
DEVIL CANYON PROJECT RELICENSING FERC PROJECT NUMBER 14797



Draft License Application Exhibit G – Project Maps

April 2019

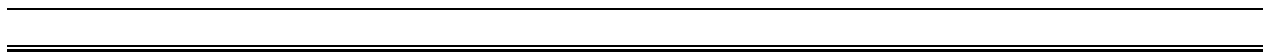


State of California
California Natural Resources Agency
DEPARTMENT OF WATER
RESOURCES
Hydropower License Planning and
Compliance Office

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Department of Water Resources



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APPENDICES

Appendix A – DWR’s Proposed Project Boundary Maps

COMMONLY USED TERMS, ACRONYMS & ABBREVIATIONS

§	Section
CFR	Code of Federal Regulations
DWR	California Department of Water Resources
FERC	Federal Energy Regulatory Commission
Project	Devil Canyon Project
U.S.C.	United States Code

1.0 INTRODUCTION

The California Department of Water Resources (DWR) has prepared this Exhibit G, Report on Project Maps, as part of its Application for a New License Major Project – Existing Dam (Application for New License) from the Federal Energy Regulatory Commission (FERC) for the Devil Canyon Project Relicensing (Project), FERC Project Number 14797. This exhibit is prepared in conformance with Title 18 of the Code of Federal Regulations (CFR), Subchapter B (Regulations under the Federal Power Act), Part 4, Subpart F (Application for License for Major Project – Existing Dam) (Traditional Licensing Process).

In particular, this exhibit conforms to the regulations in 18 CFR Section (§) 5.18(a)(5)(iii), which requires in part that the application include an Exhibit G in conformance with 18 CFR § 4.41(h) and § 4.39. Section 4.41(h) pertains to Project maps and § 4.39 provides specifications for maps and drawings. For reference, § 4.41(h) states:

18 CFR § 4.41(h): Exhibit G is a map of the project that must conform to the specifications of § 4.39. In addition, to the other components of Exhibit G, the Applicant must provide the project boundary data in a geo-referenced electronic format--such as ArcView shape files, GeoMedia files, MapInfo files, or any similar format. The electronic boundary data must be positionally accurate to ± 40 feet, in order to comply with the National Map Accuracy Standards for maps at a 1:24,000 scale (the scale of United States Geological Survey quadrangle maps). The electronic Exhibit G data must include a text file describing the map projection used (i.e., Universal Transverse Mercator, State Plane, Decimal Degrees, etc.), the map datum (i.e., feet, meters, miles, etc.). Three sets of the maps must be submitted on compact disk or other appropriate electronic media. If more than one sheet is used for the paper maps, the sheets must be numbered consecutively, and each sheet must bear a small insert sketch showing the entire project and indicate that portion of the project depicted on that sheet. Each sheet must contain a minimum of three known reference points. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown. If at any time after the application is filed there is any change in the project boundary, the applicant must submit, within 90 days following the completion of project construction, a final exhibit G showing the extent of such changes. The map must show:

- (1) *Location of the project and principal features.* The map must show the location of the project as a whole with reference to the affected stream or other body of water and, if possible, to a nearby town or any other permanent monuments or objects, such as roads, transmission lines or other structures, that can be noted on the map and recognized in the field. The map must also show the relative

locations and physical interrelationships of the principal project works and other features described under paragraph (b) of this section (Exhibit A).

- (2) *Project boundary.* The map must show a project boundary enclosing all project works and other features described under paragraph (b) of this section (Exhibit A) that are to be licensed. If accurate survey information is not available at the time the application is filed, the applicant must so state, and a tentative boundary may be submitted. The boundary must enclose only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources (see paragraph (f) of this section (Exhibit E)). Existing residential, commercial, or other structures may be included within the boundary only to the extent that underlying lands are needed for project purposes (e.g., for flowage, public recreation, shoreline control, or protection of environmental resources). If the boundary is on land covered by a public survey, ties must be shown on the map at sufficient points to permit accurate platting of the position of the boundary relative to the lines of the public land survey. If the lands are not covered by a public land survey, the best available legal description of the position of the boundary must be provided, including distances and directions from fixed monuments or physical features. The boundary must be described as follows:
- (i) *Impoundments.*
- (A) The boundary around a project impoundment must be described by one of the following:
- (1) Contour lines, including the contour elevation (preferred method);
 - (2) Specified courses and distances (metes and bounds);
 - (3) If the project lands are covered by a public land survey, lines upon or parallel to the lines of the survey; or
 - (4) Any combination of the above methods.
- (B) The boundary must be located no more than 200 feet (horizontal measurement) from the exterior margin of the reservoir, defined by the normal maximum surface elevation, except where deviations may be necessary in describing the boundary according to the above methods or where additional lands are necessary for

project purposes, such as public recreation, shoreline control, or protection of environmental resources.

