VTC	
CONCRETE WASHOUT	CWA	

NOTES

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4. AN 8 FT GAME FENCE WILL BE INSTALLED TO SURROUND THE SOLAR ARRAYS. GATES WILL BE PROVIDED FOR ACCESS.

LIMITS OF CONSTRUCTION: 23.62 ACRES
LIMITS OF DISTURBANCE: <1 ACRE

N

0' 50 100 200
SCALE: 1"=100'

FOR BURIED UTILITY INFORMATION
THREE (3) BUSINESS DAYS BEFORE YOU DIG
CALL 811
(OR 1-800-922-1987)
UTILITY NOTIFICATION CENTER OF COLORADO (UNCC)
WWW.UNCC.ORG

CASE NUMBER: _____

NO.	DATE	REVISION	DR	SK	CHK	RH	APVD	RH
DSGN	PIVOT							

ENERTIA
CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST, SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

GRADING AND EROSION CONTROL PLAN

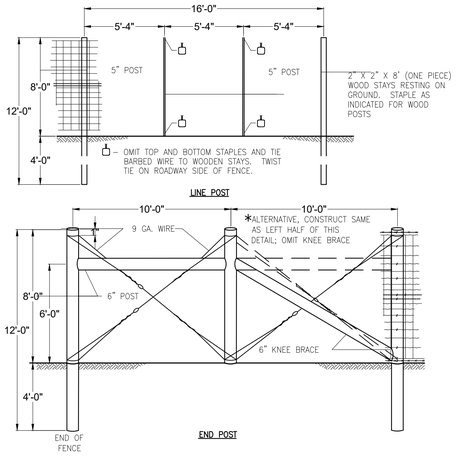
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE	MAY 16, 2022
FILE	
DWG	
SHEET	4 OF 7

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



NOTES:
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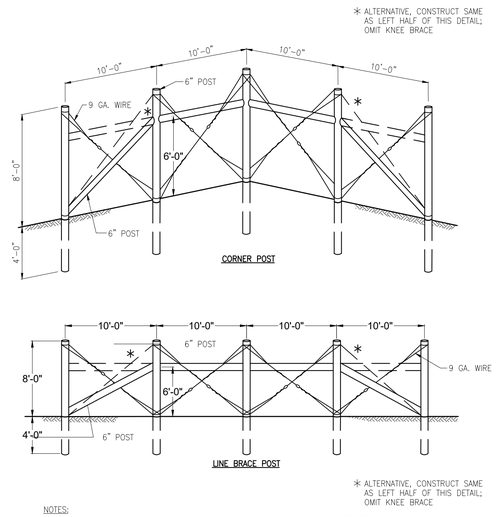
2. DO NOT SCALE DRAWINGS.

DEER FENCE
LINE & END POST DETAILS



NOTES:
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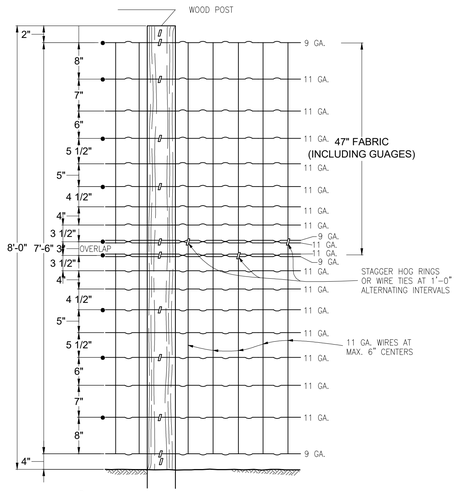
2. DO NOT SCALE DRAWINGS.

DEER FENCE
CORNER & LINE BRACE POST DETAILS



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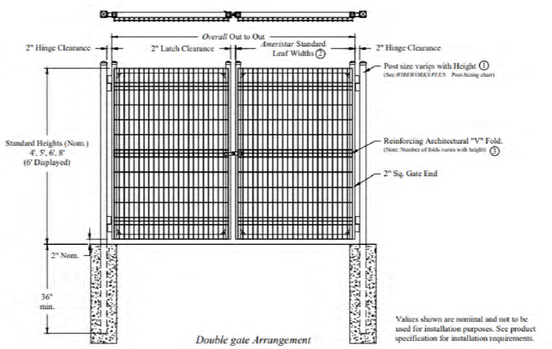
DEER FENCE
WIRE FABRIC FENCE DETAIL



DEER FENCE
FENCING GATE DETAIL

NOTES:
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2. DO NOT SCALE DRAWINGS.
3. AT EACH LOCATION WHERE AN ELECTRIC TRANSMISSION, DISTRIBUTION OR SECONDARY LINE CROSSES FENCE, THE CONTRACTOR SHALL FURNISH AND INSTALL A GROUND CONFORMING TO SECTION 9 OF THE NATIONAL ELECTRIC SAFETY CODE (NBS HANDBOOK 81).
4. END POST, CORNER POST, AND LINE BRACE POST SHALL BE ASSEMBLED BY THE UNIT AND PAID FOR AS SUCH. ALL WORK AND MATERIAL ASSOCIATED WITH EACH ASSEMBLY, SHALL BE INCLUDED IN THE UNIT PRICE FOR THAT ASSEMBLY.
5. LINE BRACE POSTS SHALL BE SPACED AT 400 FT INTERCALS, WHERE FENCING IS CONTINUOUS AND WHERE END, CORNER & LINE BRACE POSTS ARE NOT SPECIFIED.
6. ALL LINE POSTS SHALL BE 5"ø MIN. AND 12' LONG. ALL END, CORNER, AND LINE BRACE POSTS SHALL BE 6"ø MIN. AND 12' LONG. ALL POSTS AND BRACES SHALL BE TREATED PER 710.07.
7. WOODEN STAYS SHALL BE UNTREATED NATIVE TIMBER. BOTTOM ENDS OF STAYS SHALL REST ON THE NATURAL GROUND AND SHALL BE WIRED AND STAPLED AS INDICATED.
8. BARBED WIRE SHALL BE DOUBLE WRAPPED AND TIED OFF AT END POSTS, CORNER POSTS, AND LINE BRACE POSTS. WOVEN WIRE SHALL BE SINGLE WRAPPED AND TIED OFF. FENCE TO BE CONTINUED, SHALL BE RESTARTED IN LIKE MANNER.
9. FENCE MAY BE PLACED ON EITHER THE ROAD SIDE OR FIELD SIDE OF POSTS, DEPENDING ON LOCAL CONDITIONS; I.E., ON CURVES, THE WIRE SHOULD BE PLACED ON THE SIDE WHICH WOULD RESULT IN THE LEAST AMOUNT OF TENSION ON THE STAPLES. THIS WILL ALSO APPLY WHERE WIND DRIFT OR OTHER CONDITIONS WOULD EXERT UNUSUAL PRESSURE AGAINST THE WIRE.
10. WHERE CONCRETE STRUCTURES ARE USED AS A DEER PASS, THE FENCE SHALL END AT EYEBOLTS IN WINGS OF THE STRUCTURE. EYEBOLTS IN FRESH CONCRETE SHALL BE MADE OF 1/2" ROUND BARS AND EMBEDDED A MIN OF 6" WITH A HOOKED OR BENT END. IN EXISTING CONCRETE, THE 1/2" ROUND BARS SHALL BE DEFORMED AND GROUTED INTO DRILLED HOLES. EYEBOLTS SHALL HAVE A MINIMUM OF 1" INSIDE EYE DIA AND SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. COST OF EYEBOLTS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR FENCING.
11. WOVEN WIRE FENCE FABRIC SHALL CONFORM TO AASHTO M 279 (ASTM A 116) DESIGN NO. 1047-6-11 WITH CLASS 1 COATING.
12. STEEL BARBED WIRE SHALL CONFORM TO AASHTO M 280 (ASTM A 121) 12 1/2 GA. WITH CLASS 1 COATING.
13. ALL FENCE WIRE TIES, BRACE WIRES, STAPLES AND OTHER WIRE APPURTENANCES SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232.
14. 6" DOUBLE ACTING SPRING DOOR HINGE WITH FLAT BUTTON TIPS CUT IN TWO SHALL BE USED AS A SINGLE SWING HINGE AND BE PROVIDED WITH A GREASING NIPPLE AND WELDED TO SUPPORT PLATE.
15. TINES SHALL BE MOLDED IN ONE PIECE OF STEEL (AASHTO M 169, GRADE 1050), WITH NO WELDS ALLOWED.
16. DEER GATE AND TOP BRACES SHALL BE PAINTED WITH GREEN PAINT CONFORMING TO 708.03 AND COLOR NO. 14109 OF FEDERAL STANDARD 595B.
17. GAP CLOSURE: EXCEPT FOR DEER GATES, CONSTRUCT FENCE WITHOUT OPENINGS OR GAPS, ESPECIALLY AT STRUCTURES, CLIFFS, AND IRREGULAR GROUND. WHEN A 6" OR LARGER GAP EXISTS BELOW THE NORMAL BOTTOM FENCE WIRE, THE GAP SHALL BE CLOSED ACCORDING TO THE CLOSURE DETAIL. ALL EXTRA MATERIAL USED FOR GAP CLOSURES OR ANY TYPE OR LOCATION SHALL BE INCLUDED IN THE WORK.

DEER FENCE
NOTES

CASE NUMBER: _____

NO.	DATE	DSGN	DR	SK	CHK	RH	APVD	RH
		PIVOT			REVISION			

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST, SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON
N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

SITE DETAILS (1 OF 3)

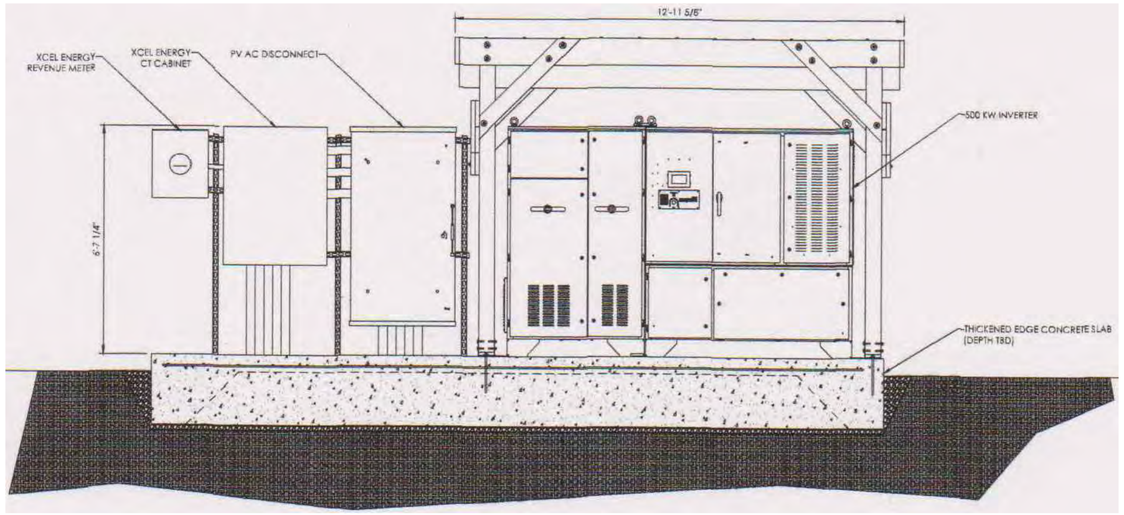
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE	MAY 16, 2022
FILE	
DWG	
SHEET	5 OF 7

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

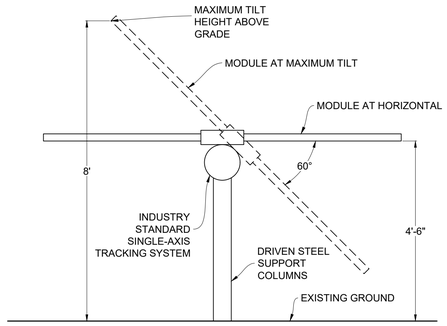
CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



INVERTER MOUNTED ON CONCRETE PAD (TYP)

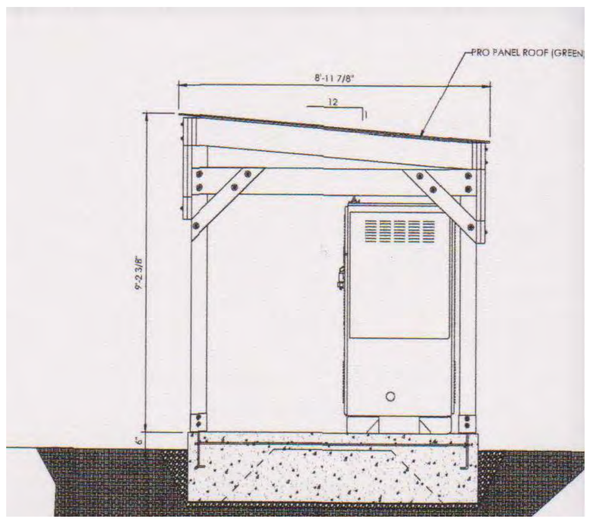
NOT TO SCALE

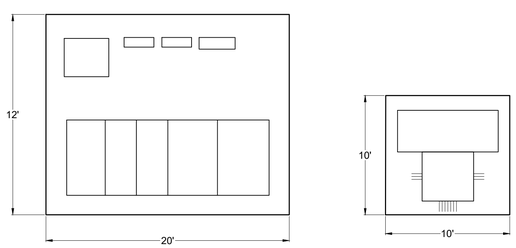


NOTE: FINAL DIMENSIONS SUBJECT TO FINAL DESIGN.

PV ARRAY RACKING SYSTEM

NOT TO SCALE





EQUIPMENT PAD LAYOUT

NOT TO SCALE

NO.	DATE	REVISION	CHK	APVD
DSGN	PIVOT	DR	SK	RH

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST, SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

SITE DETAILS (2 OF 3)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE	MAY 16, 2022
FILE	
DWG	
SHEET	6 OF 7

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

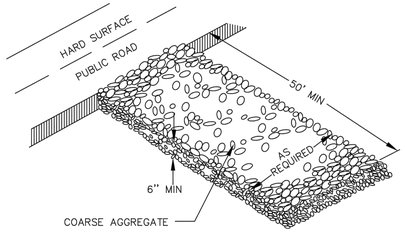
LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO

DEFINITION

A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE

PURPOSE

TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF

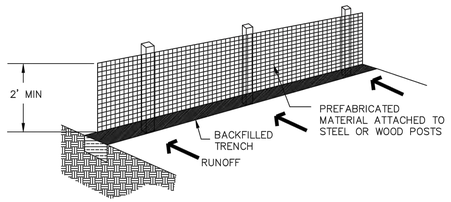


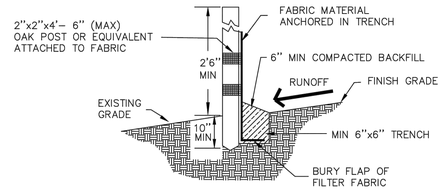
DRAWN BY: JSH
CHECKED BY: RJH
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

ISSUED: JULY 2, 1998
REVISED: OCT. 17, 2000

DRAWING NO. 7.30





DETAIL

NOTES:

1. SILT FENCE SHALL BE INSTALLED BEFORE ANY EARTH REMOVAL OR EXCAVATION TAKES PLACE.
2. SET POSTS MAXIMUM 8 FEET ON CENTER AND EXCAVATE 6"x6" TRENCH UPSLOPE ALONG THE LINE OF POSTS.
3. ATTACH FILTER FABRIC TO POSTS AND EXTEND IT INTO TRENCH.
4. BACKFILL AND COMPACT EXCAVATED SOIL.

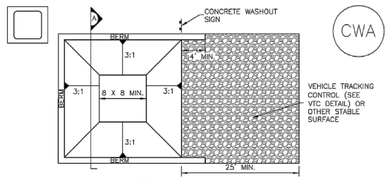
DRAWN BY: JSH
CHECKED BY: RJH
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO
PREFABRICATED SILT FENCE INSTALLATION

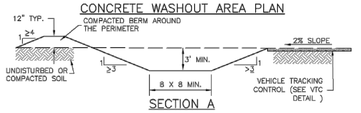
ISSUED: JULY 2, 1998
REVISED: OCT. 17, 2000

DRAWING NO. 7.26

Concrete Washout Area (CWA) MM-1



CONCRETE WASHOUT AREA PLAN



SECTION A

CWA–1, CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –CWA INSTALLATION LOCATION.
2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MM-1 Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

1. 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.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER–TIGHT CONTAINER AND DISPOSED OF PROPERLY.
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY 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.

Boulder County

Boulder County Land Use Department Publications

Revegetation

Land Use Department
Courthouse Annex Building
2045 13th Street
PO Box 471
Boulder, CO 80302

Planning Division:
Phone: 303-441-3930
Fax: 303-441-4856
Email: planner@bouldercounty.org
Website: www.bouldercounty.org/lu/

Office Hours:
Monday — Friday 8:00 a.m. to 4:30 p.m.

Revegetation

Assuring the proper revegetation of disturbed areas is an integral part of many Boulder County reviews. Successful revegetation is essential to slow soil erosion, repair scarring from cut and fill slopes, and to help deter noxious weeds. This handout is meant to guide you through some common requirements placed on projects in the county.

The Revegetation Plan

Use a copy of your site plan to delineate the areas you expect to be disturbed by construction (see example). Common disturbances include areas around the house, along the driveway, utility corridors, septic system, and staging/construction parking areas. The locations of silt fences and straw-bale barriers, if necessary, must also be shown. Each of the disturbed areas must show the method of revegetation including:

Seed List

In the Revegetation Plan, attach a list containing each type of seed and where it is to be used.

- Boulder County always encourages the use of native vegetation, and mountain projects above 5500 feet are required to use native grasses. Depending on location, some plains projects will also be required to use native grasses. This list must include seed application rates.
- Please refer to the attached recommended seed mixes and the document, "*Suggested Native Plants for Horticultural Use on the Front Range of Colorado*" as a guide. Some sources for plant material are included. Boulder County will not accept any seeds from the section titled, "*Plant Species Not to Use…*"

Slope and Revegetation

The degree of attention needed to successfully revegetate the site depends greatly on the steepness of slopes. This table shows which measures, in addition to seeding, should be included in the Revegetation Plan. Tractors, drill seeders, and mowers can operate on slopes of 3:1 or flatter, which makes such grades optimal for seedbed preparation, planting and maintenance.

Degree of Slope*	Soil Prep	Topsoil/ Stockpile	Mulch	Matting/ Hydromulch
Level to 3:1	✔	✔		
3:1 to 2:1	✔	✔	✔	
2:1 to 1.5:1	✔	✔	✔	✔

* See Determining Steepness of Grade section on page 3 for degree of slope.

Topsoil/Stockpile

Stockpiling entails scraping off the topsoil — or the uppermost, fertile layer of the soil — and setting it aside until needed. After construction, this topsoil should be spread out to a depth of 3" or more on all surfaces that are to be seeded. The addition of fertilizer is usually unnecessary for native grasses, and it can promote the growth of annual weeds.

Soil Preparation

A good seedbed is crucial to successful revegetation. Slopes should be graded to avoid concentrated water flow and subsequent erosion. If possible, any areas severely compacted by machinery and equipment during construction should be ripped by tractor or backhoe to loosen soils and allow for water infiltration and root growth. Clods larger than 3" should be broken, and any weeds controlled by tilling the soil.

Seeding

Seeding can take place from the fall until spring, including the winter months as long as the soil is workable. Many native seeds require a period of cold to germinate and are not harmed by being in the soil over winter. The best time window for seeding on the plains is November 1 to March 31. At higher elevations, seeding can be done later into the spring and early summer.

If possible, drill seeding will be the best seeding method. If the area is too small or steep for a tractor to operate, broadcasting the seed by hand or with a mechanical spreader is acceptable. Boulder County does not recommend hydroseeding; it does not work in our arid climate. In contrast, hydromulching after seeding is fine. Pay close attention to the recommended rates of seed application. Broadcast seed needs to be applied at double the rate of drilled seed. After broadcasting, seed needs to be raked in lightly by hand to provide better soil contact. Not all the seed needs to be buried; it is fine if some is still visible.

Mulch

For steeper slopes, a mulch is necessary to keep the seed and topsoil in place. Mulch also provides shade to the seedlings and helps to retain soil moisture. On slopes of 3:1 or less, the mulch can be weed-free straw. The straw should be applied at 1.5 to 2 tons per acre. This is roughly one standard straw bale per 650 square feet. Do not mulch too thickly; some of the soil should still be visible to allow solar warming. If a tractor is available the straw can be "crimped" into the soil with a crimping tool. Crimping orients some of the straw vertically and keeps it in place, minimizing wind erosion. This can be simulated by hand using a shovel and jabbing the straw into the ground. Hydromulching is another option for larger areas. For small areas in the mountains, spreading pine needles over raked-in seed is acceptable.

Erosion Matting

Slopes steeper than 2:1 require erosion matting. Common types of matting include coir (coconut or jute fiber), straw, aspen fibers, or a blend of these. Steeper slopes will require more durable blankets. Talk to a vender about which product will work for your situation. When possible, specify biodegradable netting since this breaks down more quickly and is less of a hazard to wildlife.

Installation of Matting

Installation procedure:

1. Remove any material larger than 3" in diameter.
2. At the top of the slope, dig a trench the width of the blanket, about 6" deep. Fold over the edge of the blanket and secure in the trench with landscape staples. Place soil back into trench and compact.
3. Roll out matting downhill, keeping it straight and fairly tight but not so tight that it is lifted over any low spots. Fasten with landscape staples every 3' on the edges and across the middle. Follow manufacturer's directions if provided.
4. At the end of a roll of matting, dig another trench and fasten the end of the blanket as you did the top edge, including staples.
5. Overlap side-by-side blankets by 12" minimum, and staple.

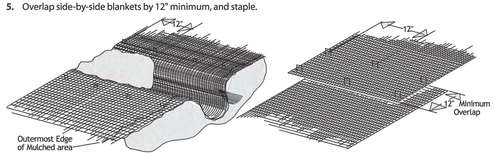


Diagram of Matting Installation.

- **Irrigation** – If you have seeded at the correct time of the year, and there is normal precipitation, then supplemental irrigation is not necessary. However, if it is a dry spring, irrigating seeds the first year will improve success.
- **Weeds** – Weeds will likely appear along with, or before, grass seedlings. There are weed seeds in the soil waiting for a disturbance that allows them to grow. If weeds are so thick that they are out-competing grasses, they can be mowed to a height of 8". Do not mow them close to the ground since this can harm the new grasses.
- **Time** – Be patient. Native grasses expend a lot of energy the first year in putting down roots. Because of this, the plants may look small after one year of growth. This is normal. It may take two growing seasons and good moisture before adequate results are seen.

Site Disturbance

The best Revegetation Plan is thoughtful about altering as little of the site as possible. Fewer disturbances translate into less time and money for revegetation. The foremost consideration in this regard is the selected project location on the site. Level building sites require less alteration to the topography. Also, it is helpful to show on the Revegetation Plan which areas are targeted for specific preservation (such as clarifying which trees will not be cut), and what measures will be taken to limit disturbances from construction (such as erecting construction fences to keep machinery away from sensitive areas).

Boulder County

Boulder County Land Use Department Publications

Native Seed Mixes

Land Use Department
Courthouse Annex Building
2045 13th Street
PO Box 471
Boulder, CO 80302

Planning Division:
Phone: 303-441-3930
Fax: 303-441-4856
Email: planner@bouldercounty.org
http://www.bouldercounty.org/lu/

Office Hours:
Monday — Friday 8:00 AM to 4:30 PM

Native Seed Mixes

Samples for Boulder County.

Plains Seed Mix

Below 5,500 Feet Elevation

Common Name	Species Name	Variety	% of Mix	#PLS/ Acre
Side Oats Grama	*Bouteloua curtipendula*	Vaughn	15%	2.74
Blue Grama	*Bouteloua gracilis*	Native, Alma, or Hachita	20%	0.84
Buffalograss	*Buchloe dactyloides*	Native	15%	9.33
Western Wheatgrass	*Pascopyrum smithii*	Arriba	12.5%	3.96
Western Wheatgrass	*Pascopyrum smithii*	Native	12.5%	3.96
Little Bluestem	*Schizachyrium scoparium*	Cimarron or Pastura	13%	1.74
Green Needlegrass	*Stipa viridula*	Lodorm or Native	12%	2.31
		Totals:	100%	24.88

Foothills Seed Mix

5,500 Feet to 7,000 Feet Elevation

Common Name	Species Name	Variety	% of Mix	#PLS/ Acre
Side Oats Grama	*Bouteloua curtipendula*	Vaughn	10%	1.82
Blue Grama	*Bouteloua gracilis*	Native, Alma, or Hachita	15%	0.63
Slender Wheatgrass	*Elymus trachycaulus*	San Luis	20%	4.38
Junegrass	*Koeleria macrantha*	Native	10%	0.15
Western Wheatgrass	*Pascopyrum smithii*	Arriba	10%	3.17
Western Wheatgrass	*Pascopyrum smithii*	Native	10%	3.17
Switchgrass	*Panicum virgatum*	Blackwell or Nebraska 28	7%	0.63
Little Bluestem	*Schizachyrium scoparium*	Cimarron or Pastura	8%	1.07
Green Needlegrass	*Stipa viridula*	Lodorm or Native	10%	1.93
		Totals:	100%	16.95

Mountain Seed Mix

7,000 Feet and Above Elevation

Common Name	Species Name	Variety	% of Mix	#PLS/ Acre
Blue Grama	*Bouteloua gracilis*	Native, Alma, or Hachita	20%	0.84
Canada Wildrye	*Elymus canadensis*	Native	10%	3.03
Thickspike Wheatgrass	*Elymus lanceolatus*	Critana	25%	5.58
Slender Wheatgrass	*Elymus trachycaulus*	San Luis	25%	5.48
Junegrass	*Koeleria macrantha*	Native	10%	0.15
Sandberg's Bluegrass	*Poa secunda*	Native	10%	0.38
		Totals:	100%	15.46

Rates are for broadcast seeding. If using a seed drill, reduce rates by half. PLS = Pure Live Seed.

NO.	DATE	DSGN	DR	CHK	APVD
		PIVOT	SK	RH	RH

REVISION

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST. SUITE 400
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PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

SITE DETAILS (3 OF 3)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE MAY 16, 2022
FILE
DWG
SHEET 7 OF 7

May 16, 2022

Development Narrative

Project Background and Overview

Public Service Company of Colorado ("Xcel Energy") has contracted with Pivot Energy to design, permit, and build a 5 megawatt (MW) solar energy facility on a parcel of land owned by Mr. Charles Rodgers located at 5980 N. 79th Street (Parcel # 146506000021). The project will be located approximately 1.5 miles south of Niwot and 1.33 miles north of Gunbarrel. Pivot has an active ground lease in place with Charles Rodgers for twenty-one years with two additional ten-year option periods. The ground lease includes approximately 30 acres of the larger 36.5-acre parcel. All 30 acres under lease are currently vacant. The parcel is zoned as Agricultural and is primarily undeveloped open land.

The facility will participate in Xcel Energy's Solar*Rewards Community Program as a Community Solar Garden and will donate 100% of the energy generate to low-income Coloradans. The solar array will generate enough energy to power the equivalent of 2,000 average homes annually. Pivot Energy will own and operate the solar energy facility for its operational life, which is expected to be 25 – 35 years.

The project will use industry standard equipment including photovoltaic (PV) solar modules and single axis tracking racks. The racks "follow" the angle of the sun during the day, maximizing the amount of energy produced by the solar modules. Pivot Energy has completed a review of any potential impacts to air traffic and has received a generated conclusion that no additional FAA review is required. It is included as Exhibit A. An analysis using Forge Solar's "GlareGauge" software revealed no anticipated glare impacts to surrounding properties or roadways. The results of the "GlareGauge" can be found attached to the end of this narrative as Appendix B.

PV solar arrays are generally regarded as passive land uses due to the characteristics of solar projects. Construction access will be off N 79th Street. During construction, crews of manual laborers as well as equipment operators and deliveries will be common. On any given day, between 25 – 50 people could be on site working on the project. The construction period will last approximal 16 to 20 weeks. Once construction is complete, the solar array operates with no on-site personnel. Periodic site visits with a pickup truck are required to ensure mechanical and electrical connections and communications equipment are operating as expected. Additional visits are required to ensure on-site vegetation is maintained at a low height, preventing shade from reducing power output of the equipment. Combined, these visits are expected to account for 4 – 8 annual visits with negligible impact to area roads, traffic, and minimal impacts to neighboring property owners.

The solar equipment will operate with minimal noise. The racks follow the sun during the day and are powered by electric motors that advance the racks at small increments. The inverters convert the direct current electricity ("DC") produced by the solar panels to alternating current electricity ("AC") suitable for injection to the local electrical grid. This process creates some noise, which could be considered similar in volume to a residential air conditioner unit. The solar array only operates during the daylight hours, meaning there would be no noise during the "quieter" hours of the day (early in the morning, late in the evening, and overnight). The energy produced by the array is clean, eliminating the greenhouse gas emissions associated with traditional fossil-fuel energy generators. The proposed project would not generate any odors, and the site would have no external illumination.

