**Draft Initial Study / Environmental Checklist**
**City of Chico**

## I. PROJECT DESCRIPTION

A. **Project Title:** Bidwell Park Golf Course Solar Array Project Administrative Architectural Review 2016-02 (John C. Anderson, Architect representing Bidwell Golf Club, Inc.)

B. **Project Location:** The project site is located in Upper Bidwell Park at the Bidwell Park Golf Course, 3199 Golf Course Road **(Figure 1)**.

C. **Application(s):** (Administrative) Architectural Review 2016-02

D. **Assessor's Parcel Number (APN):** Portions of APNs 016-170-001 and 016-230-006

E. **Parcel Size:** The project site is comprised of an approximately 16,856 square foot fenced area centrally located within an approximately 130 acre golf course within portions of a 586 acre parcel (APN 016-170-001) and a 290 acre parcel (APN 016-230-006) within the larger Bidwell Park, which is an approximately 3,670 acre municipal park in the City of Chico.

F. **General Plan Designation:** Secondary Open Space (SOP)

G. **City of Chico Zoning**: Secondary Open Space (OS2)

H. **Environmental Setting:** The project is located along the former alignment of the 13th hole fairway of Bidwell Park Golf Course, an approximately 130 acre 18-hole municipal golf course situated within Upper Bidwell Park. The front nine holes are located in a traditional park-like, groomed setting while the upper nine have a more natural setting providing transition to the adjacent native Sierra Nevada foothills found in the adjoining Upper Bidwell Park (California native grasses and oak woodland). The fairways are planted with Bermuda and rye grasses and the greens are maintained with Poa and bentgrass.

I. **Project Description:**
The applicant is proposing to install a ground mounted photovoltaic solar array system consisting of 308 panels in an approximately 5,396 square foot area within Bidwell Park Golf Course **(Attachment 1 – Site Plan: Bidwell Park Golf Course)**. The array will be mounted at a height of 18-inches from the ground and rise at a 20 degree angle to a height of approximately 6-feet. The solar array will be surrounded by a 6-foot tall fence constructed of forest green vinyl coated chain link with slats, supported by brown powder coated pipe-frame. Approximately 10,030 linear feet of trenching to accommodate underground electrical equipment upgrades and connections will originate from the solar array and terminate at two existing on-site irrigation pump station/meter buildings. Native plants approved by the City of Chico Parks Division will be planted around the perimeter of the fence. **(Attachments 2-4.3 – Site Plan: Solar System Array, Fence Elements, Fence System, Concept Landscape Plan)**. The array mounting system will be painted brown on the outside edge of the rails and pipes (**Solar System Array Elevations, Attachments 5-6.1**).

Located at the former 13th hole fairway of the Bidwell Park Golf Course, inside Bidwell Park, just south of Upper Park Road, the subject site is located on land designated Secondary Open Space on the General Plan diagram and located in the OS2 (Secondary Open Space) zoning district. The project site itself is centrally located within an existing18-hole golf course.

J. **Surrounding Land Uses:** The approximately 5,396 square foot solar array area will be enclosed by a 16,856 square foot fenced area centrally located on the approximately 130 acre groomed Bidwell Park Golf Course. The golf course is situated within the westerly portion of Upper Bidwell Park immediately north of Big Chico Creek, south of Upper Park Road and west of Wildwood Park.

K. **Public Agency Approvals:** Administrative Architectural Review

**L. Applicant:**
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Chico, CA 95926

**Lessee/Property Manager:**
Bidwell Park Golf Club, Inc./Empire Golf
3199 Golf Course Road
Chico, CA 95973

**Property Owner:**
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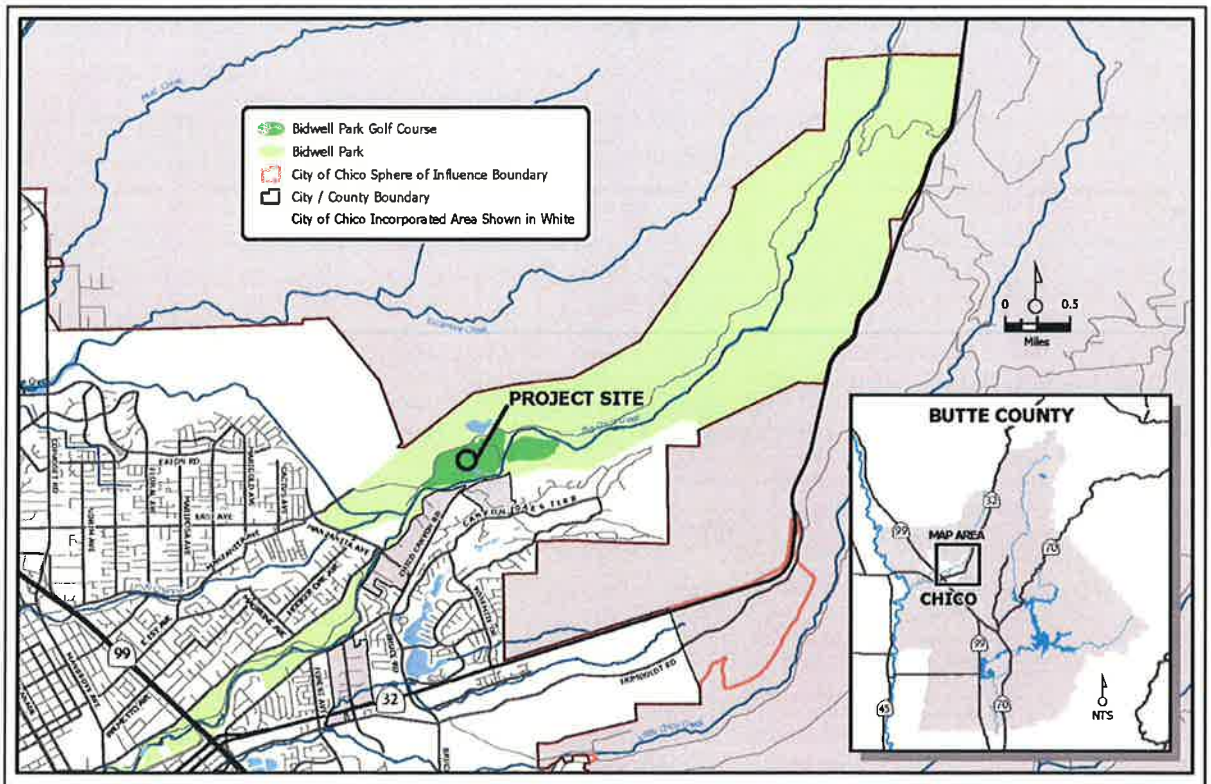
**PROJECT LOCATION**
**Figure 1.**




Architectural Review 16-02 (Bidwell Park Golf Course – Solar Array)
Location Map
Figure 1

## II. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

| | | |
|---|---|---|
| ☐ Aesthetics | ☐ Geology/Soils | ☐ Open Space/Recreation |
| ☐ Agriculture and Forest | ☐ Hazards/Hazardous Materials | ☐ Population/Housing |
| ☐ Air Quality | ☐ Hydrology/Water Quality | ☐ Public Services |
| ☐ Biological Resources | ☐ Land Use and Planning | ☐ Transportation/Circulation |
| ☐ Cultural Resources | ☐ Noise | ☐ Utilities |

## III. PLANNING DIRECTOR DETERMINATION

On the basis of this initial evaluation:

☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a potentially significant impact or have a potentially significant impact unless mitigated, but at least one effect has been adequately analyzed in an earlier document pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION including revisions or mitigation measures that are imposed upon the proposed project. No further study is required.

Tracy R Bettencourt
Signature

6/8/16
Date

Tracy R. Bettencourt – MPA, AICP, Regulatory and Grants Manager
Printed Name (for Mark Wolfe, Community Development Director)

## IV. EVALUATION OF ENVIRONMENTAL IMPACTS

- Responses to the following questions and related discussion indicate if the proposed project will have or potentially have a significant adverse impact on the environment.

- A brief explanation is required for all answers except "No Impact" answers that are adequately supported by referenced information sources. A "No Impact' answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors or general standards.

- All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

- Once it has been determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there is at least one "Potentially Significant Impact" entry when the determination is made, an EIR is required.

- Negative Declaration: "Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The initial study will describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 4, "Earlier Analysis," may be cross-referenced).

- Earlier analyses may be used where, pursuant to tiering, a program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [Section 15063(c)(3)(D)].

- Initial studies may incorporate references to information sources for potential impacts (e.g. the general plan or zoning ordinances, etc.). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated. A source list attached, and other sources used or individuals contacted are cited in the discussion.

- The explanation of each issue should identify:
  a. The significance criteria or threshold, if any, used to evaluate each question; and
  b. The mitigation measure identified, if any, to reduce the impact to less than significant.

| **A. Aesthetics**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Have a substantial adverse effect on a scenic vista, including scenic roadways as defined in the General Plan, or a Federal Wild and Scenic River? | | | X | |
| 2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | | | X | |
| 3. Affect lands preserved under a scenic easement or contract? | | | | X |
| 4. Substantially degrade the existing visual character or quality of the site and its surroundings including the scenic quality of the foothills as addressed in the General Plan? | | | X | |
| 5. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | | | X | |

**DISCUSSION: A.1-4.** The project will not have a substantial adverse effect on a scenic vista, including scenic roadways as defined in the General Plan, Federal Wild and Scenic River; nor will it substantially damage scenic resources, including trees, rock outcroppings, and historic buildings within a state scenic highway. The project will not affect lands preserved under a scenic easement or contract, nor will it substantially degrade the existing visual character or quality of the site and its surroundings, including the scenic quality of the foothills as addressed in the Chico 2030 General Plan or associated Environmental Impact Report (GPEIR). The project site is neither located in the vicinity of a designated Wild and Scenic River nor is it preserved under a scenic easement or contract.

The project involves the installation of a 5,396 square foot solar array enclosed in a 16,856 square foot fenced area centrally located within Bidwell Park Golf Course. To ensure consistency with Bidwell Park and Master Management Plan Update (BPMMP) goal to "Identify and protect the scenic and aesthetic resources in Bidwell Park" (3.5.3.5 Aesthetic Resources), the relatively small solar array facility, representing approximately 0.3% of the 130 acre golf course, will be centrally located within the lower nine holes of the golf course in a little used area that formerly served as the fairway of the 13th hole. As demonstrated by the site line analysis, elevations, and review of temporary staking to demonstrate project buildout, the low profile of the solar array and associated six-foot tall fence located at the base of a mature wooded bluff hides the view of the facility from surrounding areas outside the golf course, such as Upper Park Road, Golf Course Road, Chico Canyon Road, and the Monkey Face rock formation located above Horseshoe Lake **(Attachments 5-12 – Elevations, Details, and Photo-based Elevation Renderings with Sight Line Analysis)**.

Consistent with General Plan Policy CD-2.4 and Action CD-2.4.1, to blend with and compliment the hues of the surrounding grasses and bluff, a context sensitive 6-foot tall fence constructed of vinyl coated chain link with forest green slats supported by brown powder coated pipe-frame will be utilized to ensure the safety and security of the solar array. The perimeter will be planted with native shrubs and plants, as approved by the City of Chico Parks Division, to further soften the transition between the existing grade and the fence. Further, the project has been determined to be consistent with the City of Chico's Design Guidelines Manual (December 2009) upon meeting the necessary findings in accordance with the Architectural Review process (AR 16-02).

Ancillary utility facilities and out-buildings are a necessary and expected component of golf course facilities and such structures are expected by the Bidwell Park and Master Management Plan. While golfers will be able to see the fencing from the area immediately adjacent to the facility, the project has been located in a little utilized area of an active golf course where it will be shielded from the view of Upper Bidwell Park visitors. The project is not anticipated to result in and additional impacts beyond those identified and addressed by the BPMMP Update Environmental Impact Report (BPMMP EIR) or the GPEIR for the more "active" uses within the Park. Therefore, the project will have a **Less-Than-Significant Impact** on scenic vistas, roadways, resources, and visual character of the surrounding site, and **No Impact** on any lands preserved under a scenic easement or contract. No mitigation is required.

**MITIGATION**: None Required.

**A.5.** The project will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. No new lighting is proposed in conjunction with the installation of the solar array. As the purpose of the installation of a solar array is to absorb as much light as possible to generate power, the design of the photovoltaic panels includes the use of "high-transmission, low-iron" glass which is less reflective than standard window glass (see solar array information/specifications http://us.sunpower.com/sites/sunpower/files/media-library/white-papers/wp-pv-systems-low-levels-glare-reflectance-vs-surrounding-environment.pdf prepared by the manufacturer (SunPower) **(Attachment 13)**) to maximize the amount of light that is absorbed by the panels. Through the professional installation of the solar array, including the use of minimally reflective "light-trapping" materials and appropriate placement at the site, no substantial new glare is anticipated to affect golfers, park visitors, or residents in the area. Therefore, the project would have **Less-Than-Significant** impact on light or glare that could affect day or nighttime views. No mitigation for aesthetic impacts is required.

**MITIGATION**: None Required.

| **B. Agriculture and Forest Resources: Would the project or its related activities:** | **Potentially Significant Impact** | **Less Than Significant with Mitigation Incorporated** | **Less Than Significant Impact** | **No Impact** |
|---|---|---|---|---|
| 1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | | | | X |
| 2. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | | | | X |
| 3. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code Section 4526, or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | | | | X |
| 4. Result in the loss of forest land or conversion of forest land to non-forest use? | | | | X |
| 5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | | | | X |

**DISCUSSION: B.1 – B.5.** The project is centrally located in an existing groomed and managed golf course at the former location of the 13th hole fairway. There are no agriculture or timber resources that will be

impacted. There is no conflict with an existing Williamson Act Contract nor zoning. The site is designated for the existing golf course and ancillary utilities in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan. The project site is not designated as Farmland or Timberland and will result in no impacts to agriculture and forest resources. The project is not anticipated to result in any additional impacts beyond those identified and addressed by the BPMMP Update Environmental Impact Report (BPMMP EIR) or the GPEIR for the more active uses within the Park. The project will have **No impact** on agricultural or forest resources; therefore, no mitigation is required.

**MITIGATION**: None required.

| **C. Air Quality**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Conflict with or obstruct implementation of the applicable air quality plans (e.g., Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan, Chico Urban Area CO Attainment Plan, and Butte County AQMD Indirect Source Review Guidelines)? | | | | X |
| 2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation. | | | | X |
| 3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | | | | X |
| 4. Expose sensitive receptors to substantial pollutant concentrations? | | | | X |
| 5. Create objectionable odors affecting a substantial number of people? | | | | X |

**DISCUSSION: C.1–5.** The project will neither conflict with nor obstruct implementation of the applicable air quality plan for the Northern Sacramento Valley, nor will the project violate any air quality standard or contribute substantially to an existing or projected air quality violation. The project will not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. The project will neither expose sensitive receptors to substantial pollutant concentrations, nor create objectionable odors. According to Butte County Air Quality Management District (BCAQMD or District) http://www.bcaqmd.org/page/ files/Attainment-status.pdf, Butte County is designated as a federal and state non-attainment area for ozone and particulate matter.