- (ii) *Continuous features.* The boundary around linear (continuous) project features such as access roads, transmission lines, and conduits may be described by specified distances from center lines or offset lines of survey. The width of such corridors must not exceed 200 feet unless good cause is shown for a greater width. Several sections of a continuous feature may be shown on a single sheet with information showing the sequence of contiguous sections.
- (iii) *Noncontinuous features.*
 - (A) The boundary around noncontinuous project works such as dams, spillways, and powerhouses must be described by one of the following:
 - (1) Contour lines;
 - (2) Specified courses and distances;
 - (3) If the project lands are covered by a public land survey, lines upon or parallel to the lines of the survey; or
 - (4) Any combination of the above methods.
 - (B) The boundary must enclose only those lands that are necessary for safe and efficient operation and maintenance of the project or for other specified project purposes, such as public recreation or protection of environmental resources.
- (3) *Federal lands.* Any public lands and reservations of the United States (Federal lands) [see 16 United States Code (U.S.C.) 796 (1) and (2)] that are within the project boundary, such as lands administered by the U.S. Forest Service, Bureau of Land Management, or National Park Service, or Indian tribal lands, and the boundaries of those Federal lands, must be identified as such on the map by:
 - (i) Legal subdivisions of a public land survey of the affected area (a protraction of identified township and section lines is sufficient for this purpose); and
 - (ii) The Federal agency, identified by symbol or legend, that maintains or manages each identified subdivision of the public land survey within the project boundary; or
 - (iii) In the absence of a public land survey, the location of the Federal lands according to the distances and directions from

fixed monuments or physical features. When a Federal survey monument or a Federal bench mark will be destroyed or rendered unusable by the construction of project works, at least two permanent, marked witness monuments or bench marks must be established at accessible points. The maps show the location (and elevation, for bench marks) of the survey monument or bench mark which will be destroyed or rendered unusable, as well as of the witness monuments or bench marks. Connecting courses and distances from the witness monuments or bench marks to the original must also be shown.

- (iv) The project location must include the most current information pertaining to affected Federal lands as described under §4.81(b)(5).
- (4) *Non-Federal lands.* For those lands within the project boundary not identified under paragraph (h)(3) of this section, the map must identify by legal subdivision:
 - (i) Lands owned in fee by the applicant and lands that the applicant plans to acquire in fee; and
 - (ii) Lands over which the applicant has acquired or plans to acquire rights to occupancy and use other than fee title, including rights acquired or to be acquired by easement or lease.

Besides this introductory material, this Exhibit G includes two sections. Section 2.0 provides a description of DWR's proposed changes to the Project boundary. Section 3.0 provides a list of Project boundary maps proposed for inclusion in the new license. The maps are included in Appendix A to this exhibit. Section 4.0 provides a list of references cited.

See Exhibit A for a description of Project facilities and features, Exhibit B for a description of Project operations, Exhibit C for a construction history and a construction schedule, Exhibit D for costs and financing information, and Exhibit E for a discussion of potential environmental effects and DWR's proposed resource management measures. Design drawings are included in Exhibit F. Exhibit H contains a detailed description of the need for the electricity provided by the Project, the availability of electrical energy alternatives, and other miscellaneous information.

All elevation data in this exhibit are in the North American Datum of 1983 unless otherwise specified.

2.0 CONSTRUCTION SCHEDULE FOR DWR PROPOSED NEW FACILITIES AND FEATURES

DWR proposes changes to the existing Project boundary. The proposed specific changes to the Project boundary are listed below, in Table 2.0-1.

Table 2.0-1. Proposed Changes to Devil Canyon Project Existing Project Boundary

Drawing Number in Existing License	Date of FERC Order Approving Drawing	FERC-Assigned Drawing Number	Licensees' Proposed Drawing Number in New License	Licensees' Proposed Drawing Name	Changes Made from Existing to Proposed Project Boundary
G-1 G-2	9/30/2014	2426-501 2426-502	G-1	Devil Canyon Project: Proposed Project Boundary Overview Map	Combined Drawings G-1 and G-2 in existing license to create updated index map showing spatial layout of Boundary Drawings G-2 and G-3. Drawing depicts complete updated proposed boundary following Project waterways, reservoirs, generation, and recreation facilities.
G-1	9/30/2014	2426-501	G-2	Devil Canyon Project: Proposed Project Boundary Map	Updated drawing shows detail for the north half of the Project area. The land area surrounding Silverwood Lake was reduced in size to eliminate lands not needed for Project purposes. The existing boundary followed Public Land Survey section or quarter section lines, rather than encompassing just the lands necessary for Project facilities, operation and maintenance. These excess, unused lands are not included, as they are not needed for Project operation and maintenance of Project facilities. The proposed boundary follows the contour of Silverwood Lake more closely and provides an adequate buffer zone between maximum surface water levels, and the proposed shoreline boundary.
G-2	9/30/2014	2426-502	G-3	Devil Canyon Project: Proposed Project Boundary Map	Updated drawing shows detail in the south half of the Project area. Proposed boundary reduced some land areas around the Devil Canyon afterbays that are not needed for Project operations and maintenance, and also added some primary Project roads that are needed for ongoing operations and maintenance of the penstocks, surge chamber and San Bernardino Tunnel outlet facilities.