The proposed project does not require a well, septic system, public water, or sewer because no one will work at the site once construction is complete. During construction, appropriate on-site services will be maintained to ensure work crews have adequate access to porta-potties and potable water for drinking and washing hands. Because the site will generally not be staffed, a minimal level of emergency service will be required. Emergency services will have full access to the site off N 79th Street.

We do not anticipate any grading will be necessary during the construction phase of the project. Visual impacts to surrounding property owners will be mitigated by constructing a decorative wildlife-friendly game fence that surrounds the entire project. Pivot energy will plant native, pollinator-friendly, low-growth vegetation that will help the array blend into the natural surroundings and act as screening from adjacent landowners. Included here are photos of past projects as an example.

In preparation for our application submittal, Pivot Energy proactively reached out to all adjacent residential property owners via USPS certified mail in April of 2022. Information about the project and a request to get in touch with Pivot Energy to discuss concerns and ask questions, along with a site plan, was included. A total of 9 letters were sent to adjacent neighbors (as indicated in the aerial image above). The letters were mailed on April 15, 2022. At the time of this application, two responses have been received from landowners and Pivot Energy is in active communication with both individuals.

Response to Boulder County Land Use Code Article 4 • 4-514 Utility and Public Service Uses

M. Solar Energy – Ground-Mounted System

1. Definition: A solar energy system mounted on a rack or poles that rests on or is attached to the ground, not including a solar energy system mounted on parking canopies. Developer response: Our proposed system meets this definition.

2. Districts Permitted:

Zoning District	Small < 2.5 acres disturbed area	Medium 2.5 to 10 acres disturbed area	Large 10+ acres disturbed area
MF, MH, MI, SR, H	SPR	Not allowed	Not allowed
A, ER, RR, F	SPR/SU*	LU/ SU*	**SU***
LI, GI, C, B, T	SPR	SPR	LU

*Note: Special Review is required for Significant Agricultural Lands in A, RR, ER, as listed in the additional provisions, below. Medium and Large systems are not permitted in platted subdivisions in ER and RR. Developer response: Our proposed system is in the "A" Zoning District and will utilize more than 10 acres of land, qualifying it for a "SU," or Special Use Review.

3. Parking Requirements: To be determined through review Developer response: Noted.

4. Loading Requirements: None Developer response: Noted.

5. Additional Provisions:

a. This use is required to be located on a building lot, or an outlot platted for this purpose. Developer response: This is a building lot.

b. The use may be allowed on right-of-way, as permitted by the right-of-way owner and if compatible with the use of the right-of-way. For right-of-way systems, further requirements may be stipulated by the Boulder County Transportation Department or the Colorado Department of Transportation to ensure compatibility with transportation-related uses of the right-of-way. Developer response: The use will not be in the right-of-way.

c. The appropriateness of a site, the specific location on the site, and the extent of site disturbance will be determined through the applicable review process. Developer response: Noted.

d. Ground-mounted systems with disturbed area greater than 0.5 acre cannot be located on areas designated by the Boulder County Comprehensive Plan as Natural Landmarks, Natural Areas, Critical Wildlife Habitats, or Wildlife Migration Corridors. Developer response: The designated areas are not shown within our proposed project area.

e. Ground-mounted systems are allowed as a second Principal Use on parcels subject to the review process applicable for the proposed new ground-mounted system. Developer response: Noted.
f. Ground-mounted systems shall not exceed 15 feet in height, except to accommodate site specific needs and as approved through review. Systems exceeding 15 feet in height require an increased setback of 75 feet from all property lines unless it is demonstrated that a lesser setback or topographical or vegetative screening adequately mitigates visual impacts. In no case shall a system exceed 25 feet in height. Developer response: The proposed system will not exceed 15 feet in height.
g. Ground-mounted systems with disturbed area greater than 2.5 acre are not permitted in the Forestry Zoning District unless the site has been previously contaminated or the soil otherwise damaged, making it unsuitable for agricultural or forestry uses. Qualifying areas may include properties that have previously undergone intensive development and where it is determined, through the review process, that installation of a ground-mounted system will not have additional significant impacts. Developer response: Our proposed system is not located in the Forestry Zoning District.
h. Ground-mounted systems with a disturbed area greater than 0.5 acre on lands designated as Significant Agricultural Lands under the Boulder County Comprehensive Plan, and located in the Agricultural, Estate Residential, or Rural Residential zone districts, require Special Review and are subject to the following additional requirements intended to preserve and maintain soil and agricultural integrity: Developer response: Based on our pre-app, we expect that the 7-acre restriction only applies to Ag Lands of State and National Significance, and we're confirming this is still how Boulder County interprets this.

(i) The total disturbed area associated with the ground-mounted system cannot exceed 7 acres on parcels smaller than 70 acres in size, or 14 acres on parcels larger than 70 acres in size.
(ii) Application for the ground-mounted system must contain a solar energy system development report as set forth in Article 3-203.

Response to Boulder County Land Use Code Article 4 • 4-600 Uses Permitted by Special Review and Limited Impact Special Review

4-601 Review Criteria

A. A use will be permitted by Special Review or Limited Impact Special Review only if the Board finds that the proposed use meets the following criteria as applicable:

1. Except as otherwise noted, the use will comply 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; Developer response: The use is compatible per Boulder County Land Use Code Article 4 • 4-514(M)(2).
2. The use 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; Developer response: The proposed project is compatible with the surrounding area. The site sits near low-density residences located in the Agricultural Zoning District. The solar panels are only approximately 7.5’ above grade at their tallest point. The equipment itself maintains neat, orderly, and consistent spacing and appearance across the project area. Existing site drainage patterns will not be changed. Infiltration rates across the site will also remain consistent with current rates due to the limited increases in site imperviousness. The power generated on the site will be clean, renewable energy designated by the project owner to help low-income electric customers. The energy will be generated without creating emissions.

   After a construction period of approximately 4 – 5 months, the proposed project will operate for at least 20 years. During operation, no personnel will be stationed on the site. No external lighting is required, and the system only generates energy during daylight hours. Any noise associated with the system will be negligible to nearby residences due to their distance from the equipment. Semi-annual equipment maintenance will be supplemented with infrequent visits to manage vegetation (total visits anticipated to be 4 – 8 annually). Relative to almost any other use, the proposed project will generate less odor, noise, light, and traffic ensuring the site remains quiet and compatible with the rural nature of the surrounding community.

3. The use will be in accordance with the Comprehensive Plan; Developer response: The Boulder County Comprehensive Plan provides wide-ranging guidance for development within unincorporated Boulder County. The proposed project is consistent with the Comprehensive Plan generally, and directly addresses several key components of the plan as well. The Plan's Guiding Principles provide a coherent overview of the Plan's intent:

1. Consider and weigh the interconnections among social, environmental, and economic areas in all decisions. Developer response: The proposed project utilizes an under-used property to advance environmental and social goals by generating clean energy for delivery to low-income energy users.
2. Encourage and promote the respectful stewardship and preservation of our natural systems and environment by pursuing goals and policies that achieve significant reductions in our environmental footprint. Developer response: The project will generate enough clean energy to meet the annual needs of approximately 2,000 residences. The low impacts associated with the project mean the underlying land will be preserved for a time in the future when the project is complete, and decommissioned. At that time, the land will become available for other suitable and appropriate development.
3. Create policies and make decisions that are responsive to issues of social equity, fairness, and access to community resources for all county residents. Developer response: The nature of this project is to provide 100% donated electricity to qualified low-income electric customers in Xcel Energy's service territory. Xcel Energy recognizes that there are barriers to procuring renewable energy for many of their customers, and this project seeks to address the issue by dedicating the entire output of the facility to those who may not otherwise be able to access renewable energy due to the significant economic barriers associated with currently available technology.
4. Encourage and support a dynamic, stable, and flexible local economy that distinguishes between urban and rural economies and directs uses to appropriate locations. Developer response: Smaller solar arrays (such as this one) must be close to existing electrical infrastructure to "plug into" the electric grid. In many circumstances, open lands with enough space to support a project of this scope that are also close enough to acceptable infrastructure are simply too valuable to be used as a solar generation location. The parcel in question is a perfect location for a solar array, as it will have minimal impact on the surrounding parcels and the county at large.
5. Maintain the rural character and function of the unincorporated area of Boulder County by protecting environmental resources, agricultural uses, open spaces, vistas, and the distinction between urban and rural areas of the county. Developer response: As discussed above, the proposed project is passive in nature. There are no odors or emissions produced from the array. There are no external lights, and the project only operates

during daylight hours. The noise associated with normal operations is minimal, and there will be negligible impacts to area roads and traffic. These factors make this project consistent with the existing rural character and function of the immediate area.

6. Encourage and promote regional cooperation and coordination in working with other entities and jurisdictions. Developer response: Pivot Energy is committed to donating $85,000 to assist with the electrification of manufactured housing. Pivot looks forward to continuing conversations to explore partnering to enable the residents of Boulder to realize the substantial savings this garden will generate.

7. Actively engage the public in the planning process. Developer response: In mid-April 2022, Pivot Energy reached out to adjacent landowners to the north, west, and south who abut the property via USPS certified mail to solicit input and feedback related to the project. As noted above, we look forward to our continued conversations to work alongside the City and County of Boulder.

4. The use 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 rearrangement of structures and land disturbance, and the use of sustainable construction techniques, resource use, and transportation management; Developer response: The proposed project will have a minimally intensive impact on the land, and will not deplete natural resources. We do not anticipate any grading will be required to complete the project. Overall site drainage patterns will remain the same. The amount of equipment in contact with the ground is very limited and will not impact the site's ability to infiltrate water. No blasting is necessary for the project. Please see drainage letter for additional information. When the project is decommissioned at the end of its life, the land will again become available for consideration of appropriate development. Any temporary disturbance of plant or animal habitat related to the construction of the project will be mitigated during post-construction site stabilization, including reseeding with native low-growth grasses as selected or recommended by the County staff. There are no mapped wildlife migration corridors within the project site. There are no known natural hazards at this location. The nature of the project preserves open lands and protects them from more intensive development for decades to come.

Pivot commits to working collaboratively and in good faith with adjacent property owners to mitigate the visual impact of the project in their viewshed. Construction

techniques are generally low impact with most work completed by workers using hand tools. Some mechanized equipment is required to install foundation posts and to move larger/heavier equipment. As noted above, impacts to transportation after construction are negligible.

5. The use will not have a material adverse effect on community capital improvement programs; Developer response: Correct.

6. The use will not require a level of community facilities and services greater than that which is available; Developer response: Correct.

7. The use will support a multimodal transportation system and not result in significant negative impacts to the transportation system or traffic hazards; Developer response: Correct.

8. The use will not cause significant air, odor, water, or noise pollution; Developer response: Correct.

9. The use will be adequately buffered or screened to mitigate any undue visual impacts of the use; Developer response: Pivot commits to working collaboratively and in good faith with adjacent property owners to mitigate the visual impact of the project in their viewshed.

10. The use will not otherwise be detrimental to the health, safety, or welfare of the present or future inhabitants of Boulder County; and Developer response: The proposed project will enhance the health, safety, and welfare of the present and future inhabitants of Boulder County by creating clean, sustainable energy for decades to come. The proposed project is in conformance with Section 4.1.2 of the County's Sustainable Energy Plan.

11. The use will establish an appropriate balance between current and future economic, environmental, and societal needs by minimizing the consumption and inefficient use of energy, materials, minerals, water, land, and other finite resources. Developer response: The proposed use benefits both the current and future economic, environmental, and societal needs by creating clean, low-cost, renewable energy to be consumed in the immediate community without consuming energy, materials, minerals, water, land, or other finite resources.

12. The use will not result in unreasonable risk of harm to people or property – both onsite and in the surrounding area – from natural hazards. Development or activity associated with the use must avoid natural hazards, including those on the subject property and those originating off-site with a reasonable likelihood of affecting the subject property. Natural hazards include, without limitation, expansive soils or claystone, subsiding soils, soil creep areas, or questionable soils where the safe-sustaining power of the soils is in doubt; landslides, mudslides, mud falls, 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. Developer response: The proposed

project site is not identified on the Comprehensive Plan and Geologic Hazard and Constraint Areas as a Geologic Constraint Area.

On-site soils testing was completed by a professional geotechnical engineer and site-specific conditions were reviewed during equipment specification to ensure soil conditions were adequately addressed. Based on the physical conditions of the site, it is not anticipated that landslides, mudslides, mud falls, or debris fans have the potential to impact the proposed project site. We have also completed on-site topographic mapping with a Colorado-licensed Professional Land Surveyor (PLS).

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.

Developer response: The proposed project's plan sets have been created using data collected by a Colorado-licensed Professional Land Surveyor who completed a topographic survey of the site. Historic drainage patterns will not be changed because of this project. Please see drainage letter for additional information.

Response to Boulder County Land Use Code Article 3 • 3-203 Standards for Submittal Requirements (as determined by applicant to be applicable)

F. Development Report

1. A development report is required for subdivision requests to plat unsubdivided land, PUDs, special review approvals, rezonings, and exemptions. At a minimum the development report shall include the following information, unless specifically waived by the Director.

a. An address list of all owners and their addresses of real property adjacent to the subject property. Developer response: See appendix E below.

b. A description of site features such as streams, areas subject to flooding, lakes, high ground water areas, topography, vegetative cover, climatology, and other features that may aid in the evaluation of the proposed development. Developer response: There are no streams, areas subject to flooding, lakes, or high-water areas on the site. Site vegetation is generally weeds and grasses which can be easily cut during site preparation.

c. A description of soil characteristics of the site which have a significant influence on the proposed use of the land. Developer response: Site soils have been evaluated by a geotechnical engineer who has completed on-site sampling at several points throughout the site. The soils are sufficient to support the solar racks with no amendments. In certain instances, the applicant may elect to pre-drill foundation holes to avoid refusal in comparatively stiff subsoils.

d. The long- and short-term effect on Environmental Resources shall be determined through field surveys, and/or expert opinions or other competent information. The applicant shall address any material adverse impacts of the development on any identified Environmental Resources, including plans for the mitigation of these impacts. Wildlife impact reports shall be required in accordance with Article 7-1700. Developer response: A local environmental consultant completed a Phase 1 ESA. The assessment has revealed no
evidence of recognized environmental conditions (REC) in connection with the subject property.

e. The effect on significant cultural (archaeological and historic) resources shall be assessed and plans for protection of such resources included. Developer response: A local environmental consultant completed a Phase 1 ESA. The assessment has revealed no evidence of recognized environmental conditions (REC) in connection with the subject property.

f. An evaluation of any potential radiation hazard that may have been identified by the State or County Public Health Departments. Developer response: N/A

g. An evaluation of the expected demands and effects of the development on the ability of local governments and quasi-governmental agencies to provide water, sanitation, natural gas, electricity, access, fire protection, schools, hospitals, police, flood protection, solid waste disposal, and other

services to this development while maintaining adequate levels of service to other areas. Developer response: proposed project does not expect any demands of the listed items.

h. Provision of financial guarantees for public or communal improvements. Developer response: N/A

G. Engineering Report

1. Engineering reports may be required depending on the application, site conditions and scope of the project. Applicants should discuss these reports with staff during the pre-application conference.

a. Geology Report. A report on the geologic characteristics of the area including any potential natural or man-made hazards which would have a significant influence on the proposed use of the land, a determination of what effect such factors would have, and proposed corrective or protective measures. Developer response: N/A

b. Soils Report. A description of soil characteristics of the site which have a significant influence on the proposed use of the land. Developer response: Site soils have been evaluated by a geotechnical engineer who has completed on-site sampling at several points throughout the site. The soils are sufficient to support the solar racks with no amendments. The report is included in the submittal documents.

c. Sewage Collection. Plans for an adequate and safe sanitation system must be provided. This system must be designed, constructed, and maintained in accordance with all applicable regulations and requirements of Boulder County Public Health and other applicable regulatory agencies. Developer response: N/A

(i) Connection to a public sewer system is preferable. If a public sanitation system is not available within
a reasonable distance of the subject property, then adequate treatment facilities must be planned to dispose of the sewage.

(ii) Sewer system design must be based on the maximum number of estimated users of the development and must be approved by Boulder County Public Health prior to application.

d. Water Supply and Distribution. A report on the environmental effects of the development addressing the effect on the existing water supply. An adequate supply of water must be provided for the development. Developer response: N/A

(i) The source and method of distribution must be approved by Boulder County Public Health and other applicable regulatory agencies. The source of the water supply should be sufficient to meet all the present and future domestic and agricultural requirements of the proposed area.

(ii) Proof of contract with supplier or well log and completion report showing sustained yield. For domestic waterproof that the supply meets the Colorado Primary Drinking Water Standards must be provided.

(iii) The relation of the subject parcel to floodplains, the nature of soils and subsoils, and their ability to adequately support waste disposal, the slope of the land, the effect of sewage effluents, and the presence of streams as related to pollution shall be evaluated.
(iv) The applicable health and water resource agency's regulations shall be considered.

e. Grading Plan per the Boulder County Multi-Modal Transportation Standards. Developer response: This is included in the project submittal documents within the site plan package.

f. Drainage Report consistent with the Storm Drainage Criteria Manual. Developer response: Included in submittal documents.

g. Engineering report for structural features such as retaining walls and bridges. Developer response: N/A

h. Transportation System Impact Analysis. An assessment of the transportation impacts of the development as described in the Transportation Standards. Developer response: N/A

H. Required Title Information

1. It is the responsibility of the applicant to make a reasonable and diligent search of the public records to locate, and identify as part of the application, all owners and interest holders in the subject property as of the time of the application filing. These owners and interest holders include but are not necessarily limited to fee owners, easement owners, lessees, and lienholders and mortgagees in the subject property's surface, subsurface, or above surface (including land, water, mineral, air, or other real property which is part of the subject property). The applicant shall provide the current names and addresses of these owners and interest holders, along with information describing the nature of their respective right, interest or estate. In addition, the applicant shall independently comply with any applicable requirements of Article 65 .5 of Title 24, C. R. S., regarding the identification of and notice to any mineral estate owners or lessees that own less than full fee title in the property which is the subject of the application. Developer response: Acknowledged

2. To fulfill the requirements of this Subsection 3-203 .H the applicant at a minimum shall provide from a licensed title insurance or abstract company either

a. a title commitment for the subject property, or Developer response: Included.

b. a copy of the existing title insurance policy on the subject property with a letter from the issuing company providing updated title information. Developer response: N/A

c. a certification signed by the applicant to comply with the requirements of Article 65 .5 of Title 24, C .R .S ., confirming that the applicant or its agent has examined the records of the Boulder County Clerk and Recorder for the existence of any mineral estate owners or lessees that own less than full fee title in the property which is the subject of the application, and stating whether or not any such mineral estate owners or lessees exist . The applicant shall be responsible for making a diligent and good faith effort to ascertain the current names and addresses of the owners and

interest holders in any such severed mineral estate and otherwise comply with any applicable notice requirements of Article 65 .5 of Title 24, C. R. S ., as amended. Developer response: Applicant will send notices when public hearing date confirmed.

d. An O & E (owners and encumbrances) report shall not be considered sufficient to provide the title information required in this Subsection 3-203.H. Developer response: Acknowledged

e. Title work must be current within six months of the application submittal. Developer response: Acknowledged

3. The applicant shall have the responsibility to search other records which may be reasonably available and known to the applicant which may provide the information required in this Subsection 3-203. H. Developer response: Acknowledged

4. In addition to the information required above, the applicant shall identify any holdings of the applicant adjacent to the subject property, and shall provide an accurate legal description of the subject property. Developer response: Acknowledged

I. Solar Energy System Development Report

1. A solar energy system development report is required for an application for a ground mounted solar energy system with disturbed area greater than 0 .5 acre on lands designated as Significant Agricultural Lands under the Boulder County Comprehensive Plan. The solar energy development report must include: Developer response: Per Drainage Narrative (included in the submittal), the total disturbed area amounts to 0.01 acres total (which makes up the concrete pads). The gravel pads, which will disturb 0.637 is outside of the lands of Agricultural Significance.

Some minimal grubbing may be necessary to prepare the site with planned native seed mixes. Onsite conditions at the time of seeding will dictate necessity of such methods. The purpose of seeding is to increase the density of native vegetation, therefore, the grubbing is not considered land disturbance (if necessary).

a. An installation plan describing the installation method for the solar energy system, including a site plan showing the proposed disturbed area (as defined in Article 18) and the applicable items listed in Article 3-203.E.2. The installation plan must include a proposal to minimize soil disturbance and compaction through best management practices.

b. A management plan which includes best practices for maintaining or improving the existing soil quality and agricultural integrity of the land.

Appendix A – Determination of No Hazard to Air Navigation

9/17/21, 9:58 AM Notice Criteria Tool

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

Latitude:	40 Deg 4 M 48.79 S N
Longitude:	105 Deg 10 M 2.71 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	5290 (nearest foot)
Structure Height :	12 (nearest foot)
Traverseway:	No Traverseway (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.

https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp 1/2

Appendix B – Results of Forge Solar "GlareGauge"

ForgeSolar

ForgeSolar

Rodgers - Glare Analysis

Rodgers Glare Analysis-temp-0

Created Nov. 9, 2021
Updated Nov. 9, 2021
Time-step 1 minute
Timezone offset UTC-7
Site ID 60885.10837

Project type Basic
Project status: active
Category 500 kW to 1 MW
(1,000 kW / 8 acre limit)

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

Analysis Methodologies:

- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	SA tracking	SA tracking	0	0	3,086,000.0

Appendix C – Applicable References from Boulder County Comprehensive Plan and 2018 Boulder County Sustainability Plan

E.6 Adequate facilities and services to assure the health, safety and welfare of all citizens should be promoted. Developer response: Energy is an essential need for all people. Creating energy from clean, renewable resources reduces pollution and benefits all people by creating healthier living conditions. Healthier living conditions increase the welfare of all Boulder County citizens, as well as those across Colorado.

GE 3.01 The county shall render land use decisions consistent with the preservation or improvement of groundwater quality as well as the conservation of groundwater supplies. Developer response: The project uses no groundwater, allowing other users to benefit from the water that may otherwise be applied to the surface of this property.

B.2 Air, water and noise pollution and overall environmental degradation should be reduced as much as possible or eliminated in order to prevent potential harm to life, health and property. Developer response: The proposed solar project reduces all the noted hazards by producing clean, renewable energy from the sun.

B.4 Boulder County recognizes that climate change is having significant impacts on our environmental resources. As the body of climate science knowledge grows and potential effects are better understood, Boulder County shall incorporate the best scientific information into planning and decision-making to adapt to and offset those impacts. Developer response: As noted, access to energy is essential to all people. The proposed project creates clean energy locally and offsets fossil-fuel energy that would otherwise have to be imported to the area.

B.5 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. Pollution of air, water, and soil, and pollution caused by noise or light, shall be eliminated, or minimized to the greatest extent possible in order to prevent potential harm to life, health and property, and to reduce incremental degradation of the environment. Developer response: The proposed project protects air, water, and soil resources by creating clean, renewable energy. Further, the project allows the on-site soils to remain fallow for years to come. The equipment creates limited noise during daylight operations and has no external lighting.

ER 2.01 Boulder County shall seek to protect overall public and environmental health by enforcing regulations concerning air, soil, water, noise, and light pollution at the local level in accordance with applicable law. Developer response: The proposed project protects overall public and environmental health by creating energy from clean, renewable resources.

ER 2.02 Boulder County shall evaluate land use proposals and other planned activities considering their cumulative impacts on public and environmental health. Sufficient mitigation and minimization of any impacts shall be required for the proposal or activity

to be approved. These proposals and activities shall at a minimum comply with air, soil, and water quality standards, as well as noise level and lighting standards, established by county and state agencies or the Boulder County Land Use Code. Developer response: The proposed project has positive impacts on public and environmental health by putting to use an unused parcel for generation of clean energy.

NH 1.03.01 Development activities should be designed to minimize alteration of the natural landform to the greatest extent possible, thus reducing slope instability and drainage problems. Developer response: We do not anticipate any grading will be necessary during the construction phase of the project. Please see drainage letter for additional information as well as Appendix D.

NH 1.05 Upon county review of a new development proposal, all impacts and concerns should be considered, but safety and environmental concerns should take precedence over aesthetic concerns. Developer response: The project will change the appearance of the site from adjacent property owners but will not impact the skyline. Pivot Energy will ensure proper screening mitigation practices are taken so that the array will blend in as seamlessly as possible to the natural surroundings.

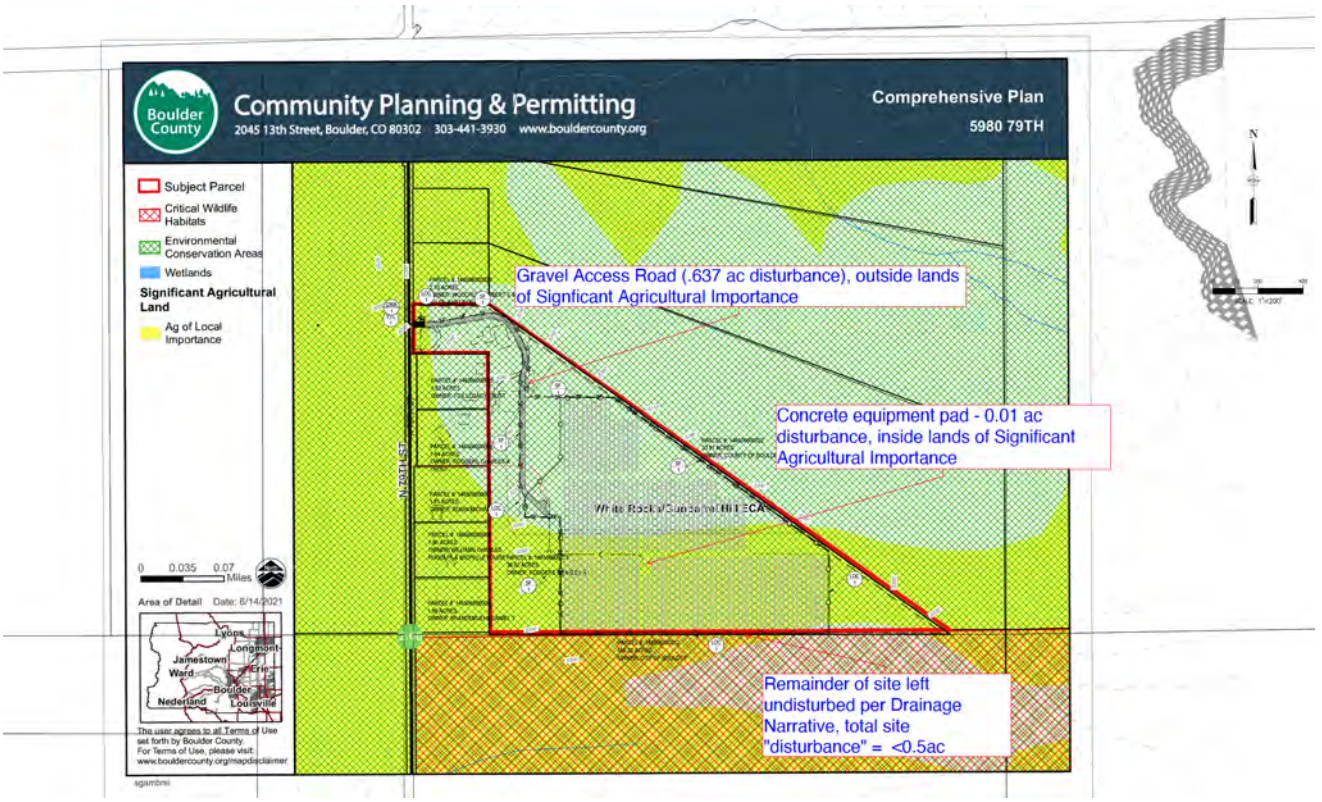
NH 3.01 Erosion from development and other land use activities should be minimized and disturbed or exposed areas should be promptly restored to a stable, natural, and/or vegetated condition using native plants and natural materials. Developer response: We do not anticipate the need for grading on this site. Please see drainage letter for additional information as well as Appendix D.

NH 3.02 Drainage from development or any alterations to historic drainage patterns shall not increase erosion either on site or on adjacent properties. Developer response: The project will incorporate BMPs to ensure no erosion leaves the site. The site will retain its overall drainage patterns with no impacts to off site or adjacent properties. Please see drainage letter as well as Appendix D.

