Camp San Luis Obispo
Bravo Range Modernization Project

Public Draft
Initial Study/Proposed Mitigated Negative Declaration

California Army National Guard

July 2019

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California Army National Guard

Notice of Intent to Adopt a Mitigated Negative Declaration

NOTICE IS HEARBY GIVEN that the California Army National Guard will consider adoption of a Mitigated Negative Declaration in accordance with the California Environmental Quality Act and approval of the following project:

Project Title: Camp San Luis Obispo – Bravo Range Modernization Project

Applicant: California Army National Guard

Project Location: North side of Range Road between San Benito Road and Chorro Reservoir Road in Camp San Luis Obispo, San Luis Obispo, CA.

Project Description: The proposed project would upgrade the existing 1.6-acre Combat Pistol Qualification Course at the Bravo Range to meet modern military standards. The project would allow soldiers to meet essential standard weapons qualification and sustainment training requirements and commanders to prepare individuals and units for advanced targeted training. The previously-existing firing lanes would be replaced with 15 modern firing lanes at the same location. The project also includes stormwater drainage improvements and erosion protection.

The entire Camp San Luis Obispo is an active California Department of Toxic Substances Control clean-up site (e.g., Cortese List) due to the presence of military munitions and explosives of concern (e.g., unexploded ordnance).

The Public Review Period for the proposed Mitigated Negative Declaration will commence on July 17, 2019, and end on August 15, 2019. All interested parties are welcome to comment on the proposed Mitigated Negative Declaration.

FINDING

The California Army National Guard has reviewed the above project in accordance with the Rules and Procedures for the Implementation of the California Environmental quality Act and has determined that an Environmental Impact Report need not be prepared because:

- ☐ The proposed project will not have a significant effect on the environment.
- ☒ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because mitigation measures described on the attached sheet and hereby made a part of Negative Declaration have been added to the project.

The Initial Study which provides the basis for this determination is available at the San Luis Obispo County Library, 995 Palm Street, San Luis Obispo, CA 93401, and the Camp San Luis Obispo Environmental Office, Camp San Luis Obispo, 10 Sonoma Ave, Building 1300, Camp San Luis Obispo, CA 93405.

NOTICE

The public is invited to provide written comment on the Draft Mitigated Negative Declaration and. The appropriateness of the Draft Mitigated Negative Declaration will be reconsidered in light of the comments received. Questions about and comments on the proposed project and Mitigated Negative Declaration may be mailed to the California Army National Guard-Environmental Directorate at 3900 Roseville Road, North Highlands, CA 95660 provided that any comments are received prior to close of the public review period. Should you have any questions about this project, please call Major Jubilee Satele at 805-594-6599 or send email to jubilee.r.satele.mil@mail.mil.

07/12/2019

Name Commander Brian N Wintzer Date

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Acronyms and Abbreviations

APE	Area of Potential Effect
CA ARNG	California Army National Guard
CAP	Climate Action Plan
CARB	California Air Resources Board
CRHR	California Register of Historic Resources
CRM	Cultural Resources Manager
RWQCB	Regional Water Quality Control Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CGP	Construction General Permit
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CSLO	Camp San Luis Obispo
DTSC	Department of Toxic Substances Control
GHG	greenhouse gas
IS/MND	Initial Study and Mitigated Negative Declaration
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
N_2O	nitrous oxide
NOA	naturally occurring asbestos
NOx	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Properties
OHWM	ordinary high water mark
$PM_{2.5}$	particulate matter with aerodynamic diameter equal to or less than 2.5 microns
PM_{10}	particulate matter with aerodynamic diameter equal to or less than 10 microns
REC	Record of Environmental Consideration
ROG	reactive organic gases
SECFOR	Security Force
SLOCAPCD	San Luis Obispo County Air Pollution Control District
SWPPP	Stormwater Pollution Prevention Plan
SYBCI	Santa Ynez Band of Chumash Indians
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

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1. Project Information

Project Title	Camp San Luis Obispo, Bravo Range Modernization Project
Lead Agency Name & Address	California Army National Guard
Contact Person & Phone Number	Major Jubilee Satale 805-594-6599
Project Location	Range Road, Camp San Luis Obispo, San Luis Obispo, CA
Project Sponsor's Name & Address	California Army National Guard, 10 Sonoma Avenue, Building 738, San Luis Obispo, CA 93405
General Plan Land Use Designation	Agriculture
Zoning	AG

1.1 California Army National Guard (CA ARNG)

The CA ARNG is a California agency that receives funding from the state and federal governments. Its federal mission is to provide mission-ready forces to the federal government, support counterterrorism, and respond to threats from weapons of mass destruction. The CA ARNG's state mission is to protect the public safety of California by providing military support to the civil authority during natural disasters and other emergencies. The CA ARNG is both the CEQA Lead Agency and NEPA Lead Agency on projects for which the CA ARNG is the proponent.

1.2 CEQA Requirements

This project is subject to the requirements of the California Environmental Quality Act (CEQA). As stated above, the CEQA Lead Agency is the CA ARNG. The purpose of this Initial Study is to provide a basis for deciding whether to prepare an Environmental Impact Report, a Mitigated Negative Declaration or a Negative Declaration. This Initial Study is intended to satisfy the requirements of CEQA (Public Resources Code, Div 13, Sec 21000-21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387). CEQA encourages Lead Agencies and applicants to modify their projects to avoid significant adverse impacts.

Section 15063(d) of the State CEQA Guidelines states the content requirements of an Initial Study as follows:

1. A description of the project including the location of the project;
2. An identification of the environmental setting;
3. An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;

4. A discussion of the ways to mitigate the significant effects identified, if any;
5. An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls; and
6. The name of the person or persons who prepared or participated in the Initial Study.

1.3 NEPA Requirements

As stated above, the CA ARNG is the NEPA Lead Agency and is authorized to adopt NEPA Categorical Exclusions. The National Guard Bureau (NGB) is responsible for approving Environmental Assessments and Environmental Impact Statements prepared by CA ARNG pursuant to NEPA. The CA ARNG will prepare NEPA documentation for the proposed project prior to discretionary approval of the project. For information regarding previous NEPA documentation that was prepared for the project, please refer to the discussion under the heading *Construction Completed to Date* in Section 1.8, below.

1.4 Camp San Luis Obispo

Camp San Luis Obispo (CSLO) is the original home and training site for the CA ARNG. During World War II, CSLO served as an Infantry Division Camp and Cantonment Area for the U.S. Army. Today, CSLO is a high-quality training camp with field and garrison facilities. CSLO provides operational, logistical support, and training to civilian and military agencies at the local, state, and federal areas, including the California Army and Air National Guard, the U.S. Coast Guard reserve, California Specialized Training Institute, the U.S. Army Reserve, the California Conservation Corps, Cuesta Community College, and the California Department of Transportation (Caltrans).[1]

Training activities at CSLO include live-fire exercises involving the use of live ammunition or ordnance. To ensure safety, live-fire exercises are highly structured, occur at only specific locations, and are tightly controlled. The Bravo Shooting Range (Bravo Range) at CSLO is an existing 1.6-acre Combat Pistol Qualification Course (CPQC). The CA ARNG is proposing to upgrade the Bravo Range to meet modern TC 25-8 U.S. Military Field Manual standards. The project would allow soldiers to meet standard weapons qualification and sustainment training requirements and commanders to prepare individuals and units for advanced targeted training.

1.5 Project Location and Surrounding Land Uses

CSLO encompasses approximately 5,612 acres of State-owned property west of the City of San Luis Obispo. The Bravo Range is located on the north side of Range Road between San Benito Road and Chorro Reservoir Road, approximately three miles northwest of the City of San Luis Obispo and two miles north of Highway 1 in unincorporated San Luis Obispo County (see **Figure 1**).

The Bravo Range is designated for Agriculture by the San Luis Obispo County General Plan and zoning code. El Chorro Regional Park is one mile to the west. The California Men's Colony (a prison) and administrative buildings and other facilities affiliated with CSLO are located

[1] MilitaryBases.com. 2019. Camp San Luis Obispo. Available online: https://militarybases.com/california/camp-san-luis-obispo/. Accessed on 3/23/19.

approximately one mile to the south.

1.6 Terminology

Bravo Range or *firing range* refers to the 1.6-acre area encompassing the proposed firing points and targetry.

Project area refers to the 10.3-acre area within which all of the past construction-related disturbance described in Section 1.9, below, occurred. Construction disturbance includes disturbance resulting from grading and earthwork, equipment storage and stockpiling, and the movement of construction vehicles and equipment. All past disturbance occurred within the 10.3 acres but not the entire 10.3 acres was disturbed. Future disturbance associated with the remaining construction activities described in Section 1.10 would also occur within the 10.3-acre project area. Disturbance from grading and earthwork, staging, and the movement of construction equipment and vehicles associated with the remaining construction activities would result in approximately 3.5 acres of disturbance within the 10.3-acre project area (see **Figure 2**).

1.7 Environmental Setting

This section summarizes the CEQA baseline conditions (existing conditions) for the environmental analysis in Section 3, below.

The 10.3-acre project area is located in south-sloping, locally rolling, sparsely-vegetated terrain and encompasses all areas where construction-related disturbance would occur. The project area includes the 1.6-acre Bravo Range, supporting infrastructure (existing control tower, two storage buildings, and bleachers) located immediately south of the firing range, an access road, and a parking area.

The 1.6-acre Bravo Range consists of nearly un-vegetated bare compacted dirt with an elevated platform with sloped edges transitioning into surrounding grassland. The sloped edges on the west side of the firing range platform forms a maximum 18-foot embankment with a slope of 1 vertical : 2 horizontal; the sloped edges on the north, east, and south side of the platform are more gradual, 1 vertical: 1.5 horizontal. Immediately west of the firing range area is a seasonal drainage channel that is a tributary to Chorro Creek (see **Figure 3**). With the exception of the seasonal drainage, the remainder of the project area is either disturbed (compacted dirt with sparse vegetation) or covered in grassland. The Bravo Range is used for military training and pistol target practice; immediately adjacent areas are open space and grazing land.

As discussed in Section 1.9, some earthwork and grading was recently completed in and around the 1.6-acre Bravo Range and within the larger 10.3-acre project area.

1.8 Project Description

The proposed modernization of the Bravo Range includes the following upgrades and improvements, which are depicted on **Figures 4 and 5 and in Appendix A**:

- **15 modern firing lanes.** The previously-existing firing lanes would be replaced with 15 modern firing lanes and a five-foot-wide cement standing pad would be poured across the base of each lane. The firing lanes would be contained within the 1.6-acre Bravo Range.

- **8 flip-up stationary infantry targets per lane.** The previously-existing remote-controlled battery-operated flip-up targets would be replaced with hard-wired flip-up targets. The stationary infantry targets would be contained within the 1.6-acre Bravo Range.
- **Electrical and mechanical improvements.** An existing pole-mounted electrical transformer located at the base of the access road would be replaced. 3-inch-diameter electrical conduit and wiring would be installed between the control tower and the new flip-up targets. Electrical and mechanical improvements would occur within the 1.6-acre firing range and an area extending south of the firing range to connect with the control tower.
- **Drainage improvements and erosion protection.** Subsurface drains would be installed along the middle of each firing lane and would drain north to a new rock-lined stormwater detention basin along the northern boundary of the firing range. Runoff from the slope above the firing range would be captured by an interceptor drain and conveyed to the stormwater detention basin via a rock-lined drainage ditch. During large rainfall events the detention basin would be designed to overtop and discharge via a low-flow sand filter outlet weir to the natural drainage channel that is a tributary to Chorro Creek. Under the existing condition, stormwater occurs as sheet flow that drains to the same drainage channel. The proposed project would not increase the volume of runoff to the drainage channel but would concentrate runoff further upstream when compared to the existing condition. In order to protect the drainage channel from erosion and scour, a protective layer of rock (approximately 400 square feet, or 20 linear feet) would be placed in the base of the channel to create a rock-lined channel leading from the detention basin to the natural drainage channel further west. The proposed drainage improvements and erosion protection are intended to protect water quality and control erosion. They would also serve to reduce peak runoff from the site. The drainage improvements would be constructed along the north and west side of the 1.6-acre firing range and in the small drainage immediately west of the firing range.

All facilities and improvements would be constructed in accordance with U.S. Department of the Army Training Circular No. 25-8, California Department of Toxic Substances Control (DTSC) requirements, and other applicable standards and requirements.

1.9 Construction Completed to-Date

This description of construction activities completed to-date is provided for informational purposes only. Consistent with CEQA requirements, the analysis presented in Section 3 uses the existing baseline conditions as the basis for evaluating the potential impacts of approving the project, completing construction, and future operations and maintenance. As a result, the construction completed to-date is reflected in the existing baseline conditions and is the basis for the impact analyses presented in Section 3.

In March 2018, based on the conceptual design plans for the project, the CA ARNG determined that the project would qualify for a C-1 NEPA Categorical Exclusion. Category C-1 applies to “Construction of an addition to an existing structure or new construction on a previously undisturbed site if the area to be disturbed has no more than five cumulative acres of new surface disturbance.” Detailed design plans were completed in April 2018. In August 2018, the original mechanical target components and concrete were removed and earthwork and grading activities commenced. Earthmoving activities included 8,000 cubic yards of cut and fill for the construction

of an elevated and slightly enlarged platform containing the new firing range, commencement of the rough grading of the firing range platform, and installation of 3-inch-diameter electrical conduit and wiring along the west side of the access road between the transformer and the control tower. With the exception of installation of the 3-inch-diameter conduit, most earthwork completed to-date was generally confined to the 1.6-acre firing range area. The earthwork associated with the platform containing the 1.6-acre firing range was not conducted in accordance with the original design specifications and the platform was inadvertently shifted approximately 15 feet to the southwest. No soil was exported off-site.

Prior to completion of the rough grade, work was halted when it was determined that portions of the project would require permitting authorizations from state and federal agencies. and a potential impact to the wetland/small drainage at the western edge of the 1.6-acre firing range was identified. Immediately after halting construction, CA ARNG installed sediment and erosion control best management practices (BMPs) on and around the disturbed portions of the site to control erosion and protect the wetland from sedimentation. While CEQA and permitting documentation are being developed, the CA ARNG is monitoring the site to ensure sediment and erosion control BMPs continue to operate effectively. The site is currently heavily grassed, which is providing significant protection from erosion and subsequent sediment transport.

1.10 Construction Activities Remaining

The construction activities remaining represents the work that would be completed if the project is approved. Thus, except where noted otherwise, these are the construction activities that are referred to in Section 3, below. Section 3 evaluates the impacts of the remaining construction activities and future maintenance and operations against the existing baseline conditions.

The work to be completed within and immediately surrounding the 1.6-acre firing platform includes the completion of the rough grade earthworks, completion of the final grade earthworks, installation of pre-cast concrete target boxes, electrical and communications lines for target equipment, and installation of the stationary infantry targets. Also remaining is the construction of the drainage improvements along the northern boundary of the firing range and in the tributary to Chorro Creek on the west side of the firing range, and replacement and upgrade of the existing transformer at the southern end of the access road. With the exception of the proposed drainage improvements in the tributary to Chorro Creek, all other remaining construction-related disturbance would occur in recently-disturbed areas.

Construction Duration and Hours

Construction of the remaining site work is anticipated to commence in 2019 and take a total of three months to complete. Construction would occur between 6:30am and 5pm, Monday through Friday.

Construction Workforce and Equipment

Construction of the remaining site work would require daily crews of up to ten workers. Construction equipment would include a backhoe, excavator, grader, roller, concrete truck, and water truck.

Earthwork and Ground Disturbance

No fill or soil would be hauled off site; however, approximately 4,850 cubic yards of clean, imported fill would be needed to complete construction. The 1.6-acre Bravo Range (firing lanes and targetry) would be graded to rough grade and final grade specifications and compacted to create a level surface. The pre-cast concrete target boxes and stationary infantry targets would be installed, electrical wiring would be extended from the existing control tower to the new targets, and a five-foot-wide cement standing pad would be poured at the base of each firing lane.

As defined in Section 1.6, above, all project-related disturbance would occur within the 10.3-acre project area boundary, with the total disturbance resulting from all grading and earthwork, staging, and the movement of construction equipment and vehicles resulting in an estimated 3.5 acres or less of total disturbance within the 10.3-acre project area. The maximum depth of excavation would be seven feet.

Construction Staging Areas

Construction parking, staging, stockpiling, and materials and equipment storage would occur along the access road and adjacent to the existing storage buildings and bleachers located southeast of the Bravo Range.

1.11 Operation and Maintenance

Operation and Maintenance of the Bravo Range

Once construction has been completed, the Bravo Range would be operated and maintained similar to the existing conditions. The firing range would be used by CA ARNG for combat training and by the public for recreational use (public shooting range) as it has been for several decades. The firing range would continue to be operated seven days a week, 7am to 4:30pm. Implementation of the project is not anticipated to result in a notable increase in use nor vehicle trips. No additional staff would be needed to manage, operate, or maintain the upgraded facility.

Maintenance of Drainage Improvements

The proposed drainage improvements would require annual visual inspections, with maintenance occurring on an as-needed basis. The detention basin would require periodic removal of sediment within the rock-lined detention basin. No earthwork or disturbance would be needed outside of the detention basin boundaries. The sand filter is anticipated to require replacement every five years or more. Replacement of the sand filter could be completed without disturbance in the natural drainage channel. The rock-lined channel is not anticipated to require maintenance.

1.12 Environmental Protection Actions Incorporated into the Project

The CA ARNG has committed to implementing the following actions as part of the project. These actions are included as part of the project to reduce or avoid potential adverse effects that could result from construction or operation of the project. Additional mitigation measures are presented in the following analysis sections in Chapter 3, Environmental Analysis. The actions identified below and the mitigation measures prescribed in the subsequent sections of this Initial Study will be included in the Mitigation Monitoring and Reporting Program (MMRP) for consideration during the project approval process. The MMRP will define the responsible parties, timing, specific

actions, and reporting requirements for all conditions of approval and mitigation measures.

Environmental Protection Action 1 – Tribal and Archaeological Monitoring

Consistent with a March 2017 consultation letter from CA ARNG and a May 2017 concurrence letter from the California Office of Historic Preservation regarding a Finding of No Effect for multiple range improvement projects at CSLO, including the Bravo Range Modernization Project, the CA ARNG is committed to tribal and archaeological monitoring during construction activities.

The CA ARNG notified the Santa Ynez Band of Chumash Indians' (SYBCI) Tribe prior to ground disturbing activities. At the discretion of the Tribe, a Tribal monitor was present for some of the earthmoving activities completed to date. The local tribe (Yak Tityu Tityu Yak Tilhini Tribe) through the SYBCI has indicated that no additional Tribal monitoring is necessary.

The CA ARNG will provide a qualified archaeologist to monitor the remaining ground-disturbance activities and ensure that such activities do not adversely affect recorded archaeological sites.

Environmental Protection Action 2 – Nesting Bird Survey

For any construction activities occurring between February 1 through August 31, a qualified biologist will conduct a nesting bird survey within two weeks prior to the start of construction. If nesting birds are found, an appropriate setback buffer will be established and no construction activities will occur in this setback area until the birds have fledged and are no longer reliant on the nest.

Environmental Protection Action 3 – No Exportation of Site Soils

Due to lead-contamination in site soils, the California Department of Toxic Substances Control prohibits the exportation of soil from the range area. None of the earthwork completed to date has involved the exportation of soil.

Environmental Protection Action 4 – Stormwater Pollution Prevention Plan

Prior to the start of any additional ground disturbance and earthmoving activities at the site, the CA ARNG would be required to obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Order No. 2009-009-DWQ as amended by 2010-2014-DWQ). CA ARNG would prepare and implement a project-specific Storm Water Pollution Prevention Plan (SWPPP) that manages pollutant sources, identifies erosion and sediment control measures and water quality protection measures, and prescribes best management practices to protect water quality pre- and post-construction. CA ARNG would submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the SWRCB. The SWPPP would address pollutant sources, best management practices, and other requirements specified in the Order. A Qualified SWPPP Practitioner would oversee implementation of the SWPPP, including visual inspections, sampling and analysis, and ensuring overall compliance.

Environmental Protection Action 5 – Spill Prevention, Control, and Countermeasure Plan

Construction workers shall take the following 9 steps in the event of spills or leaks of petroleum products, hazardous construction chemicals, or other hazardous chemicals during construction.

1. Stop the Flow if possible – shut off valves, turn drums upright, plug or cover the leak source. Don't take unnecessary chances, but stop the flow if you can do so without getting hurt or contaminated. Approach the spill/release from the upwind side. Shower and change clothes as soon as possible if you come in contact with hazardous materials.
2. Contain the Spill to the smallest possible area: surround with absorbent material, dirt, floor sweep, etc. Make every effort to keep spilled materials out of storm drains, sewers, or other drainages or water ways.
3. Control Traffic. Don't let other people drive or walk through spill area. Set up traffic barriers, orange cones, tape off the area and or leave a person at the spill site to divert traffic away from the area. If the spill is small, it may be better to stop the source and contain the flow before notifying your supervisor.
4. Report the spill to your supervisor and sound the local alarm or give verbal warning.
    a. If the spill/release occurs during regular work hours and the spill/release is a hazardous material greater than one gallon in volume, if spilled to an impervious/pervious land surface, or any volume, if spilled to a surface waterway, contact the California Army Division – Environmental (NGCA-ARN-EN) or the appropriate training site environmental office to ascertain if the California Emergency Management Agency (Cal-EMA) is required to be notified. If the release/spill is more than you can safely handle or if the spill/release has entered a storm drain or waterway appoint a responsible person to call the local emergency response or to call 911.
    b. If the spill/release occurs after regular duty hours and/or on a weekend or holiday, call the California National Guard Joint Forces Headquarters' Joint Operations Center (JOC) at (916) 854-3440 or DSN 466-3440. Leave your name or other point of contact, telephone number and a brief description of the incident with the JOC Duty Officer and follow the JOC's instructions.
5. Isolate the immediate spill area if it has been ascertained that the release/spill is a significant release until emergency response agents arrive. Keep other people or vehicles out of danger and avoid blocking access for emergency responders.
6. If the spill/release is contained on a paved surface (concrete/asphalt) and has been absorbed completely, collect the spill debris and place into an appropriate container. Mark the container with a hazardous waste label and mark the label with a permanent marker "HAZARDOUS WASTE, CONTAMINATED ABSORBENT (name of spilled material if known)". Turn in collected wastes to the designated collection point at the training sites, or to your facility's hazardous waste accumulation site for disposal. If on the road use the sturdy garbage bags in the vehicle spill kits until the spill debris can be transferred into an appropriate container.
7. If the spill/release did not occur on an impervious surface, or if it went into drainage or waterway, then your Environmental Compliance Officer (ECO) or unit supervisor will

immediately notify the California Army Division -Environmental Directorate and the appropriate contacts listed in the Emergency Response Notification List.

8. Coordinate with your ECO to fill out CA ARNG Form 200-1-8b: Hazardous Materials/Waste Incident Report. Send or fax copies to:

   California Military Department
   3900 Roseville Rd.
   North Highlands, CA 95600
   Fax: (916) 854-1467

9. Call the California Army Division – Environmental at (916) 854-1479 if you have questions pertaining to spill/release notification and reporting.

1.13 Required Permits, Approvals, and Consultations

The CA ARNG would obtain all required permits and authorizations prior to completing construction. The CA ARNG would comply with all conditions identified in those permits and authorizations, including any additional conditions required by regulatory agencies that are not contained in this Initial Study. Should a permit condition differ from an Environmental Condition or Mitigation Measure contained in this Initial Study, the permit condition shall prevail unless it is determined that its implementation would not adequately mitigate an environmental impact under CEQA. In such a case, both the permit condition and the Initial Study Mitigation Measure would be implemented as deemed necessary by the CA ARNG and the regulatory agency. The project would require the following permits and authorizations from federal, state, and local agencies:

1.14 Tribal Consultation

CA ARNG has not received any AB 52 Tribal Consultation requests for projects at CSLO. However, the local tribe (Yak Tityu Tityu Yak Tilhini Tribe) works through the federally-recognized SYBCI in the National Historic Preservation Act Section 106 process for projects at CSLO. CA ARNG consulted with SYBCI for the Bravo Range project in January 2017. The SYBCI requested that a Tribal monitor be present during ground disturbing activities. Thus, consistent with Environmental Protection Action 1 (Tribal and Archaeological Monitoring), the SYBCI was notified prior to ground disturbing activities and a Tribal monitor was present during some of the ground disturbance activities that have been completed to-date. The Yak Tityu Tityu Yak Tilhini Tribe (through the SYBCI) has indicated that no additional Tribal monitoring will be needed.

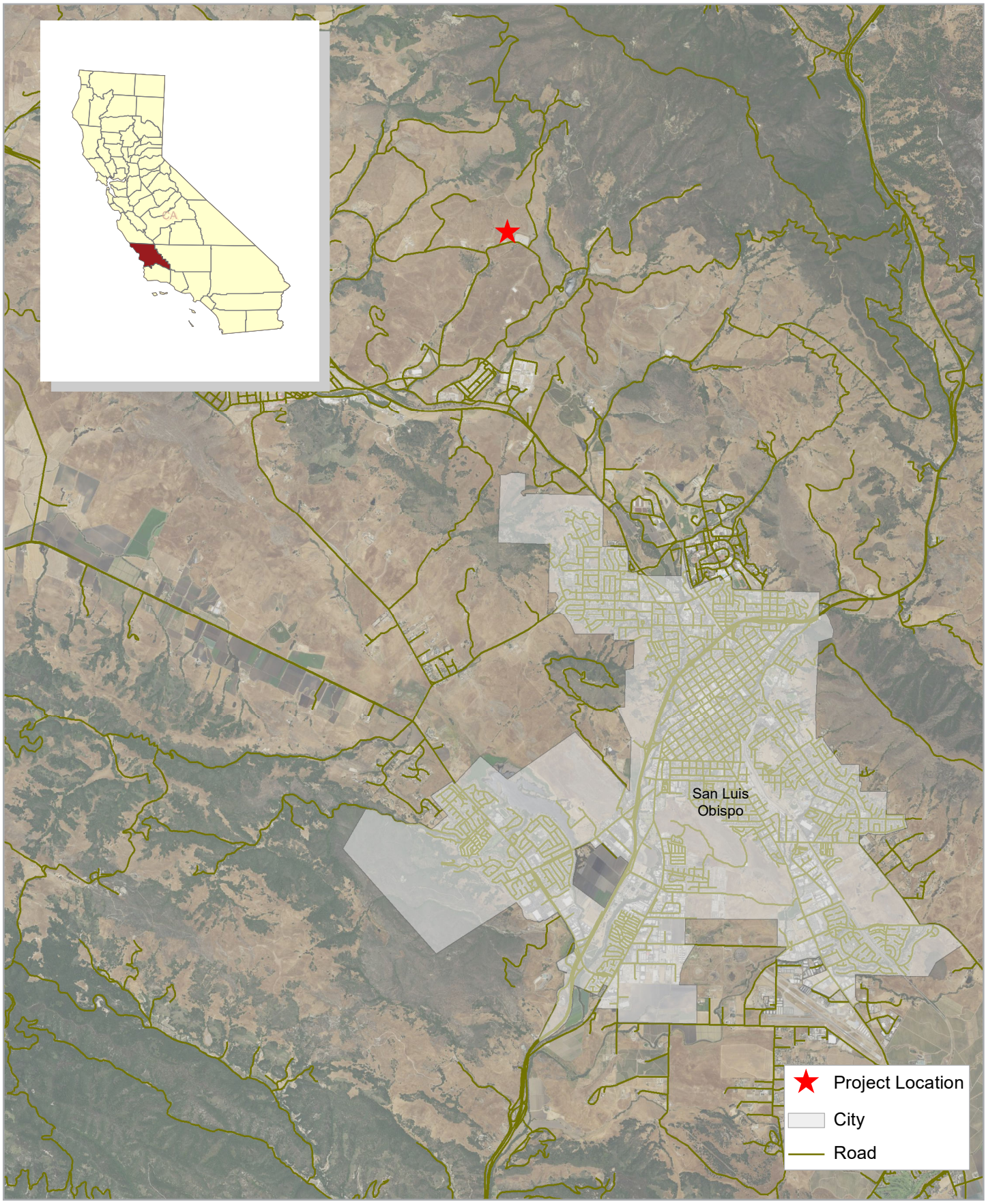
Table 1. Required Permits and Authorizations

Agency	Requirement	Trigger
CA ARNG	National Environmental Policy Act (NEPA)	Federally funded military source
U.S. Army Corps of Engineers (USACE)	Clean Water Act Section 404 Nationwide Permit	Drainage improvements require earthwork within a water of the U.S. (small drainage on west side of the firing range)
U.S. Fish and Wildlife Service (USFWS)	Federal Endangered Species Act Section 7 coverage under Programmatic Biological Opinion[2]	Project area is considered California red-legged frog dispersal habitat
State Historic Office of Preservation	National Historic Preservation Act (NHPA) Section 106 coverage under Title 36 Part 800 of the Code of Federal Regulations[3] and Programmatic Agreement[4]	USACE authorization of Clean Water Act Section 404 Nationwide Permit
SWRCB	Construction General Permit coverage	> One acre of construction-related ground disturbance
California Department of Fish and Wildlife (CDFW)	Section 1602 Lake and Streambed Alteration Agreement	Drainage improvements in the small drainage on the west side of the firing range
Regional Water Quality Control Board (RWQCB)	Clean Water Act Section 401 Water Quality Certification	Drainage improvements in the small drainage on the west side of the firing range
San Luis Obispo County Air Pollution Control District	Asbestos Dust Mitigation Plan OR Exemption from ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations.	Construction and because the project area is located within SLOCAPCD's Naturally Occurring Asbestos Map
CA ARNG	Adopt IS/MND and MMRP	CEQA must be completed before CA ARNG formally approves the project

[2] USFWS, 2015. Programmatic Biological Opinion for Multiple Activities for Camp San Luis Obispo, San Luis Obispo County, California (8-8-12-F-51). Dated March 24, 2015.

[3] (1) California Military Department, 2017. Consultation request letter to California Office of Historic Preservation RE: "Multiple Range Improvement (MRI) Project at Camp San Luis Obispo, CA" dated March 23, 2017 and (2) California Office of Historic Preservation, 2017. Concurrence letter to California Military Department RE: "Multiple Range Improvement (MRI) Project at Camp San Luis Obispo, CA" dated May 16, 2017.

[4] National Guard Bureau, California Army National Guard, California State Historic Preservation Officer, and Advisory Council on Historic Preservation, 2017. Programmatic Agreement Regarding Routine Maintenance, Construction, and Training Activities at Camp Roberts, Monterey and San Luis Obispo Counties and Camp San Luis Obispo, San Luis Obispo County. Dated August 23, 2017.



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California Military Department
CMD Camp San Luis Obispo
Bravo Range Modernization Project

Project Location

Project No. **11190751**
Revision No. **-**
Date **04/11/2019**

FIGURE 1

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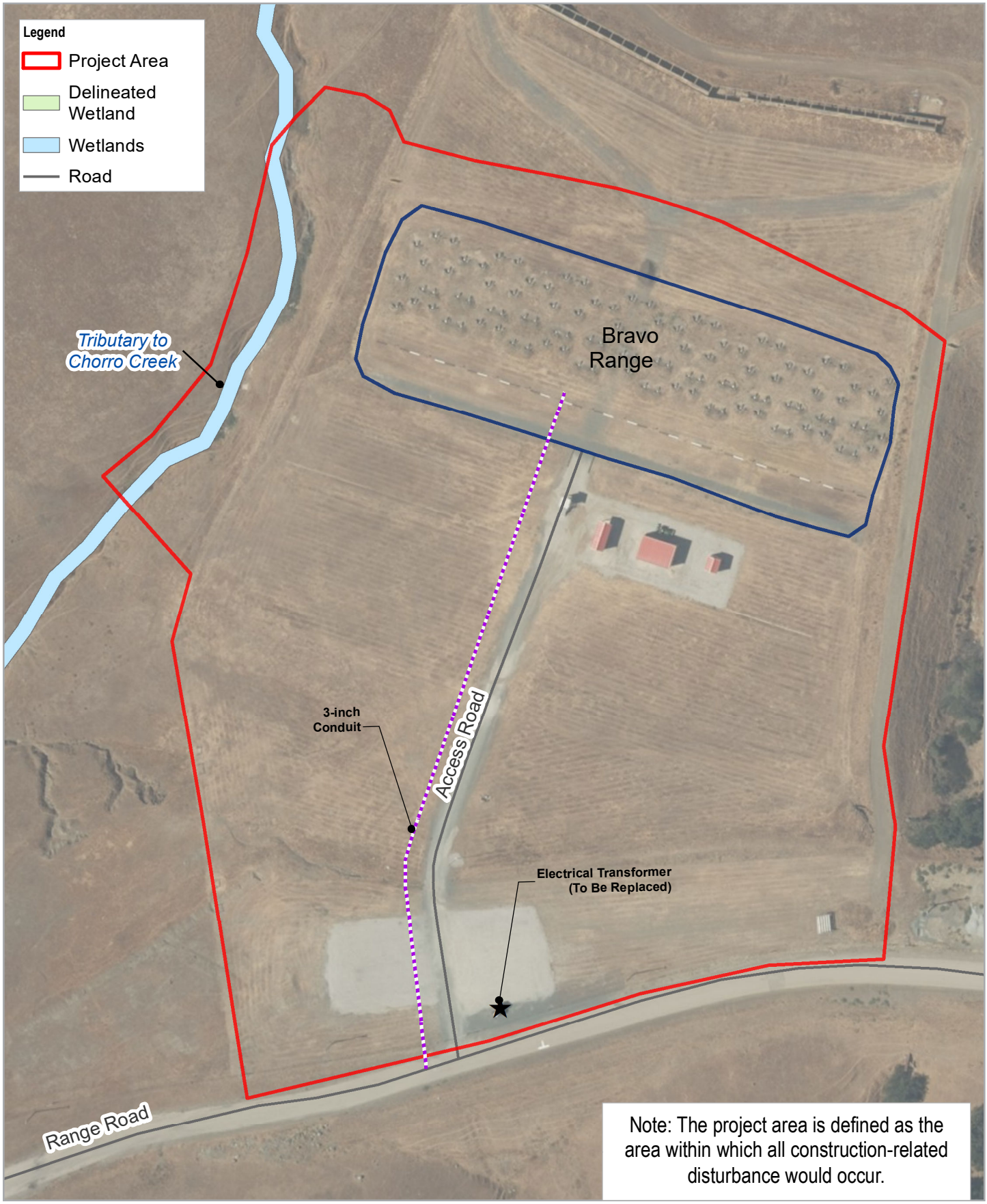

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Bravo Range Modernization Project

Project Area Boundary

Project No. **11190751**
Revision No. **-**
Date **5/30/2019**

FIGURE 2

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Data source: GHD, 2019. TIGER Roads Sources: Esri, Garmin, USGS, NPS
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: bnamsaly

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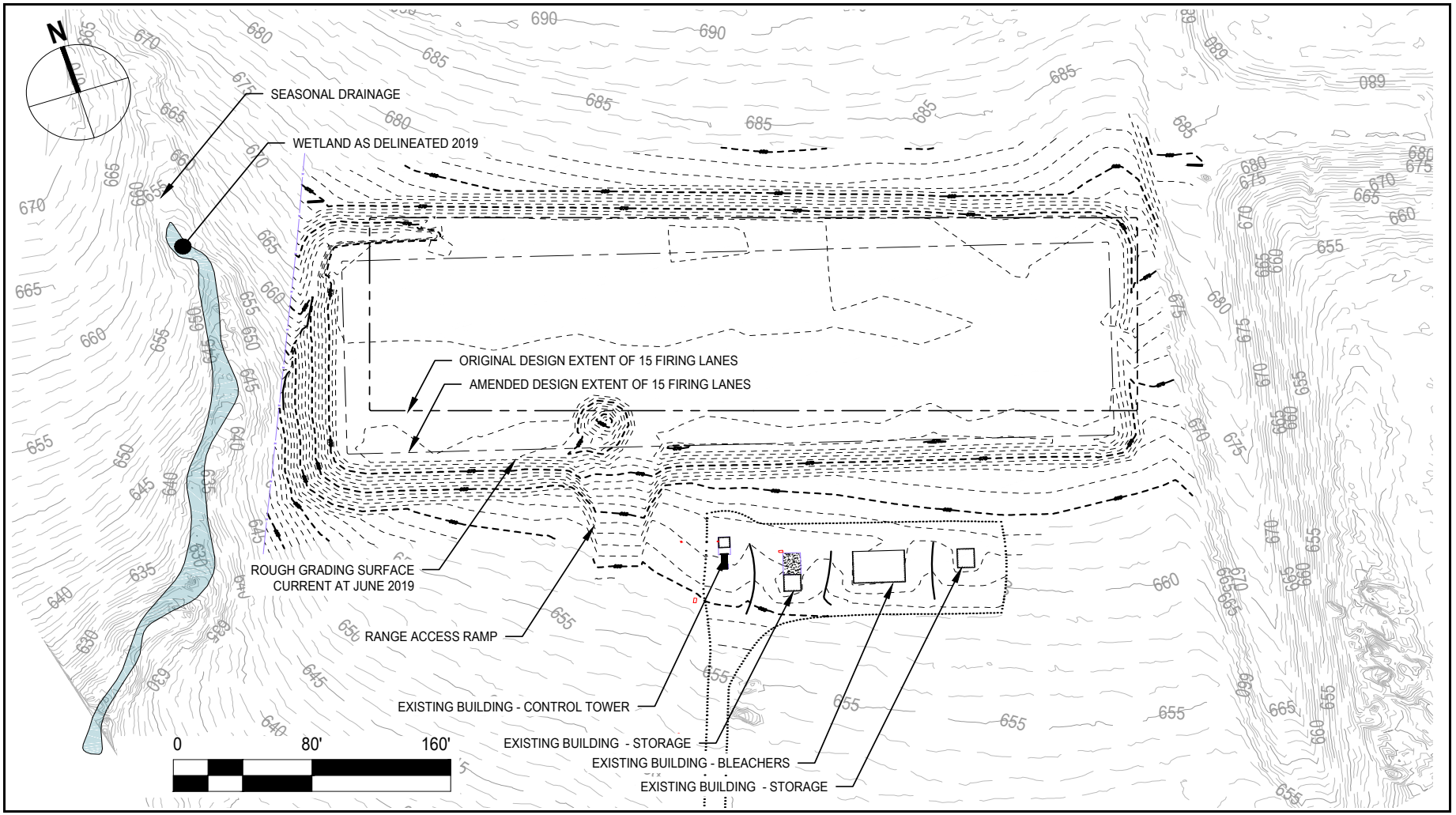

California Army National Guard
Bravo Range Modernization Project

FIGURE 3: FIRING RANGE - EXISTING SITE CONDITIONS

PROJECT NO.
11190751
DATE
7/5/19

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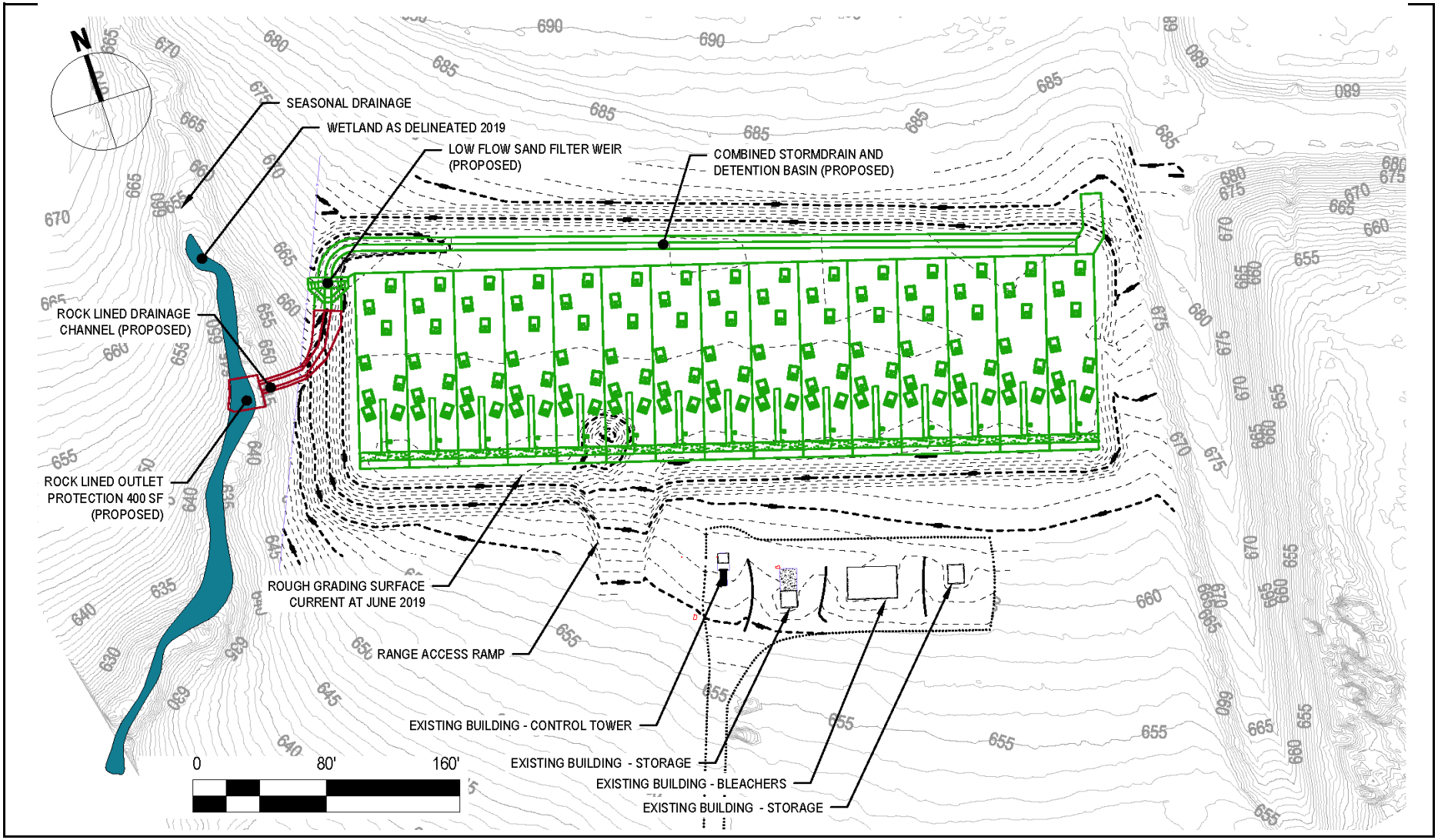

California Army National Guard
Bravo Range Modernization Project

FIGURE 4: FIRING RANGE - PROPOSED IMPROVEMENTS

PROJECT NO.
11190751
DATE
7/9/2019

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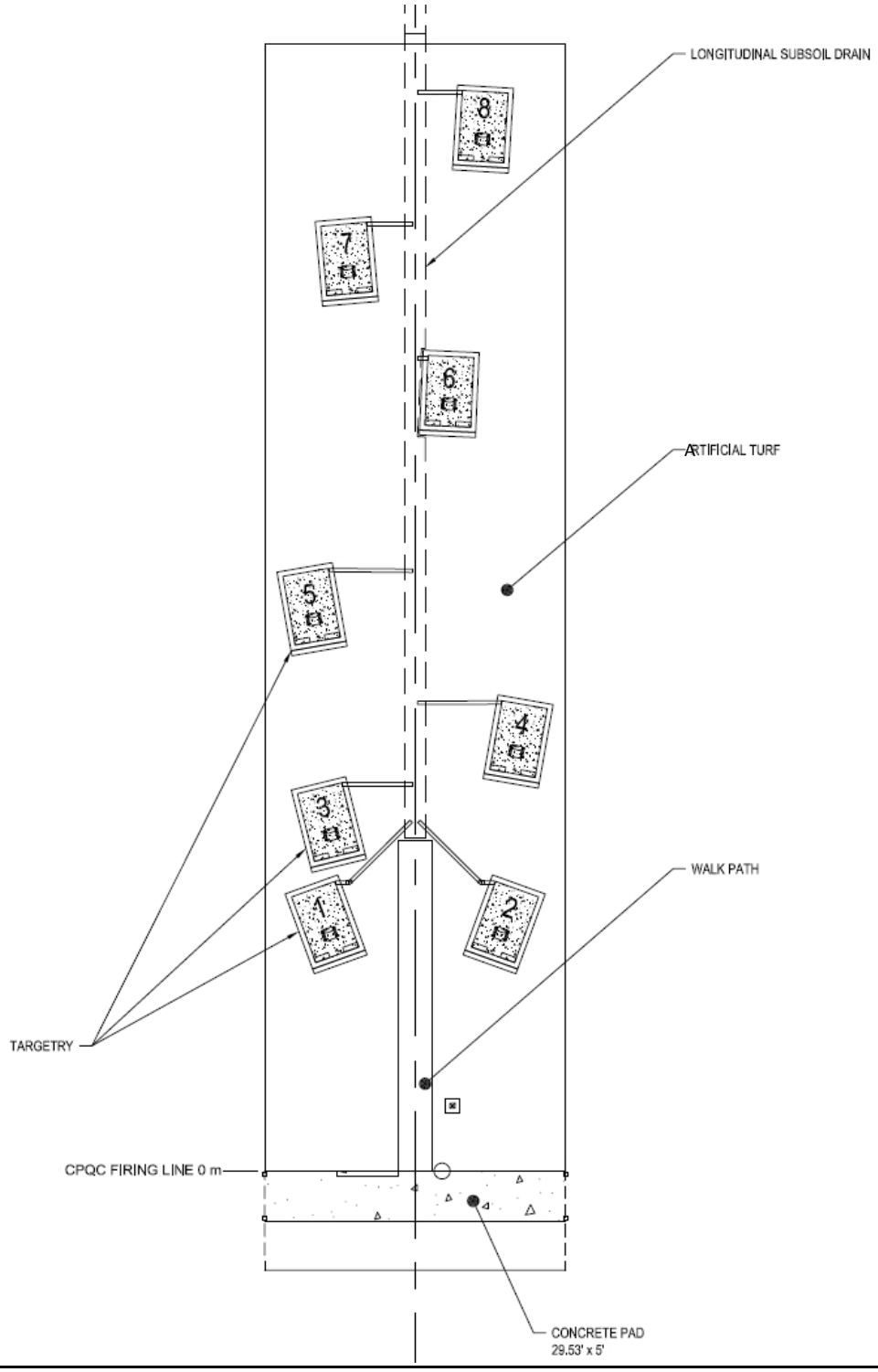

California Army National Guard
Bravo Range Modernization Project

PROJECT NO.
11190751
DATE
5/17/2019

FIGURE 5: MODERN FIRING LANE

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2. Environmental Factors Potentially Affected

The environmental factors checked below could be adversely affected by this project, involving at least one impact that would require implementation of one or more mitigation measures to ensure a "Potentially Significant Impact" would not occur.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agricultural & Forestry Resources	☒ Hazards & Hazardous Materials	☐ Recreation
☒ Air Quality	☒ Hydrology & Water Quality	☐ Transportation
☐ Energy	☐ Land Use & Planning	☒ Tribal Cultural Resources
☒ Biological Resources	☐ Mineral Resources	☐ Utilities & Service Systems
☒ Cultural Resources	☐ Noise	☐ Wildfire
☐ Geology/Soils	☐ Population/Housing	☐ Mandatory Findings of Significance

DETERMINATION (To be completed by the Lead Agency)

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 would not be a significant effect in this case because the CEQA Lead Agency and Project Proponent (e.g., the CA ARNG) has agreed to revise the project to include implementation of the conditions of project approval identified in Section 1, above, and the mitigation measures prescribed in the resource sections below to ensure no significant impacts on the environment would occur. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed 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 "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) 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 the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature — Date: 10 July 19

Title: Commander — Agency: CMD CSLO

3. Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?				✓
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) Substantially degrade the existing visual character or quality of public view of the site and its surroundings?				✓
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓

a-c) Have a substantial adverse effect on a scenic vista, substantially damage scenic resources within a state scenic highway, or substantially degrade the existing visual character or quality of public views of the site and its surroundings? (No Impact)

The Bravo Range is surrounded by State-owned land to the north, east, and south. The Bravo Range is not visible from a recognized scenic vista. Highway 1, located two miles south of the Bravo Range, is a state-designated scenic highway; however, views of the Bravo Range from the Highway 1 corridor are obstructed by intervening topography and vegetation.

Public views are those that are experienced from a publicly accessible vantage point. The Bravo Range is visible from several publicly accessible vantage points on Bishops Peak and Ferrini Open Space. However, implementation of the proposed project would not change the existing footprint, land use, height of structures, vegetation, or overall appearance of the Bravo Range. Thus, no impact to scenic vistas, scenic highways, or visual character would result.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (No Impact)

The project does not include new exterior lighting, reflective paint, nor the creation of other new sources of light or glare. No impact would result.

Mitigation

None necessary.

3.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) 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?				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c) 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))?				✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
e) 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?				✓

a, b) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use or conflict with Agricultural Zoning or Williamson Act Contract? (No impact)

The San Luis Obispo County General Plan and local zoning designate the Bravo Range parcel as Agriculture. However, the Bravo Range is not mapped as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[5] CA ARNG has not entered into any Williamson Act

[5] California Department of Conservation, 2018. Farmland Mapping and Monitoring Program, San Luis Obispo County Important Farmland Map 2016. Published 2018.

contracts within CSLO property. Implementation of the proposed project would not change land uses on the site. No impact would result.

c,d) Conflict with Forest Land Zoning or Convert Forest Land to Non-Forest Land Use? (No impact)

The Bravo Range parcel is not zoned as forest land and implementation of the project would not change any land use. No impact would result.

e) Involve Other Changes that Could Convert Farmland or Forest Land to Other Uses? (No Impact)

Implementation of the project would not change any land use. No impact would result.

Mitigation

None necessary.

3.3 Air Quality

	Potentially Significant Impact	Less-Than-Significant With Mitigation	Less-Than-Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				✓
b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			✓	
c) Expose sensitive receptors to substantial pollutant concentrations?			✓	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?		✓		

Setting

The San Luis Obispo County Air Pollution Control District's (SLOCAPCD) April 2012 CEQA Air Quality Handbook provides guidelines for evaluating, measuring, and mitigating a project's air quality impacts, including impacts associated with criteria air pollutants (such as ozone and particulate matter) and toxic air contaminants. The following analysis was conducted using the current CEQA Air Quality Handbook, which was last updated in November 2017.[6]

[6] San Luis Obispo County Air Pollution Control District (SLOCAPCD), 2017. Clarification Memorandum for the SLOCAPCD's 2012 CEQA Air Quality Handbook. Dated 11/14/17. Available online: https://www.slocleanair.org/rules-regulations/land-use-ceqa.php

a) Conflict with or obstruct implementation of the applicable air quality plan? (No Impact)

The applicable air quality plan is the SLOCAPCD 2001 Clean Air Plan,[7] adopted in March 2002. Per the SLOCAPCD's CEQA Air Quality Handbook, projects that are consistent with the adopted land use and transportation control measures and strategies outlined in the Clean Air Plan are considered to be consistent with the Clean Air Plan.

The 2001 Clean Air Plan transportation and land use management strategies include the following:

- Campus Trip Reduction Program
- Voluntary Commute Options Program
- Local Transit System Improvements
- Regional Public Transit Improvements
- Motor Vehicle Inspection and Control Programs
- Teleworking, Teleconferencing, and Telelearning
- Park and Ride Lots
- Traffic Flow Improvements

The previously adopted transportation and land use management strategies are not applicable to the Bravo Range Modernization Project. The 2001 Clean Air Plan land use planning strategies are applicable to local planning agencies, such as cities, and are not applicable to the proposed project. Furthermore, the project would not conflict with or obstruct implementation of the transportation and land use control measures and strategies. Therefore, the project is consistent with these measures, and the project is considered consistent with the Clean Air Plan. No impact would result.

b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? (Less than Significant)

The western portion of San Luis Obispo County is currently designated as "attainment" for all federal ambient air quality standards and all state standards except ozone and particulate matter 10 microns in diameter (PM_{10}). The current "non-attainment" status for ozone and PM_{10} signifies that concentrations of these pollutants in the western portion of the County exceed the established standards.

Construction Emissions

In order to evaluate ozone and other criteria air pollutant emissions and support the attainment goals for those pollutants, the SLOCAPCD has established significance thresholds for emissions of PM_{10} and ozone precursors—reactive organic gases (ROG) and nitrous oxides (NO_X). The significance thresholds for construction emissions are provided in **Table 2**. The thresholds are expressed in pounds per day (lbs/day) and tons per quarter. The quarterly thresholds apply to construction projects that occur for 90 days or more

[7] SLOCAPCD, 2002. 2001 Clean Air Plan. Adopted 2002. Available online: https://www.slocleanair.org/rules-regulations/clean-air-plan.php. Accessed 4/4/19.

Table 2. SLOCAPCD Thresholds of Significance for Construction

Pollutant	Threshold of Significance		
	Daily	Quarterly Tier 1	Quarterly Tier 2
ROG + NOX (combined)	137 lbs	2.5 tons	6.3 tons
Diesel Particulate Matter (DPM)	7 lbs	0.13 tons	0.32 tons
Fugitive Particulate Matter (PM10), Dust	Not Applicable	2.5 tons	Not Applicable

SOURCE: SLOCAPCD, 2012. CEQA Air Quality Handbook. Updated 11/24/17.

This analysis is based on the SLOCAPCD's recommended project-level criteria air pollutant CEQA thresholds of significance. Thus, if the project's emissions exceed the pollutant thresholds recommended by the SLOCAPCD, the project would have the potential to result in significant effects to air quality, and adversely affect the attainment of federal and state Ambient Air Quality Standards.

The project's potential construction-generated emissions were quantified using CalEEMod version 2016.3.2. The emissions modeling assumed a construction fleet of an excavator, grader, roller, an off-highway truck, and backhoe, each operating for eight hours per day, five days a week, for the duration of construction. The analysis also includes 4,850 cubic yards of aggregate import. The emissions modeling output is provided in **Appendix B**.

The project's estimated construction emissions and applicable SLOCAPCD thresholds of significance are provided in **Tables 3 and 4**, below. As shown in the tables, the project's construction activity would not exceed the SLOCAPCD's recommended daily or quarterly thresholds of significance. Therefore, the project's construction impact would be less than significant. No mitigation is required.

Table 3. Construction-generated Daily Air Pollutant Emissions

Pollutant	Maximum Daily Emissions (lbs/day)	
	ROG + NO_X	DPM
Project Construction Emissions	21	<1
SLOCAPCD Threshold of Significance	137	7
Significant Impact?	No	No

SOURCE: SLOCAPCD, 2012. CEQA Air Quality Handbook. Updated 11/24/17.

Table 4. Construction-generated Quarterly Air Pollutant Emissions

Pollutant	Quarterly Emissions (tons)		
	ROG + NO_X	DPM	Fugitive PM_{10}
Project Construction Emissions	0.7	0.03	<0.1
SLOCAPCD Threshold of Significance	2.5	0.13	2.5
Significant Impact?	No	No	No

SOURCE: SLOCAPCD, 2012. CEQA Air Quality Handbook. Updated 11/24/17.

Operational Emissions

Following completion of construction, the project would not include any new stationary sources of air emissions. Vehicle trips associated with operation and maintenance of the modernized firing range are anticipated to be the same as the existing condition. The project is not anticipated to increase vehicle trips or other air pollutant-generating activity above that currently occurring at the project site. Therefore, the project would not result in substantial long-term operational emissions of criteria air pollutants and project-generated operational emissions would not violate or contribute substantially to an existing or projected air quality violation. No operational impacts would result. No mitigation is required.

c) Expose sensitive receptors to substantial pollutant concentrations? (Less than Significant)

The project area is bounded by military uses and open space. The closest residential receptor is the California Men's Colony prison, located roughly one mile to the south, and the closest school is also more than a mile from the construction site. Given these distances and the very low construction emission levels, the project would not expose sensitive receptors to substantial pollutant concentrations. The impact of exposing sensitive receptors to pollutant concentrations is considered less than significant and no mitigation is necessary.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (Less than Significant with Mitigation)

The use of diesel construction equipment during project construction may generate minor odors near the project area. Construction emissions would be temporary and are not expected to create objectionable odors affecting a substantial number of people. The construction impact would be less than significant.

Naturally occurring asbestos (NOA) has been identified by the California Air Resources Board (ARB) as a toxic air contaminant. Serpentine and ultramafic rocks are common throughout California and may contain NOA. Soils in the project area are mapped in the local soil survey as Los Osos Loam, which are not serpentine soils. However, the SLOCAPCD has identified areas throughout the county where NOA may be present and, according to the SLOCAPCD's Naturally Occurring Asbestos Map, the project area is located in a candidate area for NOA,[8] therefore, the following requirements apply. Under the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (93105), prior to future construction activities at the site, CA ARNG shall conduct a geologic evaluation to determine if the area disturbed is exempt from the regulation. If the site is determined to be exempt from the regulation, an exemption request must be filed with the SLOCAPCD. If the site is not exempt from the requirements of the regulation, the applicant must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the SLOCAPCD.

The potential for project construction to disturb NOA soils is conservatively considered a potentially significant impact. However, with implementation of **Mitigation Measure AQ-1 (Geologic Evaluation for Naturally Occurring Asbestos)**, which would ensure compliance with

[8] San Luis Obispo County Air Pollution Control District (SLOCAPCD), 2019. SLO APCD NOA Screening Buffer Online Map Viewer. Website: https://www.google.com/maps/d/viewer?mid=1YAKjBzVkwi1bZ4rQ1p6b2OMyvIM&ll=35.364986805363735%2C-120.52563349999997&z=9. Accessed: 4/5/19.

SLOCAPCD's requirements, the potential impact associated with adverse exposure to NOAs during construction activities would be reduced to less than significant.

Upon completion of construction, operation, and maintenance of the Bravo Range would generally be the same as the previously existing condition; the project would not increase or substantially modify operational sources of odorous compounds. Therefore, project operations would not introduce a source of objectionable odors or other emissions that would affect a substantial number of people. No impact would occur during project operations. No mitigation is necessary.

Mitigation

Mitigation Measure AQ-1: Geologic Evaluation for Naturally Occurring Asbestos

Prior to conducting any additional construction activities at the site, CA ARNG shall conduct a geologic evaluation is to determine if the site is exempt from the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (93105). If the project is exempt from the Asbestos ATCM, an exemption request shall be filed with the San Luis County Air Pollution Control District (SLOCAPCD). If the site is not exempt from the requirements of the regulation, CA ARNG must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the SLOCAPCD.

3.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		✓		
b) 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 US Fish and Wildlife Service?		✓		
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		✓		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		✓		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

Setting

To evaluate the potential for project implementation to impact biological resources the CA ARNG retained GHD to conduct a wetland delineation and reconnaissance-level biological resources field assessment. These efforts were comprised of a site visit by GHD biologists on February 25, 2019, and review of lists of special-status plant and wildlife species with the potential to occur in the project area. The lists reviewed were the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) and the USFWS Information for Planning and Consultation (IPaC) database for the nine U.S. Geological Survey 7.5-minute Topographic Quadrangles surrounding the project area. The results of the field survey, wetland delineation, and data analysis are summarized below.

Vegetation Communities

The majority of the site is vegetated with non-native annual and perennial grassland composed of upland grasses (that had no inflorescences at the time of field assessment), musky stork's bill (*Erodium moschatum*), English plantain (*Plantago lanceolata*), hillside false bindweed (*Calystegia subacaulis ssp. subacaulis*), soapplant *(Chlorogalum spp.*), bristly ox-tongue (*Helminthotheca echioides*), and California burclover (*Medicago polymorpha*). Grasslands adjacent to the existing firing range are actively grazed.