Source: Pers. comm., Parsons 2018

Key:

FERC = Federal Energy Regulatory Commission

3.0 PROJECT MAPS

General maps for DWR's Proposal as described in Exhibit A are provided in the Exhibit G maps listed in Table 3.0-1. These maps depict the proposed Project boundary in conformance with 18 CFR § 4.39. The maps are included in Appendix A.

Table 3.0-1. DWR's Proposed Project Boundary Maps

Drawing Number	Title
G-1	Devil Canyon Project Proposed Project Boundary Overview Map
G-2	Devil Canyon Project Proposed Project Boundary Map
G-3	Devil Canyon Project Proposed Project Boundary Map

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4.0 REFERENCES CITED

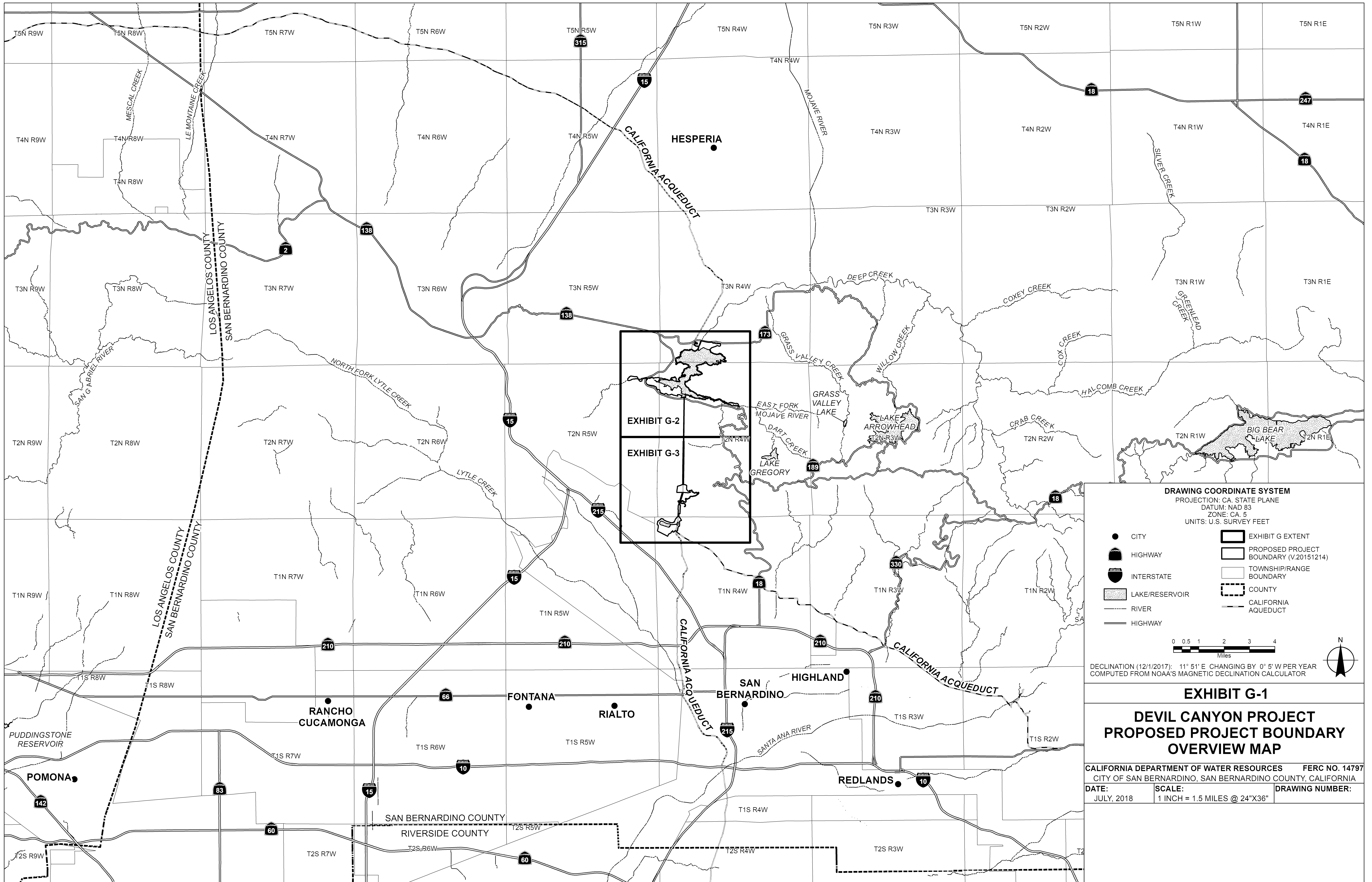
Parsons, J., California Department of Water Resources and Department of Energy; email communication with D. Burr, Supervising Geologist, Stantec Consulting Services Inc, Sacramento, California; July 24, 2018.