2018 Boulder County Sustainability Plan

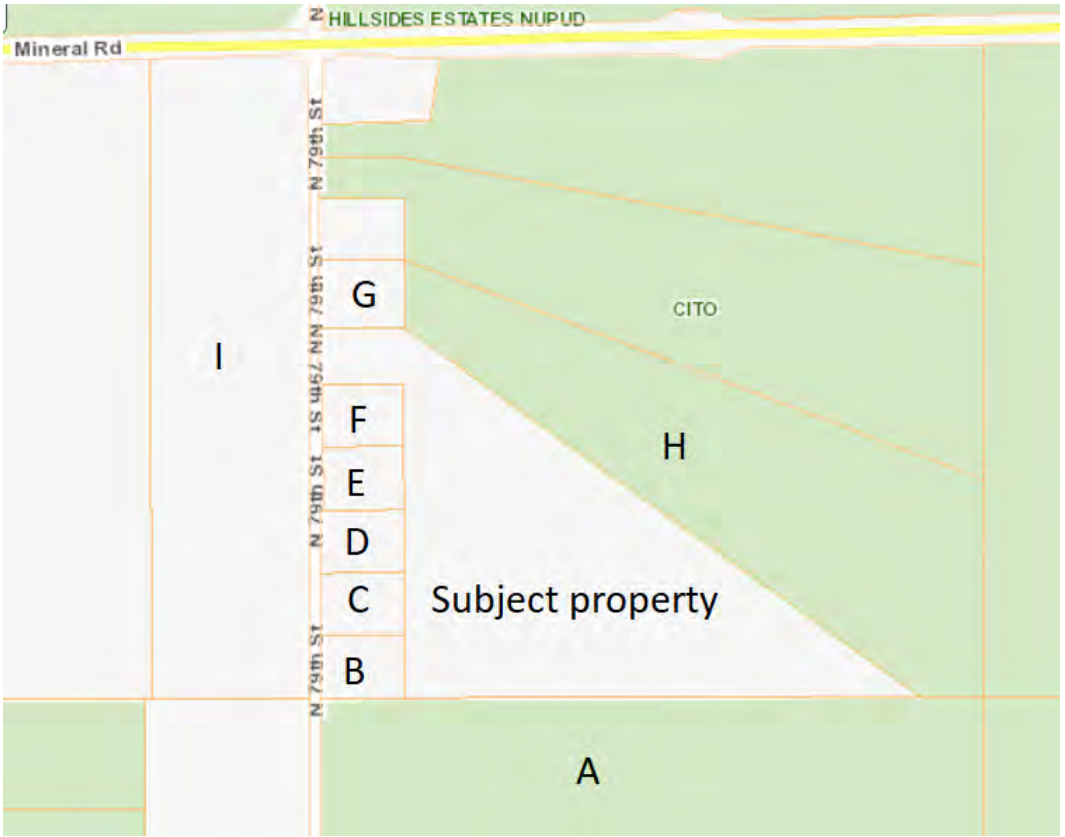
Sustainability Mission Statement: To ensure that Boulder County's operations, programs, services, regulations, and decision-making processes reflect our deep commitment to environmental, social, and economic sustainability, while building strong local partnerships to help the broader community and region become healthier and more sustainable. Developer response: The proposed project reflects a total harmony with the County's Sustainability Plan. The clean, renewable energy generated by the project will be used to benefit low-income electric consumers served by Xcel Energy. Colorado-based companies will complete the installation using local resources whenever possible.

Appendix D — Lands of Agricultural Significance being disturbed.



Appendix E – Address list of all owners and their addresses of real property adjacent to the subject property

Property Owner	Map Reference	Mailing Address	City	State	Zip
CITY OF BOULDER	A	1777 BROADWAY	BOULDER	CO	80302
DANIELBRANDEMUEHL	B	5814 N 79TH ST	BOULDER	CO	80503
CHARLES WILLIAMS	C	5850 N 79TH ST	BOULDER	CO	80503
MICHAEL RUBIN	D	5880 N 79TH ST	BOULDER	CO	80503
CHARLES RODGERS	E	5906 N 79TH ST	BOULDER	CO	80503
FOX LEGACY TRUST	F	5974 N 79TH ST	BOULDER	CO	80503
ROBERT WOODRUFF	G	6082 N 79TH ST	BOULDER	CO	80503
COUNTY OF BOULDER C/O BOULDER COUNTY PARKS & OPEN SPACE	H	5201 ST VRAIN RD BLDG 1	LONGMONT	CO	80503
UNION PACIFIC LAND RES. CORP.	I	5901 N 79TH ST	BOULDER	CO	80503




U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
Longmont, CO 80503
Certified Mail Fee $3.75
Postage $0.58
Total Postage and Fees $4.33
APR 15 2022
04/15/2022
Boulder CO Parks + Open Spaces
520 St. Vrain Rd. Bld. 1
Longmont, CO 80503
Charles Rodger
5880 N. 79th St.
Longmont CO 80503
Charles Williams
5850 N. 79th St.
Longmont, CO 80503
Michael Rubin
5880 N 79th St.
Longmont, CO 80503
Robert Woodruff
6082 N 79th St.
Longmont CO 80503
Daniel Brandemuehl
5814 N 79th St.
Longmont CO 80503
Boulder, CO 80302
Longmont, CO 80503


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
Longmont, CO 80503
Certified Mail Fee $3.75
Postage $0.58
Total Postage and Fees $4.33
05/11/2022
Union Pacific Land Res Corp
5701 N. 79th Street
Boulder, CO 80503

ENERTIA CONSULTING GROUP LLC

1529 Market Street, Suite 200
Denver, CO 80202
(720) 792-3917
rick.hagmayer@enertiacg.com

May 16, 2022

Boulder County Planning and Permitting Department
2045 13th St
Boulder, CO 80302

RE: Drainage Narrative
Pivot Energy Solar Facility at N 79th St
SE Corner of State Highway 52 & N 79th Street, Boulder County

To whom it may concern:

This drainage narrative is intended to provide Boulder County with drainage and land disturbance information related to a proposed 21.54 acre solar facility identified as Pivot Energy Solar Facility on the N 79th St (Project). The Project will be designed and will be constructed and maintained in a manner that minimizes storm water related impacts, in accordance with 2016 Boulder County Storm Drainage Criteria Manual.

Project Specific Information

Project Name, Property Address and Boulder County Parcel No.
Pivot Energy Solar Facility on N 79th St

Parcel: 5980 N 79th St, Parcel No. 146506000021

Developer/Owner
Pivot Energy, 1750 15th Street, Suite 400, Denver, CO 80202

Site/Civil Engineer
Enertia Consulting Group, LLC, 1529 Market Street, Suite 200, Denver, CO 80202

Project Location and Description
The Project is up to a 5 MW solar facility located on approximately 36.0 acres of undeveloped property; and within section 06, township 1 north, range 69 west of the 6th P.M., Boulder County, Colorado. The Project site is bounded by N 79th St to the west and SH 52 to the north.

Project components include: up to a 5 MW solar facility with approximately 15,000 solar panels mounted on steel H-piles; concrete equipment pads; 20' gravel access driveway with emergency turn-around; and perimeter fence with access gate. With the exception of a gravel driveway and concrete pads for transformers and inverters, the remainder of the solar facility will not require grading unless required to prevent shading of the solar array. Some minimal grubbing may be necessary to prepare the site with planned native seed mixes. Onsite conditions at the time of seeding will dictate necessity of such methods. The purpose of seeding is to increase the density of native vegetation, therefore, the grubbing is not considered land disturbance (if necessary).

Land Disturbance and Drainage Information

Existing Ground Surface Conditions, Drainage Patterns and Imperviousness
The 21.54 acre solar facility project area may be characterized as undeveloped agricultural land. The applicable FIRM Maps (No. 08013C0410J), included in Appendix A, indicates that the Project site is entirely located in a Zone X. This indicates area of little to no flood risk (Zone X). Based on NRCS soils data (also included in Appendix A), the site soils are identified as Ascalon-Otero and classified as Hydrologic Soil Group B. As shown on Figure 1 in Appendix A, the site ground surface gently slopes at an average of 3-7 percent from southeast to northwest. In general, storm water is conveyed across the Project area toward N 79th St.

Land Disturbance Activities
The site improvements considered as land disturbance activities include installation of (i) all-weather gravel surface driveway and (ii) concrete equipment pads.

(i) Gravel Access Drive – An all-weather gravel surface access drive will extend from N 79th St southeast to the solar facility. Given the site soils, an 8-inch-thick gravel surface (consistent with similar solar facility access drives within Boulder County) is proposed. This depth of gravel over compacted subgrade is sufficient to provide routine and emergency access to the Project.

(ii) Concrete Equipment Pads – Concrete equipment pads will be installed beneath inverters and transformers and other electrical equipment as required with the development. The pads will be 8-inches thick with reinforcing steel and located generally on the western portion of the site within proximity to N. 79th St.

*Lastly, c*omponents of the 21.54-acre solar facility will include: ±15,000 solar panels placed on steel H-piles (driven into the ground). Since the solar panels are tracking panels (rotate through the day to track the path of the sun), the ground surface vegetation beneath the panels will continue to grow. Some minimal grubbing may be necessary to prepare the site with planned native seed mixes. Onsite conditions at the time of seeding will dictate necessity of such methods. The purpose of seeding is to increase the density of native vegetation; therefore, the grubbing is not considered land disturbance (if necessary).

Land Disturbance Area

A total of approximately 28,200 square feet or 0.65 acres of the Project area is anticipated to be disturbed. The total disturbance numbers are summed in the following table.

Disturbance Surface Type	**Disturbance Area (sf)**	**Disturbance Area (Ac)**
Gravel Drive	27,778	.637
Concrete Equipment Pads	440	0.01
Total	**28,218**	**0.648**

Hydrologic Design Criteria

The following table includes hydrologic design criteria used in this analysis.

Parameter	Value	Unit	Reference
Time of Concentration, Tc	-	min.	MHFD Peak Runoff Prediction by the Rational Method (Appendix A)
Runoff Coefficient, C	-	-	MHFD Criteria Manual, Chapter 6, Table 6-4
1-hr Point Rainfall, P1 (100-Year)	2.67	inches	NOAA Rainfall Data (Appendix A)
Storm Runoff, Q	-	cfs	Q = CIA

Basin Conditions

The footprint of the solar facility and access drive is considered to be the subject drainage area under both existing and proposed conditions.

The existing condition basin (identified as basin X1 on Figure 1) was analyzed to calculate the peak runoff for the design storm using an imperviousness percentage of 3.1%. This percentage is based on the soil type and existing conditions of the site.

The proposed condition basin (identified as basin A1 on Figure 1) was analyzed to calculate the peak runoff for the design storm using an impervious percentage of 3.4%. This percentage is based on the majority of the site remaining as 2% impervious, 0.01 acres changing to 100% impervious (concrete pad area) and 0.27 acres changing to 40 percent impervious (access drive area). Note, 0.367-acres of access drive are currently categorized as 40% impervious, therefore, no increase in imperviousness is anticipated in those areas. It should also be noted that the tracking solar panels are not classified as ground surface because precipitation falling on the solar panels will shed onto the undisturbed vegetated surface below. Care is taken to ensure low sunlight vegetation is encouraged.

Stormwater Runoff

The stormwater runoff for existing and proposed conditions is calculated based on the Rational Method. The 100-year, 1-hour storm event was analyzed for basins A1 and X1. The flow path for the basins is generally from southeast to northwest toward N 79th St located. The average ground surface slope across the flow path is 3% to 7%. The time of concentration to this point was calculated using MHFD equations are summarized below and can be found on the MHFD Peak Runoff Prediction by the Rational Method in Appendix A. The Runoff Coefficients are also included in the MHFD Peak Runoff Prediction by the Rational Method and are summarized below.

Basin	Time of Concentration (Min)	Runoff Coefficients (C_{100})
X1	45.16	0.44
A1	45.03	0.44

The precipitation data used for the 100-year, 1-hour storm event is based on NOAA rainfall data from the Project site and is included in Appendix A. Per the Basin Runoff Calculation (MHFD Peak Runoff Prediction by the Rational Method) included in Appendix A the 100-year runoff flows are as follows:

Basin	Q_{100} (cfs)
X1	94.67
A1	95.05
Net	**+0.38**

Under developed conditions, runoff will follow existing drainage patterns, will not significantly increase peak flows (increase from 94.67 cfs to 95.05 cfs), Accordingly, the Project will not require storm water detention. Additionally, the site proposed disturbances of less than 1-acre, so water quality is not required.

Summary

The following list summarizes key components of the Project and findings related to land disturbance and storm water impacts.

1. Installation of the solar facility will temporarily disturb the ground surface within the 21.54-acre Project area but won't require grading except for concrete equipment pad and gravel access drive installation.

2. Grubbing may be required to provide appropriate conditions for seeding. It is intended for the vegetation throughout the site to be improved as a result, and therefore not considered land disturbance.

3. The areas considered impervious (100 percent impervious 400 sf concrete pads) or semi-impervious (40 percent impervious 27,778 sf gravel access drive) total 0.637 acres or 3.0% of the 21.54-acre solar facility area.

4. Under existing conditions, the peak flow originating from the solar facility area for the 100 yr – 1hr storm event is 94.67 cfs.

5. Under developed conditions, the peak flow originating from the solar facility area for the 100 yr - 1 hr storm event is 95.05 cfs.

6. Since a solar facility is a “Permitted Use” in the Agricultural (A) District as outlined in Article 4.4-102 of the 2022 Boulder County Land Use Code, detention is not required per Section 1200-1203.1 of the 2016 Boulder County Storm Drainage Criteria Manual.

7. Since the land disturbance is less than 1 acre, a CDPS storm water certificate issued by CDPHE is not required for this Project.

8. Installation and operation of the solar facility is not expected to impact existing drainage patterns or flow rates on or around the Project site. Runoff water quality will not be impacted by the solar facility components.

9. The Project design will adequately protect public health, safety and general welfare and have no adverse effects on N 79th Street right-of-way or offsite properties.

We trust that the information provided is acceptable and complete. Please let me know if you have any questions or require additional information. Please contact me at rick.hagmayer@enertiacg.com or (720) 792-3917 should you require additional information.

Sincerely,
ENERTIA CONSULTING GROUP, LLC

Rick Hagmayer, PE
Senior Project Manager

attachment

Appendix A

Reference Documents

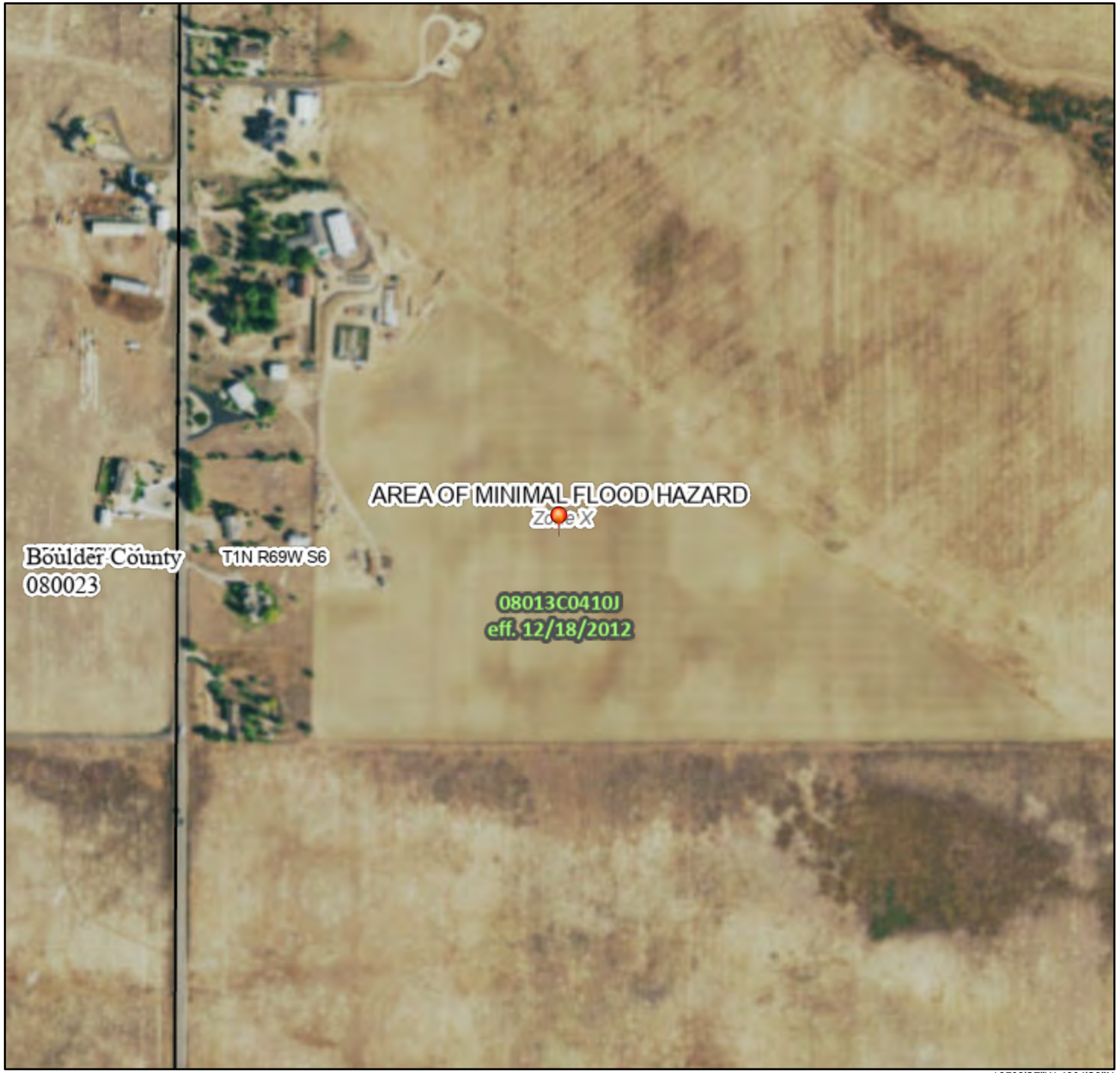
- FIRM Map
- USDA Soils Report
- Project Drainage Map
- Basin Runoff Calculations
- Project Vicinity Map

ATTACHMENT A

National Flood Hazard Layer FIRMette

FEMA

105°10'15"W 40°5'7"N



105°9'37"W 40°4'39"N

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

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

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

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

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

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

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

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

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

N

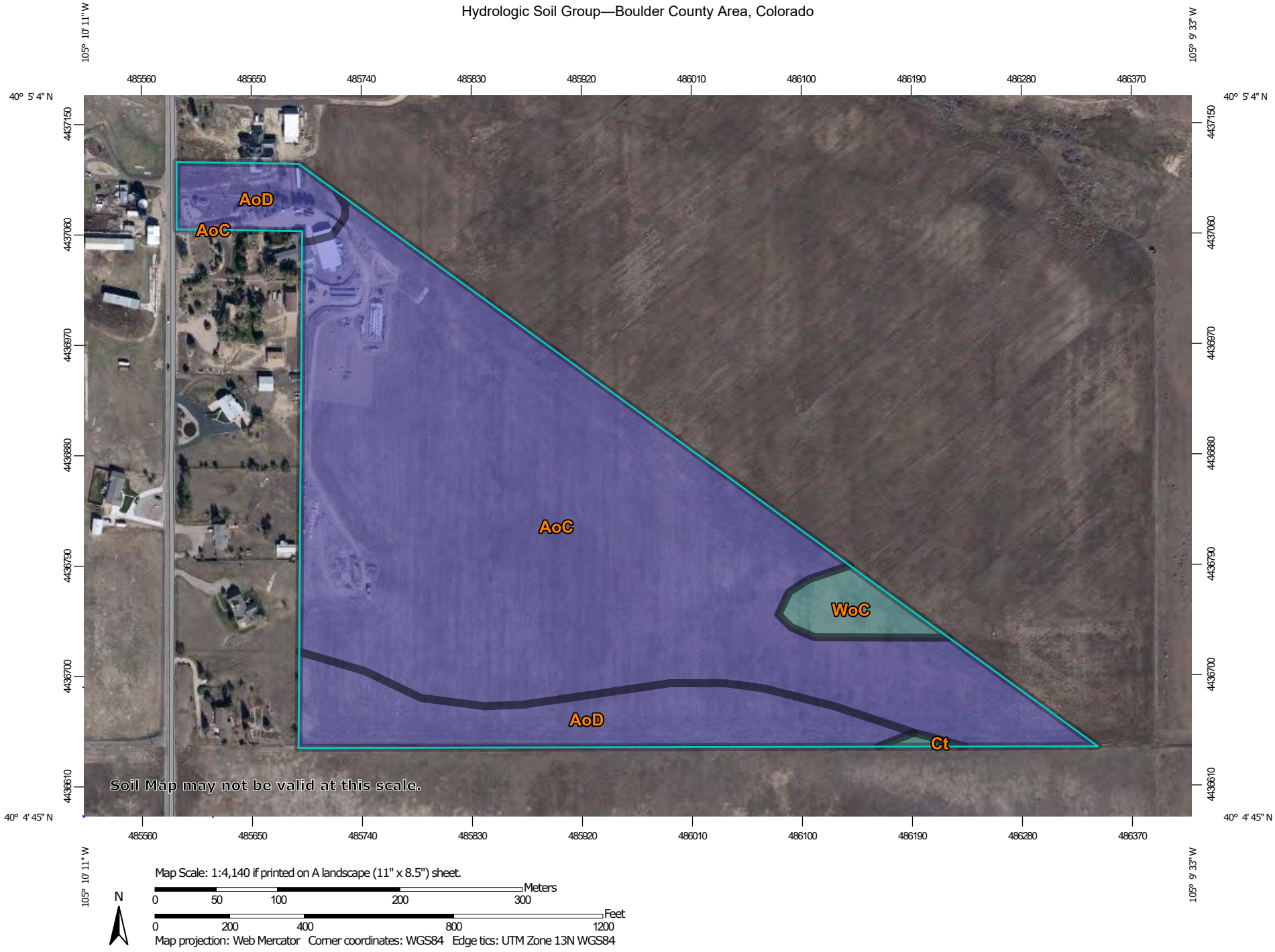
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/5/2022 at 11:48 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Hydrologic Soil Group—Boulder County Area, Colorado



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Boulder County Area, Colorado
Survey Area Data: Version 18, Sep 2, 2021

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

Date(s) aerial images were photographed: Oct 1, 2018—Oct 31, 2018

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AoC	Ascalon-Otero complex, 3 to 5 percent slopes	B	31.3	78.6%
AoD	Ascalon-Otero complex, 5 to 9 percent slopes	B	7.2	18.1%
Ct	Colby-Gaynor association	C	0.1	0.3%
WoC	Weld-Colby complex, 3 to 5 percent slopes	C	1.2	3.0%
Totals for Area of Interest			**39.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE REVIEW

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO

LEGEND

- PROPOSED CONDITION DRAINAGE BASIN BOUNDARY
- PROPOSED CONDITION DP BASIN BOUNDARY
- 5525 EXISTING CONTOUR
- PROPOSED FENCE
- PROPOSED SLOPE ARROW

XX — PROPOSED BASIN IDENTIFICATION
XX.X | XX% — IMPERVIOUSNESS / AREA (ACRES)

XX — EXISTING BASIN IDENTIFICATION
XX.X | XX% — IMPERVIOUSNESS / AREA (ACRES)

N

0' 50 100 200
SCALE: 1"=100'

Subcatchment Name	Area (ac)	NRCS Hydrologic Soil Group	Percent Imperviousness	Runoff Coefficient, C							Overland (Initial) Flow Time					Channelized (Travel) Flow Time							Time of Concentration			Rainfall Intensity, I (in/hr)							Peak Flow, Q (cfs)						
				2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	Overland Flow Length L_i (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Overland Flow Slope S_i (ft/ft)	Overland Flow Time t_i (min)	Channelized Flow Length L_t (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Channelized Flow Slope S_t (ft/ft)	NRCS Conveyance Factor K	Channelized Flow Velocity V_t (ft/sec)	Channelized Flow Time t_t (min)	Computed t_c (min)	Regional t_c (min)	Selected t_c (min)	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
A1	36.02	B	3.40	0.02	0.02	0.08	0.27	0.35	0.44	0.55	500.00			0.040	27.55	2144.00			0.037	5	0.96	37.15	64.71	45.03	45.03	0.96	1.31	1.65	2.21	2.71	3.26	4.81	0.56	1.02	5.01	21.52	33.88	51.89	95.05
X1	36.02	B	3.10	0.01	0.02	0.08	0.27	0.35	0.44	0.55	500.00			0.040	27.61	2144.00			0.037	5	0.96	37.15	64.76	45.16	45.16	0.96	1.30	1.65	2.21	2.71	3.25	4.80	0.50	0.92	4.86	21.33	33.65	51.62	94.67

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST, SUITE 400
DENVER, CO 80202

NO.	DATE	DSGN	DR	SK	CHK	REVISION	APVD	RH
		PIVOT			RH			

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE REVIEW
BOULDER COUNTY, COLORADO

OVERALL DRAINAGE AREA MAP

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 SCALE

DATE MAY 26, 2022
FILE
DWG
SHEET 1 OF 1

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET
SUITE 200
DENVER, CO 80202
(720) 250-8305

FIGURE 1 - PROXIMITY MAP
PIVOT ENERGY SOLAR FARM ON N 79TH STREET
BOULDER COUNTY, COLORADO

DATE:	5/26/2022
SCALE:	1" = 2,000'
BY:	SK

Pivot Solar 34 - Landscape and Screening Plan

Public Service Company of Colorado ("Xcel Energy") has contracted with Pivot Energy to design, permit, and build a 5 megawatt (MW) solar energy facility on a parcel of land owned by Mr. Charles Rodgers located at 5980 N. 79th Street (Parcel # 146506000021). The project will be located approximately 1.5 miles south of Niwot and 1.33 miles north of Gunbarrel. The parcel is zoned as Agricultural and is primarily undeveloped open land.

Other nearby uses include Agricultural, Open Space, and Residential. Solar facilities present a low profile, especially when compared to other operational energy and commercial facilities already present on and near the property. As such, these installations generate very little visual impact to neighboring properties and typically require little in the way of visual buffering.

We do not anticipate any grading will be necessary during the construction phase of the project. Visual impacts to surrounding property owners will be mitigated by constructing a decorative wildlife-friendly game fence that surrounds the entire project. Pivot energy will plant native, pollinator-friendly, low-growth vegetation that will help the array blend into the natural surroundings and act as screening from adjacent landowners. Included here are photos of past projects as an example. Pivot commits to working collaboratively and in good faith with adjacent property owners to mitigate the visual impact of the project in their viewshed.

Pivot Solar 34 - Landscape and Screening Plan

Walker, Samuel

From: Arnold, Melissa
Sent: Thursday, May 26, 2022 2:51 PM
To: Walker, Samuel
Cc: Northrup, Elizabeth
Subject: RE: Referral packet for SU-22-0004: Pivot Energy Solar Facility project at 5980 N. 79th Street

Hi Sam,
I reviewed the referral packet for the solar facility, and it should not directly impact the nearby and adjacent Cito conservation easement properties, so not comments from the Conservation Easement Program at this time.
Thanks,
Melissa

Melissa Arnold | Conservation Easement Program Manager
Pronouns | she/her/hers
Boulder County Parks & Open Space
303.678.6266 Office
720.745.2115 Cell
5201 St. Vrain Road, Longmont, CO 80503
marnold@bouldercounty.org
www.BoulderCountyOpenSpace.org

From: Goldstein, Andrew <agoldstein@bouldercounty.org>
Sent: Thursday, May 26, 2022 11:56 AM
To: #AssessorReferral <AssessorReferral@bouldercounty.org>; #CAreferral <CAreferral@bouldercounty.org>; Hatchimonji, David <dhatchimonji@bouldercounty.org>; #CEreferral <CEreferral@bouldercounty.org>; Johnson, Curtis <cjohnson@bouldercounty.org>; Allshouse, Alycia <aallshouse@bouldercounty.org>; Stadele, Lee <leestadele@bouldercounty.org>; Stadele, Lee <leestadele@flagstaffsurveying.com>; Steve Buckbee <sbuckbee@lefthandwater.org>; chrissmith@lefthandwater.org; jstruble@northernwater.org; bflockhart@northernwater.org; BDRCO@xcelenergy.com; Donna.L.George@xcelenergy.com; RanglosC@bouldercolorado.gov; bonnellj@bouldercolorado.gov; ashleym@bouldercolorado.gov; CollinsB@bouldercolorado.gov; Vanessa McCracken <bldrvalleyandlongmontcds@gmail.com>; prevention@mvfpd.org; Milner, Anna <amilner@bouldercounty.org>; Moline, Jeffrey <jmoline@bouldercounty.org>; Strenge, Ernst <estrenge@bouldercounty.org>; Abner, Ethan <eabner@bouldercounty.org>; Childress, Alisa <achildress@bouldercounty.org>; Hippely, Hannah <hhippely@bouldercounty.org>; Vaughn, Andrea <avaughn@bouldercounty.org>; Cavaleri, Keli <kcavaleri@bouldercounty.org>; Flax, Ron <rflax@bouldercounty.org>; Frederick, Summer <sfrederick@bouldercounty.org>; HealthWaterQuality-EnvironmentalBP LU <HealthWQ-EnvironBPLU@bouldercounty.org>; Huebner, Michelle <mhuebner@bouldercounty.org>; Sanchez, Kimberly <ksanchez@bouldercounty.org>; Severson, Jennifer <jseverson@bouldercounty.org>; Transportation Development Review <TransDevReview@bouldercounty.org>; West, Ron <rowest@bouldercounty.org>
Cc: Walker, Samuel <swalker@bouldercounty.org>
Subject: Referral packet for SU-22-0004: Pivot Energy Solar Facility project at 5980 N. 79th Street

Please find attached the referral packet for *SU-22-0004: Pivot Energy Solar Facility* project at *5980 N. 79th Street*.