A small drainage/tributary to Chorro Creek and water of the U.S. is located within the project area at the west side of the firing range. Vegetation communities in this area are comprised of iris-leaf rush seep (*Juncus* (*oxymeris, xiphioides*)), pale spike rush marsh (*Eleocharis macrostachya*), and cattail marsh (*Typha* (*angustifolia, domingensis, latifolia*)). See Appendix B for detailed figures.

Waters of the U.S. and State

As stated above, a small drainage/tributary to Chorro Creek is located at the west side of the firing range (see Figure 2). Chorro Creek flows west and discharges to the Pacific Ocean via Morro Bay. Surface water is ephemerally present in the on-site drainage during the rainy season with flow only during and immediately after significant rainfall events. The vegetation appears to remain green during the dry season, suggesting elevated groundwater levels year round along this stretch of drainage. The total area of this federally jurisdictional waterbody within the project area boundary is 1,043 square feet. This analysis conservatively assumes the full 1,043 square feet (40 linear feet) could be temporarily disturbed during construction. Approximately 400 square feet (20 linear feet) would be permanently disturbed by project implementation due to the placement of rip rap along the bottom of the drainage to protect the drainage from erosion. As explained further below, this drainage provides dispersal habitat for the federally threatened California red-legged frog (CRLF) (*Rana draytonii)* and, potentially, Coast Range newt (*Taricha torosa)*.

Special-Status Species

A nine-quad database search of the CNDDB (CDFW 2019), USFWS IPaC (Information for Planning and Conservation), NOAA Fisheries West Coast Region California Species List Tools, and CNPS (California Native Plant Society) *Inventory of Rare and Endangered Vascular Plants* was conducted for the project area. The full analysis is included in **Appendix E**.

Table 5, below, summarizes special-status species that could potentially occur in the project area. The potential occurrence categories are defined as follows:

No Potential → Important habitat components are absent, and/or habitat on and adjacent to the site is unsuitable, and/or there are no recent (20 years) nearby documented records of the species. The species is not expected to be found on the site. (Most plants in this category are excluded from Table 5 for brevity, but are included in **Appendix E**).

Low Potential → Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential → Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential or Present → All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Table 5. Special-Status Species — Potential to Occur in the Project Area

Scientific Name	Common Name	Federal Listing	California Listing	Rare Plant Ranking	Potential to Occur
Plants					
Agrostis hooveri	Hoover's bent grass	None	None	1B.2	**Low Potential.** There are several occurrences of this species near the project area, however, this species is a large perennial bunch grass that would require largely undisturbed habitats to persist. Habitat on-site would either be too wet or too disturbed by current use to support this species.
Calandrinia breweri	Brewer's calandrinia	None	None	4.2	**Moderate Potential.** There are occurrences nearby although habitat within the project area appears to be marginal. This species is a disturbance tolerant annual and could establish in the project area.
Calochortus clavatus var. clavatus	club-haired mariposa lily	None	None	4.3	**Moderate Potential.** There are occurrences documented within 300 yards of the project area. This species could be present in upland portions of the project area.
Calochortus obispoensis	San Luis mariposa-lily	None	None	1B.2	**Low Potential.** Although there are known occurrences nearby, the requisite serpentine substrate and chaparral habitat are not present in the project area.
Calochortus simulans	La Panza mariposa-lily	None	None	1B.3	**Low Potential.** There are two occurrences of this species within one mile of the project area with one adjacent to it. Even though the occurrences are nearby, both were on serpentine outcrops. Presence within the project area is considered unlikely.
Calystegia subacaulis ssp. episcopalis	Cambria morning-glory	None	None	4.2	**Moderate Potential.** There are several occurrences of this species within one mile of the project area. Habitat is present on-site and this species often grows with plants found within the project area.

Scientific Name	Common Name	Federal Listing	California Listing	Rare Plant Ranking	Potential to Occur
Carex obispoensis	San Luis Obispo sedge	None	None	1B.2	**Low Potential.** Although there are some occurrences within one mile of the project area, this species is more often in serpentine seeps. The project area does not support suitable habitat for this species.
Castilleja densiflora var. obispoensis	San Luis Obispo owl's-clover	None	None	1B.2	**High Potential.** Populations are documented within the project area as recently as 2005, and can occur in grassland and meadow habitat.
Delphinium parryi ssp. eastwoodiae	Eastwood's larkspur	None	None	1B.2	**Low Potential.** Known within one mile, but usually grows on serpentine which is not present in the project area.
Dudleya blochmaniae ssp. blochmaniae	Blochman's dudleya	None	None	1B.1	**Low Potential.** There are three occurrences of this species within one mile of and some adjacent to the project area, however it is usually associated with serpentine which is not present in the project area.
Layia jonesii	Jones' layia	None	None	1B.2	**Moderate Probability**. Known from Camp San Luis Obispo, within one mile of project area. Prefers but is not limited to serpentine.
Sanicula maritima	adobe sanicle	None	Rare	1B.1	**Moderate Potential.** There are occurrences of this plant nearby including one within 1.5 miles of the project area. In addition, habitat and associated species occur at the site.
Trifolium hydrophilum	saline clover	None	None	1B.2	**Moderate Potential.** Potentially suitable habitat is present in the stream corridor along the western edge of the project area.
Amphibians					
Rana draytonii	California red-legged frog	Threatened	Species of Special Concern	-	**Present.** Known breeding habitat within 0.5 mile, potential dispersal habitat at periphery of project area. Occasional presence is assumed.

Scientific Name	Common Name	Federal Listing	California Listing	Rare Plant Ranking	Potential to Occur
Taricha torosa	Coast Range newt	None	Species of Special Concern	-	**Moderate Potential.** No breeding habitat within 0.25 mile, however dispersal through periphery of project area is possible.
Ambystoma californiense	California tiger salamander	Threatened	Threatened		**No Potential.** The project area is well outside the range of the species.
Batrachoseps minor	lesser slender salamander	None	None		**No Potential.** Suitable habitat is not present within the project area.
Rana boylii	foothill yellow-legged frog	None	Candidate Threatened	-	**Low Potential.** No suitable habitat in project area; no permanent or semi-permanent streams, no cobble substrate present
Reptiles					
Anniella pulchra	northern California legless lizard	None	Species of Special Concern	-	**Low Potential.** Presence is possible but not likely because of relatively heavy soils and moisture limited to drainages.
Emys marmorata	western pond turtle	None	Species of Special Concern		**Low Potential.** Reported elsewhere on Camp SLO, but no permanent water within 0.25 mile of project area
Gambelia silus	blunt-nosed leopard Lizard	Endangered	Endangered		**No Potential.** The project area is well outside the known range.
Phrynosoma blainvillii	coast horned lizard	None	Species of Special Concern		**Low Potential.** Very limited shrub cover constrains quality of habitat.
Birds					
Athene cunicularia	burrowing owl	None	Species of Special Concern	-	**Moderate Potential.** Wintering habitat is present for this species in the project area and there are known occurrences from the vicinity. No occurrences have been documented during the breeding season.
Elanus leucurus	white-tailed kite	None	Fully Protected	-	**Moderate Potential.** Grassland adjacent to the project area serves as prime foraging habitat for this species and there are numerous records from the vicinity. The species could nest in the project vicinity if large trees are present.

Scientific Name	Common Name	Federal Listing	California Listing	Rare Plant Ranking	Potential to Occur
Eremophila alpestris actia	California horned lark	None	Watch List	-	**Moderate Potential.** Breeding and foraging habitat present in project area and recent occurrences from the project vicinity of wintering and nesting birds.
Falco mexicanus	prairie falcon	None	Watch List	-	**Moderate Potential.** Foraging habitat is present in the project vicinity. Wintering birds more likely to be present although local breeding and foraging could occur in the project area as well.
Gymnogyps californianus	California condor	Endangered	Endangered	-	**Moderate Potential.** Species could forage in the project vicinity if food sources (e.g. deceased cattle) are present. However, no breeding habitat is present in the project area.
Agelaius tricolor	tricolored blackbird	Under Review	Candidate Endangered	-	**Low Potential.** Although there are numerous occurrences of this species near the project area (breeding and foraging), there is no suitable habitat for this species in the project area (i.e. no herbaceous or forested wetlands, no triticale fields, etc.).
Brachyramphus marmoratus	marbled murrelet	Threatened	Endangered	-	**No Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Charadrius nivosus nivosus	western snowy plover	Threatened	Species of Special Concern	-	**No Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Empidonax traillii extimus	southwestern willow flycatcher	Endangered	Endangered	-	**Low Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Rallus obsoletus	Ridgway's rail	Endangered	Endangered	-	**No Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.

Scientific Name	Common Name	Federal Listing	California Listing	Rare Plant Ranking	Potential to Occur
Sterna antillarum browni	California least tern	Endangered	Endangered	-	**No Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Vireo bellii pusillus	least bell's vireo	Endangered	Endangered	-	**Low Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Mammals					
Antrozous pallidus	pallid bat	None	Species of Special Concern	-	**Moderate Potential.** No roost sites nearby but project area offers possible foraging habitat.
Corynorhinus townsendii	Townsend's big-eared bat	None	Species of Special Concern	-	**Low Potential.** No suitable roost sites nearby, habitat is generally marginal.
Eumops perotis californicus	western mastiff bat	None	Species of Special Concern	-	**Moderate Potential.** No roost sites nearby but project area offers possible foraging habitat.
Dipodomys heermanni morroensis	Morro Bay kangaroo rat	Endangered	Endangered	-	**No Potential.** The project area is outside the small and localized known range of the species, and no suitable habitat is present.
Taxidea taxus	American badger	None	Species of Special Concern	-	**Moderate Potential.** No evidence of presence during site visit, however project area includes potentially suitable habitat.
Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	-	**No Potential.** The project area is outside of the known range for this species.

RARE PLANT STATUS CODES *(California Native Plant Society):*

List 1A: Plants presumed extinct.
List 1B: Plants rare, threatened, or endangered in California and elsewhere.
List 4: Plants of limited distribution – a watch list.
An extension reflecting the level of threat to each species is appended to each rarity category as follows:
4.1 = Seriously endangered in California.
4.2 = Fairly endangered in California.
4.3 = Not very endangered in California.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (Less than Significant with Mitigation)

No special-status species were observed at the project site during the February 2019 field survey. However, the proposed drainage improvements would result in temporary and permanent disturbance to the on-site drainage, which is assumed dispersal habitat for CRLF and potential dispersal habitat for Coast Range newt. In addition, northern California legless lizard may occur in upland areas of the site. If present during construction, individual CRLF, newts, and legless lizards could be trampled or otherwise harmed by construction vehicles and equipment. Impacts to special-status amphibians and reptiles are considered potentially significant. However, with implementation of **Mitigation Measures BIO-1a (Biological Resources Training), BIO-1b (Construction Timing),** and **BIO-1c (Amphibian and Reptile Preconstruction Surveys and Construction Monitoring)**, the impact would be reduced to a less-than-significant level. These measures include construction worker training, limits on the timing of construction, preconstruction surveys, and minimization measures.

Numerous special-status plant species were evaluated for potential to occur in the project area (**Appendix E**). All but the 15 shown in Table 5 were eliminated from consideration because based on the February 2019 site visit and a literature review, suitable habitat is not present in the project area, or in some cases because the project area is outside the known range of the species. Note that, in some cases, it was not possible to determine presence/absence based on the February 2019 site visit because the survey was conducted outside of the blooming period and, as a result, some species are conservatively assumed as potentially present. Most but not all of the special-status plant species shown in Table 5 are characteristic of uplands. Removal of wetland vegetation would be limited to a small portion of the project area, could potentially affect only a few species in Table 5, and ample wetland vegetation exists immediately upstream and downstream of the project area. Woody riparian habitat is limited to one or two individual shrubs which would not be impacted. Potential impacts to special-status plant species is considered a potentially significant impact. However, with implementation of **Mitigation Measures BIO-1d (Conservation Measures for Special Status Plants), BIO-1e (Restrict Construction Activities to Recently Disturbed Areas), and BIO-2 (On-Site Compensatory Wetland Mitigation)**, the impact would be reduced to a less-than-significant level. These measures would compensate for impacts to special status plants and wetlands onsite. The vegetation removed would be expected to regenerate in the compensated wetland area. With implementation of this Mitigation Measure, potential impacts to special-status plants would be less-than-significant. Note that Chorro Creek bog thistle (*Cirsium fontinale var. obispoense*), a federally and state-endangered rare plant species, occurs approximately one mile north of the project area. However, suitable habitat is not present in the project area for this or other federal- or state-listed plant species. No federal or state endangered, threatened, or candidate plants are known to occur in the project area.

Five special-status bird species have the potential to occur in the project area: burrowing owls (*Athene cunicularia*), white-tailed kites (*Elanus leucurus*), California horned larks (*Eremophila alpestris actia*), prairie falcons (*Falco mexicanus*), and California condors (*Gymnogyps californianus*). These species are all temporally associated with grasslands, which may serve as seasonal breeding, wintering, or foraging habitat. Species such as prairie falcons and burrowing owls are more likely to be present during the wintering season, while white-tailed kites and California horned larks would be more likely to occur during the breeding season and nest in the

project vicinity. No nesting habitat for California condors (e.g., exposed cliff faces or large conifers) are present in the project vicinity. Although condors may not leave their roosting areas for days at a time, they are also known to range widely while foraging (up to several hundred kilometers), and it is possible that the species may fly over the site. However, the species is unlikely to be present in the project area during construction unless food sources (deceased cattle) are present. With implementation of Environmental Protection Action 3 (Nesting Survey) described in Section 1, above, potential impacts to nesting birds would be less than significant. Foraging birds are unlikely to use the site during construction due to noise and increased activity. Potential impacts to birds would be less than significant.

Three special-status bats have potential to occur in the project area. However, there are no potential bat roosting sites in the project vicinity so if bats were to occur at the site they would be night foraging. No construction would be conducted during nighttime hours and there would be no new light source, so no impact to bats would result.

American badger is unlikely to occupy the site during construction due to noise and increased activity, particularly since similar habitat is abundant in the area. Potential construction-related impacts to American badger would be less than significant.

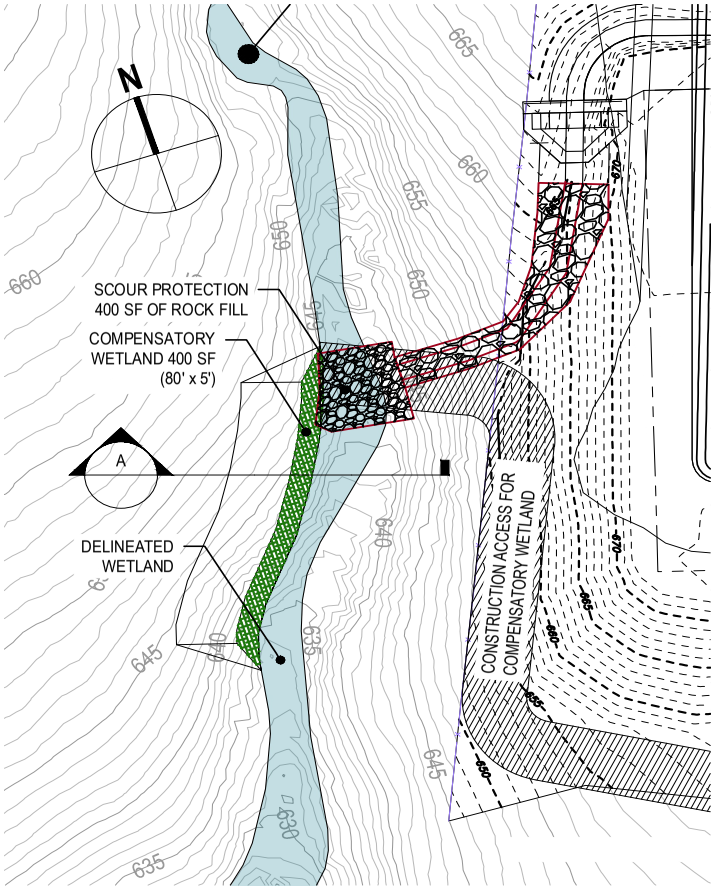
Upon completion of construction activities, the site would continue to be used for the same purpose as it is currently used. Noise generated during project operations (namely, from the firing of pistols) would be the same as the existing condition. Thus, no impact to special-status species would occur during project operations.

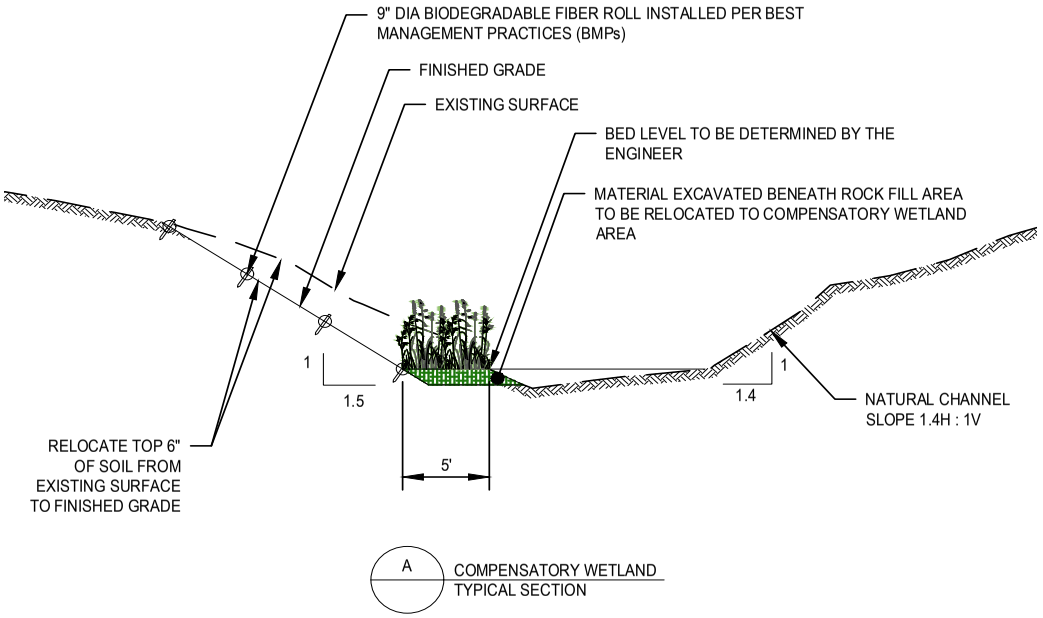
b,c) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service, including wetlands? (Less than Significant with Mitigation)

The project would result in permanent disturbance to approximately 40 square feet of mixed wetland vegetation along a tributary to Chorro Creek located at the west side of the firing range. Woody riparian habitat is limited to one or two individual shrubs and these would not be impacted by project activities. Impacts to this wetland habitat and water of the U.S. and State and federally-protected wetland would be significant. However, with implementation of **Mitigation Measure BIO-2 (On-Site Compensatory Wetland Mitigation)** (see **Figure 6**), the impact would be reduced to a less-than-significant level. This measure would compensate for wetland impacts onsite, in-kind, and in-full.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (Less than Significant with Mitigation)

Project construction activities could result in temporary impacts to dispersal habitat for CRLF and Coast Range newt although movement is not likely to occur during dry season when construction would occur. As described above under item a, this impact is considered potentially significant. However, with implementation of **Mitigation Measures BIO-1a (Biological Resources Training), BIO-1b (Construction Timing),** and **BIO-1c (Amphibian and Reptile Preconstruction Surveys and Construction Monitoring)**, the impact would be reduced to a less-than-significant level.





NOTES:
1. COMPENSATORY WETLAND FINAL LOCATION AND AREA TO BE CONFIRMED BASED ON INPUT FROM RESOURCE AGENCIES (USACE, RWQCB, and CDFW)
2. ACCESS FOR CONSTRUCTION EQUIPMENT WILL BE RESTRICTED TO THE ENVELOPES SHOWN
3. MINI EXCAVATOR (MAX WIDTH 4') TO BE USED FOR CONSTRUCTION. CONSTRUCTION EQUIPMENT CANNOT WORK OUTSIDE OF THE ARE DESIGNATED FOR CONSTRUCTION DISTURBANCE.
4. COMPENSATORY WETLAND MONITORING TO BE COMPLETED ANNUALLY FOR 5 YEARS

California Army National Guard
Bravo Range Modernization Project

FIGURE 6: COMPENSATORY WETLAND MITIGATION

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11190751
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e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (No Impact)

The project would not result in tree removal nor conflict with any local policies or ordinances protecting biological resources. No impact would result.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (No Impact)

There are no adopted habitat conservation plans, natural community conservation plans, or other approved plans that apply to the Bravo Range or immediate vicinity. Thus, this criterion is not applicable to the proposed project and no impact would result.

Mitigation

Mitigation Measure BIO-1a: Biological Resources Training

Prior to the first day of work, and starting with the first day the contractor mobilizes on the site, all construction workers shall be briefed on the biology and life history of sensitive species potentially present in the project area. The training shall be conducted by a qualified CA ARNG biologist or contractor, and shall include species identification, avoidance and minimization measures, communication protocols, and consequences of non-compliance. Upon the completion of training, construction personnel shall sign that they have received the training and the signed documentation shall be retained in the project file.

Mitigation Measure BIO-1b: Construction Timing

Project construction shall be conducted outside of the wet season (June 15 through November 15) and shall not be allowed to commence within 24 hours of a forecasted rain event. Since amphibians are drawn to moisture and humidity, this measure would reduce the potential for California red-legged frogs and Coast Range newts to be present in the project area; amphibians are not expected to enter the project area during dry periods.

Mitigation Measure BIO-1c: Amphibian and Reptile Preconstruction Surveys and Construction Monitoring

A qualified CA ARNG biologist shall conduct one daytime and one nighttime pre-activity survey of all construction areas (including access routes and staging areas) for the presence of Coast Range newt, CRLF, and legless lizard the day before project activities are to commence. A third survey shall be conducted the morning the project begins. The survey will include inspection of burrows to the extent practical without excavation or other damage, if any burrows are present.

A qualified CA ARNG biologist will monitor all vegetation trimming/removal and demolition/construction activities within the project boundaries. If any CRLF or newts are identified in the project area, construction in that immediate area will be halted until the individuals have vacated the area on their own accord or the appropriate resource agency has been contacted for guidance.

Mitigation Measure BIO-1d: Conservation Measures for Special-Status Plants

The CA ARNG shall implement the following conservation measures for special-status plant species that have potential to occur within the project area. These include but are not limited to the 15 special-status plants identified in Table 5 (Hoover's bent grass, Brewer's calandrinia, club-haired mariposa lily, San Luis mariposa lily, La Panza mariposa lily, Cambria morning glory, San Luis Obispo sedge, Condon's tarplant, dwarf soaproot, Eastwood's larkspur, Blochman's dudleya, Jones' layia, adobe sanicle, and saline clover). Significant impacts to special-status plant species shall be avoided, minimized, and (if necessary) compensated by complying with the following:

- A qualified botanist shall conduct seasonally-appropriate pre-construction surveys for special-status plant species that could potentially occur in areas not disturbed by past project activities and especially in and adjacent to wetlands along the tributary in the western portion of the project area. The surveys shall occur during the appropriate blooming time (spring or summer) for identification of the target species. Survey methods shall comply with CDFW rare plant survey protocols, and shall be performed by a qualified field botanist. Surveys shall be modified to include detection of juvenile (pre-flowering) colonies of perennial species when necessary. Any populations of special-status plant species that are detected shall be mapped. Populations shall be flagged if avoidance is feasible.
- The locations of populations to be avoided shall be clearly identified in the construction documents (plans and specifications).
- If populations are detected where construction could potentially result in adverse effects to the plants, a compensatory conservation plan shall be prepared and implemented in coordination with CDFW. Such plans may include salvage, propagation, on-site reintroduction in restored habitats, and monitoring.

Mitigation Measure BIO-1e: Restrict Construction Activities to Recently Disturbed Areas

Construction activities associated with the firing range improvements shall be restricted to areas already disturbed during 2018 grading and construction activities. The construction limits shall be flagged or otherwise clearly identified prior to the start of construction. Areas outside of the 2018 disturbance limits, such as upland slopes where drainage features will be constructed and wetland mitigation areas, shall be disturbed only after the special-status plant surveys described in Mitigation Measure BIO-1d (Conservation Measures for Special-Status Plants) have been completed and the qualified biologist and construction representative have determined which species, if any, cannot be avoided and which specific mitigation actions referenced above are best able to offset the impact.

Mitigation Measure BIO-2: On-Site Compensatory Wetland Mitigation

To mitigate the impact to the adjacent wetland and associated riparian habitat, CA ARNG proposes on-site compensatory wetland mitigation for approximately 400 square feet (20 linear feet) of permanent wetland impacts. If approved by the resource agencies (e.g., USACE, CDFW, and RWQCB), CA ARNG would widen a portion of the same drainage either immediately above or below the impacted area, to increase the vegetated wetland area, ensure no net loss of vegetated wetland habitat, and compensate for the loss of wetland associated with the rock-lined portion in full. The compensatory wetland would be monitored by a CA ARNG biologist annually for a period of five years.

3.5 Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?		✓		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		✓		
c) Disturb any human remains, including those interred outside of formal cemeteries?		✓		

Setting

Background

Cultural resources include historic architectural (built environment) resources, archaeological resources, and human remains. As the original training site of the CA ARNG, CSLO has been in operation for nearly 90 years and was designated a California Point of Historic Interest prior to 1997. A cultural resources assessment[9] for the Bravo Range Modernization Project was conducted by the CA ARNG's cultural resources specialist in 2017. The CA ARNG consulted with the State Historic Preservation Office (SHPO) regarding multiple range improvement projects at CSLO, including the proposed project, and obtained SHPO's concurrence of No Adverse Effect to historic properties.[10] The assessment is summarized below.

Cultural Resources Assessment

The Area of Potential Effect (APE) for a project encompasses the vertical and lateral extent of all construction-related disturbance, including staging and materials storage areas. The vertical extent of the APE for the Bravo Range is seven feet (the maximum depth of excavation); the lateral extent is the same as the project area boundary and encompasses the firing range, drainage improvements and erosion protection, new transformer at the base of the access road, trenching for installation of electrical conduit between the existing control tower and the proposed targetry, and staging and parking areas.

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[9] California Military Department, 2017. Santa Ynez Band of Chumash Indians Consultation Letter. Letter from John Sharp, Cultural Resources Manager, to Kenneth Kahn, Chairman, Santa Ynez Band of Chumash Indians. Dated 1/11/17.

[10] (1) California Military Department, 2017. Consultation request letter to California Office of Historic Preservation RE: "Multiple Range Improvement (MRI) Project at Camp San Luis Obispo, CA" dated March 23, 2017 and (2) California Office of Historic Preservation, 2017. Concurrence letter to California Military Department RE: "Multiple Range Improvement (MRI) Project at Camp San Luis Obispo, CA" dated May 16, 2017.

The APE was surveyed for cultural resources and archival research was conducted pursuant to requirements of 36 CFR Part 800.4(b) to identify the presence of resources eligible for inclusion in the National Register of Historic Places (NRHP). Consulted archival resources included the CA ARNG Environmental Office records (archaeological surveys and the Built Environment Evaluation Report), and the San Luis Obispo County Archaeological Society's archaeological archives. Field surveys were conducted or supervised by professional archaeologists that meet the Secretary of the Interior standards for qualified archaeologists.

The results of the research identified two (2) cultural resources located within 650 feet of the project area: CA-SLO-1856 and CA-SLO-1841. CA-SLO-1856 is 400 feet from the southern edge of the project area and CA-SLO-1841 is located 200 feet from the northern boundary. Both are prehistoric quarries (Franciscan chert). CA-SLO-1856 has been tested for inclusion to the NRHP and has been found eligible for nomination. CA-SLO-1841 has not been tested but in accordance with CA ARNG policy, is treated as NRHP eligible until testing can be completed.[11]

CEQA Guidelines

According to CEQA, a project that may cause a *substantial adverse change* in the significance of a *historical resource* or a *unique archaeological resource* may have a significant effect on the environment (CEQA Guidelines 15064.5, Pub. Res. Code Section 21083.2). CEQA defines a *substantial adverse change* as: physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a *historical resource* would be materially impaired or demolition or material alteration in an adverse manner of those physical characteristics of a *historical resource* which convey its significance and justify its inclusion in or eligibility for inclusion in the CRHR, inclusion in a local register pursuant to section 5020.1(k) of the Public Resources Code, its identification in a *historical resources* survey meeting the requirements of Section 5024.1(g) of the Public Resources Code.

Although no cultural resources (historical resources or unique archaeological resources) were identified within the project area boundary, the findings of the cultural resources assessment indicate that there is reasonable possibility that buried archaeological deposits could be inadvertently discovered during construction. Impacts to archaeological deposits—which could qualify as historical resources or unique archaeological sites under CEQA—could result in a significant impact under CEQA.

a, b) Cause a substantial adverse change in the significance of a historical or archaeological resource pursuant to §15064.5? (Less than Significant with Mitigation)

No known historic resources or archaeological sites [as defined in CEQA Guidelines Sections 15064.5(a) and (c)] were identified within the project area. However, the 2017 cultural resources assessment that was conducted for the project found two buried cultural resources sites within 650 feet of the project area. Although these known resources are outside of the ground disturbance area for the project, the potential exists for inadvertent disturbance to these resources and encountering previously undiscovered archaeological resources during project construction. Further, previously unknown archaeological deposits, which could qualify as historical resources or unique archaeological sites under CEQA, could also be encountered during construction. As described in Environmental Protection Action 1 (Tribal and Archaeological Monitoring) in Section

[11] California Military Department, 2017. Santa Ynez Band of Chumash Indians Consultation Letter. Letter from John Sharp, Cultural Resources Manager, to Kenneth Kahn, Chairman, Santa Ynez Band of Chumash Indians. Dated 1/11/17.

1, above, a tribal monitor will be notified prior to ground disturbance activities and will be given the option of being present during all ground disturbing activities, at the discretion of the Tribe. Even with Environmental Protection Action 1, the potential for construction activities to inadvertently disturb known and unknown cultural resources is considered a significant impact. With implementation of **Mitigation Measures CR-1a (Cultural Resources Awareness Training) and CR-1b (Inadvertent Discovery of Archaeological Remains or Tribal Cultural Resources)**, which require construction worker training and outlines procedures that shall be taken in the event of inadvertent discovery, the impact would be reduced to a less-than-significant level.

c) Disturb any human remains, including those interred outside of formal cemeteries? (Less than Significant with Mitigation)

No human remains are known to exist within the project area. However, there is potential for earthwork and grading to result in the disturbance of previously unrecorded human remains, which is considered a significant impact. With implementation of **Mitigation Measure CR-2 (Inadvertent Discovery of Human Remains)**, which outlines procedures to be taken in the event of inadvertent discovery of human remains, the impact would be reduced to a less-than-significant level.

Mitigation

Mitigation Measure CR-1a: Cultural Resources Awareness Training.

Prior to the resuming of ground-disturbing construction activities (on the first day of work), all construction personnel shall receive Cultural Resources Awareness Training to ensure that construction activities are conducted in a manner that is protective of known and unknown cultural resources. The training shall include information on the location and lateral extent of nearby cultural resources sites, avoidance of those areas, laws protecting such resources, and procedures for responding to inadvertent discovery situations. Avoidance of known cultural resources sites shall be determined by CA ARNG's Cultural Resources Manager and include establishing a no-disturbance buffer zone around known resources and marking the area closed on construction maps and plans. Compliance with avoidance measures shall be documented during routine construction inspections.

Mitigation Measure CR-1b: Inadvertent Discovery of Archaeological Remains or Tribal Cultural Resources.

All initial ground-disturbing activities will be monitored by a CA ARNG archaeologist. If archaeological remains or potential tribal cultural resources are encountered during construction, all work shall halt within a 50-foot radius of the discovery. Construction personnel shall not collect cultural materials. The Cultural Resources Manager (CRM) shall take appropriate measures to protect the discovery from disturbance and assess the significance of the discovery within 24 hours of discovery. If it is determined the find does represent a cultural resource, the CRM shall determine eligibility and, as needed, implement appropriate treatment measures to protect the integrity of the resource and ensure that no additional resources are affected. Work shall not resume within the no-work buffer zone until the CRM determines that the site either is not a historical resource, archaeological resource, or tribal cultural resource as defined by federal and state

laws, or that appropriate treatment measures have been completed. Specific procedural details regarding inadvertent discoveries shall be followed as outlined in the CA ARNG Integrated Cultural Resource Management Plan.

Mitigation Measure CR-2: Inadvertent Discovery of Human Remains

If human remains, or remains that are potentially human, are discovered during construction, the CA ARNG Cultural Resources Manager (CRM) shall ensure reasonable protection measures are taken to protect the discovery from disturbance and shall notify the San Luis Obispo County Coroner (per §7050.5 of the Health and Safety Code). The provisions of §7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage Commission, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. Specific procedural details regarding inadvertent discoveries shall be followed as outlined in the CA ARNG Integrated Cultural Resource Management Plan. If the CA ARNG does not agree with the recommendations of the MLD, the Native American Heritage Commission can mediate (§ 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the County (AB 2641). Work shall not resume within the no-work buffer zone until the CRM determines that the treatment measures have been completed to its satisfaction. Because CSLO is not federal property, the Native American Graves Protection and Repatriation Act does not apply.

3.6 Energy

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			✓	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				✓

a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (Less than Significant)

This analysis evaluates the use of energy resources (e.g., fuel and electricity) associated with the remaining construction activities, and operation and maintenance of the project. For construction, the analysis considers whether construction activities would use large amounts of fuels or energy, and whether they would be used in a wasteful manner. For energy used during operation and maintenance, the analysis identifies energy use that would occur with implementation of the project to determine whether large amounts would be used and whether they would be used in a wasteful manner.

Construction would require the use of fossil fuels (primarily gas, diesel, and motor oil) for excavation, grading, and vehicle travel. The precise amount of construction-related energy consumption is uncertain. However, construction would not require a large amount of fuel or energy usage because of the limited extent and nature of the proposed improvements and the minimal number of construction vehicles and equipment, worker trips, and truck trips that would be required for a project of this small scale. Therefore, project construction would not encourage activities that would result in the use of large amounts of fuel and energy in a wasteful manner; the impact would be less than significant and no mitigation is required.

Project operation would be the same as existing operations. The project is not anticipated to generate additional daily car or truck trips, involve on-site combustion of fuels, or substantially increase electricity consumption. Therefore, operation of the project would not use large amounts of energy and would not use it in a wasteful manner. The project's operational impact would be less than significant, and no mitigation is required.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (No Impact)

Project construction and operation would require a small amount of energy and would not conflict with a state or local plan for renewable energy or energy efficiency. No impact would result.

Mitigation

None necessary.

3.7 Geology and Soils

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) 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? Refer to Division of Mines and Geology Special Publication 42?				✓
ii) Strong seismic ground shaking?				✓
iii) Seismic related ground failure, including liquefaction?				✓
iv) Landslides?			✓	
b) Result in substantial soil erosion or the loss of topsoil?			✓	
c) 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?			✓	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				✓
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			✓	

Setting

The project area is located in a seismically active region. Active regional faults that pose the greatest seismic hazards include the Hosgri Fault, Los Osos Fault, and San Andreas Fault. The project area and surrounding lands are characterized by gently rolling hills underlain by highly-fractured and tectonically-sheared rocks of the Franciscan Mélange Complex (volcanic, metavolcanic, and mélanges of serpentinite and greywacke sandstone).[12] Elevations within the 1.6-acre firing range range from roughly 660 feet above mean sea level (msl) along the southern boundary to 685 feet msl along the northern boundary. Site soils are primarily Los Osos loam. These soils form on five to nine percent slopes, are well-drained, and have a high runoff potential.[13]

a.i) 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? (No Impact)

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to address the hazard of surface faulting as it pertains to structures for human occupancy. In accordance with this act, the state geologist has established regulatory zones, called "earthquake fault zones," around the surface traces of active faults and has published maps showing these zones. Within these zones, buildings for human occupancy cannot be constructed across the surface trace of active faults. The project area is not in a Fault Rupture Hazard Zone and no structures for human occupancy would be constructed as part of the project. No impact would result.

a.ii) Strong seismic ground shaking? (No Impact)

The Bravo Range will be subject to significant seismic events over the life of the project. However, project implementation would have no effect on existing land uses and would not result in the construction of any structures for human occupancy, nor any other building or structure that could potentially collapse or cause damage to other nearby structures such that substantial adverse effects related to the risk of loss, injury, or death could result. No impact would result.

a.iii, a.iv, c) Liquefaction, landslides, or otherwise unstable soils? (Less than Significant)

Liquefaction is the process by which granular soil, like sand, behaves like a dense fluid when subjected to prolonged shaking during an earthquake. The project area is underlain by Los Osos Loam and located in an area that is classified as having a low liquefaction potential.[14] Because the potential for liquefaction is low and project implementation would not result in the construction of significant structures or foundations, no impact related to risk of loss, injury, or death from liquefaction hazards would result.

The project area is located on moderately-sloping rolling hills in an area characterized as having a high landslide potential.[15] Natural slopes can become destabilized by excavation and grading

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[12] County of San Luis Obispo, 2017. ArcGIS Open Data – Geology of San Luis Obispo. Last updated 12/27/17. Available online: http://gis2017-02-24t164003926z-slocounty.opendata.arcgis.com/datasets/geology. Accessed on 4/1/19.

[13] U.S. Department of Agriculture, Natural Resources Conservation District (NRCD), 2019. Web Soil Survey. Available online: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed on 4/1/19.

[14] County of San Luis Obispo, 2017. ArcGIS Open Data – Geology of San Luis Obispo. Last updated 12/27/17. Available online: http://gis2017-02-24t164003926z-slocounty.opendata.arcgis.com/datasets/geology. Accessed on 4/1/19.

[15] County of San Luis Obispo, 2017. ArcGIS Open Data – Geology of San Luis Obispo. Last updated 12/27/17. Available online: http://gis2017-02-24t164003926z-slocounty.opendata.arcgis.com/datasets/geology. Accessed on 4/1/19.

activities, particularly if material is added to the head of the slope or removed from the toe (bottom) of the slope. Without proper controls, changes in drainage patterns, such as the redirection of flow or concentration of runoff, also have the potential to destabilize geologic units and soils.

With implementation of the project, the 1.6-acre firing range would be graded and compacted to create a more level surface. Runoff would be routed to the new rock-lined drainage at the west side of the firing range. Due to the limited grading that is remaining and because the proposed drainage improvements have been designed to more efficiently collect and convey stormwater runoff and protect the adjacent drainage from erosion, the potential for project implementation to increase landslide hazards or destabilize geologic units or soils is considered a less than significant impact. No mitigation is necessary.

b) Result in substantial soil erosion or the loss of topsoil? (Less than Significant)

During construction, vegetation that has grown since construction activities were halted that serves to stabilize site soils would be removed from the 1.6-acre firing range platform and other portions of the project area. Shallow trenches (up to two feet deep) would be excavated to install electrical conduit from the existing control tower to the firing range, and between individual firing lanes and targets. Without proper soil stabilization controls, earthmoving and grading activities could increase the erosion potential for exposed soils.

As described in more detail in Section 3.10, Hydrology and Water Quality, the project would result in an estimated 3.5 acres of total ground disturbance during construction and would require coverage under the Construction General Permit. To comply with the permit CA ARNG would be required to prepare and implement a project-specific SWPPP that prescribes measures to, among other things, minimize erosion pre- and post-construction. This is included as Environmental Protection Action 4 (Stormwater Pollution Prevention Plan) in Section 1, above. With implementation of Environmental Protection Action 4, impacts related to substantial soil erosion and loss of topsoil would be less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? (No impact)

The proposed modernization of the Bravo Range would include the installation of electrical and mechanical improvements and drainage improvements, and reconstruction of the firing lanes and targetry to meet current standards. The project would not construct any buildings, critical infrastructure, nor structures for human occupancy. Therefore, no impact related to substantial direct or indirect risks to life or property from expansive soils would result.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (No impact)

Construction and operation of the proposed project would not result in the generation of additional wastewater nor disposal of wastewater via infiltration to soils. Therefore, the significance criterion related to the capacity of soils in the project area to support septic tanks or alternative wastewater disposal systems is not applicable to construction or operation of the proposed project. No impact would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less than Significant)

Paleontological resources include fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils. The project area was disturbed during construction

of the existing firing range, supporting buildings, and access road. Because the project area was previously graded and disturbed, and because the maximum depth of excavation associated with project construction activities (seven feet) would occur within the firing range platform and immediately adjacent areas, all of which have been disturbed and are underlain with fill, any potential deposits within lateral and vertical extent of earthmoving activities are likely to have a low potential to contain fossil resources and so are considered to have little to no paleontological sensitivity. Thus, the potential for implementation of the project to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature is considered a less than significant impact.

Mitigation

None necessary.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?				✓

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? (Less than Significant)

In March 2012, the SLOCAPCD approved thresholds for GHG emission impacts and incorporated the thresholds into SLOCAPCD's CEQA Air Quality Handbook.[16] The SLOCAPCD does not have an adopted threshold of significance for construction-generated GHGs, but recommends that construction emissions be quantified, amortized over the life of the project, and added to the annual average operational emissions to be compared to the operational thresholds. The SLOCAPCD-adopted thresholds of significance for project-level operational emissions are:

- Consistency with a qualified GHG Reduction Plan, OR
- 1,150 metric tons of carbon dioxide equivalent per year (MT CO_2e), OR
- 4.9 CO_2e per service population (SP) per year

On November 22, 2011, San Luis Obispo County adopted the EnergyWise Plan,[17] which identifies ways in which the community and County government can reduce greenhouse gas emissions. The EnergyWise Plan identifies best practices for energy, waste, transportation, and land use. The plan was updated in 2016. However, neither the 2011 EnergyWise Plan or the 2016 update identify if the plan is considered 'qualified' by the SLOCAPCD or under CEQA Guidelines Section 15183.5(b)(1), which states that qualified plans must have the following elements:

(A) Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;

(B) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;

(C) Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;

[16] SLOCAPCD, 2012. CEQA Air Quality Handbook. Updated 11/24/17.

[17] San Luis Obispo County, 2011. EnergyWise Plan. Last updated in 2016. Available online: https://www.slocounty.ca.gov/Departments/Planning-Building/Energy-and-Climate/Services/Climate-Services.aspx. Accessed on 4/12/19.

(D) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

(E) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;

(F) Be adopted in a public process following environmental review.

Since it is unclear whether the EnergyWise Plan is a qualified GHG Reduction Plan, the SLOCACPD-adopted bright-line threshold of 1,150 MT CO_2e per year is applied to the project. The SLOCAPCD recommends that GHGs from construction projects be quantified, amortized over the life of the project, and added to the annual average operational emissions. The proposed project is assumed to have a 30-year life.

Project construction-generated GHG emissions were quantified using CalEEMod, as described in Section 3.3, Air Quality. The modeling output is provided in **Appendix B**. Following construction, the project would not include any stationary sources of GHG emissions. Vehicle trips associated with operation and maintenance of the project site are anticipated to be the same as the existing condition. Once construction has been completed, the project is not anticipated to increase vehicle trips or other GHG-generating activity above that currently occurring at the project site. Therefore, the project would not result in substantial long-term operational emissions of GHGs.

Project construction is estimated to generate 94.3 MT CO_2e; when amortized over a 30-year life, the project would emit approximately 3 MT CO_2e per year, which is substantially less than the SLOCAPCD's threshold of 1,150 MT CO_2e. Therefore, the project's GHG emissions are considered less than significant. No mitigation is required.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs? (No Impact)

As described under item a, above, San Luis Obispo County adopted the EnergyWise Plan in 2011, which identifies ways in which the community and County government can reduce GHG emissions. The EnergyWise Plan identifies one overarching goal—to reduce GHG emissions from community-wide and County operations sources by a minimum of 15 percent from 2006 baseline emissions by 2020.

Implementation of the proposed project would not conflict with or obstruct implementation of any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The County's EnergyWise Plan provides community-wide goals to reduce GHGs. However, the project is not a typical development project and the community-wide goals are not applicable to the project.

Development of the project would not change operation and maintenance of the Bravo Range; operational and maintenance activities would remain as they are under the existing condition. Therefore, the project would not conflict with the EnergyWise Plan and no impact would result. No mitigation is required.

Mitigation

None necessary.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				✓
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		✓		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼-mile of an existing or proposed school?				✓
d) 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?		✓		
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				✓
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			✓	

Setting

CSLO encompasses 5,612 acres in unincorporated San Luis Obispo County. CSLO was originally established as Camp Merriam in 1928 as a California National Guard post. During World War II the site was leased by the federal government, renamed Camp San Luis Obispo, and used for basic combat training. During World War II CSLO housed over 20,000 officers and enlisted personnel. CSLO was returned to the State in 1953 and today serves as an active military installation for the CA ARNG. CSLO also provides operational, logistical support, and training to other federal, state, and local civilian and military agencies, including the U.S. Coast Guard reserve, California Specialized Training Institute, the U.S. Army Reserve, the California Conservation Corps, Cuesta Community College, and Caltrans.[18]

Since 2005, the entire CSLO site has been an active California DTSC clean-up site (e.g., Cortese List) due to the presence of military munitions and explosives of concern (e.g., unexploded ordnance).[19] However, according to U.S. Army Correspondence from 1964, all of the range areas were cleared by Explosive Ordnance Disposal personnel and items disposed of in 1946.[20]

Site soils at the Bravo Range may have elevated levels of lead and other heavy metals, and other hazardous constituents. As a result, the DTSC prohibits soil from being exported offsite. Earthmoving activities are permitted but no soil is permitted to leave the site without hazardous materials testing. New soil and fill brought to CSLO from outside must be similarly tested. Soil remediation, if ultimately required at the Bravo Range, is not expected to occur until the land is sold or the designated land use changes.[21]

CSLO undergoes periodic, 5-year evaluations under the ORAP (Operational Range Assessment Program) for the investigation of hazardous range contaminants. The last ORAP was in 2017, and detected no significant migration of these constituents in the soil, air, or surface water environments within and surrounding the CSLO ranges, including the Bravo Range.[22]

All other known past and present hazardous materials releases at CSLO are located one or more miles downgradient of the Bravo Range and are highly unlikely to affect soil and groundwater conditions at the site.[23]

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (No Impact)

Use of the Bravo Range would not change with implementation of the proposed project. With implementation of the project, the site would return to its recent and long-term use of combat training and firing of pistols and small arms. Future operation of the Bravo Range would have no

[18] MilitaryBases.com. 2019. Camp San Luis Obispo. Available online: https://militarybases.com/california/camp-san-luis-obispo/. Accessed on 3/23/19.

[19] DTSC, 2019. Envirostor Database. Available at: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=4091000. Accessed on 4/24/19.

[20] USACE, Los Angeles District, 2019. Camp San Luis Obispo (CSLO), Munitions Response Site (MRS) 01/02 – Grenade Courts 25 and 26 and MRS 05 – Multi-Use Range Complex. Dated May 2019.

[21] Reid, John, 2019. Personal email communication between John Reid Environmental Scientist at Camp San Luis Obispo, and Paul Henderson, Senior Construction Engineer at GHD. Dated 3/18/18.

[22] Reid, John, 2019. Personal email communication between John Reid Environmental Scientist at Camp San Luis Obispo, and Paul Henderson, Senior Construction Engineer at GHD. Dated 3/18/18.

[23] SWRCB, 2019. GeoTracker Database, Available online: https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Camp+San+Luis+Obispo. Accessed on 4/24/19.

effect on the hazardous materials that are used, transported, or disposed of. No impact would result.

b, d) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment, or 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? (Less than Significant with Mitigation)

With the exception of an electrical transformer that does not contain polychlorinated biphenyl (PCB), no electrical equipment would be removed as part of the project. Currently, there is no nighttime lighting and none would be installed as part of the project. The project does not involve the removal of structures or infrastructure containing hazardous building materials such as asbestos, lead-based paint, electrical equipment containing PCBs, fluorescent light ballasts containing di (2-ethylhexyl) phthalate (DEHP), or fluorescent light tubes containing mercury. No impact related to the release of hazardous building materials would result.

Site soils at the Bravo Range may be contaminated with lead and other heavy metals, as well as other hazardous constituents. Consistent with DTSC requirements, neither the construction activities that have been completed to date nor the construction activities remaining include the removal or exportation of site soils. However, without proper controls, contaminated soil that is encountered during earthmoving activities is more susceptible to erosion by precipitation and wind, and could be tracked offsite by construction vehicles. Environmental Protection Action 4 (Stormwater Pollution Prevention Plan) would include best management practices and erosion control measures that would minimize the migration of contaminated soils offsite. As described in Section 1.9, above, all Environmental Protection Actions are considered part of the project and the CA ARNG is committed to implementing these conditions for the remainder of construction. However, even with implementation of Environmental Protection Action 4, if not properly managed, lead-contaminated soils could be inadvertently transported offsite during disposal of construction debris or tracked offsite by construction vehicles and equipment, a potentially significant impact. However, with implementation of **Mitigation Measures HAZ-1a (Construction Spoils Management Plan)** and **HAZ-1b (Track-out Prevention Measures)**, which would require measures be implemented during construction to ensure proper handling and management of excavated material and control track-out, the potential for future construction activities to result in the accidental release of contaminated soil into the environment would be less than significant.

Fuels, lubricants, paints, and solvents could be used during the remaining construction activities. Storage and use of hazardous construction chemicals at the construction sites and staging areas could result in the accidental release of small quantities of hazardous materials, which could degrade soil and impair water quality. However, with implementation of Environmental Protection Actions 4 (Stormwater Pollution Prevention Plan) and 5 (Spill Prevention, Control, and Countermeasure Plan), and **Mitigation Measure HAZ-1c (Storage of Hazardous Construction Materials)**, the potential for accidental releases of hazardous construction materials or chemicals into the environment would be less than significant.

As discussed above, the entire CSLO is an active DTSC clean-up site but the CSLO range areas were reportedly cleared by Explosive Ordnance Disposal personnel in 1946. Since then, the Bravo Range has been used solely for firing pistols and other small arms. Munitions such as projectiles, rockets, and mortars are not used at the Bravo Range. Unexploded ordnance was not encountered during recent earthmoving activities at the site. For these reasons, the potential

explosion hazard associated with unexploded ordnance at the Bravo Range is considered extremely low but is conservatively considered a potentially significant impact. Implementation of **Mitigation Measure HAZ-1d (Unexploded Ordinance Identification and Safety Training)**, which requires that construction workers be trained in ordnance identification and handling, would reduce the impact to a less-than-significant level.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4 mile of an existing or proposed school? (No Impact)

There are no existing nor proposed schools within ¼-mile of the Bravo Range. Therefore, no impact related to the use or emission of hazardous materials within ¼-mile of a school would result.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? (No Impact)

The closest airport to the Bravo Range is the San Luis Obispo County Regional Airport, located 7.5 miles to the southeast. Thus, no impact would result.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No Impact)

The Bravo Range is located on Range Road in a remote area of the CSLO. Project construction activities would be contained within the 10.3-acre project area and would not impede access along any private or public roadways. No impact to emergency response and evacuation would result.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (Less than Significant)

Fire Hazard maps available on the San Luis Obispo County Planning and Building Department's GIS portal and the CAL FIRE State Responsibility Areas Map for the county indicate the Bravo Range is located in a Moderate Fire Hazard Zone.[24] The use of construction equipment and the temporary onsite storage of diesel fuel could pose an increased wildfire risk for workers and the public during construction. Potential sources of ignition include equipment with internal combustion engines, gasoline-powered tools, and equipment or tools that produce a spark, fire, or flame. Smoking by construction personnel is also a potential source of ignition during construction. However, project construction activities would comply with California Public Resources Code requirements regarding wildland fire safety and Uniform Fire Code requirements for the safe storage and handling of hazardous materials. Compliance with pertinent regulations would ensure the risk of wildland fires remains less than significant. No mitigation is required.

Mitigation

Mitigation Measure HAZ-1a: Construction Risk and Spoils Management Plan

CA ARNG or CA ARNG's construction contractor shall prepare and implement a construction risk and spoils management plan (CRSMP) to address hazardous materials and other worker health and safety issues during project construction. The CRSMP shall include all necessary procedures to ensure that excavated

[24] Cal Fire, 2007. San Luis Obispo County, Fire Hazard Severity Zones in SRA [Map]. Available online: http://www.calfireslo.org/FHSZ.html. Accessed on 4/8/2019.

materials are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations. The CRSMP shall include step-by-step procedures for handling and stockpiling demolition debris and excavated material, as applicable. All excavated materials shall be inspected prior to initial stockpiling, and site soils shall be stockpiled separately to ensure contaminated soil is not inadvertently exported offsite.

Mitigation Measure HAZ-1b: Track-Out Prevention Measures

"Track-Out" is defined as sand or soil that adheres to and/or agglomerates on the exterior surfaces of motor vehicles and/or equipment (including tires) that may then fall onto any highway or street as described in California Vehicle Code Section 23113 and California Water Code 13304. To prevent track out, CA ARNG shall install and operate a "track-out prevention device" at Range Road where vehicles enter and exit the unpaved access road to the Bravo Range. The track-out prevention device can be any device or combination of devices that are effective at preventing track out, located at the point of intersection of an unpaved area (access road) and a paved road (Range Road). Rumble strips or steel plate devices require periodic cleaning to be effective.

Mitigation Measure HAZ-1c: Storage of Hazardous Construction Materials

A contained and covered area on-site shall be used for storage of cement bags, paints, flammable oils, fertilizers, pesticides, or any other materials that have the potential for being discharged to the storm drain system by wind or in the event of a material spill. The existing bleachers building may be utilized for this purpose.

Mitigation Measure HAZ-1d: Unexploded Ordnance Identification and Safety Training

Prior to the first day of work, all construction contractors and construction personnel shall be required to attend an ordnance identification and safety course led by the Local Installation Unit. The training shall provide an overview of the unexploded ordnance potentially present at the site based on past and historic land uses, and how to identify such ordinance. The training shall detail the procedures to be taken to address unexploded ordnance hazards in the event such materials are discovered during construction and earthmoving activities. In the case of discovery, construction workers shall cease work immediately and notify the Contracting Officer's Representative who will then notify CA ARNG Range Control and the CA ARNG Explosive Ordnance Disposal Team. Construction workers and contractors shall sign a certification of training form and a copy of the forms shall be maintained on file and provided to responsible agencies if requested.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		✓		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				✓
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial erosion or siltation on- or off-site?			✓	
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			✓	
iii) 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?				✓
iv) Impede or redirect flood flows?				✓
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				✓
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				✓

Setting

Bravo Range is located within the Chorro Creek watershed, which drains approximately 43.2 square miles towards the west and discharges into the Pacific Ocean via Morro Bay. Major tributaries to Chorro Creek include San Bernardo, San Luisito, Walters, Pennington, and Dairy Creeks. A small seasonal creek drains north-to-south at the western boundary of the Bravo Range, discharging to Chorro Creek approximately 1.8 miles south.

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less than Significant with Mitigation)

The remaining earthmoving activities would include vegetation removal, final grading of the firing range platform, and installation of targetry and other infrastructure. Additional earthwork and ground disturbance would occur for construction of the drainage improvements and installation of electrical conduit between the control tower and new targetry. Although the total ground disturbance is anticipated to be 3.5 acres, ground disturbance could occur in any part of the 10.3-acre project area due to the movement of construction vehicles and equipment. Exposed soil could be transported by wind or water, or tracked offsite by construction vehicles and, if not properly managed, could increase sediment loads and pollutant concentrations in receiving water bodies such as Chorro Creek.

Construction activities could also result in the accidental release of hazardous construction chemicals such as adhesives, solvents, fuels, and drilling and petroleum lubricants that, if not managed appropriately, could be inadvertently released into the environment, become mobilized, and degrade water quality. Hazardous construction chemicals could also infiltrate into groundwater, potentially degrading groundwater quality. Implementation of Environmental Protection Action 4 (Stormwater Pollution Prevention Plan), described in Section 1, above, would require that CA ARNG develop and implement a project-specific SWPPP that includes measures to prevent discharges of nonpoint source pollutants in construction-related stormwater runoff into downstream water bodies. Even with implementation of Environmental Protection Action 4, the potential to degrade downstream water quality from track-out is considered a potentially significant impact. However, with implementation of **Mitigation Measure HAZ-1b (Track-Out Prevention Measures)**, which would include tracking controls to minimize the migration of contaminated soils downstream, the impact would be reduced to a less-than-significant level.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (No Impact)

The project would not involve the use or extraction of groundwater, and no interference with groundwater recharge would occur. No impact would result.

c-i) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site? (Less than Significant)

Stormwater runoff volumes and rates generated from unpaved areas can increase significantly when a site is paved, the impervious surface area is increased, and the ability of surface water to infiltrate the ground surface is reduced or eliminated. Impervious surfaces can increase peak

flows in creeks, cause erosion, and result in greater nonpoint-source pollution in downstream water bodies.

Project implementation would result in a negligible increase in impervious surfaces (280 square feet of new impervious surfaces would be created by the four- by five-foot-wide cement standing pads that would be poured at the base of each of the 15 modern firing lanes). The project also proposes minor modifications to the seasonal drainage located immediately west of the Bravo Range to improve drainage of the site and protect the newly-created embankment along the western boundary of the firing range from erosion.

Any increase in the amount of stormwater runoff resulting from the 280 square feet of new impervious surfaces would be negligible and changes in the rate of peak runoff from the site would be addressed by the proposed drainage improvements. The project would improve on-site drainage by conveying runoff from the slope above the firing range via an interceptor drain and a rock-lined drainage to a detention basin at the western boundary of the firing range. The proposed drainage improvements would decrease erosion by including erosion protection in on-site drainage ditches, decrease sedimentation and siltation of downstream waterbodies by allowing suspended sediment in site runoff to drop out in the detention basin, and reduce peak flows by regulating the discharge to the natural drainage via the low-flow sand filter weir. The impact would be less than significant.

c-ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (Less than Significant)

As described above under item c-i, project implementation would result in a negligible increase in impervious surfaces (280 square feet) and any resultant increase in the amount of stormwater runoff would be equally negligible and addressed by the proposed on-site drainage improvements. The impact would be less than significant.

c-iii) 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? (No Impact)

Under the existing condition, stormwater within and around the firing range occurs predominantly as sheet flow that drains to the natural drainage channel located west of the range. Implementation of the project would not substantially increase the volume of runoff from the site. The 40-square-foot rock-lined drainage channel would protect the channel from erosion. The detention basin would allow suspended sediment to drop out before being discharged downstream. The combination of the detention basin and low-flow weir would reduce peak runoff from the site. These improvements would improve water quality and any downstream stormwater capacity issues. Thus, no impact would result.

c-iv) Impede or redirect flood flows? (No Impact)

The project would not construct or install structures that could result in impedance or redirection of flows. No impact would result.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (No Impact)

The project area is not located within a flood hazard, seiche, or tsunami zone. No impact would result.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (No Impact)

As described under item b, above, the project would not involve the use or extraction of groundwater, and would not interfere with groundwater recharge. As described under item c-iii, the proposed drainage improvements and erosion protection would improve downstream water quality. Thus, no impact related to conflicts with, or obstruction of, implementation of a water quality control plan or a sustainable groundwater management plan would result.

Mitigation

Mitigation Measure HAZ-1:b Track-Out Prevention Measures

(See Section 3.9, Hazards and Hazardous Materials, above, for description.)