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Appendix A

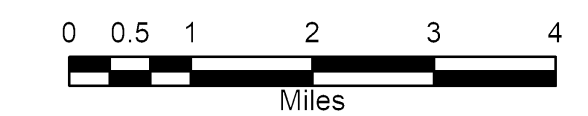
DWR's Proposed Project Boundary Maps

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DRAWING COORDINATE SYSTEM
 PROJECTION: CA. STATE PLANE
 DATUM: NAD 83
 ZONE: CA. 5
 UNITS: U.S. SURVEY FEET

- CITY
- HIGHWAY
- INTERSTATE
- LAKE/RESERVOIR
- RIVER
- HIGHWAY
- EXHIBIT G EXTENT
- PROPOSED PROJECT BOUNDARY (V.20151214)
- TOWNSHIP/RANGE BOUNDARY
- COUNTY
- CALIFORNIA AQUEDUCT



DECLINATION (12/1/2017): 11° 51' E CHANGING BY 0° 5' W PER YEAR
 COMPUTED FROM NOAA'S MAGNETIC DECLINATION CALCULATOR

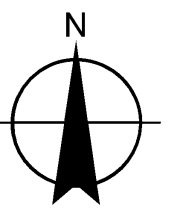
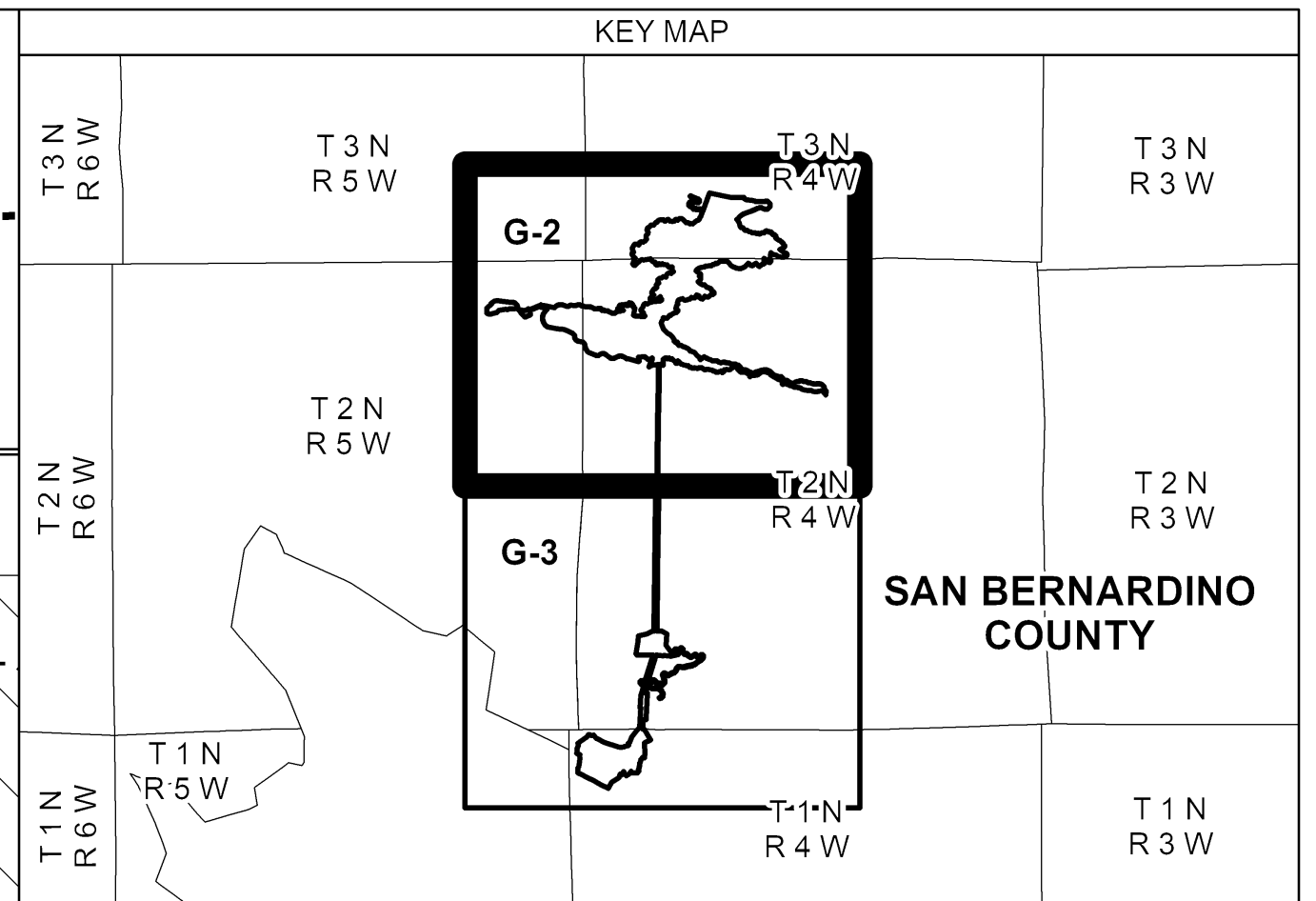
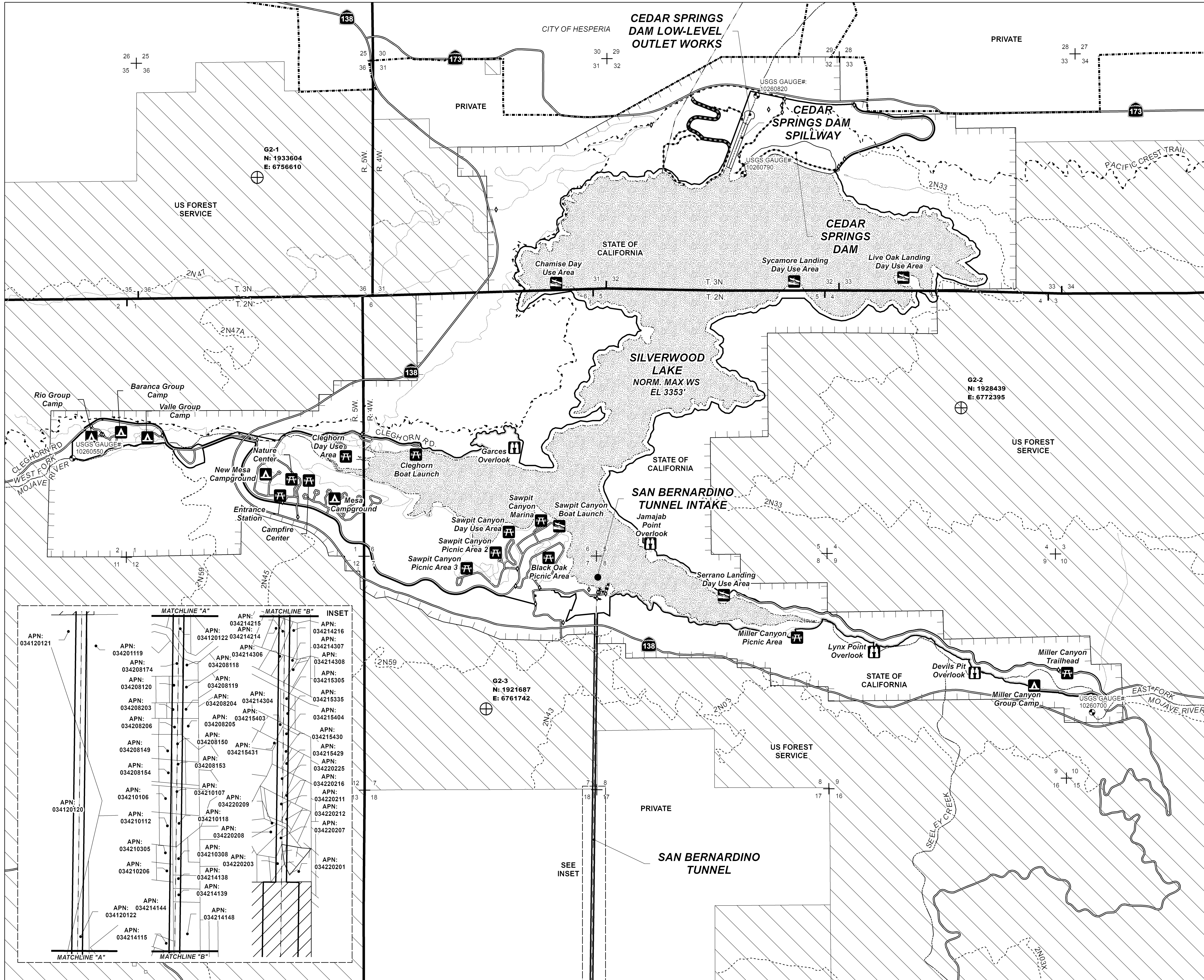


EXHIBIT G-1
DEVIL CANYON PROJECT
PROPOSED PROJECT BOUNDARY
OVERVIEW MAP

CALIFORNIA DEPARTMENT OF WATER RESOURCES FERC NO. 14797
 CITY OF SAN BERNARDINO, SAN BERNARDINO COUNTY, CALIFORNIA
 DATE: JULY, 2018 SCALE: 1 INCH = 1.5 MILES @ 24"X36" DRAWING NUMBER:



SURVEYORS STATEMENT

I HEREBY STATE THAT THE P-14797 PROJECT BOUNDARY DELINEATION FOR THE DEVIL CANYON PROJECT IS SHOWN ON THIS EXHIBIT "G" IS DEVELOPED WITHIN REASONABLE ACCURACIES AS REQUIRED IN 18CFR4.41 TO THE GEOGRAPHIC LOCATION BASED ON A GRAPHICAL POSITIONING IN REFERENCE TO USGS QUADRANGLE MAPPING WITHIN +/- 40 FEET. THE P-14797 DOCUMENT PROJECT BOUNDARY WAS DIGITIZED TO GRAPHICALLY BEST FIT THE FEATURES ON USGS EROS HIGH RESOLUTION ORTHO IMAGERY AND WAS NOT FIELD SURVEYED.