Please return responses and direct any questions to ***Samuel Walker*** by *June 30, 2022.* (Boulder County internal departments and agencies: Please attach the referral comments in Accela.)

All the best,
Andrew

Andrew Goldstein (pronouns: he/him/his) | Administrative Technician
Planning Division | Boulder County Community Planning & Permitting
(303) 441-3930 (Main Office) | (720) 564-2622 (Direct)
P.O. Box 471, Boulder, CO 80306 | Courthouse Annex Building—2045 13th St., Boulder, CO 80302
agoldstein@bouldercounty.org | www.boco.org/cpp

Department service hours are **8 a.m.-4:30 p.m.** Monday, Wednesday, Thursday, Friday, and **10 a.m.-4:30 p.m.** Tuesday.

The Community Planning & Permitting Department physical office in Boulder is now open Monday, Wednesday and Thursday from 9 a.m. to 2 p.m. On Tuesdays the department is open by appointment only from 12:30–4:30 p.m. Most services are available virtually in addition to in-person services. Staff is available at 303-441-3930, online, or via appointment.
For Marshall Fire questions, contact MarshallRebuilding@bouldercounty.org. View our Marshall Fire Recovery webpage for current Marshall Fire information and resources.

Boulder County

Community Planning & Permitting

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

MEMO TO: Referral Agencies
FROM: Sam Walker, Planner II
DATE: May 26, 2022
RE: Docket SU-22-0004

Docket SU-22-0004: Pivot Energy Solar Facility

Request:	Special Use Review to construct a 5 megawatt 24-acre solar energy facility on a 36-acre parcel.
Location:	5980 N. 79th Street, approximately .25 miles south of the intersection of N. 79th Street and State Highway 52, in Section 6, Township 1N, Range 69W.
Zoning:	Agricultural (A) Zoning District
Applicant/Owner:	Charles Rodgers
Agent:	Kyle Sundman, Pivot Energy

Special Use Review / Site Specific Development Plan is required of uses which may have greater impacts on services, neighborhoods, or environment than those allowed with only Building Permit Review. This process will review compatibility, services, environmental impacts, and proposed site plan.

This process includes public hearings before the Boulder County Planning Commission and the Board of County Commissioners. Adjacent property owners and holders of liens, mortgages, easements or other rights in the subject property are notified of these hearings.

The Community Planning & Permitting staff, Planning Commission, 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.org. 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.org to request more information. If you have any questions regarding this application, please contact me at 720-564-2738 or swalker@bouldercounty.org.

Please return responses by **June 30, 2022.**
(Please note that due to circumstances surrounding COVID-19, application timelines and deadlines may need to be modified as explained in the CPP Notice of Emergency Actions issued March 23, 2020 (see https://boco.org/covid-19-cpp-notice-20200323).

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

Signed Matt Ashley PRINTED Matt Ashley, Property Agent

Agency or Address City of Boulder Open Space and Mountain Parks

Please note that all Community Planning & Permitting Department property owner's mailing lists and parcel maps are generated from records maintained by the County Assessor and Treasurer Office. We are required to use this list to send notices to the "property owner" of land in Boulder County. If you feel you should not be considered a "property owner," or if the mailing address is incorrect, contact the County Assessor's Office at (303) 441-3530.

City of Boulder Open Space & Mountain Parks

2520 55th St.| Boulder, CO 80301; 303-441-3440
http://www.osmp.org

MEMORANDUM

To: Samuel Walker, Planner II, Boulder County Community Planning and Permitting

From: Matt Ashley, Property Agent, City of Boulder Open Space and Mountain Parks

Date: June 30, 2022

Re: Docket SU-22-0004
Pivot Solar Energy Facility Special Use Review

Thank you for the opportunity to review the application referenced above. The property's northeast boundary is adjacent to private property encumbered by a City of Boulder Open Space and Mountain Parks (OSMP) conservation easement, and the entire southern boundary is adjacent to City of Boulder OSMP fee-owned land. Please consider the following comments regarding this development application:

Open Space Adjacent
All open space fences and boundaries must be respected at all times. No gates or other access points will be allowed from the subject property onto city owned open space lands without approval of OSMP.

No dumping of trash, tree limbs, lawn clippings, or other debris is allowed on city-owned open space land. Trimming or removal of existing vegetation from OSMP property or planting vegetation on OSMP property is prohibited.

Construction access across city owned open space lands, storage of construction material, staging construction equipment, or dumping of construction debris on city owned open space lands are not allowed.

The property to the northeast is private property encumbered by a City of Boulder OSMP conservation easement, and is closed to the public, including all adjacent neighbors.

Viewshed
OSMP supports efforts by county staff to have the applicant maintain trees and vegetation that could help shield the proposed development from the public viewshed while considering the need for wildfire defensible space. OSMP also encourages the county to consider requiring Firewise landscaping plants as defined by the Colorado State Forest Service (CSFS). More

information on Firewise plants can be found at the following link: https://extension.colostate.edu/topic-areas/natural-resources/firewise-plant-materials-6-305/

Native Plants
Use of native plant materials for revegetation and landscaping should be recommended. Non-native plant materials should not be planted, particularly Mediterranean sage, myrtle spurge, purple loosestrife, Russian olive, or any other State of Colorado listed noxious weed species. The grading and landscape plans should include a section on weed management.

Following are some sources of information about the use of local native plants in landscaping:
https://conps.org/wp-content/uploads/2015/05/Suggested-Native-Plants_0408.pdf

https://conps.org/gardening-with-native-plants/

https://bouldercolorado.gov/services/gardening-native-plants

Visual Impact
Exterior lighting should be directed downward to minimize glare and the illumination of adjacent and nearby OSMP lands, conservation easements, or other undeveloped property. Exterior colors should be muted to blend into the natural surroundings, to reduce the visual impact to adjacent and nearby OSMP lands.

Consideration of Prairie Dogs
The applicant can expect to experience conditions on the neighboring open space consistent with prairie dog occupation. Prairie dogs are native wildlife, and OSMP is not responsible for their movements across land ownership boundaries. The applicant should be informed that the open space land adjacent to the southern boundary of the subject property includes a prairie dog colony and is designated as a Grassland Preserve. Grassland Preserves are locations on city open space where the conservation of prairie dogs and their associated species in large and ecologically diverse grassland habitat blocks are the management focus. Grassland Preserves may act as receiving sites for the relocation of prairie dogs.

Please feel free to contact me if you have any questions or comments about this response.

Walker, Samuel

From: Ashley, Matthew <AshleyM@bouldercolorado.gov>
Sent: Wednesday, July 13, 2022 10:13 AM
To: Walker, Samuel
Cc: Collins, Bethany
Subject: [EXTERNAL] RE: OSMP Comments on SU-22-0004: Pivot Energy Solar Facility

Hi Sam,

As we discussed last week, here are some extra comments from our resource staff on the raptors/burrowing owls:

Burrowing Owls:

- The OSMP property to the South has had consistent nesting of one or more pairs of Burrowing Owls each year.
- Burrowing Owls are a State Threatened Species in Colorado. CPW guidelines for raptor protection recommend for disturbances like this type of construction "no permitted, authorized, or human encroachment activities within ¼ mile (1320 feet, 400 meters) of the nest site during the nesting season March 15 through August 31".
- The buffer on the most recently occupied Burrowing Owl nest extends over all but the far northern corner of the subject property. As a result, construction should not be allowed on the property during the March 15-August 31 timeframe to prevent disturbance of nesting burrowing owls
- Burrowing Owls can be vulnerable to getting hung up in fences (esp. barbed wire). As a result, designs for fencing of the property should take into account designs that minimize the potential for injuring or entangling burrowing owls

Other raptors:

- The OSMP property to the south of the project is a favored hunting ground for a number of raptor species including Golden and Bald Eagles, Ferruginous Hawks and Red-tailed Hawks. If reflection/glare from the solar farm may encroach into the open space, consideration should be given to minimizing the potential impact to hunting raptors over the adjacent open space to the South.

Thanks!

Matt Ashley
Property Agent
(pronouns: he, him, his)

Mobile: (303) 828-6402

From: Ashley, Matthew
Sent: Thursday, June 30, 2022 4:28 PM
To: swalker@bouldercounty.org
Subject: OSMP Comments on SU-22-0004: Pivot Energy Solar Facility

Hi Sam,

Please see our comments attached. Just let me know if you have any questions.

Thanks,

Matt Ashley
Property Agent
(pronouns: he, him, his)

City of Boulder
Open Space & Mountain Parks

Mobile: (303) 828-6402
ashleym@bouldercolorado.gov

2520 55th St. | Boulder, CO 80301-0791
https://bouldercolorado.gov/osmp

Walker, Samuel

From: LuAnn Penfold <lpenfold@mvfpd.org>
Sent: Thursday, May 26, 2022 12:21 PM
To: Walker, Samuel
Subject: [EXTERNAL] SU-22-0004

We have no objection to the installation of a solar facility or the special use for SU-22-0004.

A final site plan and construction plans will need to be submitted for review and approval before building permits are issued. Site Plans need to show the location of the nearest fire hydrant.

Thank you for including us in the planning process.

LuAnn Penfold, Fire Prevention Specialist
Mountain View Fire Rescue
3561 N. Stagecoach Road, Longmont, CO 80504
720-678-9890 | lpenfold@mvfpd.org | www.mvfpd.org

Right of Way & Permits

1123 West 3rd Avenue
Denver, Colorado 80223
Telephone: **303.571.3306**
Facsimile: 303. 571. 3284
donna.l.george@xcelenergy.com

June 30, 2022

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

Attn: Sam Walker

RE: Pivot Energy Solar Facility, Case # SU-22-0004

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the special use documentation for **Pivot Energy Solar Facility** and has **no apparent conflict** with the proposed solar arrays.

The property owner/developer/contractor must complete the application process for any new electric service via xcelenergy.com/InstallAndConnect. It is then the responsibility of the developer to contact the Designer assigned to the project for approval of design details.

Additional easements *will* need to be acquired by separate document for new facilities (i.e. transformers/lines) – be sure to have the Designer contact a Right-of-Way and Permits Agent.

Please be aware PSCo owns and operates existing intermediate pressure natural gas and electric distribution facilities along North 79th Street. 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

Public Health
Environmental Health Division

June 6, 2022

TO: Staff Planner, Land Use Department

FROM: Jessica Epstein, Environmental Health Specialist

SUBJECT: SU-22-0004: Pivot Energy Solar Facility project

OWNER: Rodgers

PROPERTY ADDRESS: 5980 N. 79th Street

SEC-TOWN-RANGE: 06 -1N -69

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

OWTS:

1. BCPH issued a new permit for the installation of an absorption bed system on 9/23/81. The permit was issued for an onsite wastewater treatment system (OWTS) adequate for a 3-bedroom house. BCPH approved the installation of the OWTS on 9/28/81.
2. According to the assessor's record, the home has 4 bedrooms. The OWTS sizing discrepancy must be resolved before the sale of the property.
3. If the assessor's record is in error, please contact that office at (303)441-3520, to have the record changed.

Avoid Damage to OWTS:

1. As shown in the application drawings, the proposed solar arrays must not be installed on top of the absorption field. Heavy equipment should be restricted from the surface of the absorption field during construction of the solar array and other trenching and excavation activities to avoid soil compaction, which could cause premature absorption field malfunction.

This concludes comments from the Public Health – Environmental Health division at this time. For additional information on the OWTS application process and regulations, refer to the following website: **www.SepticSmart.org**. If you have additional questions about OWTS, please do not hesitate to contact Jessica Epstein at (303) 441-1138.

Cc: OWTS file, owner, Land Use Department

Boulder County

Community Planning & Permitting

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

Building Safety & Inspection Services Team

M E M O

TO: Sam Walker, Planner II
FROM: Michelle Huebner, Plans Examiner Supervisor
DATE: May 27, 2022

RE: Referral Response, Docket SU-22-0004: Pivot Energy Solar Facility. Special Use Review to construct a 5 megawatt 24-acre solar energy facility on a 36-acre parcel.

Location: 5980 N. 79th Street

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

Because this request does not propose any development, or change of use, Boulder County Building Safety and Inspection Services does not have any objections to the proposal. If at some point in the future, the applicant wishes to propose, replace any existing structures or change the use of any existing structure, or utilities a building permit will be required.

1. **Building Permit.** A building permit and plan review and inspections approvals are required for the construction of the solar array and the associated electrical equipment. Separate building permits are required for the fences and cover over the equipment.

   Boulder County's adopted codes are based upon the 2020 editions of the International Codes, along with other amendments, and the latest National Electrical Code ("NEC") as adopted by the State Electrical Board (currently the 2020 edition). Our adopted building codes and code amendments can be found via the internet at:

   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. **Design Wind and Snow Loads.** The design wind and ground snow loads for the property are 140 mph (Vult) and 50 psf, respectively.

3. **Ignition-Resistant Construction.** Please refer to; the temporary pause on the issuance of building permits for new structures and certain additions in the

unincorporated Boulder County areas of Wildfire Zone 2 not affected by the Marshall Fire is in effect through June 6, 2022. This pause does not apply to property owners who are building new structures and certain additions, so long as they commit to rebuild to the requirements adopted as Appendix A of Article 19-500 of the Boulder County Land Use Code.

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 building permit application, when full details are available for review, to assure that all applicable minimum building codes requirements are to be met. Our Solar Photovoltaic Systems Checklist and other Building Safety publications can be found at: https://www.bouldercounty.org/property-and-land/land-use/building/building-publications/

   Please also refer to our Solar Photovoltaic Systems Checklist, which is available at: https://assets.bouldercounty.org/wp-content/uploads/2017/03/b46-solar-photovoltaic-systems-checklist.pdf

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

1.

Boulder County

Community Planning & Permitting

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

August 9, 2022

TO: Sam Walker, Planner II; Community Planning & Permitting, Development Review Team - Zoning

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

SUBJECT: Docket # SU-22-0004: Pivot Energy Solar Facility

5980 N. 79th Street

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

1. The subject parcel is accessed from N. 79th Street, a paved Boulder County owned and maintained right-of-way (ROW) with a Functional Classification of Collector. Legal access has been demonstrated via adjacency to this public ROW.

2. There are two existing points of access to the subject parcel from N. 79th Street. Only the northern access shall be used to access the project site during construction.

3. An Access Permit will be issued for both existing access points at N. 79th Street at the time of building permit review. No special application procedure is necessary, the Access Permits will be issued concurrently with the building permit.

4. The applicant provided a Traffic Impact Letter dated May 16, 2022 that outlined four project phases, phase duration, and an estimate of the maximum average daily trips (ADT) anticipated during each of the four project phases.

    a. The Project is expected to generate up to 79 ADT during material and equipment delivery (anticipated to be up to one month at the beginning of the project and one month at the end of the project) and up to 64 ADT during solar garden installation (6-7 months). However, once construction is complete, the project is only expected to generate up to 2 vehicle trips per month during solar garden operation.

    b. The timeline projections included in the letter are based on a construction start date of August 2022. However, the project will be undergoing land use review through August. An updated construction schedule and daily vehicle trip generation/ distribution estimates must be submitted at the time of building permit application.

5. At time of building permit application, a Traffic Control Plan (TCP) must be submitted that addresses flaggers and the locations and types of warning signs to be used during the material and equipment delivery and the installation phases of the project. Signage warning of heavy truck traffic on N. 79th Street must be included in the TCP and the TCP must be prepared by a certified Traffic Control Supervisor.

6. A Boulder County Hauler License is required for hauling of material off site, regardless of where the material is deposited. This applies to the prime contractor as well as any subcontractors that collect, transport or dispose of any materials (dirt, gravel, garbage, recyclables, or compostables, construction and demolition waste, or landscaping materials) anywhere except within the project site, including locations outside unincorporated Boulder County. Additional information can be found here: https://www.bouldercounty.org/environment/trash/hauler-license/.

This concludes our comments at this time.

ENERTIA CONSULTING GROUP LLC

1529 Market Street, Suite 200
Denver, CO 80202
(720) 792-3917
rick.hagmayer@enertiacg.com

May 16, 2022

Boulder County Planning and Permitting Department
2045 13th St
Boulder, CO 80302

RE: Traffic Impact Letter
Special Use Review – N 79th St
SE Corner of State Highway 52 & N 79th Street, Boulder County

To whom it may concern:

I. Introduction

In fulfillment of the Boulder County Special Use Review permitting requirements, Enertia Consulting Group (Enertia) has completed this Traffic Impact Letter for the proposed Pivot Energy Solar Facility on 79th Street located on approximately 24.51-acre southeast of the intersection of State Highway 52 & N 79th Street. The intent of this Report is to provide traffic related information and identify potential project impacts to affected roadways within Boulder County.

The following information is included in this letter report:

- Project Location, Components and Construction Schedule
- Designated Travel Route
- Daily Vehicle Trip Generation
- Conclusions

II. Existing Conditions

Location
The project is located on an approximately 24.51-acre project site along the east side of N 79th Street, south of State Highway 52 on Parcel: No. 146506000022 in Section 6, T1N, R69W.

III. Proposed Condition

Components
The Pivot Energy Solar Facility on the N 79th Street project shall generally include: up to a 5 MW solar garden with approximately 15,000 tracking solar panels mounted on steel H-beams; concrete pad mounted inverters and transformers; an access drive with emergency turn-around and perimeter fence with gate.

Construction Schedule
It's currently anticipated that the Use by Special Review Permit will be issued by Boulder County on or before August, 2022. Accordingly, a construction start/mobilization date of August 22, 2022 has been established. Based on this, the following preliminary schedule is currently considered:

- Driveway and material staging area prep — August 22, 2022 – September 5, 2022
- Solar Facility Component Delivery — September 8, 2022 – October 14, 2022
- Perimeter Fence Installation — October 17, 2022 – November 25, 2022
- Solar Panel Foundation Installation — September 8, 2022 – February 24, 2023
- Transformer and Inverter Installation — February 27, 2023 – April 3, 2023
- Solar Panel Installation — September 22, 2023 – May 3, 2023

Designated Travel Route

The designated access route is: State Highway 119 north to State Highway 52. State Highway 52 east to N 97th Street. N 97th Street to the site. Figure 1 illustrates the access route. The following is a brief description of the access route roadways.

SH 119 – State Highway 119 in the vicinity of SH 52 is a 4-lane asphalt-paved road with left turn lanes and acceleration/deceleration lanes; and a posted speed limit of 55mph. It's anticipated that 100 percent of material deliveries will be from the south.

SH 52 – The +/- 1 mile segment of SH 52 included in the travel route is a 2 lane, asphalt-paved road with intermittent bar ditches. There are 2 short bridge/culvert crossings within the travel route that allow conveyance of water/bicyclists under the road. The road surface appears to be in good condition. It's anticipated that all material deliveries will travel SH 52 between SH 119 and N 79th Street.

N 79th Street – N 79th St in the vicinity of SH 52 is a 2 lane, asphalt-paved road with intermittent side drainage ditches. The road surface appears to be in fair condition. It's anticipated that all material deliveries will travel N79th Street from SH 119.

Daily Vehicle Trip Generation and Distribution

Project development may be divided into the following 4 phases (site preparation, material and equipment delivery, solar garden construction and solar garden maintenance). The following Table 1 illustrates the estimated average daily trip generation by vehicle type for each Project phase.

Table 1 – Vehicle Trip Generation

Project Phase (Time Period)	Vehicle Type	Estimated Gross Vehicle Weight	Number of Vehicles Per Day	Maximum and Average Vehicle Trips Per Day
Site Preparation (approx. 1-3 weeks)	Equipment Hauling Trucks	30,000-65,000 lbs	0-2	0-4
	Passenger Vehicles	2,000-10,000 lbs	2-5	4-10
	Fuel Delivery	20,000-30,000 lbs	1	2
				Max – 16/Ave - 9
Material and Equipment Delivery (approx. 4-5 weeks)	Conex Container and Delivery Trucks	30,000-50,000 lbs	10-30	20-60
	Equipment Hauling Trucks	20,000-40,000 lbs	0-8	0-16
				Max – 79/Ave - 40
Solar Garden Installation (6-7 months)	Passenger Vehicles	2,000 to 10,000 lbs	20-30	40-60
	Fuel Truck	20,000 to 30,000 lbs	1	2
	Material Delivery Truck	20,000 to 30,000 lbs	1	2
				Max – 64/Ave - 52
Operations (ongoing once operational)	Utility Vehicle	2,000 to 10,000 lbs	1 per month or less	
				Max - 2/Ave - 0

As illustrated in Table 1, the majority of traffic generated as a result of solar garden installation shall occur during the 8-month solar garden installation (max 79/ave 40vtpd). This traffic will generally be site worker passenger vehicles.

The majority of heavy truck traffic including conex container delivery (total of 510-850 conex containers/delivery trucks) and equipment (rubber tire loader, pile driver, forklift) delivery and pickup will travel to and from the Project between 9:30 AM and noon and 1:30PM and 4:00PM.

Project related traffic during all phases will not be significant during AM and PM peak periods (7:30 – 9:00 AM and 4:30 – 6:00 PM, respectively).

IV. Conclusions

1. The Project is expected to generate up to 79 vehicle trips per day during material and equipment delivery (anticipated to be up to one month at the beginning of the project and one month at the end of the project), up to 64 vehicle trips per day during solar garden installation (6-7 months) and up to 2 vehicle trips per month during solar garden operation.

2. Site preparation and solar garden installation anticipated to begin in August 2022 and be completed in May 2022.

3. The phase with the greatest amount of traffic (79 vtpd material and equipment delivery) is expected to occur over a 4-5 week period (September – October 2022).

4. Daily Project related truck traffic is not expected to impact AM and PM peak traffic periods.

5. Sight distance at the Project entrance is well over 1,000 feet both north and south along N 79th Street.

6. Access to the project site is through an existing driveway. Therefore, a Boulder County Access permit will not be required.

7. As proposed, the solar garden site preparation, installation and ongoing inspection/maintenance is not anticipated to create adverse traffic related impacts on Boulder County roads. Based on anticipated vehicle type and weight, the project is not anticipated to degrade/damage Boulder County roads and a Public Works Improvement Agreement is not likely warranted.

We trust that this Traffic Impact Letter for the Pivot Energy Solar Facility on the N 79th Street is acceptable and complete. Please contact me at rick.hagmayer@enertiacg.com or (720) 792-3917 should you require additional information.

Sincerely,
ENERTIA CONSULTING GROUP, LLC

Rick Hagmayer, PE
Senior Project Manager

attachment

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET
SUITE 200
DENVER, CO 80202
(720) 250-8305

FIGURE 1 - PROXIMITY MAP
PIVOT ENERGY SOLAR FARM ON N 79TH STREET
BOULDER COUNTY, COLORADO

DATE:	5/26/2022
SCALE:	1" = 2,000'
BY:	SK

Walker, Samuel

From: Bill Fox <bill.fox@foxtuttle.com>
Sent: Wednesday, June 22, 2022 9:16 AM
To: LU Land Use Planner
Subject: [EXTERNAL] Comment on SU-22-0004: Pivot Energy Solar Facility
Attachments: SU-22-0004 Comment Letter from Bill and Karen Fox.pdf

Attention:
Staff Planner Sam Walker
Boulder County Community Planning & Permitting Department
Boulder County Planning Commission
Boulder County Commissioners

Please give me a call to make sure you have received this email with our attached comments. Also please let us know of the schedule for any upcoming review meetings on this item.
Thank you,
Bill and Karen Fox
303 250 0227

Date: June 22, 2022

To: Boulder County Commissioners
Boulder County Planning Commission
Boulder County Staff Planner – Sam Walker

From: Bill Fox and Karen Fox
5974 N. 79th Street
Longmont, CO 80503
(303) 250-0227

Re: **Docket #: SU-22-0004: Pivot Energy Solar Facility -** 5980 N. 79th Street – Owner: Charles Rodgers, and Agent: Pivot Energy

As one of seven immediately adjacent neighbors of the proposed 24-acre solar facility we would like to offer our sincere and strenuous objection to this proposed land use in this location. The type and size of this proposed solar facility (illustrated on numerous images below) is completely out of character with the adjacent land uses. We consider a solar facility of this size to be an "industrial" use and should not be considered in this iconic location on Gunbarrel Hill in Boulder County. Specific reasons for this objection are listed below:

1. To place such a large industrial type facility immediately adjacent to a row of houses is inappropriate. This land is zoned agricultural, and we have no objection to the historic farming that has occurred on this and the adjacent parcels. This is not an "agricultural" type use. The heading in the Boulder County Land Use Code for this land use type reads: **"Section 4-102 Agricultural (A) District, A. Purpose: Rural areas where conservation of agricultural resources is of major value, and where residential development compatible with agricultural uses is allowed."** The 24-acre solar facility proposed is not consistent with this land use type and should not be allowed.

2. As can be seen on the **Boulder County Open Space and Public Lands Map**:
   - The adjacent property immediately to the north is County Open Space
   - The adjacent property immediately to the south is City of Boulder Open Space
   - The adjacent property immediately to the east is Joint County/City Open Space

   Allowing this use in this context is totally inappropriate. It will be a black scar on the beautiful open landscape that Boulder County and the City of Boulder have worked hard to preserve.

3. As can be seen on the **Boulder County Environmental Conservation Areas Map**, the property is immediately west of the White Rocks/Gunbarrel Hill Conservation Area 12.

4. As can be seen on the **Boulder County Critical Wildlife Habitat and Migration Corridors Map**, the property is adjacent and immediately north of critical area 88, Gunbarrel Hill.

5. As can be seen on the **Boulder County Significant Agricultural Lands Map**, the property includes areas judged to be Lands of Local and/or Statewide Importance.

6. As can be seen on the **Boulder County View Protection Corridors Map**, all of the roads that surround this property are included on the map. Lookout Road and N. 79th Street have the highest score of "2 or More". Highway 52 has the next highest score of "1 or More". Anyone viewing this parcel will no longer see the historic wheat fields. The parcel will be entirely black with solar panels. We have lived here for 34 years and have had numerous people tell us that they modify their commuting route to include North 79th Street because the view on and from Gunbarrel Hill is so beautiful. The views in this area should not be compromised.

7. **Neighborhood Context:** The residential lot two doors north of us (and adjacent to the subject property) was originally purchased by a couple that wanted to build their large "dream home" on a 2-acre lot. They eventually sold the property without developing because Boulder County Land Use staff judged their plans to be too big and out of character with the adjacent residences. Another person then purchased the lot and did build a large home, but due to the size of the planned home and County restrictions, they constructed a house with a basement of substandard height (a person has to duck to avoid the beams) so that the size of the basement wouldn't count toward the size of the home. This allowed the house to be considered OK in the context of the smaller adjacent homes. So, with this level of concern for the adjacent homeowners, it would seem extremely inconsistent to now allow the construction of an industrial sized solar farm immediately adjacent to the same residents with the neighborhood character that County staff were trying to protect in the past.

   There can be no question that the construction of an industrial sized solar farm immediately adjacent to the back yard fences of a row of houses is out of character and will irreparably damage the character of the neighborhood, not to mention what it will do to the property values of the adjacent homes.

8. As we read **Section 4-514 Utility and Public Service Uses, Section M. Solar Energy – Ground Mounted System** there are a number of considerations of note:

   Section 5. Additional Provisions

   a. Use required on a building lot or an outlot platted for this purpose. This is not met.
   c. Appropriateness determined through review process. - Ongoing
   d. Ground-mounted systems with disturbed area greater than 0.5 acre cannot be located on areas designated as Natural Landmark,, Natural Areas, Critical Wildlife Habitats, of Wildlife Migration Corridors. (See Item 4 above).

   h. (i) The total disturbed area on lands designated as Significant Agricultural Lanes (see Item 5 above)…cannot exceed 7 acres on parcels smaller than 70 acres in size.

Clearly there are considerations here that suggest this is not an appropriate site for an industrial sized solar facility on an agricultural site in this location.

Other concerns and considerations:

A large solar facility such as this 24-acre proposal should be considered in areas that are industrial in nature and/or do not directly impact adjacent residents. Examples include the following existing large solar facilities:

- IBM property adjacent to the IBM facility and the Diagonal Highway
- City of Boulder adjacent to their water treatment facility and the Diagonal Highway
- City of Boulder adjacent to their wastewater treatment facility on N. 75th Street.
- Federal Center adjacent to parking lots, US 6 and Kipling Street in Lakewood
- Jack's Solar Garden facility on N. 95th Street – less than 6 acres and is only adjacent to the owner of the property's house.