The project involves the installation of a 5,396 square foot solar array comprised of 308 panels, anticipated to generate a total of 100.7 kilowatts (kW) of direct current power, enclosed in a 16,856 square foot access and maintenance area protected by a 6-foot tall security fence. The project does not involve an expansion to the golf course operations, nor will it result in any new long-term direct or indirect sources of emissions. The purpose of the project is to generate enough solar power on-site (approximately 177,000 kW hours) to offset the power costs of two existing golf course irrigation pumps. Thus, the project will reduce the golf course's demand for off-site power generation and associated ozone precursor and carbon dioxide ($CO_2$) equivalent emissions. Based on the US Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator

| BUTTE COUNTY AMBIENT AIR QUALITY ATTAINMENT STATUS (1/09) | | |
|---|---|---|
| ***POLLUTANT*** | ***STATE*** | ***FEDERAL*** |
| 1-hour Ozone | Nonattainment | -- |
| 8-hour Ozone | Nonattainment | Nonattainment |
| Carbon Monoxide | Attainment | Attainment |
| Nitrogen Dioxide | Attainment | Attainment |
| Sulfur Dioxide | Attainment | Attainment |
| Inhalable Particulates (PM10) | Nonattainment | Attainment |
| Inhalable Particulates (PM2.5) | Nonattainment | Nonattainment |

(www.epa.gov/energy/greenhouse-gas-equivalencies-calculator), this system is estimated to result in an annual reduction of 122 metric tons $CO_2$ equivalents.

Due to the minimal size of the project and short duration to construct, the solar array will neither generate substantial fugitive dust (PM-10 and PM-2.5) nor contribute substantial heavy-duty vehicle emissions (ozone precursor emissions, such as reactive organic gases (ROG) and oxides of nitrogen (NOx)). The site is designated for the existing golf course and associated ancillary utilities in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan. The project is not expected to result in any new impacts beyond those already anticipated, analyzed, and mitigated in the 2030 General Plan Environmental Impact Report (GPEIR) and the BPMMP EIR. Existing City regulations require all grading plans to include a dust suppression plan specifying standard Best Management Practices (BMPs). Compliance with BCAQMD and Chico Municipal Code (CMC) requirements will reduce construction related impacts to a **Less-Than-Significant** level. No mitigation is required.

**MITIGATION**: None Required.

| **D. Biological Resources**<br>Will the project or its related activities result in: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species as listed and mapped in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | | | X | |
| 2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. | | | | X |
| 3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | | | | X |
| 4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife | | | | X |

| | | | | |
|---|---|---|---|---|
| corridors, or impede the use of native wildlife nursery sites? | | | | |
| 5. Result in the fragmentation of an existing wildlife habitat, such as blue oak woodland or riparian, and an increase in the amount of edge with adjacent habitats. | | | | X |
| 6. Conflict with any local policies or ordinances, protecting biological resources? | | | | X |

**DISCUSSION: D.1.-6.** The project is not anticipated to result in a substantial adverse effect, either directly or through habitat modifications, on any special status species, any riparian habitat or other sensitive natural community, or interfere substantially with the movement of any native resident or migratory fish or wildlife species. The project will not result in a substantial adverse effect to federally protected wetlands as defined by Section 404 of the Clean Water Act. There are no wetlands on the project site and no infrastructure proposed that would impact wetlands or other waters of the United States. The project will not result in the fragmentation of an existing wildlife habitat, nor conflict with any local policies or ordinances protecting biological resources.

The project involves the installation of a 5,396 square foot solar array enclosed in a 16,856 square foot fenced area centrally located within the existing Bidwell Park Golf Course. The relatively small solar array facility, representing approximately 0.3% of the 130 acre golf course, will be centrally located within the lower nine holes of the golf course in a highly disturbed area that formerly served as the fairway of the 13th hole. No trees will be removed in conjunction with this project.

On April 7, 2016, a North State Resources biologist conducted a botanical survey during the time of year when all potentially present special-status plans species would be identifiable. While the California Natural Diversity Database (CNDDB) records indicate the presence of special status plant species within a two mile radius of the project site, the survey results found that the proposed solar array and alignment of the underground electrical lines is dominated by non-native annual grasses, paved and gravel paths, and irrigated turf grasses that does not provide habitat for sensitive native species **(Botanical Survey of the Bidwell Park Golf Course – Attachment 14)**.

The site is designated for the existing golf course and associated ancillary utilities in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan and has been actively managed as such since 1929. The project is not expected to result in any new impacts beyond those already anticipated, analyzed, and mitigated in the 2030 General Plan Environmental Impact Report (GPEIR) and the BPMMP EIR. The project would have **No Impact** on these resources; therefore, no mitigation is required.

**MITIGATION:** None required.

| **E. Cultural Resources**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Cause a substantial adverse change in the significance of an historical resource as defined in PRC Section 15064.5? | | | | X |
| 2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to PRC Section 15064.5? | | | X | |

| | | | | |
|---|---|---|---|---|
| 3. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature? | | | X | |
| 4. Disturb any human remains, including those interred outside of formal cemeteries? | | | X | |

**DISCUSSION: E.1.**The project will not result in an adverse change in the significance of a historical resource as there are historical resources located at the project site. Thus, there will be **No Impact** on these resources.

**MITIGATION**: None Required

**E.2. – E.4** The project site is in an area of high archaeological sensitivity as designated by the Northeast Information Center and the Chico 2030 General Plan. However, throughout the years, the area had been actively graded and maintained to accommodate golfing activities. The project site is the former 13th hole fairway. Due to the disturbed character of the site, the potential to encounter surface-level cultural resources is considered remote. The project involves the installation of a 5,396 square foot solar array enclosed in a 16,856 square foot fenced area centrally located within the existing Bidwell Park Golf Course. The relatively small solar array facility, representing approximately 0.3% of the 130 acre golf course. It does not involve an expansion to the golf course operations. The site is designated for the existing golf course and associated ancillary utilities in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan. The project is not expected to result in any new impacts beyond those already anticipated, analyzed, and mitigated in the 2030 General Plan Environmental Impact Report (GPEIR) and the BPMMP EIR. Further, in the event of an inadvertent discovery of any archaeological artifacts, existing City requirements ensure that work would stop so that the materials could be evaluated for their significance by qualified professionals. As a result, potential future impacts relating to cultural resources are considered to be **Less-Than-Significant.**

**MITIGATION**: None Required

| **F. Geology /Soils**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Expose people or structure to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Div. of Mines & Geology Special Publication 42) | | | | X |
| b. Strong seismic ground shaking? | | | | X |
| c. Seismic-related ground failure/liquefaction? | | | | X |
| d. Landslides? | | | | X |
| 2. Result in substantial soil erosion or the loss of topsoil? | | | X | |

| **F. Geology /Soils**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | | | X | |
| 4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | | | X | |
| 5. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water, or is otherwise not consistent with the Chico Nitrate Action Plan or policies for sewer service control? | | | | X |

**DISCUSSION: F.1.** The City of Chico is located in one of the least active seismic regions in California and contains no active faults. Currently, there are no designated Alquist-Priolo Special Studies Zones within the Planning Area, nor are there any known or inferred active faults. Thus, the potential for ground rupture within the Chico area is considered very low. Under existing regulations, all future structures will incorporate California Building Code standards into the design and construction that are designed to minimize potential impacts associated with ground-shaking during an earthquake. Therefore, the project is considered to have **No Impact**.

**MITIGATION**: None Required

**F.2-4.** Development of the site will be subject to the City's grading ordinance, which requires the inclusion of appropriate erosion control and sediment transport best management practices (BMPs) as standard conditions of grading permit issuance. Additionally, the City has developed a Storm Water Management Program (SWMP) per the Phase II requirements established by §402 of the Clean Water Act. All projects within the City's jurisdiction must adhere to the applicable standards of the SWMP, which includes both construction activity and post-construction storm water discharge BMPs. Furthermore, the City and the Butte County Air Quality Management District require implementation of all applicable fugitive dust control measures, which further reduces the potential for construction-generated erosion. All projects disturbing greater than one acre must comply with and obtain coverage under the applicable National Pollution Discharge Elimination Permit (NPDES) from the Regional Water Quality Control Board (RWQCB) per §402 of the Clean Water Act. Development of the site will also be required to meet all requirements of the California Building Code which will address potential issues of ground shaking, soil swell/shrink, and the potential for liquefaction. As a result, potential future impacts relating to geology and soils are considered to be **Less-Than-Significant.**

**MITIGATION**: None Required

**F.5.** No septic tanks or alternative waste water disposal systems are proposed. All structures will be connected to City sewer lines located in the adjacent public right-of-way; therefore, the proposal will have **No Impact**.

**MITIGATION**: None Required

| G. **Greenhouse Gas Emissions**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment? | | | | X |
| 2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | | | | X |

**DISCUSSION: G.1.-2.** In 2012, the Chico City Council adopted a Climate Action Plan (CAP) which sets forth objectives and actions that will be undertaken to meet the City's GHG emission reduction target of 25 percent below 2005 levels by the year 2020. This target is consistent with the State Global Warming Solutions Act of 2006 (AB 32, Health & Safety Code, Section 38501[a]). The project involves the installation of a 5,396 square foot solar array comprised of 308 panels, anticipated to generate a total of 100.7 kilowatts (kW) of direct current power, enclosed in a 16,856 square foot access and maintenance area protected by a 6-foot tall security fence. The project does not involve an expansion to the golf course operations, nor will it result in any new long-term direct or indirect sources of emissions. The purpose of the project is to generate enough solar power on-site (approximately 177,000 kW hours) to offset the power costs of two existing golf course irrigation pumps. Thus, the project will reduce the golf course's demand for off-site power generation and associated ozone precursor and carbon dioxide ($CO_2$) equivalent emissions. Based on the US Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator (www.epa.gov/energy/greenhouse-gas-equivalencies-calculator), this system is estimated to result in an annual reduction of 122 metric tons $CO_2$ equivalents.

**MITIGATION**: None Required.

| **H. Hazards /Hazardous Materials**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | | | | X |
| 2. Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | | | | X |
| 3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | | | | X |
| 4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | | | | X |

| **H. Hazards /Hazardous Materials**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 5. For a project located within the airport land use plan, would the project result in a safety hazard for people residing or working in the Study Area? | | | | X |
| 6. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the Study Area? | | | | X |
| 7. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | | | | X |
| 8. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | | | | X |

**DISCUSSION: H.1. – H.8.** The project will not result in the generation or use of a significant amount of hazardous materials. Although the property is neither identified as a hazardous site in the Chico 2030 General Plan EIR, nor is it listed as a state or federal hazardous waste site (pursuant to Governmental Code Section 65962.5)

The project will not result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. The site is not located within the Airport Influence Area of either the Chico Municipal Airport or Ranchaero Airport. The project would not interfere with an adopted emergency response plan or emergency evacuation plan. The property is not near a wild land fire area. Therefore, the project is considered to have **No Impact** with regard to hazardous materials.

**MITIGATION**: None Required

| **I. Hydrology/ Water Quality**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Violate any water quality standards or waste discharge requirements? | | | | X |
| 2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted? | | | | X |
| 3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course | | | | X |

| **I. Hydrology/ Water Quality**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | | | | |
| 4. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site? | | | | X |
| 5. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | | | | X |
| 6. Otherwise substantially degrade water quality? | | | | X |
| 7. Place real property within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | | | | X |
| 8. Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | | | | X |
| 9. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | | | | X |
| 10. Inundation by seiche, tsunami, or mudflow? | | | | X |

**DISCUSSION**: **I.1.-6.** The proposed project will not violate any water quality standards or waste discharge requirements or deplete groundwater supplies or interfere substantially with groundwater recharge. The project will not substantially alter the existing drainage pattern of the site or area, increase the rate or amount of surface runoff, or degrade water quality. The installation of a ground mounted photovoltaic solar array system consisting of 308 panels in an approximately 5,396 square foot area enclosed by a 16,856 square foot fenced area is a minor expansion of on-site utilities, consisting of approximately 0.3% of the area of the 130 acre golf course. The project does not involve an expansion to the golf course operations. The site is designated for the existing golf course, including ancillary utilities, in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan. The project is not expected to result in any new impacts beyond those already anticipated, analyzed, and mitigated in the 2030 General Plan Environmental Impact Report (GPEIR) and the BPMMP EIR. The project would have **No Impact** on hydrology or water quality; therefore, no mitigation is required.

**MITIGATION**: None Required.

**I.7.-10.** According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map No. 06007C0506E, revised January 6, 2011, the site is located in Zone X, which is outside the 500 year flood plain. Therefore, the project would not expose people or structures to a significant risk of loss, injury or death involving flooding or related events. **No Impact**.

**MITIGATION**: None Required

| **J. Land Use and Planning**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Result in physically dividing an established community? | | | | X |
| 2. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the City of Chico General Plan, Title 19 "Land Use and Development Regulations", or any applicable specific plan) adopted for the purpose of avoiding or mitigating an environmental effect? | | | | X |
| 3. Results in a conflict with any applicable Resource Management or Resource Conservation Plan? | | | | X |
| 4. Result in substantial conflict with the established character, aesthetics or functioning of the surrounding community? | | | | X |
| 5. Result in a project that is a part of a larger project involving a series of cumulative actions? | | | | X |
| 6. Result in displacement of people or business activity? | | | | X |

**DISCUSSION: J.1.-6.** The project will neither physically divide an established community, nor conflict with any applicable land use plan or resource management or conservation plan, nor result in substantial conflict with the established character, aesthetics or functioning of the surrounding community. The project is not part of a larger project and will not result in displacement of people or business activities. The installation of a ground mounted photovoltaic solar array system consisting of 308 panels in an approximately 5,396 square foot area enclosed by a 16,856 square foot fenced area is a minor expansion of on-site utilities, consisting of approximately 0.3% of the area of the 130 acre golf course. At their January 25, 2016 meeting, the Bidwell Park and Playground Commission found that the proposed project was consistent with the Bidwell Park Master Management Plan (BPMMP), noting that the BPMMP does acknowledge and encourage the use of solar power in the Park (Section 3.5.4.6 Utilities and Services, Implementation Strategy I. U/S-1). The project does not involve an expansion to the golf course operations. The site is designated for the existing golf course and associated ancillary utilities in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan. The project is not expected to result in any new impacts beyond those already anticipated, analyzed, and mitigated in the 2030 General Plan Environmental Impact Report (GPEIR) and the BPMMP EIR. The project would have **No Impact** on land use and planning; therefore, no mitigation is required.