DRAWING COORDINATE SYSTEM

PROJECTION: CA. STATE PLANE
 DATUM: NAD 83
 ZONE: CA. 5
 UNITS: U.S. SURVEY FEET

LS STAMP

THE LICENSEE EITHER OWNS IN FEE SIMPLE, POSSESSES ADEQUATE LAND RIGHTS, OR WILL ACQUIRE ADEQUATE LAND RIGHTS OVER ALL LANDS SHOWN THAT ARE INSIDE THE PROJECT BOUNDARY

- + SECTION CORNER
- ⊕ REFERENCE POINT
- ◇ GATE
- PROJECT COMPLIANCE GAUGE STATION
- - - PROJECT ROAD
- PAVED ROAD
- - - UNPAVED ROAD
- - - PACIFIC CREST TRAIL
- - - OTHER TRAILS
- STREAM / RIVER
- CALIFORNIA AQUEDUCT
- - - CITY LIMITS
- ▭ PROPOSED PROJECT BOUNDARY (V.20151214)
- ▭ TOWNSHIP / RANGE LINE
- ▨ RESERVOIR
- ▨ LAND OWNERSHIP: CITY OF SAN BERNARDINO, FOREST SERVICE, STATE OF CALIFORNIA, PRIVATE
- ▭ RECREATION LEGEND: BOAT-IN DAY USE AREA, CAMPGROUND, DAY USE AREA, OVERLOOK