These large solar facilities do not abut residences in the area (except for Jack's as noted) and do not change the residential character of the area.

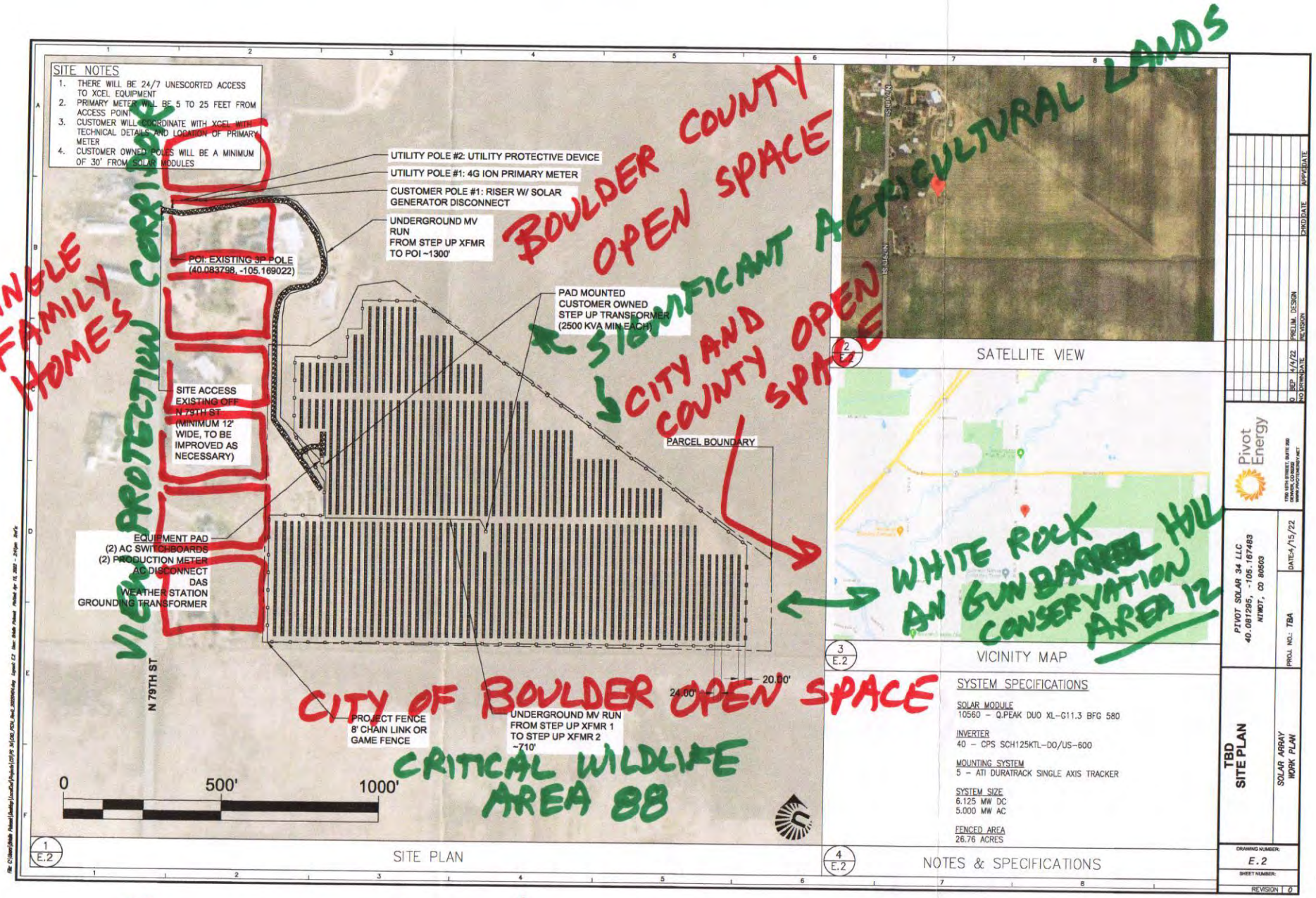
We are also concerned about the noise and traffic associated with the construction, operation and on-going maintenance of this facility. I am sure Pivot Energy will say they are minimal, but one needs to consider this in the context of one's backyard.

In closing, we are not opposed to the concept of solar energy production. We are just convinced that there are more appropriate and less impactful locations where a facility of this scale can be constructed. Pivot Energy needs to look harder. Allowing this use in this location will be a dangerous president in Boulder County.

Thank you for your time and consideration. We look forward to discussing this project with you in more detail if it moves forward in the special use review process.

Sincerely,

Bill and Karen Fox
5974 N. 79th Street
(303) 250-0227



This project will create a black smear in the middle of the iconic Gunbarrel Hill !!!

View from our backyard fence looking out at the proposed solar facility. Everything in this picture will be covered by black solar panels.

Walker, Samuel

From: Ask A Planner <no-reply@wufoo.com>
Sent: Tuesday, June 21, 2022 12:25 PM
To: LU Land Use Planner
Subject: [EXTERNAL] Ask a Planner - Michelle L Williams - SU-22-004 - 5980 N. 79th Street

Categories: docket comments

Boulder County Property Address : 5980 N. 79th Street If your comments are regarding a specific Docket, please enter the Docket number: SU-22-004
Name: Michelle L Williams
Email Address: mishelchaz@yahoo.com
Phone Number: (303) 931-5822
Please enter your question or comment: To Staff Planner: Sam Walker I am writing regarding the proposed special use project (Docket #SU-22-004), located at 5980 N. 79th St.
I believe the proposed 24 acre solar energy facility on the land directly behind our home will significantly impact our properties home value negatively.
I understand that this project will likely be approved. I have met with you and Kyle Sundman of Pivot Energy Solar and believe that the things we discussed to mitigate some of the loss of value should be included in the approval process. These things include electrical credits for our and neighbors homes, either a privacy fence and/or trees/ fast growing bushes in front of their proposed wire style fence. They also said they could/would do earth moving work while they are installing if that would help us hide the view. We are worried about the glare that the panels may happen when the panels move toward the west, which they said they would be able to use our roof line to mitigate that.
I hope that you will include these recommendations when presenting to the county commissioners.

Thank you,
Charless and Michelle Williams
5850 N 79th St., Longmont, CO
303-9311-5822
mishelchaz@yahoo.com

cc: Kyle Sundman
Public record acknowledgement:
I acknowledge that this submission is considered a public record and will be made available by request under the Colorado Open Records Act.

Walker, Samuel

From: michael rubin <skieryogamike@gmail.com>
Sent: Thursday, July 21, 2022 10:43 AM
To: LU Land Use Planner
Subject: [EXTERNAL] Fwd: SOLAR FARM

Categories: docket comments

---------- Forwarded message ---------
From: **michael rubin** <skieryogamike@gmail.com>
Date: Thu, Jul 21, 2022 at 10:42 AM
Subject: Fwd: SOLAR FARM
To: <commissioners@bouldercounty.org>

---------- Forwarded message ---------
From: **michael rubin** <skieryogamike@gmail.com>
Date: Thu, Jul 21, 2022 at 10:40 AM
Subject: SOLAR FARM
To: <swalker@bouldercounty.org>

Date: June 22, 2022
To: Boulder County Commissioners
Boulder County Planning Commission
Boulder County Staff Planner – Sam Walker
From: Mike Rubin
5880 N. 79th Street
Longmont, CO 80503
720-300-2007
Re: Docket #: SU-22-0004: Pivot Energy Solar Facility - 5980 N. 79th Street – Owner: Charles Rodgers, and Agent: Pivot Energy
As one of seven immediately adjacent neighbors of the proposed 24-acre solar facility, I'm not happy at all with this project moving forward.

The type and size of this proposed solar facility (illustrated on numerous images below) is completely out of character with the adjacent land uses. We consider a solar facility of this size to be an “industrial” use and should not be considered in this iconic location on Gunbarrel Hill in Boulder County. Specific reasons for this objection are listed below:
1. To place such a large industrial type facility immediately adjacent to a row of houses is inappropriate. This land is zoned agricultural, and we have no objection to the historic farming that has occurred on this and the adjacent parcels. This is not an “agricultural” type use. The heading in the Boulder County Land Use Code for this land use type reads: “Section 4-102 Agricultural (A) District, A. Purpose: Rural areas where conservation of agricultural resources is of major value, and where residential development compatible with agricultural uses is allowed.” The 24-acre solar facility

proposed is not consistent with this land use type and should not be allowed.
2. As can be seen on the Boulder County Open Space and Public Lands Map:
- The adjacent property immediately to the north is County Open Space
- The adjacent property immediately to the south is City of Boulder Open Space
- The adjacent property immediately to the east is Joint County/City Open Space
Allowing this use in this context is totally inappropriate. It will be a black scar on the beautiful open landscape that Boulder County and the City of Boulder have worked hard to preserve.
3. As can be seen on the Boulder County Environmental Conservation Areas Map, the property is immediately west of the White Rocks/Gunbarrel Hill Conservation Area 12.
4. As can be seen on the Boulder County Critical Wildlife Habitat and Migration Corridors Map, the property is adjacent and immediately north of critical area 88, Gunbarrel Hill.

5. As can be seen on the Boulder County Significant Agricultural Lands Map, the property includes areas judged to be Lands of Local and/or Statewide Importance.
6. As can be seen on the Boulder County View Protection Corridors Map, all of the roads that surround this property are included on the map. Lookout Road and N. 79th Street have the highest score of “2 or More”. Highway 52 has the next highest score of “1 or More”. Anyone viewing this parcel will no longer see the historic wheat fields. The parcel will be entirely black with solar panels. We have lived here for 34 years and have had numerous people tell us that they modify their commuting route to include North 79th Street because the view on and from Gunbarrel Hill is so beautiful. The views in this area should not be compromised.
7. Neighborhood Context: The residential lot two doors north of us (and adjacent to the subject property) was originally purchased by a couple that wanted to build their large “dream home” on a 2-acre lot. They eventually sold the property without developing because Boulder County Land Use staff judged their plans to be too big and out of character with the adjacent residences. Another person then purchased the lot and did build a large home, but due to the size of the planned home and County restrictions, They constructed a house with a basement of substandard height (a person has to duck to avoid the beams) so that the size of the basement wouldn’t count toward the size of the home. This allowed the house to be considered OK in the context of the smaller adjacent homes. So, with this level of concern for the adjacent homeowners, it would seem extremely inconsistent to now allow the construction of an industrial sized solar farm immediately adjacent to the same residents with the neighborhood character that County staff were trying to protect in the past.
There can be no question that the construction of an industrial sized solar farm immediately adjacent to the back yard fences of a row of houses is out of character and will irreparably damage the character of the neighborhood, not to mention what it will do to the property values of the adjacent homes.
8. As we read Section 4-514 Utility and Public Service Uses, Section M. Solar Energy – Ground Mounted System there are a number of considerations of note:
Section 5. Additional Provisions
a. Use required on a building lot or an outlot platted for this purpose. This is not met.
c. Appropriateness determined through the review process. - Ongoing
d. Ground-mounted systems with disturbed area greater than 0.5 acre cannot be located on areas designated as Natural Landmark,, Natural Areas, Critical Wildlife Habitats of Wildlife Migration Corridors. (See Item 4 above).
h. (i) The total disturbed area on lands designated as Significant Agricultural Lanes (see Item 5 above)...cannot exceed 7 acres on parcels smaller than 70 acres in size.

Clearly there are considerations here that suggest this is not an appropriate site for an

industrial sized solar facility on an agricultural site in this location.
Other concerns and considerations:
A large solar facility such as this 24-acre proposal should be considered in areas that are industrial in nature and/or do not directly impact adjacent residents. Examples include the following existing large solar facilities:
- IBM property adjacent to the IBM facility and the Diagonal Highway
- City of Boulder adjacent to their water treatment facility and the Diagonal Highway
- City of Boulder adjacent to their wastewater treatment facility on N. 75th Street.
- Federal Center adjacent to parking lots, US 6 and Kipling Street in Lakewood
- Jack's Solar Garden facility on N. 95th Street – less than 6 acres and is only adjacent to the owner of the property's house.

These large solar facilities do not abut residences in the area (except for Jack's as noted) and do not change the residential character of the area.
We are also concerned about the noise and traffic associated with the construction, operation and on-going maintenance of this facility. I am sure Pivot Energy will say they are minimal, but one needs to consider this in the context of one's backyard.

In closing, we are not opposed to the concept of solar energy production. We are just convinced that there are more appropriate and less impactful locations where a facility of this scale can be constructed. Pivot Energy needs to look harder. Allowing this use in this location will be a dangerous president in Boulder County.
Thank you for your time and consideration. We look forward to discussing this project with you in more detail if it moves forward in the special use review process.
Sincerely,
Mike Rubin

Walker, Samuel

From: Michelle Williams <mishelchaz@yahoo.com>
Sent: Tuesday, August 9, 2022 8:46 AM
To: LU Land Use Planner
Subject: [EXTERNAL] Docket# SU-22-0004

To: Sam Walker and the Boulder County Commissioners,

I would like to have our names added to the objection letter dated June 22nd by Bill Fox and Karen Fox whose property will also be impacted by this proposal.
We also strongly oppose the "industrial" use of this property and believe it doesn't fit with Boulder County's values. We ask that you deny this proposal and look forward to your denial of it.

Thank you,

Charles and Michelle Williams
5850 No 79th Street
Longmont, CO 80503
303-931-5822

Pivot Energy

July 27, 2022

Samuel Walker
Planner II, Boulder County Community Planning & Permitting
2045 13th Street, Boulder, CO 80302
Ph: 720-564-2738
swalker@bouldercounty.org

RE: Pivot Energy Solar Project – Pivot Solar 34 LLC – Charles Rodgers

Dear Mr. Walker,

We understand that a portion of our proposed solar project area is located on "Agricultural Lands of Local Importance." We further understand that on a parcel under 70 acres, a solar project can only "disturb" 7 of those acres; presently, our design affects approximately 10, with the remainder on the same parcel but outside the referenced area. This letter serves as a formal request to consider the minimal impact of the additional ~3 acres in the context of the extensive mitigation efforts Pivot is taking to lessen the impact.

Our position is the following:

1) We are not grading the property thus we are not technically "disturbing" any land besides the road and the transformer pad.
2) The methodology for the creation of map is poorly defined and imprecise.
3) We are retaining agricultural use on the property in and around the solar array.
4) The proposed project brings benefits to Boulder County residents (and others across the state of Colorado) that are more impactful than the current agricultural yields.
5) The project is temporary; once decommissioned, the land will be restored to the same condition as it is today with opportunity for pure agricultural use once again.

The following provide additional context expanding upon the above (in order):

1) As noted in our drainage letter that was submitted with our initial USR application, the proposed disturbance caused by the development of the road and transfer pad is approximately 0.65 acres.

Land Disturbance Area

A total of approximately 28,200 square feet or 0.65 acres of the Project area is anticipated to be disturbed. The total disturbance numbers are summed in the following table.

Disturbance Surface Type	Disturbance Area (sf)	Disturbance Area (Ac)
Gravel Drive	27,778	.637
Concrete Equipment Pads	440	0.01
Total	**28,218**	**0.648**

Pivot Energy

While AHJ's may have different interpretations of "disturbance," we believe that it can be defined by the need to grade or change the topography of the site. The 0.65 acres impacted represents a nominal percentage of the ~21-acre footprint. During construction, impacts are minimized by installing panels and racking in a way that is consistent with the natural topography.

2) The map that County uses as the primary determinant for significant ag lands – which was created in 1995 with best-available satellite imagery and GIS technology at the time – is limited in its site-specific evaluation criteria and thus imprecise. An aerial photo - which represents a singular snapshot in time and requires significant interpretation - cannot be relied upon as the primary determinant of soil quality. The map draws a line through the middle of the property, suggesting that the Southern half is "more significant" than the Northern. To further define the agricultural characteristics of the site, Pivot engaged an independent, qualified biologist to review the property. Included herein (Exhibit A) are the findings of Western Environment and Ecology, which we believe speak to the fact that it is primarily made up of soils inconsistent with the spirit of "significant" (we interpret that to mean highly productive) as it has been dryland for decades and can only generate income for Mr. Rodgers and his family every other year. Further, we've included a geotechnical report (Exhibit B) showing that there is shallow bedrock throughout the site and, when combined with anecdotal conversation from a neighbor that "we can hardly plant anything on the East side of our property because the soil is so shallow," we believe that as well to be inconsistent with the definition.

3) Pivot would also like to highlight that we intend to continue agricultural use on the property. Pivot commits to grazing sheep in and around the array as our primary source of vegetation management so long as forage levels are high enough to support a healthy flock. The concept called "Regenerative Energy" gives a good example of how solar and agriculture/livestock can have a symbiotic relationship. It is our goal to strive to be as holistic as possible in both the development and operation of our projects. In planting a hyper local, pollinator friendly, drought resistant seed mixes under all our projects we substantially improve the stormwater conditions of the parcel as they decrease the imperviousness of the surface and allow for sturdier soil in the event of a heavy rain event than the current row crop.

   Pivot is also evaluating an opportunity to partner with the National Renewable Energy Laboratory and Colorado School of Mines to conduct a comprehensive "agrovoltaics" project which would further commit the project to continued agricultural use by measuring things like: Soil water retention to quantify irrigation needs with vs. without a solar array above crops; Carbon sequestration, crops vs. typical seed mixes; Harvesting costs, methods, and equipment; comparing typical crop layout to those beneath array; Quantifying time and hard costs associated with this approach. Operations and maintenance costs, quantify if/how operational hard and soft costs are impacted by the addition of crop growing on site.

4) We strongly believe the proposed project bring benefits to Boulder County residents (and others across the state of Colorado) that are more impactful than the current agricultural yields. As noted in our project narrative, 100% of the power generated by this array is being donated by Pivot to low-income Coloradans, which amounts to a lifetime donation of $17,000,000. Based on the way Xcel Energy awards projects, there are no opportunities to move this project to another site. If this project does not go

Pivot Energy

through, the result would be the $17M in direct energy assistance to those families lost with no opportunity to recover them on another site.

5) As noted, all ground mounted solar projects are temporary; at the end of this project's useful life, it will be decommissioned, and the land restored to its existing state. It is different than other permanent developments in that it will remain agricultural in use during and after this project.

We believe this project is consistent with the Boulder County Comprehensive Plan to increase the number of renewable energy sources in the County. Goal 4 states:

> *"Identify & Implement Actions to Diminish Greenhouse Gas Emissions. The county considers global climate change to be a matter of paramount concern and a potential threat to any sustainability efforts that may be undertaken. In recognition of this concern and to implement the Board of County Commissioners' Resolution 2005-137 regarding a Sustainable Energy Path for Boulder County, the county should take a leadership role in identifying and implementing actions that will lead to a diminishment in the county's contribution to total greenhouse gas emissions…"*

We are excited by the prospect of working to directly benefit the community in several meaningful ways. We appreciate your time and look forward to working with the County to move forward with our project.

Sincerely,

Kyle Sundman
Director, Project Development
Pivot Energy

Pivot Energy

Exhibit A

WESTERN ENVIRONMENT AND ECOLOGY, INC

July 21, 2022

Kyle Sundman
Pivot Energy
1750 15th Street
Denver, Colorado 80202

Subject: Significant Agricultural Lands, 5980 North 79th, Street, Boulder County, Colorado. Western Environment and Ecology, Inc. Project Number 750-045-02.

Dear Mr. Sundman:

At your request, Western Environment and Ecology, Inc. (Western Environment) was asked to review the Boulder County Comprehensive Plan designation of a portion of the approximately 24 acre solar project (Boulder County Parcel# 146506000021) referenced above as Significant Agricultural Lands. Western Environment performed a General Ecological Resource Survey of the project dated November 12th, 2021. At the time our inspection the proposed Pivot Energy project was covered in Winter Wheat stubble. Conversations on November 2nd, 2021 with Mr. Charles Rodgers, confirmed that his family has owned the property since the early 1900's and it has been "used exclusive for dryland farming".

The Boulder County Comprehensive Plan identifies an estimated 10 acres of the 25 as Significant Agricultural Lands of Local Importance (see attached). A more accurate determination of the area is difficult due to the scale and resolution of the Comprehensive Plan map. Based upon our review, the Significant Agricultural Lands closely mirror the 2008 National Resource Conservation Service (NRCS) Soil Survey of Boulder County soil class map identifying Ascalon-Otero D Series soils. We are sure additional criteria are used by the County to recognize unique agricultural properties. However, in this specific instance soils appear to be the primary source.

NRCS classifies this soil's Land Capability as 4e, stating that these (4e) soils have "severe limitations that restrict the choice of plants and require very careful management (due to erosion potential)". The majority crop for non-irrigated areas of Ascalon-Otero soil is Winter Wheat. NRCS estimates the average yield to be 28 bushels/acre ($6.00/bushel or $168/acre). Moreover, the soil is fallowed in alternate years to allow for moisture accumulation, further reducing productivity.

Based upon these data, crop production on this Parcel is both uneconomic and unsustainable. The proposed use of the site that would incorporate "agrovoltaics" (personal conversation July 21, 2022 with Mr. Sundman) would retain and enhance agricultural function allowing controlled livestock grazing and increase pollinator viability while protecting vulnerable soils.

Please do not hesitate to contact me with any questions regarding this opinion.

Respectfully,

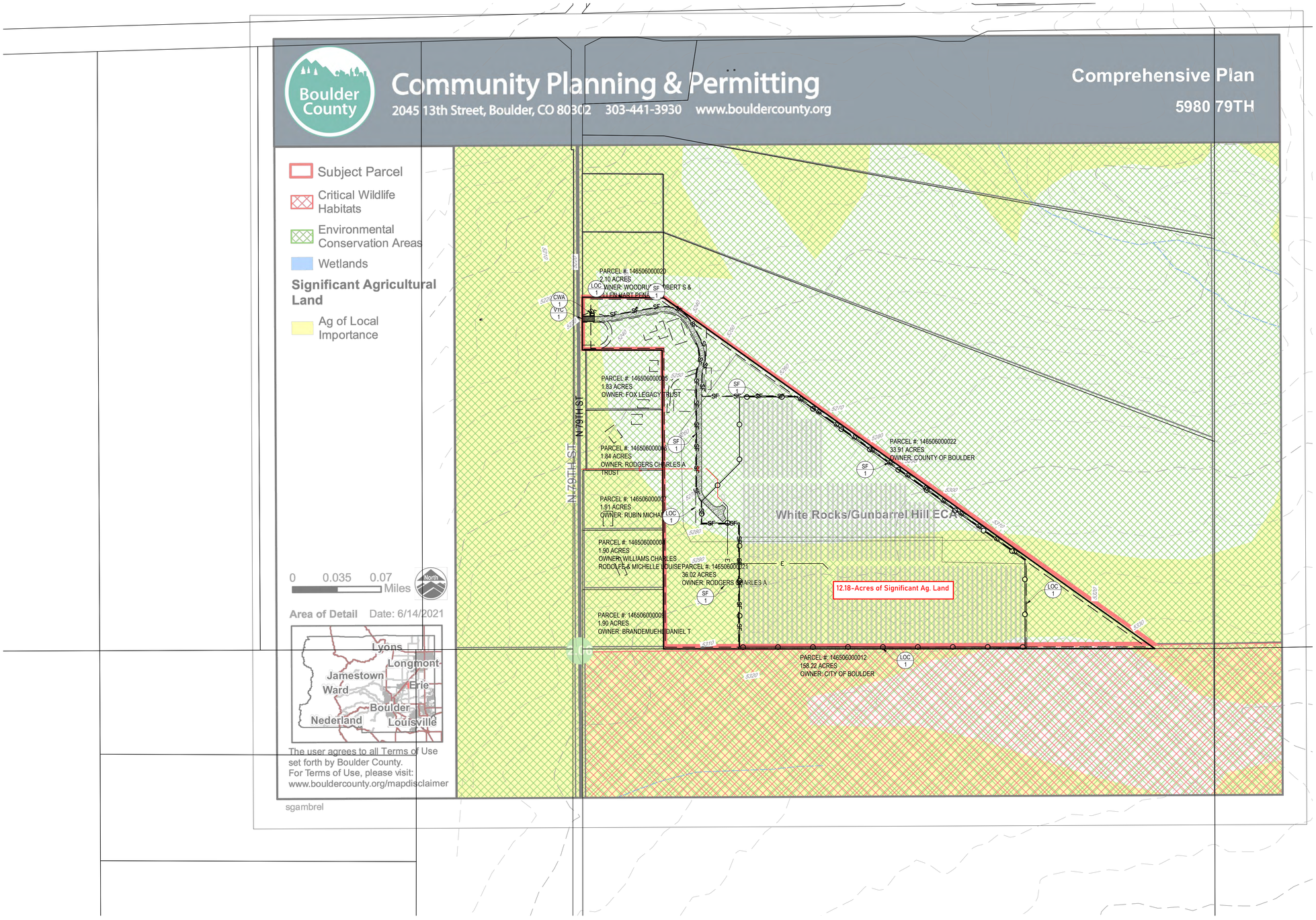
Greg D. Sherman P.G.
President

2217 WEST POWERS AVENUE * LITTLETON, COLORADO 80120
PHONE (303)730-3452 * FAX (303)730-3461
WWW.WESTERNENVIRONMENT.COM

PIVOT ENERGY SOLAR FARM ON BOULDER COUNTY
SPECIAL USE REVIEW

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



CASE NUMBER: _____

NO.	DATE	REVISION	DR	CHK	APVD
DSGN	PIVOT		SK	RH	RH

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST, SUITE 400
DENVER, CO 80202

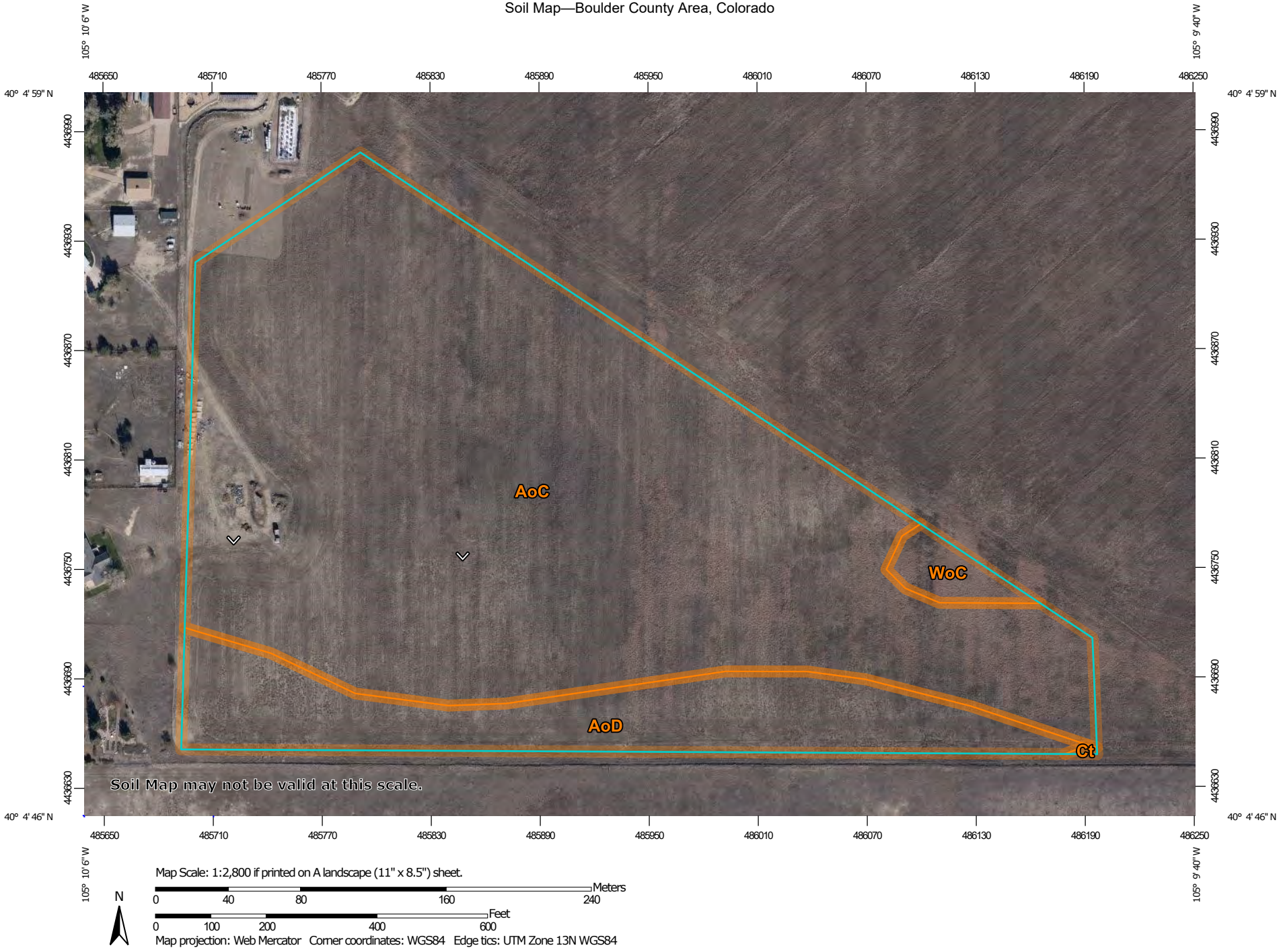
PIVOT ENERGY SOLAR FARM ON
N 97TH ST
SPECIAL USE REVIEW
BOULDER COUNTY, COLORADO

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

FOR BURIED UTILITY INFORMATION
THREE (3) BUSINESS DAYS BEFORE YOU DIG
CALL 811
(OR 1-800-922-1987)
UTILITY NOTIFICATION CENTER OF COLORADO (UNCC)
WWW.UNCC.ORG

DATE	MAY 26, 2022
FILE	
DWG	
SHEET	OF 6

Soil Map—Boulder County Area, Colorado



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Boulder County Area, Colorado
Survey Area Data: Version 18, Sep 2, 2021

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

Date(s) aerial images were photographed: Oct 1, 2018—Oct 31, 2018

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AoC	Ascalon-Otero complex, 3 to 5 percent slopes	21.7	81.8%
AoD	Ascalon-Otero complex, 5 to 9 percent slopes	4.4	16.4%
Ct	Colby-Gaynor association	0.0	0.0%
WoC	Weld-Colby complex, 3 to 5 percent slopes	0.5	1.7%
Totals for Area of Interest		**26.6**	**100.0%**

Pivot Energy

Exhibit B

CTL|THOMPSON

50 YEARS

FOUNDED IN 1971

GEOTECHNICAL INVESTIGATION
RODGERS PROPERTY SOLAR ARRAY
5980 NORTH 79TH STREET
LONGMONT, COLORADO

Prepared For:

PIVOT ENERGY DEVELOPMENT, LLC
1750 15th Street, Suite 400
Denver, Colorado 80202

Attention: Johnathan Fitzpatrick

Project No. DN51,309-125-R1

December 17, 2021

1971 West 12th Avenue | Denver, Colorado 80204 | Phone: 303-825-0777 | Fax: 303-825-4252 | www.ctlt.com

TABLE OF CONTENTS

SCOPE

This report presents the results of our Geotechnical Investigation for the solar array facility planned on a vacant parcel located at 5980 North 79th Street in Longmont, Colorado (Fig. 1). The purpose of our investigation was to evaluate the subsurface conditions and provide geotechnical design and construction criteria for the project. The scope was described in a Service Agreement (DN 21-0499) dated September 17, 2021. Evaluation of the property for the possible presence of potentially hazardous materials (Environmental Site Assessment) was not included in our scope.