**MITIGATION**: None Required.

| **K. Mineral Resources. Would the project or its related activities:** | **Potentially Significant Impact** | **Less Than Significant with Mitigation Incorporated** | **Less Than Significant Impact** | **No Impact** |
|---|---|---|---|---|
| | | | | X |

| | | | | |
|---|---|---|---|---|
| 1. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | | | | |
| 2. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | | | | X |

**DISCUSSION: K.1.-2.** The project would not result in the loss of availability of a known mineral resource or mineral resource recovery site. Mineral resources are not associated with the project or located on the project site. **No Impact.**

**MITIGATION**: None Required.

| **L. Noise**<br>Will the project or its related activities result in: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Exposure of persons to or generation of noise levels in excess of standards established in the Chico 2030 General Plan or noise ordinance. | | | | X |
| 2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | | | | X |
| 3. Exposure of sensitive receptors (residential, parks, hospitals, schools) to exterior noise levels (CNEL) of 65 dBA or higher? | | | | X |
| 4. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | | | | X |
| 5. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | | | X | |
| 6. For a project located within the airport land use plan, would the project expose people residing or working in the Study Area to excessive noise levels? | | | | X |
| 7. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the Study Area to excessive noise levels? | | | | X |

**DISCUSSION: L.1.-4.** The project will not expose persons to or generate noise levels in excess of standards established in the Chico 2030 General Plan or noise ordinance, nor will it expose persons to or generate excessive groundborne vibration or noise levels. There will be no substantial permanent increase in ambient noise levels. There will be **No Impact** with regard to noise.

**MITIGATION**: None Required

**L.5.** Although temporary single-noise events will be generated during the construction phase, these impacts are considered to be less than significant because they are short term, and project contractors will be required to comply with the City's existing noise regulations which limit the hours of construction and maximum noise levels. Therefore, the impact is considered to be **Less-Than-Significant.**

**MITIGATION**: None Required

**L.6.-L.7.** The project site is located outside of the Airport Influence Areas of the Chico Municipal Airport and Ranchaero Airport. No private airstrips exist in the vicinity of the project site. There will be **No Impact** with regard to noise.

**MITIGATION**: None Required

| **M. Open Space/ Recreation**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Affect lands preserved under an open space contract or easement? | | | | X |
| 2. Affect an existing or potential community recreation area? | | | X | |
| 3. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | | | | X |
| 4. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | | | | X |

**DISCUSSION: M.1., 3-4.** The project site is not preserved under an open space contract, nor does it contain an open space easement. The project does not increase the use of, or require the construction or expansion of existing neighborhood and regional parks or other recreational facilities. Therefore, the proposed project would have **No Impact** on these park resources.

**MITIGATION**: None Required

**M.2.** The installation of a ground mounted photovoltaic solar array system consisting of 308 panels in an approximately 5,396 square foot area enclosed by a 16,856 square foot fenced area is a minor expansion of on-site utilities, consisting of approximately 0.3% of the area of the 130 acre golf course. While the golf course is situated in Upper Bidwell park, only a small percentage of the golf course will be affected. No existing fairways are impacted as the solar array will be situated in an area not utilized for active golfing. Ancillary utility facilities and out-buildings are a necessary and expected component of golf course facilities and such structures are expected by the Bidwell Park and Master Management Plan. Further, the project does not involve an expansion to the golf course operations. The site is designated for the existing golf course and associated ancillary utilities in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan. The project is not expected to result in any new impacts beyond those already anticipated, analyzed, and mitigated in the 2030 General Plan Environmental Impact Report (GPEIR) and the BPMMP EIR. The project would have a **Less-Than-Significant** impact on utilities; therefore, no mitigation is required.

**MITIGATION**: None Required.

| **N. Population/ Housing**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | | | | X |
| 2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | | | | X |
| 3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | | | | X |

**DISCUSSION: N.1.-N.3.** The project would not induce substantial population growth, nor would it displace people or housing. The project involves the installation of a 5,396 square foot solar array comprised of 308 panels enclosed in a 16,856 square foot access and maintenance area protected by a 6-foot tall security fence. The project's purpose is to offset existing power necessary to operate irrigation pumps. It does not involve an expansion to the golf course operations. The site is designated for the existing golf course and associated ancillary utilities in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan. The project is not expected to result in any new impacts beyond those already anticipated, analyzed, and mitigated in the 2030 General Plan Environmental Impact Report (GPEIR) and the BPMMP EIR. The project would have **No Impact** on these resources; therefore, no mitigation is required.

**MITIGATION**: None Required.

| **O. Public Services**<br>Will the project or its related activities have an effect upon or result in a need for altered governmental services in any of the following areas: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Fire protection? | | | | X |
| 2. Police protection? | | | | X |
| 3. Schools? | | | | X |
| 4. Parks and recreation facilities? (See Section J Open Space/Recreation) | | | | X |
| 5. Other government services? | | | | X |

**DISCUSSION: O.1.-5.** The project will not affect fire, police, schools, parks and recreation facilities, or other government services. The project involves the installation of a 5,396 square foot solar array comprised of 308 panels enclosed in a 16,856 square foot access and maintenance area protected by a 6-foot tall security fence. The project does not involve an expansion to the golf course operations or displace any active golfing areas. The site is designated for the existing golf course and associated ancillary utilities in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan. The project is not expected to result in any new impacts beyond those already anticipated, analyzed, and mitigated in the 2030 General Plan Environmental Impact Report (GPEIR) and the BPMMP EIR. The project would have **No Impact** on these resources; therefore, no mitigation is required.

**MITIGATION**: None Required.

| **P. Transportation/Circulation**<br>Will the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | | | | X |
| 2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | | | | X |
| 3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | | | | X |
| 4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | | | | X |
| 5. Result in inadequate emergency access? | | | | X |
| 6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | | | | X |

**DISCUSSION: P.1.- 6.** The project would not conflict with an applicable plan, ordinance or policy regarding the circulation system, nor will it conflict with an applicable congestion management program, result in changes in air traffic levels, substantially increase hazards due to design features, affect air traffic patterns, result in inadequate emergency access, or conflict with adopted policies regarding multi-modal transportation facilities.

The project involves the installation of a 5,396 square foot solar array comprised of 308 panels enclosed in a 16,856 square foot access and maintenance area protected by a 6-foot tall security fence. The project does not involve an expansion to the golf course operations. The site is designated for the existing golf course and associated ancillary utilities in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan. The project is not expected to result in any new impacts beyond those already anticipated, analyzed, and mitigated in the 2030 General Plan Environmental Impact Report (GPEIR) and the BPMMP EIR. The project would have **No Impact** on these resources; therefore, no mitigation is required.

**MITIGATION**: None Required.

| **Q. Utilities**<br>Will the project or its related activities have an effect upon or result in a need for new systems or substantial alterations to the following utilities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Water for domestic use and fire protection? | | | | X |
| 2. Natural gas, electricity, telephone, or other communications? | | | X | |
| 3. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | | | | X |
| 4. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | | | | X |
| 5. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | | | | X |
| 6. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | | | | X |
| 7. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | | | | X |
| 8. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | | | | X |
| 9. Comply with federal, state, and local statutes and regulations related to solid waste? | | | | X |

**DISCUSSION: Q.1.-7.** The project will not result in a need for new systems or substantial alterations to the following utilities: water, natural gas, telephone or other communications; nor will the project require the construction or expansion of water, wastewater treatment, or storm drainage facilities. No additional water will be necessary. The installation of a ground mounted photovoltaic solar array system consisting of 308 panels in an approximately 5,396 square foot area enclosed by a 16,856 square foot fenced area is a minor expansion of on-site utilities, consisting of approximately 0.3% of the area of the 130 acre golf course. Ancillary utility facilities and out-buildings are a necessary and expected component of golf course facilities and such structures are expected by the Bidwell Park and Master Management Plan and the project does not involve an expansion to the golf course operations. The site is designated for the existing golf course and associated ancillary utilities in the Chico 2030 General Plan and identified as a golf course in the Bidwell Park Master Management Plan. The project is not expected to result in any new impacts beyond those already anticipated, analyzed, and mitigated in the 2030 General Plan Environmental Impact Report (GPEIR) and the BPMMP EIR. The project would have a **Less-Than-Significant** impact on utilities; therefore, no mitigation is required.

**MITIGATION**: None Required.

## V. MANDATORY FINDINGS OF SIGNIFICANCE

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| A. The project has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. | | | | X |
| B. The project has possible environmental effects which are individually limited but cumulatively considerable. (Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past, current and probable future projects). | | | | X |
| C. The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly. | | | | X |

**DISCUSSION: A-C:** The project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. Based on the preceding environmental analysis, the project will not result in direct or indirect adverse effects on human beings or the environment, nor result in significant cumulative impacts. There are no potentially significant impacts anticipated by the project. **No Impact**.

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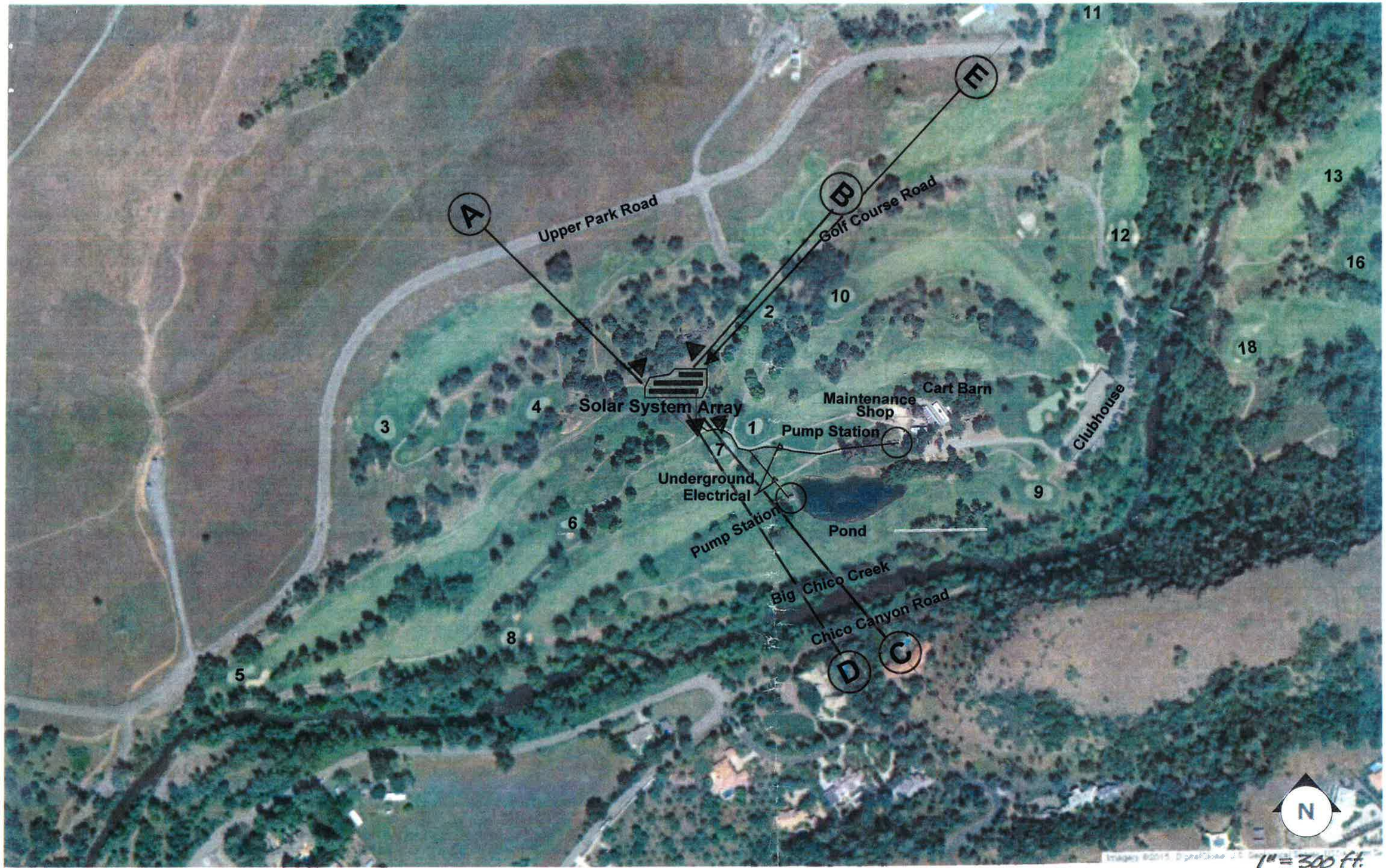


# Site Plan: Bidwell Park Golf Course

1" = 300 ft.

600 300 100 200


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B.P.G.C.
Solar
System

Ground Mounted
Solar System

at

3199 Golf Course Road
Chico, Ca. 95973

for

Bidwell Park
Golf Course

3199 Golf Course Road
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1

120 60 20 40 1" = 60 ft.

# Site Plan: Solar System Array


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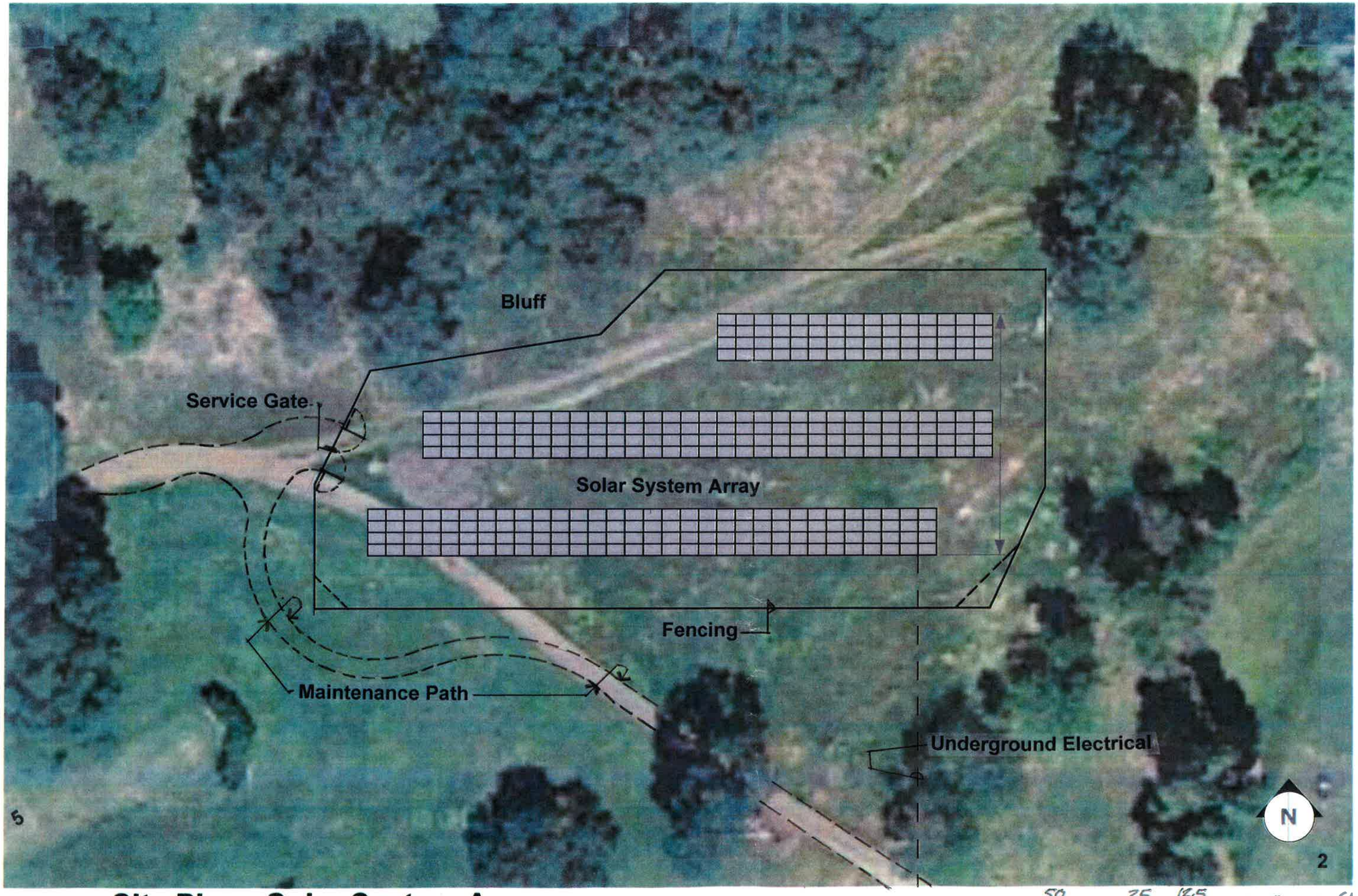
2




## Site Plan: Solar System Array

50 25 12.5 6.25 1" = 25 ft.

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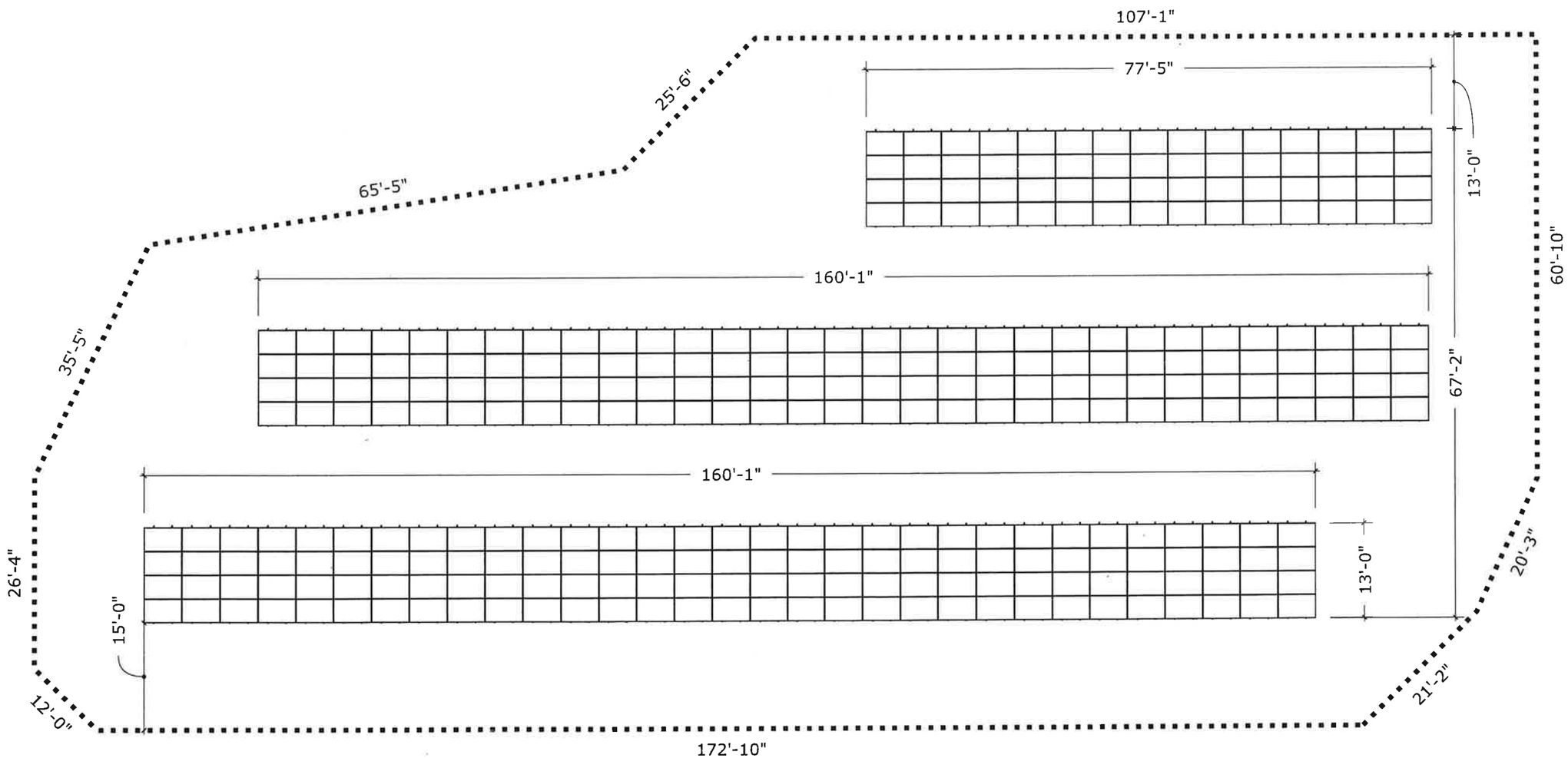


# Plan: Solar System Array

1/16" = 1'-0"

N

REVISION

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AES
Alternative Energy Systems Inc.

**B.P.G.C. Solar System**

**Ground Mounted Solar System**

at

3199 Golf Course Road
Chico, Ca. 95973

for

**Bidwell Park Golf Course**

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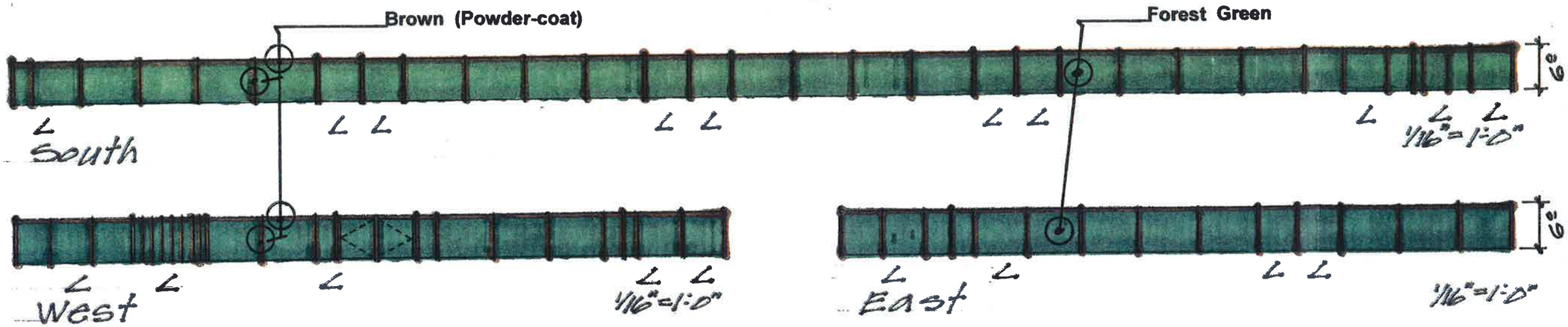
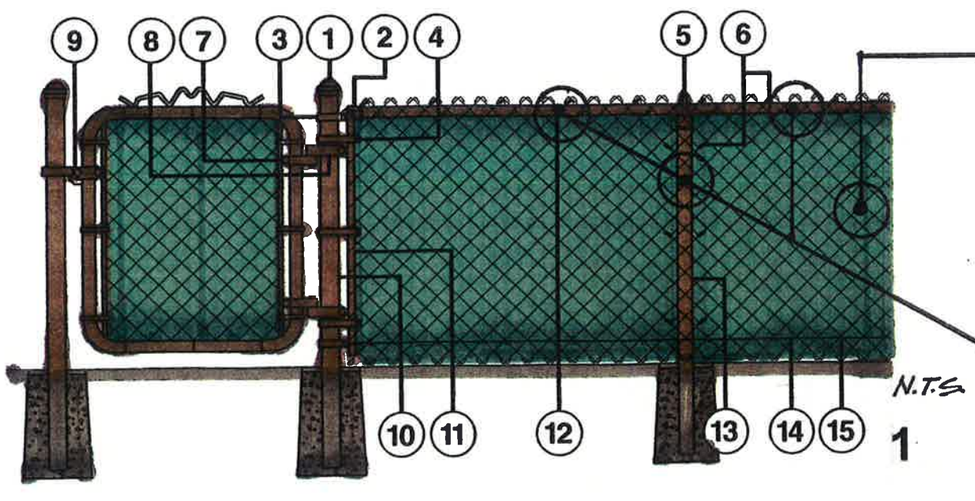
**4**

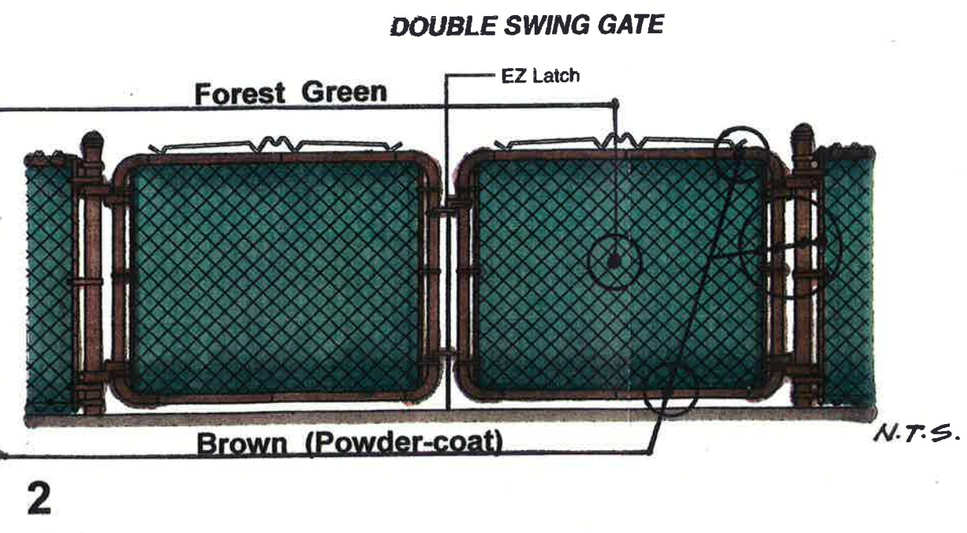
# Fence Exterior Elevations




## CHAIN-LINK FENCE AND GATE

PARTS LIST




1. Terminal Post Cap
2. Rail End
3. Rail End Band
4. Tension Band
5. Line Post Top
6. Fence Tie
7. Gate Frame Hinge
8. Gate Post Hinge
9. Gate Fork Latch
10. Terminal Post
11. Tension Bar
12. Top Rail
13. Line Post
14. Bottom Tension Wire
15. Tension Wire Clip

## Fence Elements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B.P.G.C. Solar System

Ground Mounted Solar System

at

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for

Bidwell Park Golf Course

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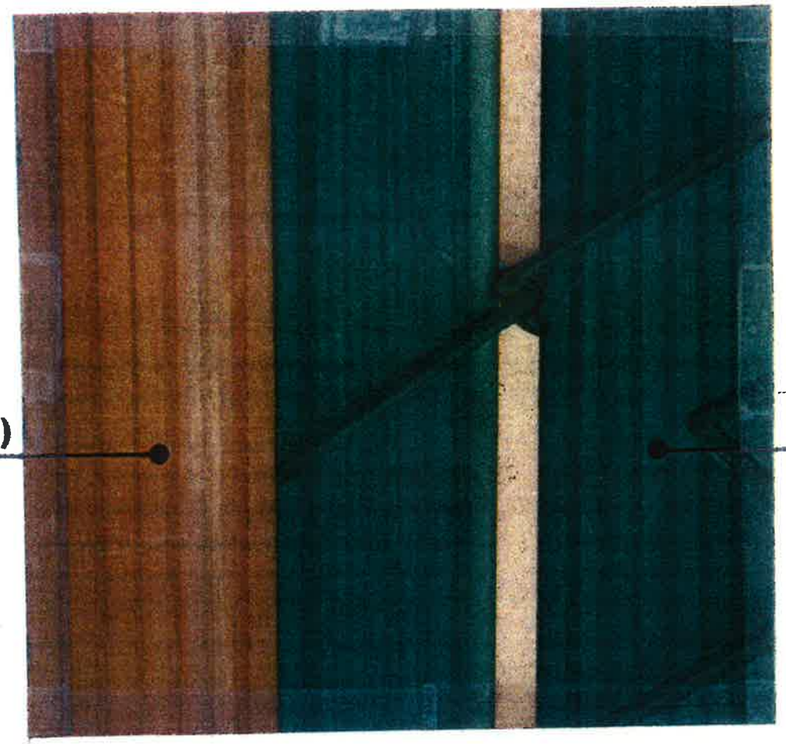
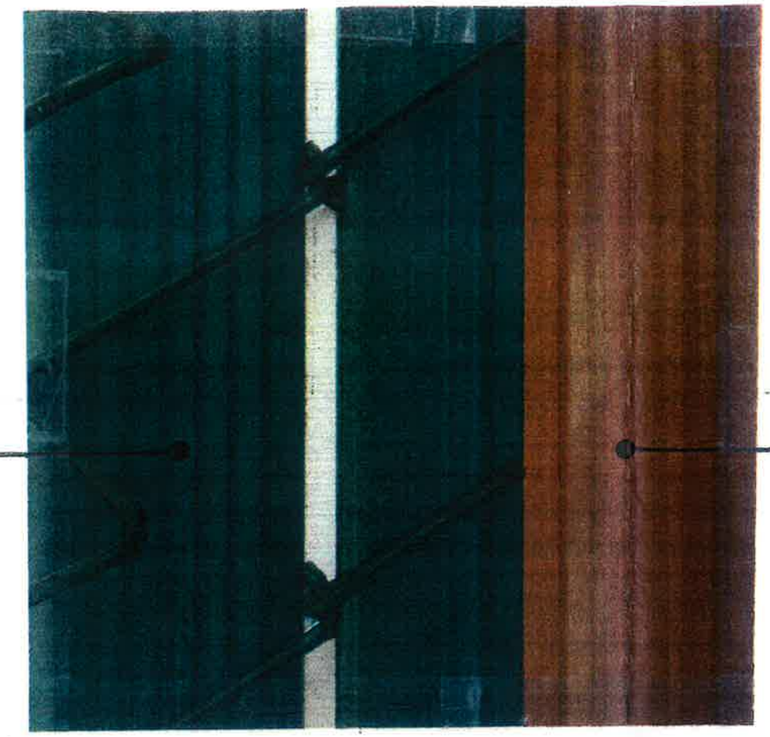
4.1

3-1-16




Fence Concept (Color Approx.)




Fence Concept (Color Approx.)

Fence System

Fence System

architect
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anderson
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530.891.4242

B.P.G.C.
Solar
System

Ground Mounted
Solar System

at

3199 Golf Course Road
Chico, Ca. 95973

for

Bidwell Park
Golf Course

3199 Golf Course Road
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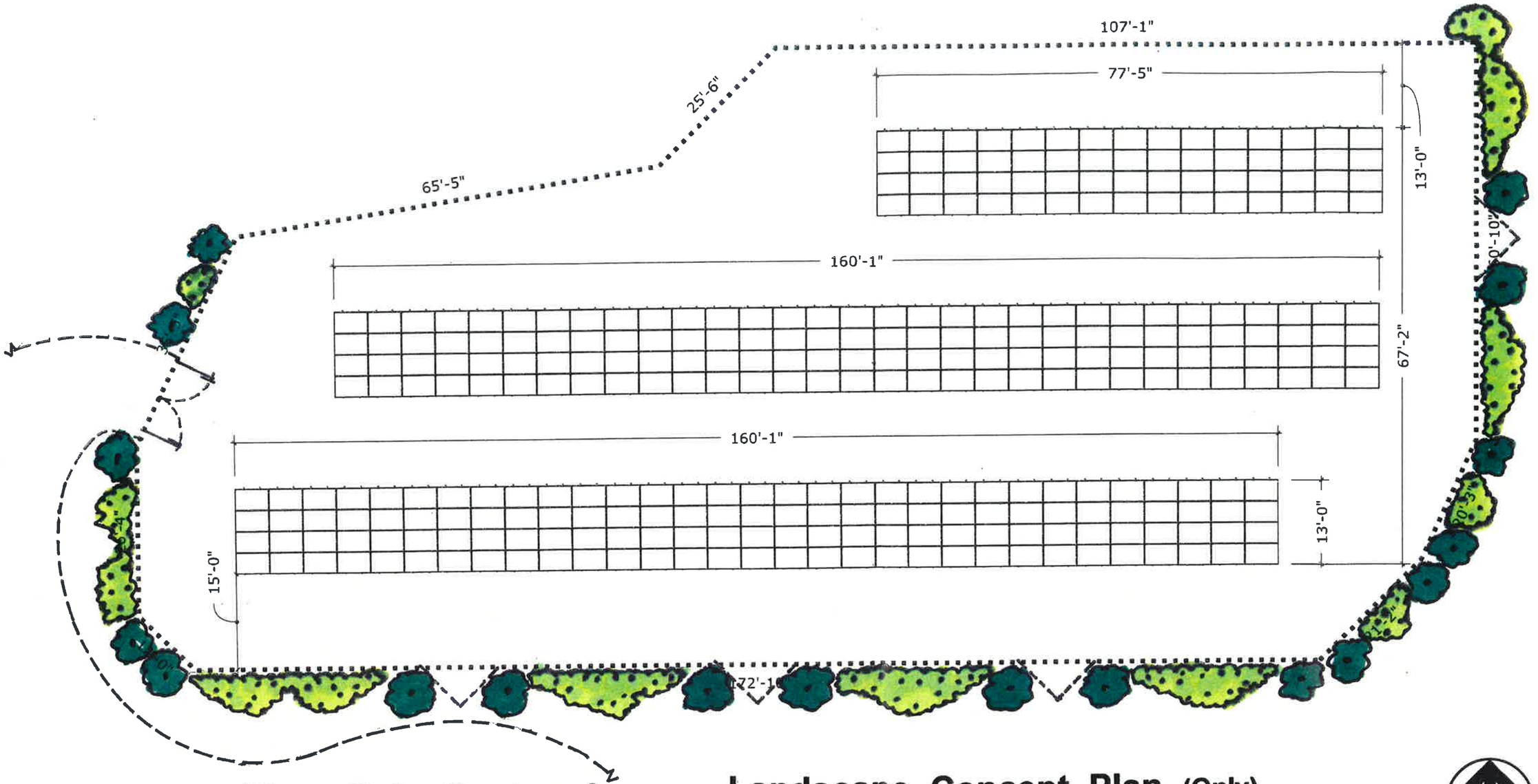
4.2
3.1.16




# Plan: Solar System Array

# Landscape Concept Plan (Only)

**Note:** Plantings will be selected with Public Work Department - Park Division guidance and approvals.

1/16" = 1'-0"
3-1-16

N

REVISION

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info@solarenergyforlife.com

Alternative Energy Systems Inc.

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for

**Bidwell Park Golf Course**

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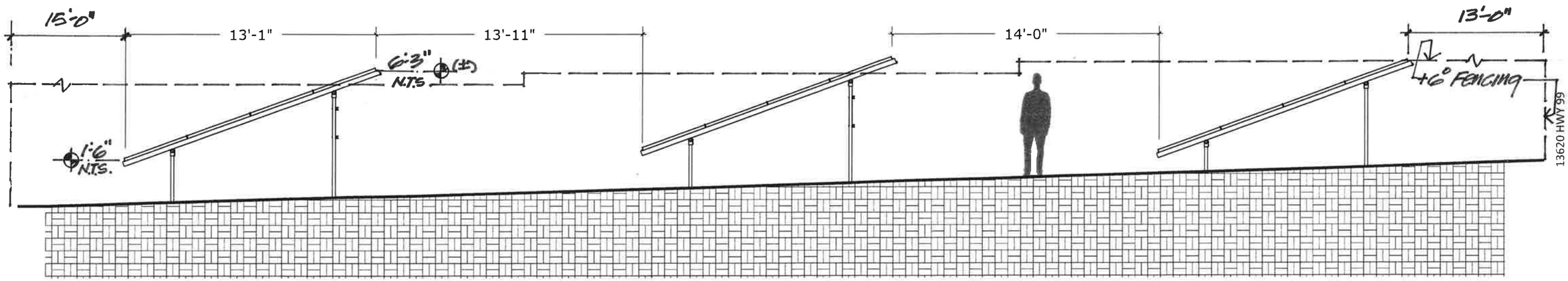
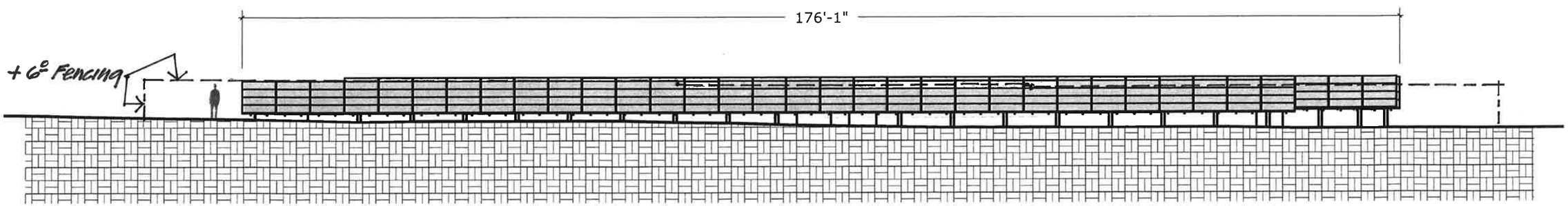
# 4.3




A/1 EAST ELEVATION

3/16"=1'-0"




SOUTH ELEVATION A/2

1/16"=1'-0"

# Solar System Array: Elevations

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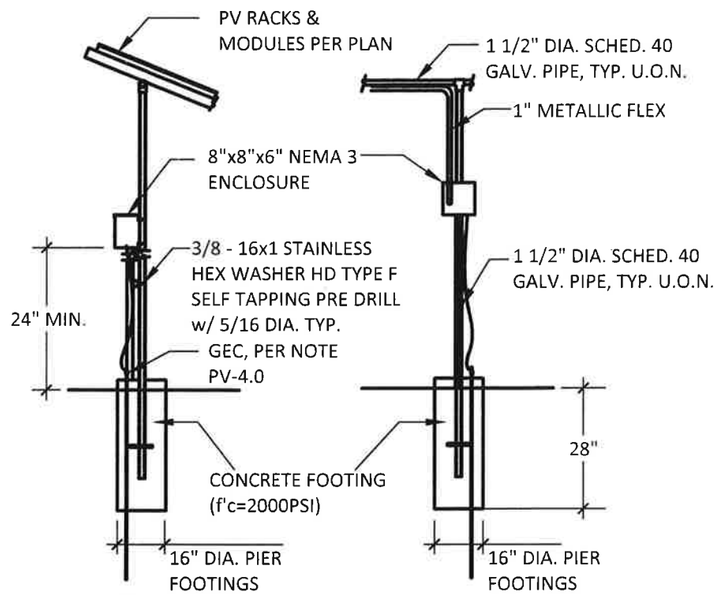
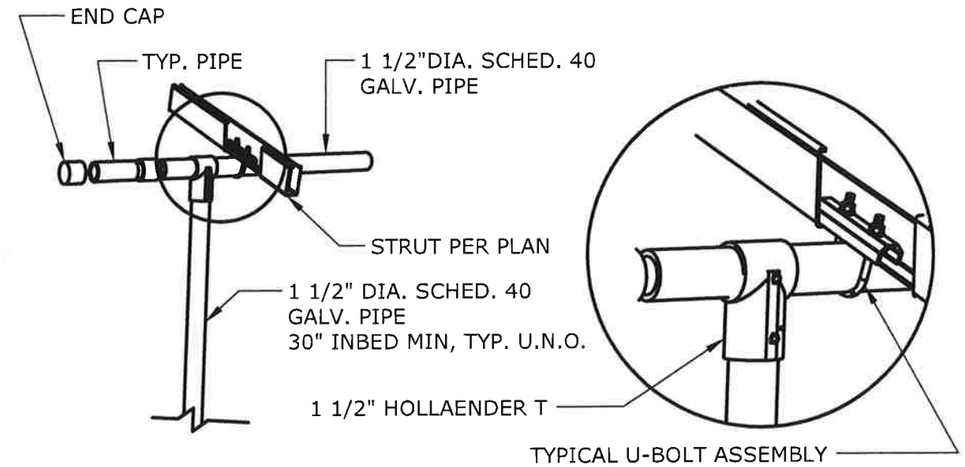
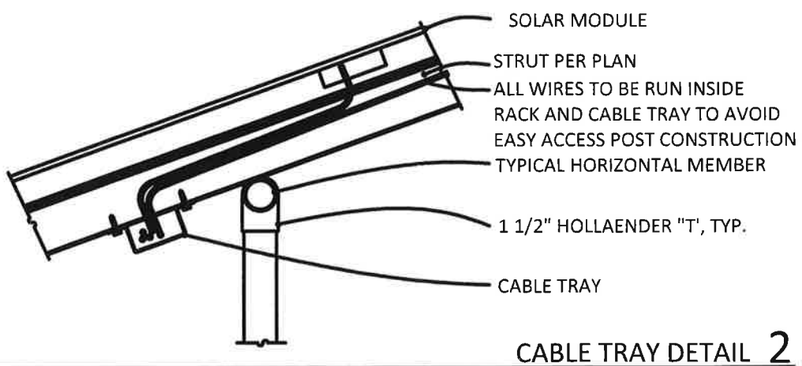
**5**



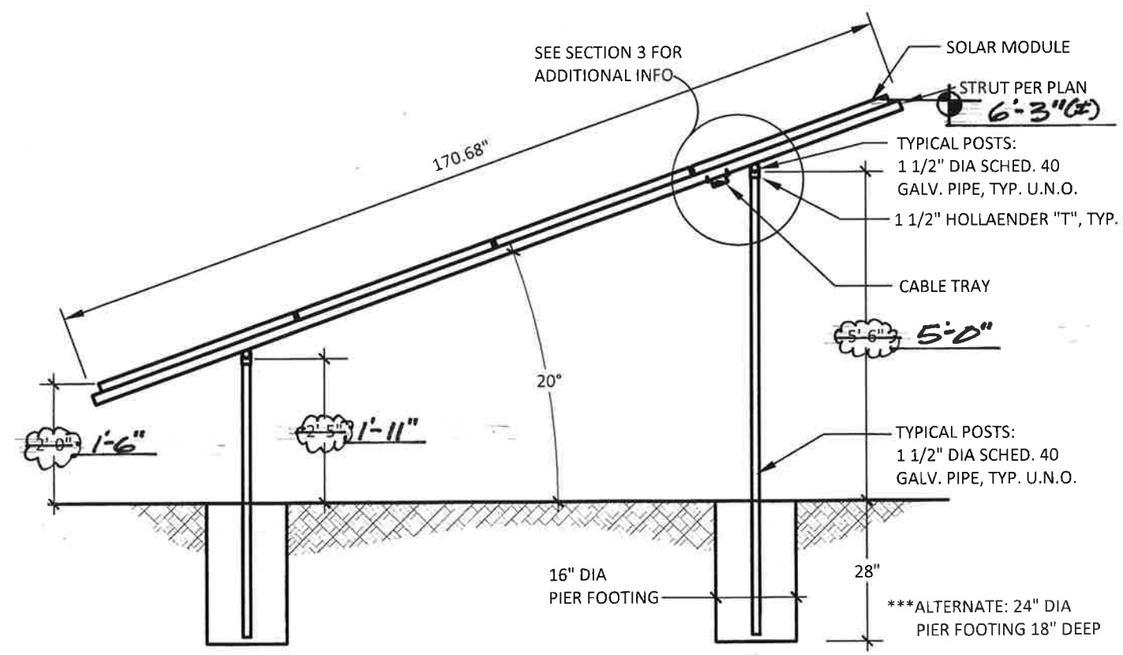

TYPICAL J-BOX AT BACK OF ARRAY 4




TYPICAL PROSOLAR GROUND MOUNT RAIL TO PIPE DETAIL 3




CABLE TRAY DETAIL 2




SECTION 1

# Solar System Array: Details

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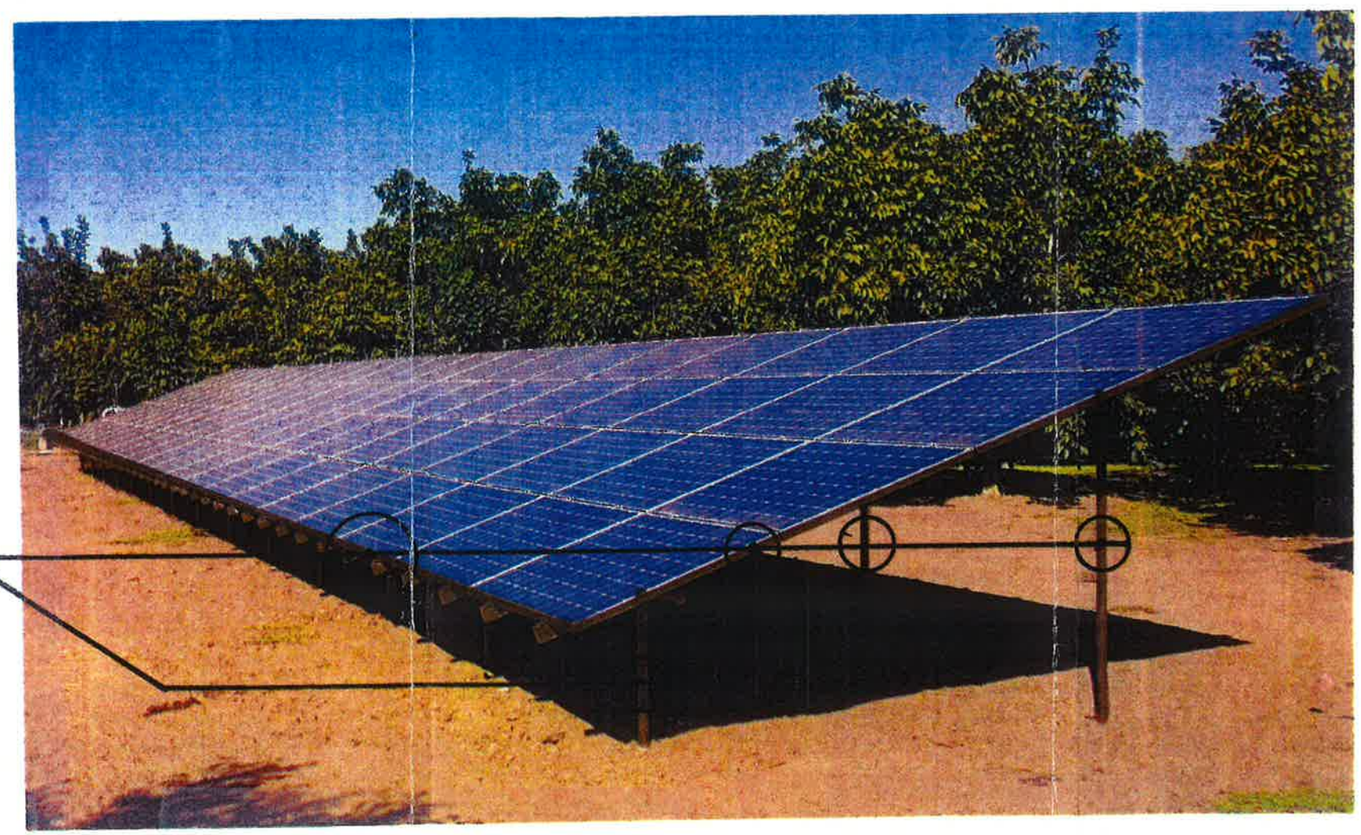
## Solar System Array (4 Panel High) (Example Only)

1

**Note:** Perimeter treated to match Brown (Powder-coat) Color



2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**6.1**

3·1·16

# Solar System Array: South Elevation


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**7**

## Solar System Array: West Elevation


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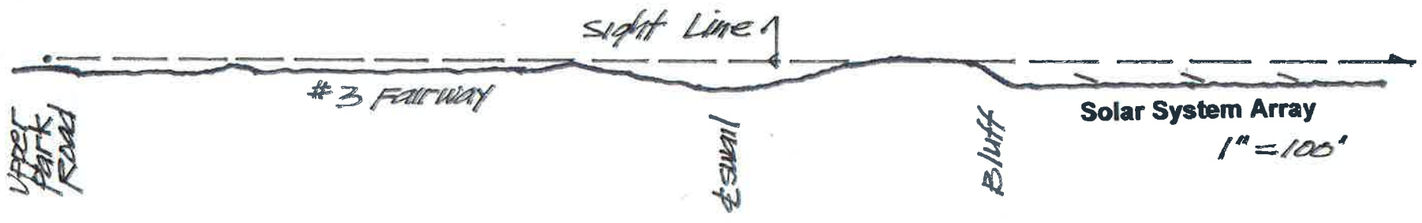
8

**Section**




**A** **Upper Park Road:** **Toward Solar Array)**

**(Across Hole # 3)**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for

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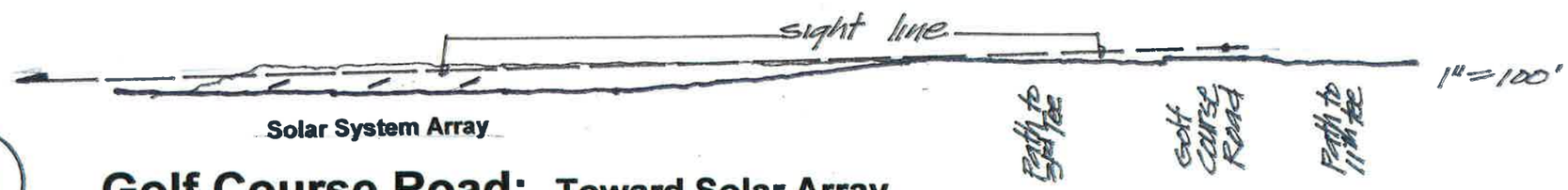
**9**




Solar System Array

**B**

## Golf Course Road: Toward Solar Array

**(Between 10th green & 11th tee)**

**(Between 2nd green & 3rd tee)**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**B.P.G.C. Solar System**

**Ground Mounted Solar System**

at

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for

**Bidwell Park Golf Course**

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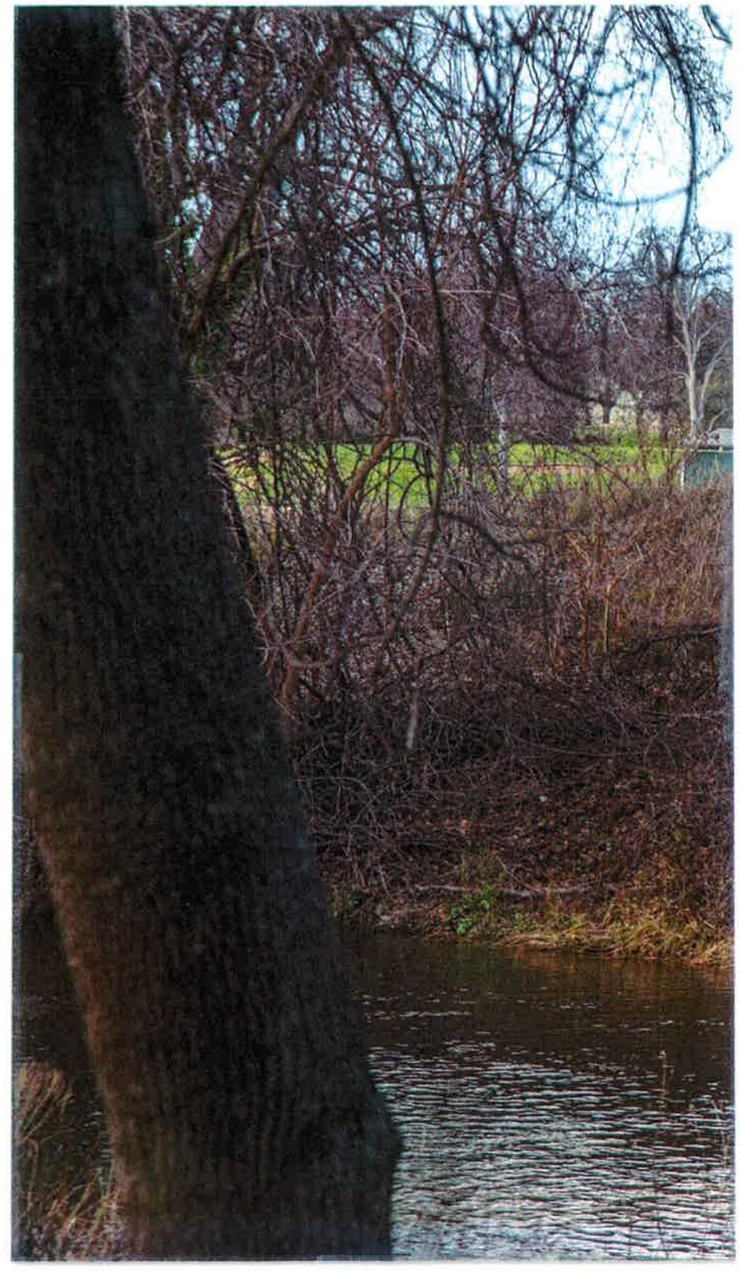
**10**

**D** **Chico Canyon Road:** Toward Solar Array
(Across Big Chico Creek over 7th green)



**C** **Chico Canyon Road:** Toward Solar Array
(Across Big Chico Creek over 7th green)


architect

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for

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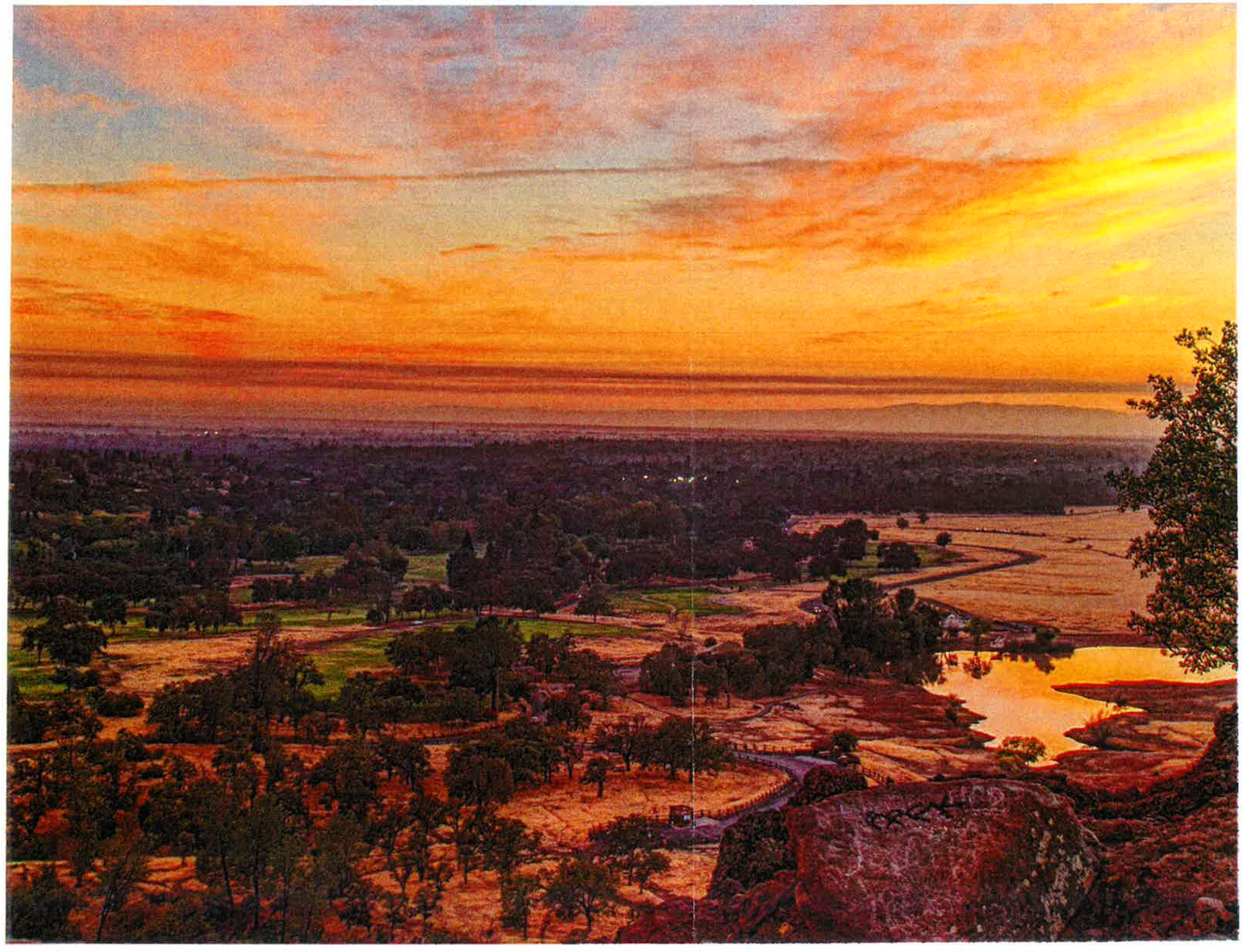
**11**



E **Monkey Face:** Toward Solar Array
(Over 11th fairway & 2nd green)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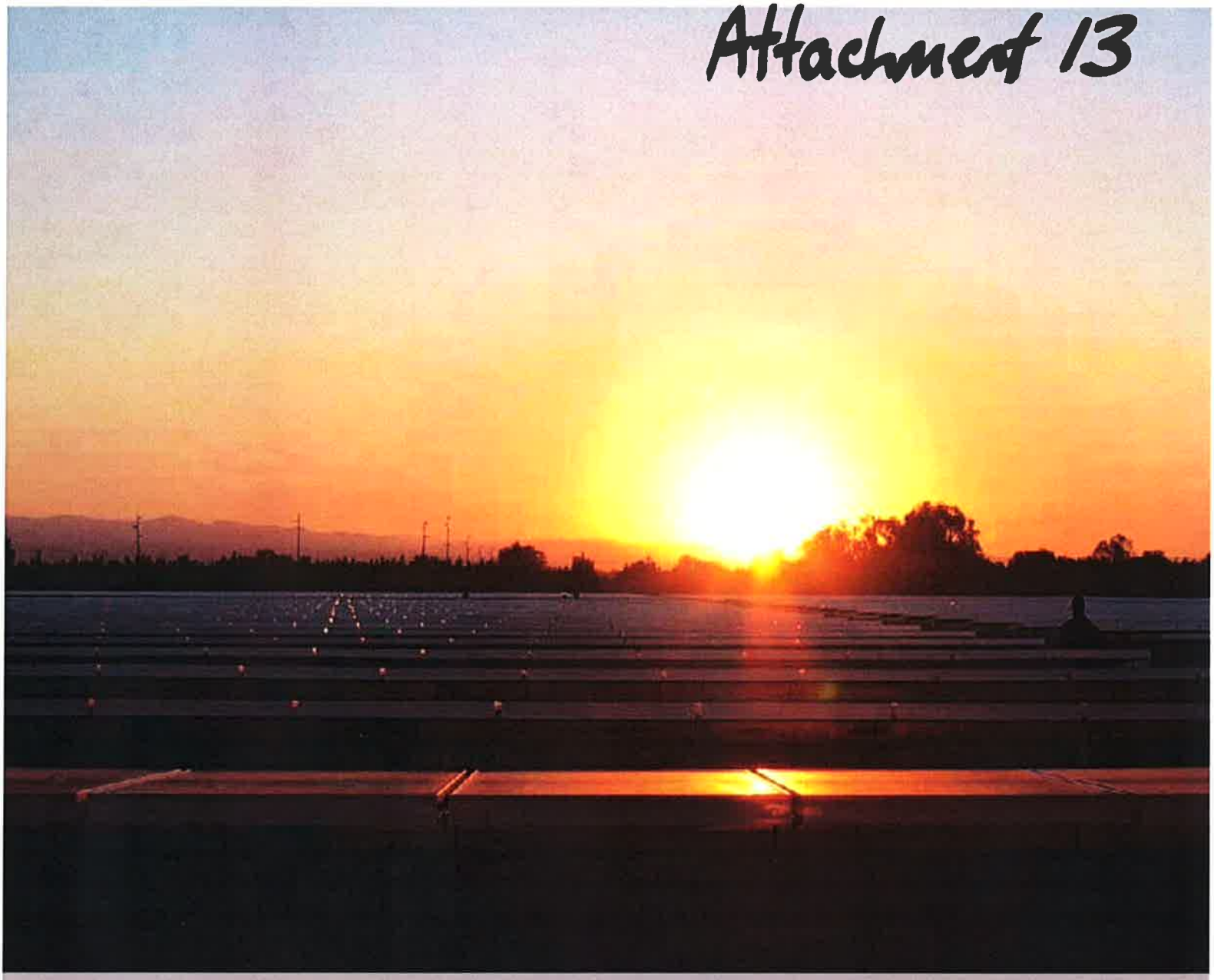
**12**

Attachment 13



# PV Systems: Low Levels of Glare and Reflectance vs. Surrounding Environment

13

SUNPOWER™

by Mark Shields
2010

# EXECUTIVE SUMMARY

The glare and reflectance levels from a given PV system are decisively lower than the glare and reflectance generated by the standard glass and other common reflective surfaces in the environments surrounding the given PV system. Possibilities of random glare and reflectance observed from the air: the PV industry has multiple large projects installed near airports or on air force bases. Each of these large projects has passed FAA or Air Force standards and all projects have been determined as "No Hazard to Air Navigation". Although the possible glare and reflectance from PV systems are at safe levels and are decisively lower than other standard residential and commercial reflective surfaces, it is suggested that customers and installers discuss any possible concerns with the neighbors/cohabitants near the planned PV system installation.

# EXPLANATION OF REFLECTANCE AND PV GLASS

SECTION 1

In general, since the whole concept of efficient solar power is to absorb as much light as possible while reflecting as little light as possible, standard solar panels produce less glare and reflectance than standard window glass. This is pointed out very well in US patent # 6359212 (Method for testing solar cell assemblies and second surface mirrors by ultraviolet reflectometry for susceptibility to ultraviolet degradation), which explains the differences in the refraction and reflection of solar panel glass versus standard window glass. Specifically, on a more technical level, solar panels use "high-transmission, low-iron" glass, which absorbs more light, producing smaller amounts of glare and reflectance than normal glass. In order to further explain these differences, we will need to explain some basic scientific terms that are used when discussing beams of light impacting the surfaces of other mediums, as the light beams leave air to enter the other mediums.

## Reflection, Refraction and Angles-of-incidence

The imaginary line at 90° to a given reflective surface is called the Normal. The original beam of light is called the incident beam, and the angle at which it strikes the surface is called the incident angle. The quantity of reflected light is called the reflectance, and the angle at which it leaves the surface is the angle of reflectance. With transparent surfaces, the amount of light which bends slightly as it goes through the surface is called the refracted beam OR transmittance. These basic concepts of reflection (return of light from a surface) and refraction (bending and transmission of light through a surface) are pointed out in the first two figures on the next page. Both have a normal, an incident beam and an incident angle;

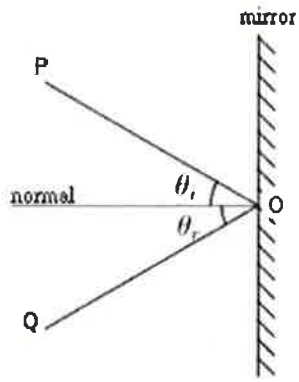



Figure 1.1; Reflection

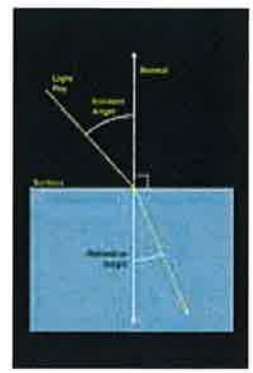


Figure 1.2: Refraction

Since our main discussion concerns types of glass and sunlight, we will further our explanation using glass as the example and speaking in terms of reflected energy percentages:

Incident light and Reflected Energy percentages. When a beam of light falls on a piece of glass, some of the light is reflected from the glass surface, some of the light passes through the glass (transmitted), and some (very little) is absorbed by the glass.

- The measure of the proportion of light reflected from the surface is called reflectance (reflection).
- The measure of the proportion transmitted is the transmittance (This is where the term high light-transmission glass comes from because the glass is formulated to allow more light to pass through its surface than would pass through a standard glass surface).
- The measure of the proportion absorbed is the absorptance (absorption (this amount is very small for clear glass – much, much smaller proportionately, than the other two components).
- Each quantity is expressed as a fraction of the total quantity of light in the beam. If the intensity of the beam is represented by the numerical 1, reflectance by R, absorptance by A and transmittance by T, intensity may be expressed as follows: R + A + T = 1, where glass is the glazing material pointed out in figure 2-2 in the next column (Figure 2-1 is a rough depiction of the percentages of light for each component of the equation).

Figure 2.1: Depiction of resultant percentages for incident components

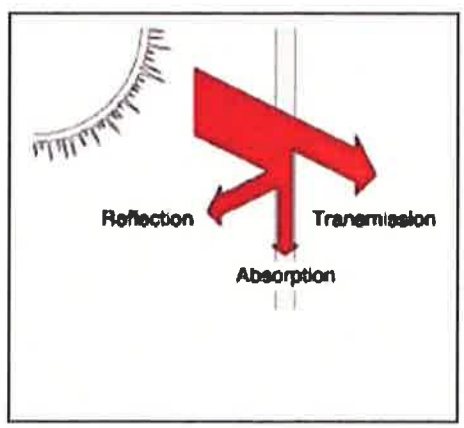



Figure 2.2: Solar radiation through a glazing material is either reflected, transmitted or absorbed

The reflection/refraction behavior of a medium is directly related to its index of refraction. The lower the index of refraction for a medium, the less light it reflects because the medium is allowing more of the incident beam to pass directly through (in our case, directly through the glass to the solar cells). The following list and graphical representation are one-to-one in the order of a materials' representation;

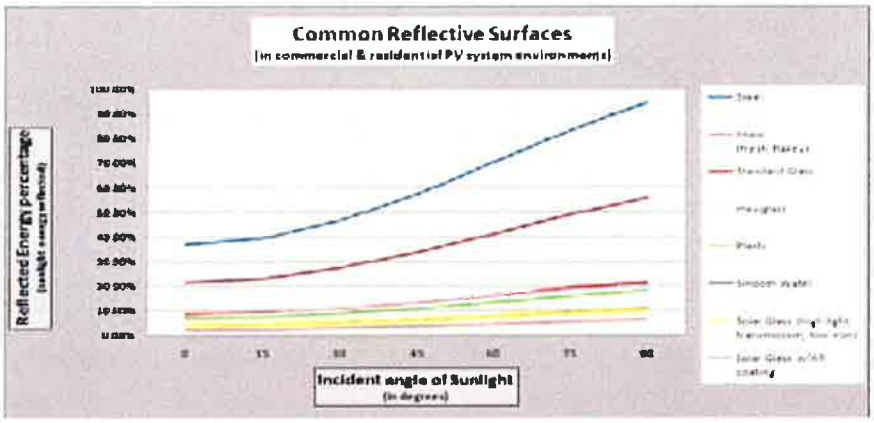



Figure 2.4: Common Reflective Surfaces and reflectance percentages.

| n | Common Reflective Surfaces (in surrounding environments for the systems) | |
|---|---|---|
| 2.500 | Material Reflectivity (percent of incident light reflected) | Steel |
| 1.980 | | Snow (fresh, flaken) |
| 1.517 | | Standard Glass |
| 1.500 | | Plexiglass |
| 1.460 | | Plastic |
| 1.333 | | Smooth Water |
| 1.329 | | Solar Glass (high light transmission, low iron) |
| 1.250 | | Solar Glass w/AR coating |

Figure 2.3: Common Reflective Surfaces and Index of Refraction, "n" (the value "n" may vary by reference source, but the hierarchy of "n" values from one material to another will remain the same).

In the below we show the reflected energy percentages of sunlight, off of some common residential and commercial surfaces. The legend and the graph lists the items from top to bottom in order of the highest percentage of reflected energy (as does the list of Common Reflective Surfaces); E.g. – 'Steel' reflects more energy than 'Snow'. 'Snow' reflects more energy than 'standard glass', etc. It should be noted from the graph and the table below, that the reflected energy percentage of Solar Glass is far below that of standard glass and more on the level of smooth water.

| Common Reflective Surfaces (in surrounding environments for the systems) | Incident angle in degrees | | | | | | |
|---|---|---|---|---|---|---|---|
| | 0 | 15 | 30 | 45 | 60 | 75 | 90 |
| Steel | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Snow (fresh, flaken) | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Standard Glass | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Plexiglass | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Plastic | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Smooth Water | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Solar Glass (high light transmission, low iron) | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Solar Glass w/AR coating | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

Figure 2.5: Common Reflective Surfaces and reflectance percentage values.

## Stippled Glass" and "Light Trapping"

In addition to the superior refractive/reflective properties of solar glass versus standard glass, many PV suppliers uses stippled solar glass for their panels. Stippled glass is also used with high powered telescopes and with powerful beacons and flashlights. The basic concept behind stippling is for the surfaces of the glass to be "textured" with small types of indentations. As a result, stippling allows more light energy to be channeled/transmitted through the glass while diffusing (weakening) the reflected light energy. "Light trapping" is also used by more high-quality PV suppliers. "Light Trapping" is the practice of using additional techniques like mirrors and natural surface textures to "trap" light within the layers of the solar cell, allowing even less light to escape by reflection. These concepts are why a reflection of off a high-quality solar panel will look hazy and less-defined than the same reflection from standard glass. This occurs because the stippled and light-trapping PV glass and cell texture are transmitting a larger percentage of light to the solar cell while breaking-up the intensity of the reflected energy.

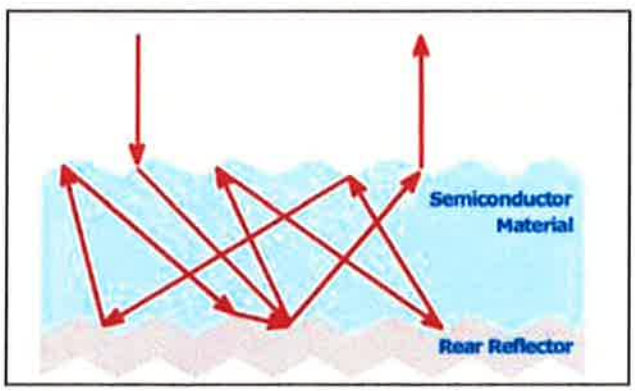
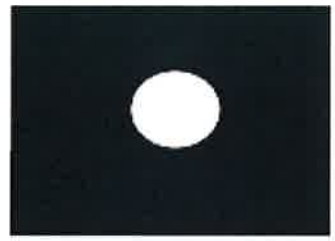



Figure 3.1: Light Trapping. More light energy is absorbed by the cell with each ensuing reflection of the initial light beam.

Try this basic optical experiment where ever a reflection comparison can be safely made between a high-efficiency/high-quality PV panel and a large window or plate of glass.

Regular (Float) Glass



PV Glass (low Fe, high trans.)

Figure 3.2: Reflection Characteristic example

## No Hazard to Air Navigation

A handful of PV suppliers are proud to point out their PV installations at airports and on Air Force bases. The statement "No Hazard to Air Navigation" is the FAA status consistently applied to the large system arrays and power-plants which are continuously being erected on and around airports and Air Force bases. After covering the information prior to this section, it should come as no surprise that PV installations have this status concerning air navigation.

# CONCLUSION

SECTION 2

In support of the executive summary, the studies, data and light-beam physics behind the charts and graphs prove beyond a reasonable doubt that solar glass has less glare and reflectance than standard glass. The figures also make it clear that the difference is very decisive between solar glass and other common residential and commercial glasses. In addition, not to be lost in the standard light/glass equations and calculations, PV solar-glass is often stippled and has a light-trapping, very photon-absorbent solar cell attached to its' back side, contributing additional factors which result in even less light energy being reflected.

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SECTION 3


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4.8. *J. Karlsson, B. Karlsson and A. Roos, A simple model for assessing the energy efficiency of windows, In Press, Energy and Buildings*

4.9. *Saint Gobain; SG Solar Eclipse for Airport Zones*

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April 8, 2016

Mr. John C. Anderson
Architect
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**Subject: Botanical Survey of the Bidwell Park Golf Course – Solar Project, Butte County, California (NSR No. 16.122.000)**

Mr. Anderson:

North State Resources, Inc. (NSR) has conducted a botanical survey for special-status plant species for the 0.4± acre Bidwell Park Golf Course Solar Project survey area. The survey area includes the locations of the proposed solar system array, access paths, and new electrical line corridors; and a 20-foot buffer surrounding these areas. The boundaries of the survey area are illustrated in Figure 1.

## Purpose of Botanical Survey

The purpose of the botanical survey is to:

- characterize the habitat types present within the survey area; and
- determine the presence/absence of special-status plant species within the survey area.

## Environmental Setting

The survey area is located at Bidwell Park Golf Course, roughly between the maintenance shop and the 5th tee. The majority of the survey area consists of irrigated turfgrass and paved golf cart paths that are part of the actively managed golf course. Portions of the survey area, primary at the northern and eastern extents, also include annual grassland and blue oak woodland vegetation communities.

Elevation within the survey area ranges between approximately 293 to 303 feet above mean sea level. Average temperatures range from July highs of 96 °F and January lows of 36 °F. Average annual precipitation is approximately 26 inches; most precipitation falls as rain between November and April (Western Regional Climate Center 2016).

## Methodology

Prior to conducting the botanical field survey, the following information sources were reviewed:

- *Richardson Springs, California* 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle;
- Color aerial photography of the survey area and vicinity; and
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) records for the *Richardson Springs, California* USGS quadrangle and the surrounding eight quadrangles (CNDDB 2016) (Appendix A).

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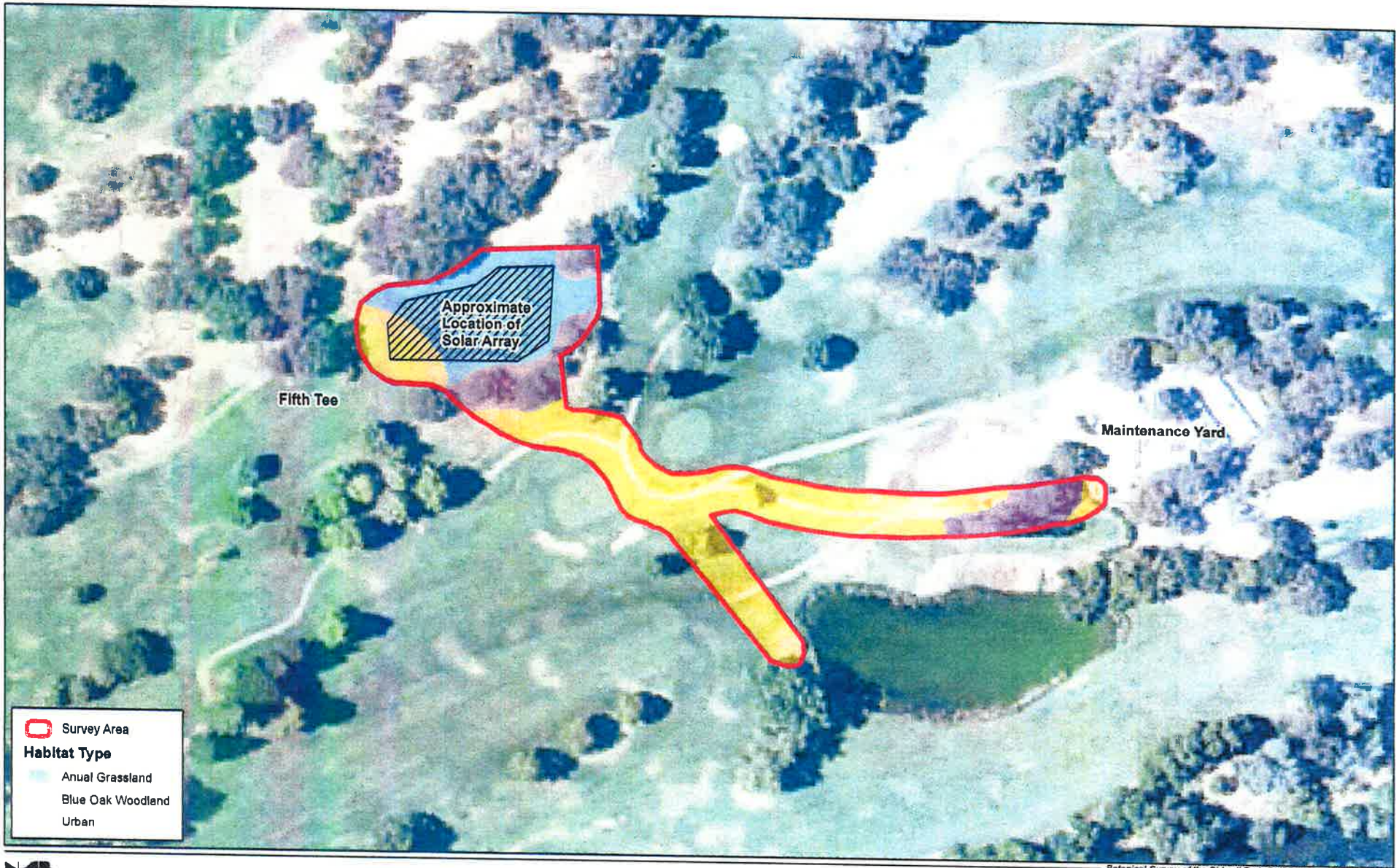


North State Resources, Inc.

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Botanical Survey of the Bidwell Park Golf Course - Solar Project

**Figure 1**
**Survey Area**

The botanical field survey was conducted by NSR biologist Tim Hanson on April 7, 2016. The survey was floristic in nature and conducted at a time of year when all potentially present special-status plant species would be evident and identifiable. The entire survey area was inspected by walking meandering transects to assess habitat types and viewing all areas to the degree necessary to determine the presence or absence of special-status plant species.

## Results

### *Habitat Types*

The survey area encompasses urban (golf course), annual grassland, and blue oak woodland habitat types (Figure 1). Urban areas encompass much of the survey area and consist of paved and gravel paths and irrigated turfgrasses. The urban areas also have small inclusions of non-native annual grassland and scattered trees including blue oak (*Quercus douglasii*), foothill pine (*Pinus sabiniana*), and ornamental trees such as tuliptree (*Liriodendron tulipifera*).

Annual grassland habitat occurs within the northwest portion of the survey area near the proposed location of the solar system array. This area is dominated by non-native annual grasses such as wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), and foxtail barley (*Hordeum murinum* ssp. *leporinum*). Other species present include spring vetch (*Vicia sativa*), bull thistle (*Cirsium arvense*), and yellow star-thistle (*Centaurea solstitialis*). Due to the dense cover of non-native annual grasses in this area, it does not provide habitat for herbaceous native plant species.

The proposed alignment of the underground electrical lines for the solar array pass through small portions of blue oak woodland west of the maintenance yard and directly south of the proposed solar array. These blue oak woodlands are dominated by blue oaks with scattered foothill pine near the maintenance yard and white mulberry (*Morus albus*) and incense cedar (*Calocedrus decurrens*) south of the proposed solar array. The herbaceous vegetation in these areas is heavily dominated by non-native annual grasses similar to those in the annual grassland habitat.

### *Special-Status Plant Species*

Special-status plant species include plants that are: (1) listed as threatened or endangered under the federal Endangered Species Act or the California Endangered Species Act; (2) designated as rare by the CDFW; (3) state or federal candidate or proposed species for listing as threatened or endangered; and/or (4) have a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, or 2B (CNPS 2016). A list of regionally occurring, special-status plant species was compiled based on review of the CNDDB records (Appendix B); review of biological literature and herbarium specimens relevant to the vicinity of the survey area (Consortium of California Herbaria 2016); and the results of the field survey.

Based on the review of the CNDDB records, four special-status plant species have been reported within two miles of the survey area. These species and a determination regarding habitat suitability within the survey area are provided below.

- Wooly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*) – The survey area does not contain suitable habitat (marshes and swamps) for this species.

- Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*) – The survey area does not contain suitable habitat (mesic grassland or vernal pools) for this species.

- California beaked-rush (*Rhynchospora californica*) – The survey area does not contain suitable habitat (meadows and seeps) for this species.

- Butte County checkerbloom (*Sidalcea robusta*) –The survey area contains marginally suitable habitat (cismontane woodland) for this species.

Based on the review of habitat requirements of the special-status plants identified in the CNDDB review, Butte County checkerbloom was determined to be the most likely species to occur in the survey area. This species most often occurs on rocky and brush-covered slopes in the Butte County foothills. Although this species occurs in blue oak woodland within a half mile of the survey area, due to the low gradient slopes and dense cover of non-native grasses, it is unlikely that Butte County checkerbloom would occur in the survey area.

The botanical survey conducted on April 7, 2016 did not detect any special-status plant species. A complete list of plant species observed during the botanical survey is presented as Appendix B.

**References**

California Native Plant Society (CNPS), Rare Plant Program. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed April 1, 2016].

California Natural Diversity Database (CNDDB). 2016. RareFind 5 [Internet]. California Department of Fish and Wildlife [April 1, 2016].

Consortium of California Herbaria. 2016. [Internet]. Available at: http://ucjeps.berkeley.edu/consortium/ [accessed April 1, 2016]

Western Regional Climate Center. 2016. CHICO UNIV FARM, CALIFORNIA (041715) Period of Record Monthly Climate Summary. Available at: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca1715

Thank you for this opportunity to assist with your project needs. Please contact me if you have any questions or require additional information. I can be reached by phone at (530) 345-4552 ext. 205 or by e-mail at hanson@nsrnet.com.

Sincerely,
North State Resources, Inc.

Tim Hanson
Biologist / Botanist

# **Appendix A** CNDDB Query Results

# Selected Elements by Scientific Name

## California Department of Fish and Wildlife

## California Natural Diversity Database

**Query Criteria:** Taxonomic Group is (Ferns or Gymnosperms or Monocots or Dicots or Lichens or Bryophytes) and Quad is (Campbell Mound (3912187) or Chico (3912167) or Cohasset (3912186) or Hamlin Canyon (3912166) or Nord (3912178) or Ord Ferry (3912168) or Paradise West (3912176) or Richardson Springs (3912177) or Richardson Springs NW (3912188))

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| ***Astragalus tener var. ferrisiae***<br>Ferris' milk-vetch | PDFAB0F8R3 | None | None | G2T1 | S1 | 1B.1 |
| ***Balsamorhiza macrolepis***<br>big-scale balsamroot | PDAST11061 | None | None | G2 | S2 | 1B.2 |
| ***California macrophylla***<br>round-leaved filaree | PDGER01070 | None | None | G3? | S3? | 1B.2 |
| ***Calystegia atriplicifolia ssp. buttensis***<br>Butte County morning-glory | PDCON04012 | None | None | G5T3 | S3 | 4.2 |
| ***Campylopodiella stenocarpa***<br>flagella-like atractylocarpus | NBMUS84010 | None | None | G5 | S1? | 2B.2 |
| ***Cardamine pachystigma var. dissectifolia***<br>dissected-leaved toothwort | PDBRA0K1B1 | None | None | G3G5T2Q | S2 | 1B.2 |
| ***Castilleja rubicundula var. rubicundula***<br>pink creamsacs | PDSCR0D482 | None | None | G5T2 | S2 | 1B.2 |
| ***Clarkia gracilis ssp. albicaulis***<br>white-stemmed clarkia | PDONA050J1 | None | None | G5T2 | S2 | 1B.2 |
| ***Clarkia mildrediae ssp. mildrediae***<br>Mildred's clarkia | PDONA050Q2 | None | None | G3T3 | S3 | 1B.3 |
| ***Cryptantha crinita***<br>silky cryptantha | PDBOR0A0Q0 | None | None | G2 | S2 | 1B.2 |
| ***Downingia pusilla***<br>dwarf downingia | PDCAM060C0 | None | None | GU | S2 | 2B.2 |
| ***Eriogonum umbellatum var. ahartii***<br>Ahart's buckwheat | PDPGN086UY | None | None | G5T3 | S3 | 1B.2 |
| ***Euphorbia hooveri***<br>Hoover's spurge | PDEUP0D150 | Threatened | None | G2 | S2 | 1B.2 |
| ***Fritillaria eastwoodiae***<br>Butte County fritillary | PMLIL0V060 | None | None | G3Q | S3 | 3.2 |
| ***Fritillaria pluriflora***<br>adobe-lily | PMLIL0V0F0 | None | None | G2G3 | S2S3 | 1B.2 |
| ***Gratiola heterosepala***<br>Boggs Lake hedge-hyssop | PDSCR0R060 | None | Endangered | G2 | S2 | 1B.2 |
| ***Hibiscus lasiocarpos var. occidentalis***<br>woolly rose-mallow | PDMAL0H0R3 | None | None | G5T2 | S2 | 1B.2 |
| ***Imperata brevifolia***<br>California satintail | PMPOA3D020 | None | None | G3 | S3 | 2B.1 |
| ***Juncus leiospermus var. leiospermus***<br>Red Bluff dwarf rush | PMJUN011L2 | None | None | G2T2 | S2 | 1B.1 |

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| ***Lasthenia glabrata ssp. coulteri*** Coulter's goldfields | PDAST5L0A1 | None | None | G4T2 | S2 | 1B.1 |
| ***Limnanthes floccosa ssp. californica*** Butte County meadowfoam | PDLIM02042 | Endangered | Endangered | G4T1 | S1 | 1B.1 |
| ***Limnanthes floccosa ssp. floccosa*** woolly meadowfoam | PDLIM02043 | None | None | G4T4 | S3 | 4.2 |
| ***Monardella venosa*** veiny monardella | PDLAM18082 | None | None | G1 | S1 | 1B.1 |
| ***Orcuttia pilosa*** hairy Orcutt grass | PMPOA4G040 | Endangered | Endangered | G1 | S1 | 1B.1 |
| ***Orcuttia tenuis*** slender Orcutt grass | PMPOA4G050 | Threatened | Endangered | G2 | S2 | 1B.1 |
| ***Paronychia ahartii*** Ahart's paronychia | PDCAR0L0V0 | None | None | G3 | S3 | 1B.1 |
| ***Rhynchospora californica*** California beaked-rush | PMCYP0N060 | None | None | G1 | S1 | 1B.1 |
| ***Rhynchospora capitellata*** brownish beaked-rush | PMCYP0N080 | None | None | G5 | S1 | 2B.2 |
| ***Rupertia hallii*** Hall's rupertia | PDFAB62010 | None | None | G2G3 | S2S3 | 1B.2 |
| ***Sagittaria sanfordii*** Sanford's arrowhead | PMALI040Q0 | None | None | G3 | S3 | 1B.2 |
| ***Sidalcea robusta*** Butte County checkerbloom | PDMAL110P0 | None | None | G2 | S2 | 1B.2 |
| ***Stuckenia filiformis ssp. alpina*** slender-leaved pondweed | PMPOT03091 | None | None | G5T5 | S3 | 2B.2 |
| ***Tuctoria greenei*** Greene's tuctoria | PMPOA6N010 | Endangered | Rare | G1 | S1 | 1B.1 |
| ***Wolffia brasiliensis*** Brazilian watermeal | PMLEM03020 | None | None | G5 | S1 | 2B.3 |

**Record Count: 34**

# **Appendix B** Plant Species Observed

## Plant Species Observed at the Bidwell Park Golf Course – Solar Project
## Butte County, California

**Field Visit Dates: April 8, 2016**

**Surveyor: Tim Hanson**

| Scientific Name | Common Name | Nativity[1] |
|---|---|---|
| *Anthriscus caucalis* | bur-chervil | naturalized |
| *Avena barbata* | slender wild oat | naturalized |
| *Avena fatua* | wild oat | naturalized |
| *Brassica nigra* | black mustard | naturalized |
| *Bromus diandrus* | ripgut grass | naturalized |
| *Bromus hordeaceus* | soft chess | naturalized |
| *Calocedrus decurrens* | incense cedar | native |
| *Capsella bursa-pastoris* | shepherd's purse | naturalized |
| *Centaurea solstitialis* | yellow star-thistle | naturalized |
| *Cirsium vulgare* | bull thistle | naturalized |
| *Digitaria* sp. | crab grass | naturalized |
| *Erodium cicutarium* | redstem filaree | naturalized |
| *Festuca myuros* | rattail sixweeks grass | naturalized |
| *Festuca perennis* | rye grass | naturalized |
| *Hordeum murinum* ssp. *leporinum* | hare barley | naturalized |
| *Lactuca serriola* | prickly lettuce | naturalized |
| *Lepidium didymum* | lesser swine cress | naturalized |
| *Ligustrum japonicum* | Japanese privet | naturalized |
| *Liriodendron tulipifera* | tulip tree | non-native |
| *Malva parviflora* | cheeseweed | naturalized |
| *Marrubium vulgare* | white horehound | naturalized |
| *Matricaria discoidea* | pineapple weed | native |
| *Medicago polymorpha* | California burclover | naturalized |
| *Morus alba* | white mulberry | naturalized |
| *Nerium oleander* | common oleander | naturalized |
| *Olea europaea* | European olive | naturalized |
| *Oxalis corniculata* | creeping wood sorrel | naturalized |
| *Paspalum dilatatum* | dallis grass | naturalized |
| *Phytolacca americana* var. *americana* | pokeweed | naturalized |
| *Pinus sabiniana* | foothill pine | native |
| *Plantago lanceolata* | English plantain | naturalized |
| *Poa annua* | annual blue grass | naturalized |
| *Poa bulbosa* | bulbous blue grass | naturalized |
| *Polygonum aviculare* | knotweed | naturalized |
| *Quercus douglasii* | blue oak | native |

| | | |
|---|---|---|
| *Quercus wislizeni* | interior live oak | native |
| *Senecio vulgaris* | common groundsel | naturalized |
| *Silybum marianum* | milk thistle | naturalized |
| *Toxicodendron diversilobum* | poison oak | native |
| *Trifolium repens* | white clover | naturalized |
| *Typha* sp. | cattail | native |
| *Verbascum thapsus* | wooly mullein | naturalized |
| *Veronica persica* | Persian speedwell | naturalized |
| *Vicia sativa* | vetch | naturalized |
| *Vitis californica* | California wild grape | native |

[1]Nativity designation per *The Jepson Manual, 2nd edition* (Baldwin et al. 2012)