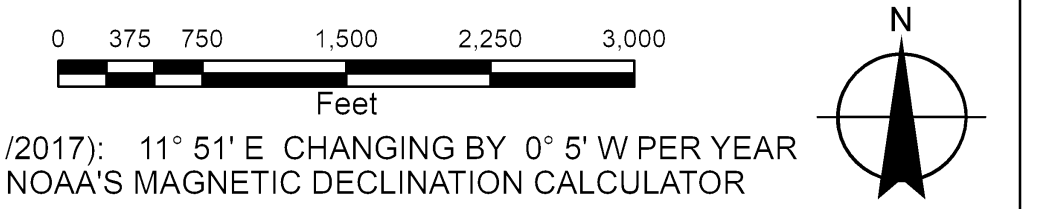
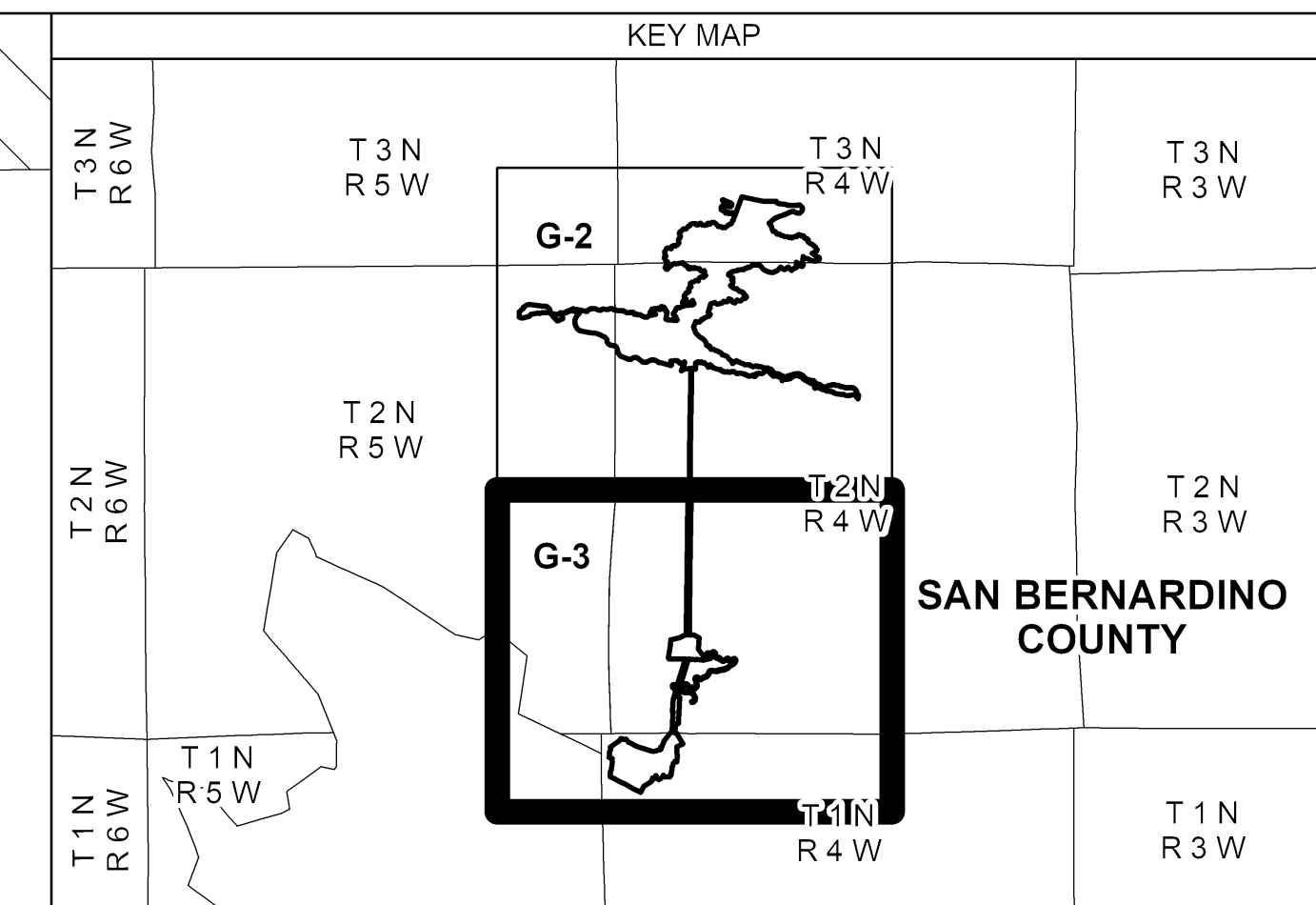
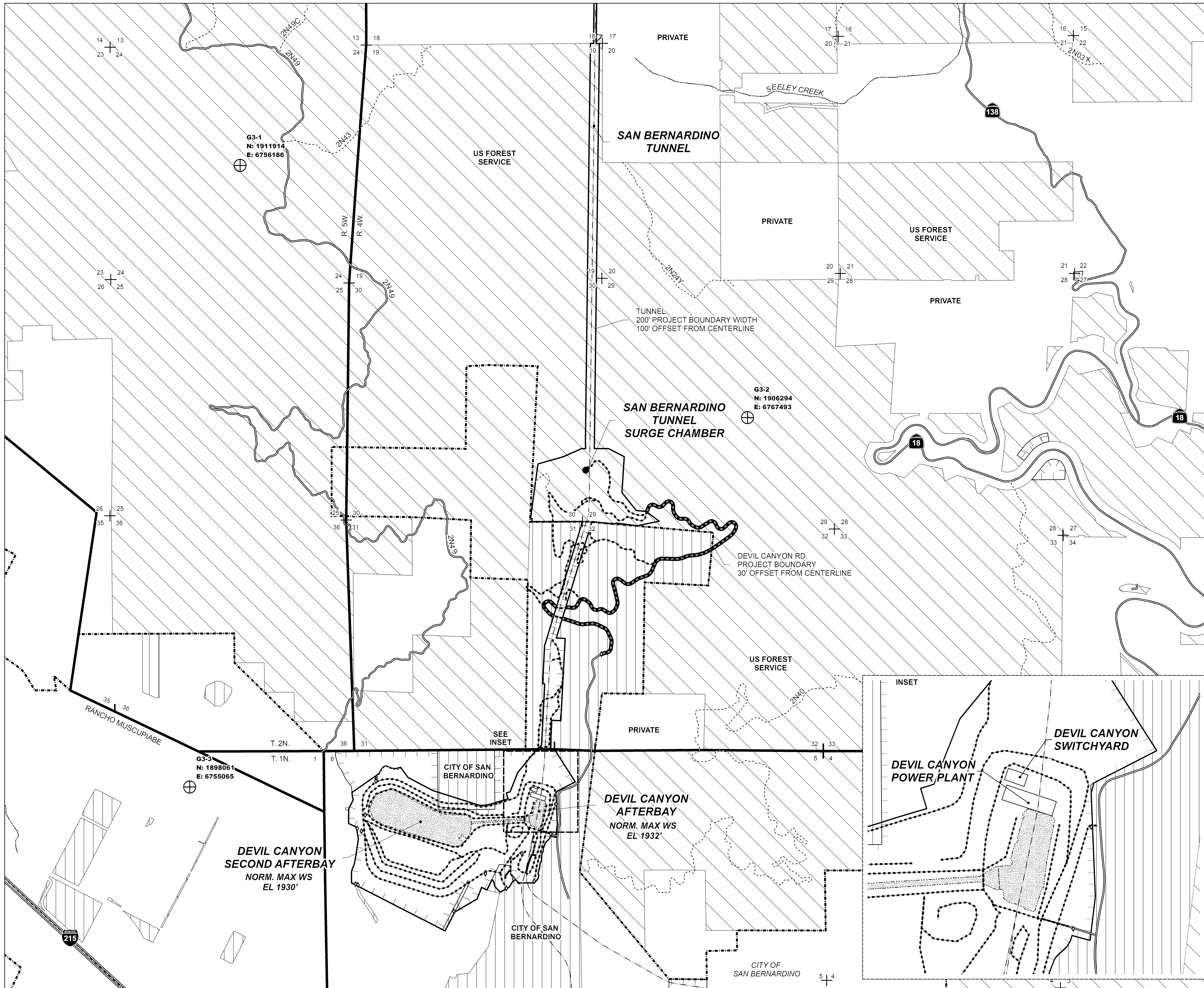