The report is based on our understanding of the planned structures, published topographic and geologic mapping, conditions found in our exploratory borings, results of field and laboratory tests, engineering analysis of field and laboratory data, and our experience. It contains descriptions of the subsurface conditions found in our exploratory borings and recommended design and construction criteria for site development, foundations, slabs-on-grade, gravel roads and surface drainage. The recommendations presented in the report are based on construction as currently planned. Revisions to the planned construction could affect our recommendations. If the construction will differ from the descriptions herein, we should be contacted to review our recommendations and determine if revisions are needed.

SUMMARY OF CONCLUSIONS

1. Subsoils found in our borings consisted of about 8.5 to at least 25 feet of stiff to very stiff silty-sandy clay. Weathered to comparatively unweathered claystone and sandstone bedrock at the surface in one boring and at depths of about 9 to 24.5 feet in three other borings.

2. Groundwater was not encountered in the borings. Groundwater is not expected to influence construction. Groundwater levels may fluctuate seasonally and rise in response to development, precipitation, landscape irrigation, and changes in land-use.

3. We understand steel H- or pipe-piles are the typical foundation systems used for solar arrays. We anticipate most or all piles will be installed into stiff to very stiff clay and likely refusing in bedrock at some locations. Subsurface conditions appear suitable for driving piles to depths of less than 6 feet. Pre-drilling may be necessary.

4. For unpaved roads drives, we recommended the use of at least 8 inches of gravel (such as ASTM C33 No. 57, No. 67, or No. 467) or crushed rock or concrete comprised of CDOT Class 5 or 6 Aggregate Base Course. Recycled asphalt can also be used.

5. Surface drainage should be designed, constructed, and maintained to promote runoff of water away from foundations and pavements. Water should not be allowed to pond adjacent to structures.

SITE CONDITIONS

The Rodgers Property Solar Array project is planned at 5980 North 79th Street in Longmont, Colorado (Fig. 1 and Photo 1). The 36-acre parcel is bordered by existing residences and North 79th Street to the west, and vacant land to north, east, and south. The site is vacant and appears to have been previously used for crop farming. The ground surface is covered with grasses, weeds, and slopes 2 to 4 percent to the north and west.

PROPOSED CONSTRUCTION

We understand that ground-mounted solar panels utilizing pipe of H-pile foundations are planned. Based on previous projects, the rows of solar panels and motors will be installed on a series of H-piles spaced approximately 20 feet apart. We understand loads are relatively light and that W6x9, W6x12 or W6x15 piles are normally used. Lateral loads, not axial loads, typically govern the

foundation selection and sizing. We assume existing grades are near construction grades and very little, if any, cuts and fills are planned. Non-paved access drives and small equipment buildings may be included.

Photo 1 – Google Earth© Aerial Site Photo, June 2021

SITE GEOLOGY

The mapped geology of the site was researched through review of the Geologic Map of the Niwot Quadrangle, Boulder County, Colorado by D.E. Trimble (Geologic Quadrangle Map GQ-1229, 1975). Geology was further evaluated through review of samples and conditions found in exploratory borings and our experience in the area. The surficial geology is mapped as eolian (wind deposited) fine-to-medium sand and silt, with thickness of the 5 to 25 feet thick, of the Holocene to Pleistocene-Sangamon Interglaciation. Fox Hills sandstone comprised of fine- to course-grained quartzose sand with calcareous concretions is reported to be below the wind deposited soil.

INVESTIGATION

We investigated subsurface conditions on October 15, 2021 by drilling and sampling six exploratory borings at the approximate locations shown on Fig. 1. Borings were staked and elevations estimated using a Leica GS18 GPS unit referencing the North American Vertical Datum of 1988 NAVD88. Prior to drilling, we contacted the Utility Notification Center of Colorado and local sewer and water districts to identify locations of buried utilities.

The borings were drilled to depths of 20 feet below existing grades using 4-inch diameter, continuous-flight, solid-stem auger and a truck-mounted drill rig. Samples of the soil and bedrock were obtained at approximate 5-foot intervals using a 2.5-inch diameter (O.D.) modified California barrel sampler driven by blows from an automatic 140-pound hammer falling 30 inches. Bulk samples of the surficial soils were obtained from auger cuttings. Our field representative was present to observe drilling, log the strata encountered, obtain samples, and measure groundwater. Summary logs of the exploratory borings including results of field penetration resistance tests and a portion of the laboratory data are presented in Appendix A.

Samples were returned to our laboratory where they were examined and testing assigned. Laboratory tests included moisture content, dry density, percent silt- and clay-sized particles (percent passing the No. 200 sieve), gradation, Atterberg limits, standard Proctor (ASTM D 698), electrical resistivity (ASTM G57-78), thermal resistivity (ASTM D 5334), unconfined compression, pH, and water-soluble chloride and sulfate concentrations. Laboratory test results are presented in Appendix B and summarized in Table B-I.

SUBSURFACE CONDITIONS

Strata encountered in our borings consisted of about 8.5 to at least 25 feet of silty-sandy clay. Weathered to comparatively unweathered bedrock was encountered at the surface in one boring and at depths ranging from about 9 to 24.5 feet in three other borings. Pertinent engineering characteristics of the soil and bedrock are described in the following paragraphs.

The silty-sandy clay appeared to be either residual soil weathered down from sedimentary bedrock or wind-deposited soil or a mixture thereof. The clay was medium stiff to very stiff based on results of field penetration resistance tests and was often calcareous. Two clay samples had unconfined compressive strengths of 5,790 and 8,090 psf, contained 55 and 67 percent silt- and clay-fines (passing the No. 200 sieve), and both exhibited moderate plasticity. Standard Proctor tests were performed on bulk samples of silty-sandy clay obtained from the upper 5 feet of TH-2, TH-5, and TH-6. Maximum dry densities of 107.5 to 109.5 pcf were determined at optimum moisture contents of 14 to 15.5 percent.

We encountered claystone and sandstone at the surface in one boring and in three other borings at depths of 8.5 to 24.5 feet (approximate EL. 5264.4 to 5298.3). The upper portion of claystone was weathered in TH-1 and TH-3. Two weathered claystone samples exhibited unconfined compressive strengths of 7,390 and 9,560 psf, contained 77 and 100 percent silt and clay, and exhibited moderate and high plasticity.

Groundwater was not encountered during drilling or when the holes were checked after drilling on October 21, 2021. Groundwater is not expected to influence construction. Groundwater levels may fluctuate seasonally and rise in response to development, precipitation, landscape irrigation, changes in land-use.

Seismicity

The soil is not expected to respond unusually to seismic activity. According to the 2018 International Building Code (Standard Penetration Resistance method), and based upon the results of our investigation, we judge that the Seismic Site Class ranges between C and D. The soil is not expected to respond unusually to seismic activity and has low susceptibility to liquefaction.

SITE DEVELOPMENT

The on-site soils are suitable for reuse as new fill, provided they are free of debris, vegetation/organics, and other deleterious materials. Soil particles larger than about 3 inches in diameter should not be used for fill unless broken down. Imported fill should ideally consist of granular soil (sand) having a maximum particle size of 3 inches, less than 45 percent passing the No. 200 sieve, a liquid limit less than 30 and a plasticity index less than 15. Potential fill materials should be submitted to our office for approval.

Prior to fill placement, the ground surface should be scarified to a depth of at least 8 inches, moisture conditioned, and compacted to the criteria below. Subsequent fill should be placed in thin (8 inches or less) loose lifts, moisture conditioned to within 2 percent of optimum moisture content for sand and between optimum moisture and 3 percent above optimum for clay, and compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698).

We recommend utility trench backfill be placed and compacted as outlined above. Our experience indicates use of self-propelled compactors results in more reliable performance compared to fill compacted by an attachment on a backhoe or trackhoe. The upper portion of the trenches should be widened to allow the use of a self-propelled compactor. The placement and compaction of fill and

backfill should be observed and tested by a representative of our firm during construction.

Our experience indicates fill and backfill can settle, even if properly compacted to criteria provide above. Factors that influence the amount of settlement are depth of fill, material type, degree of compaction, amount of wetting and time. The degree of compression of properly compacted fill under its own weight may be about 1 percent of the fill depth.

If loose or soft fill/soils are encountered during construction, they should be removed and replaced with compacted fill or stabilized. Stabilization can likely be accomplished by crowding 1.5-inch to 3-inch nominal-size crushed rock into the soft subsoils until the base of the excavation does not deform significantly when compactive effort (a full-sized loader with full load) is applied.

Permanent slopes should be stable at inclinations of 3:1 (horizontal to vertical) or flatter. Use of flatter slopes (4:1) is preferable to control erosion. Shallower slopes can decrease erosion from run-off and sheet-flow. Seeding and re-vegetation can also be used to reduce erosion.

FOUNDATIONS

In our experience with solar array foundations, steel H-piles or pipe piles are the foundation systems typically used. We encountered stiff to very stiff clay underlain by weathered claystone and very hard sandstone at depths likely to support piles. H- or pipe-piles are considered appropriate provided that they can be installed deep enough to achieve the lateral resistance required by the structural engineer. Pile driving refusal may occur as shallower than 6 feet considering widely spaced borings.

On a preliminary basis, we performed lateral pile analysis, using LPile version 2019.11.09, to evaluate the available lateral soil resistance for 1 inch of deflection. Assuming free- and fixed-head conditions of W6x12 pile comprised of 36 ksi steel, we analyzed two soil conditions in the pile's strong direction including the shallowest bedrock condition (TH-1) and the softest soil and deepest bedrock conditions (TH-6). We assumed 4 feet of pile stick-up above grade and no lateral surcharge loads along the pile stick-up.

For the soil conditions at TH-1, we modeled pile lengths of 10 feet including stick-up which assumes pile driving refusal on bedrock at a depth of 6 feet. For the free head condition, the analysis indicated that 1-inch of deflection would result in a maximum applied shear in the pile of 7.8 kips and a maximum applied moment in the pile of 17.4 kips; the push over analysis indicated that 1-inch of deflection would result after a maximum applied shear of 3.9 kips at the pile head. For the fixed head condition at TH-1, the analysis indicated that 1-inch of deflection would result after a maximum applied shear in the pile of 10.5 kips and a maximum applied in the pile of 33.9 kips; the push over analysis indicated that 1-inch of deflection would result after a maximum applied shear at the pile head of 10.5 kips. If additional resistance is needed, pre-drilling may be necessary to achieve resistance of a driven piles.

For the soil conditions at TH-6, we modeled pile lengths of 14 feet including stick-up which assumes pile tipped in stiff clay at a depth of about 10 feet. For the free head condition at TH-6, the analysis indicated that 1-inch of deflection would result in a maximum applied shear in the pile of 5.9 kips and a maximum applied moment in the pile of 14.9 kips; the push over analysis indicated that 1-inch of deflection would result after a maximum applied shear of 3.2 kips at the pile head. For the fixed head condition at TH-6, the analysis indicated that 1-inch of deflection would result after a maximum applied shear in the pile of 9.2 kips and a maximum applied in the pile of 33.2 kips; the push over analysis indicated

that 1-inch of deflection would result after a maximum applied shear at the pile head of 9.2 kips. If additional resistance is needed, the piles should be up-sized and/or driven deeper. Design and construction criteria for driven steel H- and pipe-piles are provided below. The criteria were developed from analysis of field and laboratory data and our experience.

1. For the anticipated range of pile sizes, the tip capacity can be evaluated based on an allowable end pressure of 8,700 psf for piles tipped in clay and 25,000 psf for piles tipped in practical refusal conditions. Skin resistance below frost depth (30 inches) can be as 480 psf in the allowable case. Due to freeze-thaw, the upper 30 inches of the pile in ground should be neglected for load capacity. The “Laterally Loaded Piles” section gives soil data input for LPILE software.

2. Piles should be driven a minimum of 6 feet below approximate existing grade. Shallow, weathered to comparatively unweathered claystone and sandstone should be anticipated around TH-1, TH-3, and TH-4, on the west portion of the property. We should be notified if practical refusal occurs shallower than the design pile installation depth. We define “practical” refusal at this site as an average penetration of 0.25 inch per blow for the final 1 foot of pile penetration with a hammer delivering at least 20,000 foot pounds of energy per blow. The manufacturer's rated energy output of the hammer should be between 1,000 and 2,000 foot-pounds per square inch of steel section. The hammer for pile driving should be operated at manufacturers recommended stroke and speed when "practical refusal" is measured.

3. The maximum allowable pile capacity should not exceed the rated working stress for the chosen steel H-pile section.

4. The efficiency of the hammer and impact should be monitored during driving. The contractor should select a driving hammer and cushion combination which is capable of installing the selected piles without over-stressing the pile. The contractor should submit the pile driving plan and the pile hammer/cushion combination to the engineer for evaluation of the driving stress in advance of the pile installation.

5. Piles should be driven plumb to within plan tolerance, or battered as detailed by the structural engineer.

6. Groups of piles required to support concentrated loads will require an appropriate reduction of the estimated bearing capacity based on the effective envelope area of the pile group. This reduction can be avoided by spacing piles a distance of at least 3 diameters center to center. The following section Closely-Spaced Pile Reduction Factors contains detailed discussion of this issue.

7. CTL | Thompson should observe pile driving and keep the records of driving penetration resistance, pile length, and other factors that affect the performance of a pile foundation. This will permit us to confirm the piles are “driving” as we anticipated from our boring information.

Laterally Loaded Piles

Lateral load analysis of piles can be performed with the software analysis package LPILE by Ensoft, Inc. We believe this method of analysis is appropriate for piles with a pile length to diameter ratio of seven or greater. Suggested criteria for LPILE analysis are presented in the following table. The ε_{50} represents the strain corresponding to 50 percent of the maximum principal stress difference.

SOIL INPUT DATA FOR “LPILE”

Soil Type	Clay	Weathered Claystone	Sandstone Bedrock
Model Type	Stiff Clay w/o Free Water	Stiff Clay w/o Free Water	Sand (Reece)
Effective Unit Weight (pcf)	122	127.5	130
Cohesive Strength, c (psf)	2890	4780	0
Friction Angle, ø (degree)	-	--	46
Soil Strain, ε_{50} (in/in)	0.005	0.005	-
p-y Modulus, k_s (pci)	500	500	1450
p-y Modulus, k_c (pci)	200	200	-

Closely-Spaced Pile Reduction Factors

For axial loading, no reduction is needed for a minimum spacing of three diameters (center-to-center). At one diameter (piles touching), the skin friction reduction factor for both piles would be 0.5. End pressure values would not be reduced provided the bases of the piles are at similar elevations. Interpolation can be used between one and three diameters.

For lateral loading, no reduction is needed for piles in-line with the direction of lateral loads with a minimum spacing of six diameters (center-to-center) based upon the larger pile. If a closer spacing is required, the modulus of subgrade reaction for initial and trailing piles should be reduced. At a spacing of three diameters, the effective modulus of subgrade reaction of the first pile can be estimated by multiplying the given modulus by 0.6; for trailing piles in a line at three-diameter spacing, the factor is 0.4. Linear interpolation can be used for spacing between three and six diameters.

Reductions to the modulus of subgrade reaction can be accomplished in LPILE by inputting the appropriate modification factors for p-y curves. Reducing the modulus of subgrade reaction in trailing piles will result in greater computed deflections on these piles. In practice, a grade beam can force deflections of all piles to be equal. Load-deflection graphs can be generated for each pile by using the appropriate p-multiplier values. The sum of the piles lateral load resistance at selected deflections can be used to develop a total lateral load versus deflection graph for the system of piles.

For lateral loads perpendicular to the line of piles, a minimum spacing of three diameters can be used with no capacity reduction. At one diameter (piles touching) the piles should be analyzed as one unit. Interpolation can be used for intermediate conditions.

CORROSION

Electrical resistivity testing was conducted according to ASTM G57-78 on bulk samples from borings TH-2, TH-5, and TH-6 comprised of the upper 0-5 feet of auger cuttings. For Trial No. 1, the samples were tested at field moisture content and Trial No. 2 was performed under an elevated moisture condition.

ELECTRICAL RESISTIVITY TEST RESULTS BORING	Depth (Feet)	Trial No.	Moisture Content (%)	Resistivity (ohm-cm)
TH-2	0-5	1 (field moisture)	13.5	1,300
		2 (elevated moisture)	30.3	930
TH-5	0-5	1 (field moisture)	15.3	1,100
		2 (elevated moisture)	26.9	810
TH-6	0-5	1 (field moisture)	11.6	1,800
		2 (elevated moisture)	26.3	870

The Denver Water Department established apparent resistivity versus corrosion potential of the subsoils for their underground pipelines based on the region's soils. They concluded from their studies that apparent resistivity of less than 1,000 ohm-cm indicates severe corrosion potential for metal pipes; 1,000 ohm-cm to 2,500 ohm-cm indicates moderate corrosion potential; and greater than 2,500 ohm-cm indicates low corrosion potential. Using these guidelines, the near-surface soils can be considered to have moderate corrosion potential for soils near their field moisture content and high corrosion potential at an elevated moisture condition.

Laboratory tests for pH and chloride and sulfate concentrations were conducted. Test results are presented in the Table below. These results can be used along with electrical resistivity (see "Resistivity" section) to provide a basis to estimate the corrosive potential of the on-site soils.

PH, CHLORIDE, AND SULFATE TEST RESULTS

Boring	Depth (feet)	pH	Soluble Chloride Content (%)	Soluble Sulfate Content (%)
TH-2	0-5	8.2	<0.01	0.01
TH-5	0-5	8.1	<0.01	<0.01
TH-6	0-5	8.0	<0.01	<0.01

THERMAL RESISTIVITY

Thermal resistivity testing was performed in conformance with ASTM D 5334 on selected bulk samples. Silty, sandy clay was the predominant soil type encountered in the upper portion of our borings and was used for testing. Samples were tested at various remolded densities and moisture contents. The test data is presented in the table below.

THERMAL RESISTIVITY TEST RESULTS

Boring	Depth (feet)	Remolded Dry Density (pcf)	Moisture Content (%)	Sample Temperature	Thermal Resistivity	Correlation Coefficient
TH-2	0-5	104.4	11.8	21.15 °C	74.13 °C·cm/W	0.002
			Oven Dried	25.25 °C	142.8 °C·cm/W	0.013
		108.2	14.0	20.91 °C	79.63 °C·cm/W	0.008
			Oven Dried	27.12 °C	130.2 °C·cm/W	0.033
		107.0	16.4	20.95 °C	65.07 °C·cm/W	0.011
		100.6	18.4	21.04 °C	60.73 °C·cm/W	0.004
TH-5	0-5	103	12.4	21.10 °C	78.57 °C·cm/W	0.021
			Oven Dried	23.19 °C	153.9 °C·cm/W	0.010
		106.4	14.5	21.19 °C	68.12 °C·cm/W	0.019

Boring	Depth (feet)	Remolded Dry Density (pcf)	Moisture Content (%)	Sample Temperature	Thermal Resistivity	Correlation Coefficient
			Oven Dried	22.96 °C	139.8 °C·cm/W	0.008
		106.9	15.9	21.19 °C	58.95 °C·cm/W	0.007
		101.4	18.4	21.36 °C	67.50 °C·cm/W	0.011
TH-6	0-5	104.8	10.8	21.44 °C	94.91 °C·cm/W	0.030
		108.1	12.9	21.51 °C	66.39 °C·cm/W	0.016
			Oven Dried	22.59 °C	180.5 °C·cm/W	0.013
		108.6	14.7	21.60 °C	57.11 °C·cm/W	0.008
			Oven Dried	22.74 °C	204.3 °C·cm/W	0.024
		102.4	16.6	21.70 °C	55.94 °C·cm/W	0.006

UNPAVED ROADS

We understand unpaved roads are planned around and possibly between arrays. We assume that the unpaved drives will have very low traffic volumes and will serve lightly loaded maintenance vehicles after construction. Traffic volumes of less than 1 to 2 vehicles per week are anticipated after construction. The heaviest vehicles will likely access the roads during construction.

We recommend the unpaved roadways consist of at least 8 inches of gravel (such as ASTM C33 No. 57, No. 67, or No. 467) or CDOT Class 5 or 6 aggregate base course (ABC) for the gravel drives. Recycled asphalt or crushed concrete that meets CDOT Class 5 or 6 Aggregate Base Course Specifications may also be used. The use ASTM graded gavel or recycled asphalt usually results in less dust from traffic compared to CDOT aggregate base course or recycled concrete material. A combination of materials can also be used. If Class 5 or

6 ABC or recycled concrete are used, we suggest it be placed as the lower 4-inch lift and the upper lift should consist of gravel.

Water trapped in gravel or ABC can soften the roadway subgrade, reduce its strength, and decreasing the service life of the unpaved roads. The decreased service life is typically evident by rutting and/or shoving of the gravel in the sub-grade. Engineered design and proper grading can reduce the likelihood of water becoming trapped in the gravel. One alternative would be to design the unpaved roadway surface about 12 inches higher than adjacent graded such that water in trapped in the gravel will drain to surrounding areas and swales. Another alternative, if the grade recommendations cannot be met, would be to place geogrid on the prepared subgrade to help bridge areas that become softened and yielded.

Subgrade preparation should consist of 12 inches of scarification, moisture conditioning, and compaction in general accordance with the criteria in the "Site Development" section of this report. The prepared subgrade should be proof rolled using a full-loaded rubber-tire dump truck. A representative of our firm should be present to test compaction of prepared subgrade and to observe proof rolling.

CONCRETE

Concrete which comes into contact with soils can be subject to sulfate attack. We measured water soluble concentrations in three samples from this site. Concentrations were measured between less than 0.01 percent. Sulfate concentrations less than 0.1 percent indicate negligible exposure to sulfate attack for concrete which comes into contact with the subsoils according to the American Concrete Institute (ACI). ACI indicates Type I or Type II cement can be used for concrete which comes into contact with the subsoils.

In our experience, superficial damage may occur to the exposed surfaces of highly permeable concrete, even though sulfate levels are relatively low. To control this risk and to resist freeze-thaw deterioration, the water-to-cementitious material ratio should not exceed 0.5 for concrete in contact with soils that are likely to stay moist with soils which are likely to stay moist due to surface drainage or high water tables.

SURFACE DRAINAGE

Performance of foundations, flatwork, and gravel roads is dependent to a large degree on subsoil moisture conditions. The risk of wetting the subsoils can be reduced by carefully planned and maintained surface grading. The ground surface below the panels should slope to promote good drainage away from foundations. Positive surface drainage should be provided away from structures.

GEOTECHNICAL RISK

The concept of risk is an important aspect with any geotechnical evaluation, primarily because the methods used to develop geotechnical recommendations do not comprise an exact science. We never have complete knowledge of subsurface conditions. Our analysis must be tempered with engineering judgment and experience. Therefore, the recommendations presented in any geotechnical evaluation should not be considered risk-free. Our recommendations represent our judgment of those measures that are necessary to increase the chances that the structure and improvements will perform satisfactorily. It is critical that all recommendations in this report are followed during construction. Owners or property managers must assume responsibility for maintaining the structure and use appropriate practices regarding drainage and landscaping. Improvements after construction should be completed in accordance with

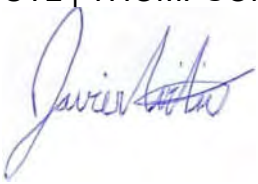
recommendations provided in this report and may require additional soil investigation and consultation.

LIMITATIONS

Our borings were spaced to obtain a reasonably accurate picture of subsurface conditions at the site. The borings are representative of conditions encountered only at the location drilled. Subsurface variations not indicated by our borings are possible.

We believe this investigation was conducted in a manner consistent with the level of care and skill ordinarily used by geotechnical engineers practicing under similar conditions. No warranty, express or implied, is made. If we can be of further service in discussing the contents of this report, or in the analysis of the influence of the subsurface conditions on the design of the facility or any other aspect of the proposed construction, please call.

CTL | THOMPSON, INC.



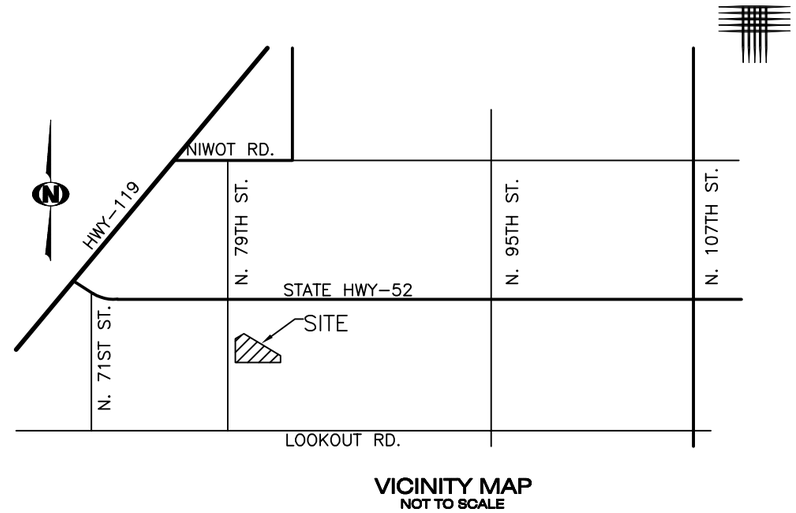
Javier Avitia-Herrera, E.I.T
Staff Engineer

Reviewed by:

Matt D. Monteith, P.E.
Senior Geotechnical Engineer, Associate

JAH:MDM/nn

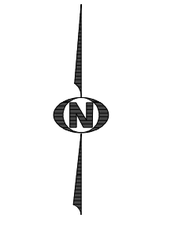
Via e-mail: jfitzpatrick@pivotenergy.net



VICINITY MAP
NOT TO SCALE

LEGEND:

TH–1 APPROXIMATE LOCATION OF EXPLORATORY BORING



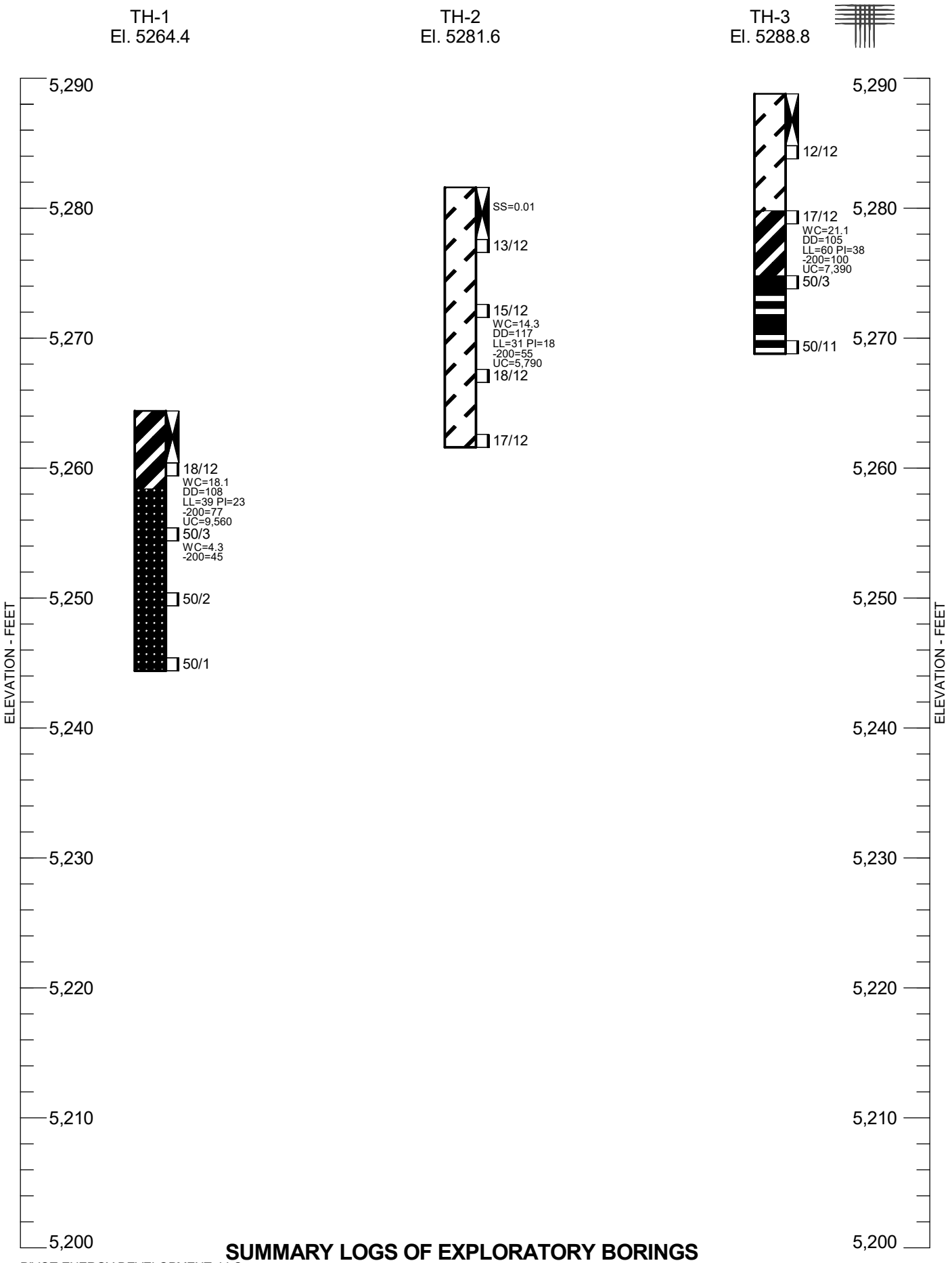
PIVOT ENERGY DEVELOPMENT, INC.
RODGERS PROPERTY SOLAR ARRAY
CTL|T Project No. DN51,309-125-R1

Locations of Exploratory Borings

Fig. 1

APPENDIX A

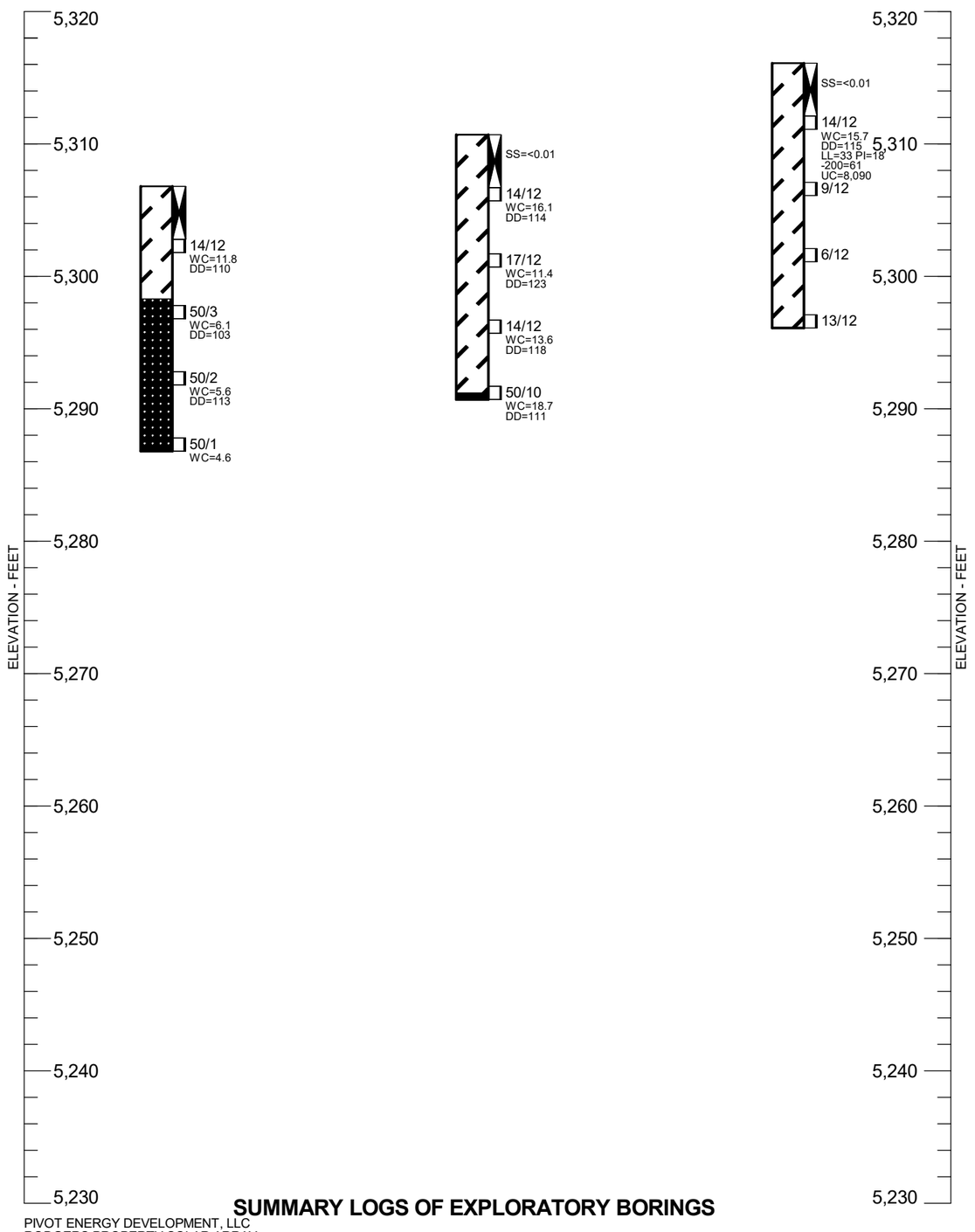
SUMMARY OF LOGS OF EXPLORATORY BORINGS



SUMMARY LOGS OF EXPLORATORY BORINGS

PIVOT ENERGY DEVELOPMENT, LLC
RODGERS PROPERTY SOLAR ARRAY
CTL|T PROJECT NO. DN51,309-125-R1

FIG. A- 1



SUMMARY LOGS OF EXPLORATORY BORINGS

PIVOT ENERGY DEVELOPMENT, LLC
RODGERS PROPERTY SOLAR ARRAY
CTL|T PROJECT NO. DN51,309-125-R1

LEGEND:

- CLAY, SANDY, SILTY, MEDIUM STIFF TO VERY STIFF, SLIGHTLY MOIST, BROWN, TAN (CL).
- WEATHERED CLAYSTONE, SLIGHTLY MOIST, DARK BROWN, TAN, RUST.
- BEDROCK, SANDSTONE, SILTY, VERY HARD, SLIGHTLY MOIST, WHITE, TAN, GRAY, RUST.
- BEDROCK, CLAYSTONE, HARD TO VERY HARD, SLIGHTLY MOIST TO MOIST, BROWN, TAN, GRAY.
- DRIVE SAMPLE. THE SYMBOL 18/12 INDICATES 18 BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE A 2.5-INCH O.D. SAMPLER 12 INCHES.
- BULK SAMPLE COLLECTED FROM AUGER CUTTINGS.

NOTES:

1. THE BORINGS WERE DRILLED ON OCTOBER 15, 2021 USING 4-INCH DIAMETER, CONTINUOUS-FLIGHT SOLID-STEM AUGER AND TRUCK-MOUNTED CME-45 DRILL RIG.
2. GROUNDWATER WAS NOT ENCOUNTERED DURING THIS INVESTIGATION.
3. WC - INDICATES MOISTURE CONTENT (%).
   DD - INDICATES DRY DENSITY (PCF).
   LL - INDICATES LIQUID LIMIT.
   PI - INDICATES PLASTICITY INDEX.
   -200 - INDICATES PASSING NO. 200 SIEVE (%).
   UC - INDICATES UNCONFINED COMPRESSIVE STRENGTH (psf).
   SS - INDICATES WATER-SOLUBLE SULFATE CONTENT (%).
4. THESE LOGS ARE SUBJECT TO THE EXPLANATIONS, LIMITATIONS AND CONCLUSIONS CONTAINED IN THIS REPORT.

FIG. A- 2

TABLE B-I
LABORATORY TEST RESULTS

TABLE B - I

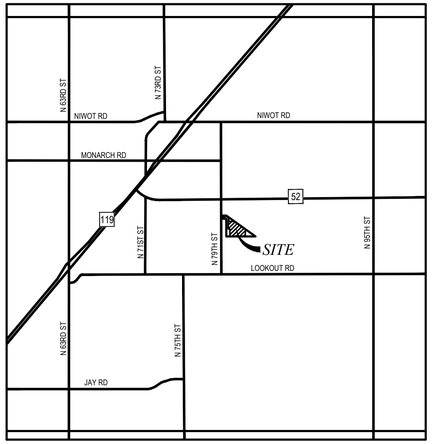
SUMMARY OF LABORATORY TEST RESULTS

BORING	DEPTH (ft)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	ATTERBERG LIMITS LIQUID LIMIT	ATTERBERG LIMITS PLASTICITY INDEX	UNCONFINED COMPRESSIVE STRENGTH (psf)	SOLUBLE SULFATE CONTENT (%)	PASSING NO. 200 SIEVE (%)	SOIL RESISTIVITY (@ MOISTURE %)	SOIL PH	SOIL TYPE
TH-1	4	18.1	108	39	23	9,560		77			WEATHERED CLAYSTONE
TH-1	9	4.3						45			SANDSTONE
TH-2	0-5						0.01		1300 @ 13.5, 930 @ 30.3	8	CLAY, SANDY (CL)
TH-2	9	14.3	117	31	18	5,790		55			CLAY, SANDY (CL)
TH-3	9	21.1	105	60	38	7,390		100			WEATHERED CLAYSTONE
TH-4	4	11.8	110								CLAY, SANDY (CL)
TH-4	9	6.1	103								SANDSTONE
TH-4	14	5.6	113								SANDSTONE
TH-4	19	4.6									SANDSTONE
TH-5	0-5						<0.01		3000 @ 9.8, 810 @ 26.9, 1100 @ 15.3	8	CLAY, SANDY (CL)
TH-5	4	16.1	114								CLAY, SANDY (CL)
TH-5	9	11.4	123								CLAY, SANDY (CL)
TH-5	14	13.6	118								CLAY, SANDY (CL)
TH-5	19	18.7	111								CLAYSTONE
TH-6	0-5						<0.01		1800 @ 11.6, 870 @ 26.3	8	CLAY, SANDY (CL)
TH-6	4	15.7	115	33	18	8,090		61			CLAY, SANDY (CL)

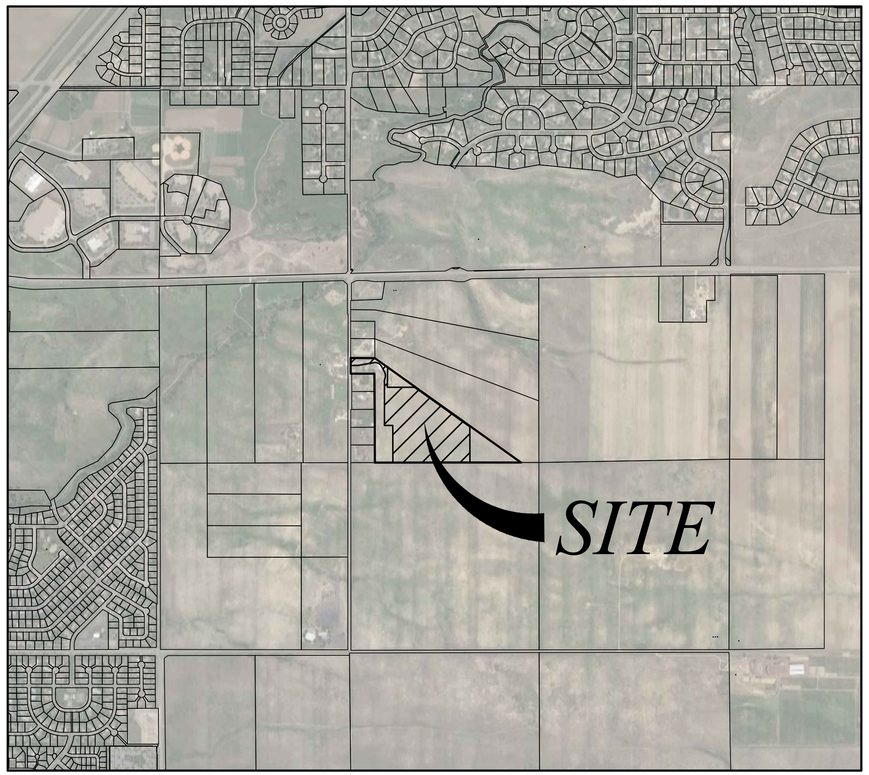
PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



VICINITY MAP
SCALE 1" = 5000'



OVERALL SITE AREA
SCALE 1" = 1000'

SITE DATA

PARCEL AREA: ±36.02 ACRES
PROJECT AREA: ±21.89ACRES
INDUSTRY STANDARD PV MODULES
INDUSTRY STANDARD STRING INVERTERS
INDUSTRY STANDARD SINGLE-AXIS TRACKING SYSTEM
ACCESS PERMIT NUMBER: EXISTING
ZONING: A_AGRICULTURAL

±15,000 MODULES

Sheet List Table

SHEET NO.	SHEET DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS
3	SITE PLAN
4	GRADING AND EROSION CONTROL PLAN
5	SITE DETAILS (1 OF 3)
6	SITE DETAILS (2 OF 3)
7	SITE DETAILS (3 OF 3)

LEGEND

- EX. MAJOR CONTOUR (-5350-)
- EX. MINOR CONTOUR (-5340-)
- 8' HIGH GAME FENCE
- SETBACK LINE
- PROJECT BOUNDARY
- PV ARRAY
- INVERTER PAD
- TRANSFORMER PAD
- GRAVEL FIRE LANE & ACCESS ROAD

LEGAL DESCRIPTION:

36.17 ACS M/L IN NW 1/4 6-1N-69 PER DEED 1706934
SPLIT FROM ID 56420 PER DEED 1706934

BENCHMARK:

BASED ON SURVEY COMPLETED AT THE TIME OF BUILDING PERMIT

CASE NUMBER: _____

APPLICANT
PIVOT ENERGY
1750 15TH ST, SUITE 400
DENVER, CO 80202
CONTACT: KYLE SUNDMAN
(888) 734-3033

ENGINEER
ENERTIA CONSULTING GROUP, LLC
1515 MARKET STREET
DENVER, COLORADO 80202
CONTACT: RICK HAGMAYER, PE
(720) 792-3917

SURVEYOR
GREEN MOUNTAIN SURVEYING
1195 EDINBORO DR
BOULDER, CO 80305
CONTACT: SAM KNIGHT
(303) 601-8588

FOR BURIED UTILITY INFORMATION
THREE (3) BUSINESS DAYS BEFORE YOU DIG
CALL 811
(OR 1-800-922-1987)
UTILITY NOTIFICATION CENTER OF COLORADO (UNCC)
WWW.UNCC.ORG

NO. | DATE | REVISION | DR | SK | CHK | APVD
DSGN PIVOT | | | | | RH | RH

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST, SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

COVER SHEET

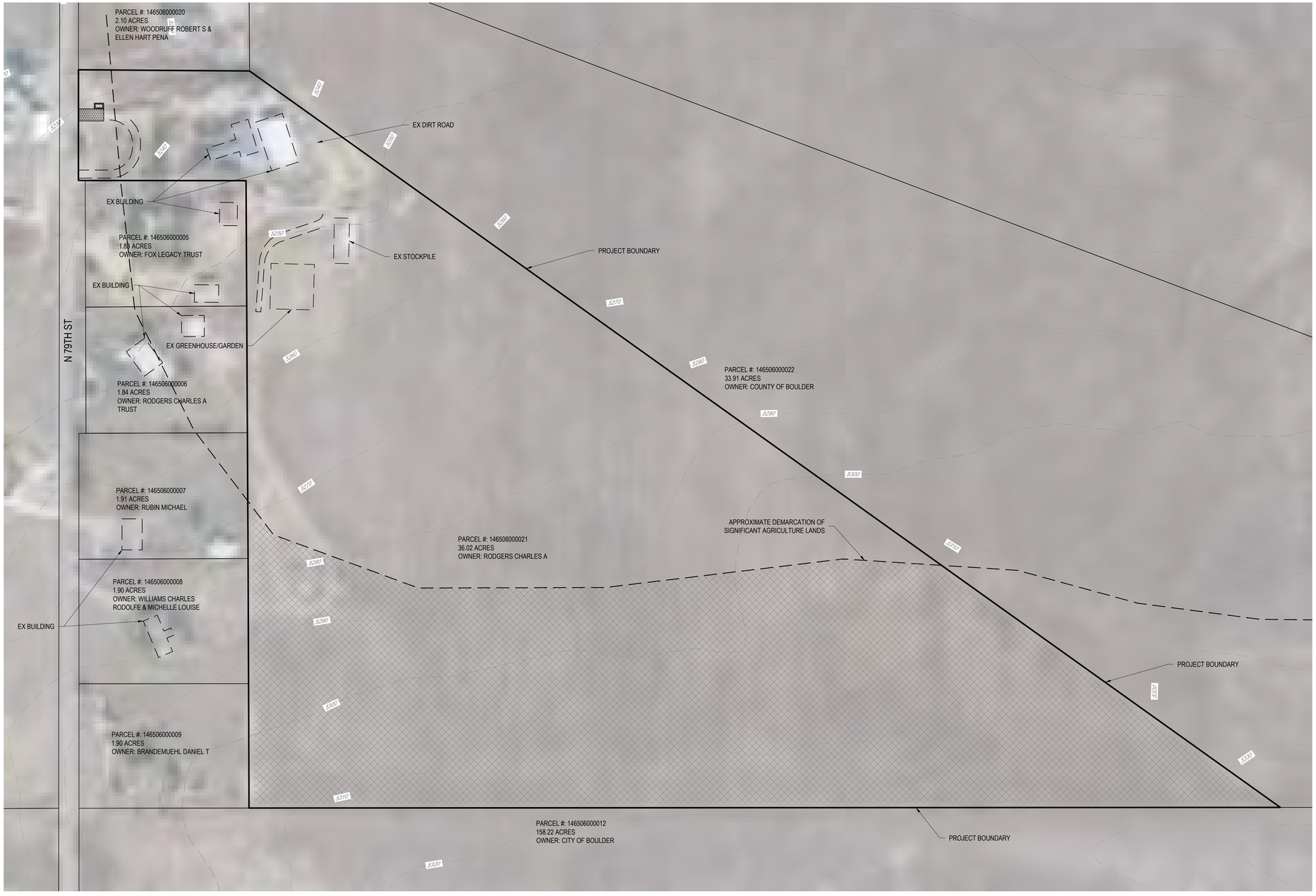
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE AUGUST 2, 2022
FILE
DWG
SHEET 1 OF 7

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



LEGEND

- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- 8' HIGH GAME FENCE
- SETBACK LINE
- PROJECT BOUNDARY
- PV ARRAY
- INVERTER PAD
- TRANSFORMER PAD
- GRAVEL FIRE LANE & ACCESS ROAD

NOTES

1. A LAYOUT OF THE SOLAR FACILITY IS NOT YET CONCEPTUALIZED. FINAL LOCATIONS FOR EQUIPMENT AND ALL OTHER FACILITY COMPONENTS MAY BE ANYWHERE WITHIN THE SOLAR SITING ENVELOPE HATCHED ON THESE PLANS.
2. TREES WERE NOT OBSERVED WITHIN THE MAJORITY OF PROPOSED SOLAR ARRAY AREAS. IF NECESSARY, TREES AND SHRUBS ARE TO BE REMOVED TO ALLOW FOR THE INSTALLATION OF THE ARRAYS AND TO ELIMINATE SHADING.
3. ENERTIA CONSULTING GROUP, LLC ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. ANY UTILITIES SHOWN ON THIS DRAWING HAVE BEEN LOCATED PER CURSORY VISUAL OBSERVATION AND NOT BASED ON SURVEY DATA. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO MOBILIZATION.
4. AN 8 FT GAME FENCE WILL BE INSTALLED TO SURROUND THE SOLAR ARRAYS. GATES WILL BE PROVIDED FOR ACCESS.

N

0' 50 100 200

SCALE: 1"=100'

FOR BURIED UTILITY INFORMATION
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UTILITY NOTIFICATION CENTER OF COLORADO (UNCC)
WWW.UNCC.ORG

CASE NUMBER: _____

NO.	DATE	REVISION	CHK	APVD
DSGN	PIVOT	DR	SK	RH	RH

ENERTIA
CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST. SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

EXISTING CONDITIONS

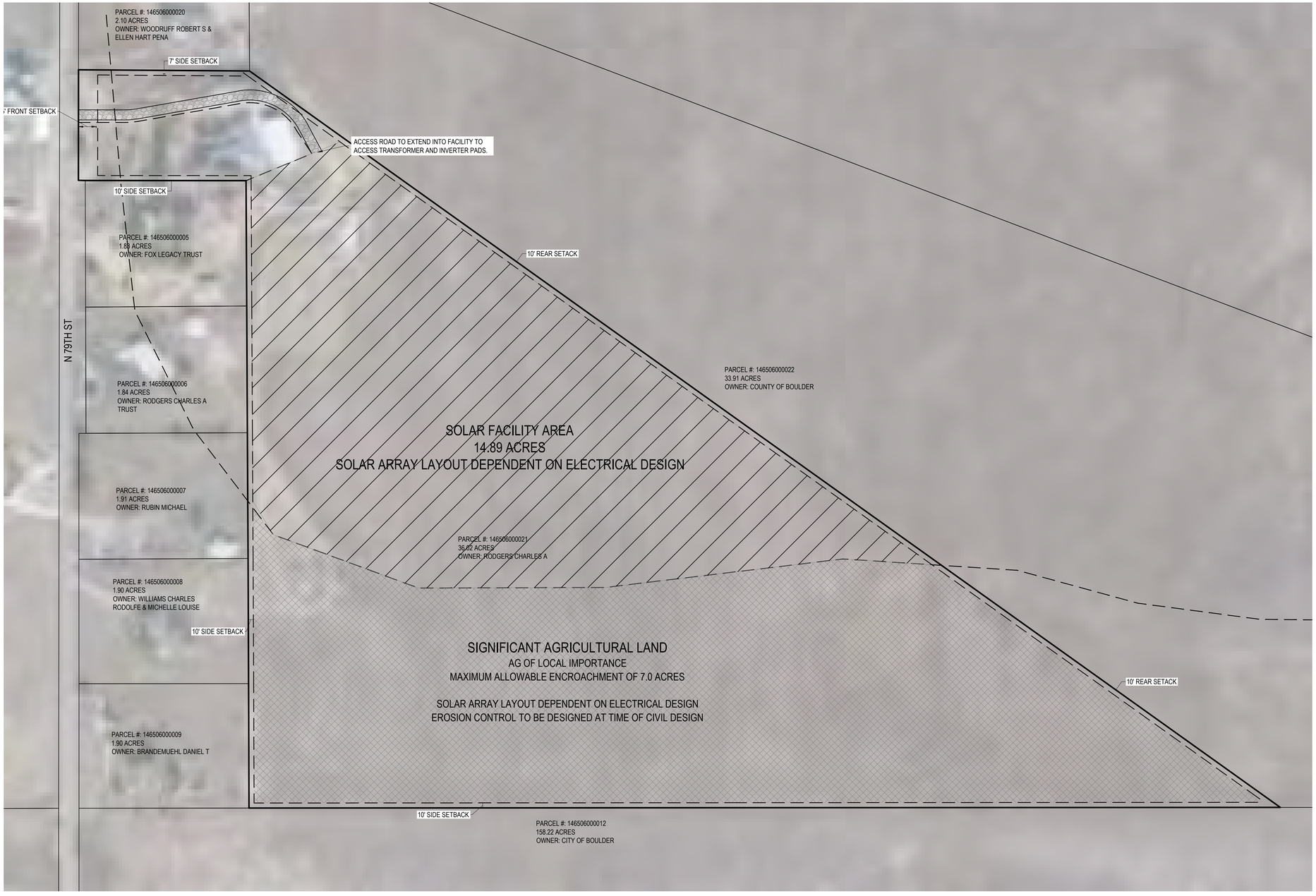
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE	AUGUST 2, 2022
FILE	
DWG	
SHEET	2 OF 7

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



LEGEND

- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- 8' HIGH GAME FENCE
- SETBACK LINE
- PROJECT BOUNDARY
- PV ARRAY
- INVERTER PAD
- TRANSFORMER PAD
- GRAVEL FIRE LANE & ACCESS ROAD

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N

0' 50 100 200

SCALE: 1"=100'

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NO.	DATE	REVISION	CHK	APVD
DSGN	PIVOT	DR	SK	RH	RH

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST. SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

SITE PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 _____ SCALE

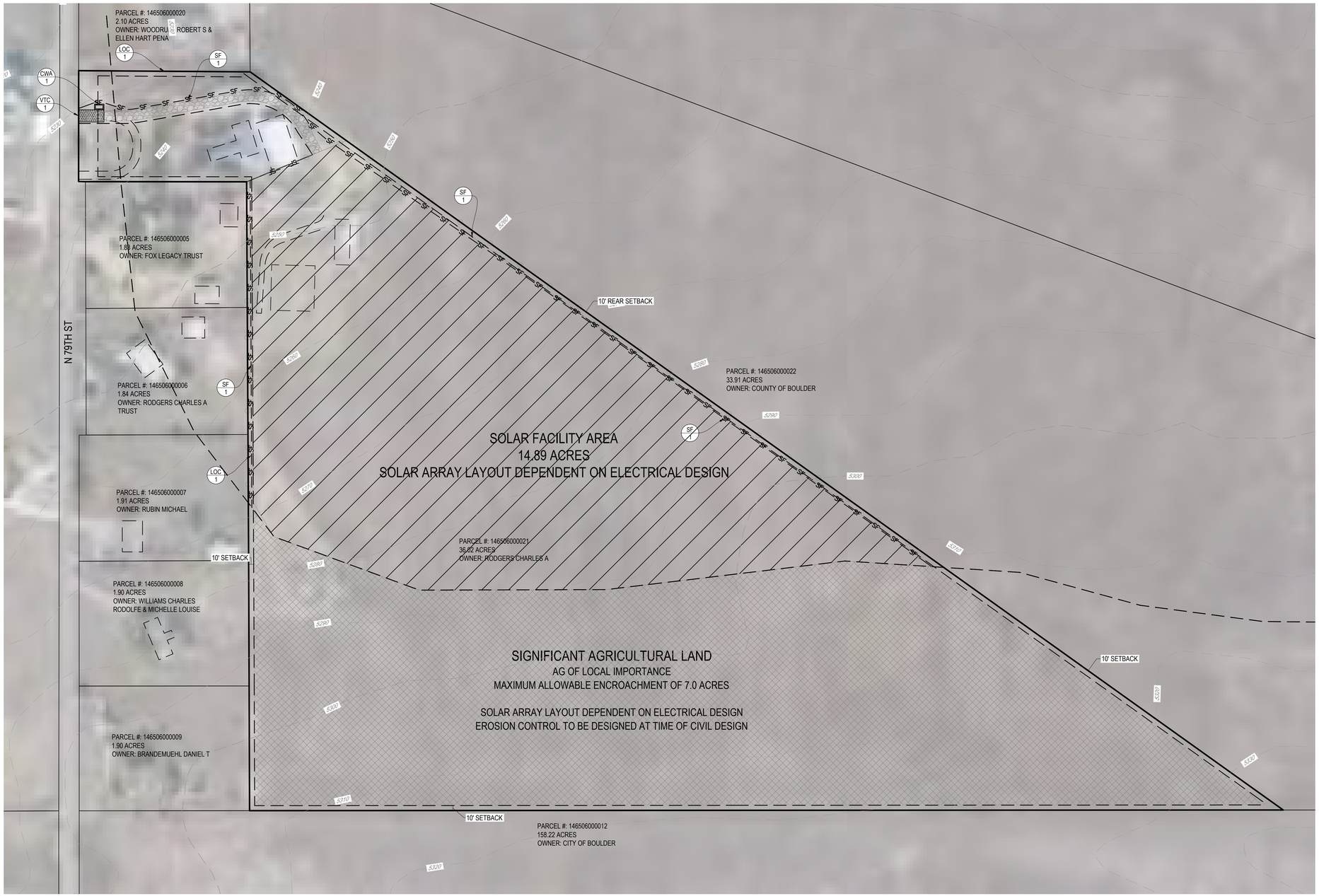
DATE	AUGUST 2, 2022
FILE	
DWG	
SHEET	3 OF 7

CASE NUMBER: _____

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



LEGEND

- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- 8' HIGH GAME FENCE
- SETBACK LINE
- PROJECT BOUNDARY
- PV ARRAY
- INVERTER PAD
- TRANSFORMER PAD
- GRAVEL FIRE LANE & ACCESS ROAD

GEC LEGEND

SILT FENCE	SF	SF
LIMITS OF CONSTRUCTION	LOC	
VEHICLE TRACKING CONTROL	VTC	
CONCRETE WASHOUT	CWA	

NOTES

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4. AN 8 FT GAME FENCE WILL BE INSTALLED TO SURROUND THE SOLAR ARRAYS. GATES WILL BE PROVIDED FOR ACCESS.

LIMITS OF CONSTRUCTION: 21.89 ACRES
LIMITS OF DISTURBANCE: <1 ACRE

N

0' 50 100 200
SCALE: 1"=100'

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NO.	DATE	REVISION	CHK	APVD
DSGN	PIVOT	DR	SK	RH

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST, SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

GRADING AND EROSION CONTROL PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 SCALE

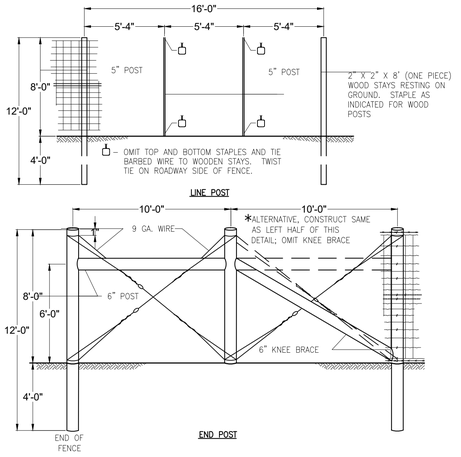
DATE	AUGUST 2, 2022
FILE	
DWG	
SHEET	4 OF 7

CASE NUMBER: _____

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

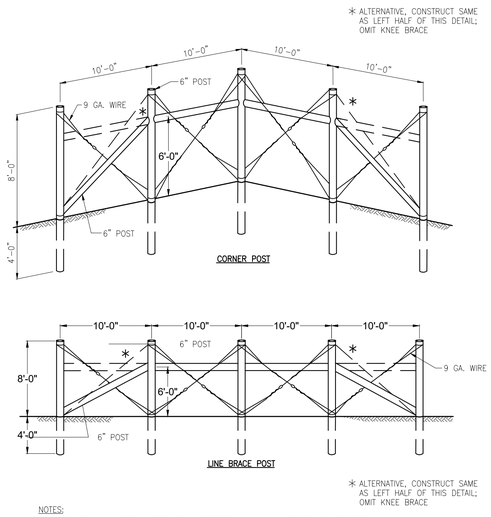
CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



NOTES:
1. THIS DRAWING IS FOR INFORMATION PURPOSES ONLY AND NOT FOR CONSTRUCTION.
2. DO NOT SCALE DRAWINGS.

DEER FENCE
LINE & END POST DETAILS



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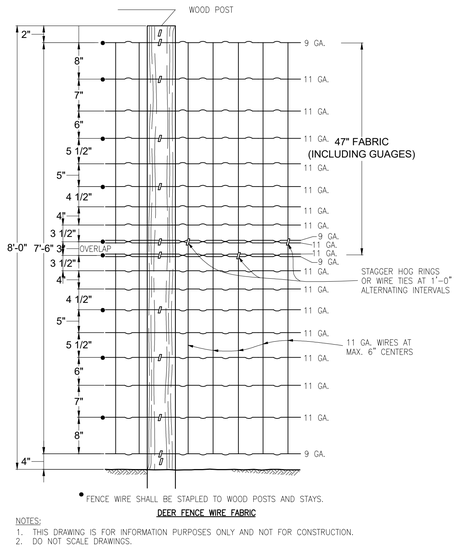
DEER FENCE
CORNER & LINE BRACE POST DETAILS



NOTES:
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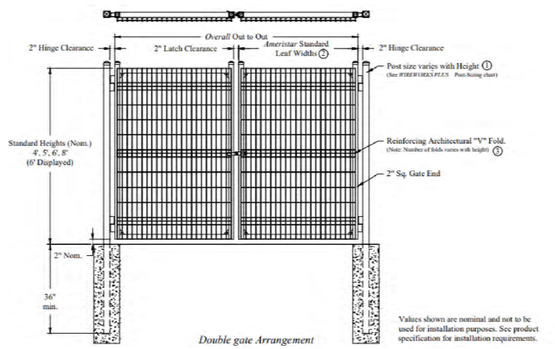
DEER FENCE
WIRE FABRIC FENCE DETAIL



DEER FENCE
FENCING GATE DETAIL

NOTES:
1. THIS DRAWING IS FOR INFORMATION PURPOSES ONLY AND NOT FOR CONSTRUCTION.
2. DO NOT SCALE DRAWINGS.
3. AT EACH LOCATION WHERE AN ELECTRIC TRANSMISSION, DISTRIBUTION OR SECONDARY LINE CROSSES FENCE, THE CONTRACTOR SHALL FURNISH AND INSTALL A GROUND CONFORMING TO SECTION 9 OF THE NATIONAL ELECTRIC SAFETY CODE (NBS HANDBOOK 81).
4. END POST, CORNER POST, AND LINE BRACE POST SHALL BE ASSEMBLED BY THE UNIT AND PAID FOR AS SUCH. ALL WORK AND MATERIAL ASSOCIATED WITH EACH ASSEMBLY, SHALL BE INCLUDED IN THE UNIT PRICE FOR THAT ASSEMBLY.
5. LINE BRACE POSTS SHALL BE SPACED AT 400 FT INTERCALS, WHERE FENCING IS CONTINUOUS AND WHERE END, CORNER & LINE BRACE POSTS ARE NOT SPECIFIED.
6. ALL LINE POSTS SHALL BE 5"ø MIN. AND 12' LONG. ALL END, CORNER, AND LINE BRACE POSTS SHALL BE 6"ø MIN. AND 12' LONG. ALL POSTS AND BRACES SHALL BE TREATED PER 710.07.
7. WOODEN STAYS SHALL BE UNTREATED NATIVE TIMBER. BOTTOM ENDS OF STAYS SHALL REST ON THE NATURAL GROUND AND SHALL BE WIRED AND STAPLED AS INDICATED.
8. BARBED WIRE SHALL BE DOUBLE WRAPPED AND TIED OFF AT END POSTS, CORNER POSTS, AND LINE BRACE POSTS. WOVEN WIRE SHALL BE SINGLE WRAPPED AND TIED OFF. FENCE TO BE CONTINUED, SHALL BE RESTARTED IN LIKE MANNER.
9. FENCE MAY BE PLACED ON EITHER THE ROAD SIDE OR FIELD SIDE OF POSTS, DEPENDING ON LOCAL CONDITIONS; I.E., ON CURVES, THE WIRE SHOULD BE PLACED ON THE SIDE WHICH WOULD RESULT IN THE LEAST AMOUNT OF TENSION ON THE STAPLES. THIS WILL ALSO APPLY WHERE WIND DRIFT OR OTHER CONDITIONS WOULD EXERT UNUSUAL PRESSURE AGAINST THE WIRE.
10. WHERE CONCRETE STRUCTURES ARE USED AS A DEER PASS, THE FENCE SHALL END AT EYEBOLTS IN WINGS OF THE STRUCTURE. EYEBOLTS IN FRESH CONCRETE SHALL BE MADE OF 1/2" ROUND BARS AND EMBEDDED A MIN OF 6" WITH A HOOKED OR BENT END. IN EXISTING CONCRETE, THE 1/2" ROUND BARS SHALL BE DEFORMED AND GROUTED INTO DRILLED HOLES. EYEBOLTS SHALL HAVE A MINIMUM OF 1" INSIDE EYE DIA AND SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. COST OF EYEBOLTS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR FENCING.
11. WOVEN WIRE FENCE FABRIC SHALL CONFORM TO AASHTO M 279 (ASTM A 116) DESIGN NO. 1047-6-11 WITH CLASS 1 COATING.
12. STEEL BARBED WIRE SHALL CONFORM TO AASHTO M 280 (ASTM A 121) 12 1/2 GA. WITH CLASS 1 COATING.
13. ALL FENCE WIRE TIES, BRACE WIRES, STAPLES AND OTHER WIRE APPURTENANCES SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232.
14. 6" DOUBLE ACTING SPRING DOOR HINGE WITH FLAT BUTTON TIPS CUT IN TWO SHALL BE USED AS A SINGLE SWING HINGE AND BE PROVIDED WITH A GREASING NIPPLE AND WELDED TO SUPPORT PLATE.
15. TINES SHALL BE MOLDED IN ONE PIECE OF STEEL (AASHTO M 169, GRADE 1050), WITH NO WELDS ALLOWED.
16. DEER GATE AND TOP BRACES SHALL BE PAINTED WITH GREEN PAINT CONFORMING TO 708.03 AND COLOR NO. 14109 OF FEDERAL STANDARD 595B.
17. GAP CLOSURE: EXCEPT FOR DEER GATES, CONSTRUCT FENCE WITHOUT OPENINGS OR GAPS, ESPECIALLY AT STRUCTURES, CLIFFS, AND IRREGULAR GROUND. WHEN A 6" OR LARGER GAP EXISTS BELOW THE NORMAL BOTTOM FENCE WIRE, THE GAP SHALL BE CLOSED ACCORDING TO THE CLOSURE DETAIL. ALL EXTRA MATERIAL USED FOR GAP CLOSURES OR ANY TYPE OR LOCATION SHALL BE INCLUDED IN THE WORK.

DEER FENCE
NOTES

CASE NUMBER: _____

NO.	DATE	DSGN	DR	SK	CHK	RH	APVD	RH
		PIVOT			REVISION			

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST, SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

SITE DETAILS (1 OF 2)

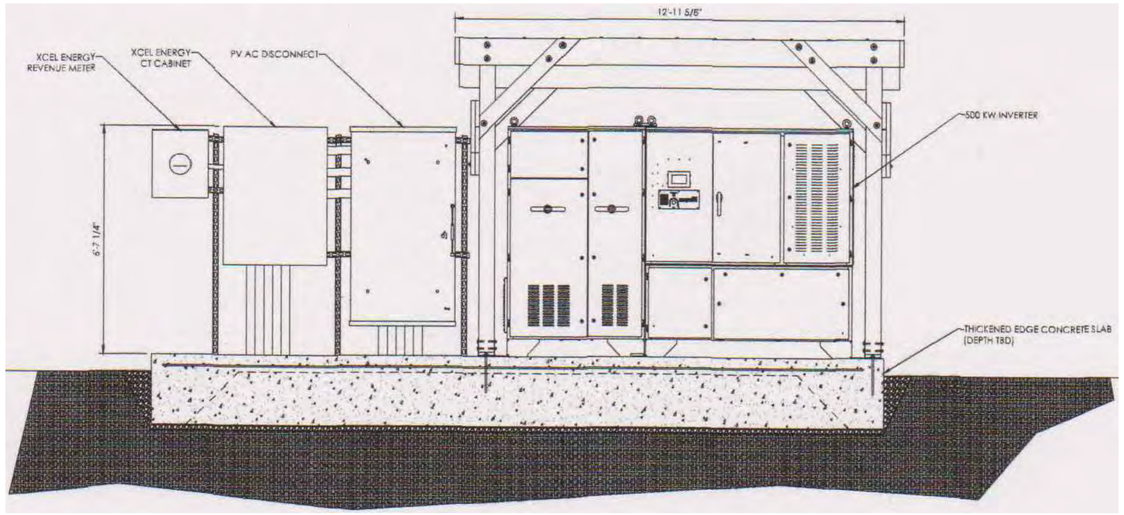
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE	AUGUST 2, 2022
FILE	
DWG	
SHEET	5 OF 7

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

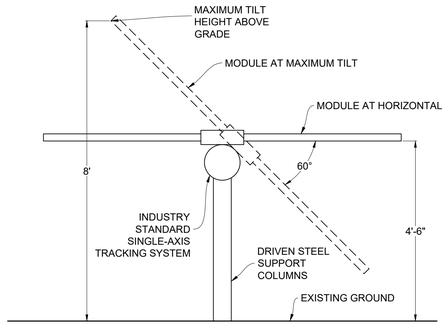
CASE NUMBER: _____

LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO



INVERTER MOUNTED ON CONCRETE PAD (TYP)

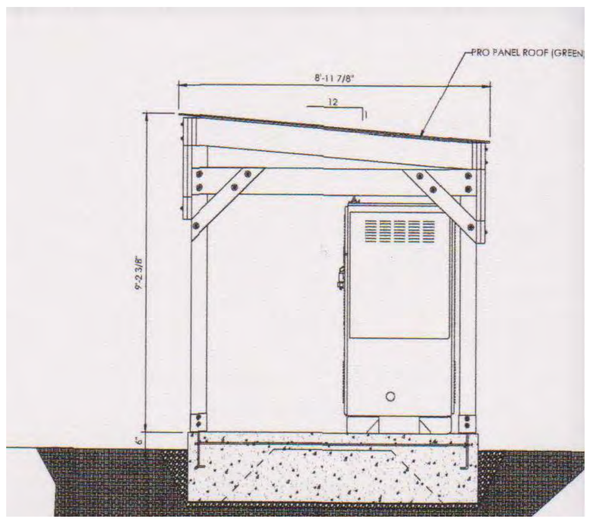
NOT TO SCALE

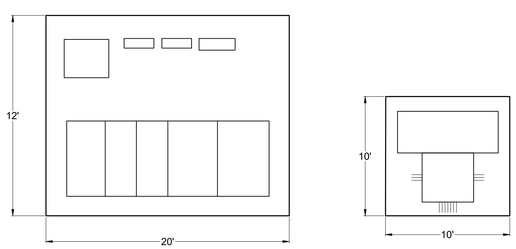


NOTE: FINAL DIMENSIONS SUBJECT TO FINAL DESIGN.

PV ARRAY RACKING SYSTEM

NOT TO SCALE





EQUIPMENT PAD LAYOUT

NOT TO SCALE

NO.	DATE	REVISION			
DSGN	PIVOT	DR	SK	CHK	RH	APVD	RH

ENERTIA CONSULTING GROUP LLC
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DENVER, COLORADO 80202

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PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

SITE DETAILS (2 OF 3)

VERIFY SCALE
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0 SCALE

DATE	AUGUST 2, 2022
FILE	
DWG	
SHEET	6 OF 7

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN

CASE NUMBER: _____

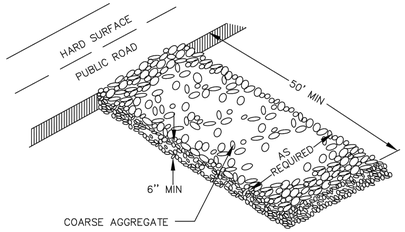
LOCATED IN SECTION 06, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO

DEFINITION

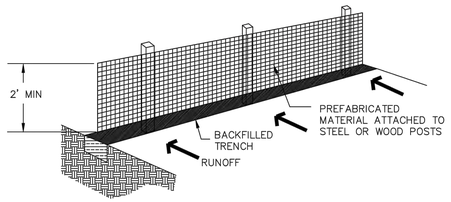
A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE

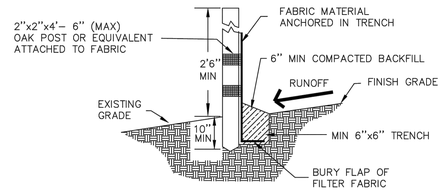
PURPOSE

TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF



DRAWN BY: JSH CHECKED BY: RJH APPROVED BY: DIRECTOR OF PUBLIC WORKS	CITY OF BOULDER, COLORADO TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	ISSUED: JULY 2, 1998 REVISED: OCT. 17, 2000 DRAWING NO. 7.30	





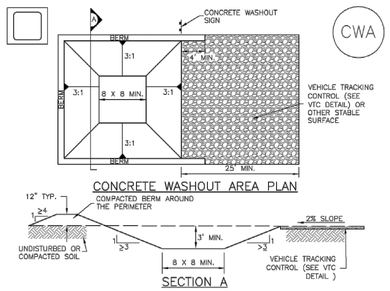
DETAIL

NOTES:

1. SILT FENCE SHALL BE INSTALLED BEFORE ANY EARTH REMOVAL OR EXCAVATION TAKES PLACE.
2. SET POSTS MAXIMUM 8 FEET ON CENTER AND EXCAVATE 6"x6" TRENCH UPSLOPE ALONG THE LINE OF POSTS.
3. ATTACH FILTER FABRIC TO POSTS AND EXTEND IT INTO TRENCH.
4. BACKFILL AND COMPACT EXCAVATED SOIL.

DRAWN BY: JSH CHECKED BY: RJH APPROVED BY: DIRECTOR OF PUBLIC WORKS	CITY OF BOULDER, COLORADO PREFABRICATED SILT FENCE INSTALLATION	ISSUED: JULY 2, 1998 REVISED: OCT. 17, 2000 DRAWING NO. 7.26	

Concrete Washout Area (CWA) MM-1



CWA–1, CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –CWA INSTALLATION LOCATION.
2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MM-1 Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

1. 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.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER–TIGHT CONTAINER AND DISPOSED OF PROPERLY.
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY 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.

Boulder County

Boulder County Land Use Department Publications

Revegetation

Land Use Department
Courthouse Annex Building
2045 13th Street
PO Box 471
Boulder, CO 80302

Planning Division:
Phone: 303-441-3930
Fax: 303-441-4856
Email: planner@bouldercounty.org
Website: www.bouldercounty.org/lu/

Office Hours:
Monday — Friday 8:00 a.m. to 4:30 p.m.

Revegetation

Assuring the proper revegetation of disturbed areas is an integral part of many Boulder County reviews. Successful revegetation is essential to slow soil erosion, repair scarring from cut and fill slopes, and to help deter noxious weeds. This handout is meant to guide you through some common requirements placed on projects in the county.

The Revegetation Plan

Use a copy of your site plan to delineate the areas you expect to be disturbed by construction (see example). Common disturbances include areas around the house, along the driveway, utility corridors, septic system, and staging/construction parking areas. The locations of silt fences and straw-bale barriers, if necessary, must also be shown. Each of the disturbed areas must show the method of revegetation including:

Seed List

In the Revegetation Plan, attach a list containing each type of seed and where it is to be used.

- Boulder County always encourages the use of native vegetation, and mountain projects above 5500 feet are required to use native grasses. Depending on location, some plains projects will also be required to use native grasses. This list must include seed application rates.
- Please refer to the attached recommended seed mixes and the document, "*Suggested Native Plants for Horticultural Use on the Front Range of Colorado*" as a guide. Some sources for plant material are included. Boulder County will not accept any seeds from the section titled, "*Plant Species Not to Use…*"

Slope and Revegetation

The degree of attention needed to successfully revegetate the site depends greatly on the steepness of slopes. This table shows which measures, in addition to seeding, should be included in the Revegetation Plan. Tractors, drill seeders, and mowers can operate on slopes of 3:1 or flatter, which makes such grades optimal for seedbed preparation, planting and maintenance.

Degree of Slope*	Soil Prep	Topsoil/ Stockpile	Mulch	Matting/ Hydromulch
Level to 3:1	✔	✔		
3:1 to 2:1	✔	✔	✔	
2:1 to 1.5:1	✔	✔	✔	✔

* See Determining Steepness of Grade section on page 3 for degree of slope.

Topsoil/Stockpile

Stockpiling entails scraping off the topsoil — or the uppermost, fertile layer of the soil — and setting it aside until needed. After construction, this topsoil should be spread out to a depth of 3" or more on all surfaces that are to be seeded. The addition of fertilizer is usually unnecessary for native grasses, and it can promote the growth of annual weeds.

Soil Preparation

A good seedbed is crucial to successful revegetation. Slopes should be graded to avoid concentrated water flow and subsequent erosion. If possible, any areas severely compacted by machinery and equipment during construction should be ripped by tractor or backhoe to loosen soils and allow for water infiltration and root growth. Clods larger than 3" should be broken, and any weeds controlled by tilling the soil.

Seeding

Seeding can take place from the fall until spring, including the winter months as long as the soil is workable. Many native seeds require a period of cold to germinate and are not harmed by being in the soil over winter. The best time window for seeding on the plains is November 1 to March 31. At higher elevations, seeding can be done later into the spring and early summer.

If possible, drill seeding will be the best seeding method. If the area is too small or steep for a tractor to operate, broadcasting the seed by hand or with a mechanical spreader is acceptable. Boulder County does not recommend hydroseeding; it does not work in our arid climate. In contrast, hydromulching after seeding is fine. Pay close attention to the recommended rates of seed application. Broadcast seed needs to be applied at double the rate of drilled seed. After broadcasting, seed needs to be raked in lightly by hand to provide better soil contact. Not all the seed needs to be buried; it is fine if some is still visible.

Mulch

For steeper slopes, a mulch is necessary to keep the seed and topsoil in place. Mulch also provides shade to the seedlings and helps to retain soil moisture. On slopes of 3:1 or less, the mulch can be weed-free straw. The straw should be applied at 1.5 to 2 tons per acre. This is roughly one standard straw bale per 650 square feet. Do not mulch too thickly; some of the soil should still be visible to allow solar warming. If a tractor is available the straw can be "crimped" into the soil with a crimping tool. Crimping orients some of the straw vertically and keeps it in place, minimizing wind erosion. This can be simulated by hand using a shovel and jabbing the straw into the ground. Hydromulching is another option for larger areas. For small areas in the mountains, spreading pine needles over raked-in seed is acceptable.

Erosion Matting

Slopes steeper than 2:1 require erosion matting. Common types of matting include coir (coconut or jute fiber), straw, aspen fibers, or a blend of these. Steeper slopes will require more durable blankets. Talk to a vender about which product will work for your situation. When possible, specify biodegradable netting since this breaks down more quickly and is less of a hazard to wildlife.

Installation of Matting

Installation procedure:

1. Remove any material larger than 3" in diameter.
2. At the top of the slope, dig a trench the width of the blanket, about 6" deep. Fold over the edge of the blanket and secure in the trench with landscape staples. Place soil back into trench and compact.
3. Roll out matting downhill, keeping it straight and fairly tight but not so tight that it is lifted over any low spots. Fasten with landscape staples every 3' on the edges and across the middle. Follow manufacturer's directions if provided.
4. At the end of a roll of matting, dig another trench and fasten the end of the blanket as you did the top edge, including staples.
5. Overlap side-by-side blankets by 12" minimum, and staple.

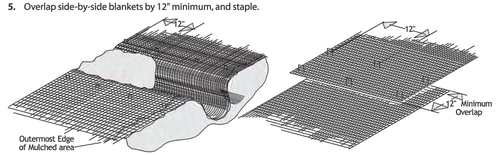


Diagram of Matting Installation.

- **Irrigation** – If you have seeded at the correct time of the year, and there is normal precipitation, then supplemental irrigation is not necessary. However, if it is a dry spring, irrigating seeds the first year will improve success.
- **Weeds** – Weeds will likely appear along with, or before, grass seedlings. There are weed seeds in the soil waiting for a disturbance that allows them to grow. If weeds are so thick that they are out-competing grasses, they can be mowed to a height of 8". Do not mow them close to the ground since this can harm the new grasses.
- **Time** – Be patient. Native grasses expend a lot of energy the first year in putting down roots. Because of this, the plants may look small after one year of growth. This is normal. It may take two growing seasons and good moisture before adequate results are seen.

Site Disturbance

The best Revegetation Plan is thoughtful about altering as little of the site as possible. Fewer disturbances translate into less time and money for revegetation. The foremost consideration in this regard is the selected project location on the site. Level building sites require less alteration to the topography. Also, it is helpful to show on the Revegetation Plan which areas are targeted for specific preservation (such as clarifying which trees will not be cut), and what measures will be taken to limit disturbances from construction (such as erecting construction fences to keep machinery away from sensitive areas).

Boulder County

Boulder County Land Use Department Publications

Native Seed Mixes

Land Use Department
Courthouse Annex Building
2045 13th Street
PO Box 471
Boulder, CO 80302

Planning Division:
Phone: 303-441-3930
Fax: 303-441-4856
Email: planner@bouldercounty.org
http://www.bouldercounty.org/lu/

Office Hours:
Monday — Friday 8:00 AM to 4:30 PM

Native Seed Mixes

Samples for Boulder County.

Plains Seed Mix

Below 5,500 Feet Elevation

Common Name	Species Name	Variety	% of Mix	#PLS/ Acre
Side Oats Grama	*Bouteloua curtipendula*	Vaughn	15%	2.74
Blue Grama	*Bouteloua gracilis*	Native, Alma, or Hachita	20%	0.84
Buffalograss	*Buchloe dactyloides*	Native	15%	9.33
Western Wheatgrass	*Pascopyrum smithii*	Arriba	12.5%	3.96
Western Wheatgrass	*Pascopyrum smithii*	Native	12.5%	3.96
Little Bluestem	*Schizachyrium scoparium*	Cimarron or Pastura	13%	1.74
Green Needlegrass	*Stipa viridula*	Lodorm or Native	12%	2.31
		Totals:	100%	24.88

Foothills Seed Mix

5,500 Feet to 7,000 Feet Elevation

Common Name	Species Name	Variety	% of Mix	#PLS/ Acre
Side Oats Grama	*Bouteloua curtipendula*	Vaughn	10%	1.82
Blue Grama	*Bouteloua gracilis*	Native, Alma, or Hachita	15%	0.63
Slender Wheatgrass	*Elymus trachycaulus*	San Luis	20%	4.38
Junegrass	*Koeleria macrantha*	Native	10%	0.15
Western Wheatgrass	*Pascopyrum smithii*	Arriba	10%	3.17
Western Wheatgrass	*Pascopyrum smithii*	Native	10%	3.17
Switchgrass	*Panicum virgatum*	Blackwell or Nebraska 28	7%	0.63
Little Bluestem	*Schizachyrium scoparium*	Cimarron or Pastura	8%	1.07
Green Needlegrass	*Stipa viridula*	Lodorm or Native	10%	1.93
		Totals:	100%	16.95

Mountain Seed Mix

7,000 Feet and Above Elevation

Common Name	Species Name	Variety	% of Mix	#PLS/ Acre
Blue Grama	*Bouteloua gracilis*	Native, Alma, or Hachita	20%	0.84
Canada Wildrye	*Elymus canadensis*	Native	10%	3.03
Thickspike Wheatgrass	*Elymus lanceolatus*	Critana	25%	5.58
Slender Wheatgrass	*Elymus trachycaulus*	San Luis	25%	5.48
Junegrass	*Koeleria macrantha*	Native	10%	0.15
Sandberg's Bluegrass	*Poa secunda*	Native	10%	0.38
		Totals:	100%	15.46

Rates are for broadcast seeding. If using a seed drill, reduce rates by half. PLS = Pure Live Seed.

NO.	DATE	REVISION	DR	SK	CHK	RH	APVD	RH
DSGN	PIVOT							

ENERTIA CONSULTING GROUP LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202

Pivot Energy
1750 15TH ST. SUITE 400
DENVER, CO 80202

PIVOT ENERGY SOLAR FARM ON N 97 STREET
SPECIAL USE PERMIT PLAN
BOULDER COUNTY, COLORADO

SITE DETAILS (3 OF 3)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 SCALE

DATE AUGUST 2, 2022
FILE
DWG
SHEET 7 OF 7