3.11 Land Use and Planning

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?				✓
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				✓

Setting

The Bravo Range is located within CSLO, approximately three miles northwest of the City of San Luis Obispo and two miles north of Highway 1 on the flanks of Cuesta Grade in unincorporated San Luis Obispo County. The Bravo Range is designated for Agriculture by the San Luis Obispo County General Plan and zoning code.

a) Physically divide an established community? (No Impact)

The Bravo Range is not located within an established community and implementation of the project would not construct any linear structures such as roads or bridges that could physically divide an established community. No impact would result.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (No Impact)

The proposed project would have no effect on land uses. With implementation of the project the Bravo Range would resume use as a firing range. Further, with implementation of the Environmental Protection Actions described in Section 1, above, and the mitigation measures prescribed in Section 3 of this document, the project would be consistent with applicable land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating environmental effects. No impact would result.

Mitigation

None required.

3.12 Mineral Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) 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?				✓
b) 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?				✓

Setting

The California Geological Survey classifies land into Mineral Resource Zones (MRZs) based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act (SMARA) of 1974. The Bravo Range and surrounding areas are mapped as MRZ-3, which indicates areas containing known or inferred aggregate resources of undetermined significance.[25]

a, b) 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, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

The project area and surrounding land is mapped as containing known or inferred mineral deposits. However, because project implementation consists of upgrading a previously existing firing range, and would not change land use nor the overall extent and nature of development on the site, no impact to mineral resources would result.

Mitigation

None necessary.

[25] California Geological Survey, 2011. Updated Mineral Land Classification Map for Concrete-Grade Aggregates in the San Luis Obispo-Santa Barbara Production-Consumption Region, California – North Half. Special Report 215.

3.13 Noise

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
b) Result in generation of excessive groundborne vibration or noise levels?				✓
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓

Setting

The Bravo Range is subject to the 2015 Statewide Operational Noise Management Plan prepared by the National Guard. Except where noise extends outside of the CSLO boundaries, CSLO does not designate maximum allowable noise levels.

The Bravo Range is located within a relatively remote portion of CSLO. Sensitive receptors include people in residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks, and other outdoor recreation areas. Land uses within and surrounding the Bravo Range are not noise sensitive. The closest sensitive receptors are the California Men's Colony roughly one mile to the south and recreationists at El Chorro Regional Park one mile to the west.

Project construction would occur between 6:30am and 5pm, Monday through Friday, over a 3 month period. Noise generated by project construction would vary depending on the construction activities taking place and the equipment being operated.

a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less than Significant)

Within the Chorro Valley, high-speed traffic on Highway 1 is the predominant noise source. Noise generated by project construction is expected to vary depending on construction activities. Project construction would generate noise from heavy equipment that typically generates noise levels of 80 to 85 a-weighted decibels at 50 feet from the source. Noise levels from construction activities are typically considered as point sources and attenuate (i.e., decrease) with distance at a rate of 6 dBA per doubling of distance over hard site surfaces, such as streets and parking lots, and a rate of 7.5 dBA per doubling of distance for soft site surfaces, such as open terrain with vegetation. At the closest sensitive receptors located one mile away at El Chorro Regional Park, the noise from construction equipment would be well below acceptable noise levels. The temporary construction-related increase in ambient noise levels would be less than significant.

Upon completion of construction activities, the Bravo Range would be operated in the same manner that it currently is. There would be no change in operating hours and no increase in the total number of firing lanes or overall capacity of the facility. Therefore, no permanent changes in ambient noise levels would result.

b) Result in generation of excessive groundborne vibration or noise levels? (No Impact)

Project construction activities would involve the use and operation of a backhoe, excavator, grader, roller, concrete truck, and water truck. This equipment does not generate excessive groundborne vibration or noise levels. No impact would result.

Upon completion of construction activities, the Bravo Range would be operated in the same manner that it has been operated for decades. Therefore, no permanent changes in excessive groundborne vibration or noise levels would result.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No Impact)

The closest airport to the Bravo Range is the San Luis Obispo County Regional Airport, located 7.5 miles to the southeast. Thus, no impact would result.

Mitigation

None necessary.

3.14 Population and Housing

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned 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)?				✓
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				✓

a) Induce substantial unplanned 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)? (No Impact)

The proposed project would modernize a previously existing firing range. The project does not include the construction of any new homes, businesses, or other infrastructure that would directly or indirectly induce population growth in the area. No impact would result.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)

The project would not displace people or housing. No impact would result.

Mitigation

None necessary.

3.15 Public Services

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire Protection?			✓	
Police protection?			✓	
Schools?				✓
Parks?				✓
Other public facilities?				✓

Setting

CSLO maintains a Security Force (SECFOR) which monitors access on and off CSLO along with post-wide security protection. The San Luis Obispo County Sheriff's Department provides police protection services for most of the unincorporated county. Patrol services for the Chorro Valley are provided primarily through the Sheriff's substation in Los Osos. Other services, including investigative and emergency dispatch services, are provided through the county operations center on Kansas Avenue. Fire protection in CSLO is provided by CAL FIRE under contract with the County.

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public services? (Less than Significant)

During project construction activities, emergencies could occur in the project area; however, appropriate local emergency service providers are available. Thus, any potential impact to police and fire protection services during construction would be less than significant.

During project operations, the Bravo Range would continue to be used as it is currently used – for training and the firing of pistols and small fire arms. Construction and operation of the project would not change nor expand existing land uses. The project would not increase the local population, increase visitors, nor bring additional people to the area. Thus, implementation of the project would not increase the long-term demand for police or fire protection services, increase students at local schools, nor increase the use of parks and other public facilities. No impact to public services would result.

Mitigation

None necessary.

3.16 Recreation

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) 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?				✓
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				✓

Setting

El Chorro Regional Park, located one mile west of the Bravo Range, provides active and passive recreational opportunities. The park includes campsites, a public golf course, botanical gardens, volleyball courts, softball fields, and hiking trails.

a) 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? (No Impact)

The project does not propose to construct new homes or businesses and would not increase the number of residents in the project area. Thus, implementation of the proposed project would not increase the use of recreational parks or other recreational facilities in the area. Therefore, this significance criterion is not applicable to the proposed project. No impact would result.

b) Include or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (No Impact)

The proposed project involves the modernization of a firing range that is used by the CA ARNG for combat training and by the public for recreational use (public shooting range). The impacts of these improvements are the subject of this Initial Study. The project does not propose to construct any other recreational facilities and would not result in the need for new or expanded recreational facilities. Thus, the significance criterion related to the construction or expansion of recreational facilities is not applicable to the proposed project. No impact would result.

Mitigation

None necessary.

3.17 Transportation

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?				✓
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?				✓
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				✓
d) Result in inadequate emergency access?				✓

Introduction

Project construction activities would occur over a three-month period between 6:30am and 5pm, Monday through Friday, and would require up to ten construction workers on a given day. Construction would generate vehicle traffic associated with construction worker vehicles, materials and equipment deliveries, and haul trucks. Construction-related vehicles would travel to and from the project site on regional and local roads. All construction disturbance, staging, materials storage, and parking would be accommodated within the 10.3-acre project area. Construction activities would not extend into Range Road nor require temporary lane or road closures.

Upon completion of construction activities, future use, operation, and maintenance of the Bravo Range is anticipated to generate about the same number of vehicle trips as the existing condition.

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (No Impact)

CSLO does not have established standards for circulation performance as the installation accommodates extremely low traffic levels. Project construction would not block or cause temporary closure of any roadways or traffic lanes during construction. No transit, bicycle, or pedestrian facilities would be affected during construction. No impact would result. .

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (No Impact)

The project is not a transportation project and project implementation would not change future land uses at the Bravo Range. Since future operations are anticipated to be similar to the existing condition and are not expected to increase vehicle miles traveled, no impact related to conflicts with CEQA Guidelines section 15064.3 would result.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (No Impact)

The project would not involve any changes in roadway configurations or traffic flow. Upon completion of construction, land uses would remain the same as the existing condition. No impact would result.

d) Result in inadequate emergency access? (No Impact)

The project would not require construction within any roadways and access to and from the site would occur via an existing access road. Project operations would have no effect on emergency access. Thus, no impact would result.

Mitigation

None necessary.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?		✓		
b) Cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.		✓		

Background

CSLO contains a variety of significant cultural resources of tribal interest. CSLO lies within the traditional territory of the Chumash, specifically the Northern Chumash. The CA ARNG communicates regularly with the federally-recognized SYBCI regarding projects and undertakings at CSLO. As discussed in Section 1.14, consistent with Environmental Protection Action 1 (Tribal and Archaeological Monitoring), the SYBCI was notified prior to the recent ground-disturbing activities and a Tribal monitor was present during some of the ground disturbance activities that were previously completed. The Yak Tityu Tityu Yak Tilhini Tribe (through the SYBCI) has indicated that no additional Tribal monitoring will be needed for the proposed project.

a,b) Cause a substantial adverse change in the significance of a tribal cultural resource? (Less than Significant with Mitigation)

No known tribal cultural resources were identified within or immediately adjacent to the project area boundary during a 2017 cultural resources assessment for the project.

In the process of identifying cultural resources as specified in subdivision (c) of the Public Resources Code Section 5024.1, consultation with the SYBCI was conducted on January 11, 2017 to ascertain if resources important to the tribe were present in or around the project area

and, if so, would they be impacted. No cultural resources of tribal significance were identified. However, the potential for inadvertent discovery of tribal cultural resources exists and is considered a significant impact. Consistent with Environmental Protection Action 1 (Tribal Monitor), a Tribal representative will be notified in advance of ground disturbance activities. However, the impact would remain potentially significant. To reduce this potential impact to a less-than-significant level, CA ARNG would implement **Mitigation Measures CR-1b (Inadvertent Discovery of Archaeological Remains or Tribal Cultural Resources) and CR-2 (Inadvertent Discovery of Human Remains)**. These measures outline procedures in the event of inadvertent discovery.

Mitigation

Mitigation Measure CR-1b: Inadvertent Discovery of Archaeological Remains or Tribal Cultural Resources

(See Section 3.5, Cultural Resources, for description.)

Mitigation Measure CR-2: Inadvertent Discovery of Human Remains

(See Section 3.5, Cultural Resources, for description.)

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				✓
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				✓
c) 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?				✓
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				✓
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				✓

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (No Impact)

The project would not result in the relocation or construction or new or expanded water, wastewater treatment, natural gas, or telecommunication facilities. The project includes stormwater drainage improvements and the extension of electrical power from a pole-mounted transformer at the base of the access road to the flip-up targets in the firing range. The potential impacts associated with these improvements are evaluated as part of the project throughout this Initial Study. Thus, this criterion is addressed throughout this document and is not applicable in this section. No impact would result.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (No Impact)

The project would not construct new housing, nor would it increase the number of residents in the area. The project would not require additional water supply or require new or expanded water supply resources or entitlements. No changes in water demand or water distribution would result. Therefore, no impacts related to insufficient water supplies would result.

c) 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. (No Impact)

The project would not increase the generation of wastewater nor exceed wastewater treatment capacity. No impact related to wastewater treatment and capacity would result.

d, e) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, and comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (No Impact)

A small amount of construction waste may be generated during construction. The solid waste would be disposed of at Cold Canyon Landfill in San Luis Obispo County in accordance with all federal, state, and local regulations. Project operations would not increase the generation of solid waste. No impact related to conflicts with solid waste reduction goals or federal, state, and local regulations related to solid waste would result.

Mitigation

None necessary.

3.20 Wildfire

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				✓
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				✓
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				✓
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes?				✓

Setting

The project is located in an area classified by CAL FIRE as having a moderate fire hazard severity zone. The closest state responsibility areas and lands classified by CAL FIRE as very high fire hazard severity zones are located 0.35 mile to the east.[26] CSLO operates under a Wildland Fire Management Plan.

a) Substantially impair an adopted emergency response plan or emergency evacuation plan? (No Impact)

The Bravo Range is located on CSLO property. Project construction would not require road closures nor impede traffic along Range Road. Upon completion of construction activities, the site would be used for the same purpose it is used under existing conditions. No impact related to

[26] Cal Fire, 2007. San Luis Obispo County, Fire Hazard Severity Zones in SRA [Map]. Available online: http://www.calfireslo.org/FHSZ.html. Accessed on 4/8/2019.

substantial impairment of an adopted emergency response plan or emergency evacuation plan would result.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? (No Impact)

The Bravo Range is located on CSLO property. The proposed project would modernize a previously existing firing range and does not include structures for human occupancy. No impact would result.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? (No Impact)

The project would include the replacement of an existing electrical transformer and the installation of 3-inch-diameter electrical conduit from the existing control tower to the new targetry in the firing lanes. The project would not require the installation or maintenance of infrastructure that could exacerbate fire risk. No impact would result.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes? (No Impact)

The project would modernize a previously existing firing range and would not change land uses at or below the site. No impact would result.

Mitigation

None necessary.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-than-Significant with Mitigation	Less-than-Significant Impact	No Impact
a) Does the project have the potential to substantially 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, substantially 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?			✓	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			✓	
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?			✓	

a) Does the project have the potential to substantially 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, substantially 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? (Less than Significant)

As discussed in Section 3.4, Biological Resources, the project area is considered dispersal habitat for CRLF. Temporary impacts could occur during construction; however, the construction period would be temporary and proposed mitigation measures in Section 3.4 would reduce biological impacts to a less-than-significant level.

As discussed in Section 3.5, Cultural Resources, and Section 3.18, Tribal Cultural Resources, although no known resources exist within the project area, impacts to known cultural resources located within 650 feet from the project area and inadvertent discovery could potentially occur

during construction. Mitigation Measures identified in Sections 3.5 and 3.18 would ensure significant impacts would not result.

With implementation of the mitigation measures prescribed above, the proposed project would not threaten a significant biological resource, nor would it eliminate important examples of California history or prehistory. No additional mitigation measures are necessary.

b) Does the project have impacts that are individually limited, but cumulatively considerable? (Less than Significant)

The project is relatively benign and would result in limited, minimal, and very short-term impacts. The project-level mitigation measures prescribed herein would ensure project impacts are not cumulatively considerable. Thus, the project's impacts are not cumulatively considerable and this overall impact is less than significant. No mitigation is necessary.

c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant)

Only one potentially significant impact was identified that could cause adverse effects on humans. This impact is the potential to encounter NOAs during construction. As discussed in Section 3.3, Air Quality, the presence of NOAs on the site is unlikely based on the local soil survey mapping. However, a geologic evaluation is needed to completely rule this out. If the geologic evaluation determines that NOAs are a potential issue at the site, CA ARNG would comply with the Asbestos ATCM. With implementation of the mitigation measure in Section 3.3, the potential impact would be reduced to less than significant. No additional mitigation is necessary.

4. Report Preparers and Contributors

4.1 CA ARNG Contributors

Nathan Parks – Associate Environmental Planner

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4.2 GHD Preparers

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Joslyn Curtis – Ecologist/Biologist

Appendices

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Appendix A Design Plans and Specifications (April 2018)

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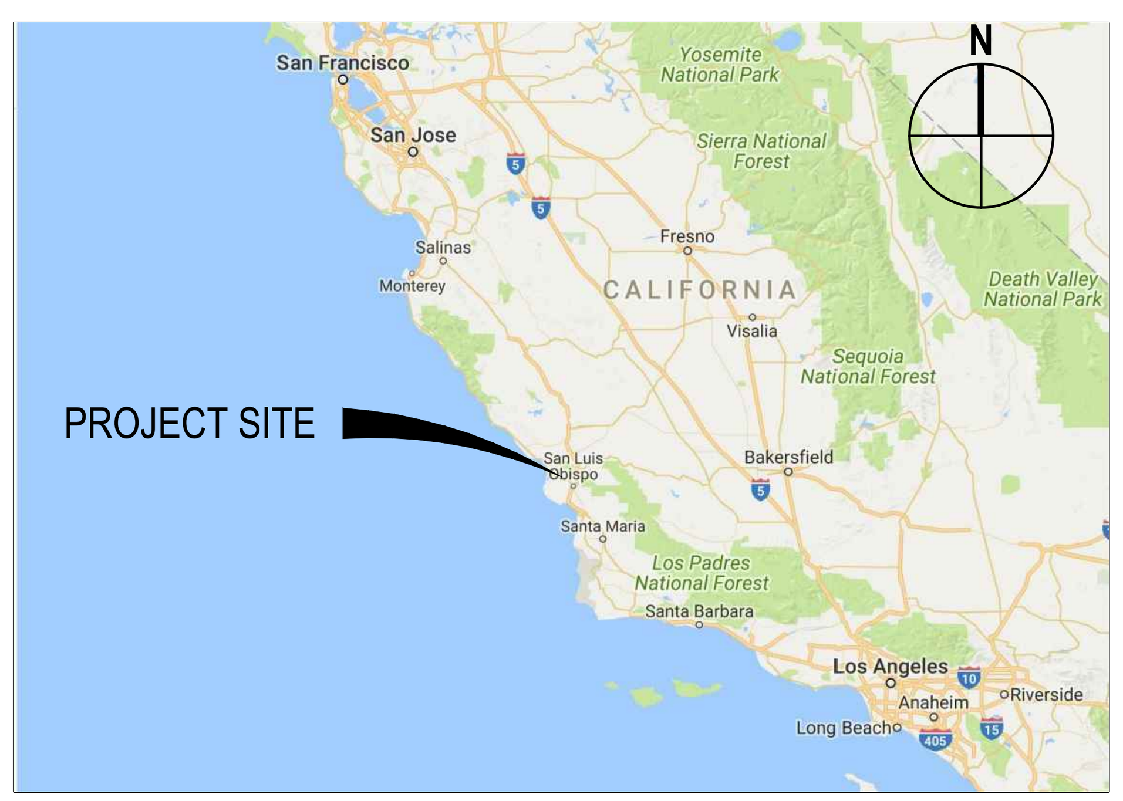
CALIFORNIA MILITARY DEPARTMENT

COMBAT PISTOL QUALIFYING COURSE (CBQC)
CAMP SAN LUIS OBISPO, CALIFORNIA

AGREEMENT NUMBER: G0184

LOCATION MAP

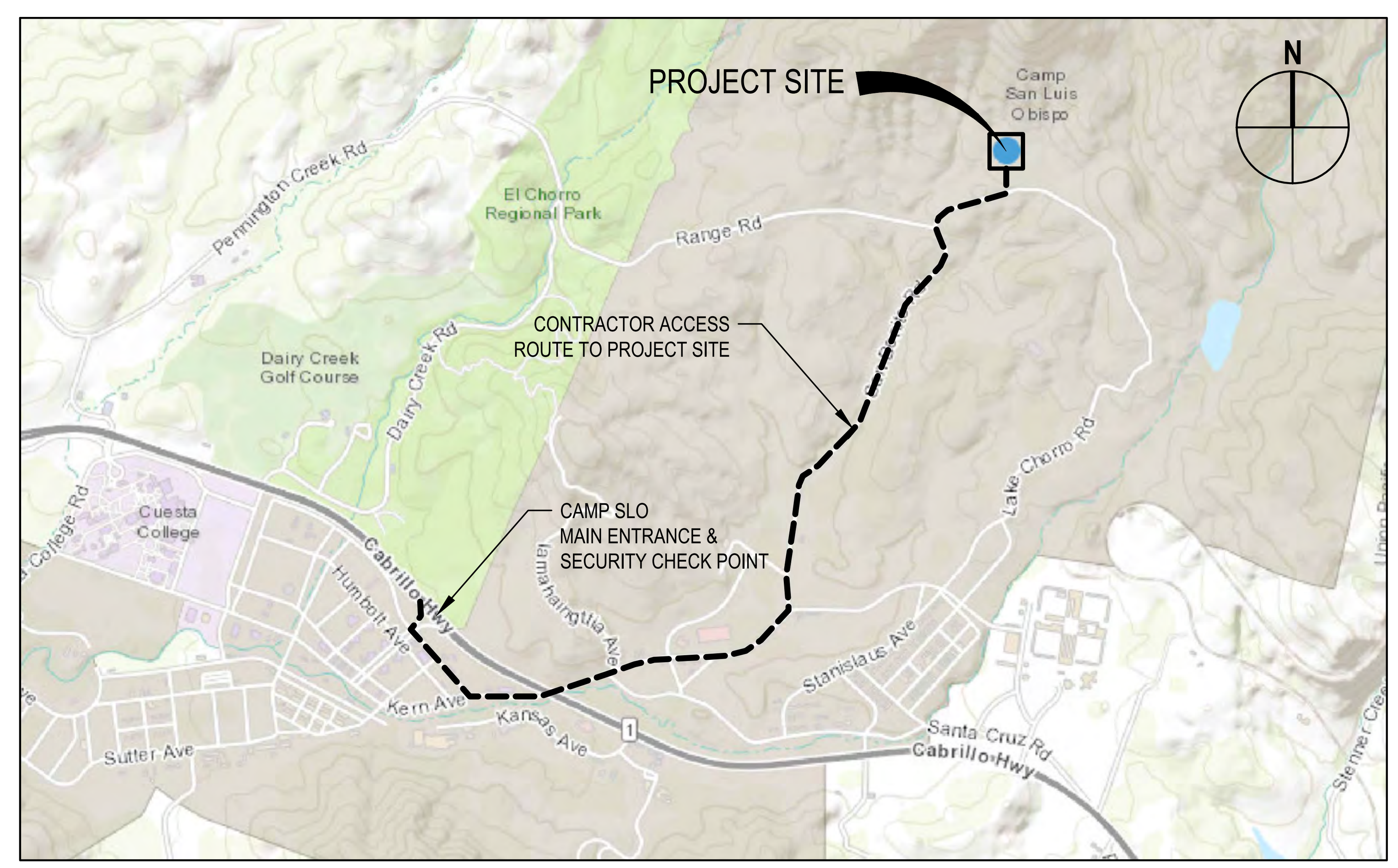


NOT TO SCALE

VICINITY MAP

NOT TO SCALE

AREA MAP AND ACCESS ROUTE



NOT TO SCALE

DRAWING INDEX

SHEET OF	DRAWING NUMBER	DESCRIPTION
		GENERAL
1	G- 001	TITLE SHEET, DRAWING INDEX, LOCATION MAPS
		CIVIL
2	C- 001	CIVIL NOTES, SYMBOLS, AND ABBREVIATIONS
3	C- 101	EXISTING CONDITIONS AND SURVEY CONTROL
4	C- 120	GRADING PLAN - ROUGH GRADING
5	C- 121	GRADING PLAN - FINISHED GRADE
6	C- 301	SECTIONS - ROUGH GRADE AND FINISHED GRADE
7	C- 501	CIVIL DETAILS - 1
8	C- 502	CIVIL DETAILS - 2
9	C- 503	CIVIL DETAILS - 3
		ELECTRICAL
10	E- 001	ELECTRICAL LEGEND SYMBOLS, ABBREVIATIONS AND GENERAL NOTES
11	E- 101	ELECTRICAL SITE PLAN
12	E- 401	ENLARGED ELECTRICAL FIRING LANES PLAN
13	E- 501	ELECTRICAL DETAILS - 1
14	E- 502	ELECTRICAL DETAILS - 2
15	E- 601	SINGLE LINE DIAGRAM AND SCHEDULES
16	E- 602	POWER RISER DIAGRAM
17	E- 603	DATA RISER DIAGRAM

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REVISIONS	SYMBOL	DATE	REMARKS	BY:
			ISSUED FOR CONSTRUCTION	

DRAWN BY: PBH
CHECKED BY: AP
APPROVED BY: AP
DATE: JULY 2018

SHEET TITLE: TITLE SHEET, DRAWING INDEX, LOCATION MAPS
PROJECT: COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN — AGREEMENT NUMBER: G0184
LOCATION: CAMP SAN LUIS OBISPO, CA
STATE OF CALIFORNIA — MILITARY DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — CIVIL — No. C44138 — Exp. 6/30/19

SHEET NUMBER
G-001
1 OF 17

Cad File No: N:\US\San Francisco\Projects\111\11146462 CMD Camp SLO Pistol Range\06-CAD\Sheets\11146462 G001.dwg

SHEET GENERAL NOTES

1. GENERAL

1.1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS.

1.2. THE CONTRACTOR SHALL HAVE A SUPERINTENDENT OR REPRESENTATIVE ON SITE AT ALL TIMES DURING CONSTRUCTION.

1.3. THE CONTRACTOR WILL BE RESPONSIBLE FOR COMPLYING WITH ALL CONDITIONS CONTAINED IN PROJECT RELATED PERMITS AND IN OBTAINING ANY OTHER PERMITS THAT MAY BE REQUIRED.

1.4. CONTRACTOR SHALL CONDUCT FIELD REVIEW AND VERIFY ALL LINES, LEVELS AND CONDITIONS PRIOR TO BEGINNING OF ANY WORK. SUBMIT TO CONTRACTING OFFICER A LIST OF IDENTIFIED PROBLEM AREAS. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES AND COORDINATE WITH CONTRACTING OFFICER REGARDING THE RELOCATION OF EXISTING UTILITIES AS NEEDED.

1.5. ALL MATERIALS, REQUIRED FOR THE COMPLETE EXECUTION OF THE PROJECT, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED. ROUGH GRADING EARTHWORKS WILL BE COMPLETED BY OTHERS.

1.6. CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

2. CONSTRUCTION

2.1. HOURS OF WORK

2.1.1. THE CONTRACTOR SHALL CONDUCT ALL WORK BETWEEN THE HOURS OF 0630 AND 1700, MONDAY THROUGH FRIDAY, UNLESS AUTHORIZED BY CONTRACTING OFFICER. CONTRACTOR AND CREW SHALL NOT ENTER SITE PRIOR TO 0630 AM OR LEAVE THE SITE AFTER 1830 PM, MONDAY THROUGH FRIDAY. NO EQUIPMENT ENGINES OR OTHER NOISE GENERATING ACTIVITIES SHALL BE STARTED PRIOR TO 0630 OR CONTINUE PAST 1700, MONDAY THROUGH FRIDAY. WEEKEND AND HOLIDAY WORK WILL ONLY BE CONDUCTED AFTER PRIOR AUTHORIZATION FROM THE CONTRACTING OFFICER.

2.2. HOURS FOR EQUIPMENT DELIVERY

2.2.1. EQUIPMENT DELIVERY, SUPPLY DELIVERY AND SERVICE/FUELING VEHICLES SHALL ONLY ENTER AND EXIT SITE WORK AREAS BY THE APPROVED ACCESS ROADS DURING NORMAL WORKING HOURS.

2.3. DAILY COMMUNICATIONS

2.3.1. CONTRACTOR SHALL MAINTAIN FREQUENT COMMUNICATIONS, AT LEAST DAILY, WITH THE ON-SITE CONTRACTING OFFICER OR HIS/HER AUTHORIZED REPRESENTATIVE TO DISCUSS DETAILS OF IMPLEMENTATION, ORDER OF WORK, METHODS OF MINIMIZING ENVIRONMENTAL IMPACTS AND OTHER RELEVANT COMPONENTS OF CONSTRUCTION. THERE WILL BE COMMUNICATION WITH THE ENVIRONMENTAL MONITOR AT LEAST ONCE PER WEEK EITHER IN A MEETING WITH THE CONTRACTING OFFICER AND CONTRACTOR REPRESENTATIVE OR INDIRECTLY THROUGH THE CONTRACTING OFFICER.

2.4. OFF-SITE TRAFFIC RESTRICTIONS AND SITE ACCESS

2.4.1. THE CONTRACTING OFFICER WILL DOCUMENT DESIGNATED ROUTES AND ENTRY POINTS FOR ACCESS TO THE SITE BY PERSONNEL AND EQUIPMENT. NO OTHER ROUTE MAY BE USED WITHOUT PRIOR APPROVAL OF THE CONTRACTING OFFICER. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY SIGNS, BARRICADES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVEYANCE, AND SAFETY OF THE PUBLIC.

2.5. CLEANING, TRASH, DEBRIS, AND STORAGE

2.5.1. THE SITE WILL BE KEPT FREE OF TRASH AT ALL TIMES. ALL ITEMS USED FOR CONSTRUCTION PURPOSES WILL BE REMOVED FROM THE SITE AT THE COMPLETION OF CONSTRUCTION.

2.5.2. STORAGE OF CONSTRUCTION MATERIAL AND EQUIPMENT OUTSIDE OF THE FENCED BRAVO RANGE AREA WILL NOT BE PERMITTED.

2.5.3. CONSTRUCTION EQUIPMENT, TOOLS, ETC. SHALL NOT BE CLEANED OR RINSED INTO A STREET, GUTTER OR STORM DRAIN.

2.5.4. A CONTAINED AND COVERED AREA ON-SITE SHALL BE USED FOR STORAGE OF CEMENT BAGS, PAINTS, FLAMMABLE, OILS, FERTILIZERS, PESTICIDES, OR ANY OTHER MATERIALS THAT HAVE POTENTIAL FOR BEING DISCHARGED TO THE STORM DRAIN SYSTEM BY WIND OR IN THE EVENT OF A MATERIAL SPILL. THE EXISTING BLEACHES BUILDING MAY BE UTILIZED FOR THIS PURPOSE.

2.5.5. ALL TEMPORARY ON-SITE CONSTRUCTION PILES SHALL BE SECURELY COVERED WITH A TARP OR OTHER DEVICE TO CONTAIN DEBRIS UNLESS OTHERWISE AUTHORIZED.

2.5.6. CONCRETE TRUCKS AND CONCRETE FINISHING OPERATIONS SHALL NOT DISCHARGE WASH WATER INTO THE STREET GUTTERS OR DRAINS.

2.6. UTILITY LOCATION

2.6.1. THE SURVEY DID NOT PICK UP UTILITIES. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE UTILITIES AT THE SITE.

2.6.2. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR THE UTILITIES. ANY AND ALL DAMAGE SHALL BE IMMEDIATELY REPAIRED AND/OR RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT HIS/HER EXPENSE. UTILITIES INCLUDE, BUT ARE NOT LIMITED TO ELECTRICAL, AND COMMUNICATION.

2.6.3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY LOCATION, DEPTH AND HEIGHT. THE CONTRACTOR SHALL COOPERATE WITH UTILITY OWNERS TO EXPEDITE THE RELOCATION OR ADJUSTMENT OF THEIR UTILITIES TO MINIMIZE INTERRUPTION OF SERVICE AND DUPLICATION OF WORK. THE CONTRACTOR SHALL EXERCISE CARE WHEN WORKING NEAR EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ALL DAMAGE, BREAKS AND/OR LEAKS. IF DAMAGE OCCURS, THE CONTRACTOR SHALL REPAIR UTILITY AT NO ADDITIONAL EXPENSE TO THE GOVERNMENT.

2.7. PROPOSED MODIFICATIONS TO PLANS OR SPECIFICATIONS

2.7.1. ANY DEVIATIONS FROM PLANS AND SPECIFICATIONS NEED TO BE APPROVED BY CONTRACTING OFFICER PRIOR TO IMPLEMENTATION. NO CHANGE IS ALLOWED WITHOUT CONTRACTING OFFICER APPROVAL.

2.7.2. SHOULD DISCREPANCIES EXIST BETWEEN ANY ACTUAL ELEVATIONS OR HORIZONTAL POSITIONS AND THESE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONTRACTING OFFICER.

3. PERMITTING

3.1. COMPLIANCE WITH REGULATORY PERMITS

3.1.1. THE CONTRACTOR SHALL COMPLETELY REVIEW, BE FAMILIAR WITH AND ADHERE TO THE TERMS OF ALL PERMITS AND AGENCY APPROVALS FOR THIS PROJECT. THE CONTRACTING OFFICER WILL BE RESPONSIBLE FOR SECURING ALL PERMITS WHICH WILL BE AVAILABLE FROM THE CONTRACTING OFFICER AND WILL REMAIN AT THE PROJECT SITE THROUGHOUT THE DURATION OF CONSTRUCTION.

3.2. COMPLIANCE WITH COUNTY AND STATE PERMITS

3.1.1. THE CONTRACTOR WILL BE RESPONSIBLE FOR SECURING ALL PERMITS AND COMPLIANCE WITH ANY RELEVANT COUNTY OR STATE PERMITS NEEDED FOR THE PROPOSED CONSTRUCTION ACTIVITIES INCLUDING, BUT NOT LIMITED TO, TRAFFIC AND ENCROACHMENT PERMITS RELATED TO THE DELIVERY AND HAULING OF CONSTRUCTION EQUIPMENT AND MATERIALS, AND TRAFFIC CONTROL MEASURES (TRAFFIC SAFETY PLAN). THE CONTRACTOR MUST FOLLOW ALL PERTINENT REQUIREMENTS FOR HAULING LARGE VEHICLES OR EQUIPMENT TO THE PROJECT SITE. IF A COUNTY, STATE, OR CITY ROAD IS USED FOR HEAVY EQUIPMENT TRANSPORT OR WIDE LOADS, PERTINENT CLEARANCES MUST BE OBTAINED.

4. ENVIRONMENTAL

4.1. AIR QUALITY AND CONSTRUCTION NOISE RESTRICTIONS

4.1.1. THE CONTRACTOR AT HIS/HER OWN EXPENSE SHALL KEEP THE PROJECT AREA AND SURROUNDING AREAS FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION STANDARDS AND REGULATIONS OF THE STATE OF CALIFORNIA, DEPARTMENT OF PUBLIC HEALTH. THE STATE SHALL INDICATE SUPPLEMENTARY MEASURES IF REQUIRED.

4.1.2. THE CONTRACTOR SHALL IMPLEMENT MEASURES TO REDUCE CONSTRUCTION NOISE INCLUDING: ENSURING THAT ALL CONSTRUCTION EQUIPMENT HAS SOUND-CONTROL DEVICES AT LEAST AS EFFECTIVE AS THOSE ORIGINALLY SUPPLIED BY THE MANUFACTURER AND THAT NO EQUIPMENT WITH AN UNMUFFLED EXHAUST IS OPERATED; LIMITING CONSTRUCTION ACTIVITIES TO SPECIFIED TIMES; AND PROHIBITING UNNECESSARY WARMING UP, IDLING, OR ENGINE REVVING OF GAS OR DIESEL POWERED EQUIPMENT OR VEHICLES.

4.2. CONTAMINATION PREVENTION RESTRICTIONS

4.2.1. THE CONTRACTOR SHALL TAKE PREVENTATIVE MEASURES TO AVOID ANY SPILLS OR LEAKS ON THE SITE FROM PETROLEUM PRODUCTS. THE CONTRACTOR SHALL PREPARE A SPILL PREVENTION AND RESPONSE PLAN THAT WILL BE APPROVED BY THE CONTRACTING OFFICER AND ENVIRONMENTAL MONITOR, AS WELL AS LEAD AGENCIES. THIS SHALL BE IMPLEMENTED AND ADHERED TO BY THE CONTRACTOR. AT A MINIMUM, THIS PLAN SHALL REQUIRE THAT STAGING, STORAGE, AND REFUELING AREAS AND ANY EQUIPMENT REPAIR OR SIMILAR ACTIVITY TAKE PLACE WHEN EQUIPMENT IS AT LEAST 100-FEET FROM ANY WETLAND, DITCH, POND, OR FENCED SENSITIVE AREA. REFUELING SHALL ONLY OCCUR IN AREAS APPROVED BY THE CONTRACTING OFFICER OR ENVIRONMENTAL MONITOR. STAGING AND STORAGE AREAS SHALL OCCUR ONLY IN DESIGNATED AREAS: ANY STAGING OR STORAGE IN WETLANDS OR OTHER SENSITIVE HABITATS WILL REQUIRE PRIOR APPROVAL FROM THE CONTRACTING OFFICER OR ENVIRONMENTAL MONITOR. PROTECTIVE TARPS SHALL BE USED DURING REFUELING OR EQUIPMENT REPAIR. THE CONTRACTOR SHALL INSPECT AND FULLY CLEAN UP ANY SUCH LEAKS OR SPILLS THAT OCCUR ON THE SITE.

4.3. CULTURAL RESOURCE RESTRICTIONS

4.3.1. IF ANY ITEMS OF POTENTIAL CULTURAL OR ARCHEOLOGICAL SIGNIFICANCE ARE ENCOUNTERED DURING EXCAVATION OPERATIONS, CONSTRUCTION WITHIN THIS AREA SHALL BE HALTED IMMEDIATELY, AND THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER.

5. CONSTRUCTION SEQUENCE WITH REGARD TO WORK BY OTHERS

5.1. THE CALIFORNIA STATE MILITARY DEPARTMENT WILL CONSTRUCT THE ROUGH GRADE SURFACE TO THE LINES AND LEVELS SHOWN IN THE DRAWINGS. THE CONTRACTOR SHOULD EXPECT A VERTICAL TOLERANCE FOR THIS ROUGH GRADE SURFACE TO BE +/- 4"

5.2. THE CONTRACTOR SHALL COMPLETE A SURVEY OF THE ROUGH GRADING SURFACE PRIOR TO COMMENCING CONSTRUCTION WORK ONSITE. THIS SURVEY WILL BE USED TO DETERMINE CONTRACTORS QUANTITIES TO COMPLETE THE EARTHWORKS. SURVEY SHALL BE PROVIDED TO THE DEIGN ENGINEER AND CONTRACTOR SHALL ALLOW 7 WORKING DAYS FOR RESPONSE PRIOR TO COMMENCING EARTHWORKS.

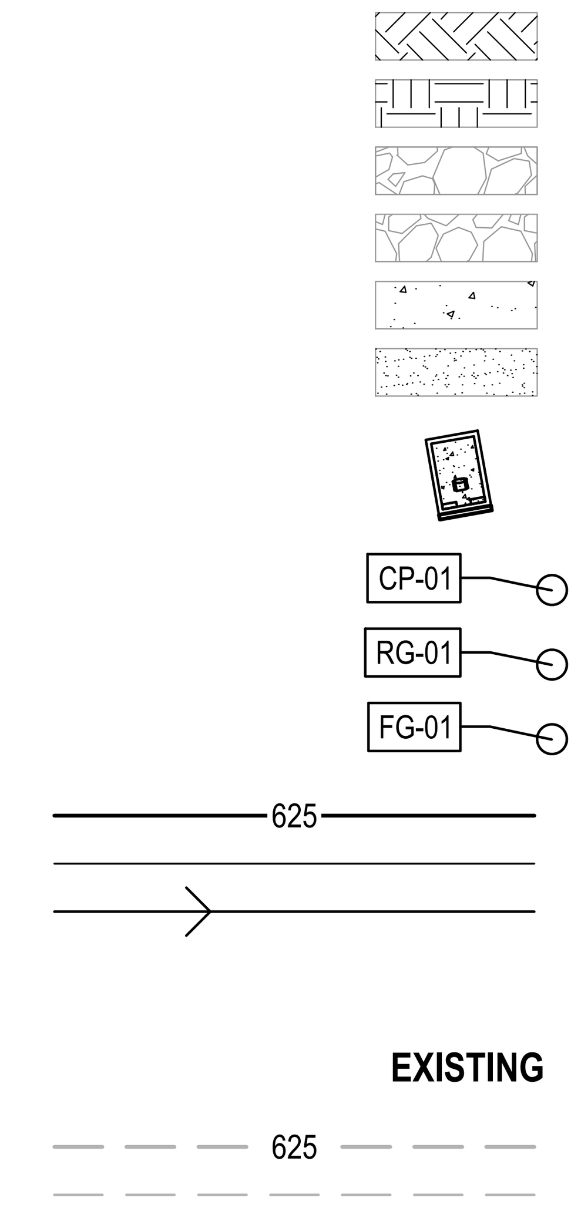
5.3. IF INSTRUCTED, THE CONTRACTOR SHALL PREPARE THE ROUGH GRADE SURFACE I.E. TRIM OR FILL AND COMPACT TO THE LEVELS PROVIDED BY THE DESIGN ENGINEER.

5.4. THE CONTRACTOR SHALL ALLOW TO LOCALLY EXCAVATE ROUGH GRADE SURFACE FOR INSTALLATION OF PRE-CAST CONCRETE SIT EMPLACEMENTS, ELECTRICAL CABLING AND LANE DRAINAGE LINES. REFER CIVIL DETAIL DRAWINGS C501, 502 AND 503.

5.5. RANGE TARGETRY AND SIGNS WILL BE INSTALLED BY THE CALIFORNIA STATE MILITARY DEPARTMENT AFTER THE CONTRACTOR HAS DEMOBILIZED FROM THE SITE FOLLOWING SUBSTANTIAL COMPLETION.

UNEXPLODED ORDINANCE (UXO) NOTE:
THE CALIFORNIA STATE MILITARY DEPARTMENT WILL MAKE EVERY EFFORT TO CLEAR THE SITE FOR UXO PRIOR TO CONSTRUCTION. HOWEVER DURING THE RANGE CONSTRUCTION CONTRACT, ORDINANCE MAY BE FOUND IN THE AREA. INERT PRACTICE ORDINANCE MAY ALSO BE ENCOUNTERED. WHEN ANY ORDINANCE MATERIAL IS DISCOVERED, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CONTRACTING OFFICER'S REPRESENTATIVE AND WILL CEASE WORK IN THE VICINITY OF THE ITEM. ONCE NOTIFIED OF ORDINANCE MATERIAL, THE CONTRACTING OFFICER'S REPRESENTATIVE WILL NOTIFY RANGE CONTROL WHO WILL THEN NOTIFY THE INSTALLATIONS EXPLOSIVE ORDINANCE DISPOSAL (EOD) TEAM. EXCAVATION ON THIS PROJECT WILL NOT BE ALLOWED UNTIL EACH FIELD EMPLOYEE ATTENDS AN ORDINANCE IDENTIFICATION COURSE THAT THE LOCAL INSTALLATION UNIT WILL PROVIDE. SUBSEQUENT NEW FIELD EMPLOYEES ARE ALSO REQUIRED TO ATTEND THE SAFETY COURSE.

SYMBOLS LEGEND



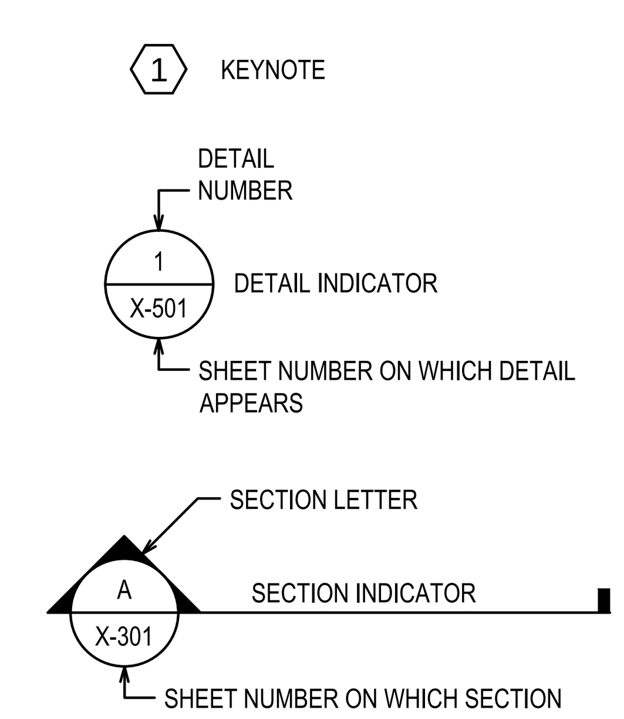
NEW

COMPACTED FILL - FINISHED SURFACE
COMPACTED FILL - ROUGH GRADING
ROCK PROTECTION TYPE 1
ROCK PROTECTION TYPE 2
CONCRETE / CONCRETE SLURRY
DRAINAGE GRAVEL
STATIONARY INFANTRY TARGET (SIT) EMPLACEMENT
SURVEY STAKING POINT - CONTROL POINT
SURVEY STAKING POINT - ROUGH GRADE SURFACE
SURVEY STAKING POINT - FINISHED GRADE SURFACE
MAJOR CONTOUR - DESIGN
MINOR CONTOUR - DESIGN
INTERCEPTOR DRAIN

EXISTING

MAJOR CONTOUR - EXISTING
MINOR CONTOUR - EXISTING

SHEET ANNOTATION



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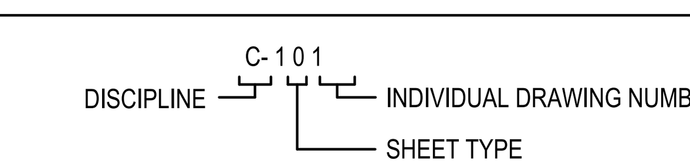

LETTER	DISCIPLINE
G	GENERAL
C	CIVIL
A	ARCHITECTURAL
S	STRUCTURAL
M	MECHANICAL
E	ELECTRICAL
CP	CATHODIC PROTECTION

NUMBER	SHEET TYPE
0	GENERAL
1	PLANS
2	ELEVATIONS
3	SECTIONS
4	LARGE SCALE VIEWS
5	DETAILS
6	SCHEDULE AND DIAGRAMS

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			ISSUED FOR CONSTRUCTION	

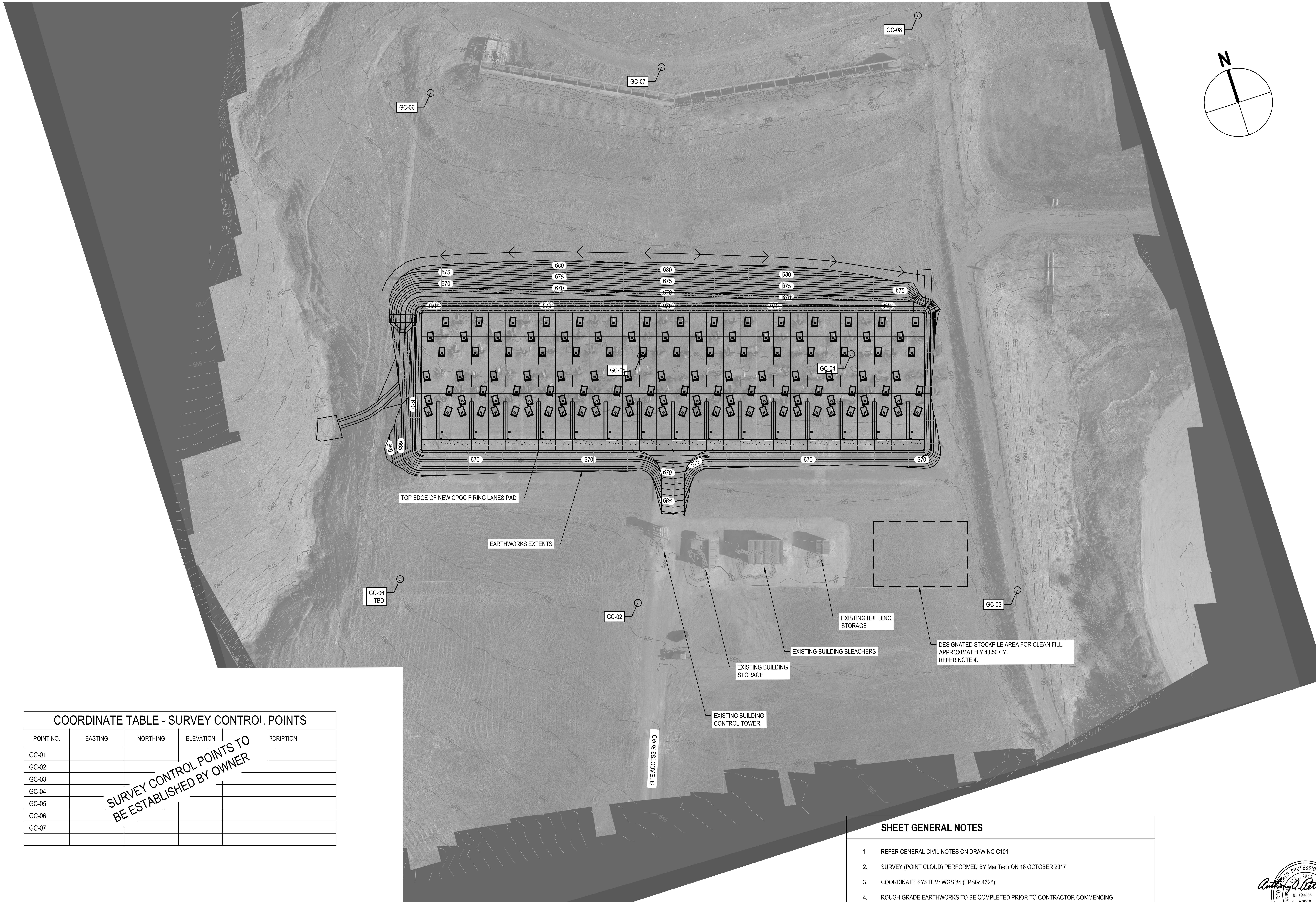
DRAWN BY: PBH
CHECKED BY: AP
APPROVED BY: AP
DATE: JULY 2018

SHEET TITLE CIVIL NOTES, SYMBOLS, AND ABBREVIATIONS
PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
AGREEMENT NUMBER: G0184
LOCATION CAMP SAN LUIS OBISPO, CA
STATE OF CALIFORNIA MILITARY DEPARTMENT

SHEET NUMBER
C-001

2 OF 17

Cad File No: N:\US\San Francisco\Projects\111\11146462 CMD Camp SLO Pistol Range\06-CAD\Sheets\11146462 C001.dwg



COORDINATE TABLE - SURVEY CONTROL POINTS

POINT NO.	EASTING	NORTHING	ELEVATION	DESCRIPTION
GC-01				
GC-02				
GC-03				
GC-04				
GC-05				
GC-06				
GC-07				

SURVEY CONTROL POINTS TO BE ESTABLISHED BY OWNER

SHEET GENERAL NOTES

1. REFER GENERAL CIVIL NOTES ON DRAWING C101
2. SURVEY (POINT CLOUD) PERFORMED BY ManTech ON 18 OCTOBER 2017
3. COORDINATE SYSTEM: WGS 84 (EPSG::4326)
4. ROUGH GRADE EARTHWORKS TO BE COMPLETED PRIOR TO CONTRACTOR COMMENCING CONSTRUCTION. ROUGH GRADING INCLUDES STOCKPILING OF CLEAN FILL MATERIAL FOR THE CONTRACTOR TO USE IN THE CONSTRUCTION TO THE FINISHED GRADE LEVEL.

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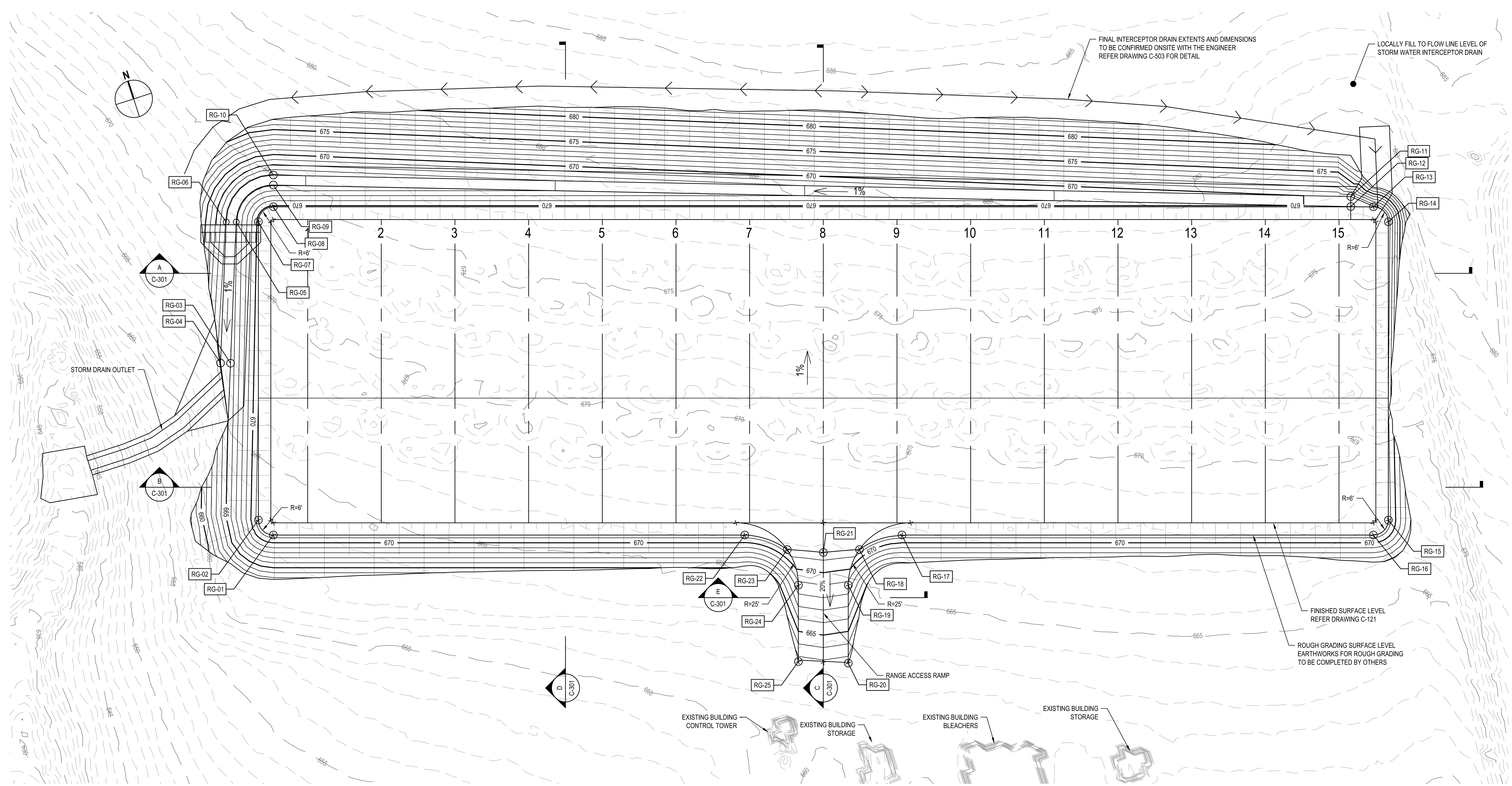
SHEET TITLE EXISTING CONDITIONS AND SURVEY CONTROL
PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
AGREEMENT NUMBER: G0184
LOCATION CAMP SAN LUIS OBISPO, CA
STATE OF CALIFORNIA MILITARY DEPARTMENT

SHEET NUMBER
C-101



COORDINATE TABLE - ROUGH GRADING

POINT NO.	EASTING	NORTHING	ELEVATION	DESCRIPTION
RG-01	5757013.845	2322598.866	671.549	TOP EDGE OF ROUGH GRADE
RG-02	5757009.974	2322606.417	671.489	TOP EDGE OF ROUGH GRADE
RG-03	5757018.642	2322669.682	665.286	BASE OF STORM DRAIN
RG-04	5757014.855	2322670.964	665.286	BASE OF STORM DRAIN
RG-05	5757038.147	2322722.837	665.854	BASE OF STORM DRAIN
RG-06	5757034.339	2322724.064	665.854	BASE OF STORM DRAIN
RG-07	5757046.637	2322720.209	670.294	TOP EDGE OF ROUGH GRADE
RG-08	5757054.188	2322724.080	670.233	TOP EDGE OF ROUGH GRADE
RG-09	5757056.857	2322732.388	665.870	BASE OF STORM DRAIN
RG-10	5757058.084	2322736.196	665.870	BASE OF STORM DRAIN
RG-11	5757466.480	2322595.537	670.189	BASE OF STORM DRAIN

COORDINATE TABLE - ROUGH GRADING

POINT NO.	EASTING	NORTHING	ELEVATION	DESCRIPTION
RG-12	5757465.253	2322591.730	670.189	BASE OF STORM DRAIN
RG-13	5757473.842	2322588.868	670.234	TOP EDGE OF ROUGH GRADE
RG-14	5757477.712	2322581.317	670.294	TOP EDGE OF ROUGH GRADE
RG-15	5757441.049	2322467.526	671.489	TOP EDGE OF ROUGH GRADE
RG-16	5757433.498	2322463.655	671.549	TOP EDGE OF ROUGH GRADE
RG-17	5757253.653	2322521.600	671.549	TOP EDGE OF ROUGH GRADE
RG-18	5757235.658	2322521.275	671.607	TOP EDGE OF ROUGH GRADE
RG-19	5757227.024	2322509.065	668.700	ACCESS RAMP TOP EDGE
RG-20	5757217.430	2322479.284	662.442	ACCESS RAMP TOP EDGE
RG-21	5757221.523	2322524.595	671.619	TOP EDGE OF ROUGH GRADE
RG-22	5757193.689	2322540.921	671.549	TOP EDGE OF ROUGH GRADE

COORDINATE TABLE - ROUGH GRADING

POINT NO.	EASTING	NORTHING	ELEVATION	DESCRIPTION
RG-23	5757208.108	2322530.151	671.607	TOP EDGE OF ROUGH GRADE
RG-24	5757207.989	2322515.197	668.700	ACCESS RAMP TOP EDGE
RG-25	5757198.595	2322486.042	662.574	ACCESS RAMP TOP EDGE

SHEET GENERAL NOTES

1. REFER GENERAL CIVIL NOTES ON DRAWING C-001
2. SIT DEMOLITION AND CLEANUP TO BE COMPLETED BY OTHERS BEFORE CONTRACTOR COMMENCES CONSTRUCTION.
3. ROUGH GRADE SURFACE TO BE COMPLETED BY OTHERS
4. ROUGH GRADE SURFACE TO BE CONSTRUCTED TO VERTICAL AND HORIZONTAL TOLERANCES OF +/- 4"
5. CONSTRUCTION STAKING WILL BE COMPLETED BY THE OWNER.

0 20' 40'

REVISIONS | SYMBOL | DATE | REMARKS | BY:
ISSUED FOR CONSTRUCTION

DRAWN BY: PBH
CHECKED BY: AP
APPROVED BY: AP
DATE: JULY 2018

AGREEMENT NUMBER: G0184

SHEET TITLE GRADING PLAN - ROUGH GRADING
PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
LOCATION CAMP SAN LUIS OBISPO, CA
STATE OF CALIFORNIA
MILITARY DEPARTMENT

SHEET NUMBER
C-120

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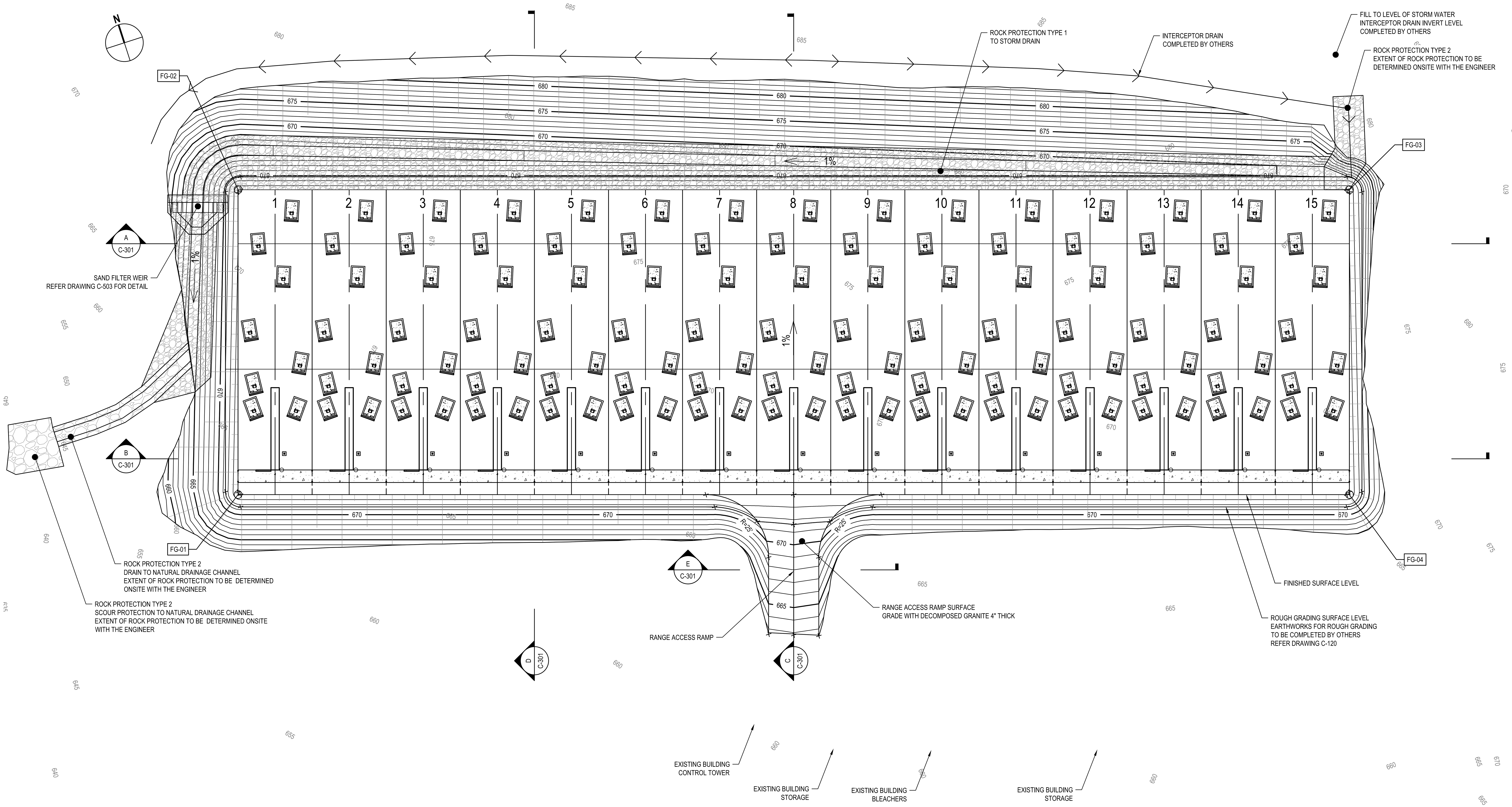

0 20' 40'

COORDINATE TABLE - FINISHED GRADE

POINT NO.	EASTING	NORTHING	ELEVATION	DESCRIPTION
FG-01	5757014.389	2322603.840	674.000	TOP EDGE OF FINISHED GRADE
FG-02	5757051.664	2322719.532	672.785	TOP EDGE OF FINISHED GRADE
FG-03	5757473.398	2322583.703	672.785	TOP EDGE OF FINISHED GRADE
FG-04	5757435.960	2322468.011	674.000	TOP EDGE OF FINISHED GRADE

SHEET GENERAL NOTES

1. REFER GENERAL CIVIL NOTES ON DRAWING C-001
2. CONTRACTOR WILL BE ADVISED OF SELECTION OF ALTERNATIVES PRIOR TO MOBILIZATION TO SITE.
3. FOR DETAILS REFER TO DRAWINGS C-501, C-502 AND C-503

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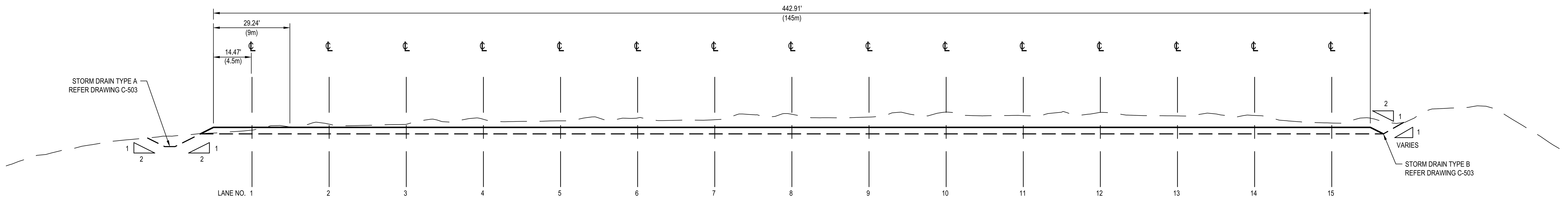
APPROVED BY:	AP
DATE: JULY 2018	

MILITARY DEPARTMENT
AGREEMENT NUMBER: G0184

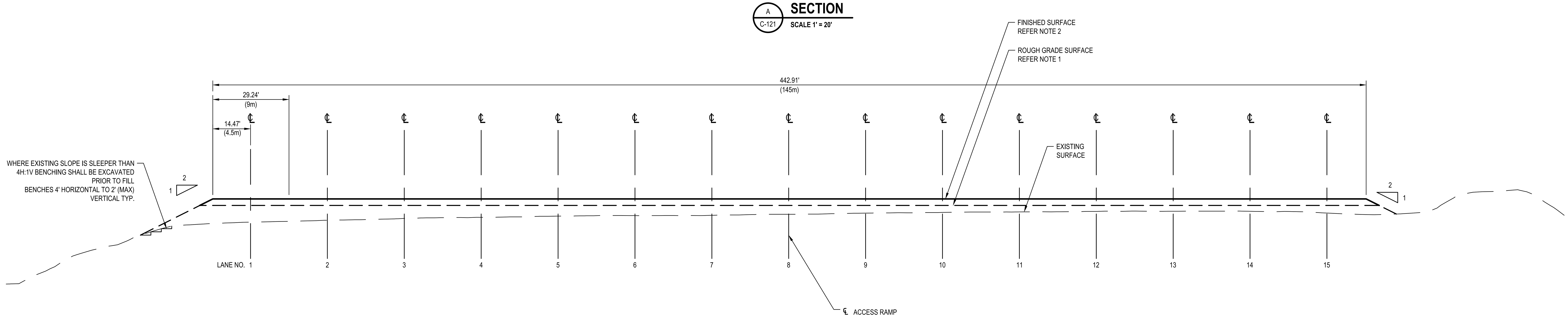
SHEET TITLE GRADING PLAN - FINISHED GRADE
PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
LOCATION CAMP SAN LUIS OBISPO, CA
STATE OF CALIFORNIA

SHEET NUMBER
C-121

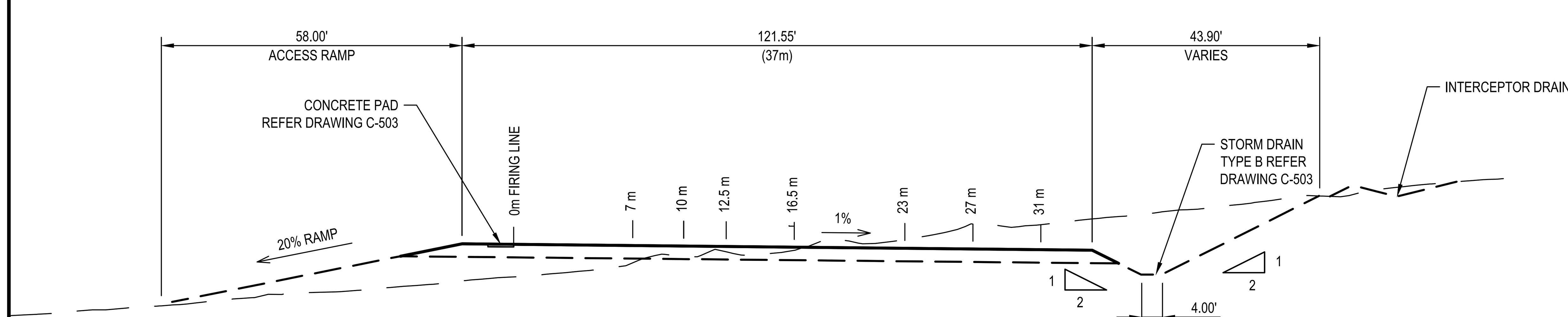
Cad File No: N:\US\San Francisco\Projects\111\11146462 CMD Camp SLO Pistol Range\06-CAD\Sheets\11146462 C121.dwg



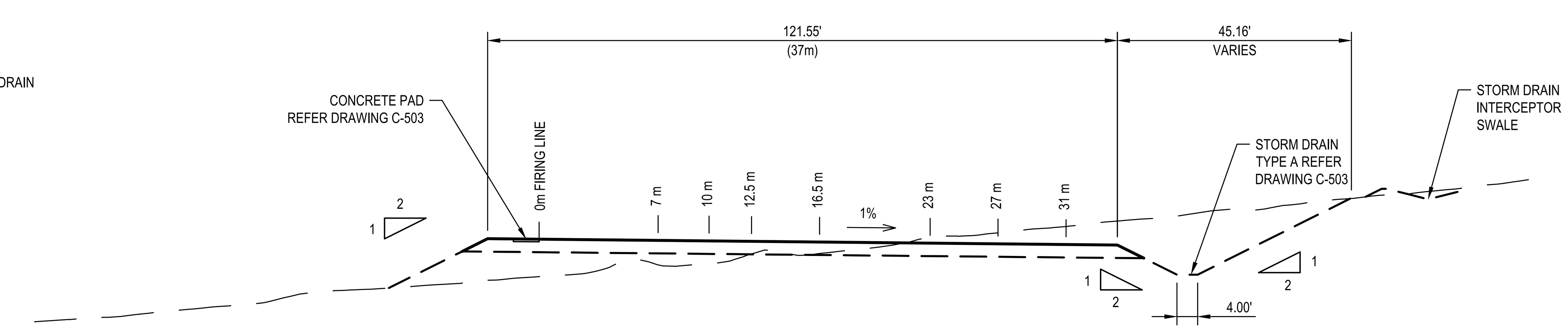
SECTION A C-121
SCALE 1' = 20'



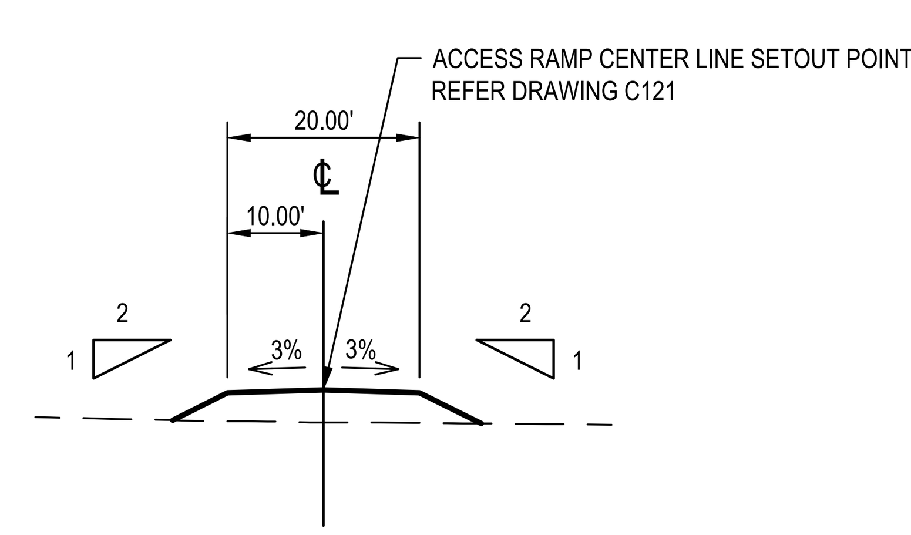
SECTION B C-121
SCALE 1' = 20'



SECTION C C-121
SCALE 1' = 20'



SECTION D C-121
SCALE 1' = 20'



SECTION (ACCESS RAMP) E C-121
SCALE 1' = 20'

LEGEND

- FINISHED GRADE SURFACE
- ROUGH GRADE SURFACE
- EXISTING GROUND SURFACE

0 20' 40'

SHEET GENERAL NOTES

1. ROUGH GRADE SURFACE TO BE CONSTRUCTED BY OTHERS. TOLERANCE +/- 4".
2. ROUGH GRADE SURFACE DOES NOT INCLUDE ROCK PROTECTION IN STORM DRAINS AND OTHER AREAS. CONTRACTOR TO SUPPLY AND INSTALL ROCK PROTECTION. FINISHED SURFACE INCLUDES ARTIFICIAL TURF. CONTRACTOR SHALL ALLOW FOR BASE PREPARATION AND MATERIAL AS PER TURF MANUFACTURERS SPECIFICATIONS.
3. THE CONTRACTOR SHALL SURVEY THE ROUGH GRADE SURFACE PRIOR TO COMMENCING EARTHWORKS.
4. THE CONTRACTOR SHALL ALLOW TO TRIM AND COMPACT ROUGH GRADING AS NECESSARY TO INSTALL ELECTRICAL CONDUITS, DRAINAGE AND SIT EMPLACEMENTS.
5. FOR ROUGH GRADE LAYOUT AND SET OUT REFER TO DRAWING C-120
6. FOR FINISHED GRADE LAYOUT AND SET OUT REFER TO DRAWING C-121

REGISTERED PROFESSIONAL ENGINEER No. C44138 Exp. 6/30/19 CIVIL STATE OF CALIFORNIA

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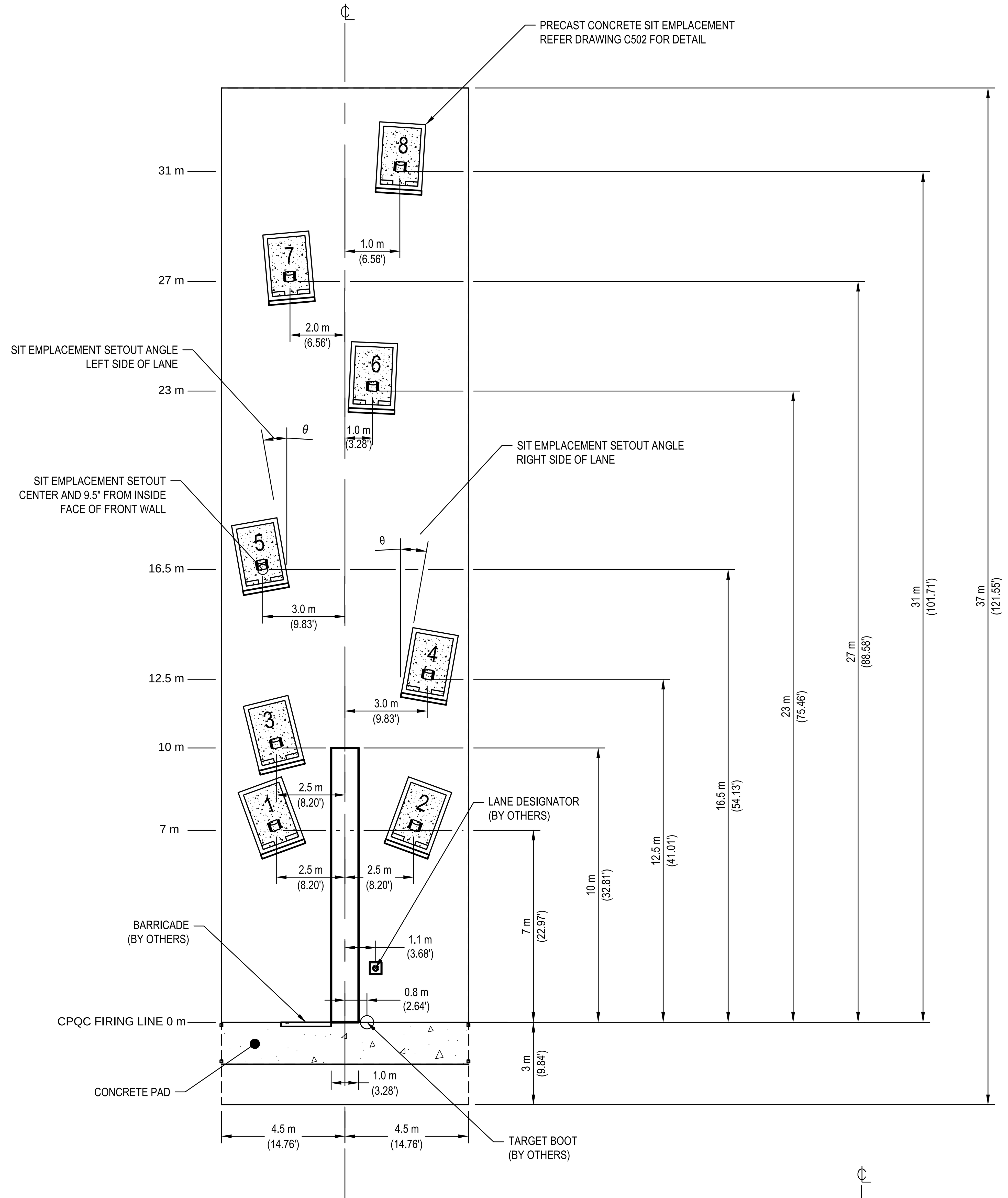
AGREEMENT NUMBER: G0184

MILITARY DEPARTMENT

SHEET TITLE SECTIONS ROUGH GRADE AND FINISHED GRADE
PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
LOCATION CAMP SAN LUIS OBISPO, CA
STATE OF CALIFORNIA

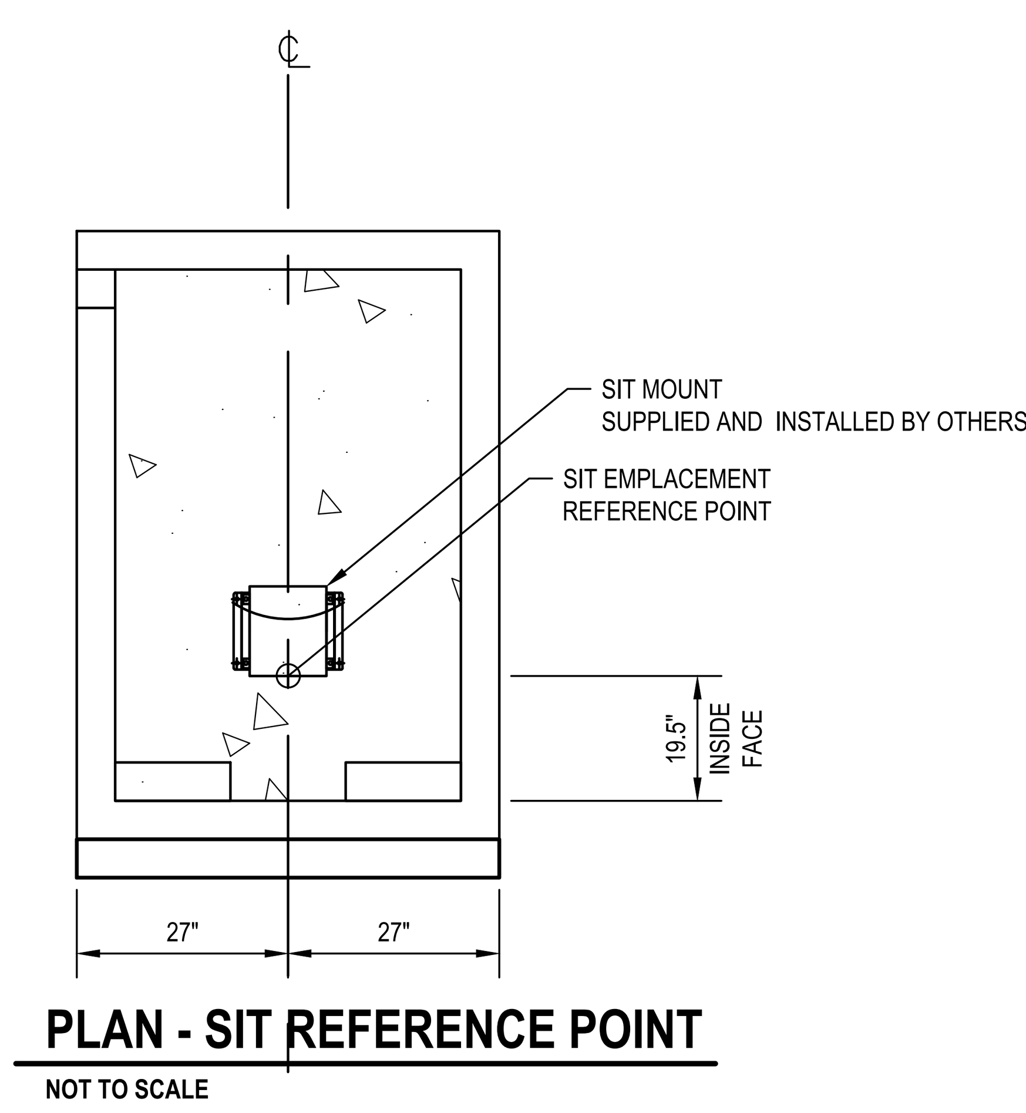
SHEET NUMBER
C-301
6 OF 17



PLAN - LANE AND SIT LAYOUT

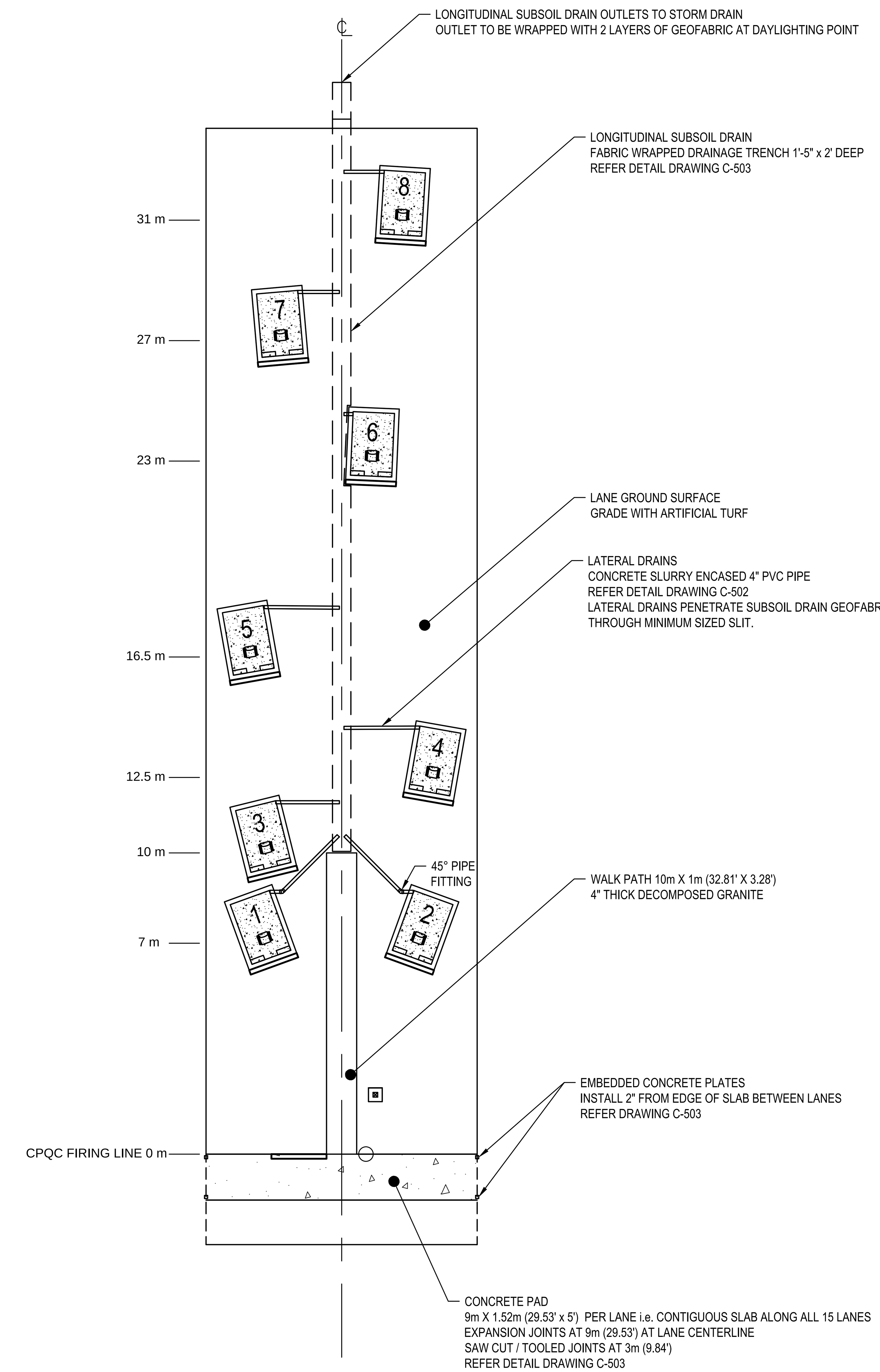
SCALE 1" = 10'

STATIONARY INFANTRY TARGET (SIT) POSITIONING	
TARGET NO.	ANGLE (θ)
1	20°
2	20°
3	14°
4	10°
5	10°
6	2.5°
7	5°
8	3.5°



PLAN - SIT REFERENCE POINT

NOT TO SCALE



PLAN - LANE DRAINAGE AND SURFACING

SCALE 1" = 10'

0 10' 20'

REVISIONS	SYMBOL	DATE	REMARKS	BY:
PBH			ISSUED FOR CONSTRUCTION	
AP				
AP				

DRAWN BY: PBH
CHECKED BY: AP
APPROVED BY: AP
DATE: JULY 2018

AGREEMENT NUMBER: G0184

SHEET TITLE CIVIL DETAILS - 1

PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN

LOCATION CAMP SAN LUIS OBISPO, CA

MILITARY DEPARTMENT

STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER No. C44138 Exp. 6/30/19 CIVIL STATE OF CALIFORNIA

SHEET NUMBER

C-501

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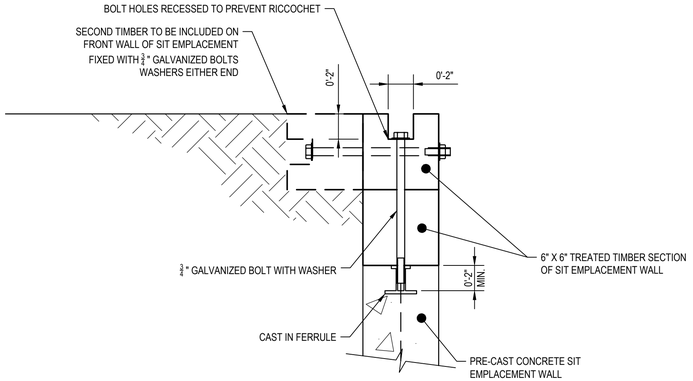
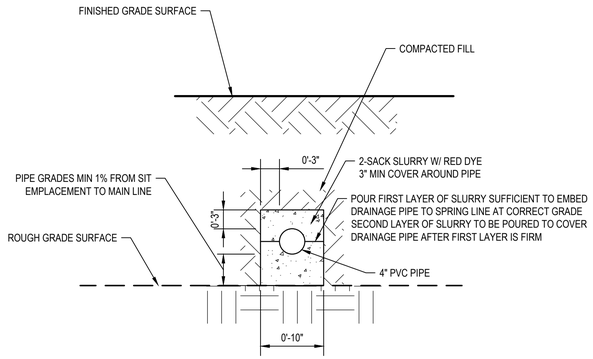
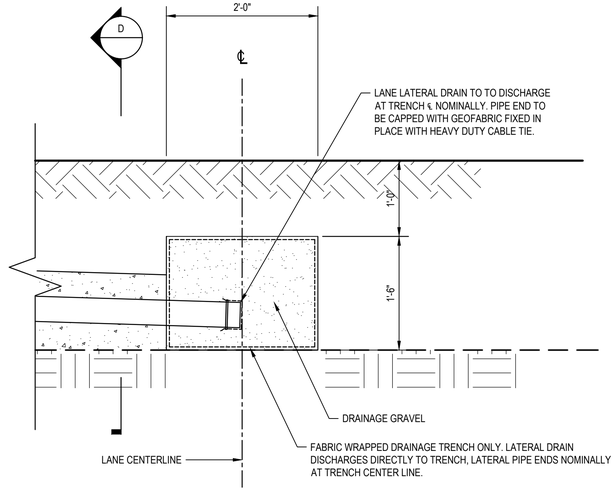


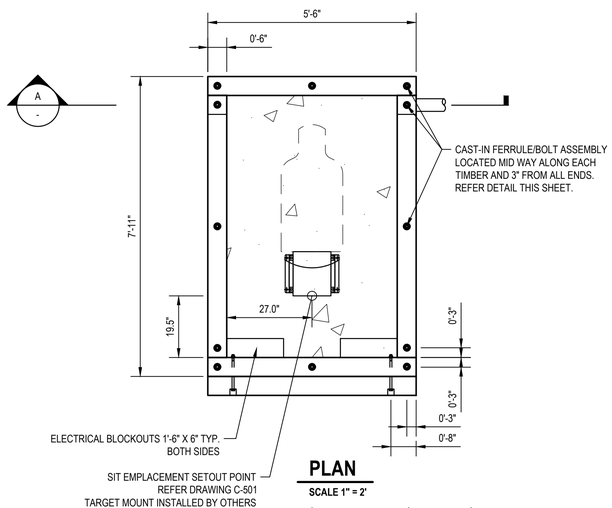
DETAIL - TIMBER CONNECTIONS
NTS



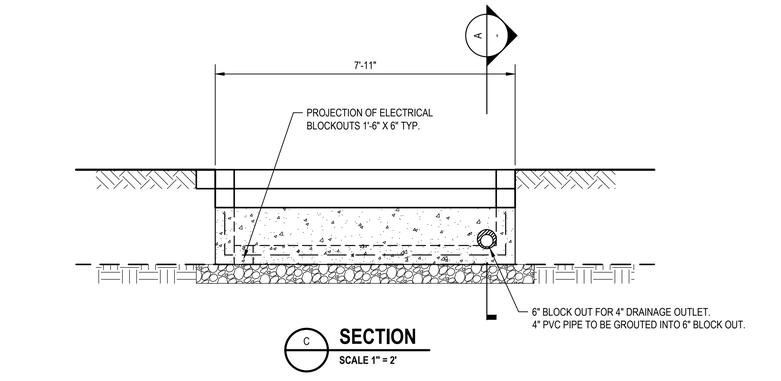
D LANE LATERAL DRAIN SECTION
NTS



LONGITUDINAL SUBSOIL DRAIN SECTION
NTS



PLAN
SCALE 1" = 2'



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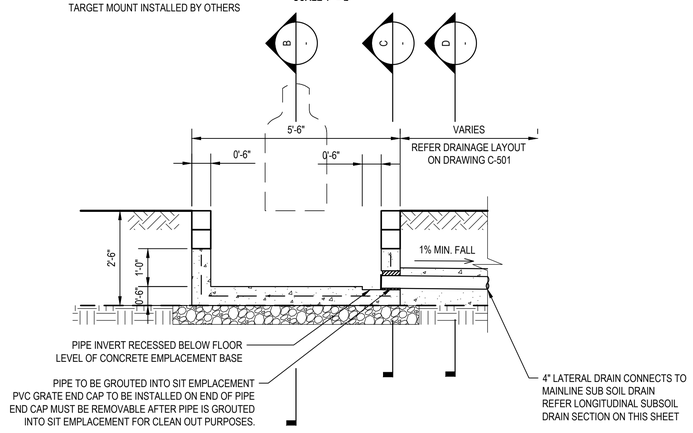

A SECTION
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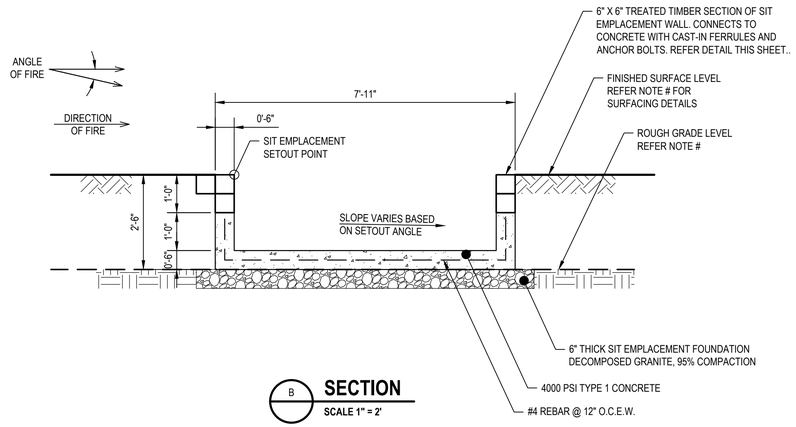

B SECTION
SCALE 1" = 2'

0 2' 4'

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BY:	REMARKS	DATE	SYMBOL	REVISIONS
	ISSUED FOR CONSTRUCTION			

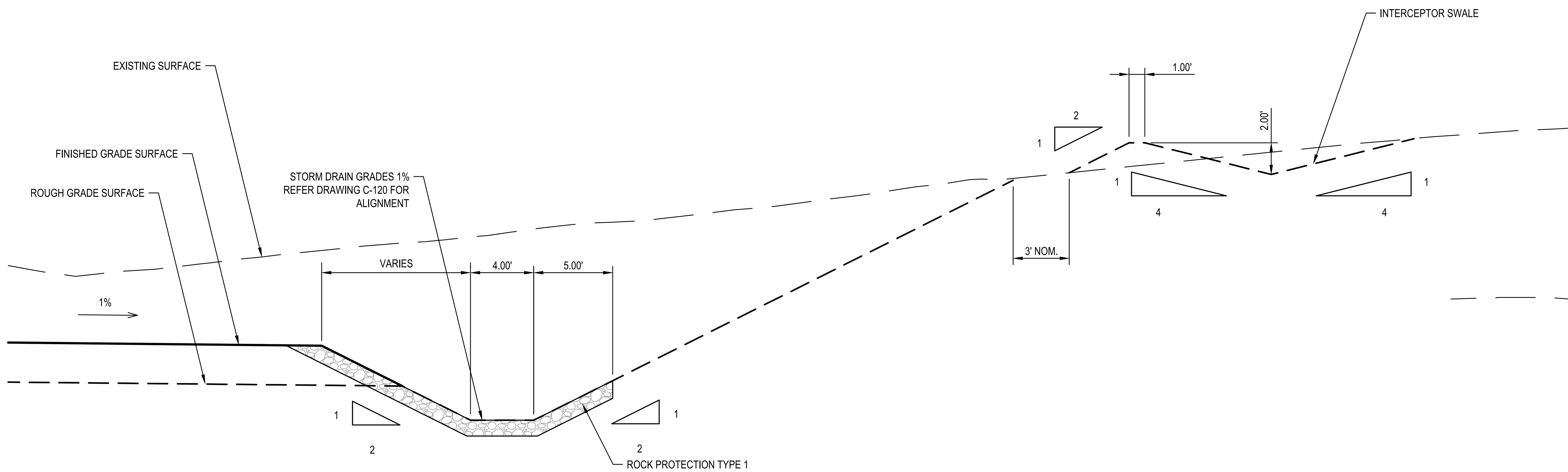
DRAWN BY: PBH
CHECKED BY: AP
APPROVED BY: AP
DATE: JULY 2018

SHEET TITLE: CIVIL DETAILS - 2
PROJECT: COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
LOCATION: CAMP SAN LUIS OBISPO, CA
AGREEMENT NUMBER: G0184
MILITARY DEPARTMENT
STATE OF CALIFORNIA

SHEET NUMBER
C-502

8 OF 17

Cad File No: N:\US\San Francisco\Projects\111\11146462 CMD Camp SLO Pistol Range\06-CAD\Sheets\11146462 C502.dwg



STORM DRAIN TYPE A SECTION
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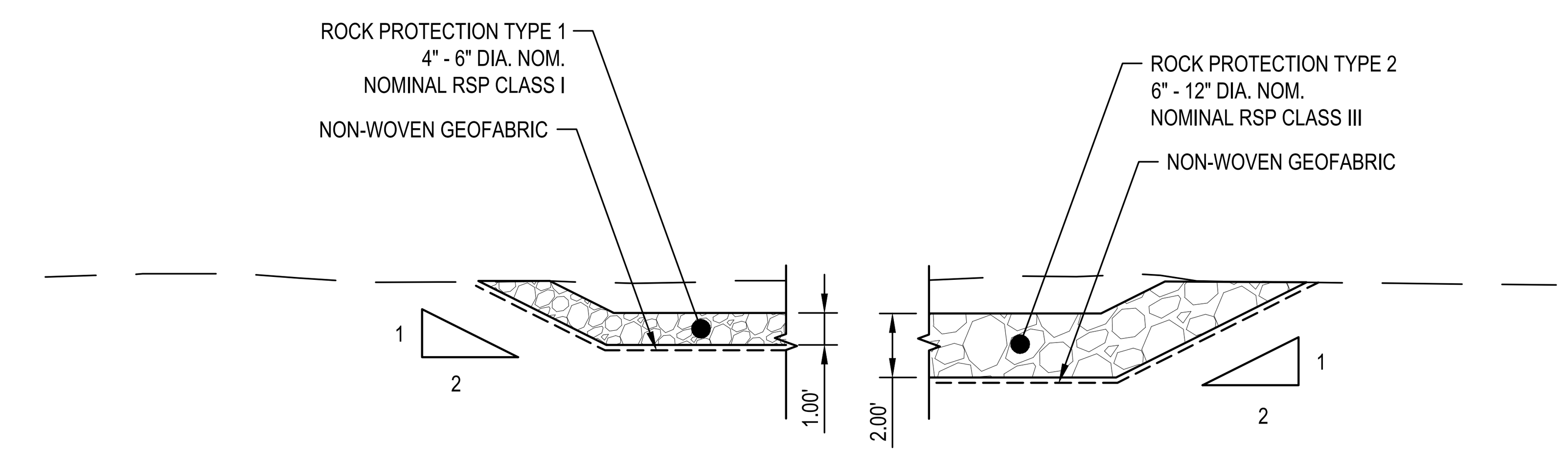
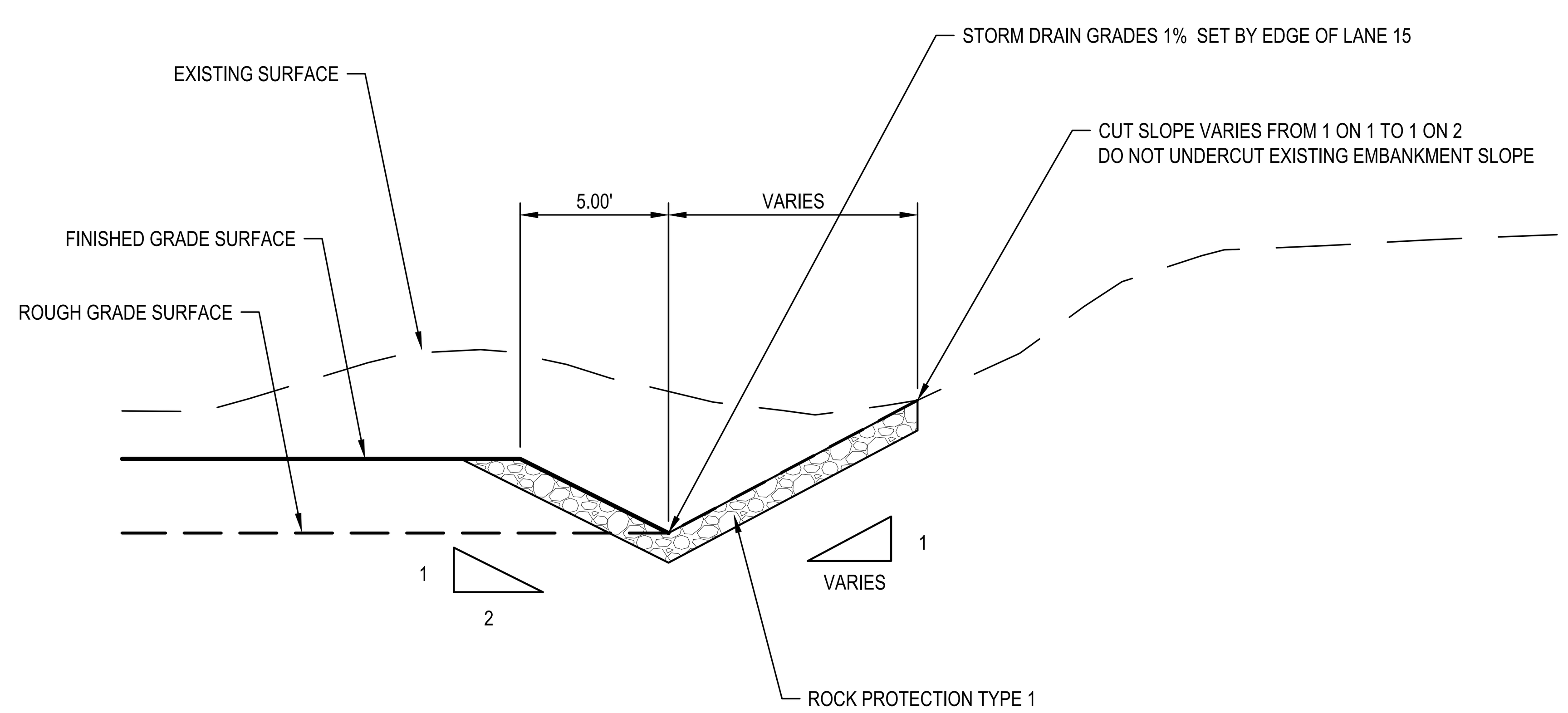
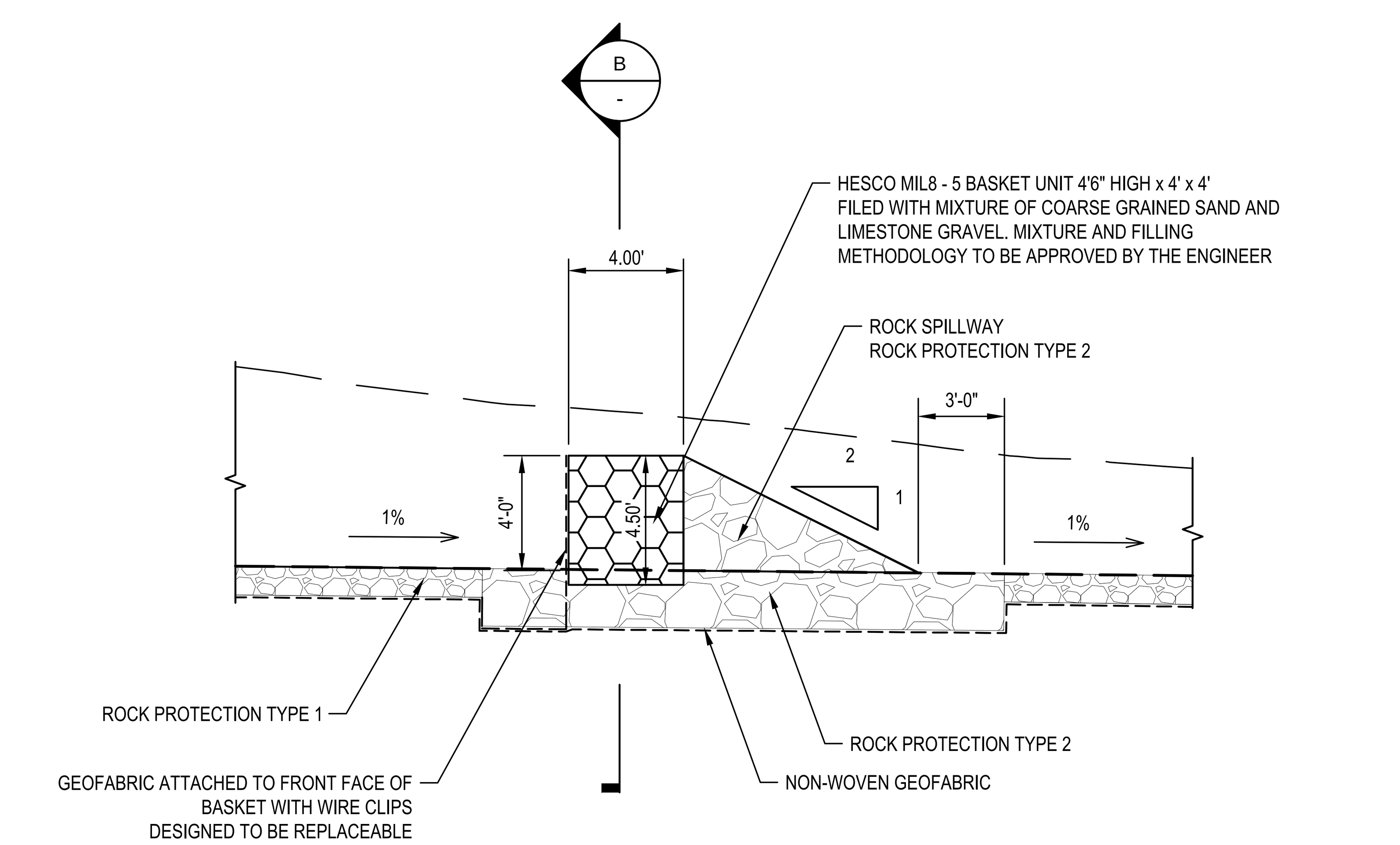


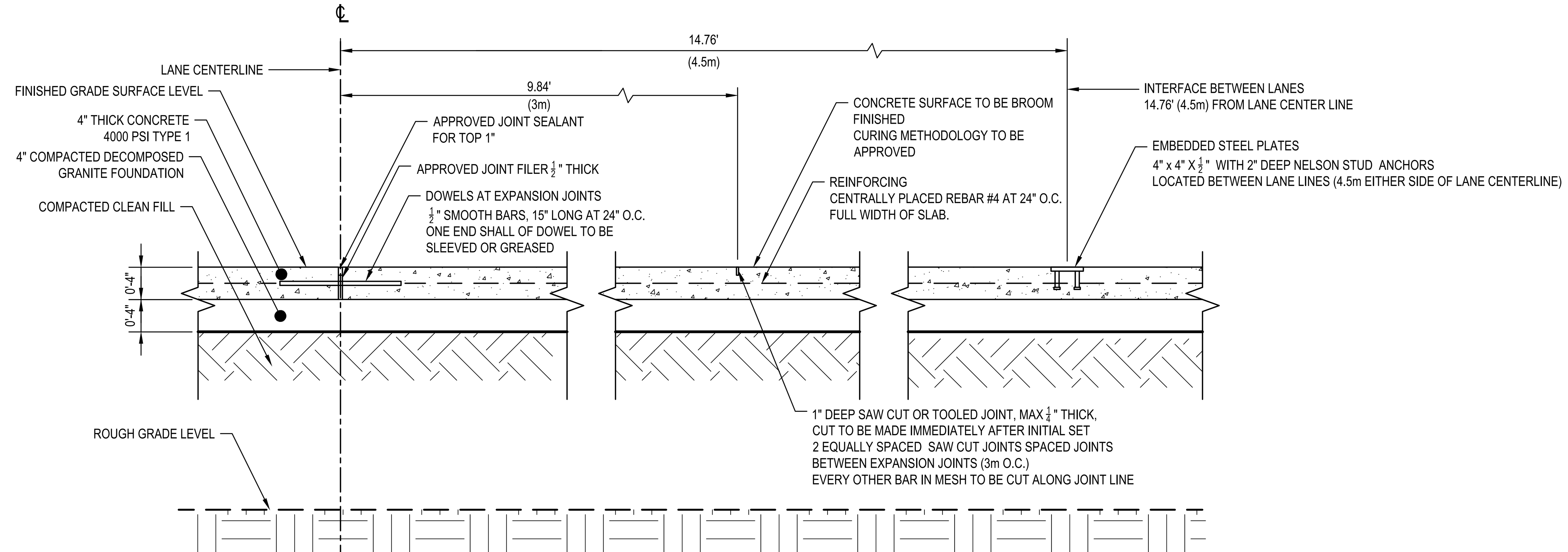
ROCK PROTECTION DETAILS (TYPE 1 & TYPE 2)
SCALE 1" = 5'



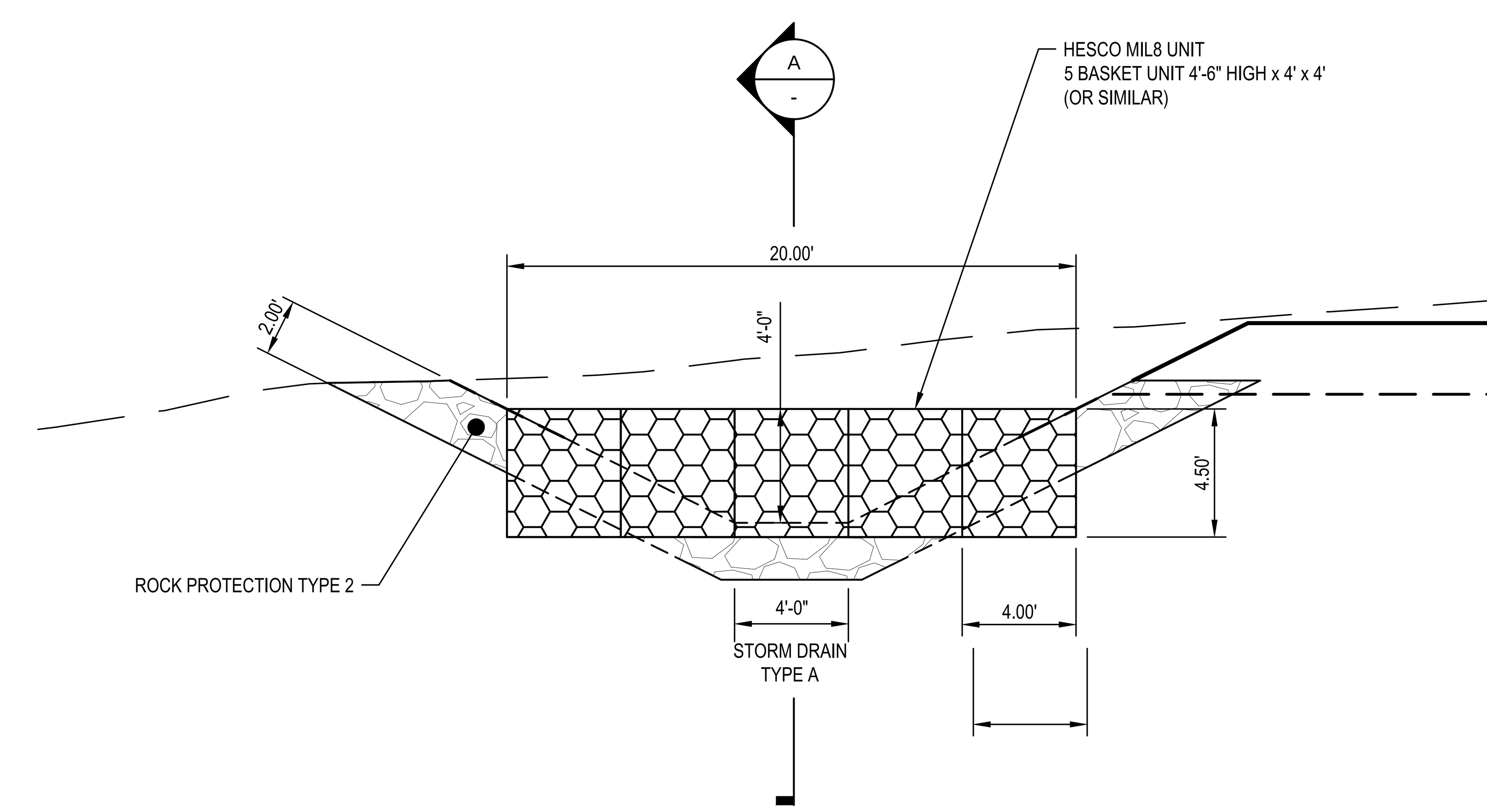
STORM DRAIN TYPE B SECTION
SCALE 1" = 5'



(A) STORM DRAIN FILTER WEIR
SCALE 1" = 5'



CONCRETE PAD DETAILS
NTS



(B) STORM DRAIN FILTER WEIR
SCALE 1" = 5'

0 5' 10'

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DRAWN BY: PBH
CHECKED BY: AP
APPROVED BY: AP
DATE: JULY 2018

SHEET TITLE CIVIL DETAILS - 3
PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
AGREEMENT NUMBER: G0184
LOCATION CAMP SAN LUIS OBISPO, CA
STATE OF CALIFORNIA
MILITARY DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
No. C44138
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER
C-503
9 OF 17

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ABBREVIATIONS

(D)	DEMOLISH
(E)	EXISTING
(F)	FUTURE
(N)	NEW
A	AMPERES
AC	ALTERNATING CURRENT
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CAPACITY
ANN	ANNUNCIATOR
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BAT	BATTERY
BFG	BELOW FINISH GRADE
CATV	CABLE TELEVISION
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CO	CONDUIT ONLY
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
EF	EXHAUST FAN
EGU	ENGINE GENERATOR UNIT
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NON-METALLIC TUBING
EP	EXPLOSION PROOF
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT CANDLE
FU	FUSE
GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GFR	GROUND FAULT RELAY
HID	HIGH INTENSITY DISCHARGE
HOA	"HAND-OFF-AUTO" SWITCH
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HVAC	HEATING, VENTILATION & AIR-CONDITIONING
IG	ISOLATED GROUND
JB	JUNCTION BOX
KAIC	KILO-AMPS INTERRUPTING CAPACITY
KV	KILOVOLT
KVA	KILOVOLT-AMP
KW	KILOWATT
KWH	KILOWATT-HOUR
LPS	LOW PRESSURE SODIUM
LV	LOW VOLTAGE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MH	METAL HALIDE
MLO	MAIN LUGS ONLY
MV	MEDIUM VOLTAGE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OC	ON CENTER
PA	PUBLIC ADDRESS
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PB	PULL BOX, ELECTRICAL
RECPT	RECEPTACLE, OUTLET
RGS	RIGID GALVANIZED STEEL (CONDUIT)
RVSS	REDUCED VOLTAGE SOFT START
RTU	REMOTE TERMINAL UNIT
TV	TELEVISION MONITOR (SET)
TVSS	TRANS. VOLT. SURGE SUPPRESSOR
UF	UNDER FLOOR
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
VA	VOLT-AMP
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
WPI	WEATHERPROOF IN USE
XFMR	TRANSFORMER

ELECTRICAL SYMBOLS LEGEND

LIGHTING

- LIGHTING FIXTURE, RECESSED
- RECESSED DOWN LIGHT FIXTURE
- RECESSED DIRECTIONAL FIXTURE (ARROW INDICATES AIMING)
- LIGHTING FIXTURE, SURFACE MOUNTED
- SURFACE, PENDANT OR OTHER FIXTURE
- LARGE DIAMETER PENDANT, DEPICTING APPROXIMATE DIAMETER
- LIGHTING FIXTURE, WALL MOUNTED
- WALL-MOUNTED HID, INCANDESCENT, OR COMPACT FLUORESCENT FIXTURE
- LIGHTING FIXTURE, PENDANT OR CABLE HUNG
- LIGHT TRACK AND TRACK-MOUNTED FIXTURES
- BATH FAN WITH INTEGRAL LIGHT
- EXIT SIGN, SINGLE FACE WITH DIRECTIONAL ARROWS AS INDICATED
- EXIT SIGN, DOUBLE FACE WITH DIRECTIONAL ARROWS AS INDICATED
- EXIT SIGN, LOW LEVEL (LL)
- COMBINATION EXIT/EMERGENCY LIGHT FIXTURE MOUNTING HEIGHT: +8'-0" AFF, UON
- EMERGENCY FIXTURE MOUNTING HEIGHT: +8'-0" AFF, UON
- DENOTES FIXTURE CONNECTED TO EMERGENCY CIRCUIT
- ADJUSTABLE SPOT OR FLOOD (ARROW INDICATES AIMING)
- OUTDOOR SITE LIGHT, POLE MOUNTED LUMINAIRE ARROW INDICATES AIMING DIRECTION, IF APPLICABLE
- BOLLARD OR POST-TOP FIXTURE

SWITCHING

- $ — LIGHT SWITCH, SPST - MOUNTING HEIGHT: +44" AFF, UON
- $2 — LIGHT SWITCH, DPST - MOUNTING HEIGHT: +44" AFF, UON
- $3 — LIGHT SWITCH, 3-WAY - MOUNTING HEIGHT: +44" AFF, UON
- $a,L — LOW VOLTAGE SWITCH, MOMENTARY CONTACT, 3-POS., CENTER-OFF, MOUNTING HEIGHT: +44" AFF, UON (a: DENOTES SWITCH)
- $T — TIMER SWITCH - MOUNTING HEIGHT: +44" AFF, UON
- 1a — CIRCUIT AND SWITCH DESIGNATION FOR LIGHTING FIXTURE (1: DENOTES CIRCUIT; a: DENOTES SWITCH)
- 6RS — CIRCUIT AND RELAY DESIGNATION FOR LIGHTING FIXTURES (SEE CORRESPONDING LIGHTING CONTROL PANEL RELAY SCHEDULE) (6: DENOTES CIRCUIT; RS: DENOTES RELAY)
- D1 — DIMMER SWITCH - MOUNTING HEIGHT: +44" AFF, UON
- PP1 — OCCUPANCY SENSOR POWER PACK, 1-CIRCUIT, MOUNTED ABOVE CEILING
- PP2 — OCCUPANCY SENSOR POWER PACK, 2-CIRCUIT MOUNTED ABOVE CEILING
- CS1 — OCCUPANCY SENSOR, CEILING MOUNTED, LINE VOLTAGE
- CS2 — OCCUPANCY SENSOR, CEILING MOUNTED, LOW VOLTAGE
- W1 — OCCUPANCY SENSOR, WALL MOUNTED, LINE VOLTAGE, 1-CIRCUIT MOUNTING HEIGHT: +44" AFF, UON
- W2 — OCCUPANCY SENSOR, WALL MOUNTED, LINE VOLTAGE, 2-CIRCUIT MOUNTING HEIGHT: +44" AFF, UON
- PC — PHOTO CONTROL SWITCH - MOUNT ON BUILDING EXTERIOR
- TC — TIME CLOCK FOR LIGHTING CONTROL

POWER

- DUPLEX RECEPTACLE, 20A 125V 2P 3W, GROUNDING TYPE, MOUNTING HEIGHT: +18" AFF UON (+46": DENOTES HEIGHT IN INCHES AFF (INTERIOR) AFG (EXTERIOR))
- $ — DUPLEX RECEPTACLE - SPLIT WIRED, SWITCHED
- DUPLEX RECEPTACLE - EMERGENCY POWER
- C — DUPLEX RECEPTACLE - CEILING MOUNTED
- FLOOR RECEPTACLE, 20A 125V 2P 3W, GROUNDING TYPE, FLUSH TYPE UON
- DOUBLE DUPLEX RECEPTACLE, 20A 125V 2P 3W, GROUNDING TYPE, MOUNTING HEIGHT: +18" AFF UON
- SINGLE RECEPTACLE, 20A 125V 2P 3W, GROUNDING TYPE, MOUNTING HEIGHT: +18" AFF UON
- SPECIAL PURPOSE RECEPTACLE AS DESIGNATED OR — SEE 'SPECIAL SYMBOLS' ON EACH SHEET
- DUAL SERVICE RECESSED FLOOR BOX WITH DUPLEX AND DATA RECEPTACLES
- J OR J — JUNCTION BOX, CODE SIZED UON
- FLOOR JUNCTION BOX
- DISCONNECT SWITCH - FUSED WHERE APPLICABLE
- MOTOR STARTER, COMBINATION WITH DISCONNECT SWITCH
- MOTOR STARTER OR CONTROLLER
- M — MOTOR CONNECTION
- CEILING EXHAUST FAN
- WH OR WH — WATER HEATER
- P — POWER POLE: P=POWER, T=TELEPHONE, D=DATA, C=COMBINATION
- TEST PORT
- OR — GROUND ROD
- GUY WIRE AND ANCHOR
- T — THERMOSTAT (SEE MECHANICAL DRAWINGS) COORDINATE MOUNTING HEIGHT
- BT — BYPASS TIMER OR TIME SWITCH
- PUSHBUTTON
- LC — LIGHTING CONTACTOR

COMMUNICATION

- CCTV CAMERA, CEILING MOUNT
- I — INTERCOM CALL IN SWITCH - MOUNTING HEIGHT: +44" AFF, UON
- TELEPHONE OUTLET FOR WALL MOUNTED TELEPHONE MOUNTING HEIGHT: +44" AFF UON
- DATA OUTLET - MOUNTING HEIGHT: +18" AFF UON
- 2T1D — TELEPHONE/DATA OUTLET, FLUSH TYPE UON MOUNTING HEIGHT: +18" AFF UON (2: DENOTES # OF TELEPHONE JACKS; 1: DENOTES # OF DATA JACKS)
- 1,2 — SURFACE RACEWAY WITH POWER AND TELEPHONE/DATA RECEPTACLES AS INDICATED
- TV — CATV OUTLET - MOUNTING HEIGHT: +96" AFF UON
- AV1 — AUDIO/VIDEO OUTLET - MOUNTING HEIGHT: +18" AFF UON
- C — CLOCK WITH BUZZER - MOUNTING HEIGHT: SEE PLANS
- B — BELL, STANDARD 6" - MOUNTING HEIGHT: SEE PLANS PA SYSTEM
- S — SPEAKER - WALL MOUNTED
- S — PA SYSTEM SPEAKER - CEILING MOUNTED
- S — PA SYSTEM HORN - MOUNTING HEIGHT: SEE PLANS

EQUIPMENT

- MAIN SWITCHBOARD
- DISTRIBUTION PANEL BOARD
- COMBINATION METER/MAIN SERVICE PANEL
- OR — BRANCH CIRCUIT PANEL BOARD, SURFACE OR FLUSH MOUNTED
- OR — LIGHTING CONTROL PANEL
- OR — SIGNAL TERMINAL CABINET OR CONTROL PANEL SURFACE OR FLUSH MOUNTED
- SIGNAL TERMINAL BACKBOARD
- N30 — CONCRETE UNDERGROUND HAND HOLE (NUMBER DENOTES CHRISTY SIZE)
- T OR — TRANSFORMER

CONDUIT

- CONDUIT INSTALLED ABOVE GRADE
- CONDUIT INSTALLED UNDERGROUND OR UNDER SLAB
- CONDUIT STUB-OUT WITH CAP
- FLEXIBLE CONDUIT WHIP TO LIGHT FIXTURE OR EQUIPMENT
- INDICATES CIRCUIT BREAKER I.D. (L1-4: INDICATES BRANCH PANEL)
- CONDUIT HOME RUN TO DESIGNATED PANEL, TERMINAL, OR CONTROL CABINET
- EXAMPLES: L1-6,8 — COMMA INDICATES MULTIPLE SINGLE POLE CIRCUITS; L1-10/12 — SLASH INDICATES MULTI-POLE CIRCUIT
- NOTE FOR CONDUIT: THE TIC MARKS INDICATE THE QUANTITY OF #12 AWG WIRES OR, IF INDICATED, THE QUANTITY OF OTHER SIZE WIRE OR CABLES.
- SEE THE SINGLE LINE DIAGRAM FOR FEEDER SIZES. EXAMPLES: = (3) #12; = (2) #10; = (1) TYPE F1 CABLE. SEE CABLE SCHEDULE. (F1)

OBJECT LINES

- NEW OBJECTS (HEAVY CONTINUOUS LINES, UNDERGROUND CONDUIT HEAVY DASHED LINES)
- EXISTING OBJECTS TO REMAIN. MAY INCLUDE NEW CIRCUITING ETC. (FINE CONTINUOUS LINES, UNDERGROUND CONDUIT FINE DASHED LINES)
- EXISTING OBJECTS TO BE DEMOLISHED (EXTRA FINE DASHED LINES, SCREENED)

ANNOTATION

- 1 — KEYNOTE
- 10 — RACEWAY, FEEDER OR CIRCUIT DESIGNATION (SEE SCHEDULE)
- A 180 — LIGHTING FIXTURE TYPE DESIGNATION (SEE SCHEDULE) (A: DENOTES TYPE; 180: DENOTES WATTS)
- 1 E-501 — DETAIL INDICATOR (1: DETAIL NUMBER; E-501: SHEET NUMBER ON WHICH DETAIL APPEARS)
- A E-301 — SECTION INDICATOR (A: SECTION LETTER; E-301: SHEET NUMBER ON WHICH SECTION APPEARS)
- WH 1 — MECHANICAL EQUIPMENT DESIGNATION (SEE SCHEDULE)

GENERAL ELECTRICAL NOTES

1. ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH CODES, STANDARDS, AND ORDINANCES AS SET FORTH BY THE AUTHORITIES HAVING JURISDICTION AND THEIR LATEST ADOPTED EDITIONS OF THE FOLLOWING PUBLICATIONS:
   (A) CALIFORNIA CODE OF REGULATIONS TITLE 24; INCLUDES; 2016 CALIFORNIA ELECTRICAL CODE, CALIFORNIA FIRE CODE, CALIFORNIA BUILDING CODE, ETC.
   (B) NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
   (C) AMERICANS WITH DISABILITIES ACT (ADA)
2. INFORMATION SHOWN AS EXISTING CONDITIONS WAS PRIMARILY GAINED FROM "AS BUILT" DRAWINGS AND LIMITED FIELD INVESTIGATION. BEFORE CONSTRUCTION, VISIT SITE TO VERIFY EXISTING CONDITIONS AND MAKE ALLOWANCE FOR VARIATIONS FROM THAT SHOWN.
3. DEMOLITION WORK SHOWN WAS PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER DOES NOT REPRESENT THAT ALL ITEMS WHICH MAY REQUIRE DEMOLITION HAVE BEEN SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE SITE AND THE CONTRACT DOCUMENTS AND TO PERFORM ALL DEMOLITION AND RECONSTRUCTION WHICH MAY BE REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK.
4. INTERCEPT, EXTEND, REROUTE, REPULL CONDUCTORS AND OTHERWISE MODIFY EXISTING CONDUCTORS OF ALL SYSTEMS AS REQUIRED TO MAINTAIN AND/OR ESTABLISH PROPER FUNCTION AND SATISFY DESIGN INTENT. REMOVE ALL ABANDONED CONDUCTORS AND CONDUIT, UON.
5. PRIOR TO COMMENCING WORK, COORDINATE WTIH LBRID REPRESENTATIVE. WHERE DISCONNECTING, MODIFYING OR WORKING ON EXISTING EQUIPMENT OR SYSTEMS, PROVIDE A WRITTEN METHOD OF PROCEDURE OUTLINING DATES, TIMES, DURATION AND DESCRIPTION OF PROPOSED WORK PRIOR TO COMMENCING WORK FOR APPROVAL.
6. PRIOR TO COMMENCING WORK, COORDINATE WITH OTHER TRADES TO PREVENT CONFLICTS.
7. ALL EQUIPMENT SHALL BE LISTED AND LABELED PER RECOGNIZED ELECTRICAL TESTING LABORATORY AND INSTALLED PER THE LISTING REQUIREMENTS AND THE MANUFACTURERS INSTRUCTIONS.
8. ALL EQUIPMENT SHALL BE GROUNDED PER THE REQUIREMENTS OF CEC ARTICLES 250. EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED IN ALL POWER SYSTEM RACEWAYS.
9. WIRING METHODS FOR THIS PROJECT SHALL BE AS FOLLOWS:
   (A) PVC SCHEDULE 40 - UNDERGROUND AND BELOW / IN SLAB.
   (B) EMT - CONCEALED IN BUILDING CONSTRUCTION WHEN NOT SUBJECT TO PHYSICAL DAMAGE OR CORROSIVE ENVIRONMENT.
   (C) RGS - ABOVEGROUND WHERE EXPOSED.
10. PULLROPES: ANY RACEWAY WITHOUT CABLE OR WIRE SHALL BE INSTALLED WITH MINIMUM 200 POUND TEST PULL LINE.

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	ISSUED FOR CONSTRUCTION			

DRAWN BY: JJVL | CHECKED BY: RPG | APPROVED BY: AAP | DATE: JULY 2018

SHEET TITLE: ELECTRICAL LEGEND SYMBOLS, ABBREVIATIONS AND GENERAL NOTES

PROJECT: COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN — AGREEMENT NUMBER: G0184

LOCATION: CAMP SAN LUIS OBISPO, CA

MILITARY DEPARTMENT
STATE OF CALIFORNIA

SHEET NUMBER: E-001

10 OF 17

REGISTERED PROFESSIONAL ENGINEER — No. E15580 — Exp. 12/31/19 — ELECTRICAL — STATE OF CALIFORNIA

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PLAN NORTH

0 20' 40' 80'

SHEET GENERAL NOTES

1. COORDINATE WITH BASE STAFF PRIOR TO START CONSTRUCTION.
2. CONDUIT ROUTE SHOWN DIAGRAMMATICALLY ONLY. DETERMINE EXACT ALIGNMENT IN FIELD. ADJUST TO AVOID (E) AND (N) CONFLICTS AND (E) SURFACE AND SUBSURFACE FEATURES.
3. SEE SINGLE LINE DIAGRAM FOR ADDITIONAL INFORMATION.

SHEET KEYNOTES

1. REMOVE (E) POLE-MOUNT TRANSFORMER AND PROVIDE (N) TRANSFORMER. SEE SINGLE-LINE DIAGRAM.
2. PROVIDE (2) 3-INCH CONDUIT, USING 36" x 24" PULLBOXES WHERE SHOWN. CONNECT FROM POLE TO (N) PANEL PP1. PROVIDE (3) 250kCMIL IN EACH CONDUIT.
3. PROVIDE (2) 2-INCH SPARE CONDUITS W/ PULL STRING, USING 11" x 17" x 12" PULLBOXES WHERE SHOWN.
4. PROVIDE 36" (L) x 24" (W) x 24" (D) PULLBOX.
5. PROVIDE 11" (L) x 17" (W) 12" (D) PULLBOX.
6. DISCONNECT (E) CIRCUIT FEEDERS AND ABANDON IN PLACE (E) CONDUIT AND (E) PULLBOXES.

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			ISSUED FOR CONSTRUCTION	

DRAWN BY:	JJVL
CHECKED BY:	RPG
APPROVED BY:	AAP
DATE: JULY 2018	

SHEET TITLE ELECTRICAL SITE PLAN

PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN

AGREEMENT NUMBER: G0184

LOCATION CAMP SAN LUIS OBISPO, CA

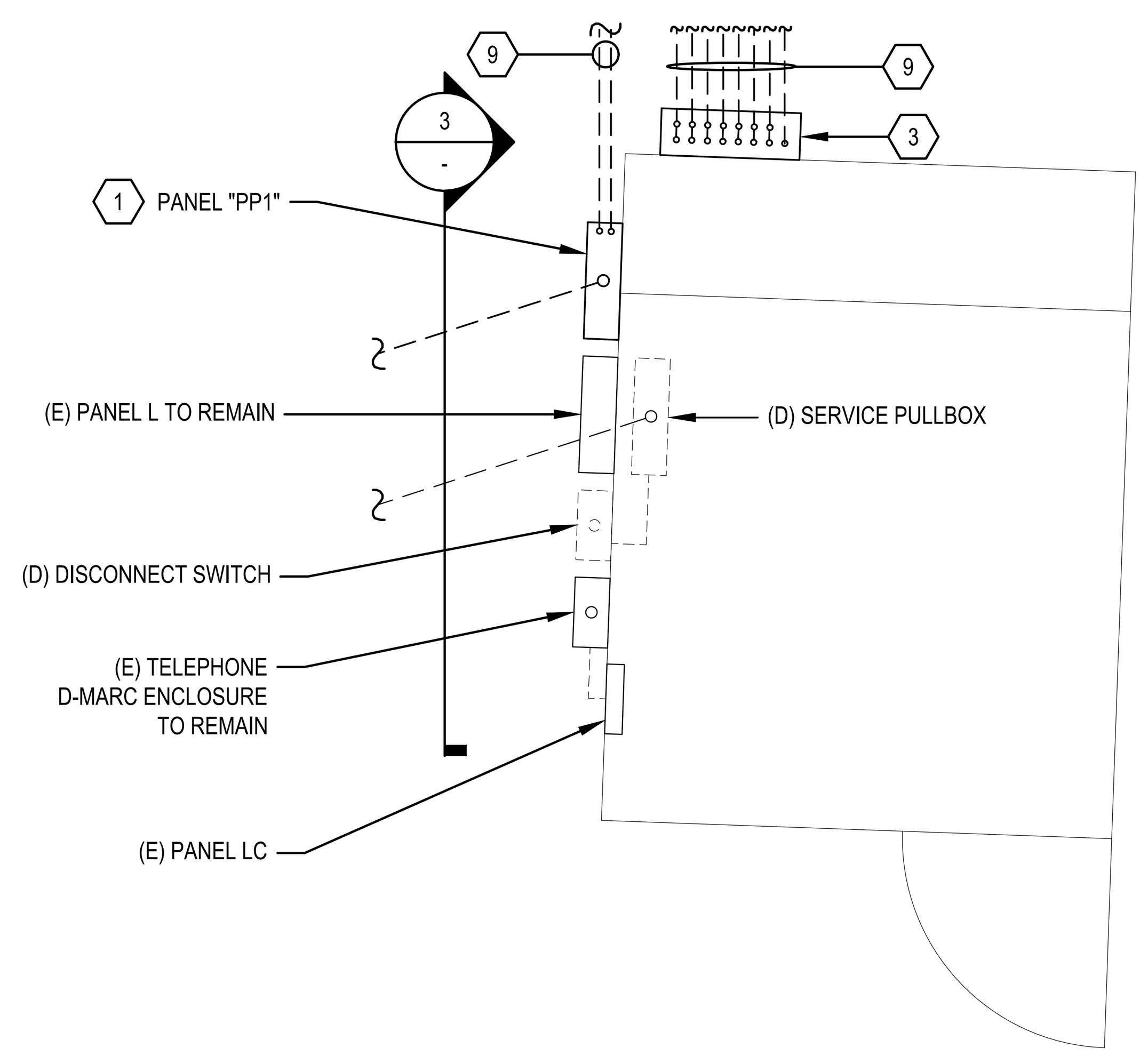
STATE OF CALIFORNIA MILITARY DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER No. E15580 Exp. 12/31/19 ELECTRICAL STATE OF CALIFORNIA

SHEET NUMBER

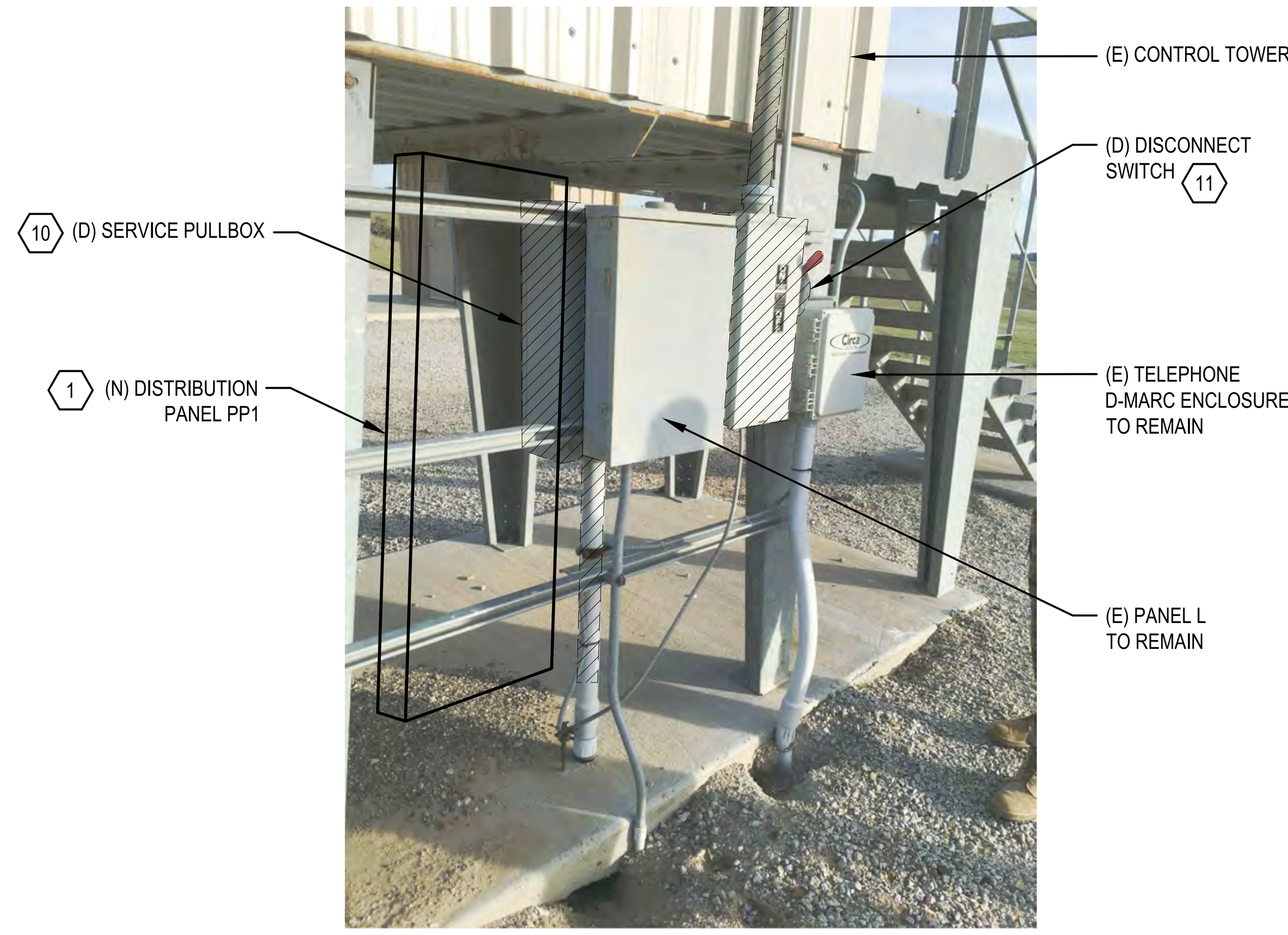
E-101

Cad File No: N:\US\San Francisco\Projects\111\11146462 CMD Camp SLO Pistol Range\06-CAD\Sheets\11146462 E101.dwg



2 ENLARGED CONTROL TOWER PLAN

SCALE: NOT TO SCALE



3 DISTRIBUTION PANEL PP1 - ELEVATION

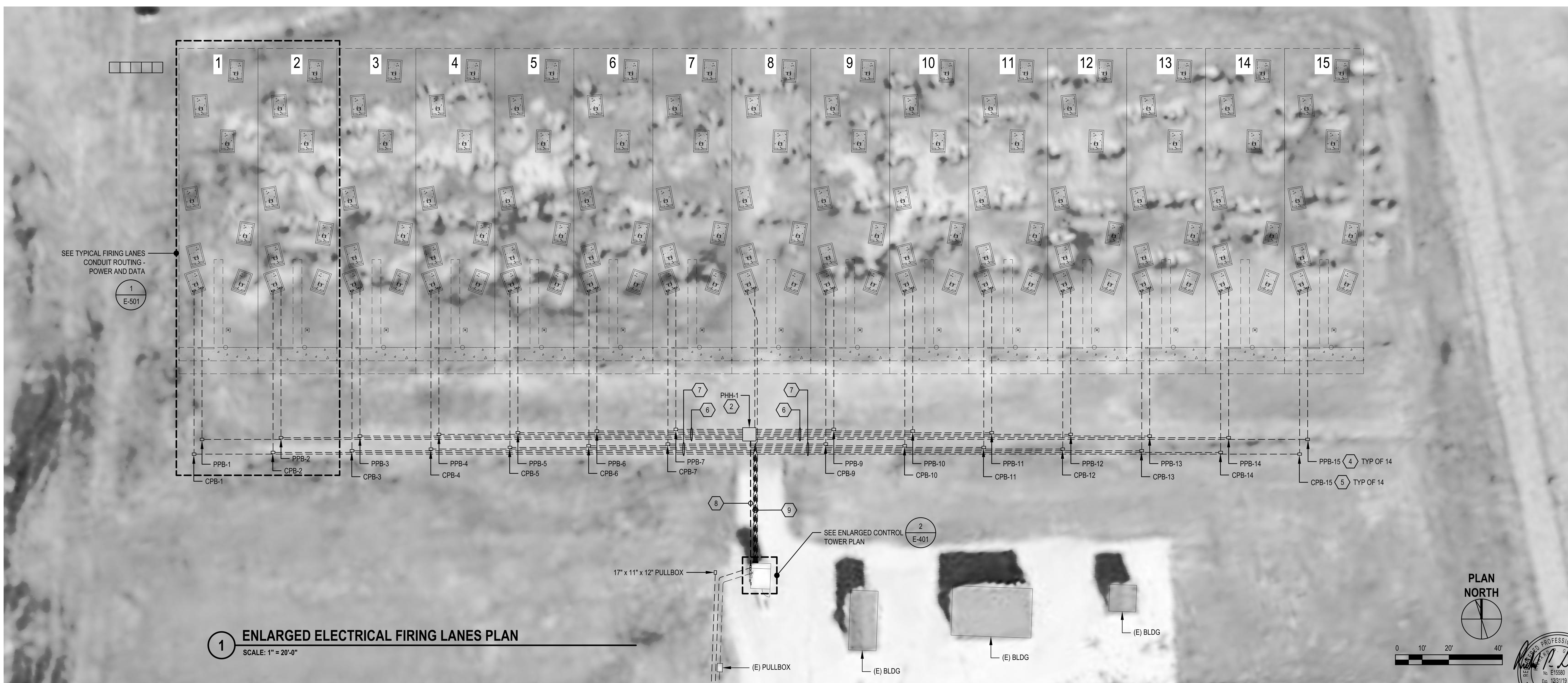
SCALE: NOT TO SCALE

SHEET GENERAL NOTES

1. CONTRACTOR SHALL VERIFY IN FIELD EXACT LOCATION OF CONDUIT ROUTING.
2. SEE SINGLE LINE DIAGRAM FOR ADDITIONAL INFORMATION.

SHEET KEYNOTES

1. PROVIDE (N) PANEL "PP1".
2. PROVIDE POWER HANDHOLE "PHH-1". SEE DETAIL 1/E-502.
3. INSTALL OWNER-FURNISHED 24" x 36" x 18" TOWER JUNCTION BOX. TERMINATE TARGET CONTROL CONDUITS IN BOTTOM OF JUNCTION BOX. EXTEND (2) 2-INCH CONDUITS FROM TOP OF JUNCTION BOX TO CONTROL TOWER CAB.
4. PROVIDE 17" (L) x 11" (W) x 12" (D) POWER PULLBOX. SEE DETAIL 3/E-502.
5. PROVIDE 17" (L) x 11" (W) x 12" (D) DATA PULLBOX. SEE DETAIL 3/E-502.
6. PROVIDE 1-INCH CONDUIT FOR POWER BETWEEN HANDHOLE "PHH-1" TO POWER PULLBOXES.
7. PROVIDE 1-INCH CONDUIT FOR DATA BETWEEN HANDHOLE "CHH-1" TO DATA PULLBOXES.
8. PROVIDE (2) 2-INCH CONDUIT BETWEEN PANEL PP1 AND POWER HANDHOLE "PHH-1".
9. PROVIDE (15) 1-INCH CONDUITS BETWEEN DATA PULLBOXES AND OWNER-FURNISHED TOWER JUNCTION BOX.
10. DISCONNECT AND REMOVE (E) SERVICE PULLBOX INCLUDING (E) CABLES AND ASSOCIATED APPURTENANCES. CUT (E) CONDUIT 6-INCHES ABOVE SLAB AND CAP.
11. DISCONNECT AND REMOVE (E) DISCONNECT SWITCH INCLUDING (E) CIRCUIT FROM (E) PANEL L TO (E) PANEL LC AND ASSOCIATE APPURTENANCES.



1 ENLARGED ELECTRICAL FIRING LANES PLAN

SCALE: 1" = 20'-0"

SEE SHEET E-101 FOR CONTINUATION

REVISIONS	SYMBOL	DATE	REMARKS	BY:
			ISSUED FOR CONSTRUCTION	

GHD Inc.

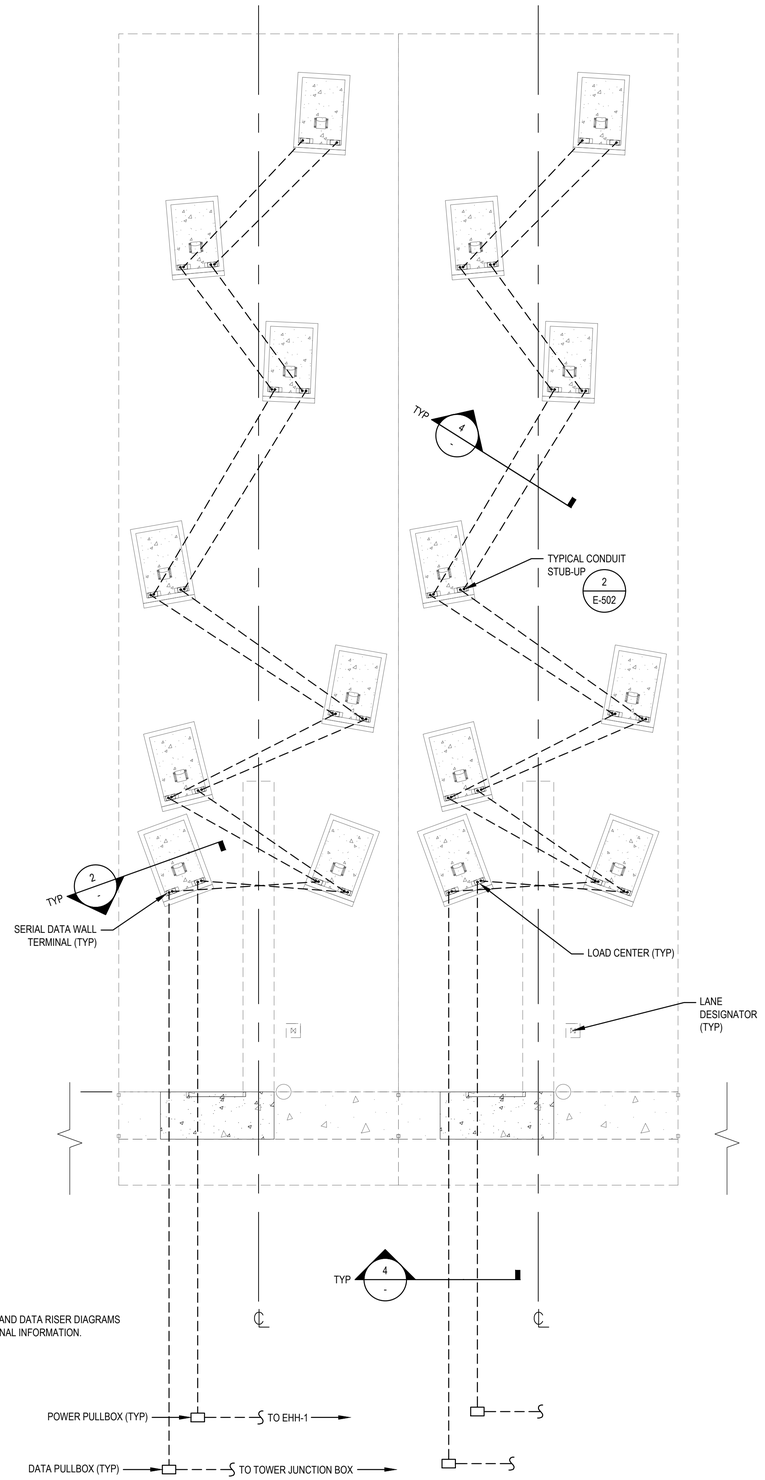
DRAWN BY: JJVL
CHECKED BY: RPG
APPROVED BY: AP
DATE: JULY 2018

SHEET TITLE: ENLARGED ELECTRICAL FIRING LANES PLAN
PROJECT: COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
AGREEMENT NUMBER: G0184
LOCATION: CAMP SAN LUIS OBISPO, CA
STATE OF CALIFORNIA MILITARY DEPARTMENT

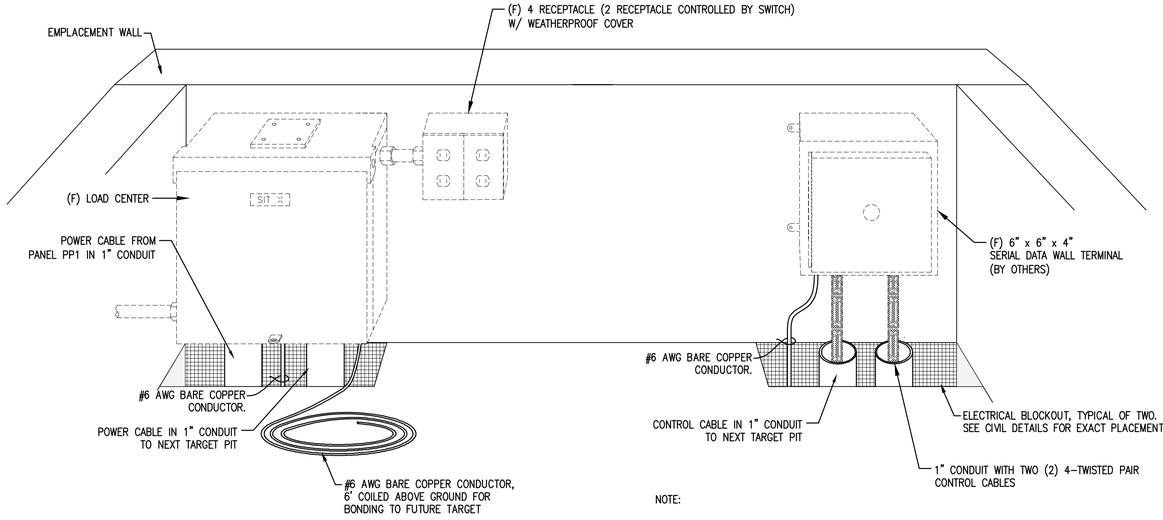
REGISTERED PROFESSIONAL ENGINEER — No. E15580 — Exp. 12/31/19 — ELECTRICAL — STATE OF CALIFORNIA

SHEET NUMBER
E-401

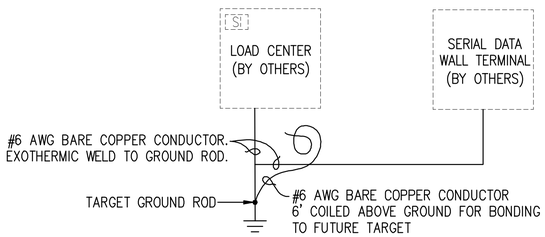
Cad File No: N:\US\San Francisco\Projects\111\11146462 CMD Camp SLO Pistol Range\06-CAD\Sheets\11146462 E401.dwg



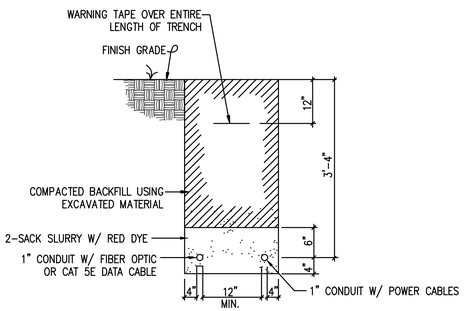
1 **TYPICAL FIRING LANES CONDUIT ROUTING - POWER & DATA** NOT TO SCALE



2 **TYPICAL SIT EMPLACEMENT ELEVATION** NOT TO SCALE



3 **TYPICAL EMPLACEMENT GROUNDING** NOT TO SCALE



4 **TYPICAL ELECTRICAL TRENCH** NOT TO SCALE

GHD Inc.
One Montgomery Street, Suite 1101
San Francisco, California 94111 USA
T: 1 415 733 4000 F: 1 415 733 4099 W: www.ghd.com

REVISIONS	SYMBOL	DATE	REMARKS	BY:
			ISSUED FOR CONSTRUCTION	

DRAWN BY: JJVL
CHECKED BY: RPG
APPROVED BY: AAP
DATE: JULY 2018

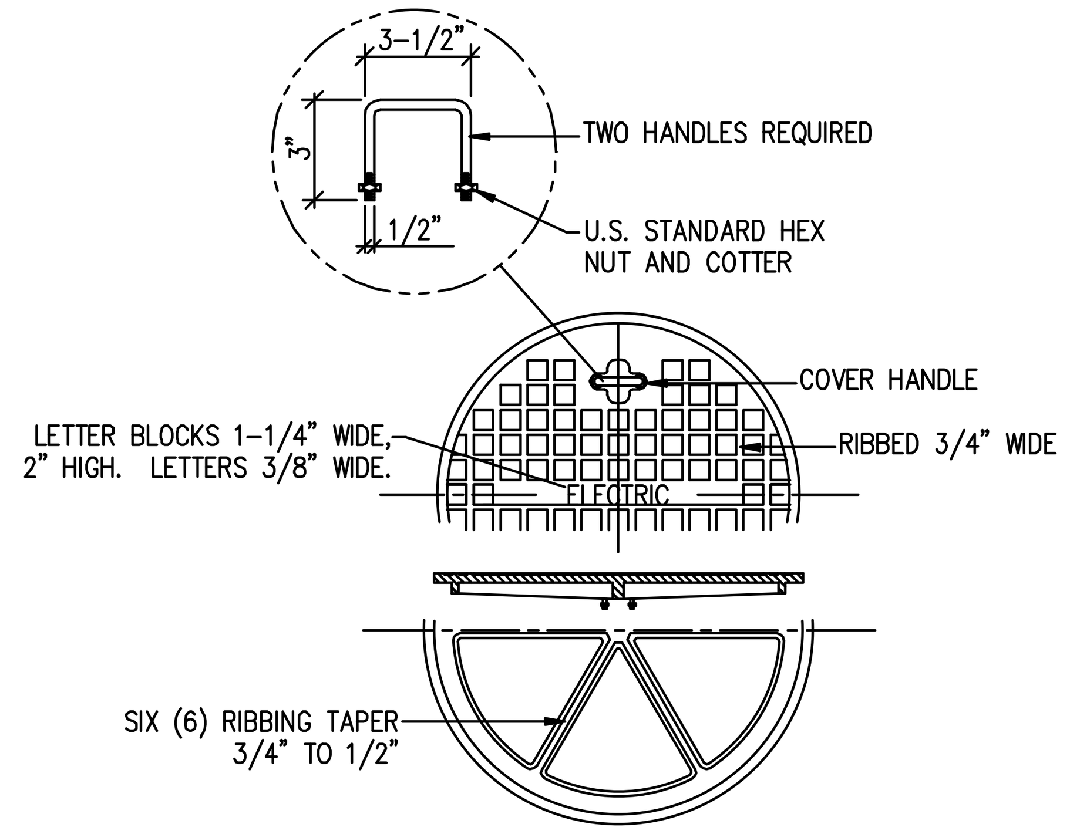
SHEET TITLE: ELECTRICAL DETAILS - 1

PROJECT: COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
AGREEMENT NUMBER: G0184
LOCATION: CAMP SAN LUIS OBISPO, CA
STATE OF CALIFORNIA
MILITARY DEPARTMENT

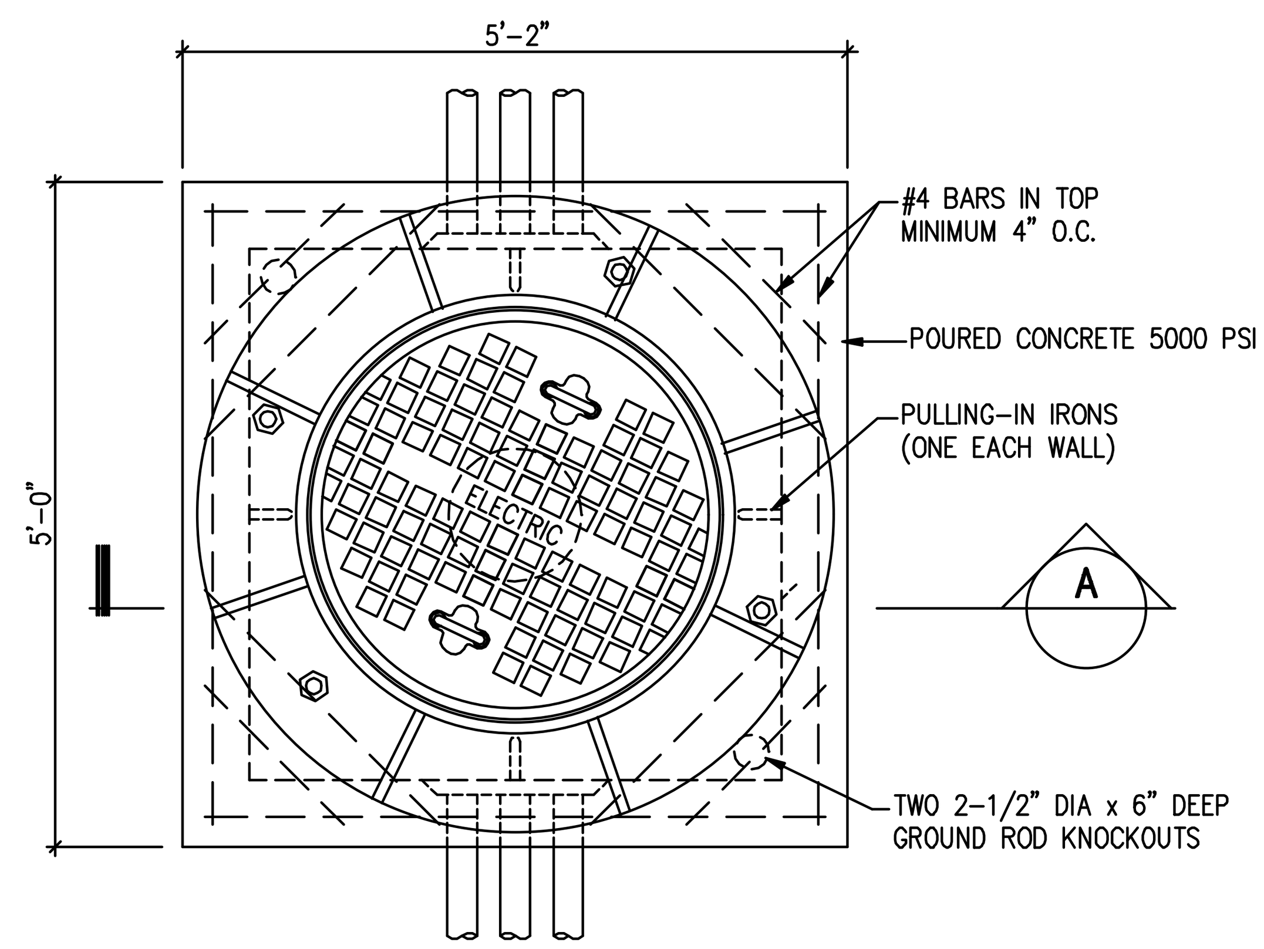
SHEET NUMBER
E-501

13 OF 17

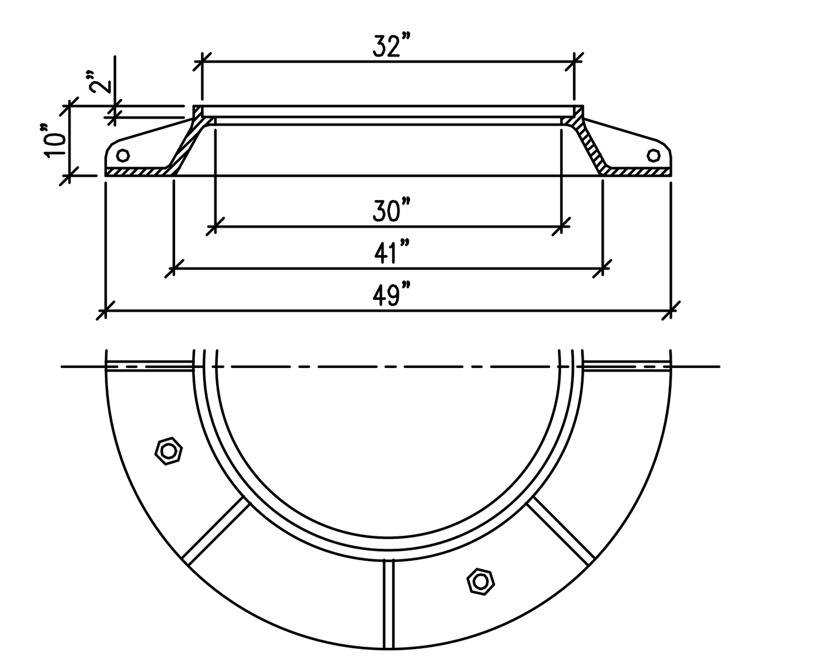
Cad File No: N:\US\San Francisco\Projects\111\11146462 CMD Camp SLO Pistol Range\06-CAD\Sheets\11146462 E501.dwg



COVER



PLAN VIEW



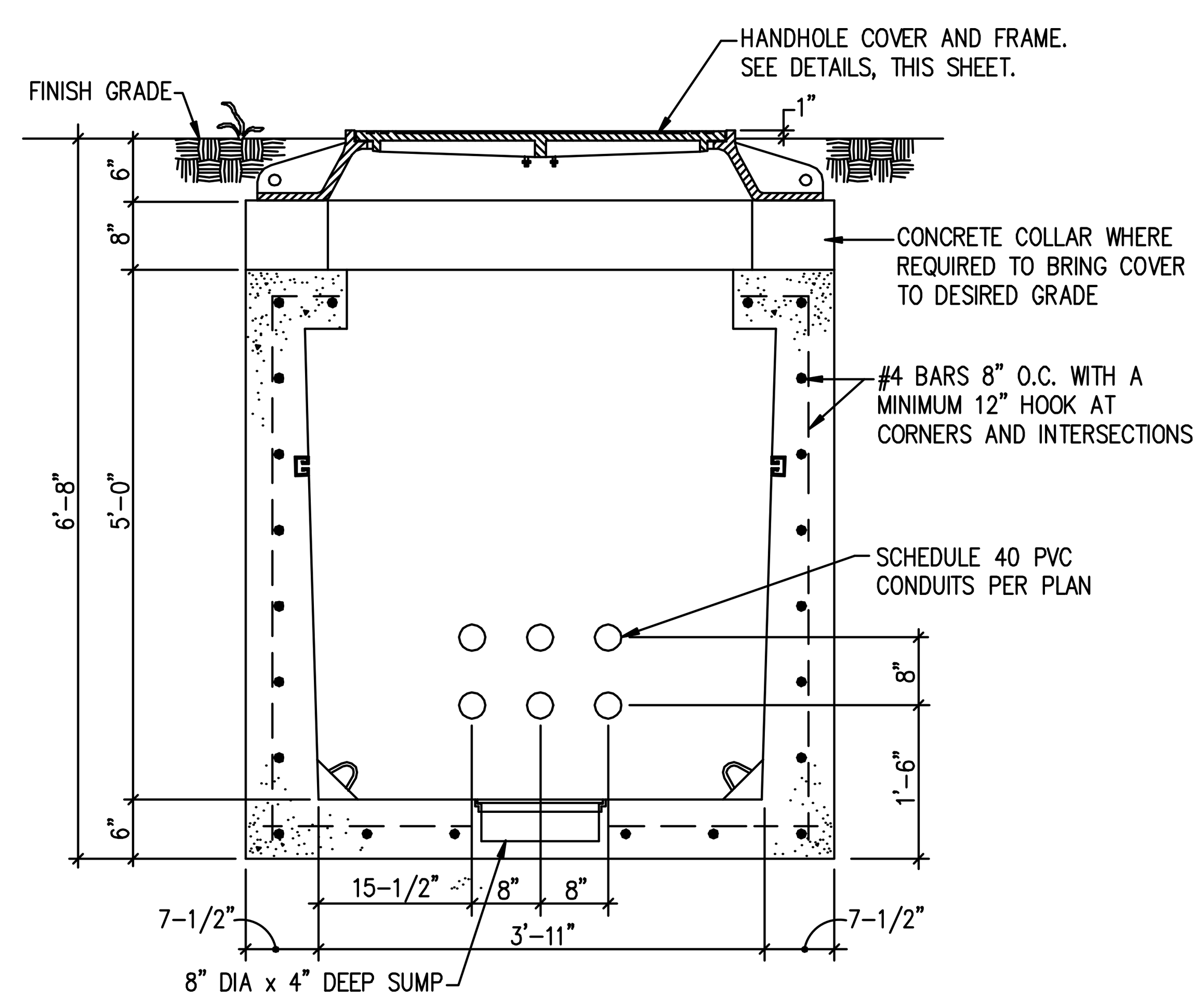
FRAME

HANDHOLE COVER & FRAME DETAIL

NOT TO SCALE

NOTE

PROVIDE LOCKING MANHOLE COVER

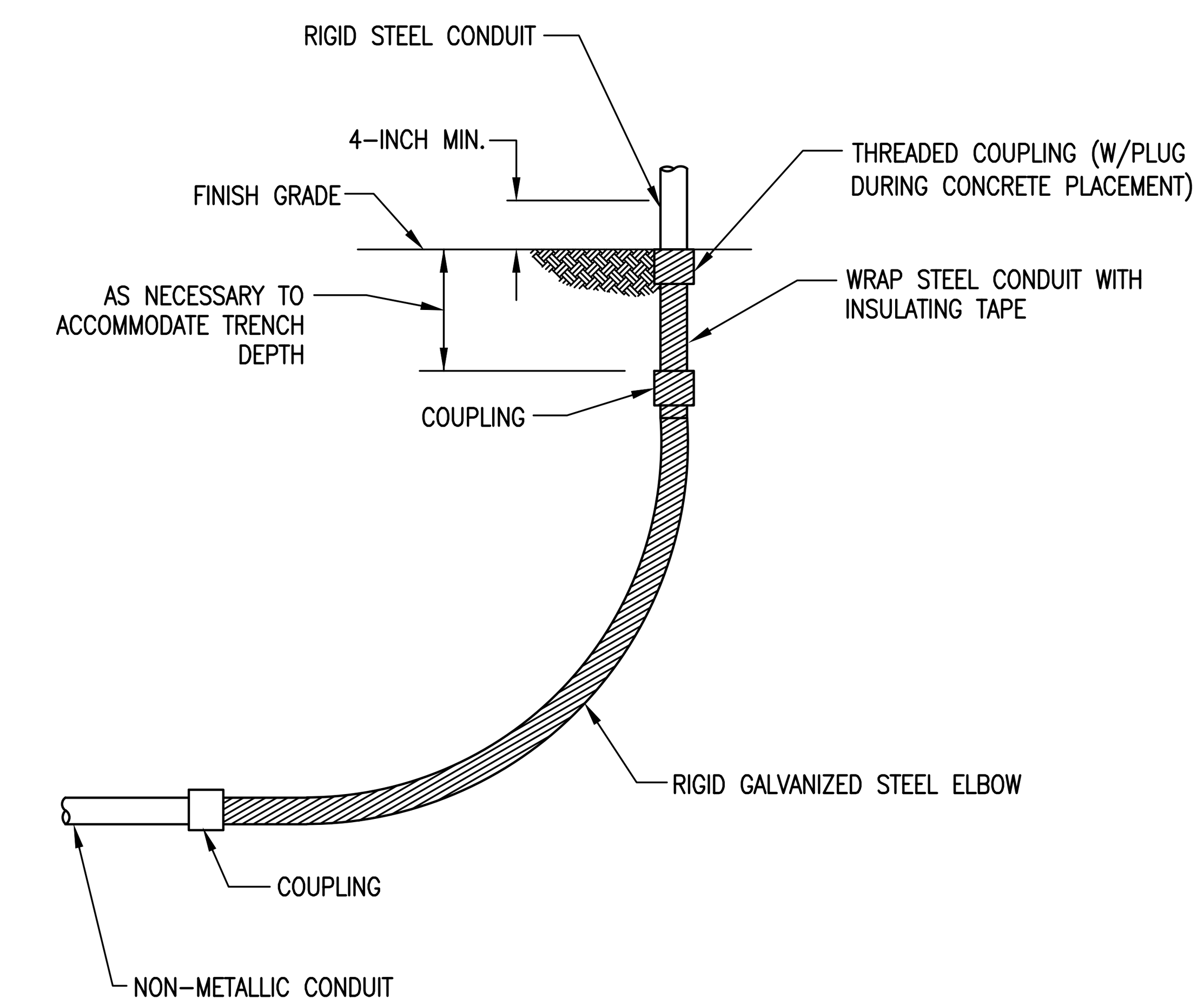


SECTION A

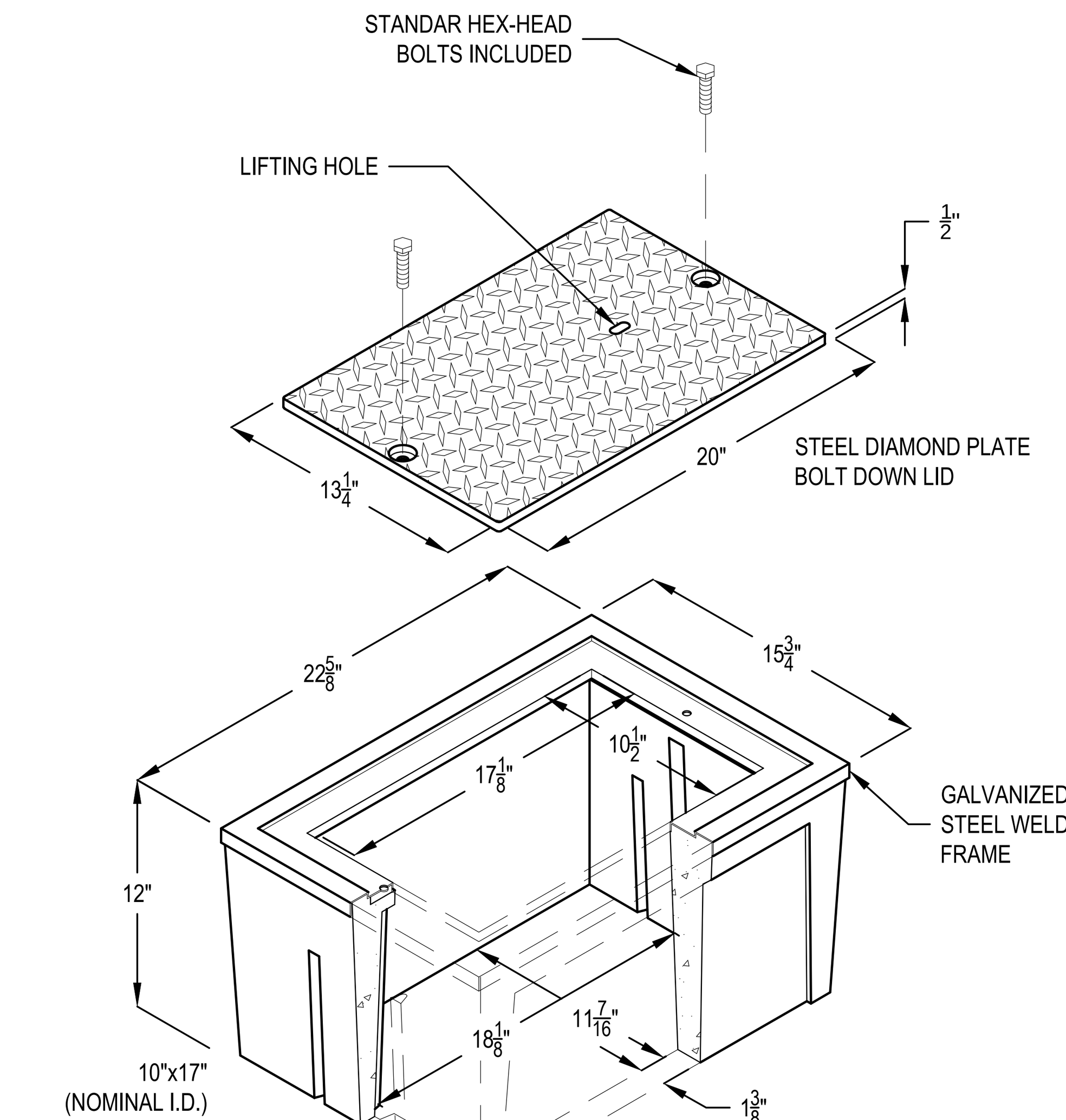
NOTE

REINFORCING SHALL BE INCREASED WHERE REQUIRED TO SUIT ACTUAL INSTALLATION. MINIMUM REQUIREMENTS ARE FOR A H20 WHEEL LOADING (AASHTO).

1 TYPICAL HANDHOLE - POWER & COMMUNICATIONS — NOT TO SCALE



2 TYPICAL CONDUIT STUB-UP — NOT TO SCALE



PRODUCT	DESCRIPTION
BOX	10"x17"x12" CONCRETE TRAFFIC RATED BOX
EXTENSION	10"x17"x12" CONCRETE EXTENSION
LID	STEEL DIAMOND PLATE BOLT DOWN LID

MEETS SPECIFICATIONS: CALTRANS 3-1/2(T) AND NDOT 3-1/2(T)
DESIGN LOAD: TRAFFIC RATED WHEN INSTALLED PER CALTRANS ES-8B
CHRISTY B1017, JENSEN HT1017B, BROOKS PRODUCTS 3-1/2-T

3 TYPICAL 11" x 17" PULLBOX - POWER AND DATA — NOT TO SCALE

REVISIONS	SYMBOL	DATE	REMARKS	BY:
			ISSUED FOR CONSTRUCTION	

DRAWN BY: JJ/VL
CHECKED BY: RPG
APPROVED BY: AAP
DATE: JULY 2018

AGREEMENT NUMBER: G0184

SHEET TITLE ELECTRICAL DETAILS - 2

PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN

LOCATION CAMP SAN LUIS OBISPO, CA

STATE OF CALIFORNIA — MILITARY DEPARTMENT

SHEET NUMBER

E-502

EXISTING PANEL SCHEDULE

PANEL NAME: **L** | MAINS RATING: MLO A MCB | BUS RATING: A
VOLTAGE: 240/120 | PHASE: 1 | WIRE: 3
NEMA RATING: 3R | AIC RATING: 10000 | DEMAND FACTOR: STD
MOUNTING: SURFACE | LOCATION: BELOW FIRING RANGE TOWER BUILDING
NOTES: EXISTING PANEL

CKT NO.	USE	DESCRIPTION	BKR SIZE	CKT KVA	CKT AMPS	WIRE SIZE	WIRE LENGTH (FT)	VOLTAGE DROP %	PHASE	VOLTAGE DROP %	WIRE LENGTH (FT)	WIRE SIZE	CKT AMPS	CKT KVA	BKR SIZE	DESCRIPTION	USE	CKT NO.
1	R	ANNEX RECEPTACLE	20/1	0.24	2.00				A				2.00	0.24	20/1	BLEACHER RECEPTACLE	R	2
3	R	ANNEX RECEPTACLE	20/1	0.24	2.00				B				2.00	0.24	20/1	BLEACHER RECEPTACLE	R	4
5	O	BATTERY	20/1	0.60	5.00				A						50/2	SPARE	P	6
7	O	BATTERY	20/1	0.60	5.00				B						50/2	SPARE	P	8
9		SPACE							A							SPACE		10
11		SPACE							B							SPACE		12
13		SPACE							A							SPACE		14
15		SPACE							B							SPACE		16
17		SPACE							A							SPACE		18
19		SPACE							B							SPACE		20
21		SPACE							A							SPACE		22
23		SPACE							B							SPACE		24

	CONNECTED KVA	DEMAND KVA	DEMAND AMPS
PHASE A:	1.1	1.1	9.0
PHASE B:	1.1	1.1	9.0

STD DEMAND LOAD BASED ON 125% OF THE LARGEST MOTOR AND 100% OF THE REMAINING MOTORS, 125% OF CONTINUOUS LOADS, 100% OF NONCONTINUOUS LOADS, AND 50% OF RECEPTACLE LOADS BEYOND THE FIRST 10KVA

USE LEGEND

ID	LOAD TYPE	ASSUMED PF
H	HVAC	0.85
L	LIGHTING	0.80
M	MOTOR	0.85
R	RECEPTACLE	0.80
P	PANEL	0.85
O	OTHER	0.85

VOLTAGE DROP CALCULATION

VOLTAGE DROP IS BASED ON THE IEEE RED BOOK AND 2011 NEC CHAPTER 9 TABLE 9 FORMULA:

VD = I * (R * PF + X * SIN(ACOS(PF)) * L
WITH AN ADDITIONAL MULTIPLIER OF 2 FOR SINGLE PHASE AND 1.732 FOR 3-PHASE LOADS

R AND X VALUES ARE TAKEN FROM 2011 NEC CHAPTER 9 TABLE 9.

ASSUMPTIONS:
POWER FACTOR: VARIES BY LOAD TYPE
CONDUIT TYPE: RGS
WIRE MATERIAL: CU

EXISTING PANEL SCHEDULE

PANEL NAME: **LC** | MAINS RATING: MLO A MCB | BUS RATING: 100 A
VOLTAGE: 240/120 | PHASE: 1 | WIRE: 3
NEMA RATING: 1 | AIC RATING: 10000 | DEMAND FACTOR: STD
MOUNTING: RECESSED | LOCATION: FIRING RANGE TOWER BUILDING
NOTES: EXISTING PANEL

CKT NO.	USE	DESCRIPTION	BKR SIZE	CKT KVA	CKT AMPS	WIRE SIZE	WIRE LENGTH (FT)	VOLTAGE DROP %	PHASE	VOLTAGE DROP %	WIRE LENGTH (FT)	WIRE SIZE	CKT AMPS	CKT KVA	BKR SIZE	DESCRIPTION	USE	CKT NO.
1	R	RECEPTACLES	15/1	0.60	5.00				A				5.00	0.60	15/1	RECEPTACLES	R	2
3	L	LIGHTING	15/1	0.50	4.17				B						20/1			4
5			20/1						A				10.00	1.20	20/1	A/C		6
7		SPACE	-						B						-	SPACE		8

	CONNECTED KVA	DEMAND KVA	DEMAND AMPS
PHASE A:	2.4	2.4	20.0
PHASE B:	0.5	0.6	5.2

STD DEMAND LOAD BASED ON 125% OF THE LARGEST MOTOR AND 100% OF THE REMAINING MOTORS, 125% OF CONTINUOUS LOADS, 100% OF NONCONTINUOUS LOADS, AND 50% OF RECEPTACLE LOADS BEYOND THE FIRST 10KVA

USE LEGEND

ID	LOAD TYPE	ASSUMED PF
H	HVAC	0.85
L	LIGHTING	0.80
M	MOTOR	0.85
R	RECEPTACLE	0.80
P	PANEL	0.85
O	OTHER	0.85

VOLTAGE DROP CALCULATION

VOLTAGE DROP IS BASED ON THE IEEE RED BOOK AND 2011 NEC CHAPTER 9 TABLE 9 FORMULA:

VD = I * (R * PF + X * SIN(ACOS(PF)) * L
WITH AN ADDITIONAL MULTIPLIER OF 2 FOR SINGLE PHASE AND 1.732 FOR 3-PHASE LOADS

R AND X VALUES ARE TAKEN FROM 2011 NEC CHAPTER 9 TABLE 9.

ASSUMPTIONS:
POWER FACTOR: VARIES BY LOAD TYPE
CONDUIT TYPE: RGS
WIRE MATERIAL: CU

PANEL SCHEDULE

PANEL NAME: **PP1** | MAINS RATING: 400 A MCB | BUS RATING: 400 A
VOLTAGE: 240/120 | PHASE: 1 | WIRE: 3
NEMA RATING: 3R | AIC RATING: 22000 | DEMAND FACTOR: STD
MOUNTING: SURFACE | LOCATION: BELOW RANGE TOWER
NOTES:

CKT NO.	USE	DESCRIPTION	BKR SIZE	CKT KVA	CKT AMPS	WIRE SIZE	WIRE LENGTH (FT)	VOLTAGE DROP %	PHASE	VOLTAGE DROP %	WIRE LENGTH (FT)	WIRE SIZE	CKT AMPS	CKT KVA	BKR SIZE	DESCRIPTION	USE	CKT NO.
1	O	LANE 1	50/2	2.80	23.33	6	300	2.63	A	2.41	275	6	23.33	2.80	50/2	LANE 2	O	2
3			50/2	2.80	23.33	6	300	2.63	B	2.41	275	6	23.33	2.80	50/2			4
5	O	LANE 3	50/2	2.80	23.33	6	245	2.14	A	1.93	220	6	23.33	2.80	50/2	LANE 4	O	6
7			50/2	2.80	23.33	6	245	2.14	B	1.93	220	6	23.33	2.80	50/2			8
9	O	LANE 5	50/2	2.80	23.33	6	190	1.66	A	1.44	165	6	23.33	2.80	50/2	LANE 6	O	10
11			50/2	2.80	23.33	6	190	1.66	B	1.44	165	6	23.33	2.80	50/2			12
13	O	LANE 7	50/2	2.80	23.33	6	135	1.18	A	0.88	100	6	23.33	2.80	50/2	LANE 8	O	14
15			50/2	2.80	23.33	6	135	1.18	B	0.88	100	6	23.33	2.80	50/2			16
17	O	LANE 9	50/2	2.80	23.33	6	140	1.23	A	1.31	150	6	23.33	2.80	50/2	LANE 10	O	18
19			50/2	2.80	23.33	6	140	1.23	B	1.31	150	6	23.33	2.80	50/2			20
21	O	LANE 11	50/2	2.80	23.33	6	200	1.75	A	1.79	205	6	23.33	2.80	50/2	LANE 12	O	22
23			50/2	2.80	23.33	6	200	1.75	B	1.79	205	6	23.33	2.80	50/2			24
25	O	LANE 13	50/2	2.80	23.33	6	260	2.28	A	2.28	260	6	23.33	2.80	50/2	LANE 14	O	26
27			50/2	2.80	23.33	6	260	2.28	B	2.28	260	6	23.33	2.80	50/2			28
29	O	LANE 15	50/2	2.80	23.33	6	320	2.80	A		1	10			30/2	SURGE PROTECTIVE DEVICE	O	30
31			50/2	2.80	23.33	6	320	2.80	B		1	10			30/2			32
33	P	PANEL LC	50/2	2.40	20.00	6	10	0.08	A	0.01	5	1	9.00	1.08	100/2	PANEL L	P	34
35			50/2	0.50	4.17	6	10	0.02	B	0.01	5	1	9.00	1.08	100/2			36
37	R	RECEPTACLE	20/1	0.24	2.00	5	12	0.01	A				8.00	0.96	20/1	LIGHTING	L	38
39		SPARE	20/1						B						20/1	SPARE		40
41		SPACE							A							SPACE		42

	CONNECTED KVA	DEMAND KVA	DEMAND AMPS
PHASE A:	46.7	46.9	391.0
PHASE B:	43.6	43.6	363.2

STD DEMAND LOAD BASED ON 125% OF THE LARGEST MOTOR AND 100% OF THE REMAINING MOTORS, 125% OF CONTINUOUS LOADS, 100% OF NONCONTINUOUS LOADS, AND 50% OF RECEPTACLE LOADS BEYOND THE FIRST 10KVA

USE LEGEND

ID	LOAD TYPE	ASSUMED PF
H	HVAC	0.85
L	LIGHTING	0.80
M	MOTOR	0.85
R	RECEPTACLE	0.80
P	PANEL	0.85
O	OTHER	0.85

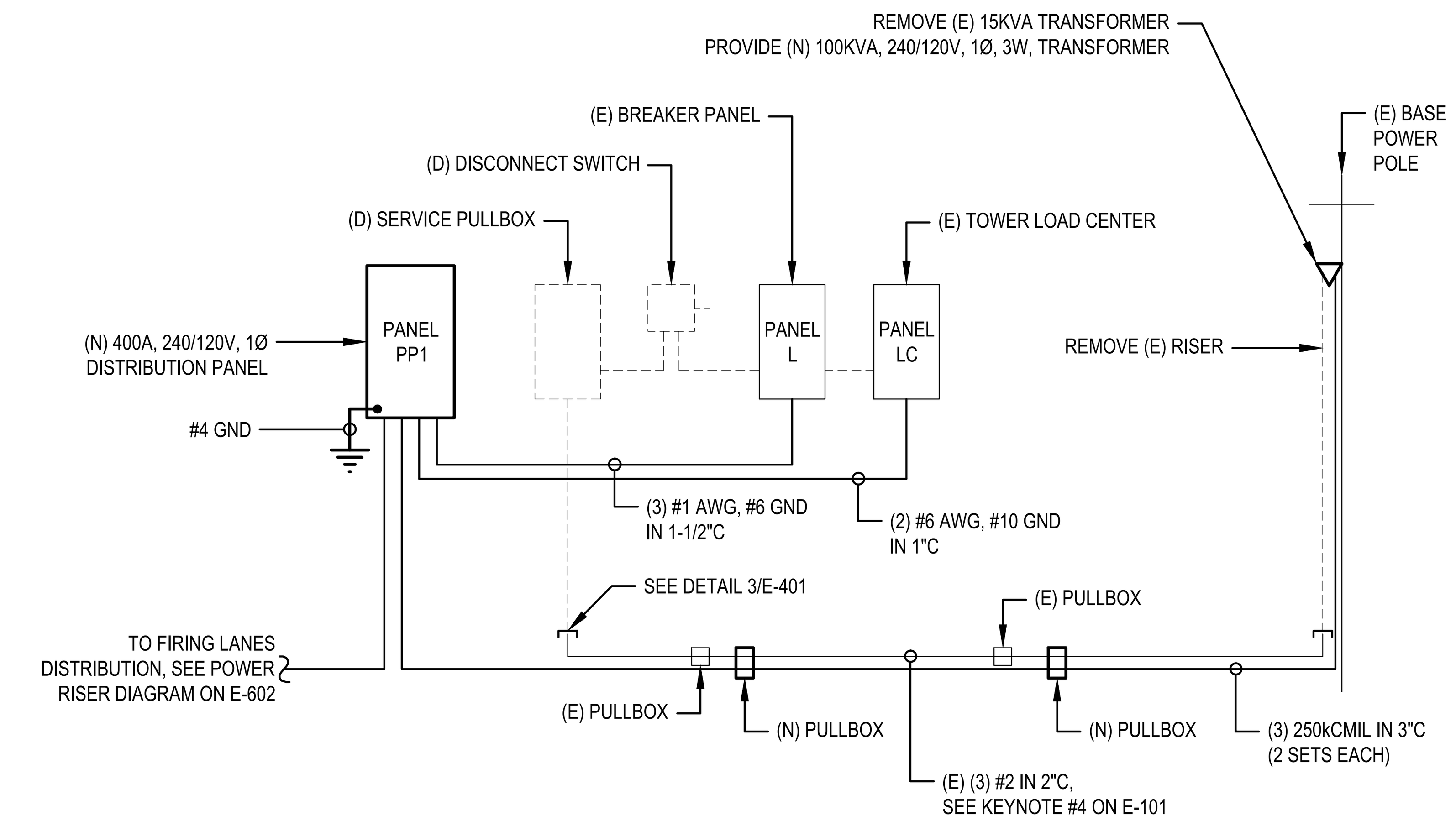
VOLTAGE DROP CALCULATION

VOLTAGE DROP IS BASED ON THE IEEE RED BOOK AND 2011 NEC CHAPTER 9 TABLE 9 FORMULA:

VD = I * (R * PF + X * SIN(ACOS(PF)) * L
WITH AN ADDITIONAL MULTIPLIER OF 2 FOR SINGLE PHASE AND 1.732 FOR 3-PHASE LOADS

R AND X VALUES ARE TAKEN FROM 2011 NEC CHAPTER 9 TABLE 9.

ASSUMPTIONS:
POWER FACTOR: VARIES BY LOAD TYPE
CONDUIT TYPE: RGS
WIRE MATERIAL: CU



SINGLE LINE DIAGRAM

SCALE: NOT TO SCALE

GHD Inc.
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San Francisco California 94111 USA
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REVISIONS	SYMBOL	DATE	REMARKS	BY:
			ISSUED FOR CONSTRUCTION	

DRAWN BY: JJVL
CHECKED BY: RPG
APPROVED BY: AAP
DATE: JULY 2018

SHEET TITLE: SINGLE LINE DIAGRAM AND SCHEDULES
PROJECT: COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
AGREEMENT NUMBER: G0184
LOCATION: CAMP SAN LUIS OBISPO, CA
MILITARY DEPARTMENT
STATE OF CALIFORNIA

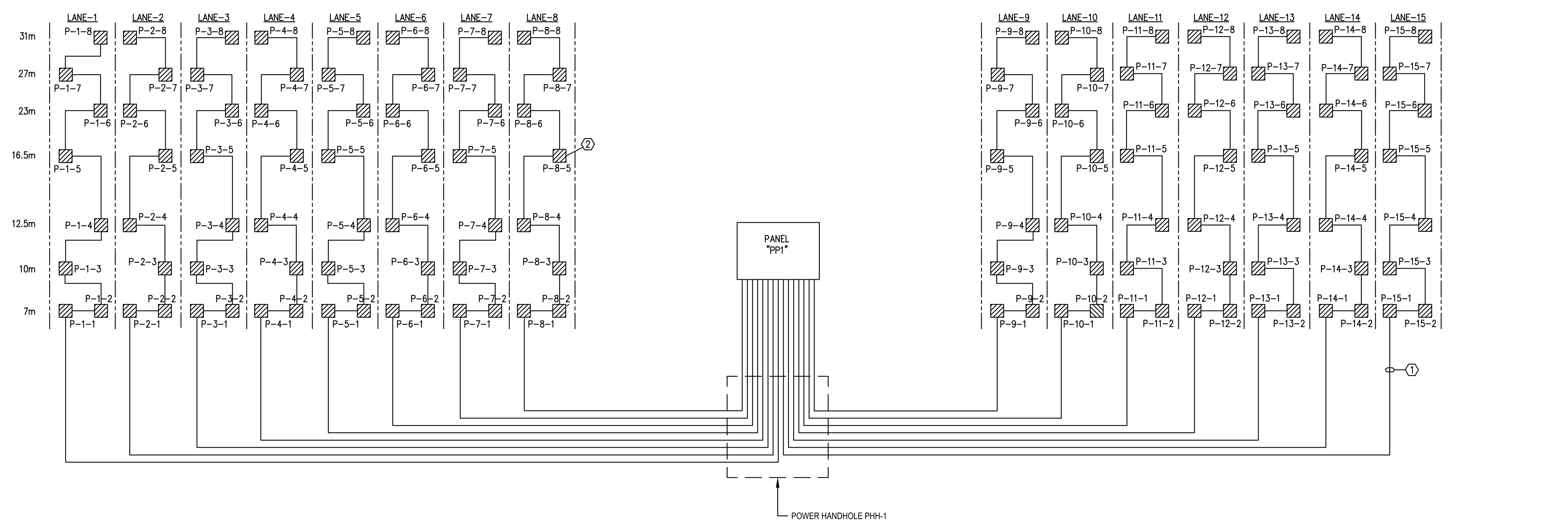
REGISTERED PROFESSIONAL ENGINEER No. E15580 Exp. 12/31/19 ELECTRICAL STATE OF CALIFORNIA

SHEET NUMBER: E-601

Cad File No: N:\US\San Francisco\Projects\111\11146462 CMD Camp SLO Pistol Range\06-CAD\Sheets\11146462 E601.dwg

POWER RISER KEY NOTES

1. PROVIDE (3) #6 AWG, #10 GND IN 1"C, TYPICAL FOR ALL CIRCUITS TO EMPLACEMENTS.
2. (F) STATIONARY INFANTRY TARGET (SIT) EMPLACEMENT LOADCENTER. SEE DETAIL 2/E-501.



REVISIONS	SYMBOL	DATE	REMARKS	BY:
			ISSUED FOR CONSTRUCTION	

GHD Inc. 655 Montgomery Street Suite 1010 San Francisco California 94111 USA T 1 415 283 4970 F 1 415 283 4980 W www.ghd.com

DRAWN BY: JJVL
CHECKED BY: RPG
APPROVED BY: AAP
DATE: JULY 2018

SHEET TITLE POWER RISER DIAGRAM
PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
AGREEMENT NUMBER: G0184
LOCATION CAMP SAN LUIS OBISPO, CA
STATE OF CALIFORNIA
MILITARY DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER No. E15580 Exp. 12/31/19 ELECTRICAL STATE OF CALIFORNIA

SHEET NUMBER
E-602

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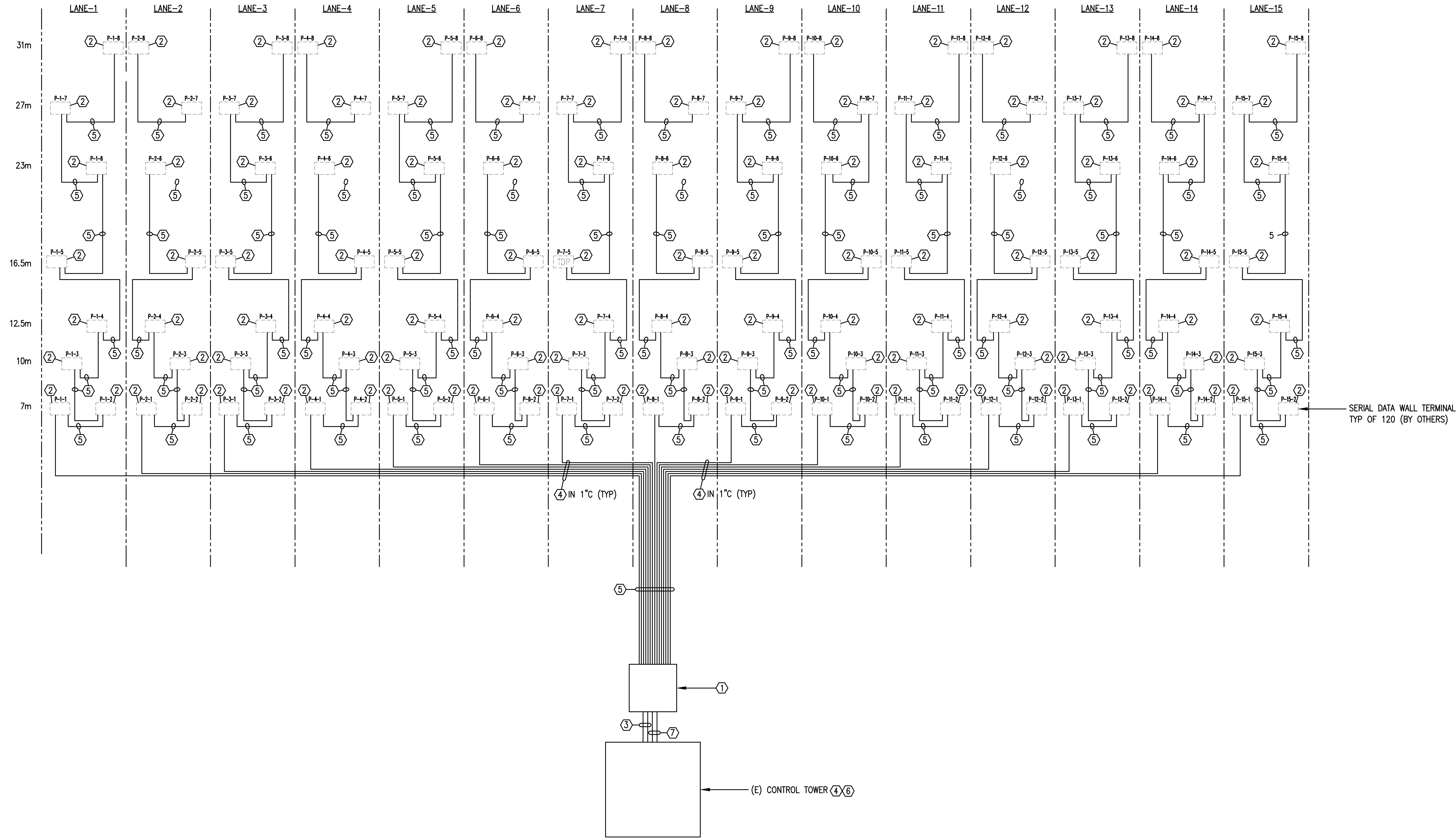

TARGET DATA SYSTEM KEY NOTES:

1. INSTALL OWNER-FURNISHED TOWER JUNCTION BOX.
2. SERIAL DATA WALL TERMINAL (BY OTHERS).
3. ROUTE DATA CABLES BETWEEN CONTROL TOWER AND TOWER JUNCTION BOX IN (2) 2-INCH CONDUITS.
4. PROVIDE CONDUITS THROUGH FLOOR. TERMINATE 4" AFF W/ BUSHINGS. SEAL AROUND CONDUIT PENETRATIONS.
5. 4-PAIR ARMORED/SHIELDED #22 AWG IN 1-INCH CONDUIT.
6. INSTALL DATA CABLE W/ ENOUGH LENGTH TO ALLOW FOR CONNECTION TO (E) RANGE CONTROLLER. FINAL CONNECTION TO RANGE CONTROLLER BY OTHERS.
7. SPARE (2) 2-INCH CONDUITS.

NOTES:

1. RUN ALL CABLES CONTINUOUS BETWEEN TERMINATION POINTS INDICATED WITH NO INTERMEDIATE SLICES OR TERMINATIONS.
2. LABEL ALL CABLES WITH ADHESIVE POLYETHYLENE WRAP-AROUND LASER PRINTED LABELS INDICATING CABLE NUMBER DESTINATION AND CABLE TYPE. CONTRACTOR TO SUBMIT SCHEDULE OF PROPOSED LABEL FOR APPROVAL.

REVISIONS	SYMBOL	DATE	REMARKS	BY
			ISSUED FOR CONSTRUCTION	

DRAWN BY: JJVL
CHECKED BY: RPG
APPROVED BY: AAP
DATE: JULY 2018

SHEET TITLE DATA RISER DIAGRAM
AGREEMENT NUMBER: G0184
PROJECT COMBAT PISTOL QUALIFYING COURSE (CPQC) DESIGN
LOCATION CAMP SAN LUIS OBISPO, CA
MILITARY DEPARTMENT
STATE OF CALIFORNIA

SHEET NUMBER
E-603

Cad File No: N:\US\San Francisco\Projects\111\11146462 CMD Camp SLO Pistol Range\06-CAD\Sheets\11146462 E603.dwg

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Appendix B Air Quality and Greenhouse Gas Emissions Calculations

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Bravo Range Improvement Project

San Luis Obispo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 gun range

Construction Phase - 3 months, 5 days/wk

Off-road Equipment - Estimated project construction fleet

Grading - 4,850 cubic yards aggregate import

Trips and VMT -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	66.00
tblConstructionPhase	PhaseEndDate	3/31/2019	9/2/2019
tblConstructionPhase	PhaseStartDate	4/1/2019	6/1/2019

tblGrading	MaterialImported	0.00	4,850.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.6257	19.7271	12.0058	0.0311	0.8325	0.7604	1.5928	0.1373	0.7003	0.8375	0.0000	3,140.0284	3,140.0284	0.7528	0.0000	3,158.8478
Maximum	**1.6257**	**19.7271**	**12.0058**	**0.0311**	**0.8325**	**0.7604**	**1.5928**	**0.1373**	**0.7003**	**0.8375**	**0.0000**	**3,140.0284**	**3,140.0284**	**0.7528**	**0.0000**	**3,158.8478**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Construction	Grading	6/1/2019	9/2/2019	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Construction	Excavators	1	8.00	158	0.38
Site Construction	Graders	1	8.00	187	0.41
Site Construction	Rollers	1	8.00	80	0.38
Site Construction	Concrete/Industrial Saws	0	8.00	81	0.73
Site Construction	Off-Highway Trucks	1	3.00	402	0.38
Site Construction	Rubber Tired Dozers	0	1.00	247	0.40
Site Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Construction	5	13.00	0.00	606.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5438	0.0000	0.5438	0.0593	0.0000	0.0593			0.0000			0.0000
Off-Road	1.4712	16.5135	10.8039	0.0225		0.7405	0.7405		0.6813	0.6813		2,226.0199	2,226.0199	0.7043		2,243.6271
Total	**1.4712**	**16.5135**	**10.8039**	**0.0225**	**0.5438**	**0.7405**	**1.2843**	**0.0593**	**0.6813**	**0.7406**		**2,226.0199**	**2,226.0199**	**0.7043**		**2,243.6271**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0934	3.1609	0.6795	7.3400e-003	0.1602	0.0190	0.1792	0.0439	0.0182	0.0621		790.0732	790.0732	0.0439		791.1715
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0527	0.5224	1.2500e-003	0.1285	8.5000e-004	0.1294	0.0341	7.8000e-004	0.0349		123.9353	123.9353	4.5500e-003		124.0491
Total	**0.1545**	**3.2136**	**1.2019**	**8.5900e-003**	**0.2887**	**0.0199**	**0.3085**	**0.0780**	**0.0190**	**0.0969**		**914.0084**	**914.0084**	**0.0485**		**915.2206**

Bravo Range Improvement Project - San Luis Obispo County, Annual

Bravo Range Improvement Project

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 gun range

Construction Phase - 3 months, 5 days/wk

Off-road Equipment - Estimated project construction fleet

Grading - 4,850 cubic yards aggregate import

Trips and VMT -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	66.00
tblConstructionPhase	PhaseEndDate	3/31/2019	9/2/2019
tblConstructionPhase	PhaseStartDate	4/1/2019	6/1/2019

tblGrading	MaterialImported	0.00	4,850.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0537	0.6533	0.3964	1.0200e-003	0.0272	0.0251	0.0523	4.4700e-003	0.0231	0.0276	0.0000	93.7187	93.7187	0.0226	0.0000	94.2825
Maximum	**0.0537**	**0.6533**	**0.3964**	**1.0200e-003**	**0.0272**	**0.0251**	**0.0523**	**4.4700e-003**	**0.0231**	**0.0276**	**0.0000**	**93.7187**	**93.7187**	**0.0226**	**0.0000**	**94.2825**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-1-2019**	**6-30-2019**	0.2288	0.2288
2	**7-1-2019**	**9-30-2019**	0.4881	0.4881
		Highest	0.4881	0.4881

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Construction	Grading	6/1/2019	9/2/2019	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Construction	Excavators	1	8.00	158	0.38
Site Construction	Graders	1	8.00	187	0.41
Site Construction	Rollers	1	8.00	80	0.38
Site Construction	Concrete/Industrial Saws	0	8.00	81	0.73
Site Construction	Off-Highway Trucks	1	3.00	402	0.38
Site Construction	Rubber Tired Dozers	0	1.00	247	0.40
Site Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Construction	5	13.00	0.00	606.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0179	0.0000	0.0179	1.9600e-003	0.0000	1.9600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0486	0.5450	0.3565	7.4000e-004		0.0244	0.0244		0.0225	0.0225	0.0000	66.6406	66.6406	0.0211	0.0000	67.1677
Total	**0.0486**	**0.5450**	**0.3565**	**7.4000e-004**	**0.0179**	**0.0244**	**0.0424**	**1.9600e-003**	**0.0225**	**0.0244**	**0.0000**	**66.6406**	**66.6406**	**0.0211**	**0.0000**	**67.1677**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.1200e-003	0.1064	0.0231	2.4000e-004	5.1600e-003	6.3000e-004	5.8000e-003	1.4200e-003	6.1000e-004	2.0200e-003	0.0000	23.5126	23.5126	1.3400e-003	0.0000	23.5460
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0600e-003	1.9400e-003	0.0168	4.0000e-005	4.1300e-003	3.0000e-005	4.1600e-003	1.1000e-003	3.0000e-005	1.1200e-003	0.0000	3.5655	3.5655	1.3000e-004	0.0000	3.5689
Total	**5.1800e-003**	**0.1084**	**0.0398**	**2.8000e-004**	**9.2900e-003**	**6.6000e-004**	**9.9600e-003**	**2.5200e-003**	**6.4000e-004**	**3.1400e-003**	**0.0000**	**27.0781**	**27.0781**	**1.4700e-003**	**0.0000**	**27.1148**

Appendix C Aquatic Resources Report

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Aquatic Resources Report

Camp San Luis Obispo, Bravo Range Modernization Project
California Army National Guard
3900 Roseville Road
North Highlands, CA 95660

GHD | 669 Pacific Street San Luis Obispo CA 93401 USA

11190751 | 20 | Report No 1 | July 9, 2019

Executive Summary

This aquatic resource delineation map (Appendix A) was based on field observations of soil, vegetation, and hydrologic characteristics as defined in the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (USACE 2008).

Information included in this delineation is subject to verification by the USACE. GHD advises all parties to treat the information contained herein as preliminary until the USACE provides written verification of the boundaries of their jurisdiction.

The California Army National Guard at Camp San Luis Obispo proposes a project to update and modernize the Bravo Range Combat Pistol Qualification Course (CPQC). The proposed improvements will upgrade training capabilities at the Bravo Range and will address site drainage issues. Improvements will include grading, construction of an outfall, electrical and mechanical improvements. The area for improvement includes the 1.6-acre firing range footprint, as well as a new outfall to the existing seasonal drainage. A total Survey Area of 4 acres was considered to provide an adequate overview of the existing conditions for purposes of aquatic resources.

Review of available data was compiled to provide a frame of reference for the site. A pedestrian survey and wetland delineation were conducted on February 25, 2019, during normal climate conditions for the area. Only one wetland (W1) was identified within the Survey Area, in the drainage to the west of the Range. It is a seasonally flooded, palustrine, persistent herbaceous emergent wetland (PEM1E) and occupies 0.084 acres of the Survey Area. Due to the lack of development on the surrounding landscape, the quality of this feature is quite good. Only a piece or corrugate metal was observed in the creek bed and the site appeared to be in good ecological condition.

Table of Contents

Tables

Appendix Index

Acronyms

CA ARNG	California Army National Guard
CPQC	Combat Pistol Qualification Course
FAC	Facultative plant
FACU	Facultative upland plant
FACW	Facultative wetland plant
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
NI	Not indicative
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OBL	Obligate plant
OHWM	Ordinary High Water Mark
PEM1E	NWI code for Palustrine-Emergent-Persistent-Seasonally Flooded/Saturated
SITs	Stationary infantry targets
SLO	San Luis Obispo
UPL	Upland plant
US	United States
USACE	United States Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
W	Wetland
WD	Wetland Determination

1. Introduction

1.1 Contact Information

Applicant and Property Owner:

Contact information: Major Jubilee Satale
California Army National Guard, Camp San Luis Obispo
jubilee.r.satele.mil@mail.mil
805-594-6599
10 Sonoma Avenue, Building 738
San Luis Obispo, CA 93405

Agent:

Contact information: Paul Henderson, Senior Construction Engineer
GHD, Inc.
paul.henderson@ghd.com
805-858-3142
669 Pacific Street
San Luis Obispo, CA 93401

1.2 Purpose of this Report

The purpose of this report, per the Minimum Standards, is to identify and describe wetlands and aquatic resources (provided in Appendix A) and to identify known possible sensitive plant, fish, and wildlife species, and cultural/historic properties in the Survey Area. This report facilitates efforts to:

1. Avoid or minimize impacts to wetland and aquatic resources during the design process.
2. Document wetland and aquatic resource boundary determinations for review by regulatory authorities.
3. Provide early indications of known sensitive species and historic/cultural properties within the Survey Area.
4. Provide background information (USACE 2016a).

1.3 Project Description

The California Army National Guard (CA ARNG) plans to upgrade the previously-existing Bravo Range Combat Pistol Qualification Course (CPQC) at Camp San Luis Obispo (CSLO) in unincorporated San Luis Obispo County. The upgrade consists of modernizing the 1.6-acre Bravo Range by replacing the previously-existing firing lanes with 15 modern firing lanes, pouring a four- by five-foot-wide cement standing pad at the base of each lane, replacing previously-existing remote-controlled battery-operated flip-up targets with hard-wired flip-up targets, electrical and mechanical upgrades, and drainage improvements and erosion protection.

The drainage improvements and erosion protection would involve the installation of subsurface drains would be installed along the middle of each firing lane and would drain north to a new rock-lined stormwater detention basin along the northern boundary of the firing range. Runoff from the slope above the firing range would be captured by an interceptor drain and conveyed to the stormwater detention basin via a rock-lined drainage ditch. During large rainfall events the detention basin would be designed to overtop and discharge via a low-flow sand filter outlet weir to the natural drainage channel that is a tributary to Chorro Creek. Under the existing condition, stormwater occurs as sheet flow that drains to the same drainage channel. The proposed project would not increase the volume of runoff to the drainage channel but would concentrate runoff further upstream when compared to the existing condition. In order to protect the drainage channel from erosion and scour, a protective layer of rock (approximately 400 square feet, or 20 linear feet) would be placed in the base of the channel to create a rock-lined channel leading from the detention basin to the natural drainage channel further west. The proposed drainage improvements and erosion protection are intended to protect water quality and control erosion. They would also serve to reduce peak runoff from the site. The drainage improvements would be constructed along the north and west side of the 1.6-acre firing range and in the small drainage immediately west of the firing range.

Construction is anticipated to commence in 2019 and take a total of three months to complete. Construction equipment will include backhoe, excavator, grader, roller, concrete truck, and water truck.

1.4 Survey Area Description

The Bravo Range is located west of the City of San Luis Obispo in unincorporated San Luis Obispo County (Figure 1 and 2, Appendix B). The 4-acre aquatic resources Survey Area encompassed the 1.6-acre firing range platform, a seasonal drainage located immediately west of the firing range, and the immediately surrounding area (Figure 3). This Survey Area was appropriate for documenting the existing condition of the seasonal drainage and aquatic resources that could potentially be affected by the project. The 1.6-acre firing range is surrounded by California Annual and Perennial Grassland. The seasonal drainage is tributary to Chorro Creek. The stream is at the bottom of a deeply cut, steep sided gully that transitions through three different vegetation composition as it flows down through the Survey Area (Figure 4) (Photos 1-39, Appendix C). In the Survey Area, the upstream section is composed of predominantly pale spike rush (*Eleocharis macrostachya*), followed by alternating cattail (*Typha* (*domingensis*)) and iris-leaf rush (*Juncus xiphioides*) dominated communities. A few willow (*Salix lasiolepis*) saplings dot the stream channel, but not in high enough cover to characterize the communities. A full species list with corresponding indicator statuses is provided in Appendix D.

2. Location

The project is located in the Mt. Diablo Meridian, Township 30 South, Range 12 East, and Section 4, at latitude 35.344743 North and longitude -120.698748 West. This is inside Camp San Luis Obispo Army Base (Camp SLO) near San Luis Obispo, California. The entrance to Camp SLO is off Highway 1 at Sonoma Avenue, and the closest intersection in Camp SLO is San Benito Road and Range Road. (Figures 1, 2, and 3).

Driving directions from the City of San Luis Obispo are as follows:

1. From the City of San Luis Obispo Take CA-1 N
2. Sharp left onto Sonoma Avenue (partially restricted usage road) 0.1 miles
3. Turn left onto San Joaquin Avenue (restricted usage road) 0.3 miles
4. Turn left onto Kern Avenue (restricted usage road) 1.0 miles
5. Turn left onto San Benito Road (restricted usage road) 1.2 miles
6. Continue onto Range Road (restricted usage road) 0.2 miles

3. Methods

3.1 Technical Method

The aquatic resource delineations are based on field observations of soil, vegetation, and hydrologic characteristics as defined in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West region, Version 2.0 (USACE 2008). Ordinary high water mark (OHWM) was determined using “A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States” (Lichvar and Shawn 2008). Seven, three-parameter data points (soil pits and vegetative plots) within the Survey Area were documented and analyzed. Wetland determination data forms for these data points are presented in Appendix E.

3.2 Date of Field Observations

The field observations for this delineation were conducted by Joslyn Curtis, Ecologist/Biologist, and Ken Mierzwa, Senior Biologist, on February 25, 2019.

3.3 Wetland Vegetation Indicator Status Reference

The USACE 2016 National Wetland Plant List for the arid west region was used to determine the wetland indicator status for each plant species (Lichvar et. al. 2016 and USACE 2016b). When species were not officially listed, additional references were used to verify species affinities. If no references to an indicator status were found, species were counted as upland species (as per USACE 2008 pg. 19). In addition, vegetation communities were classified using the Manual of California Vegetation (CNPS 2019).

3.4 Hydric Soil Method of Determination

A standard Munsell® soil color chart was used to determine soil matrix and mottle colors, if applicable.

3.5 Wetland Hydrology Method of Determination

Indicators of depth and duration of soil saturation, ponding, drainage patterns, bank-full, and the OHWM were observed in the field. Aerial photography was also used to verify field determinations.

3.6 Mapping Technique

The location of the three-parameter data points were mapped using Global Positioning System (GPS) capability on a Trimble Geo 7X Handheld Global Navigation Satellite System (GNSS) device with post-processing analysis to establish sub-meter accuracy.

4. Existing Conditions

Available data was reviewed and analyzed to provide a frame of reference for the site, including NRCS web soil survey and National Wetland Inventory. A pedestrian survey and wetland delineation were conducted on February 25, 2019, during normal climate conditions for the area. 1.3 inches of rain fell within the two week time period before the survey, and with the majority of it 10 days before (Appendix F). A Survey Area of approximately 4 acres was considered during these investigations. The delineation focused on the seasonal drainage that is proposed for modification.

4.1 Recent Site Disturbance and Modifications

Detailed design plans were completed in April 2018. In August 2018, the original mechanical target components and concrete were removed and earthwork and grading activities commenced. Earthmoving activities included 8,000 cubic yards of cut and fill for the construction of an elevated and slightly enlarged platform containing the new firing range, commencement of the rough grading of the firing range platform, and installation of 3-inch-diameter electrical conduit and wiring along the west side of the access road between the transformer and the control tower. With the exception of installation of the 3-inch-diameter conduit, most earthwork completed to-date was generally confined to the 1.6-acre firing range area. The earthwork associated with the platform containing the 1.6-acre firing range was not conducted in accordance with the original design specifications and the platform was inadvertently shifted approximately 15 feet to the southwest. No soil was exported off-site.

Prior to completion of the rough grade, work was halted when it was determined that portions of the project would require permitting authorizations from state and federal agencies. and a potential impact to the wetland/small drainage at the western edge of the 1.6-acre firing range was identified. Immediately after halting construction, CA ARNG installed sediment and erosion control best management practices (BMPs) on and around the disturbed portions of the site to control erosion and protect the wetland from sedimentation. The CA ARNG is monitoring the site to ensure sediment and erosion control BMPs continue to operate effectively. The site is currently heavily grassed, which is providing significant protection from erosion and subsequent sediment transport.

4.2 Landscape Setting

The historical land use of the Bravo Range is for military training. The surrounding land use is grazing. The Survey Area is located on military lands and is surrounded by relatively undeveloped agricultural and recreational lands, with public facility development about 1 mile to the south (Figure 5). The Survey Area is on rolling hills below Cuesta Ridge, around 700 ft elevation. Vegetation communities occurring within the Survey Area, as classified using the Manual of California Vegetation (CNPS 2019) include: California

annual and perennial grassland macrogroup, iris-leaf rush seep (*Juncus* (*oxymeris, xiphioides*)) Provisional Herbaceous Alliance, pale spike rush marsh (*Eleocharis macrostachya*) Herbaceous Alliance, and Cattail marsh (*Typha* (*angustifolia, domingensis, latifolia*)) Herbaceous Alliance (Figure 4).

Topography in the vicinity of the Survey Area encompasses the rolling hills below Cuesta Ridge leading down to the coastal flats of Morro Bay. Local terrain within the Survey Area is situated on the south to southwest facing side of the hillslope and consists of an elevated, mounded range and a steep slope (45 degrees) down to a concave drainage feature (Figure 2).

4.2.1 Hydrology

Water that lands in the Survey Area drains and seeps into the drainage and out to Chorro Creek. Chorro Creek flows past Camp San Luis Obispo out to Morro Bay before emptying into the Pacific Ocean. Surface water is present in the drainage during the rainy season and the vegetation appears to remain green during the dry season, as seen from a project photo from September 2018, and aerial imagery from August 2013 and June 2017 (Appendix C, Photo 40-42), suggesting some ground water remains available year round along this stretch of drainage.

4.2.2 Soils

The US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) identifies two soil units within the Survey Area (Figure 6): Los Osos loam and Diablo and Cibo clays. A brief map unit description, as generated by the NRCS, is provided for each soil unit below (USDA 201).

While the soil units are informative, the mapping scale is too broad to accurately characterize this small Survey Area and feature.

Los Osos loam, 5 to 9 percent slopes

The map unit composition is as follows: 85 percent Los Osos and similar soils, and 14 percent minor components. The setting includes convex, backslopes or summits of hills with residuum weathered from parent material of sandstone and shale.

Depth to a restrictive feature is 20 to 40 inches to paralithic bedrock. The natural drainage class is well drained. The runoff class is very high. The depth to the water table is more than 80 inches. There is no frequency of flooding or ponding. The available water storage in a soil profile is moderate or about 7.3 inches. Irrigated land capability classification is 3e. Non-irrigated land capability classification is 3e. The hydrologic soil group is D. Its ecological site character is a loamy claypan. The soil series unit is not inherently hydric.

The descriptions of the minor components (none of which are inherently hydric) are as follows: 2 percent Cibo clay, 2 percent Diablo clay, 2 percent Gazos clay loam, 2 percent Lodo, clay loam, 2 percent Millsap loam, 2 percent Rock outcrop, and 2 percent of an Unnamed unit (USDA 2019).

Diablo and Cibo clays, 9 to 15 percent slopes

The map unit composition is as follows: 45 percent Diablo and similar soils, 45 percent Cibo and similar soils, and 3 percent minor components. The setting includes convex backslopes and summits with residuum weathered from parent material of mudstone, sandstone and/or shale.

Depth to a restrictive feature is 45 to 58 inches to paralithic bedrock. The natural drainage class is well drained. The runoff class is very high. The depth to the water table is more than 80 inches. There is no frequency of flooding or ponding. The available water storage in a soil profile is moderate or about 6.2 inches. Irrigated land capability classification is 3e. Non-irrigated land capability classification is 3e. The hydrologic soil group is D. Its ecological site character is clayey. The soil series unit is not inherently hydric.

The description of the minor components is as follows: 3 percent Zaca clay. This component is also not a hydric soil (USDA 2019).

4.2.3 Vegetation Communities/Habitat

The Survey Area consists of four vegetation communities as classified by the Manual of California Vegetation (CNPS 2019): California annual and perennial grassland macrogroup, iris-leaf rush seep provisional herbaceous alliance, pale spike rush marsh herbaceous alliance, and cattail marsh herbaceous alliance (Figure 4). In the Survey Area, the upstream drainage community is dominated by pale spike rush. This community alliance is characterized by more than 70% relative cover of this species in the herbaceous layer. Continuing downstream, a clump of cattails (*Typha domingensis*) takes over. This community alliance is characterized by more than 50% relative cover of any cattail species. Farther downstream still, cattails begin to drop out and iris-leaf rushes (*Juncus xiphioides*) dictates the community. This alliance type is provisional and not fully characterized yet. All three of these communities are associated with landscape features that are flooded or wet for at least parts of the growing season, such as marshes, seeps, and streambeds. A few willow (*Salix lasiolepis*) saplings dot the stream channel, but not in high enough cover to characterize the communities. The surrounding California annual and perennial grassland is composed of upland grasses (that had no inflorescences at the time of survey), musky stork's bill (*Erodium moschatum*), English plantain (*Plantago lanceolata*), hillside false bindweed (*Calystegia subacaulis* ssp. *subacaulis*), soapplant (*Chlorogalum* spp.), bristly ox-tongue (*Helminthotheca echioides*), and California burclover (*Medicago polymorpha*).

Appendix D provides the lists of plants observed during field surveying, including scientific name, common name and the wetland indicator status.

4.2.4 Interstate or Foreign Commerce

There is not interstate or foreign commerce on Chorro Creek.

4.3 Aquatic Resources

4.3.1 Overview

The current National Wetlands Inventory (NWI) map and flood plain map for the area are provided in Figure 7 and 8 respectively.

Aquatic resources depicted on the Aquatic Resources Delineation Map (Appendix A) are as follows:

Table 1 Federal Aquatic Resources within the Delineated Area

Aquatic Resource Name (Jurisdiction)	Aquatic Resources Classification		Aquatic Resource Size (acre)	Aquatic Resource Size (linear feet)
	Cowardin	Location (lat/long)		
W1 (US)	PEM1E	35.344743, -120.698748	0.084	809
Total US Jurisdiction:			0.084	809

- **Wetland (W1):** Located to the west of Bravo Range, W1 is the only wetland in the project boundary. It is a shallow creek that transitions through three different vegetation compositions as it flows down through the Survey Area. In the Survey Area, the upstream section is composed of predominantly pale spike rush, followed by alternating cattail and iris-leaf rush dominated communities. One determination pit was dug within each vegetation community, and one more at the downstream end of the Survey Area (sampling points Wetland Determination (WD) 1-4). W1 occupies 0.084 acres within the Survey Area. Soil characteristics of wetlands plots (Table 2) at these sampling locations were saturated, with standing water 1.5 to 36 inches deep at or near the soil pit locations at the time of sampling. Soils at the locations exhibited a “Depleted Matrix” (color matrix of 10YR 4/2) and in one instance (WD 4) a hydrogen sulfide smell with a “Redox Dark Surface” (color matrix of 10YR 2/1 with 10% prominent redox features). It is believed that WD 1-3 did not exhibit redoximorphic features because they were overly saturated and wet. Unfortunately, alpha-Dipyridyl was not available to detect reduced iron in the soil. Soils at these pits are determined to be hydric soils, despite the lack of redox evidence, due to the depleted nature and overwhelming evidence of hydrology and hydric vegetation. Flowing water was observed in the creek at the time of survey. Due to the lack of development on the surrounding landscape, the quality of this feature is quite good. The only trash evidence was a piece of corrugate metal observed in the creek. Overall, the site appeared to be in good ecological condition.

Table 2 Soil Color for Sampling Points

Sampling Pit	Feature	Soil Texture	Soil Color
WD1	W1	Clay Loam	10YR 4/2 with 40% of secondary matrix color of 10YR 5/8
WD2	W1	Clay Loam	10YR 4/2 no visible redox features

UP2	Upland	Sandy Clay Loam	7YR 5/4 no visible redox features
WD3	W1	Clay Loam	10YR 4/2 no visible redox features
UP3	Upland	Sandy Clay Loam	7YR 5/4 no visible redox features
WD4	W1	Sandy Clay Loam	10YR 2/1 with 10% 10YR 4/6 redox features
UP4	Upland	Sandy Clay Loam	7YR 5/4 no visible redox features

5. References

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U.S. Department of Agriculture (USDA). 2019. Natural Resources Conservation Service Web Soil Survey Map Unit Description (Brief, Generated) for San Luis Obispo County, California. Retrieved from: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

Appendix A Aquatic Resource Delineation

Paper Size ANSI A

0 30 60 90 120

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

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Bravo Range Improvements

Aquatic Resources Report

Aquatic Resource Delineation

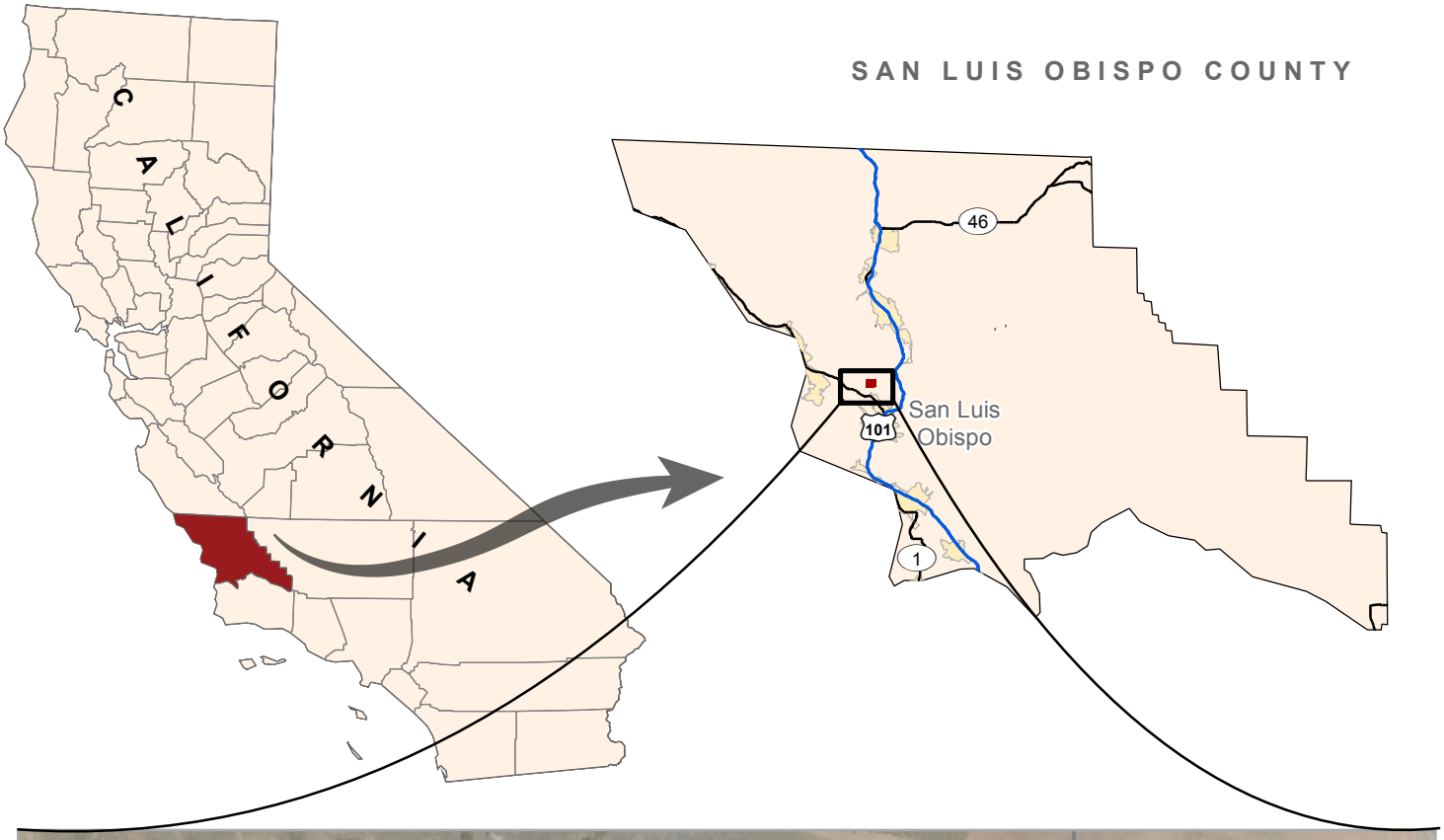
Project No. **11190751**
Revision No. **-**
Date **04/24/2019**

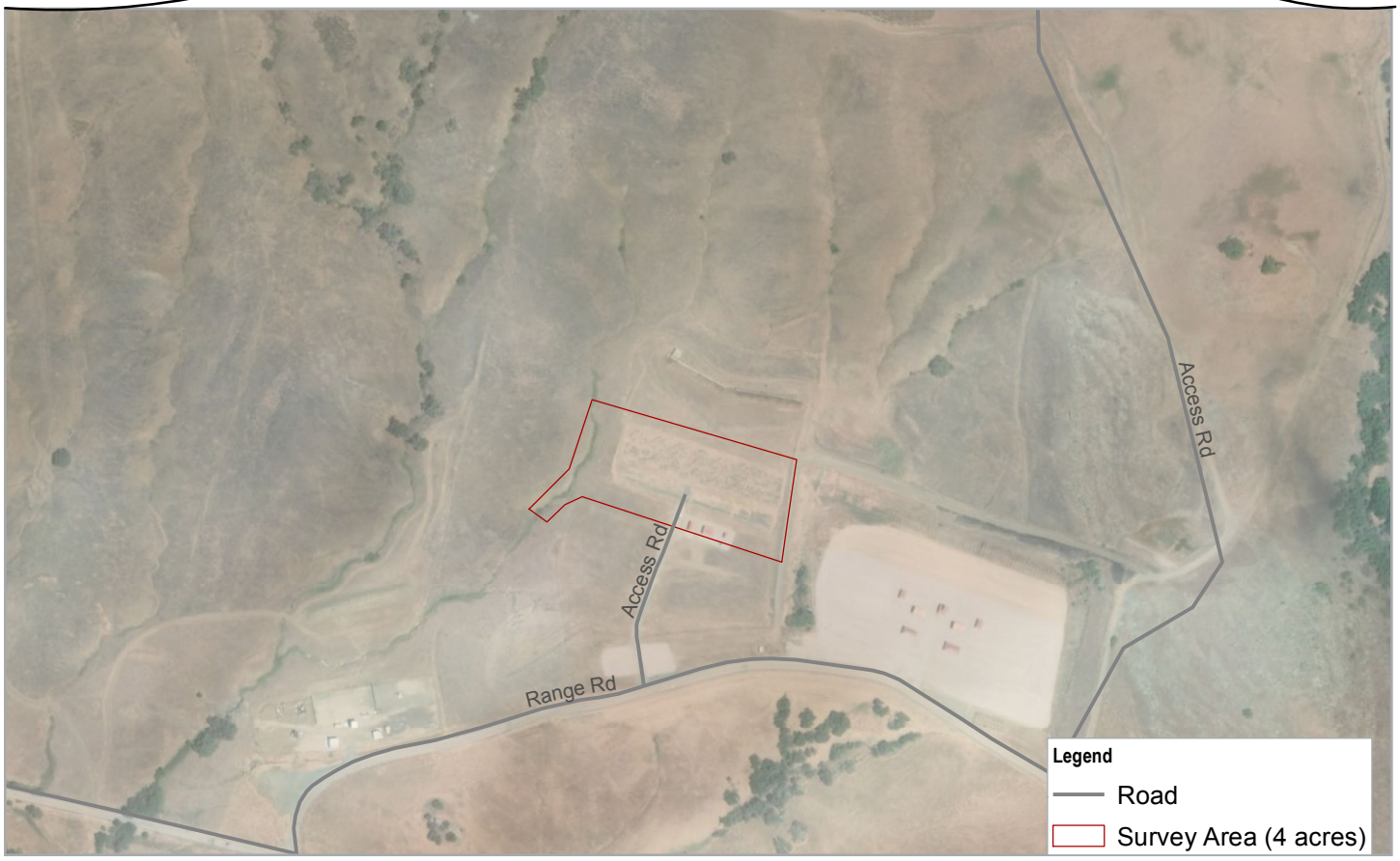
APPENDIX A

\\ghdnet\ghd\US\San Luis Obispo\Projects\561\11190751\GIS\Maps\Deliverables\Wetland Delineation\11190751_AA_AquaticResources.mxd
Print date: 24 Apr 2019 - 12:29

Data source: GHD field data, February 2018; . Created by: jcurtis

Appendix B Figures





Paper Size ANSI A

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Feet

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane Nevada Central FIPS 2702 Feet

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GHD

California Military Department

CMD Camp San Luis Obispo
Bravo Range Improvements

Project No. **11190751**
Revision No. **-**
Date **04/25/2019**

Project Location

FIGURE 1

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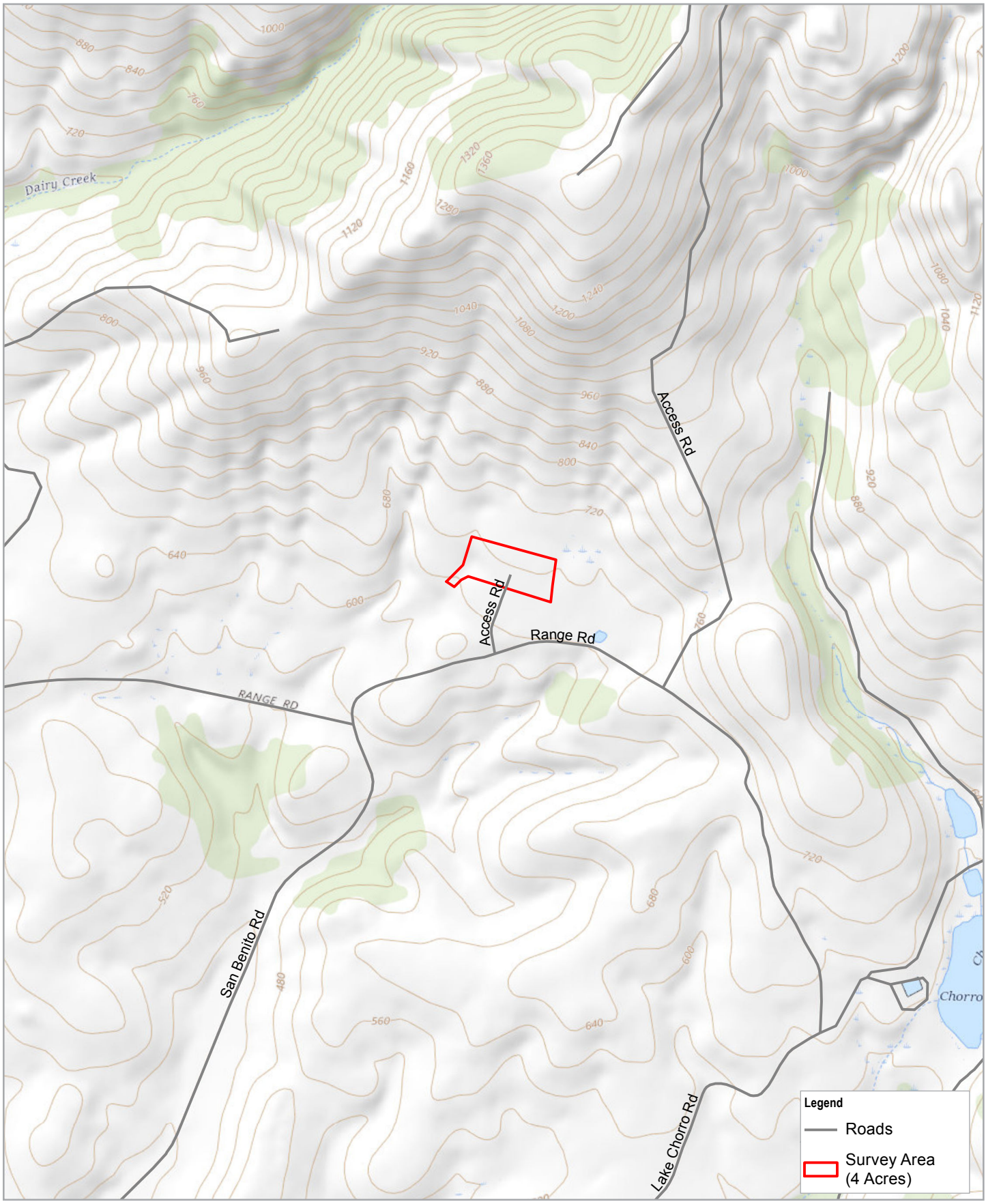

Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

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Bravo Range Improvements

Project No. **11190751**
Revision No. **-**
Date **03/08/2019**

USGS Topography

FIGURE 2

\\ghdnet\ghd\US\San Luis Obispo\Projects\561\11190751\GIS\Maps\Deliverables\Wetland Delineation\11190751_02_Topo.mxd
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Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

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Aerial Map

Project No. **11190751**
Revision No. **-**
Date **05/03/2019**

FIGURE 3

\\ghdnet\ghd\US\San Luis Obispo\Projects\561\11190751\GIS\Maps\Deliverables\Wetland Delineation\11190751_03_Aerial.mxd
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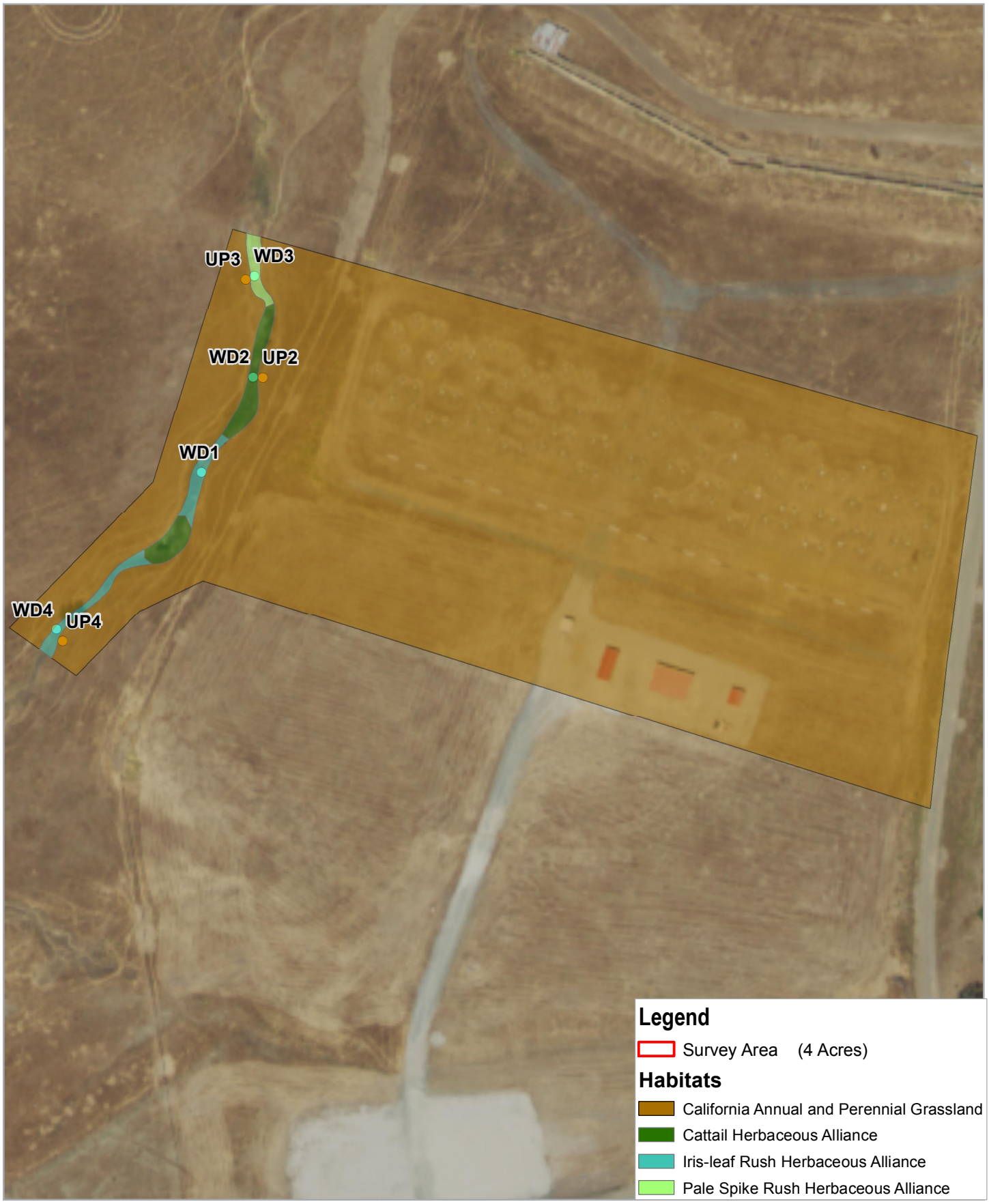

Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

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Habitat Map

Project No. **11190751**
Revision No. **-**
Date **04/24/2019**

FIGURE 4

\\ghdnet\ghd\US\San Luis Obispo\Projects\561\11190751\GIS\Maps\Deliverables\Wetland Delineation\11190751_04_HabitatMap_JTC.mxd
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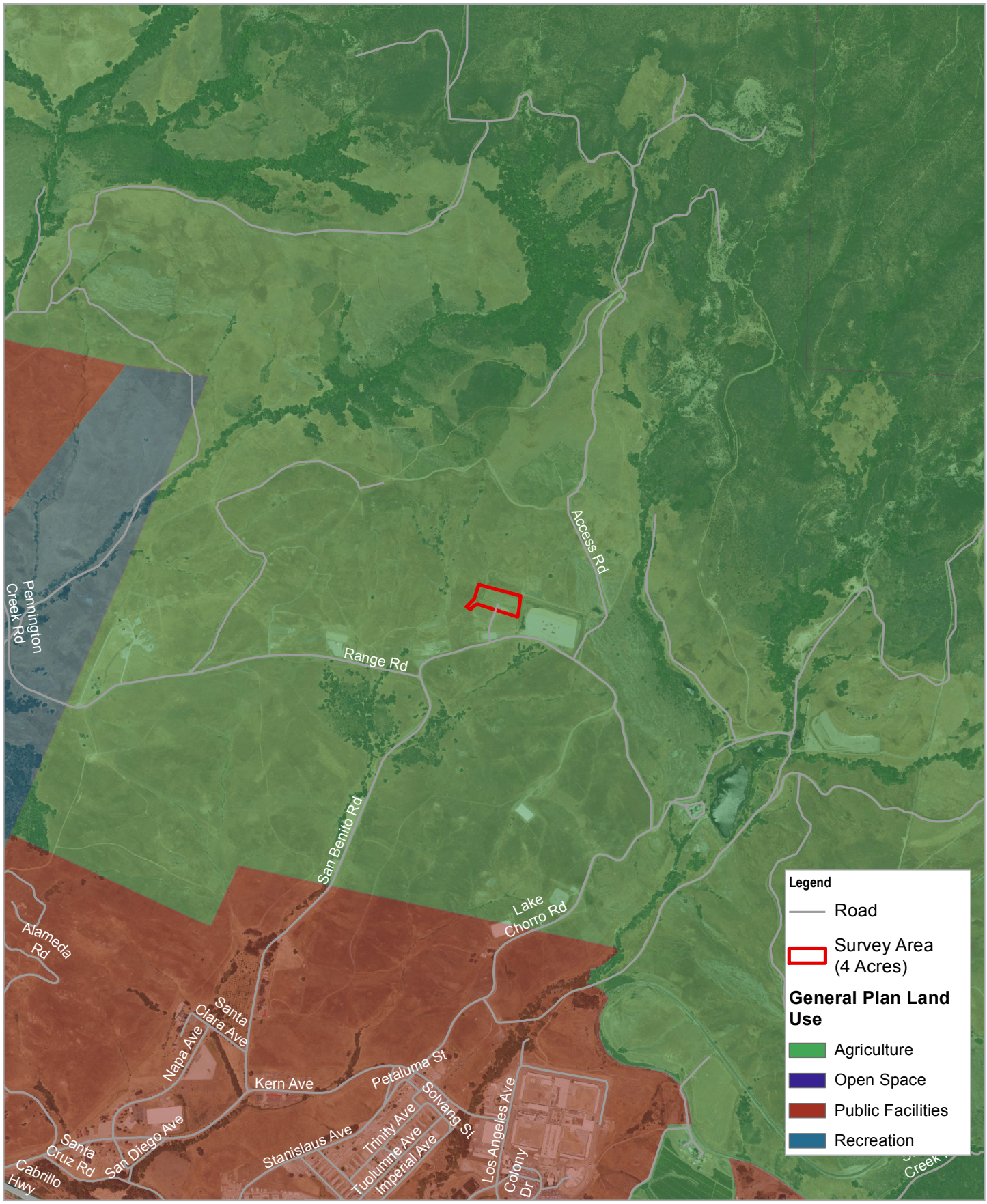

Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

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Land Use

Project No. **11190751**
Revision No. **-**
Date **04/24/2019**

FIGURE 5

\\ghdnet\ghd\US\San Luis Obispo\Projects\561\11190751\GIS\Maps\Deliverables\Wetland Delineation\11190751_05_LandUse.mxd
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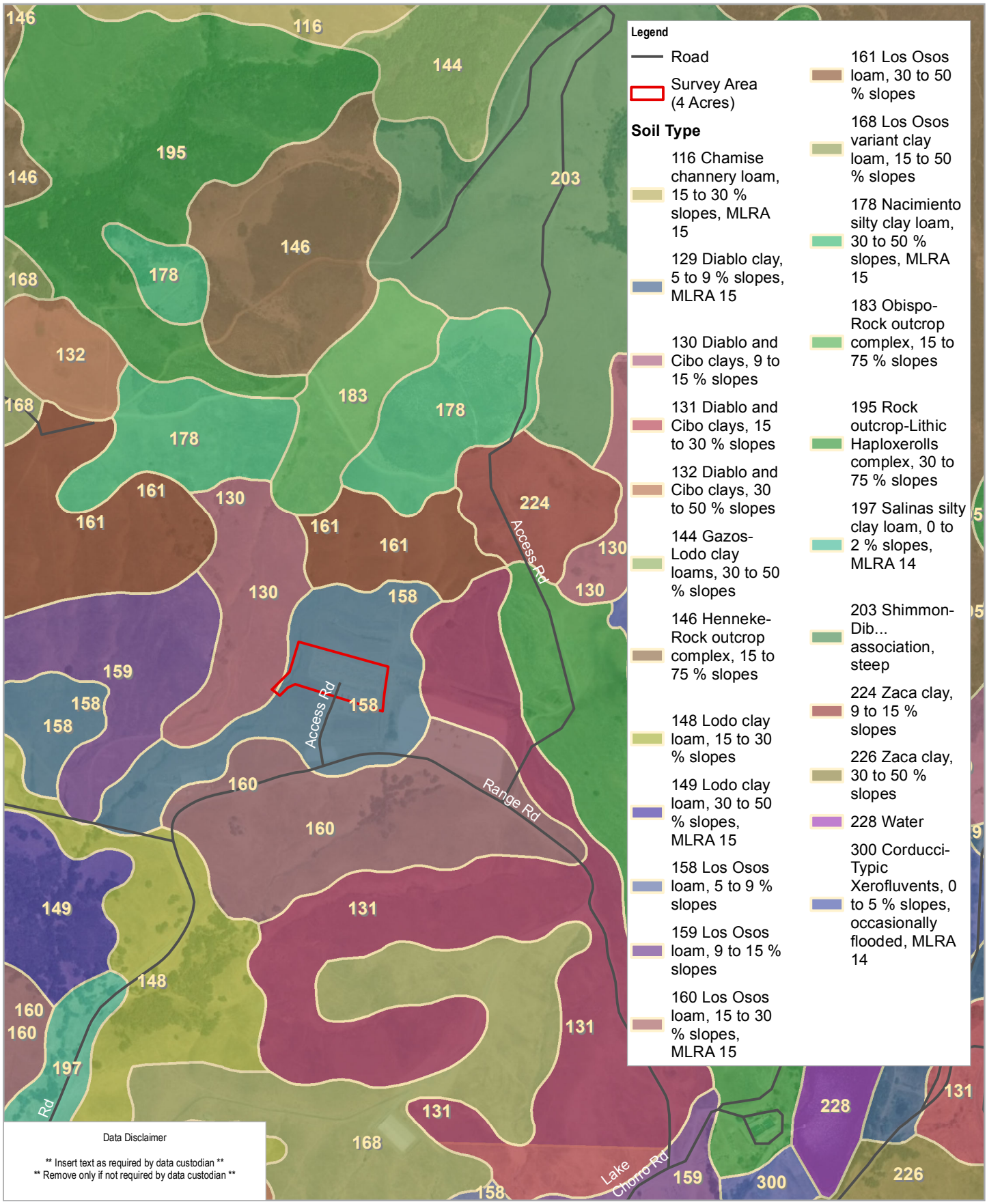

Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

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Project No. **11190751**
Revision No. **-**
Date **04/24/2019**

NCRCS Soils

FIGURE 6

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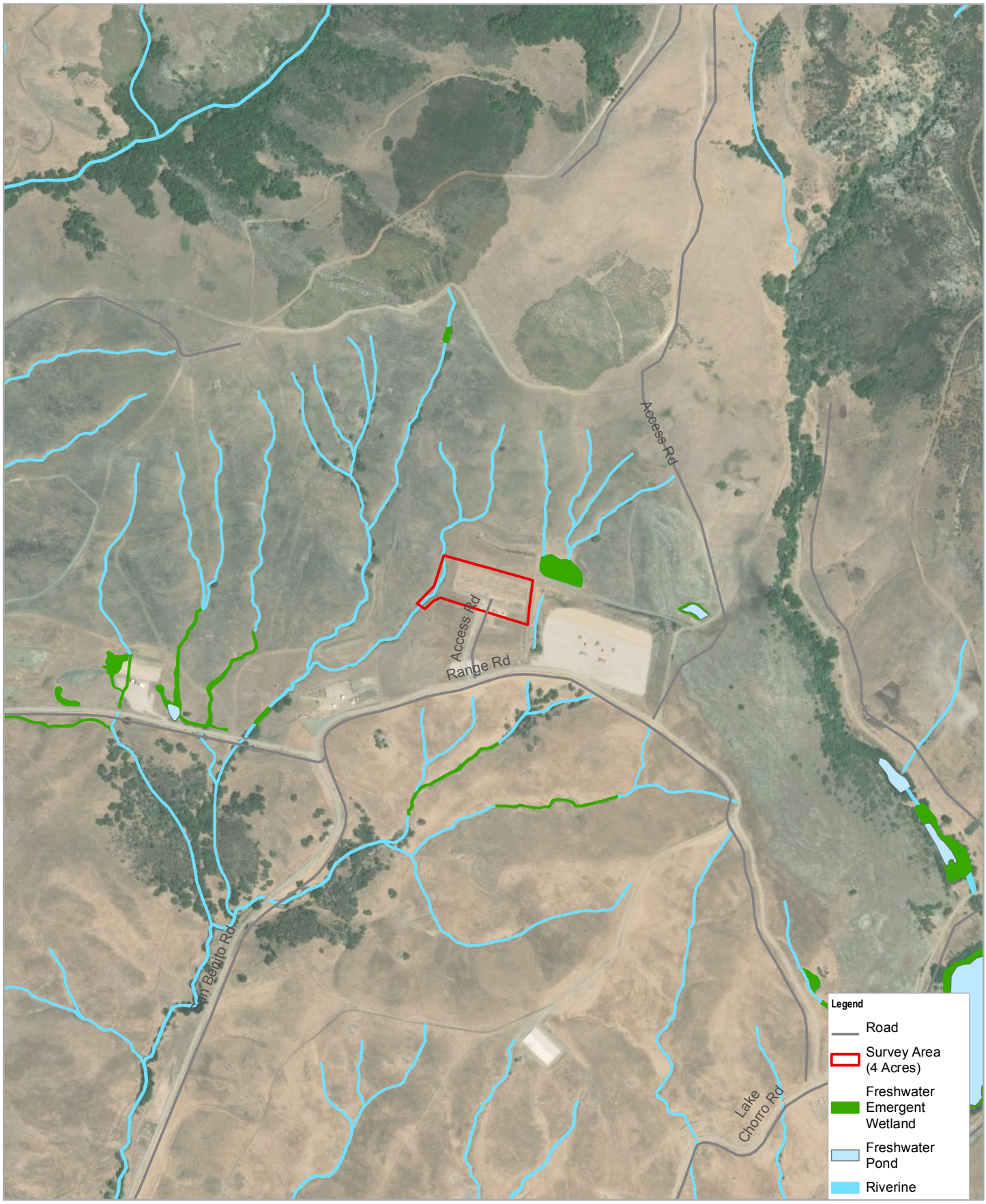
Data source: GHD 2019, United States Department of Agriculture Natural Resources Conservation Service Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: jcurtis



Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: NAD 1983 2011
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CMD Camp San Luis Obispo
Bravo Range Improvements

Project No. **11190751**
Revision No. **-**
Date **04/24/2019**

National Wetland Inventory

FIGURE 7

\\ghdnet\ghd\US\San Luis Obispo\Projects\561\11190751\GIS\Maps\Deliverables\Wetland Delineation\11190751_07_Wetland.mxd
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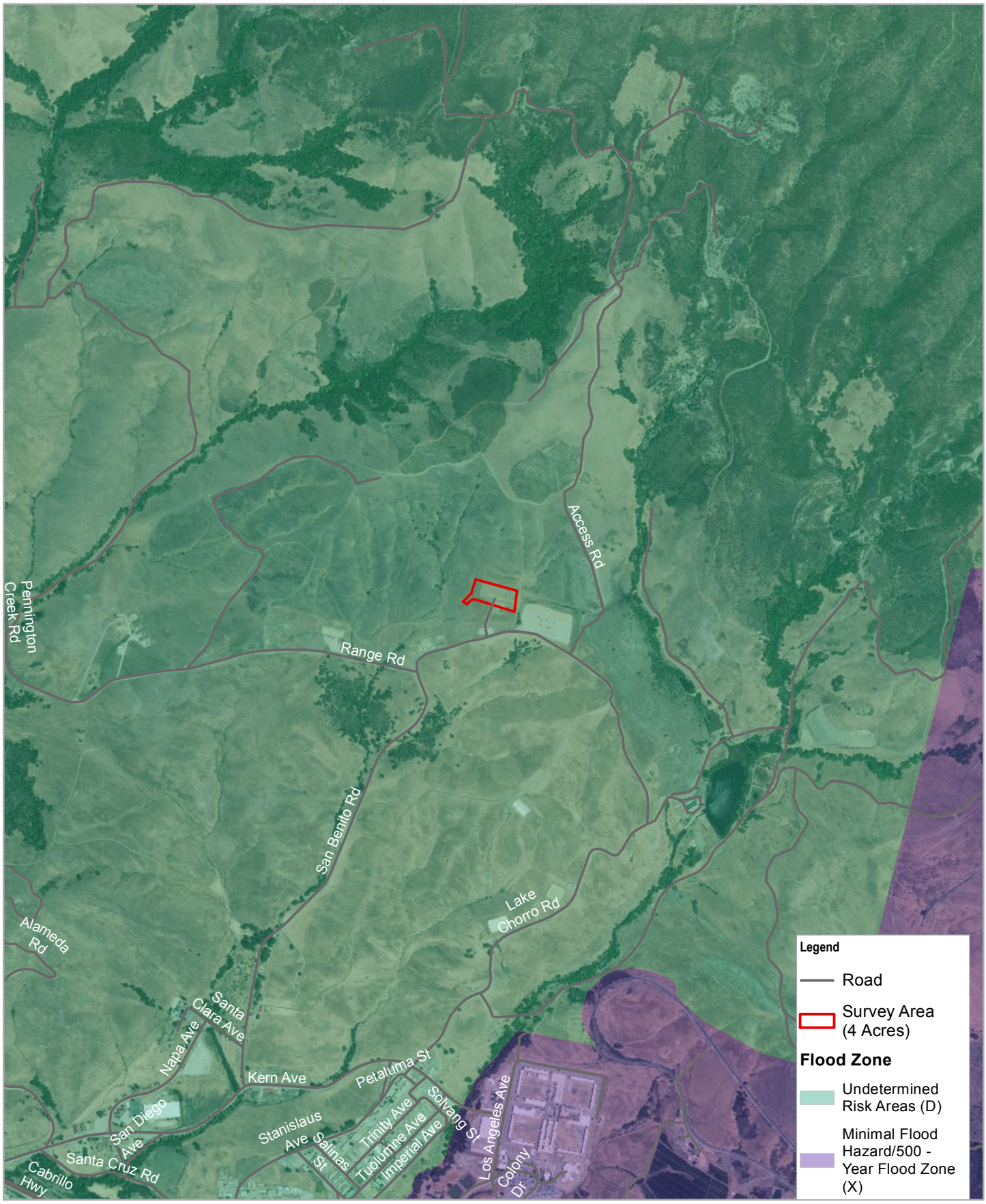

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

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California Military Department
CMD Camp San Luis Obispo
Bravo Range Improvements

Project No. **11190751**
Revision No. **-**
Date **04/24/2019**

Floodplain

FIGURE 8

\\ghdnet\ghd\US\San Luis Obispo\Projects\561\11190751\GIS\Maps\Deliverables\Wetland Delineation\11190751_08_Floodplain.mxd
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Data source: GHD 2019, United States Department of Agriculture Natural Resources Conservation Service Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: jcurtis

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Appendix C Site Photographs

Photo 1- View from north end of survey area; near third wetland and upland determination point facing north.

Photo 2- View near third wetland determination point facing south.

Appendix C: Site Photographs

Photo 3- View near third wetland determination point facing east.

Photo 4- View near third wetland determination point facing east and down at pale spike rush (*Eleocharis macrostachya*) community.

Appendix C: Site Photographs

Photo 5- View near third wetland determination point facing northeast and down at pale spike rush (*Eleocharis macrostachya*) community.

Photo 6- Farther downstream; near second wetland determination point view facing southwest.

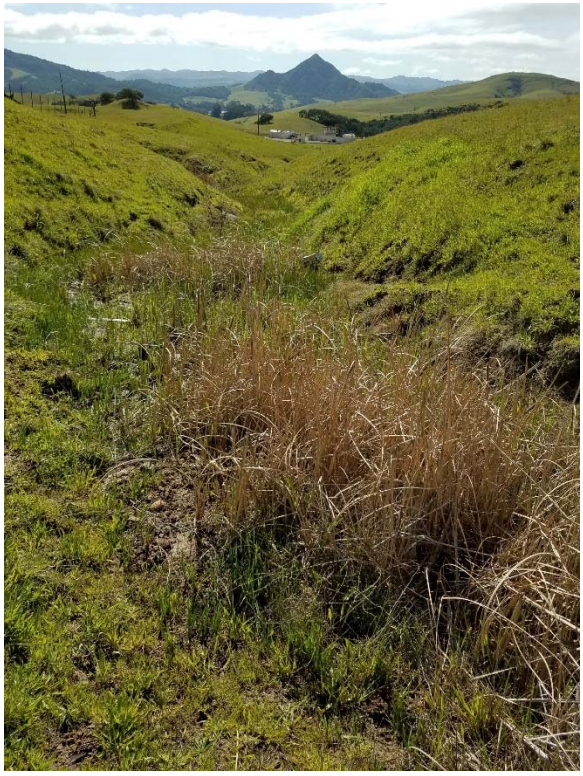

Photo 7- View near second wetland determination point facing south.

Photo 8- View near second wetland determination point facing north.

Photo 9- View near second wetland determination point facing west.

Photo 10- View near second wetland determination point facing west.

Photo 11- View near second wetland determination point facing west.

Photo 12- View near second upland determination point facing south.

Photo 13- View near second upland determination point facing north.

Photo 14- View near second upland determination point facing northeast.

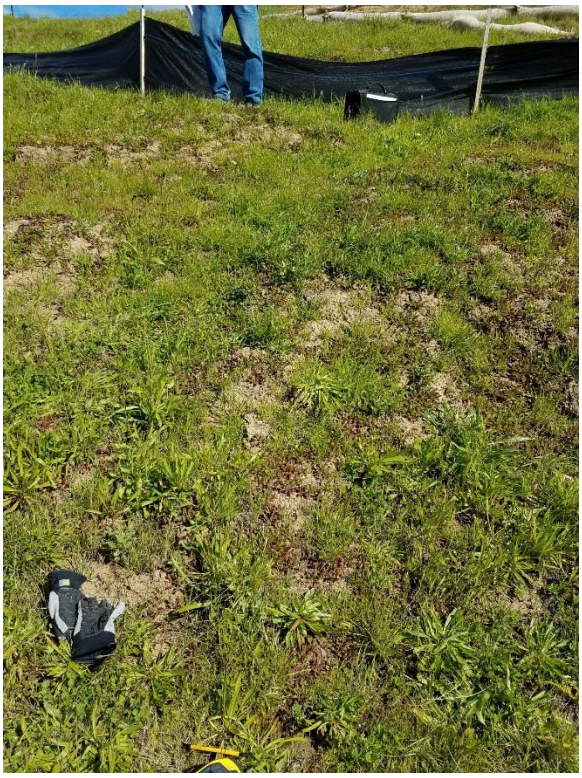

Photo 15- View near second upland determination point facing east.

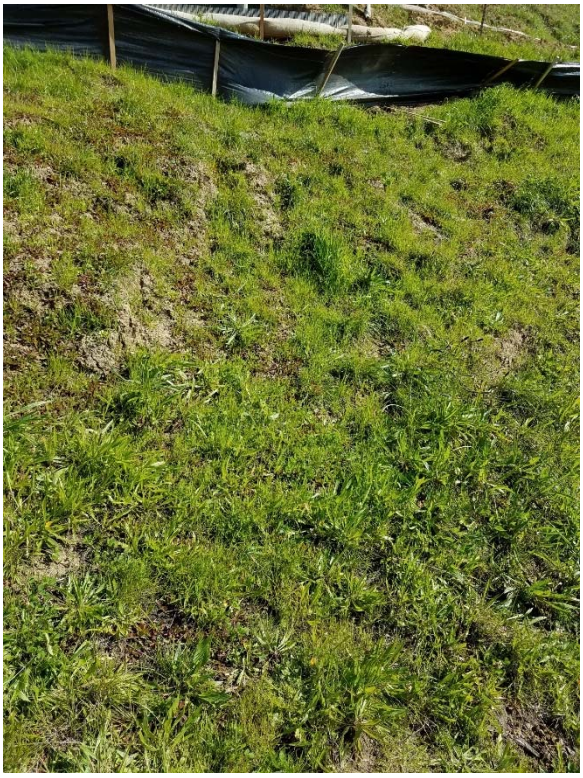

Photo 16- View near second upland determination point facing southeast.

Photo 17- Farther south, view near first wetland determination point facing north.

Photo 18- View near first wetland determination point facing south.

Photo 19- View near first wetland determination point facing west.

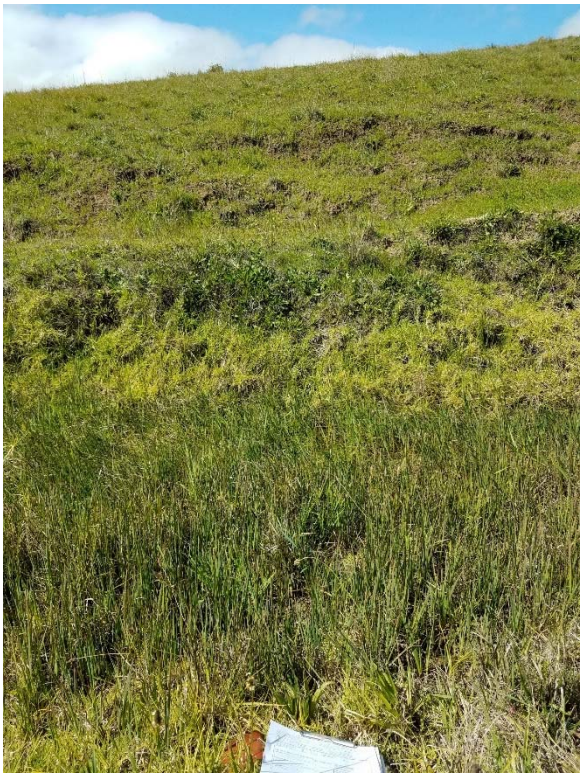

Photo 20- View near first wetland determination point facing west.

Photo 21- View near first wetland determination point facing northwest.

Photo 22- View near first wetland determination point facing northwest. Closer view of water and willow (*Salix lasiolepis).*

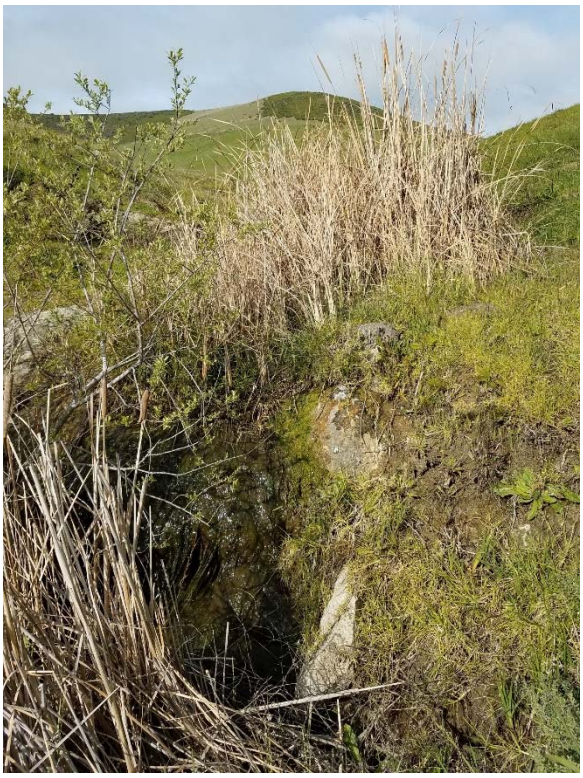

Photo 23- View facing north; looking at cattail patch between wetland determination point one and four.

Photo 24- View facing north; looking at cattail patch between wetland determination point one and four.

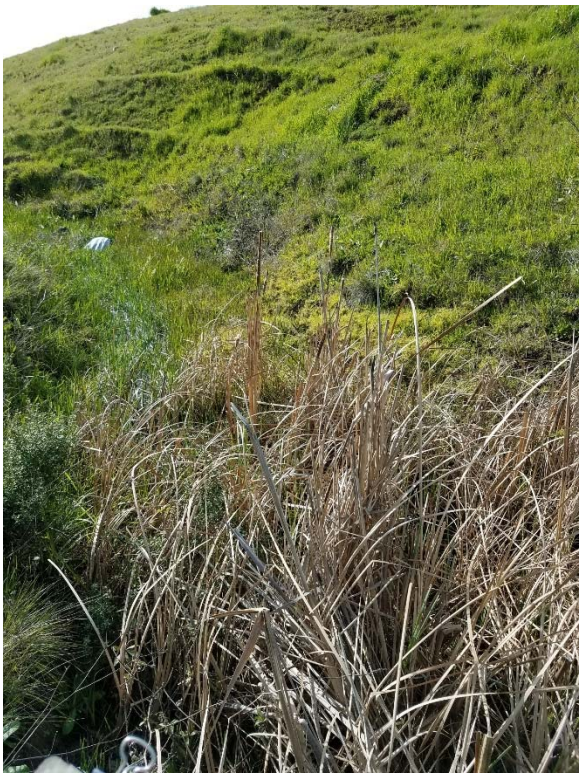

Photo 25- View facing southwest; looking at cattail patch between wetland determination point one and four.

Photo 26- View facing west; looking at cattail patch between wetland determination point one and four.

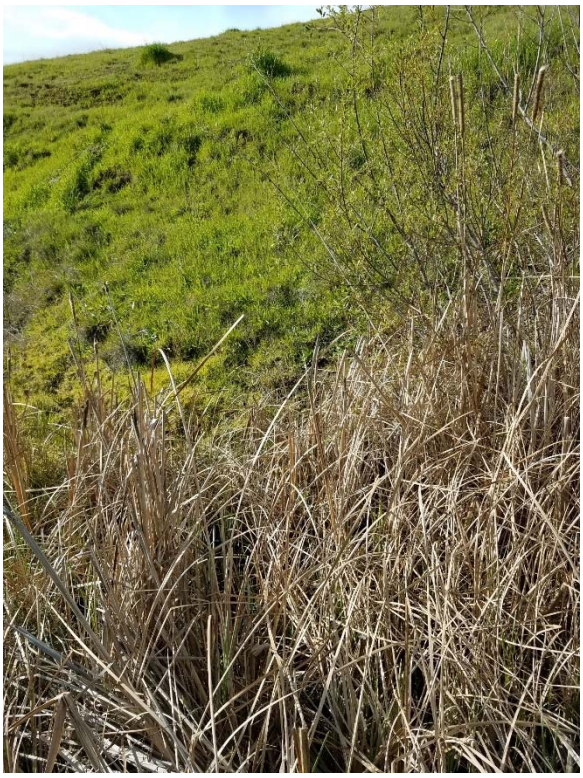

Photo 27- View facing west; looking at cattail patch between wetland determination point one and four.

Photo 28- View facing east; looking at upland slope between wetland determination point one and four.

Photo 29- View facing east; looking at upland slope between wetland determination point one and four.

Photo 30- View near fourth wetland determination point facing northeast at willow and deeper pool.

Appendix C: Site Photographs

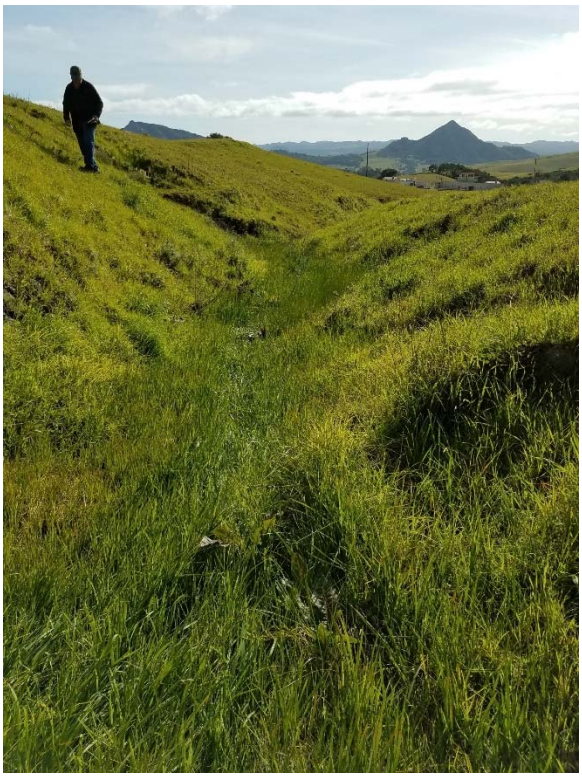

Photo 31- View near fourth wetland determination point facing southwest.

Photo 32- View near fourth wetland determination point facing northeast towards willow and deeper pool.

Photo 33- View near fourth wetland determination point facing northwest, close-up of deeper pool.

Photo 34- View near fourth upland determination point facing east at slope of drainage.

Photo 35- View near fourth upland determination point facing northeast at slope of drainage.

Photo 36- View near fourth upland determination point facing south at slope of drainage.

Photo 37- View facing east; looking at upland slope of drainage farther to the south of wetland determination point four.

Photo 38- View facing east; looking at upland slope of drainage farther to the south of wetland determination point four.

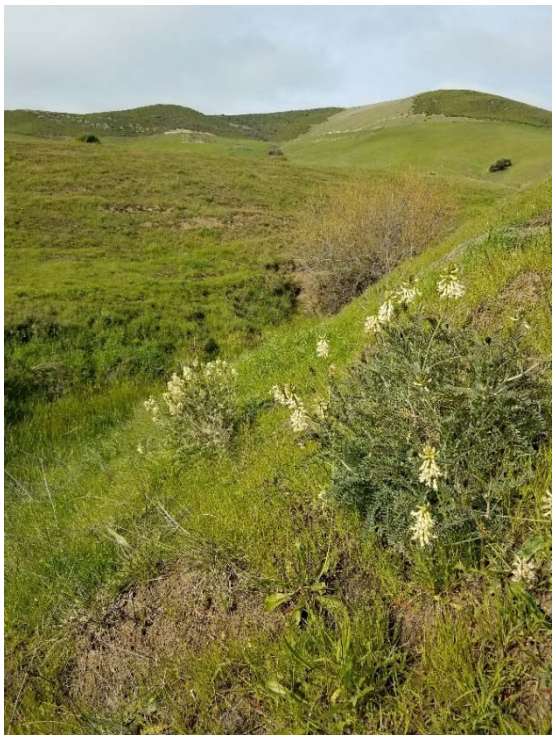

Photo 39- View facing north; looking at upland slope of drainage farther to the south of wetland determination point four. View of willow near wetland determination point four in the mid-ground.

Photo 40- View facing north; looking at wetland with in the Survey Area to the west of Bravo Range on September 26, 2018.

Photo 41- Aerial Imagery as see from Google Earth in August 2013

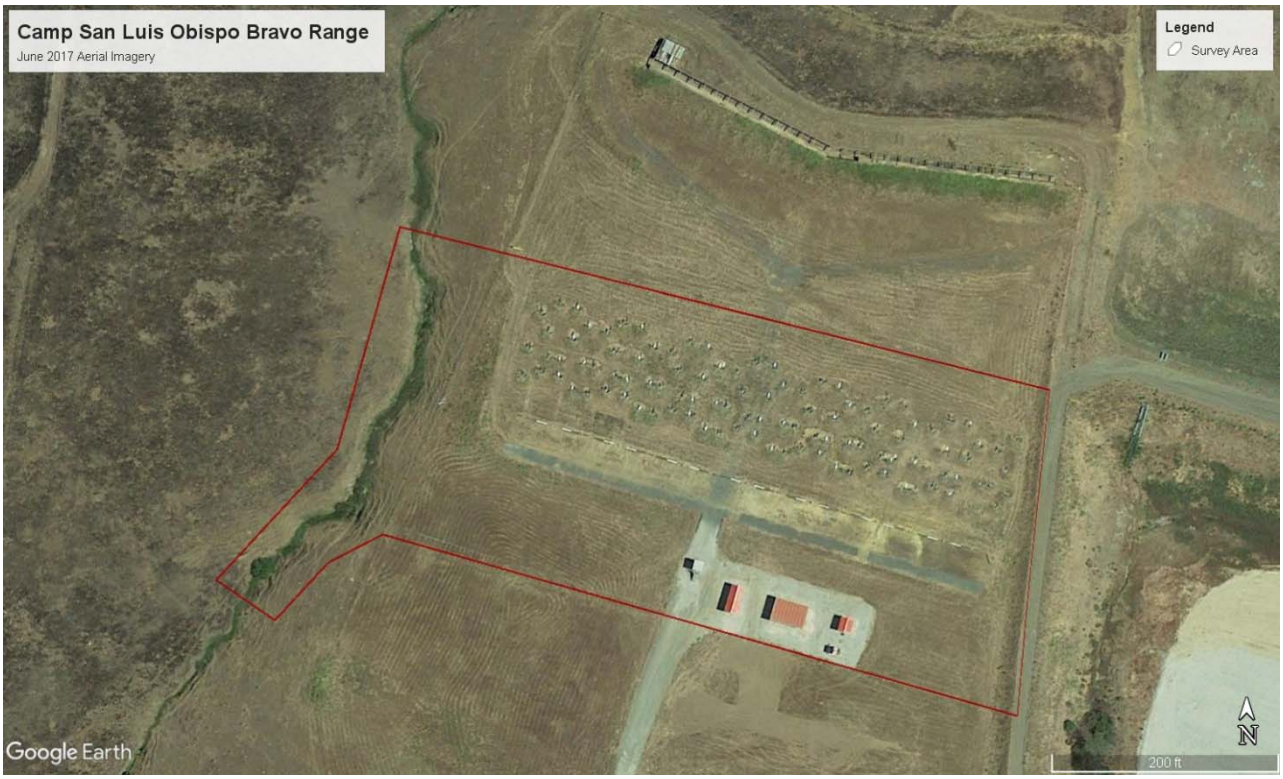

Photo 42- Aerial Imagery as see from Google Earth in June 2017

Appendix D Plant List

Scientific Name	Common Name	Indicator Status
Brassica nigra	black mustard	UPL
Calystegia subacaulis ssp. *subacaulis*	hillside false bindweed	UPL
Chlorogalum spp.	soapplant	UPL
Cynodon dactylon	Bermuda grass	FACU
Cyperus eragrostis	tall flat sedge	FACW
Cyperus niger	black flat sedge	FACW
Eleocharis macrostachya	pale spikerush	OBL
Erodium botrys	long-beak stork's-bill	FACU
Erodium moschatum	musky stork's bill	UPL
Geranium dissectum	cutleaf geranium	UPL
Grasses (Not In Flower (NIF)		
Helminthotheca echioides	bristly ox-tongue	FAC
Hypochaeris glabra	smooth cat's ear	UPL
Juncus xiphioides	iris-leaf rush	OBL
Lythrum hyssopifolium	hyssop loosestrife	OBL
Medicago polymorpha	California burclover	FACU
Nasturtium officinale	watercress	OBL
Perennial bunch grass (NIF)		
Plantago lanceolata	English plantain	FAC
Plantago subnuda	tall coastal plantain	FACW
Polypogon monspeliensis	annual rabbit's-foot grass	FACW
Rumex crispus	curly dock	FAC
Salix lasiolepis	arroyo willow	FACW
Symphoricarpos mollis	creeping snowberry	FACU
Toxicodendron diversilobum	Pacific poison-oak	FACU
Trifolium fragiferum	strawberry-head clover	FAC
Typha domingensis	southern cat-tail	OBL
Vicia villosa ssp. *villosa*	winter vetch	UPL

Appendix E Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Bravo Range Improvements Project City/County: San Luis Obispo, San Luis Obispo Sampling Date: 2/25/2019

Applicant/Owner: U.S. Army Camp San Luis Obispo State: CA Sampling Point: WD 1

Investigator(s): Joslyn Curtis Section, Township, Range: M 30S 12E 4

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): LRR C Lat: 35.344741496 -120.698723708 Datum: WGS84

Soil Map Unit Name: Diablo and Cibo clays, 9 to 15 percent slopes NWI classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ✓ No ____	**within a Wetland?** **Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks: 1.3 inches of rain fell in the last two weeks and most of it 10 days ago. A dry season water table is suspected here due to green vegetation visible during the dry season on both aerial imagery from August 2013 and June 2017, and in a project photo taken in September 2018.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 7 x 7)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	1		FACW
2.			
3.			
4.			
	1 = Total Cover		
Sapling/Shrub Stratum (Plot size: NONE)			
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 7 x 7)			
1. *Juncus xiphioides*	75	Y	OBL
2. *Polypogon monspeliensis*	2		FACW
3. *Cyperus niger*	1		FACW
4. *Nasturtium officinale*	1		OBL
5. *Lythrum hyssopifolium*	1		OBL
6. *Cynodon dactylon*	2		FACU
7. *Plantago subnuda*	1		FACW
8. *Typha (domingensis)*	1		OBL
	85 = Total Cover		
Woody Vine Stratum (Plot size: NONE)			
1. NONE			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = NA

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

NA Prevalence Index is ≤3.0[1]

NA Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

NA Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✓ No ____**

Remarks:

Water Present with algae just upstream. Vegetation is green, but not quite at peak flowering phenology. P. monspeliensis and Plantago only species flowering Typha is small and young; just establishing. Cynodon on banks and interspersing within Juncus. One small willow on northwest edge of creek in this area.

SOIL

Sampling Point: WD 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1- 4	10YR 4/2 &10YR 5/8	60% & 40% respectively					Clay Loam	Almost too wet to assess texture

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

Soil was almost too wet to assess texture. Could not be dug deep because of high water table and soil was washing away during extraction. Redoximorphic features were not observed at the time of sampling. It is believed that the sample was too wet and alpha-alpha-Dipyridyl was not available to detect reduced iron in the soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ✓ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): some spots 1.25

Water Table Present? Yes ✓ No ___ Depth (inches): in pit 3.5

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): in pit 2.5

Wetland Hydrology Present? Yes ✓ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: A dry season water table is suspected due to green vegetation visible during the dry season on both aerial imagery from August 2013 and June 2017, and in a project photo taken in September 2018. Rainfall data from NOAA San Luis Obispo Poly, CA US Weather Station ID: GHCND:USC00047851.

Remarks:

1.3 inches of rain fell in the last two weeks and most of it 10 days ago.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Bravo Range Improvements Project City/County: San Luis Obispo, San Luis Obispo Sampling Date: 2/25/2019

Applicant/Owner: U.S. Army Camp San Luis Obispo State: CA Sampling Point: WD 2

Investigator(s): Joslyn Curtis Section, Township, Range: M 30S 12E 4

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 9

Subregion (LRR): LRR C Lat: 35.344944 Long: -120.698599 Datum: WGS84

Soil Map Unit Name: Diablo and Cibo clays, 9 to 15 percent slopes NWI classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No	**Is the Sampled Area**
Hydric Soil Present?	Yes ✓ No	**within a Wetland?** **Yes ✓ No**
Wetland Hydrology Present?	Yes ✓ No	

Remarks: 1.3 inches of rain fell in the last two weeks and most of it 10 days ago. A dry season water table is suspected here due to green vegetation visible during the dry season on both aerial imagery from August 2013 and June 2017, and in a project photo taken in September 2018.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20 x 7)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	1		FACW
2.			
3.			
4.			
	1 = Total Cover		
Sapling/Shrub Stratum (Plot size: NONE)			
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 7 x 7)			
1. *Typha (domingensis) (Not In Flower (NIF))*	60	Y	OBL
2. *Nasturtium officinale*	20	Y	OBL
3. *Cyperus niger*	1		FACW
4. *Rumex (crispus) (NIF)*	<1		FAC
5. *Polypogon monspeliensis*	1		FACW
6. *Cynodon dactylon*	1		FACU
7. *Plantago lanceolata*	1		FAC
8. *Lythrum hyssopifolium*	1		OBL
	85 = Total Cover		
Woody Vine Stratum (Plot size: NONE)			
1. NONE			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = NA

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

NA Prevalence Index is ≤3.0[1]

NA Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

NA Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✓ No**

Remarks:

Salix not leafing out yet. Typha only remnant inflorescences remain. Phenology is too early for the majority of species.

SOIL

Sampling Point: WD 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1- 2	10YR 4/2	100%					Clay Loam	Almost too wet to assess texture

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Too wet to dig deep. Sample was being washed away by water. Soil was almost too wet to assess texture. Redoximorphic features were not observed at the time of sampling. It is believed that the sample was too wet and alpha-alpha-Dipyridyl was not available to detect reduced iron in the soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ✓ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): some spots 1.5

Water Table Present? Yes ✓ No ___ Depth (inches): in pit 3.5

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): in pit 2.5

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: A dry season water table is suspected due to green vegetation visible during the dry season on both aerial imagery from August 2013 and June 2017, and in a project photo taken in September 2018. Rainfall data from NOAA San Luis Obispo Poly, CA US Weather Station ID: GHCND:USC00047851.

Remarks:

1.3 inches of rain fell in the last two weeks and most of it 10 days ago. Water is flowing down this drainage off of the hill and there are several places water is seeping out of the rocks, substrate and surround soil indicating ground water contribution as well.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Bravo Range Improvements Project City/County: San Luis Obispo, San Luis Obispo Sampling Date: 2/25/2019

Applicant/Owner: U.S. Army Camp San Luis Obispo State: CA Sampling Point: UP 2

Investigator(s): Joslyn Curtis Section, Township, Range: M 30S 12E 4

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Slope Slope (%): 100% (45 degrees)

Subregion (LRR): LRR C Lat: 35.344944 Long: -120.698574 Datum: WGS84

Soil Map Unit Name: Diablo and Cibo clays, 9 to 15 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ____ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: NONE)	Absolute % Cover	Dominant Species?	Indicator Status
1. NONE			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: NONE)			
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 7 x 7)			
1. *Erodium moschatum*	10	Y	UPL
2. *Calystegia subacaulis* ssp. *subacaulis*	5		UPL
3. *Medicago polymorpha*	10	Y	FACU
4. *Plantago lanceolata*	10	Y	FAC
5. *Erodium botrys*	1		FACU
6. Grasses (Not In Flower (NIF) (*Vulpia bromoides*)	5		NI
7. Perennial bunch grass (NIF)	5		NI
8. *Cynodon dactylon*	5		FACU
	51 = Total Cover		
Woody Vine Stratum (Plot size: NONE)			
1. NONE			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	16	x 4 =	64
UPL species	15	x 5 =	75
Column Totals:	41 (A)		169 (B)

Prevalence Index = B/A = 4.12

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Phenology is early; many not blooming. Only *Plantago* and *Cynodon* flowering.

SOIL

Sampling Point: UP 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1- 6	7YR 5/4	100%					Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

unless disturbed or problematic.

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes_____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes_____ No ✓ Depth (inches): _____

Water Table Present? Yes_____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes_____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes_____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Bravo Range Improvements Project City/County: San Luis Obispo, San Luis Obispo Sampling Date: 2/25/2019

Applicant/Owner: U.S. Army Camp San Luis Obispo State: CA Sampling Point: WD 3

Investigator(s): Joslyn Curtis Section, Township, Range: M 30S 12E 4

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 9

Subregion (LRR): LRR C Lat: 35.345156 Long: -120.698603 Datum: WGS84

Soil Map Unit Name: Diablo and Cibo clays, 9 to 15 percent slopes NWI classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area**
Hydric Soil Present?	Yes ✓ No _____	**within a Wetland?** **Yes ✓ No _____**
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks: 1.3 inches of rain fell in the last two weeks and most of it 10 days ago. A dry season water table is suspected here due to green vegetation visible during the dry season on both aerial imagery from August 2013 and June 2017, and in a project photo taken in September 2018.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: NONE)	Absolute % Cover	Dominant Species?	Indicator Status
1. NONE			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: NONE)			
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 7 x 7)			
1. *Eleocharis macrostachya*	75	Y	OBL
2. *Typha (domingensis)* (Not In Flower (NIF))	5		OBL
3. *Helminthotheca echioides*	2		FAC
4. *Plantago lanceolata*	3		FAC
5. *Cyperus eragrostis*	1		FACW
6. *Juncus xiphioides*	5		OBL
7. *Trifolium (fragiferum)* (NIF)	5		FAC
8.			
	96 = Total Cover		
Woody Vine Stratum (Plot size: NONE)			
1. NONE			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = NA

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

NA Prevalence Index is ≤3.0[1]

NA Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

NA Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✓ No _____**

Remarks:

Typha is not blooming and phenology is too early for the majority of species.

SOIL

Sampling Point: WD 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1- 2	10YR 4/2	100%					Clay Loam	Almost too wet to assess texture

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

Too wet to dig deep. Sample was being washed away by water. Soil was almost too wet to assess texture. Redoximorphic features were not observed at the time of sampling. It is believed that the sample was too wet and alpha-alpha-Dipyridyl was not available to detect reduced iron in the soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ✓ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): some spots 1.5

Water Table Present? Yes ✓ No ___ Depth (inches): in pit 3.5

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): in pit 2.5

Wetland Hydrology Present? Yes ✓ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: A dry season water table is suspected due to green vegetation visible during the dry season on both aerial imagery from August 2013 and June 2017, and in a project photo taken in September 2018. Rainfall data from NOAA San Luis Obispo Poly, CA US Weather Station ID: GHCND:USC00047851.

Remarks:

1.3 inches of rain fell in the last two weeks and most of it 10 days ago. Water is flowing down this drainage off of the hill and there are several places water is seeping out of the rocks, substrate and surround soil indicating ground water contribution as well.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Bravo Range Improvements Project City/County: San Luis Obispo, San Luis Obispo Sampling Date: 2/25/2019

Applicant/Owner: U.S. Army Camp San Luis Obispo State: CA Sampling Point: UP 3

Investigator(s): Joslyn Curtis Section, Township, Range: M 30S 12E 4

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): 100% (45 degrees)

Subregion (LRR): LRR C Lat: 35.345149 Long: -120.698624 Datum: WGS84

Soil Map Unit Name: Diablo and Cibo clays, 9 to 15 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓	**Is the Sampled Area**
Hydric Soil Present?	Yes ____ No ✓	**within a Wetland?** **Yes** ____ **No** ✓
Wetland Hydrology Present?	Yes ____ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: NONE)	Absolute % Cover	Dominant Species?	Indicator Status
1. NONE			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: NONE)			
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 7 x 7)			
1. *Medicago polymorpha*	25	Y	FACU
2. *Helminthotheca echioides*	5		FAC
3. *Plantago lanceolata*	5		FAC
4. *Chlorogalum* (Not In Flower (NIF))	1		UPL
5. *Brassica nigra*	1		UPL
6. *Erodium moschatum*	15	Y	UPL
7. *Cynodon dactylon*	15	Y	FACU
8. *Centaurea calcitrapa*	1		UPL
	cont… = Total Cover		
Woody Vine Stratum (Plot size: 7 x 7 (cont. of herbs))			
1. *Calystegia subacaulis ssp. subacaulis*	5		UPL
2.			
	73 = Total Cover		

% Bare Ground in Herb Stratum 28 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	40	x 4 =	160
UPL species	23	x 5 =	115
Column Totals:	73 (A)		305 (B)

Prevalence Index = B/A = 4.17

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** ✓

Remarks:

Nothing but *Plantago* in flower.

SOIL

Sampling Point: UP 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1- 6	7YR 5/4	100%					Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

unless disturbed or problematic.

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes_____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes_____ No ✓ Depth (inches): _____

Water Table Present? Yes_____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes_____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes_____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Bravo Range Improvements Project City/County: San Luis Obispo, San Luis Obispo Sampling Date: 2/25/2019

Applicant/Owner: U.S. Army Camp San Luis Obispo State: CA Sampling Point: WD 4

Investigator(s): Joslyn Curtis Section, Township, Range: M 30S 12E 4

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): LRR C Lat: 35.344404 Long: -120.699084 Datum: WGS84

Soil Map Unit Name: Diablo and Cibo clays, 9 to 15 percent slopes NWI classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area**
Hydric Soil Present?	Yes ✓ No _____	**within a Wetland?** **Yes ✓ No _____**
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks: 1.3 inches of rain fell in the last two weeks and most of it 10 days ago. A dry season water table is suspected here due to green vegetation visible during the dry season on both aerial imagery from August 2013 and June 2017, and in a project photo taken in September 2018.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 x 7)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	5	Y	FACW
2.			
3.			
4.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: NONE)			
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 7 x 7)			
1. *Juncus xiphioides*	50	Y	OBL
2. *Eleocharis macrostachya*	10		OBL
3. *Rumex (crispus)* (Not In Flower (NIF))	10		FAC
4. *Nasturtium officinale*	5		OBL
5. *Cynodon dactylon*	5		FACU
6. *Typha (domingensis)* (NIF)	5		OBL
7. *Lythrum hyssopifolium*	5		OBL
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: NONE)			
1. NONE			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = NA

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

NA Prevalence Index is ≤3.0[1]

NA Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

NA Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✓ No _____**

Remarks:

Phenology is early; nothing is flowering. Salix is just leafing out.

SOIL

Sampling Point: WD 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1- 6	10YR 2/1	90%	10YR 4/6	10%	C	M	Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

Sulfur smell when soil pit dug.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ✓ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 36inches

Water Table Present? Yes ✓ No ___ Depth (inches): 3 inch

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 2 inches

Wetland Hydrology Present? Yes ✓ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: A dry season water table is suspected due to green vegetation visible during the dry season on both aerial imagery from August 2013 and June 2017, and in a project photo taken in September 2018. Rainfall data from NOAA San Luis Obispo Poly, CA US Weather Station ID: GHCND:USC00047851.

Remarks:

Deep 3ft pool just upstream about one foot away. 1.3 inches of rain fell in the last two weeks and most of it 10 days ago.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Bravo Range Improvements Project City/County: San Luis Obispo Sampling Date: 2/25/2019

Applicant/Owner: U.S. Army Camp San Luis Obispo State: CA Sampling Point: UP 4

Investigator(s): Joslyn Curtis Section, Township, Range: M 30S 12E 4

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): 100% (45 degrees)

Subregion (LRR): LRR C Lat: 35.344380 Long: -120.699067 Datum: WGS84

Soil Map Unit Name: Diablo and Cibo clays, 9 to 15 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No ✓	**Is the Sampled Area**
Hydric Soil Present?	Yes ___ No ✓	**within a Wetland?** **Yes** ___ **No** ✓
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: NONE)	Absolute % Cover	Dominant Species?	Indicator Status
1. NONE			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10 x 7)			
1. *Symphoricarpos mollis*	1		FACU
2. *Toxicodendron diversilobum*	5	Y	FACU
3. *Epilobium canum* ssp. *canum*	10	Y	UPL
4. *Cirsium cymosum* var. *cymosum*	1		UPL
5.			
	17 = Total Cover		
Herb Stratum (Plot size: 7 x 7)			
1. *Medicago polymorpha*	5		FACU
2. *Hypochaeris glabra*	20	Y	UPL
3. *Plantago lanceolata*	5		FAC
4. *Calystegia subacaulis ssp. subacaulis*	10	Y	UPL
5. *Vicia villosa* ssp. *villosa*	1		UPL
6. *Geranium dissectum*	5		UPL
7. *Chlorogalum* (Not In Flower (NIF))	3		UPL
8. *Brassica nigra*	1		UPL
	50 = Total Cover		
Woody Vine Stratum (Plot size: NONE)			
1. NONE			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 5	x 3 =	15
FACU species 11	x 4 =	44
UPL species 51	x 5 =	255
Column Totals: 67 (A)		314 (B)

Prevalence Index = B/A = 4.69

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✓

Remarks:

Too early; no grasses in flower.

SOIL

Sampling Point: UP 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1- 6	7YR 5/4	100%					Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

unless disturbed or problematic.

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes_____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes_____ No ✓ Depth (inches): _____

Water Table Present? Yes_____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes_____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes_____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix F Precipitation Data

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 308 ft. Lat: 35.3056° N Lon: -120.6619° W
Station: **SAN LUIS OBISPO POLY, CA US USC00047851**

Record of Climatological Observations

These data are quality controlled and may not be identical to the original observations.

Generated on 05/02/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1600 Observation Time Precipitation: 1600

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2019	02	01	61	45	59	0.00												
2019	02	02	59	50	57	1.25												
2019	02	03	57	52	54	1.24												
2019	02	04	57	49	50	0.68												
2019	02	05	51	41	49	0.43												
2019	02	06	58	35	55	0.00												
2019	02	07	59	44	57	0.00												
2019	02	08	59	33	54	0.00												
2019	02	09	57	44	56	0.80												
2019	02	10	56	43	53	0.55												
2019	02	11	59	37	58	0.00												
2019	02	12	58	34	58	0.00												
2019	02	13	60	47	60	0.33												
2019	02	14	62	54	55	0.89												
2019	02	15	59	46	56	0.19												
2019	02	16	56	39	55	0.20												
2019	02	17	55	38	53	0.26												
2019	02	18	56	36	55	0.00												
2019	02	19	58	33	56	0.00												
2019	02	20	56	33	54	0.01												
2019	02	21	56	35	55	0.01												
2019	02	22	59	35	56	0.00												
2019	02	23	61	37	56	0.00												
2019	02	24	62	36	59	0.00												
2019	02	25	60	42	58	0.00												
2019	02	26	61	40	56	0.00												
2019	02	27	57	51	56	0.27												
2019	02	28	65	50	62	0.30												
Summary			58	41		7.41		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

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Appendix D Mitigation Monitoring and Reporting Program

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Bravo Range Modernization Project – Mitigation, Monitoring, and Reporting Plan

The California Environmental Quality Act (CEQA) requires the adoption of feasible mitigation measures to reduce the severity and magnitude of potentially significant environmental impacts associated with project development.

CEQA Guidelines Section 15091(d) states:

When making the findings required in subdivision (a)(1), the CEQA Lead Agency shall also adopt a program for reporting on or monitoring the changes which it has either required in the project or made a condition of approval to avoid or substantially lessen significant environmental effects. These measures must be enforceable through permit conditions, agreements, or other measures.

CEQA Guidelines Section 15097(a) states:

This section applies when a public agency has made the findings required under paragraph (1) of subdivision (a) of section 15091 to adopt a mitigated negative declaration in conjunction with approving a project. In order to assure that the mitigation measures and project revisions identified in the negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects.

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Environmental Protection Actions	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
EPA-1: Tribal and Archaeological Monitoring Consistent with a March 2017 consultation letter from CA ARNG and a May 2017 concurrence letter from the California Office of Historic Preservation regarding a Finding of No Effect for multiple range improvement projects at CSLO, including the Bravo Range Modernization Project, the CA ARNG is committed to tribal and archaeological monitoring during construction activities. The CA ARNG notified the Santa Ynez Band of Chumash Indians' (SYBCI) Tribe prior to ground disturbing activities. At the discretion of the Tribe, a Tribal monitor was present for some of the earthmoving activities completed to date, and has indicated that no additional Tribal monitoring is necessary. The CA ARNG will provide a qualified archaeologist to monitor the remaining ground-disturbance activities and ensure that such activities do not adversely affect recorded archaeological sites.	1. Document the previous communication with the Tribe regarding no additional tribal monitoring being needed in the project file. 2. Conduct periodic site inspections	1. Prior to re-initiating construction. 2. During construction	1. CA ARNG 2. CA ARNG Archaeologist or Qualified Contractor	

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Environmental Protection Actions	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
EPA-2: Nesting Bird Survey For any construction activities occurring between February 1 through August 31, a qualified biologist will conduct a nesting bird survey within two weeks prior to the start of construction. If nesting birds are found, an appropriate setback buffer will be established and no construction activities will occur in this setback area until the birds have fledged and are no longer reliant on the nest.	[If construction occurs between February and August:] 1. Document results of nesting bird survey 2. If nesting birds are found, delineate buffer in the field using fencing and signage and depict the buffers on construction drawings	1. 2 weeks prior to construction. 2. Prior to construction, and until birds have fledged	1. CA ARNG Biologist or Qualified Contractor 2. CA ARNG Biologist or Qualified Contractor	
EPA-3: No Exportation of Site Soils Due to lead-contamination in site soils, the California Department of Toxic Substances Control prohibits the exportation of soil from the range area. None of the earthwork completed to date has involved the exportation of soil.	Verify that a provision specifying that no soils are to be exported from the site is included in construction specifications.	Prior to reinitiating construction	CA ARNG	
EPA-4: Stormwater Pollution Prevention Plan Prior to the start of any additional ground disturbance and earthmoving activities at the site, the CA ARNG would be required to obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Order No. 2009-009-DWQ as amended by 2010-2014-DWQ). CA ARNG would prepare and implement a project-specific Storm Water Pollution Prevention Plan (SWPPP) that manages pollutant sources, identifies erosion and sediment control measures and water quality protection measures, and prescribes best management practices to protect water quality pre- and post-construction. CA ARNG would submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the SWRCB. The SWPPP will address pollutant sources, best management practices, and other requirements specified in the Order. A Qualified SWPPP Practitioner would oversee implementation of the SWPPP, including visual inspections, sampling and analysis, and ensuring overall compliance.	1. Verify SWPPP requirements are incorporated into construction plans and specifications 2. Monitor construction activities for compliance (visual inspections, sampling ,etc) and document in project file.	1. Prior to construction. 2. During construction.	1. CA ARNG 2. Qualified SWPPP Practitioner	

EPA-5: Spill Prevention, Control, and Countermeasure Plan The construction contractor shall take the following 9 steps in the event of spills or leaks of petroleum products, hazardous construction chemicals, or other hazardous chemicals during construction. 1. Stop the Flow if possible – shut off valves, turn drums upright, plug or cover the leak source. Don't take unnecessary chances, but stop the flow if you can do so without getting hurt or contaminated. Approach the spill/release from the upwind side. Shower and change clothes as soon as possible if you come in contact with hazardous materials. 2. Contain the Spill to the smallest possible area: surround with absorbent material, dirt, floor sweep, etc. Make every effort to keep spilled materials out of storm drains, sewers, or other drainages or water ways. 3. Control Traffic. Don't let other people drive or walk through spill area. Set up traffic barriers, orange cones, tape off the area and or leave a person at the spill site to divert traffic away from the area. If the spill is small, it may be better to stop the source and contain the flow before notifying your supervisor. 4. Report the spill to your supervisor and sound the local alarm or give verbal warning. a. If the spill/release occurs during regular work hours and the spill/release is a hazardous material greater than one gallon in volume, if spilled to an impervious/pervious land surface, or any volume, if spilled to a surface waterway, contact the California Army Division – Environmental (NGCA-ARN-EN) or the appropriate training site environmental office to ascertain if the California Emergency Management Agency (Cal-EMA) is required to be notified. If the release/spill is more than you can safely handle or if the spill/release has entered a storm drain or waterway appoint a responsible person to call the local emergency response or to call 911. b. If the spill/release occurs after regular duty hours and/or on a weekend or holiday, call the California National Guard Joint Forces Headquarters' Joint Operations Center (JOC) at (916) 854-3440 or DSN 466-3440. Leave your name or other point of contact, telephone number and a brief description of the incident with the JOC Duty Officer and follow the JOC's instructions. 5. Isolate the immediate spill area if it has been ascertained that the release/spill is a significant release until emergency	1. Take action to stop the flow, contain the spill, and control traffic 2. Report spill to supervisor 3. Isolate spill and post signage to isolate 4a. [If contained on a paved surface] collect spill 4b. [If not contained on paved surface] notify CA ARNG Environmental Directorate 5. Submit Form 200-1-8b	1. Immediately 2. ASAP 3. ASAP 4. ASAP 5. After spill has been addressed and no longer presents immediate risk to people or the environment	1. Contractor 2. Contractor 3. Contractor 4. Contractor 5. Contractor	

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Environmental Protection Actions	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
response agents arrive. Keep other people or vehicles out of danger and avoid blocking access for emergency responders. 6. If the spill/release is contained on a paved surface (concrete/asphalt) and has been absorbed completely, collect the spill debris and place into an appropriate container. Mark the container with a hazardous waste label and mark the label with a permanent marker "HAZARDOUS WASTE, CONTAMINATED ABSORBENT (name of spilled material if known)". Turn in collected wastes to the designated collection point at the training sites, or to your facility's hazardous waste accumulation site for disposal. If on the road use the sturdy garbage bags in the vehicle spill kits until the spill debris can be transferred into an appropriate container. 7. If the spill/release did not occur on an impervious surface, or if it went into drainage or waterway, then your Environmental Compliance Officer (ECO) or unit supervisor will immediately notify the California Army Division -Environmental Directorate and the appropriate contacts listed in the Emergency Response Notification List. 8. Coordinate with your ECO to fill out CA ARNG Form 200-1-8b: Hazardous Materials/Waste Incident Report. Send or fax copies to: California Military Department 3900 Roseville Rd. North Highlands, CA 95600 Fax: (916) 854-1467 9. Call the California Army Division – Environmental at (916) 854-1479 if you have questions pertaining to spill/release notification and reporting.				

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Mitigation Measure	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
AQ-1: Geologic Evaluation for Naturally Occurring Asbestos Prior to conducting any additional construction activities at the site, CA ARNG shall conduct a geologic evaluation is to determine if the site is exempt from the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (93105). If the project is exempt from the Asbestos ATCM, an exemption request shall be filed with the San Luis County Air Pollution Control District (SLOCAPCD). If the site is not exempt from the requirements of the regulation, CA ARNG must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the SLOCAPCD.	1. Conduct geologic evaluation 2a. [If site is exempt] submit exemption request to SLOCAPCD 2b. [If site is not exempt] verify the requirements of the Asbestos ATCM are incorporated into construction plans and specifications	1. Prior to construction 2. Prior to construction	1. Registered Geologist 2. CA ARNG	
BIO-1a: Biological Resources Training Prior to the first day of work, and starting with the first day the contractor mobilizes on the site, all construction workers shall be briefed on the biology and life history of sensitive species potentially present in the project area. The training shall be conducted by a qualified CA ARNG biologist or contractor, and shall include species identification, avoidance and minimization measures, communication protocols, and consequences of non-compliance. Upon the completion of training, construction personnel shall sign that they have received the training and the signed documentation shall be retained in the project file.	1. Conduct training and save signed completion documents in project file	1. First day of work	1. CA ARNG Biologist or qualified contractor	
BIO-1b: Construction Timing Project construction shall be conducted outside of the wet season (June 15 through November 15) and shall not be allowed to commence within 24 hours of a forecasted rain event. Since amphibians are drawn to moisture and humidity, this measure would reduce the potential for California red-legged frogs and Coast Range newts to be present in the project area; amphibians are not expected to enter the project area during dry periods.	1. Verify that construction documents specify the allowable timing of construction	1. Prior to construction	1. CA ARNG	

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Mitigation Measure	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
BIO-1c: Amphibian and Reptile Preconstruction Surveys and Construction Monitoring A qualified CA ARNG biologist shall conduct one daytime and one A qualified CA ARNG biologist shall conduct one daytime and one nighttime pre-activity survey of all construction areas (including access routes and staging areas) for the presence of Coast Range newt, CRLF, and legless lizard the day before project activities are to commence. A third survey shall be conducted the morning the project begins. The survey shall include inspection of burrows to the extent practical without excavation or other damage, if any burrows are present. A qualified CA ARNG biologist will monitor all vegetation trimming/removal and demolition/construction activities within the project boundaries. If any CRLF or newts are identified in the project area, construction in that immediate area shall be halted until the individuals have vacated the area on their own accord or the appropriate resource agency has been contacted for guidance.	1. Conduct preconstruction surveys 2. Construction monitoring 3. [If CRLF or newts are observed in the project area] halt construction until the individuals have vacated the area	1. One day prior to starting construction, as specified 2. During construction 3. As needed	1. CA ARNG Biologist or qualified contractor 2. CA ARNG Biologist or qualified contractor 3. CA ARNG Biologist or qualified contractor	

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Mitigation Measure	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
BIO-1d: Conservation Measures for Special-Status Plants The CA ARNG shall implement the following conservation measures for special-status plant species that have potential to occur within the project area. These include but are not limited to the 15 special-status plants identified in Table 5 (Hoover's bent grass, Brewer's calandrinia, club-haired mariposa lily, San Luis mariposa lily, La Panza mariposa lily, Cambria morning glory, San Luis Obispo sedge, Condon's tarplant, dwarf soaproot, Eastwood's larkspur, Blochman's dudleya, Jones' layia, adobe sanicle, and saline clover). Significant impacts to special-status plant species shall be avoided, minimized, and (if necessary) compensated by complying with the following: • A qualified botanist shall conduct seasonally-appropriate pre-construction surveys for special-status plant species that could potentially occur in areas not disturbed by past project activities and especially in and adjacent to wetlands along the tributary in the western portion of the project area. The surveys shall occur during the appropriate blooming time (spring or summer) for identification of the target species. Survey methods shall comply with CDFW rare plant survey protocols, and shall be performed by a qualified field botanist. Surveys shall be modified to include detection of juvenile (pre-flowering) colonies of perennial species when necessary. Any populations of special-status plant species that are detected shall be mapped. Populations shall be flagged if avoidance is feasible. • The locations of populations to be avoided shall be clearly identified in the construction documents (plans and specifications). • If populations are detected where construction could potentially result in adverse effects to the plants, a compensatory conservation plan shall be prepared and implemented in coordination with CDFW. Such plans may include salvage, propagation, on-site reintroduction in restored habitats, and monitoring.	1. Conduct botanical surveys and map any detected populations 2a.[If populations can be avoided] map areas as off-limits in construction documents 2b.[If populations cannot be avoided] prepare compensatory conservation plan in coordination with CDFW	1. Blooming period (spring or summer) of target species 2. Prior to construction in the areas that were not disturbed during 2018 construction activities	1. CA ARNG Biologist or qualified contractor 2. CA ARNG Biologist or qualified contractor	

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Mitigation Measure	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
BIO-1e: Restrict Construction Activities to Recently Disturbed Areas Construction activities associated with the firing range improvements shall be restricted to areas already disturbed during 2018 grading and construction activities. The construction limits shall be flagged or otherwise clearly identified prior to the start of construction. Areas outside of the 2018 disturbance limits, such as upland slopes where drainage features will be constructed and wetland mitigation areas, shall be disturbed only after the special-status plant surveys described in Mitigation Measure BIO-1d (Conservation Measures for Special-Status Plants) have been completed and the qualified biologist and construction representative have determined which species, if any, cannot be avoided and which specific mitigation actions referenced above are best able to offset the impact.	1. Conduct botanical surveys and map any detected populations 2a. [If populations can be avoided] map areas as off-limits in construction documents 2b. [If populations cannot be avoided] prepare compensatory conservation plan in coordination with CDFW	1. Blooming period (spring or summer) of target species 2. Prior to construction in the areas that were not disturbed during 2018 construction activities	1. CA ARNG Biologist or qualified contractor 2. CA ARNG Biologist or qualified contractor	
BIO-2: On-Site Compensatory Wetland Mitigation To mitigate the impact to the adjacent wetland and associated riparian habitat, CA ARNG proposes on-site compensatory wetland mitigation for approximately 400 square feet (20 linear feet) of permanent wetland impacts. If approved by the resource agencies (e.g., USACE, CDFW, and RWQCB), CA ARNG would widen a portion of the same drainage either immediately above or below the impacted area, to increase the vegetated wetland area, ensure no net loss of vegetated wetland habitat, and compensate for the loss of wetland associated with the rock-lined portion in full. The compensatory wetland would be monitored by a CA ARNG biologist annually for a period of five years.	1. Obtain approval from resource agencies 2. Install compensatory wetland area 3. Monitor establishment or compensatory wetland	1. Prior to construction of drainage improvements in small drainage on east side of firing range 2. Construction 3. Annually for 5 years	1. CA ARNG 2. CA ARNG or Construction Contractor 3. CA ARNG Biologist or qualified contractor	

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Mitigation Measure	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
CR-1a: Cultural Resources Awareness Training Prior to the resuming of ground-disturbing construction activities (on the first day of work), all construction personnel shall receive Cultural Resources Awareness Training to ensure that construction activities are conducted in a manner that is protective of known and unknown cultural resources. The training shall include information on the location and lateral extent of nearby cultural resources sites, avoidance of those areas, laws protecting such resources, and procedures for responding to inadvertent discovery situations. Avoidance of known cultural resources sites shall be determined by CA ARNG's Cultural Resources Manager and include establishing a no-disturbance buffer zone around known resources and marking the area closed on construction maps and plans. Compliance with avoidance measures shall be documented during routine construction inspections.	1. Conduct training and save signed completion documents in project file 2. Construction monitoring	1. First day of work 2. Periodically during construction	1. CA ARNG Cultural Resources Specialist or qualified contractor 2. CA ARNG Cultural Resources Specialist or qualified contractor	
CR-1b: Inadvertent Discovery of Archaeological Remains or Tribal Cultural Resources All initial ground-disturbing activities will be monitored by a CA ARNG archaeologist. If archaeological remains or potential tribal cultural resources are encountered during construction, all work shall halt within a 50-foot radius of the discovery. Construction personnel shall not collect cultural materials. The Cultural Resources Manager (CRM) shall take appropriate measures to protect the discovery from disturbance and assess the significance of the discovery within 24 hours of discovery. If it is determined the find does represent a cultural resource, the CRM shall determine eligibility and, as needed, implement appropriate treatment measures to protect the integrity of the resource and ensure that no additional resources are affected. Work shall not resume within the no-work buffer zone until the CRM determines that the site either is not a historical resource, archaeological resource, or tribal cultural resource as defined by federal and state laws, or that appropriate treatment measures have been completed. Specific procedural details regarding inadvertent discoveries shall be followed as outlined in the CA ARNG Integrated Cultural Resource Management Plan.	1. Construction monitoring 2. [If archaeological remains or potential tribal cultural resources are encountered] halt construction, establish a no-work buffer zone 3. Determine eligibility, and implement appropriate treatment measures	1. Throughout construction 2. During construction if needed 3. Prior to resuming work	1. CA ARNG Archaeologist 2. CA ARNG Archaeologist/ CRM 3. CRM	

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Mitigation Measure	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
CR-2: Inadvertent Discovery of Human Remains If human remains, or remains that are potentially human, are discovered during construction, the CA ARNG Cultural Resources Manager (CRM) shall ensure reasonable protection measures are taken to protect the discovery from disturbance and shall notify the San Luis Obispo County Coroner (per §7050.5 of the Health and Safety Code). The provisions of §7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage Commission, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. Specific procedural details regarding inadvertent discoveries shall be followed as outlined in the CA ARNG Integrated Cultural Resource Management Plan. If the CA ARNG does not agree with the recommendations of the MLD, the Native American Heritage Commission can mediate (§ 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the County (AB 2641). Work shall not resume within the no-work buffer zone until the CRM determines that the treatment measures have been completed to its satisfaction. Because CSLO is not federal property, the Native American Graves Protection and Repatriation Act does not apply.	1. [If human remains are discovered] halt work and follow procedures, as appropriate.	1. During construction, if needed	1. CA ARNG CRM	

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Mitigation Measure	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
HAZ-1a: Construction Risk and Spoils Management Plan CA ARNG or CA ARNG's construction contractor shall prepare and implement a construction risk and spoils management plan (CRSMP) to address hazardous materials and other worker health and safety issues during project construction. The CRSMP shall include all necessary procedures to ensure that excavated materials are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations. The CRSMP shall include step-by-step procedures for handling and stockpiling demolition debris and excavated material, as applicable. All excavated materials shall be inspected prior to initial stockpiling, and site soils shall be stockpiled separately to ensure contaminated soil is not inadvertently exported offsite.	1. Prepare CRSMP and verify the plan is incorporated into construction specifications 2. Construction monitoring	1. Prior to construction 2. During construction	1. CA ARNG or Construction Contractor 2. CA ARNG or Construction Contractor	
HAZ-1b: Track-Out Prevention Measures "Track-Out" is defined as sand or soil that adheres to and/or agglomerates on the exterior surfaces of motor vehicles and/or equipment (including tires) that may then fall onto any highway or street as described in California Vehicle Code Section 23113 and California Water Code 13304. To prevent track out, CA ARNG shall install and operate a "track-out prevention device" at Range Road where vehicles enter and exit the unpaved access road to the Bravo Range. The track-out prevention device can be any device or combination of devices that are effective at preventing track out, located at the point of intersection of an unpaved area (access road) and a paved road (Range Road). Rumble strips or steel plate devices require periodic cleaning to be effective.	1. Verify track-out prevention measures are incorporated into construction specifications 2. Construction monitoring and maintenance to ensure proper functionality	1. Prior to construction 2. During construction	1. CA ARNG or Construction Contractor 2. CA ARNG or Construction Contractor	
HAZ-1c: Storage of Hazardous Construction Materials A contained and covered area on-site shall be used for storage of cement bags, paints, flammable oils, fertilizers, pesticides, or any other materials that have the potential for being discharged to the storm drain system by wind or in the event of a material spill. The existing bleachers building may be utilized for this purpose.	1. Verify storage requirements are incorporated into construction specifications 2. Construction monitoring	1. Prior to construction 2. During construction	1. CA ARNG or Construction Contractor 2. CA ARNG or Construction Contractor	

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Mitigation Measure	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
HAZ-1d: Spill Prevention and Response Plan The construction contractor shall prepare a Spill Prevention and Response Plan that includes preventative measures to avoid prevent spills or leaks of petroleum products during construction. The plan shall be reviewed and approved by the contracting officer and environmental monitor. At a minimum, the plan shall include the following provisions: • Staging, storage, and refueling areas and any equipment repair or similar activity must take place at least 100 feet from the small drainage and wetland located on the west side of the Bravo Range, and 100 feet from exclusion fencing for sensitive biological resources. • Refueling shall only occur in areas approved by the contracting officer or environmental monitor. • Staging and storage areas shall occur only in designated areas. • Protective tarps shall be used during refueling and equipment repair. • The construction contractor shall be responsible for inspecting and fully cleaning up any hazardous materials spills or leaks that occur on the site	Verify Spill Prevention and Response Plan is in construction documents prior to construction.	Prior to construction	CA ARNG	

MITIGATION AND MONITORING PLAN Camp San Luis Obispo Bravo Range Modernization Project				
Mitigation Measure	**Monitoring or Reporting Action**	**Timing of Monitoring or Reporting Action**	**Responsible Party**	**Compliance Verification Date**
HAZ-1d: Unexploded Ordnance Identification and Safety Training Prior to the first day of work, all construction contractors and construction personnel shall be required to attend an ordnance identification and safety course led by the Local Installation Unit. The training shall provide an overview of the unexploded ordnance potentially present at the site based on past and historic land uses, and how to identify such ordinance. The training shall detail the procedures to be taken to address unexploded ordnance hazards in the event such materials are discovered during construction and earthmoving activities. In the case of discovery, construction workers shall cease work immediately and notify the Contracting Officer's Representative who will then notify CA ARNG Range Control and the CA ARNG Explosive Ordnance Disposal Team. Construction workers and contractors shall sign a certification of training form and a copy of the forms shall be maintained on file and provided to responsible agencies if requested.	1. Conduct training and save signed completion documents in project file 2. [In case of discovery] half construction and notify the Contracting Officer's Representative 3. Notify the CA ARNG Range Control and CA ARNG Explosive Ordnance Disposal Team	1. First day of work 2. ASAP 3. ASAP	1. CA ARNG Local Installation Unit 2. Construction Contractor 3. Contracting Officer's Representative	

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Appendix E Special-Status Species Occurrence Table

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Appendix E: CNDDB, IPaC, and NMFS Species from Nine Quad Scoping Surrounding San Luis Obispo, CA
Camp San Luis Obispo - Bravo Range Modernization Project

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Plants								
Agrostis hooveri	Hoover's bent grass	None	None	1B.2	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Valley and foothill grassland		Dry sandy soils, open chaparral, oak woodland (Jepson 2012) Blooms: April-July	**Low Potential.** There are several occurrences of this species near the project area, however, this species is a large perennial bunch grass that would require largely undisturbed habitats to persist. Habitat on-site would either be too wet or too disturb by current use to suppport this species.
Arctostaphylos cruzensis	Arroyo de la Cruz manzanita	None	None	1B.2	Broadleafed upland forest, Coastal bluff scrub, Closed-cone coniferous forest, Chaparral, Coastal scrub, Valley and foothill grassland		Sandy soils.	**No Potential.** Habitat for this species does not exist within the project area.
Arctostaphylos luciana	Santa Lucia manzanita	None	None	1B.2	Chaparral | Cismontane woodland	Chaparral, cismontane woodland.	On shale (one site says serpentine) outcrops, on slopes, in chaparral. 105-825 m.	**No Potential.** Habitat for this species does not exist within the project area.
Arctostaphylos morroensis	Morro manzanita	Threatened	None	1B.1	Chaparral (maritime), Cismontane woodland, Coastal dunes (pre-Flandrian), Coastal scrub	Chaparral, cismontane woodland, coastal dunes, coastal scrub.	On Baywood fine sands, usually with chaparral associates. 30-125 m.	**No Potential.** Habitat for this species does not exist within the project area.
Arctostaphylos osoensis	Oso manzanita	None	None	1B.2	Chaparral | Cismontane woodland	Chaparral, cismontane woodland.	Usually occurs in openings w/in oak woodland on dacite porphyry buttes. 180-275 m.	**No Potential.** Habitat for this species does not exist within the project area.
Arctostaphylos pechoensis	Pecho manzanita	None	None	1B.2	Chaparral | Closed-cone coniferous forest | Coastal scrub	Closed-cone coniferous forest, chaparral, coastal scrub.	Grows on siliceous shale with other chaparral associates. 60-855 m.	**No Potential.** Habitat for this species does not exist within the project area.
Arctostaphylos pilosula	Santa Margarita manzanita	None	None	1B.2	Broadleaved upland forest | Chaparral | Cismontane woodland | Closed-cone coniferous forest	Closed-cone coniferous forest, chaparral, broadleafed upland forest, cismontane woodland.	Shale outcrops & slopes; reported growing on decomposed granite or sandstone. 60-1220 m.	**No Potential.** Habitat for this species does not exist within the project area.
Arctostaphylos rudis	sand mesa manzanita	None	None	1B.2	Chaparral (maritime), Coastal scrub		sandy	**No Potential.** Habitat for this species does not exist within the project area.
Arctostaphylos tomentosa ssp. daciticola	dacite manzanita	None	None	1B.1	Chaparral | Cismontane woodland	Chaparral, cismontane woodland.	Only known from one site in SLO County on dacite porphyry buttes. About 120m.	**No Potential.** Habitat for this species does not exist within the project area.
Arenaria paludicola	marsh sandwort	Endangered	Endangered	1B.1	Marshes and swamps (freshwater or brackish)	Marshes and swamps.	Sandy, openings. Growing up through dense mats of Typha, Juncus, Scirpus, etc. in freshwater marsh. Sandy soil. 3-170 meters. Blooms: May-August	**No Potential.** The only known naturally occurring population as of 2018 is over 20 miles to the south.
Astragalus didymocarpus var. milesianus	Miles' milk-vetch	None	None	1B.2	Coastal scrub	Coastal scrub.	Clay soils. 50-385 m.	**No Potential.** Habitat for this species does not occur within the project area.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Atriplex coulteri	Coulter's saltbush	None	None	1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland		alkaline or clay	**No Potential.** Habitat is mostly coastal. In addition the project area is not alkaline and would not be considered suitable habitat for this species.
Bryoria spiralifera	twisted horsehair lichen	None	None	1B.1	North Coast coniferous forest (immediate coast)		Usually on conifers	**No Potential.** Habitat for this species does not exist within the project area.
Calandrinia breweri	Brewer's calandrinia	None	None	4.2	Chaparral, Coastal scrub	Sandy to loamy soil, disturbed sites, burns (Jepson 2012)	Sandy or loamy, disturbed sites and burns. Blooms: March-June.	**Moderate Potential.** There are occurrences nearby although habitat within the project area appears to be marginal. This species is a disturbance tolerant annual and could establish in the project area.
Calochortus clavatus var. clavatus	club-haired mariposa lily	None	None	4.3	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland		Usually serpentinite, clay, rocky. Blooms: May-June.	**Moderate Potential.** There are occurrences documented within 300 yards of the project area. This species could be present in upland portions of the project area.
Calochortus obispoensis	San Luis mariposa-lily	None	None	1B.2	Chaparral | Cismontane woodland | Coastal scrub | Ultramafic | Valley & foothill grassland	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland.	Often in serpentine grassland. 15-550 meters. Blooms: May-July	**Low Potential.** There are occurrences of this species within 300 yards of the project area. Although the occurrences are nearby, they are associated with serpentine substrate. Presence in the project area is considered unlikely but cannot be ruled out because of proximity.
Calochortus simulans	La Panza mariposa-lily	None	None	1B.3	Chaparral | Cismontane woodland | Lower montane coniferous forest | Valley & foothill grassland	Valley and foothill grassland, cismontane woodland, chaparral, lower montane coniferous forest.	Decomposed granite, or sometimes on serpentine. 150-1160 meters. Blooms: April-June.	**Low Potential.** There are two occurrences of this species within one mile of the project area with one adjacent to it. Although the occurrences are nearby, both are located on serpentine outcrops. Presence within the project area is considered unlikely.
Calycadenia villosa	dwarf calycadenia	None	None	1B.1	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland		rocky, fine soils. 240 - 1350 meters	**No Potential.** The project area is outside the known elevation range for this species.
Calystegia subacaulis ssp. episcopalis	Cambria morning-glory	None	None	4.2	Chaparral | Cismontane woodland | Coastal prairie | Valley & foothill grassland	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland.	Usually found growing on clay soils. 5-475 meters. Blooms: March-June.	**Moderate Potential.** There are several occurrences of this species within one mile of the project area. Habitat is present on-site and this species often grows with plants found within the project area.
Camissoniopsis hardhamiae	Hardham's evening-primrose	None	None	1B.2	Chaparral, Cismontane woodland		sandy, decomposed carbonate, disturbed or burned areas. 140 - 945 meters	**No Potential.** Habitat for this species does not exist within the project area.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Carex obispoensis	San Luis Obispo sedge	None	None	1B.2	Chaparral | Closed-cone coniferous forest | Coastal prairie | Coastal scrub | Ultramafic | Valley & foothill grassland	Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland.	Usually in transition zone on sand, clay, serpentine, or gabbro. In seeps. 5-845 meters.	**Low Potential.** Although there are some occurrences within one mile of the project area, this species is more often in serpentine seeps. The project area does not support suitable habitat for this species.
Castilleja densiflora var. obispoensis	San Luis Obispo owl's-clover	None	None	1B.2	Meadow & seep | Ultramafic | Valley & foothill grassland	Valley and foothill grassland, meadows and seeps.	Sometimes on serpentine. 9-485 m.	**High Potential.** Populations are documented near the project area as recently as 2005.
Caulanthus californicus	California Jewelflower	Endangered	Endangered	1B.1	Chenopod scrub | Pinon & juniper woodlands | Valley & foothill grassland	Chenopod scrub, valley and foothill grassland, pinyon and juniper woodland.	Sandy soils. 65-1860 meters (CDFW 2019). Generally in non-alkaline grassland (Jepson 2012).	**No Potential.** Even though habitat could exist within the project area, no other occurrences are remotely close. The nearest occurrence in San Luis Obispo County is over 27 miles away.
Ceanothus thyrsiflorus var. obispoensis	San Luis Obispo ceanothus	None	None	1B.1	Chaparral, Cismontane woodland		Dacite	**No Potential.** Habitat for this species does not exist within the project area.
Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None	1B.1	Valley & foothill grassland	Valley and foothill grassland.	Alkaline soils, sometimes described as heavy white clay. 0-245 meters.	**Low Potential**. Nearest occurrence is a little over 1 mile away. project area does not have white clay soils.
Chenopodium littoreum	coastal goosefoot	None	None	1B.2	Coastal dunes			**No Potential.** Habitat for this species does not exist within the project area.
Chlorogalum pomeridianum var. minus	dwarf soaproot	None	None	1B.2	Chaparral | Ultramafic	Chaparral.	Serpentine. 120-1220 meters.	**Low Potential**. This species has reported occurrences within 1 mile of the project area. There was a Chlorogalum sp. observed during the site visit. It was not able to be identified at the time of survey, however there is no chaparral or serpentine within the project area.
Chlorogalum purpureum	Purple Amole	Threatened	Rare	1B.1	Cismontane woodland | Ultramafic | Valley & foothill grassland	Cismontane woodland, valley and foothill grassland.	Serpentine; open area with low vegetative cover in heavy clay soils. 575-610 m.	**No Potential**. This species has reported occurrences within the ecoregion, however these occurrences are over 23 miles away to the east. There was a Chlorogalum sp. observed during the site visit, but these species leaves are so much smaller that this species can be ruled out. There is no serpentine in the project area.
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Endangered	Endangered	1B.2	Coastal dunes, Marshes and swamps (coastal salt)			**No Potential.** No coastal salt marsh or dune habitat is present.
Chorizanthe breweri	Brewer's spineflower	None	None	1B.3	Chaparral | Cismontane woodland | Closed-cone coniferous forest | Coastal scrub | Ultramafic	Chaparral, cismontane woodland, coastal scrub, closed-cone coniferous forest.	Rocky or gravelly serpentine sites; usually in barren areas. 45-765 m.	**No Potential**. Occurrence is known within 1 mi, however none of the known habitat types are present in the project area.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Chorizanthe douglasii	Douglas' spineflower	None	None	4.3	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland		Sandy or gravelly soils	**No Potentia**l. No suitable habitat is present.
Chorizanthe leptotheca	Peninsular spineflower	None	None	4.2	Chaparral, Coastal scrub, Lower montane coniferous forest		alluvial fan, granitic	**No Potential.** None of the known habitat types are present in the project area.
Chorizanthe rectispina	straight-awned spineflower	None	None	1B.3	Chaparral, Cismontane woodland, Coastal scrub			**No Potential.** None of the known habitat types are present in the project area.
Cirsium fontinale var. obispoense	Chorro Creek bog thistle	Endangered	Endangered	1B.2	Chaparral | Cismontane woodland | Coastal scrub | Ultramafic | Valley & foothill grassland	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland.	Serpentine seeps. 5-385 m.	**No Potential.** Present within one mile but occurrence is well defined, is upgradient and suitable habitat is not present in the project area.
Cirsium loncholepis	La Graciosa Thistle	Endangered	Threatened	1B.1	Brackish marsh | Cismontane woodland | Coastal dunes | Coastal scrub | Marsh & swamp | Valley & foothill grassland | Wetland	Coastal dunes, coastal scrub, brackish marshes, valley and foothill grassland, cismontane woodland.	Lake edges, riverbanks, other wetlands; often in dune areas. Mesic, sandy sites. 3-220 meters.	**No Potential**. All known occurrences are well to the south in San Luis Obispo County.
Cirsium occidentale var. lucianum	Cuesta Ridge thistle	None	None	1B.2	Chaparral | Ultramafic	Chaparral.	Openings; on serpentinite. Often on steep rocky slopes and along disturbed roadsides. 485-765 meters.	**No Potential.** The project area is well below the known elevation range.
Cirsium rhothophilum	Surf thistle	None	Threatened	1B.2	Coastal bluff scrub, Coastal dunes			**No Potential.** No suitable habitat is present in the project area.
Cirsium scariosum var. loncholepis	La Graciosa thistle	Endangered	Threatened	1B.1	Cismontane woodland, Coastal dunes, Coastal scrub, Marshes and swamps (brackish), Valley and foothill grassland		mesic, sandy	**No Potential**. All eight known localities are coastal and well south of the project area.
Cladonia firma	popcorn lichen	None	None	2B.1	Coastal dunes (stabilized), Coastal scrub		On soil, detritus, and/or moss	**No Potential.** Habitat for this species does not occur within the project area.
Clarkia speciosa ssp. immaculata	Pismo clarkia	Endangered	Rare	1B.1	Chaparral (margins, openings), Cismontane woodland, Valley and foothill grassland	Chaparral, cismontane woodland, valley and foothill grassland.	On ancient sand dunes not far from the coast. Sandy soils; openings. 30-185 meters.	**No Potential.** No suitable habitat is present in the project area.
Cordylanthus maritimus ssp. maritimus	Salt Marsh Bird's-beak	Endangered	Endangered	1B.2	Coastal dunes | Marsh & swamp | Salt marsh | Wetland	Marshes and swamps, coastal dunes.	Limited to the higher zones of salt marsh habitat. 0-10 meters.	**No Potential.** Habitat for this species does not exist within the project area.
Delphinium parryi ssp. blochmaniae	dune larkspur	None	None	1B.2	Chaparral (maritime), Coastal dunes			**No Potential.** Habitat for this species does not exist within the project area.
Delphinium parryi ssp. eastwoodiae	Eastwood's larkspur	None	None	1B.2	Chaparral | Ultramafic | Valley & foothill grassland	Chaparral, valley and foothill grassland.	Serpentine. Openings. 60-640 meters. Blooms: April-May.	**Low Potential.** Known within 1 mile, but usually grows on serpentine which is not present in the project area.
Delphinium umbraculorum	umbrella larkspur	None	None	1B.3	Chaparral, Cismontane woodland			**No Potential.** No suitable habitat is present in the project area.
Dithyrea maritima	beach spectaclepod	None	Threatened	1B.1	Coastal dunes, Coastal scrub (sandy)			**No Potential.** No suitable habitat is present in the project area.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Dudleya abramsii ssp. bettinae	Betty's dudleya	None	None	1B.2	Chaparral | Coastal scrub | Ultramafic | Valley & foothill grassland	Coastal scrub, valley and foothill grassland, chaparral.	On rocky, barren exposures of serpentine within scrub vegetation. 20-250 m.	**No Potential.** No suitable serpentine habitat is present in the project area.
Dudleya abramsii ssp. murina	mouse-gray dudleya	None	None	1B.3	Chaparral | Cismontane woodland | Ultramafic | Valley & foothill grassland	Chaparral, cismontane woodland, valley and foothill grassland.	Serpentine outcrops. 25-535 m.	**No Potential.** Strict serpentine endemic, no serpentine habitat is present in the project area although there are occurrences of this species within one mile of and some adjacent to the project area.
Dudleya blochmaniae ssp. blochmaniae	Blochman's dudleya	None	None	1B.1	Chaparral | Coastal bluff scrub | Coastal scrub | Ultramafic | Valley & foothill grassland	Coastal scrub, coastal bluff scrub, chaparral, valley and foothill grassland.	Open, rocky slopes; often in shallow clays over serpentine or in rocky areas with little soil. 5-290 meters. Blooms: April-June.	**Low Potential.** There are three occurrences of this species within one mile of and some adjacent to the project area, however it is usually associated with serpentine which is not present in the project area.
Eriastrum luteum	yellow-flowered eriastrum	None	None	1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland		sandy or gravelly	**No Potential.** No suitable habitat is present in the project area.
Erigeron blochmaniae	Blochman's leafy daisy	None	None	1B.2	Coastal dunes, Coastal scrub			**No Potential.** No suitable habitat is present in the project area.
Eriodictyon altissimum	Indian Knob Mountainbalm	Endangered	Endangered	1B.1	Chaparral | Cismontane woodland | Coastal scrub	Chaparral (maritime), cismontane woodland, coastal scrub.	Ridges in open, disturbed areas within chaparral on Pismo sandstone. 95-245 meters.	**No Potential.** None of the six extant populations as of 2019 are near the project area, and no suitable habitat is present
Eryngium aristulatum var. hooveri	Hoover's button-celery	None	None	1B.1	Vernal pool | Wetland	Vernal pools.	Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast. 1-50 meters.	**No Potential.** No suitable habitat is present in the project area.
Extriplex joaquinana	San Joaquin spearscale	None	None	1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland		alkaline	**No Potential.** Suitable habitat is not present within the project area.
Fritillaria ojaiensis	Ojai fritillary	None	None	1B.2	Broadleaved upland forest | Chaparral | Cismontane woodland | Lower montane coniferous forest | Ultramafic	Broadleafed upland forest (mesic), chaparral, lower montane coniferous forest, cismontane woodland.	Rocky sites. Sometimes on serpentine; sometimes along roadsides. 95-1140 m.	**No Potential.** No suitable habitat is present in the project area.
Fritillaria viridea	San Benito fritillary	None	None	1B.2	Chaparral | Cismontane woodland | Ultramafic	Chaparral, cismontane woodland.	Serpentine slopes. Sometimes on rocky streambanks. 365-1360 m.	**No Potential.** No suitable serpentine habitat is present in the project area.
Horkelia cuneata var. puberula	mesa horkelia	None	None	1B.1	Chaparral | Cismontane woodland | Coastal scrub	Chaparral, cismontane woodland, coastal scrub.	Sandy or gravelly sites. 15-1645 m.	**No Potential.** No suitable habitat is present in the project area.
Horkelia cuneata var. sericea	Kellogg's horkelia	None	None	1B.1	Closed-cone coniferous forest, Chaparral (maritime), Coastal dunes, Coastal scrub		sandy or gravelly, openings	**No Potential.** No suitable habitat is present in the project area.
Lasthenia californica ssp. macrantha	perennial goldfields	None	None	1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub			**No Potential.** No suitable habitat is present in the project area.
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	None	None	1B.1	Marshes and swamps (coastal salt), Playas, Vernal pools			**No Potential.** No vernal pools exist within the project area.
Layia jonesii	Jones' layia	None	None	1B.2	Chaparral | Ultramafic | Valley & foothill grassland	Chaparral, valley and foothill grassland.	Clay soils and serpentine outcrops. 5-245 meters. Blooms: March-May	**Moderate Probability.** Known from Camp San Luis Obispo, within one mile of project area. Prefers but is not limited to serpentine.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Lupinus ludovicianus	San Luis Obispo County lupine	None	None	1B.2	Chaparral, Cismontane woodland		sandstone or sandy	**No Potential.** No suitable habitat is present in the project area.
Lupinus nipomensis	Nipomo Mesa Lupine	Endangered	Endangered	1B.1	Coastal dunes	Coastal dunes.	Dry sandy flats, restricted to back dunes, associated with central dune scrub habitat - a rare community type. 20-30 m.	**No Potential.** No suitable habitat is present in the project area.
Malacothamnus gracilis	slender bush-mallow	None	None	1B.1	Chaparral		Usually rocky	**No Potential.** No suitable habitat is present in the project area.
Malacothamnus palmeri var. involucratus	Carmel Valley bush-mallow	None	None	1B.2	Chaparral, Cismontane woodland, Coastal scrub			**No Potential.** No suitable habitat is present in the project area.
Malacothamnus palmeri var. palmeri	Santa Lucia bush-mallow	None	None	1B.2	Chaparral (rocky)			**No Potential.** No suitable habitat is present in the project area.
Monardella palmeri	Palmer's monardella	None	None	1B.2	Chaparral | Cismontane woodland | Ultramafic	Cismontane woodland, chaparral.	On serpentine, often found associated with Sargent cypress forests. 90-945 m.	**No Potential**. No suitable serpentine habitat is present in the project area.
Monardella sinuata ssp. sinuata	southern curly-leaved monardella	None	None	1B.2	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub (openings)		Sandy	**No Potential.** No suitable habitat is present in the project area.
Monardella undulata ssp. undulata	San Luis Obispo monardella	None	None	1B.2	Coastal dunes, Coastal scrub (sandy)			**No Potential.** No suitable habitat is present in the project area.
Monolopia gracilens	woodland woolythreads	None	None	1B.2	Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland		Serpentine	**No Potential.** No suitable serpentine habitat is present in the project area.
Navarretia fossalis	Spreading Navarretia	Threatened	None	1B.1	Alkali playa | Chenopod scrub | Marsh & swamp | Vernal pool | Wetland	Vernal pools, chenopod scrub, marshes and swamps, playas.	San Diego hardpan and San Diego claypan vernal pools; in swales & vernal pools, often surrouded by other habitat types. 15-850	**No Potential.** No suitable habitat is present in the project area.
Navarretia nigelliformis ssp. radians	shining navarretia	None	None	1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools		Sometimes clay	**No Potential.** No vernal pool habitat within the project area, and known records are inland of the project area.
Nemacaulis denudata var. denudata	coast woolly-heads	None	None	1B.2	Coastal dunes			**No Potential.** No suitable habitat is present in the project area.
Plagiobothrys uncinatus	hooked popcornflower	None	None	1B.2	Chaparral | Cismontane woodland | Valley & foothill grassland	Chaparral, cismontane woodland, valley and foothill grassland.	Sandstone outcrops and canyon sides; often in burned or disturbed areas. 210-855 meters.	**No Potential.** The nearest occurrence is 2.7 miles away, however the project area is outside the known elevation range for the species.
Poa diaboli	Diablo Canyon blue grass	None	None	1B.2	Closed-cone coniferous forest, Chaparral (mesic), Cismontane woodland, Coastal scrub		shale; sometimes burned areas	**No Potential.** This species is only known from five locations in the San Luis Range to the southwest, near the coast. This species has a limited distribution and suitable habitat is not present in the project area.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Rorippa gambellii = Nasturtium gambelii	Gambel's Watercress	Endangered	Threatened	1B.1	Brackish marsh | Freshwater marsh | Marsh & swamp | Wetland	Marshes and swamps.	Freshwater and brackish marshes at the margins of lakes and along streams, in or just above the water level. 5-305 meters.	**No Potential.** The two remaining pure populations are located > 25 miles south of the project area.
Sanicula hoffmannii	Hoffmann's sanicle	None	None	4.3	Broadleafed upland forest, Coastal bluff scrub, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest	Shrubby coastal hills, pine woodland (Jepson 2012)	often serpentinite or clay	**No Potential.** Habitat for this species does not exist within the project area.
Sanicula maritima	adobe sanicle	None	Rare	1B.1	Chaparral | Coastal prairie | Meadow & seep | Ultramafic | Valley & foothill grassland	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie (CDFW 2019). Coastal, grassy, open wet meadows, ravines (Jepson 2012)	Moist clay or ultramafic soils. 15-215 meters. Blooms: February-May.	**Moderate Potential.** There are occurrences of this plant nearby including one within a 1.5 miles of the project area. In addition, habitat and associated species occur at the site.
Scrophularia atrata	black-flowered figwort	None	None	1B.2	Closed-cone coniferous forest, Chaparral, Coastal dunes, Coastal scrub, Riparian scrub			**No Potential.** No suitable habitat is present in the project area.
Senecio aphanactis	chaparral ragwort	None	None	2B.2	Chaparral | Cismontane woodland | Coastal scrub	Chaparral, cismontane woodland, coastal scrub.	Drying alkaline flats. 20-855 meters.	**No Potential.** Occurs within one mile, however there is no suitable habitat within the project area.
Sidalcea hickmanii ssp. anomala	Cuesta Pass checkerbloom	None	Rare	1B.2	Chaparral | Closed-cone coniferous forest | Ultramafic	Closed-cone coniferous forest, chaparral	Rocky serpentine soil; associated with Sargent cypress forest. 600-800 meters.	**No Potential.** No suitable habitat is present in the project area.
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower	None	None	1B.2	Chaparral | Cismontane woodland | Ultramafic | Valley & foothill grassland	Chaparral, valley and foothill grassland, cismontane woodland.	Serpentine outcrops, on ridges and slopes. 90-1040 m.	**No Potential.** Occurs within one mile, of the project area, however the species is strongly associated with serpentine outcrops on ridges and slopes and this habitat does not occur within the project area.
Suaeda californica	California Seablite	Endangered	None	1B.1	Freshwater marsh | Marsh & swamp | Wetland	Marshes and swamps.	Margins of coastal salt marshes. 0-5 m.	**No Potential.** No suitable habitat is present in the project area.
Sulcaria isidiifera	splitting yarn lichen	None	None	1B.1	Coastal scrub (old growth)		On branches of oaks and shrubs	**No Potential.** No suitable habitat is present in the project area.
Trifolium hydrophilum	saline clover	None	None	1B.2	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools		Wetland-riparian; Blooms: April-July.	**Moderate Potential**. Potentially suitable habitat is present in thre strean corridor along the western edge of the project area.
Tropidocarpum capparideum	caper-fruited tropidocarpum	None	None	1B.1	Valley and foothill grassland (alkaline hills)			**No Potential.** Known from a single extant population at Fort Hunter-Liggett well north of the project area.
Vegetation Communities								
Central Maritime Chaparral	Central Maritime Chaparral	None	None	-	Chaparral			**No Potential**. Not present in the immediate project vicinity based on site visit, may be present elsewhere on Camp SLO

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	-	Marsh & swamp | Wetland			**Present.** Wetlands were delineated within the project area.
Northern Interior Cypress Forest	Northern Interior Cypress Forest	None	None	-	Closed-cone coniferous forest			**No Potential.** Not present at or near project site based on site visit.
Serpentine Bunchgrass	Serpentine Bunchgrass	None	None	-	Valley & foothill grassland			**No Potential.** Not present at or near project site based on site visit, although occurrences are reported within 1 mile.
Mollusks								
Haliotis cracherodii	Range Black Abalone	Endangered	None	-	Marine intertidal & splash zone communities	Mid to low rocky intertidal areas.	Black abalone live on rocky substrates in intertidal and shallow subtidal reefs (to about 18 feet deep) along the coast. They typically occur in habitats with complex surfaces and deep crevices that provide shelter for juveniles and adults. Because they occur in coastal habitats, black abalone can withstand extreme variations in temperature, salinity, moisture, and wave action (NMFS).	**No Potential.** Habitat for this species does not exist within the project area.
Pyrgulopsis taylori	San Luis Obispo pyrg	None	None	-		Freshwater habitats in San Luis Obispo County.		**No Potential.** Occurs within one mile, but limited to perennial springs which are not present in the project area.
Crustaceans								
Branchinecta lynchi	Vernal Pool Fairy Shrimp	Threatened	None	-	Valley & foothill grassland | Vernal pool | Wetland	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools.	Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**No Potential.** Habitat for this species does not exist within the project area.
Lindériella occidentalis	California linderiella	None	None	-	Vernal pool	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.	Water in the pools has very low alkalinity, conductivity, and total dissolved solids.	**No Potential.** Habitat for this species does not exist within the project area.
Insects								
Danaus plexippus pop. 1	monarch - California overwintering population	None	None	-	Closed-cone coniferous forest	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico.	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**No Potential**. Habitat for this species does not exist within the project area.
Euproserpinus euterpe	Kern Primrose Sphinx Moth	Threatened	None	-	Valley & foothill grassland	Found in the Walker Basin, Kern County, and several other scattered locations (Carrizo Plain, Pinnacles NM).	Host plant is Camissonia contorta epilobioides (evening primrose).	**No Potential.** The project area is well outside of the known range of the species.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Helminthoglypta walkeriana	Morro Shoulderband Snail	Endangered	None	-	Coastal dunes | Coastal scrub	Restricted to the coastal strand in the immediate vicinity of Morro Bay.	Inhabits the duff beneath Haplopappus, Salvia, Dudleya, and Mesembryanthemum.	**No Potential.** The project area is not within the restricted range of the species.
Polyphylla nubila	Atascadero June beetle	None	None	-	Interior dunes	Known only from inland sand dunes in San Luis Obispo County.		**No Potential.** Habitat for this species does not exist within the project area.
Fish								
Acipenser medirostris	sDPS Green Sturgeon	Threatened	Species of Special Concern	-	Aquatic | Klamath/North coast flowing waters | Sacramento/San Joaquin flowing waters	These are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, & Trinity Rivers.	Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	**No Potential.** Habitat for this species does not exist within the project area.
Eucyclogobius newberryi	Tidewater Goby	Endangered	Species of Special Concern	-	Aquatic | Klamath/North coast flowing waters | Sacramento/San Joaquin flowing waters | South coast flowing waters	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River.	Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	**No Potential.** Habitat for this species does not exist within the project area.
Oncorhynchus mykiss irideus	steelhead - south-central California coast DPS	Threatened	None	-	Aquatic | Sacramento/San Joaquin flowing waters | South coast flowing waters	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.		**No Potential.** Occurs in lower drainage/estuary but not within one mile. Stream within project area is too ephemeral to support fish.
Amphibians								
Ambystoma californiense	California Tiger Salamander	Threatened	Threatened	-	Cismontane woodland | Meadow & seep | Riparian woodland | Valley & foothill grassland | Vernal pool | Wetland	Central Valley DPS federally listed as threatened. Santa Barbara and Sonoma counties DPS federally listed as endangered.	Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	**No Potential.** The project area is well outside the known range of the species.
Batrachoseps minor	lesser slender salamander	None	Species of Special Concern	-	Broadleaved upland forest	South Santa Lucia Mountains in tanbark oak, coast live oak, blue oak, sycamore & laurel.	Shaded slopes with abundant leaf litter.	**No Potential.** Suitable habitat is not present within the project area.
Rana boylii	foothill yellow-legged frog	None	Candidate Threatened	-	Aquatic | Chaparral | Cismontane woodland | Coastal scrub | Klamath/North coast flowing waters | Lower montane coniferous forest | Meadow & seep | Riparian forest | Riparian woodland | Sacramento/San Joaquin flowing waters	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	**No Potential.** No suitable habitat in project area; no permanent or semi-permanent streams, no cobble substrate present

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Rana draytonii	California red-legged frog	Threatened	Species of Special Concern	-	Aquatic | Artificial flowing waters | Artificial standing waters | Freshwater marsh | Marsh & swamp | Riparian forest | Riparian scrub | Riparian woodland | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | Wetland	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**Present.** Known breeding habitat within 0.5 mile, potential dispersal habitat at periphery of project area. Occasional presence is assumed.
Taricha torosa	Coast Range newt	Species of Special Concern	None	-		Coastal drainages from Mendocino County to San Diego County.	Lives in terrestrial habitats & will migrate over 1 km to breed in ponds, reservoirs & slow moving streams.	**Moderate Potential.** No breeding habitat within 0.25 mile, however dispersal through pepriphery of project area is possible.
Reptiles								
Anniella pulchra	northern California legless lizard	None	Species of Special Concern	-	Chaparral | Coastal dunes | Coastal scrub	Sandy or loose loamy soils under sparse vegetation.	Soil moisture is essential. They prefer soils with a high moisture content.	**Low Potential.** Presence is possible but not likely because of r elatively heavy soils and moisture limited to drainageways.
Caretta caretta	North Pacific Loggerhead Sea Turtle	Endangered	None	-	Marine	Marine	Open sea to more than 500 miles from shore, mostly over continental shelf, and in bays, estuaries, lagoons, creeks, and mouths of rivers; mainly warm temperate and subtropical regions not far from shorelines	**No Potential.** Habitat for this species does not exist within the project area.
Chelonia mydas	East Pacific Green Sea Turtle	Threatened	None	-	Marine bay	Marine.	Completely herbivorous; needs adquate supply of seagrasses and algae.	**No Potential.** Habitat for this species does not exist within the project area.
Dermochelys coriacea	Leatherback Sea Turtle	Endangered	None	-	Marine	Marine	Open ocean. Also seas, gulfs, bays, and estuaries. Seldom approaches land except for nesting.	**No Potential.** Habitat for this species does not exist within the project area.
Emys marmorata	western pond turtle	None	Species of Special Concern	-	Aquatic | Artificial flowing waters | Klamath/North coast flowing waters | Klamath/North coast standing waters | Marsh & swamp | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | Wetland	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.	Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Low Potential.** Reported elsewhere on Camp SLO, but no permanent water within 0.25 mile of project area
Gambelia silus	Blunt-nosed Leopard Lizard	Endangered	Endangered	-	Chenopod scrub	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief.	Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	**No Potential.** The study varea is well outside the known range of the species.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Lepidochelys olivacea	Olive Ridley Sea Turtle	Threatened/ Endangered	None	-	Marine	Marine	Tropical and subtropical waters including protected, shallow, marine and estuarine waters, bays and lagoons, to offshore areas. Nesting occurs on upper beaches.	**No Potential.** Habitat for this species does not exist within the project area.
Phrynosoma blainvillii	coast horned lizard	None	Species of Special Concern	-	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon & juniper woodlands | Riparian scrub | Riparian woodland | Valley & foothill grassland	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	**Low Potential.** Very limited shrub cover constrains quality of habitat.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Birds								
Agelaius tricolor	Tricolored Blackbird	Under Review	Candidate Endangered	-	Freshwater marsh | Marsh & swamp | Swamp | Wetland	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California.	Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**Low Potential.** Although there are numerous occurrences of this species near the project area (breeding and foraging), there is no suitable habitat for this species in the project area (i.e. no herbaceous or forested wetlands, no triticale fields, etc.).
Athene cunicularia	Burrowing Owl	None	Species of Special Concern	-	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley & foothill grassland	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation.	Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Moderate Potential.** Wintering habitat is present for th species in the project area and there are known occurrences from the vicinity. No occurrences have been documented during the breeding season.
Brachyramphus marmoratus	Marbled Murrelet	Threatened	Endangered	-	Lower montane coniferous forest | Oldgrowth | Redwood	Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz.	Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	**No Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Charadrius nivosus nivosus	Western Snowy Plover	Threatened	Species of Special Concern	-	Great Basin standing waters | Sand shore | Wetland	Sandy beaches, salt pond levees & shores of large alkali lakes.	Needs sandy, gravelly or friable soils for nesting.	**No Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Elanus leucurus	White-tailed Kite	None	Fully Protected	-	Cismontane woodland | Marsh & swamp | Riparian woodland | Valley & foothill grassland | Wetland	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland.	Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Moderate Potential.** Grassland adjacent to the project area serves as prime foraging habitat for this species and there are numerous records from the vicinity. The species could nest in the project vicinity if large trees are present.
Empidonax traillii extimus	Southwestern Willow Flycatcher	Endangered	Endangered	-	Riparian woodland	Riparian woodlands in Southern California.		**Low Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Eremophila alpestris actia	California Horned Lark	None	Watch List	-	Marine intertidal & splash zone communities | Meadow & seep	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills.	Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	**Moderate Potential.** Breeding and foraging habitat present in project area and recent occurrences from the project vicinity of wintering and nesting birds.
Falco mexicanus	Prairie Falcon	None	Watch List	-	Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley & foothill grassland	Inhabits dry, open terrain, either level or hilly.	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	**Moderate Potential.** Foraging habitat is present in the project vicinity. Wintering birds more likely to be present although local breeding could forage in the project area as well.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Gymnogyps californianus	California Condor	Endangered	Endangered	-	Chaparral | Valley & foothill grassland	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude.	Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	**Moderate Potential.** Species could forage in the project vicinity if food sources (e.g. deceased cattle) are present. However, no breeding habitat is present in the project area.
Rallus obsoletus	Ridgway's Rail	Endangered	Endangered	-	Brackish marsh | Marsh & swamp | Salt marsh | Wetland	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.	Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	**No Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Sterna antillarum browni	California Least Tern	Endangered	Endangered	-	Alkali playa | Wetland	Nests along the coast from San Francisco Bay south to northern Baja California.	Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, land fills, or paved areas.	**No Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Vireo bellii pusillus	Least Bell's Vireo	Endangered	Endangered	-	Riparian forest | Riparian scrub | Riparian woodland	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft.	Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	**Low Potential.** No breeding or foraging habitat for this species present in the project vicinity and no known occurrences nearby.
Mammals								
Antrozous pallidus	pallid bat	None	Species of Special Concern	-	Chaparral | Coastal scrub | Desert wash | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Riparian woodland | Sonoran desert scrub | Upper montane coniferous forest | Valley & foothill grassland	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Moderate Potential.** No roost sites nearby but project area offers possible foraging habitat.
Arctocephalus townsendi	Guadalupe Fur Seal	Threatened	Threatened	-	Marine intertidal & splash zone communities | Protected deepwater coastal communities	Breeds on Isla de Guadalupe off of Mexico, occasionally found on San Miguel, San Nicolas, and San Clemente islands.	Prefers shallow, nearshore island water, with cool and sheltered rocky areas for haul-outs.	**No Potential.** Habitat for this species does not exist within the project area.
Balaenoptera borealis	Sei Whale	Endangered	None	-	Marine	Marine	Generally in deep water; along edge of continental shelf and in open ocean.	**No Potential.** Habitat for this species does not exist within the project area.
Balaenoptera musculus	blue whale	Endangered	None	-	Marine	Marine	Mainly pelagic; generally prefers cold waters and open seas, but young are born in warmer waters of lower latitudes	**No Potential.** Habitat for this species does not exist within the project area.
Balaenoptera physalus	fin whale	Endangered	None	-	Pelagic	Pelagic	Pelagic; usually found in largest numbers 25 miles or more from shore. Young are born in the warmer waters of the lower latitudes.	**No Potential.** Habitat for this species does not exist within the project area.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Corynorhinus townsendii	Townsend's big-eared bat	None	Species of Special Concern	-	Broadleaved upland forest | Chaparral | Chenopod scrub | Great Basin grassland | Great Basin scrub | Joshua tree woodland | Lower montane coniferous forest | Meadow & seep | Mojavean desert scrub | Riparian forest | Riparian woodland | Sonoran desert scrub | Sonoran thorn woodland | Upper montane coniferous forest | Valley & foothill grassland	Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**Low Potential.** No suitable roost sites nearby, habitat is generally marginal.
Dipodomys heermanni morroensis	Morro Bay kangaroo rat	Endangered	Endangered	-	Coastal bluff scrub | Coastal scrub	Coastal sage scrub on the south side of Morro Bay.	Needs sandy soil, but not active dunes, prefers early seral stages.	**No Potential.** No suitable habitat in project area and outside known range.
Dipodomys ingens	giant kangaroo rat	Endangered	Endangered	-	Chenopod scrub | Valley & foothill grassland	Annual grasslands on the western side of the San Joaquin Valley, marginal habitat in alkali scrub.	Need level terrain and sandy loam soils for burrowing.	**No Potential.** The study varea is well outside the known range of the species.
Enhydra lutris nereis	Southern Sea Otter	Threatened	Fully Protected	-	Aquatic | Protected deepwater coastal communities	Nearshore marine environments from about Ano Nuevo, San Mateo Co. to Point Sal, Santa Barbara Co.	Needs canopies of giant kelp & bull kelp for rafting & feeding. Prefers rocky substrates with abundant invertebrates.	**No Potential.** Habitat for this species does not exist within the project area.
Eubalaena japonica	North Pacific Right Whale	Endangered	None	-	Marine	Marine (North Pacific)	Near shore, Pelagic, Bearing Sea Shelf, Gulf of Alaska	**No Potential.** Habitat for this species does not exist within the project area.
Eumops perotis californicus	western mastiff bat	None	Species of Special Concern	-	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral, etc.	Roosts in crevices in cliff faces, high buildings, trees and tunnels.	**Low Potential.** No roost sites nearby but project area offers possible foraging habitat.
Megaptera novaeangliae	Humpback Whale	Endangered	None	-	Marine	Marine	Habitat includes the open ocean and coastal waters, sometimes including inshore areas such as bays. Summer distribution is in temperate and subpolar waters. In winter, most humpbacks are in tropical/subtropical waters near islands or coasts.	**No Potential.** Habitat for this species does not exist within the project area.
Orcinus orca	Southern Resident Killer Whale	Endangered	None	-	Near shore, pelagic	Near shore, pelagic	Mainly in coastal waters, but may occur anywhere in all oceans and major seas at any time of year	**No Potential.** Habitat for this species does not exist within the project area.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur
Physeter macrocephalus	Sperm Whale	Endangered	None	-	Marine	Marine	Tends to occur near productive waters, and often near continental shelves. Females generally restricted to waters with surface temperatures warmer than about 15 degrees C and rarely found in waters less than 1000 m deep. Males, although primarily found in deep water, are sometimes found in waters 200 to 1000 m deep.	**No Potential.** Habitat for this species does not exist within the project area.
Taxidea taxus	American badger	None	Species of Special Concern	-	Alkali marsh | Alkali playa | Alpine | Alpine dwarf scrub | Bog & fen | Brackish marsh | Broadleaved upland forest | Chaparral | Chenopod scrub | Cismontane woodland | Closed-cone coniferous forest | Coastal bluff scrub | Coastal dunes | Coastal prairie | Coastal scrub | Desert dunes | Desert wash | Freshwater marsh | Great Basin grassland | Great Basin scrub | Interior dunes | Ione formation | Joshua tree woodland | Limestone | Lower montane coniferous forest | Marsh & swamp | Meadow & seep | Mojavean desert scrub | Montane dwarf scrub | North coast coniferous forest | Oldgrowth | Pavement plain | Redwood | Riparian forest | Riparian scrub | Riparian woodland | Salt marsh | Sonoran desert scrub | Sonoran thorn woodland | Ultramafic | Upper montane coniferous forest | Upper Sonoran scrub | Valley & foothill grassland	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Moderate Potential.** No evidence of presence during site visit, however project area includes potentially suitable habitat.
Vulpes macrotis mutica	San Joaquin Kit Fox	Endangered	Threatened	-	Chenopod scrub | Valley & foothill grassland	Annual grasslands or grassy open stages with scattered shrubby vegetation.	Need loose-textured sandy soils for burrowing, and suitable prey base.	**No Potential.** The project area is outside of the known range for this species.

SciName	ComName	FedList	CalList	RPlant Rank	Habitats	GenHab	MicroHab	Potential to Occur

POTENTIAL TO OCCUR:

No Potential	Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Low Potential	Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
Moderate Potential	Some habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
High Potential	All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found

RARE PLANT STATUS CODES (California Native Plant Society):

State (California Native Plant Society)

List 1A: Plants presumed extinct.

List 1B: Plants rare, threatened, or endangered in California and elsewhere.

List 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere.

List 3: Plants about which more information is needed – a review list.

List 4: Plants of limited distribution – a watch list.

An extension reflecting the level of threat to each species is appended to each rarity category as follows:

4.1 = Seriously endangered in California.

4.2 = Fairly endangered in California.

4.3 = Not very endangered in California.