EXHIBIT G-2

DEVIL CANYON PROJECT PROPOSED PROJECT BOUNDARY MAP

CALIFORNIA DEPARTMENT OF WATER RESOURCES FERC NO. 14797
 CITY OF SAN BERNARDINO, SAN BERNARDINO COUNTY, CALIFORNIA

DATE: JULY, 2018 SCALE: 1 INCH = 1000 FEET @ 24"x36" DRAWING NUMBER:

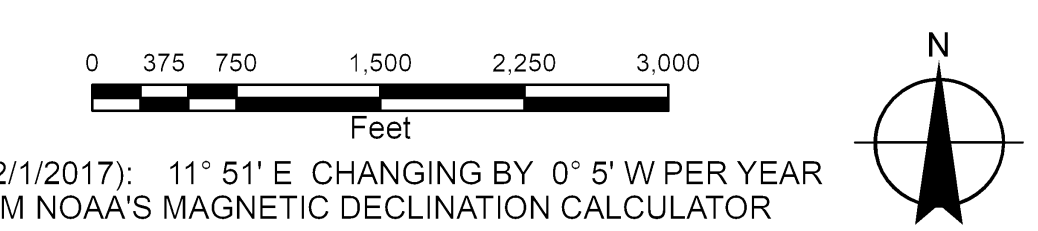


SURVEYORS STATEMENT
 I HEREBY STATE THAT THE P-14797 PROJECT BOUNDARY DELINEATION FOR THE DEVIL CANYON PROJECT IS SHOWN ON THIS EXHIBIT "G-3" IS DEVELOPED WITHIN REASONABLE ACCURACIES AS REQUIRED IN 18CFR4.41 TO THE GEOGRAPHIC LOCATION BASED ON A GRAPHICAL POSITIONING IN REFERENCE TO USGS QUADRANGLE MAPPING WITHIN +/- 40 FEET. THE P-14797 DOCUMENT PROJECT BOUNDARY WAS DIGITIZED TO GRAPHICALLY BEST FIT THE FEATURES ON USGS EROS HIGH RESOLUTION ORTHO IMAGERY AND WAS NOT FIELD SURVEYED.

DRAWING COORDINATE SYSTEM
 PROJECTION: CA. STATE PLANE
 DATUM: NAD 83
 ZONE: CA. 5
 UNITS: U.S. SURVEY FEET

LS STAMP
 THE LICENSEE EITHER OWNS IN FEE SIMPLE, POSSESSES ADEQUATE LAND RIGHTS, OR WILL ACQUIRE ADEQUATE LAND RIGHTS OVER ALL LANDS SHOWN THAT ARE INSIDE THE PROJECT BOUNDARY

- | | | | |
|-----|----------------------------------|-----|--|
| + | SECTION CORNER | --- | CITY LIMITS |
| ⊕ | REFERENCE POINT | --- | PROPOSED PROJECT BOUNDARY (V.20151214) |
| ◇ | GATE | --- | TOWNSHIP / RANGE LINE |
| ⊙ | PROJECT COMPLIANCE GAUGE STATION | --- | RESERVOIR |
| --- | PROJECT ROAD | --- | LAND OWNERSHIP |
| --- | PAVED ROAD | --- | CITY OF SAN BERNARDINO |
| --- | UNPAVED ROAD | --- | FOREST SERVICE |
| --- | PACIFIC CREST TRAIL | --- | STATE OF CALIFORNIA |
| --- | OTHER TRAILS | --- | PRIVATE |
| --- | STREAM / RIVER | --- | |
| --- | CALIFORNIA AQUEDUCT | --- | |



DECLINATION (12/1/2017): 11° 51' E. CHANGING BY 0° 5' W PER YEAR
 COMPUTED FROM NOAA'S MAGNETIC DECLINATION CALCULATOR

EXHIBIT G-3
DEVIL CANYON PROJECT
PROPOSED PROJECT BOUNDARY
MAP

CALIFORNIA DEPARTMENT OF WATER RESOURCES FERC NO. 14797
 CITY OF SAN BERNARDINO, SAN BERNARDINO COUNTY, CALIFORNIA

DATE: JULY, 2018 SCALE: 1 INCH = 1000 FEET @ 24"x36" DRAWING NUMBER:

