Appendix D
(Available on City website)

Hydrology and Hydraulic Study
Phase I & 2
January 2022

Hydrology and Water Quality CEQA Analysis Memo
January 2022

DRAFT

Hydrology and Hydraulic Study

Desert Peak Energy Center – Phase 1 and 2 Riverside County, California

JANUARY 2022

Prepared for:

DESERT PEAK ENERGY CENTER LLC

Prepared by:

DUDEK

605 Third Street
Encinitas, California 92024
Contact: Kipp Vilker, PE No. 90011

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AMC	antecedent moisture condition
amsl	above mean sea level
BMPs	Best management practices
BESS	battery energy storage system
cfs	cubic feet per second
CY	cubic yards
fps	feet per second
GIS	Geographic Information System
HEC-HMS	Hydraulic Engineering Center Hydrologic Modeling System
HEC-RAS	Hydraulic Engineering Center River Analysis System
LID	Low Impact Development
NOAA	National Oceanic and Atmospheric Administrations
RI	Runoff Index
SR	State Route
SCE	Southern California Edison
SCS	Soil Conservation Service
Sq. mi.	square-mile
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
RCFCWCD	Riverside County Flood Control and Water Conservation District
WQMP	Water Quality Management Plan

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1 Introduction

This report (Report) documents the methods and results of a hydrology and hydraulics study for the watersheds contributing flow to the Desert Peak Project site (site), City of Palm Springs, Riverside County, California. The hydrological methods used in this Report are described in the Riverside County Flood Control and Water Conservation District (RCFCWCD) Hydrology Manual (Hydrology Manual).

The Synthetic Unit Hydrograph Method, which is outlined in Section E of the Hydrology Manual, was used to develop the rainfall-runoff relationship for this Report. Hydraulic Engineering Center Hydrologic Modeling System (HEC-HMS) software developed by the U.S. Army Corps of Engineers (USACE) was used to model the precipitation-runoff process of the watershed's contributing flow to the site. HEC-HMS was utilized to calculate pre- and post-project peak discharge and maximum flow volumes for the 10-year and 100-year rainfall events with storm durations of 1-, 3-, 6-, and 24-hours. A HEC-HMS Preprocessor User Manual and Guidance document was developed by the USACE in 2016 and was used in the development of the project hydrologic model. Hydraulic Engineering Center River Analysis System (HEC-RAS) software was used to model the 100-year, 24-hour flood inundation depths and flow velocities at the site.

The objective of this Report is to:

- Assess the hydrological impacts to the contributing watersheds resulting from the development of Phases 1 and 2 of the Desert Peak Energy Center (Project) by comparing pre-Project peak flows and volumes to post-Project flows and volumes.
- Use the peak flows to analyze proposed condition hydraulics of the site including maximum flow depths and velocities.

This Report does not address Project-specific requirements which are discussed in the RCFCWCD Design Handbook for Low Impact Development Best Management Practices or Riverside County Water Quality Management Plans.

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2 Project Background

2.1 Project Description and Location

Desert Peak Energy Center LLC (Applicant) proposes to construct and operate the Desert Peak Energy Center (Project) on approximately 78 acres to store 700 megawatts (MW) of energy. The Project would be developed in two distinct phases spanning two project sites totaling approximately 357 acres. Phase 1 would occupy approximately 50 acres on a 189-acre site (Phase 1 Site) and would store 400 MW of electricity. The Phase 1 site is located immediately south of the Southern California Edison (SCE) Devers Substation. Phase 2 is anticipated to be developed approximately two years after the completion of Phase 1 and would occupy approximately 28 acres on a 168-acre site (Phase 2 Site). Phase 2 would store 300 MW of electricity and would be located adjacent to the Phase 1 site to the south. The Project, in total, includes a 700-megawatt battery energy storage system (BESS) facility with associated on-site substation, inverters, fencing, roads, and supervisory control and data acquisition system. The Project also includes a 230-kilovolt aboveground generation tie line (gen-tie line), and telecommunication lines, which would extend approximately 0.3 miles from the northern portion of the Phase 1 site to SCE's Devers Substation, located adjacent to the Phase 1 site to the north.

The Project is located approximately 4 miles north of the center of the City of Palms Springs and approximately 1 mile north of Interstate 10 (Figure 1). The Phase 1 site is located immediately south of the SCE Devers Substation at the northeastern intersection of Diablo Road and Dillon Road. The Phase 2 site is located immediately south of the Phase 1 site. Both Sites are located entirely within the jurisdiction of the City of Palm Springs and zoned Energy Industrial (E-I) per the City's Zoning Ordinance. The Project sites are situated roughly in the southern half of Sections 4 and 9, Township 3 South, Range 4 East, of the Desert Hot Springs, California, U.S. Geological Survey (USGS) 7.5-Minute Topographic Quadrangle, centered approximately at 33°55'29"N/116°34'33"W.

A summary of specific Project location attributes includes the following:

- **County:** Riverside
- **Section:** 4 and 9; **Township:** 3S; **Range:** 4E
- **USGS 7.5-Minute Quadrangle:** Desert Hot Springs
- **Latitude/Longitude:** 33°55'29"N/116°34'33"W
- **Average Elevation:** 840 to 1,070 feet above mean sea level
- **Desert Peak Energy Center Project Site Total Acreage:** 357

2.2 Rainfall

Isohyetal maps of point precipitation of the 2- and 100-year average recurrence intervals for storm duration periods of 1-, 3-, 6-, and 24-hours are shown in the Hydrology Manual. Rainfall data for the 10-year recurrence interval can be interpolated using the Hydrology Manual and is provided in Table 1 along with the 100-year recurrence interval data.

Table 1. Rainfall Depth in Hydrology Manual

Duration	Precipitation (inches)	
	Average Recurrence Interval (years)	
	10	100
1-hour	1.0	1.61
3-hour	1.3	2.27
6-hour	1.7	2.75
24-hour	2.7	4.5

Source: RCFCWCD Hydrology Manual 1978.

The Hydrology Manual states that "it should be noted that in mountainous terrain, or for studies of large watersheds, the National Oceanic and Atmospheric Administrations (NOAA) Atlas 2 data should be checked … and adjustments made as necessary (RCFCWCD 1978)." Because the NOAA Atlas 2 data used to formulate this data are from 1973, more updated data can be obtained. Using current NOAA Atlas 14 precipitation estimates, more conservative rainfall depths were obtained and are provided in Table 2.

Table 2. Rainfall Depth in NOAA Atlas 14

Duration	Precipitation (inches)		Aerial Adjustment Factor (%)
	Average Recurrence Interval (years)		
	10	100	
1-hour	0.90	1.74	95
3-hour	1.39	2.55	96
6-hour	1.83	3.31	97
24-hour	2.99	5.49	98

Source: NOAA 2021.

The rainfall estimates in Table 2 are more conservative (with the exception of the 10-year, 1-hour storm) and will be used for the purposes of this study. For use with the Synthetic Unit Hydrograph method, an area adjustment using curves in Plate E-5.8 of the Hydrology Manual was applied to point rainfall values. The aerial adjustment factors used are shown in Table 2.

3 Existing Condition Drainage

3.1 Methodology

The Project site is located within the Colorado Desert, in the northwestern end of the Coachella Valley, which is generally bounded by the San Bernardino Mountains and Little San Bernardino Mountains to the north, the San Jacinto and Santa Rosa Mountains to the south, and the Salton Sea and Imperial Valley to the east. The site is subject to storm flows due to its location on an active desert alluvial fan and near a concentrated flow path. Four watersheds contribute flow to the site and all four are within the Whitewater watershed (Figure 1). Southeasterly-flowing intermittent streams and washes fan out from the San Bernardino Mountains in the northwest and flow through the site. The National Hydrography Dataset (USGS 2021) depicts one stream within the Phase 1 site, bisecting the Phase 1 site from northwest to southeast. The National Wetlands Inventory (USFWS 2021) generally depicts the same riverine feature. The National Hydrography Dataset (USGS 2021) depicts two streams within the Phase 2 site, one stream bisecting the southwestern corner and one continuing from the Phase 1 site and bisecting the northwestern and southeastern portions of the Phase 2 site. The National Wetland Inventory (USFWS 2021) depicts the same riverine features and an additional riverine feature continuing from the Phase 1 site and bisecting the Phase 2 site north to south (Figure 2). There are potentially jurisdictional aquatic resources on site which are presented in Figure 3. Further discussion can be found in the Jurisdictional Delineation Reports (Dudek 2021a and Dudek 2021b).

Four watersheds totaling 13.2 square miles (sq. mi. [8,448 acres]) contribute flow to the site and are examined as part of this Report (Figure 4). The watersheds are referred to as southern, western, central, and eastern. There are three drainages which flow through the site and are referred to as the western drainage, central drainage, and southern drainage.

The southern drainage flows from northwest to southeast through the southwestern corner of the Phase 2 site. This drainage is an ephemeral wash that originates from precipitation within the higher elevation peaks in the northwest. Flows continue southeast off of the Phase 2 site until their confluence with Garnet Wash. The southern watershed contributes flow to the southern drainage. The southern watershed was delineated using StreamStats, a web-based Geographic Information System (GIS) application developed by the USGS that provides analytical tools for water-resources planning and design purposes.

The western drainage is comprised of braided, ephemeral features that flow northwest to southeast and originate to the northwest from Painted Hills. From Painted Hills the flows continue southeast, flowing under State Route (SR) 62, and then continuing southeast approximately 1.73 miles, where flows are directed south due to the development of the SCE Devers Substation. An additional undercrossing of an access road to the substation is located directly north of the site. Flows continue south through the Phase 1 site before crossing Dillon Road and enter onto the Phase 2 site where they continue for approximately 0.5 miles southeast before dissipating as sheet flow. This 4,068-acre area is referred to as the western watershed. The western watershed was delineated by StreamStats and was modified by creating hydrological breaks using Google Earth and aerial imagery after identifying features such as the armored flow barrier at the substation north of the site. Directly north of the Phase 1 site is an approximately 300-acre SCE substation which consists of mostly of graded and compacted soils with gravel or paved cover. On the northern and northwestern edge of the substation is a barrier armored with riprap, assumed to divert, and disrupt southeasterly flow from the westernmost contributing watershed.

Precipitation that falls south of the substation barrier and within the substation area is assumed to flow southeast and contribute to the central drainage identified in Figure 3. This 228-acre area is referred to as the central watershed.

A culvert is located on the eastern portion of the Phase 1 site which collects flow from the northwest and conveys it east under Melissa Lane (see Figure 3). It is assumed that the drainage area contributing to this culvert outfall is primarily the graded, compacted pad on the northeastern portion of the Phase 1 site. This 20-acre area is referred to as the eastern watershed.

The Synthetic Unit Hydrograph Method was used to determine runoff for these watersheds. An S-graph is a summation hydrograph modified to the extent that discharge is expressed in percent of ultimate discharge, and time is expressed in percent of lag time. Four S-graphs are used to represent the runoff characteristics of watersheds in Riverside County. Based on Google Earth aerial imagery, an equal percentage of all four S-graphs (Valley, Foothill, Mountain, and Desert) were used to characterize the contributing watersheds.

Lag time was computed using the HEC-HMS preprocessor tool available on the Riverside County Flood Control and Water Conservation District website. Lag for a drainage area is defined as the elapsed time from the beginning of unit effective rainfall to the instant that the summation hydrograph for the concentration point of an area reaches 50% of ultimate discharge. The preprocessor tool is used to calculate input parameters into HEC-HMS. Lag time calculations can be found in Appendix A.

3.2 Existing Condition Topography

Existing topography of the site and watersheds is presented in Figure 4. The site is relatively flat; however, elevations gradually slope from northwest to southwest. Elevation within the Phase 1 site ranges from approximately 1,050 feet above mean sea level (amsl) in the northwest corner of the site to approximately 930 feet amsl in the southeast corner of the site. Elevations within the Phase 2 site ranges from approximately 950 feet amsl in the northwest corner of the site to approximately 820 feet amsl in the southeast corner of the site.

The southern watershed extends approximately 4-miles to the northwest of the site into the San Bernardino Mountains. The longest flow path in this watershed is 4.9-miles and starts at an elevation of 2,280-feet amsl and ends at an elevation of 870-feet amsl. The flow direction is southeast, and the slope of the flow path is 5.5%.

The western watershed extends approximately 6-miles northwest of the site into the San Bernardino Mountains. The longest flow path in this watershed is 6.7-miles and starts at an elevation of approximately 3,270-feet amsl and ends at an elevation of approximately 940 feet amsl. The flow direction is southeast, and the slope of this flow path is 6.2%.

The central watershed extends approximately 0.5 miles north of the site and contains a flow path of approximately 1-mile, starting at an elevation of 1,185 feet amsl and ending at an elevation of 950 feet amsl.

The eastern watershed contains a flow path of 0.25 miles starting at an elevation of 1,050 feet amsl and ending at an elevation of 990 feet amsl.

3.3 Existing Condition Infiltration and Surface Cover

Among the many factors affecting infiltration or loss rates, three of the most impactful are: soil surface and profile characteristics, soil cover or vegetation type, and antecedent moisture condition (AMC). The Soil Conservation Service (SCS) of the U.S. Department of Agriculture (USDA) has investigated the hydrologic characteristics of soils as related to runoff potential and has developed a system useful to RCFCWCD to classify soils into four hydrologic soil groups. The hydrologic soil groups of the site and contributing watersheds were obtained using Plate C-1.21 and C-1.22 in the Hydrology Manual and the Web Soil Survey application made available through the USDA Natural Resources Conservation Service website (USDA 2021). The hydrologic soil group data is presented in Figure 5.

As shown in Figure 5, an 1,844-acre northwestern portion of the western watershed, consisting of mountainous terrain, was not surveyed for hydrologic soil group data. It is assumed that this area is made up of an even split between hydrologic soil group A and hydrologic soil group B. In addition, a 542-acre portion of the southern watershed, also consisting of mountainous terrain, was not surveyed for hydrologic soil group data. Because the majority of the hydrologic soil group data for the area surrounding this portion is hydrologic soil group D, and because this is the most conservative assumption in terms of runoff, this whole portion of non-surveyed area is assumed to be hydrologic soil group D. Hydrologic soil group data by contributing watershed are presented in Table 3.

Table 3. Hydrologic Soil Groups of Contributing Watersheds

Watershed	Hydrologic Soil Group	Size (Acres)	Percentage of Watershed
Southern Watershed	A	2,203	54%
	B	874	21%
	D	992	24%
Western Watershed	A	2,982	75%
	B	998	25%
Central Watershed	A	191	100%
Eastern Watershed	A	20	100%

Sources: RCFCWCD Hydrology Manual 1978. USDA 2021.

The type of vegetation or ground cover on a watershed, and the quality or density of that cover, has a major impact on the infiltration capacity of a given soil. Figure 6 presents the land cover types at the site and the contributing watersheds (NLCD 2021). Shrub/scrub cover makes up the majority of the land cover type within the contributing watersheds. The Phase 1 site consists mostly of shrub/scrub cover with some developed and barren land. The Phase 2 site consists mostly of barren and developed land.

AMC has a major effect on the runoff potential of a particular soil-cover complex. The Hydrology Manual defines AMC as the relative wetness of a watershed just prior to a flood producing storm event. For the purposes of design hydrology using RCFCWCD methods, AMC II should be assumed for both the 10-year and 100-year frequency storm (RCFCWCD 1978). For this study, AMC Level II, the intermediate condition with moderate runoff potential, has been selected.

In estimating infiltration rates for the western watershed for RCFCWCD design hydrology, an index of runoff potential or "runoff index" (RI) is determined for each soil-cover complex within a study watershed. The northwest portion of the western watershed which was not surveyed for hydrological soil groups was assumed

to be half soil group A and half soil group B, meaning half of the area is assigned RI 71 and half the area is assigned RI 82. A map of the RI of the site and contributing watersheds is shown in Figure 7 and the data are presented in Table 4.

Table 4. Existing Condition Runoff Index

Watershed	Cover Type	Quality of Cover	Hydrologic Soil Group	Runoff Index	Land Use	Impervious Area (%)	Area (acres)	Percentage of Area
Southern Watershed	Chaparral, Narrowleaf	Poor	A	71	Natural	0	1,807	44.4%
	Chaparral, Narrowleaf	Poor	B	82	Natural	0	707	17.4%
	Chaparral, Narrowleaf	Poor	D	91	Natural	0	889	21.9%
	Barren/ Developed	—	A	78	Commercial, Downtown Business or Industrial	90	531	13.1%
	Barren/ Developed	—	B	86	Commercial, Downtown Business or Industrial	90	70	1.7%
	Barren/ Developed	—	D	93	Commercial, Downtown Business or Industrial	90	65	1.6%
Western Watershed	Chaparral, Narrowleaf	Poor	A	71	Natural	0	2,887	71.0%
	Chaparral, Narrowleaf	Poor	B	82	Natural	0	995	24.5%
	Barren/ Developed	—	A	78	Commercial, Downtown Business or Industrial	90	186	4.6%
Central Watershed	Barren/ Developed	—	A	78	Commercial, Downtown Business or Industrial	90	201	88.2%
	Chaparral, Narrowleaf	Poor	A	71	Commercial, Downtown Business or Industrial	90	27	11.8%
Eastern Watershed	Barren/ Developed	—	A	78	Commercial, Downtown Business or Industrial	90	20	100.0%

Source: RCFCWCD Hydrology Manual 1978.

Table 4 was input into the HEC-HMS Preprocessor tool on the RCFCWCD website. The cover types selected were those provided in the Hydrology Manual that most closely represented the cover found within the watersheds. Therefore, shrub/scrub cover was selected to be represented by the chaparral, narrowleaf cover type and impervious surfaces were selected to be the barren/developed land type with an impervious area land use to capture accurate infiltration rates. The shrub/scrub cover is graded as poor because less than 50% of the ground surface is protected by plant cover or brush and tree canopy.

3.4 Existing Hydrology Results

Peak flow rates and total discharge volume for various storms are presented in Table 5 and 6, respectively. The maximum peak flow rate occurs in the southern watershed during the 100-year, 3-hour storm with a flow rate of 4,412 cubic feet per second (cfs). The maximum total discharge volume occurs in the southern watershed during the 100-year, 24-hour storm at approximately 1,851 acre-feet.

Table 5. Existing Condition Peak Flows

Watershed	Area (sq. mi.)	Peak Flow (cfs)							
		10-Year Storm Recurrence Interval				100-Year Storm Recurrence Interval			
		1-hour	3-hour	6-hour	24-hour	1-hour	3-hour	6-hour	24-hour
Southern Watershed	645	1,858	1,999	1,741	1,410	4,192	4,412	3,854	2,605
Western Watershed	6.36	864	1,311	1,160	1,307	2,259	3,181	2,817	2,408
Central Watershed	0.36	398	226	200	90	786	431	367	167
Eastern Watershed	0.03	54	24	22	8	105	45	40	15

Table 6. Existing Condition Peak Discharge Volumes

Watershed	Area (sq. mi.)	Volume (ac-ft)							
		10-Year Storm Recurrence Interval				100-Year Storm Recurrence Interval			
		1-hour	3-hour	6-hour	24-hour	1-hour	3-hour	6-hour	24-hour
Southern Watershed	645	44	229	164	1,015	110	559	480	1,851
Western Watershed	6.36	18	166	92	1,000	54	481	283	1,826
Central Watershed	0.36	11	21	27	57	22	42	51	103
Eastern Watershed	0.03	1	2	2	5	3	4	5	9

3.5 Existing 100-Year Flood Inundation Results

The site is located in FEMA Zone X, an area of minimal flood hazard (Appendix B). Although the site is not located within a FEMA special flood hazard area (SFHA), it is located in the 100-year California Department of Water Resources (DWR) "Awareness Floodplain," which means without specific depths and other flood hazard data, this area is possibly prone to flooding (Appendix C).

4 Proposed Condition Drainage

4.1 Methodology

The methodology used for the proposed post-Project condition is the same as the methodology used for the existing pre-Project condition. See Section 3.1 for details regarding methodology.

The BESS located at both Sites would include multiple self-contained, pre-fabricated enclosure units, approximately 12 to 15 feet in height, in a parallel configuration. The enclosure units would contain lithium-ion batteries stored on racking. Preliminary grading and drainage plans for the Project showing proposed development and battery unit locations are provided in Appendix D. Because this Project is within Riverside County and qualifies as a "Significant Redevelopment" Project, it is assumed that the Project design will satisfy the requirements of the Water Quality Management Plan (WQMP) and follow the Low Impact Development (LID) principles outlined in the Design Handbook or Low Impact Development Best Management Practices prepared by RCFCWCD (RCFCWCD 2021). The goal of these practices is to ensure that post-construction site hydrology mimics pre-development hydrology.

4.2 Proposed Topography

Grading on both Project sites is expected to change the drainage patterns on each site. Certain areas with rough surface topography will be converted to smooth slopes and developed areas will be raised above existing grade in order to provide level pads and adequate freeboard for equipment. Preliminary earthwork quantities estimate approximately 47,000 cubic yards (CY) of cut and 204,000 CY of fill will be needed for the Phase 1 site and approximately 0 CY of cut and 115,000 CY of fill will be needed for the Phase 2 site.

The proposed stormwater design for the Phase 1 site incorporates riprap to serve as energy dissipation placed along the upstream and downstream boundaries of the development areas where flow is anticipated. Energy dissipation and armoring along the upstream development area boundaries should reduce erosion and scour potential in those areas. The Phase 2 site incorporates rip rap on the upstream end of the development areas and 5-foot-deep retention basins on the downstream end.

The topography data outside of the site within the contributing watersheds remains unchanged between the existing condition and proposed condition for purposes of calculating flows.

4.3 Proposed Loss Rates

The hydrologic soil groups within the contributing watershed remain unchanged as a result of the Project and AMC II will continue to be applied to the proposed condition. Soil cover will change due to Project implementation. For Phase 1 approximately 33 acres within the site will be converted to gravel road and battery units. For Phase 2 approximately 24 acres of the site will be developed with battery units and access roads. The locations of proposed development are shown in Figures 8 through 10. These areas were classified as having a "Commercial, Downtown Business, or Industrial" cover type in the pre-development condition and will be classified as the same in the post-development condition. There may be an increase in imperviousness as a result of the proposed development, but it will constitute a very small portion of the entire contributing watershed (<0.1%) and is not expected to impact the

overall watershed hydrology. Because the developed areas will be compacted and will contain equipment that can be considered impervious, imperviousness could increase in the localized development areas. The proposed condition runoff index is the same as the existing condition runoff index which is presented in Table 4.

4.4 Proposed Hydrology Results

Because the increase in imperviousness comprises a small portion of the contributing watersheds to the site, there is no change in the maximum flow and discharge volume for the contributing watersheds in the pre- and post-development condition. The compacted roadways, pads, and battery energy storage system units have the potential to increase the imperviousness of the development areas and increase localized runoff rates. However, these increased runoff rates will be slowed by a combination of retention basins and energy dissipation devices in the form of riprap downstream of the development areas. In the areas where grading will alter the flow path, it is expected that flow will infiltrate or gradually migrate into existing drainage patterns downstream.

Proposed condition peak flows and discharge volumes remain unchanged from the existing condition and are presented above in Tables 5 and 6.

4.5 Proposed Flow Results

Flow depth and velocity modeling was performed using HEC-RAS software for the 100-year, 24-hour storm to model proposed site conditions. Rip rap, energy dissipation devices, and retention basins were not included in the model. The area modeled includes the Phase 1 and 2 sites and Dillon Road in between the two sites. Hydrographs generated in HEC-HMS, with peak flows shown in Table 5, were used in the model as boundary conditions for the four watersheds. Flood inundation maps showing water depths and velocities can be found in Figures 9 and 10. Modeling results indicate that maximum water depths reach approximately 3 feet and maximum flow velocities reach approximately 20 feet per second (fps). The maximum depth and velocities of the western drainage are approximately 3 feet and 12 fps, respectively. In between the western and central drainage are concentrated flows with depths of 1 to 2 feet and velocities of 6 to 9 fps. Maximum flow depths up to 2 feet and flow velocities up to 13 fps can be expected in the southern drainage. The eastern portion of the site is characterized by braided flow patterns with average flow depths of approximately 0.5 feet, and velocities reaching 1 to 2 fps. Flow depths crossing Dillon Road are expected to be less than 1 foot while maximum flow velocities crossing Dillon Road may reach up to 20 fps.

5 Conclusions and Recommendations

An analysis was completed to evaluate the hydrologic conditions of the watersheds contributing flow to the site and the hydraulic conditions of the site pre- and post-Project. Four watersheds totaling 13.2 square miles contribute flow to the site. Peak flows and maximum discharge volumes for the four watersheds were calculated using the Synthetic Hydrograph method outlined in the Hydrology Manual. Rainfall depths, topography, land cover type, quality, use, hydrologic soil group, and AMC are all variables which affect peak flows and discharge volumes. The Riverside County HEC-HMS Preprocessor tool was used to obtain effective rainfall data and lag time data which was then utilized in HEC-HMS software to calculate hydrologic data for the 10-year and 100-year return rainfall events with storm durations of 1-, 3-, 6-, and 24-hours. The peak discharge of 4,412 cfs occurs in the southern watershed during the 100-year, 3-hour storm and the maximum volume discharge is 1,851 acre-feet and occurs in the southern watershed during the 100-year, 24-hour storm. While the proposed development involves grading alterations, the alteration of land cover within the Project site comprises a small portion of the watersheds, so the pre- and post-project discharge flows and volumes are expected to remain unchanged. Localized runoff rates may increase due to the compaction of the developed areas and impact to drainage patterns is anticipated due to proposed Project earthwork. Energy dissipation BMPs in the form of rip rap and retention basins placed downstream of the developed areas should mitigate localized increases in runoff rates.

Hydraulic modeling was completed for proposed topographical conditions using HEC-RAS software. Discharge data obtained from the HEC-HMS model of the four watersheds was used as inflow data in a HEC-RAS two-dimensional flow area. Proposed Project features primarily include the development of battery storage units, ancillary equipment, an overhead gen-tie line, and access roads. These preliminary design locations are presented in Figure 8. The model did not consider proposed energy dissipation devices or BMPs.

Flow depths and velocities were estimated using a modeling run of the 100-year, 24-hour storm. Maximum flow depths and velocities from this model run within the site occur in the western drainage with a maximum flow depth of approximately 3 feet and a maximum flow velocity of approximately 12 fps. The maximum flow velocity of 20 fps would occur crossing Dillon Road.

The southwestern development area within the Phase 1 site encroaches into the western drainage. While the BESS equipment will be elevated and outside of the drainage, flood depths between 1 to 1.5 feet and flow velocities between 6 to 9 fps can be expected to flow along the eastern edge of the development area. The eastern edge shall be armored with rip rap in order to avoid erosion due to flood flows. Several other development areas can expect flood flows to encroach onto the graded areas and also will be armored with rip rap to reduce scour potential and dissipate energy.

RCFCWCD LID and WQMP requirements shall be followed, if necessary, to ensure that post-construction site hydrology mimics pre-development hydrology.

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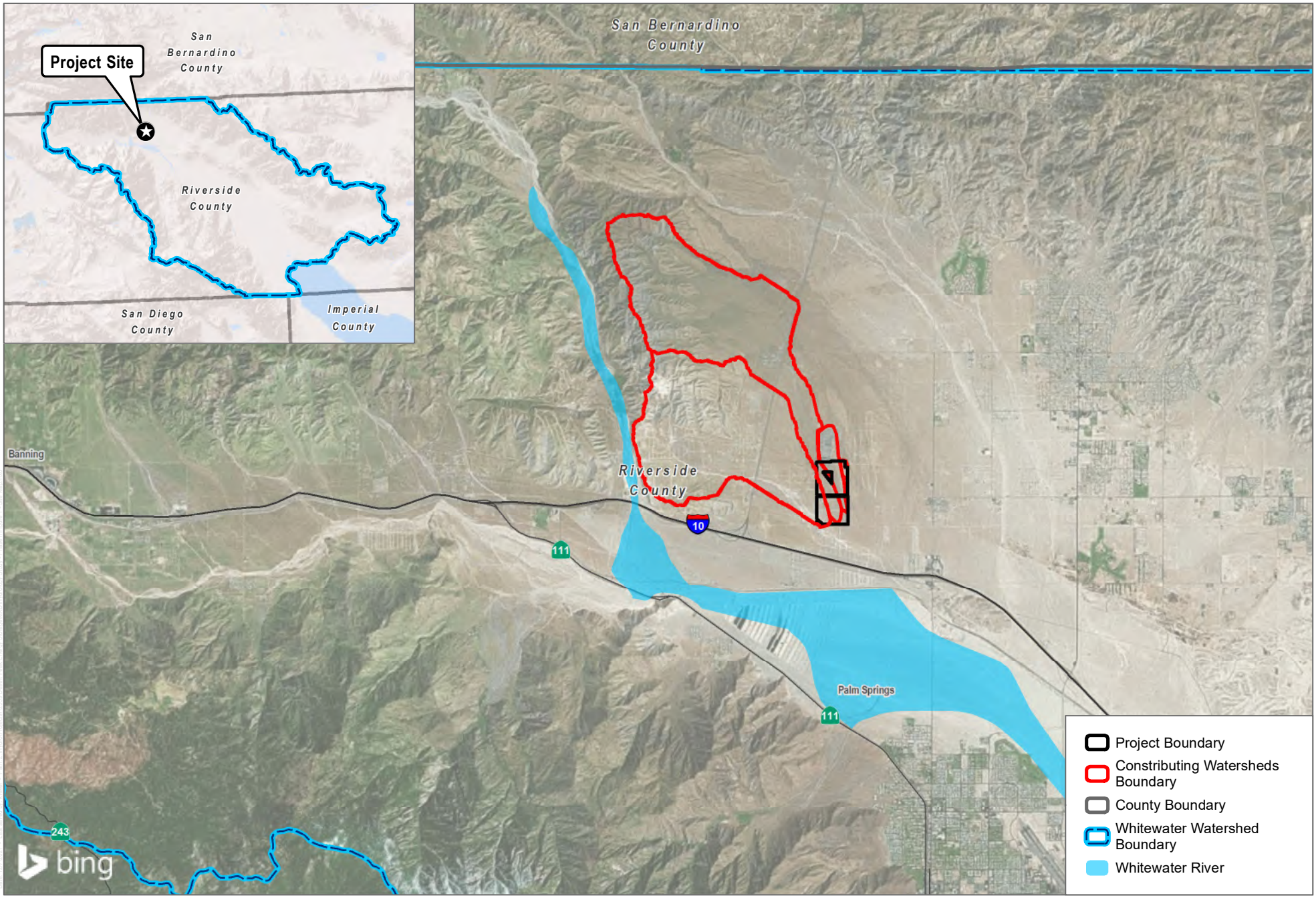

SOURCE: Bing Maps

DUDEK

0 1 2 Miles

FIGURE 1

Project Location

Hydrology Study - Desert Peak Energy Center - Phase 1 and 2

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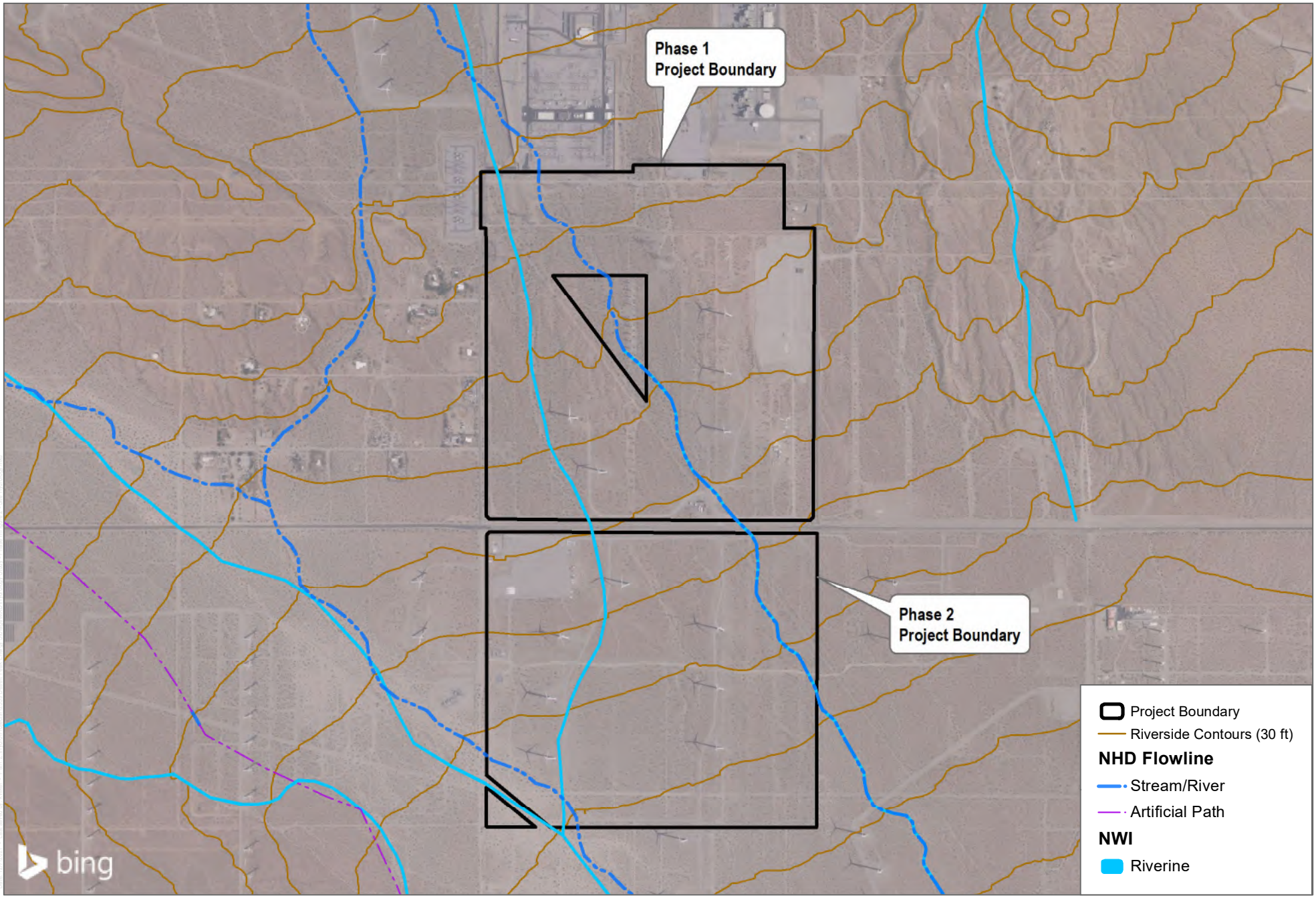

SOURCE: Bing Maps, Riverside County, USFWS 2021, USGS 2021

DUDEK

0 1,000 2,000 Feet

FIGURE 2

Project Site Hydrology

Hydrology Study - Desert Peak Energy Center - Phase 1 and 2

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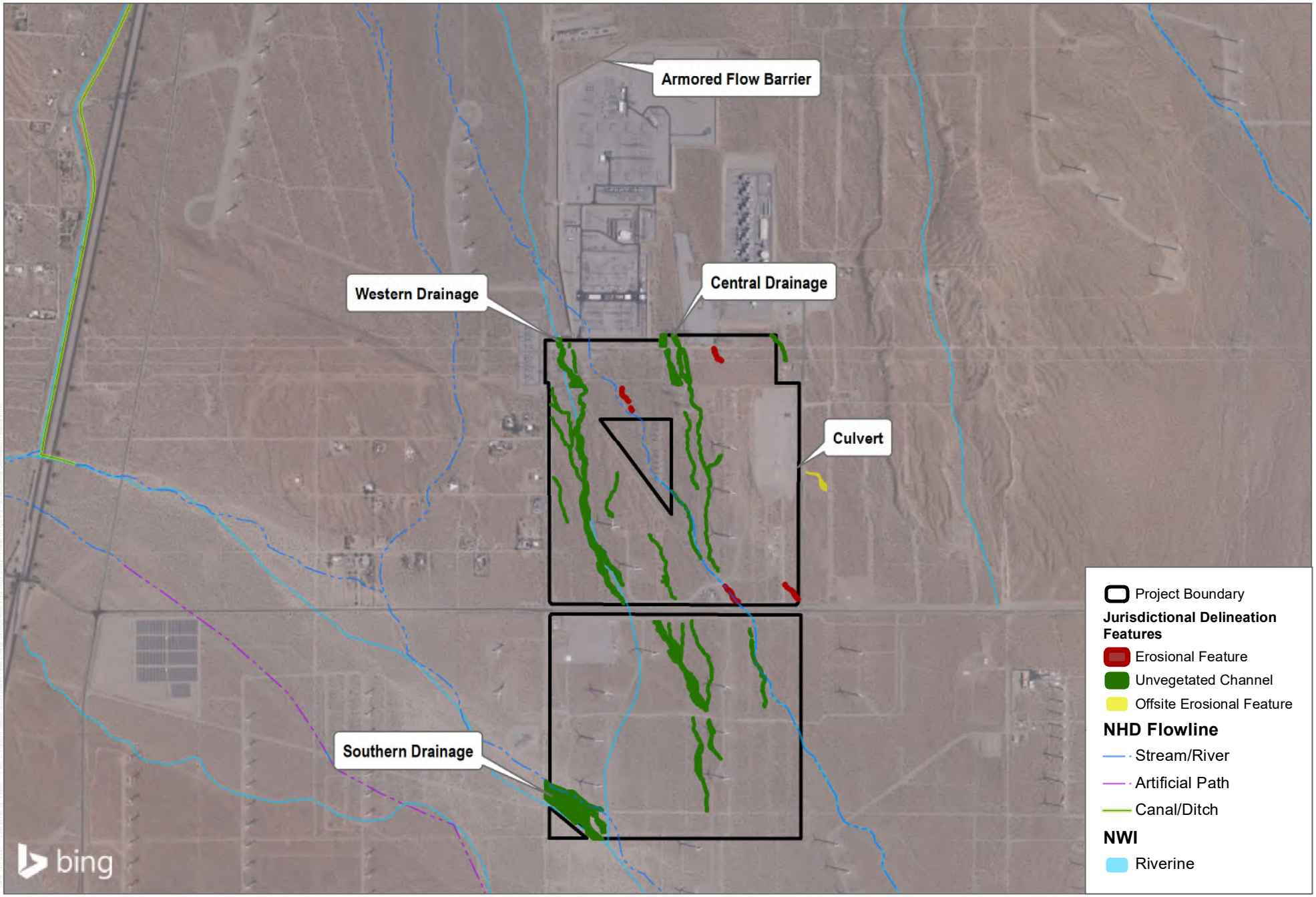

SOURCE: Bing Maps, Dudek 2020, Dudek 2021, USFWS 2021, USGS 2021

DUDEK

0 1,500 3,000 Feet

FIGURE 3

Jurisdictional Delineation Features

Hydrology Study - Desert Peak Energy Center - Phase 1 and 2

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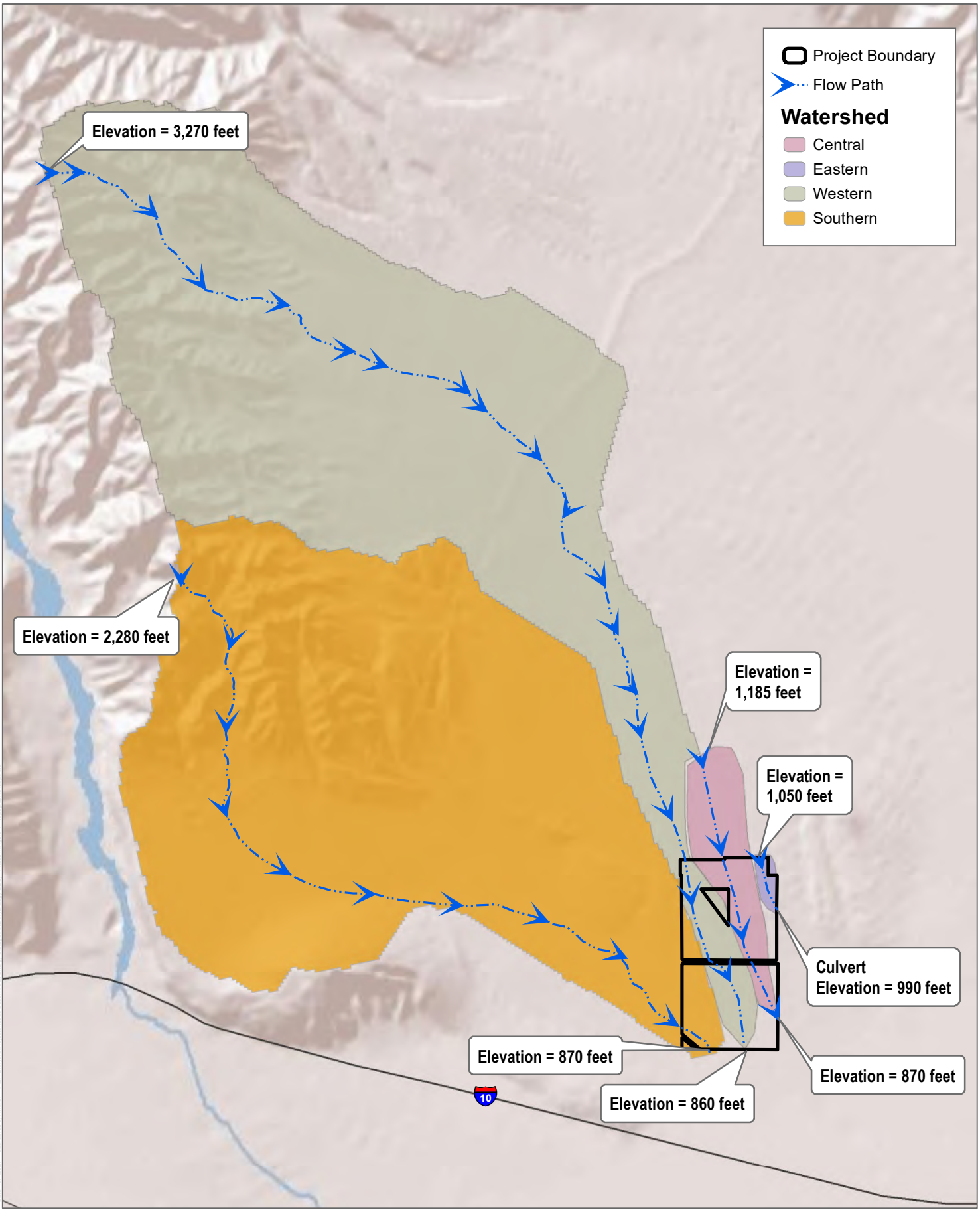

SOURCE: Riverside County

DUDEK

0 0.5 1 Miles

FIGURE 4

Topographic Map

Hydrology Study - Desert Peak Energy Center - Phase 1 and 2

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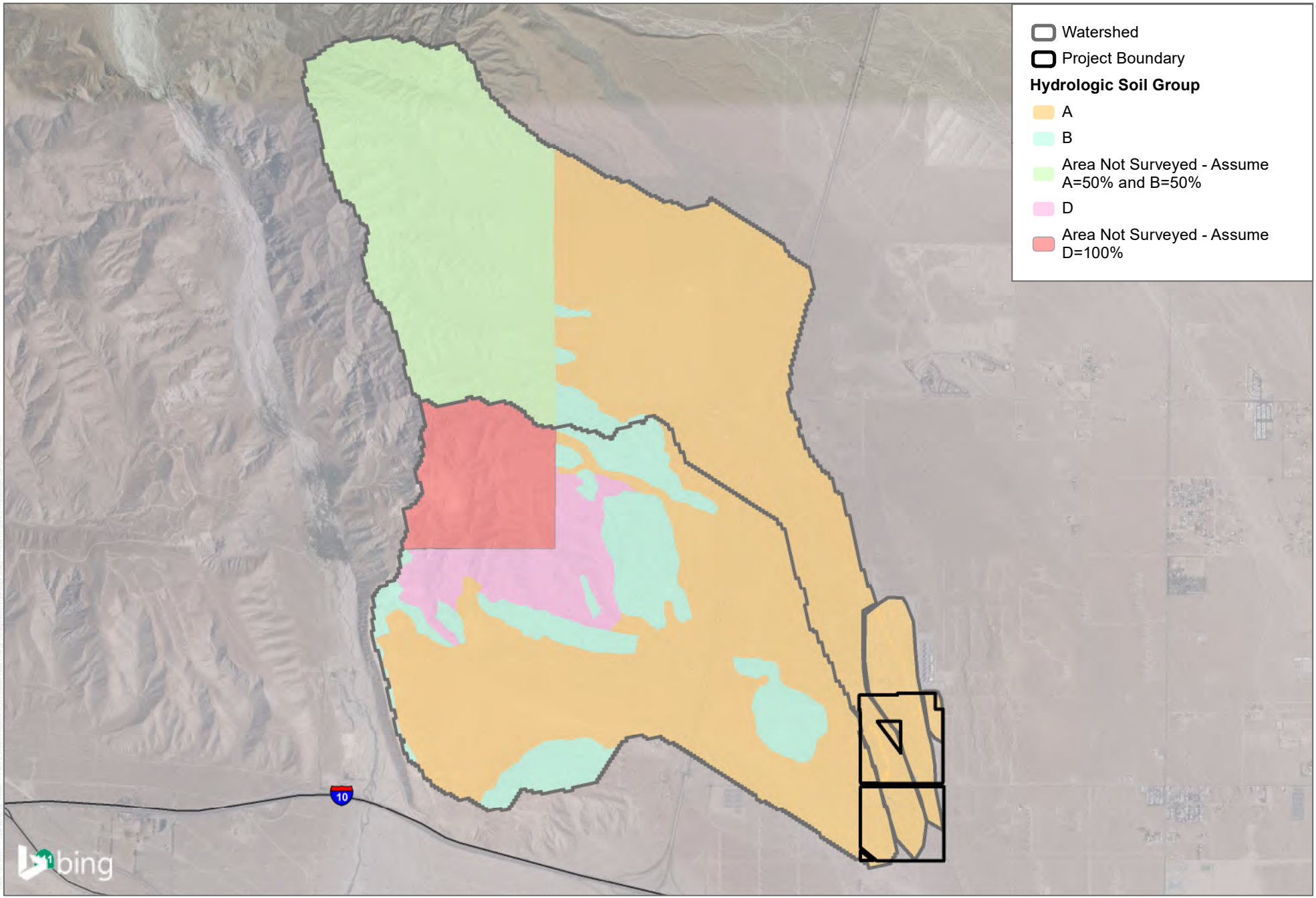

SOURCE: Bing; USDA 2021

DUDEK

0 0.5 1 Miles

FIGURE 5

Hydrologic Soil Groups

Hydrology Study - Desert Peak Energy Center - Phase 1 and 2

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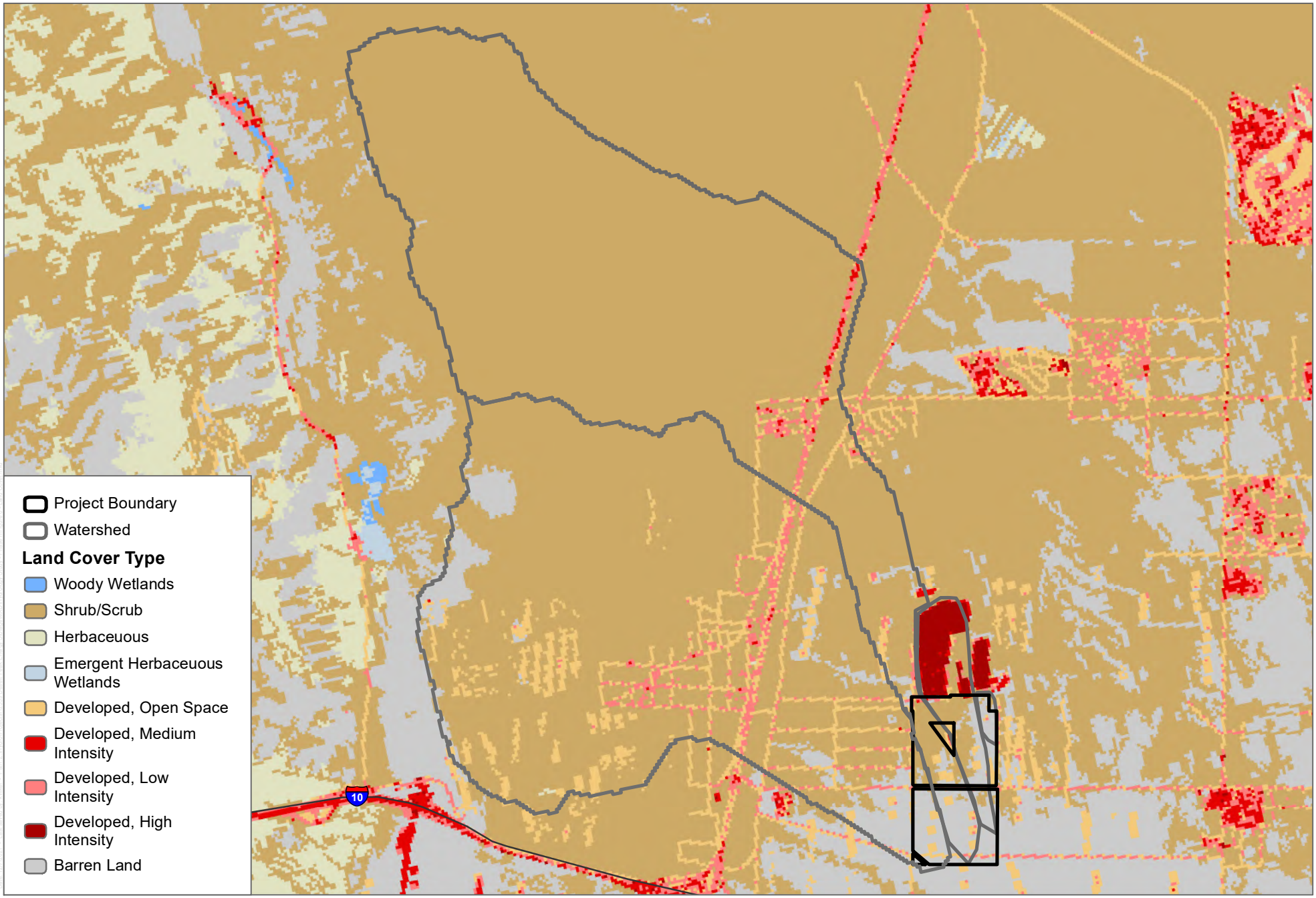

SOURCE: NCLD; USGS 2021

DUDEK

0 0.5 1 Miles

FIGURE 6

Land Cover Map

Hydrology Study - Desert Peak Energy Center - Phase 1 and 2

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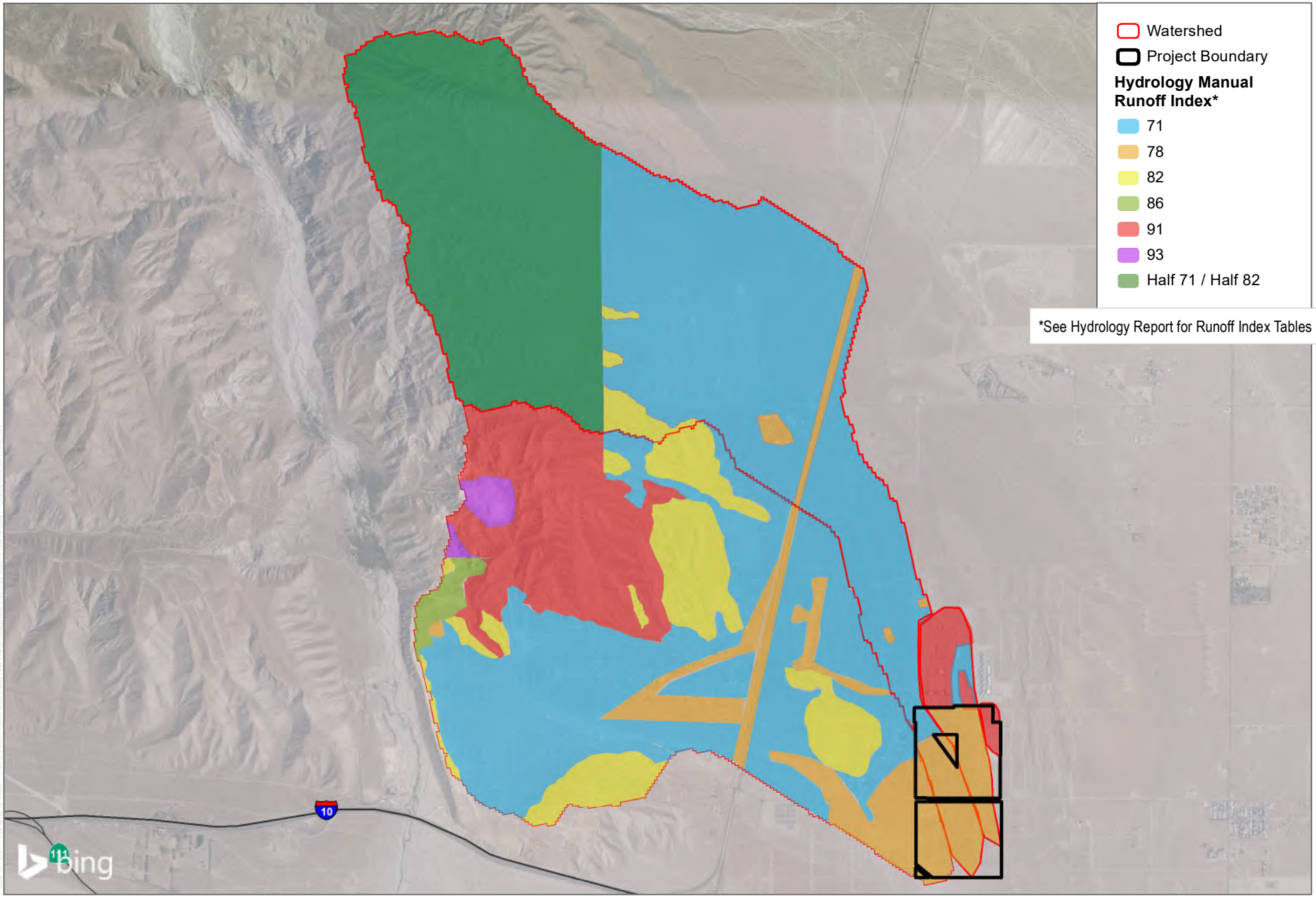


SOURCE: Bing

FIGURE 7

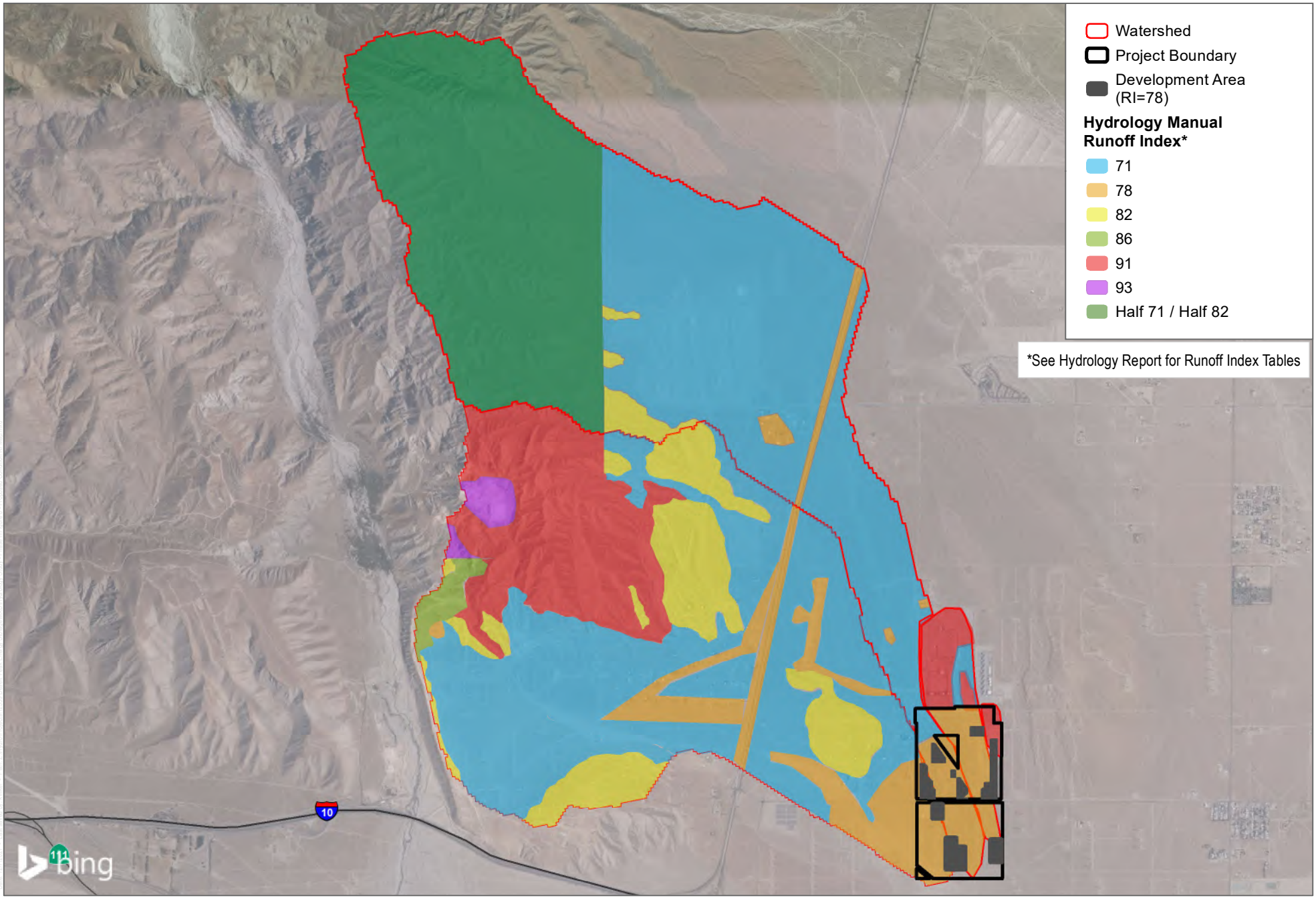
Existing Condition Runoff Index Map

Hydrology Study - Desert Peak Energy Center - Phase 1 and 2

DUDEK

0 0.5 1 Miles

INTENTIONALLY LEFT BLANK



SOURCE: Bing

FIGURE 8

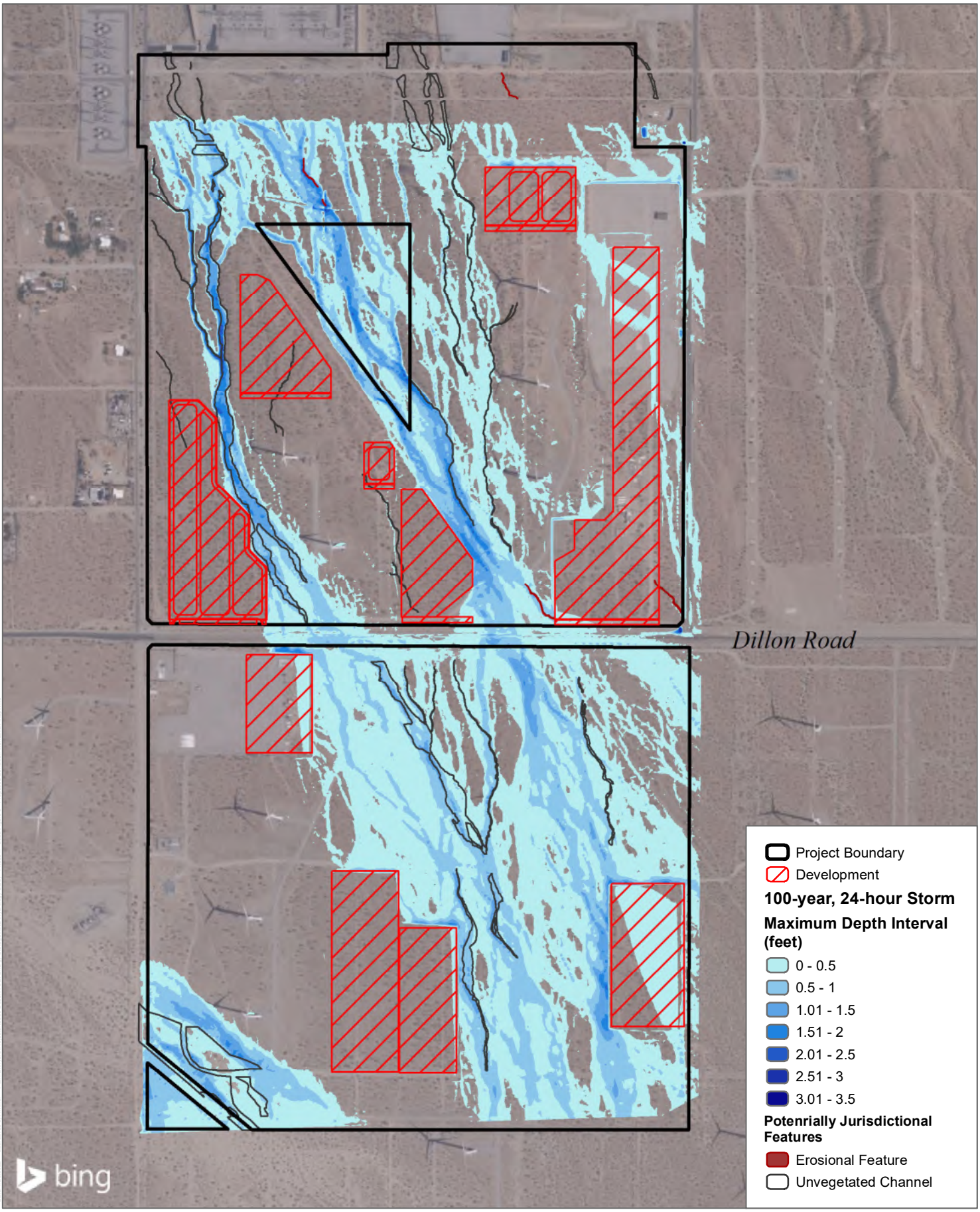
Proposed Condition Runoff Index Map

Hydrology Study - Desert Peak Energy Center - Phase 1 and 2

DUDEK

0 0.5 1 Miles

INTENTIONALLY LEFT BLANK



SOURCE: Bing

FIGURE 9

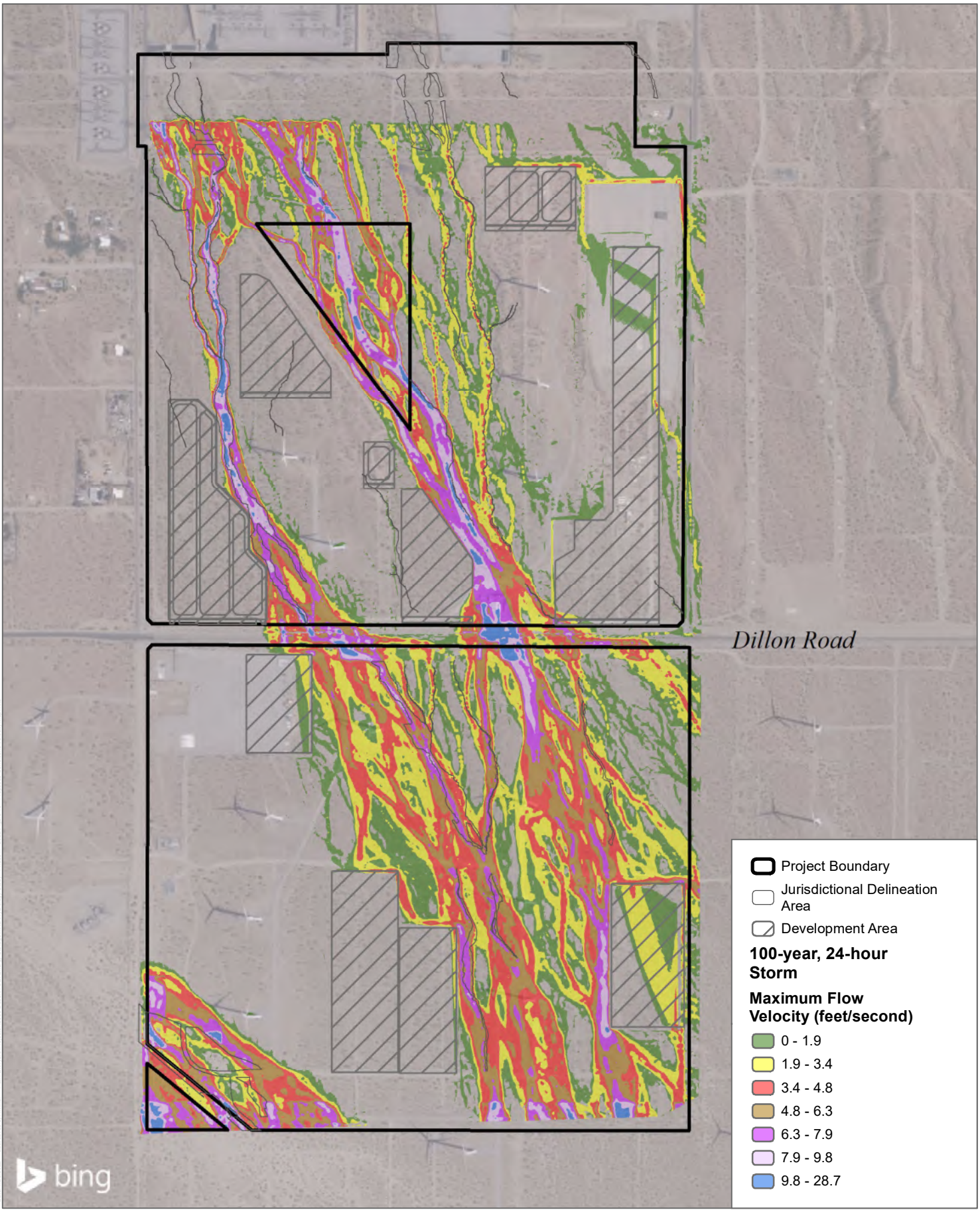
Proposed Condition Inundation Map

Hydrology Study - Desert Peak Energy Center - Phase 1 and 2

DUDEK

0 500 1,000 Feet

INTENTIONALLY LEFT BLANK



SOURCE: Bing

DUDEK

0 500 1,000 Feet

FIGURE 10

Proposed Condition Flow Velocity Map

Hydrology Study - Desert Peak Energy Center - Phase 1 and 2

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Appendix A
Lag Time Calculations

Lag Equation per RCFCWCD Hydrology Manual

Lag - Lag for a drainage area is defined as the elapsed time in hours from the beginning of unit effective rainfall to the instant that the summation hydrograph for the concentration point of an area reaches 50 percent of ultimate discharge. Lag can be calculated from the physical characteristics of a drainage area by the empirical formula:

$$\text{Lag (hours)} = 24\bar{n}\left[\frac{L \cdot L_{ca}}{S^{1/2}}\right]^{(.38)}$$

where:

$\bar{n}$ = The visually estimated mean of the n (Manning's formula) values of all collection streams and channels within the watershed

L = Length of longest watercourse - miles

Lca = Length along longest watercourse, measured upstream to a point opposite the centroid of the area - miles

S = Overall slope of longest watercourse between headwaters and the collection point feet per mile

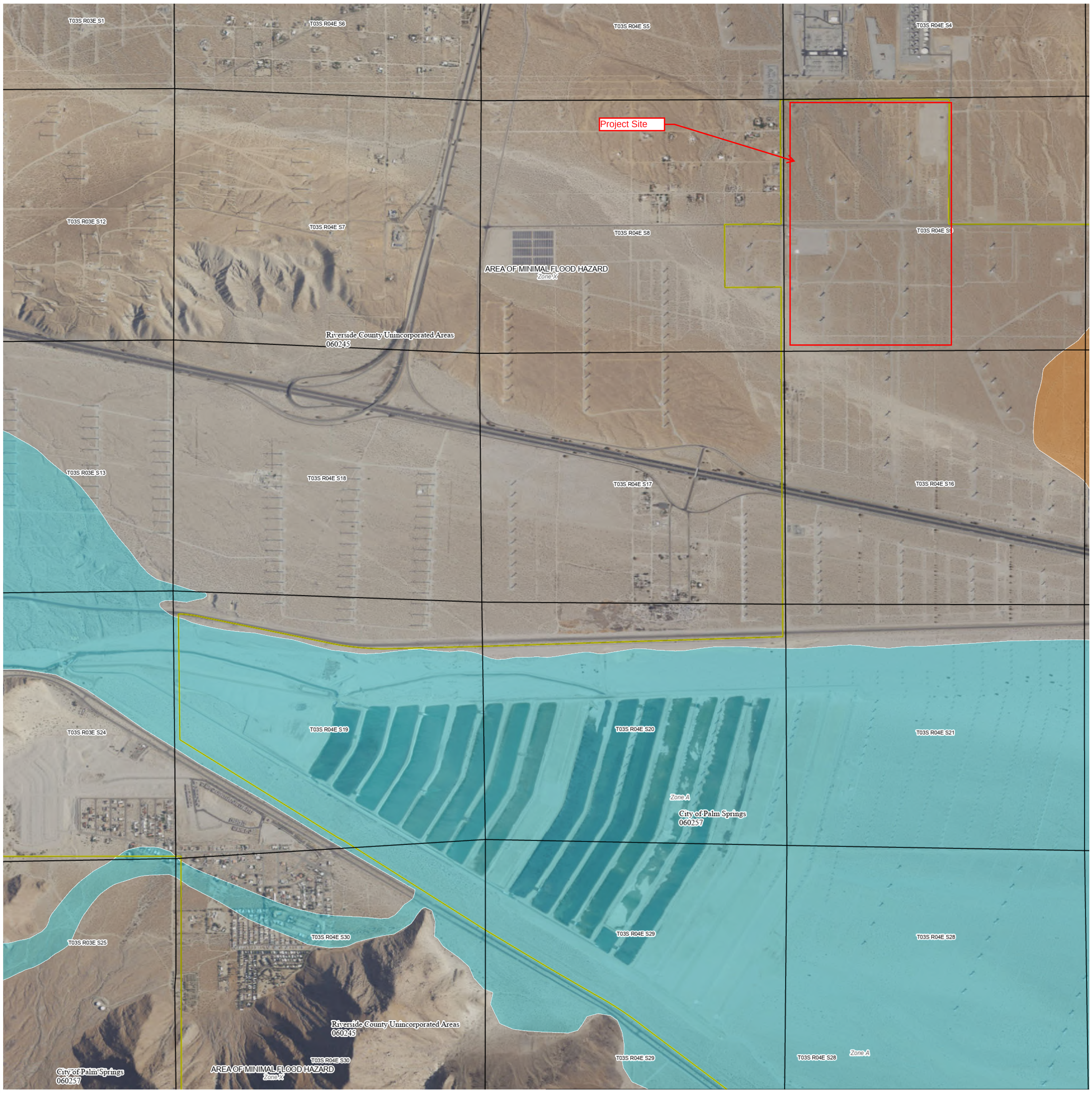
Table A. Lag Calculations

	Southern	Western	Central	Eastern
L (ft)	25,677	37,804	8,000	1,800
L_{ca} (ft)	11,839	25,824	4,890	900
Elev Difference (ft)	1,410	2,410	315	60
S (ft/mi)	290	337	208	176
Basin Factor - n	0.03	0.03	0.015	0.015
Lag (hours)	**0.608**	**0.920**	**0.149**	**0.046**

Appendix B

FEMA Flood Insurance Rate Map

116°37'30.9"W 33°56'28.2"N



116°33'44.19"W 33°52'16.84"N

FLOOD HAZARD INFORMATION

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

SPECIAL FLOOD HAZARD AREAS

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

OTHER AREAS OF FLOOD HAZARD

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

OTHER AREAS

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

GENERAL STRUCTURES

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

OTHER FEATURES

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

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **7/20/2021 2:19 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: No elevation features on this FIRM
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 1,000 feet 1:12,000

0 500 1,000 2,000 3,000 4,000 Feet

0 105 210 420 630 840 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL **890** OF **3805**

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF PALM SPRINGS	060257	0890
RIVERSIDE COUNTY UNINCORPORATED AREAS	060245	0890

MAP NUMBER
06065C0890G
EFFECTIVE DATE
August 28, 2008

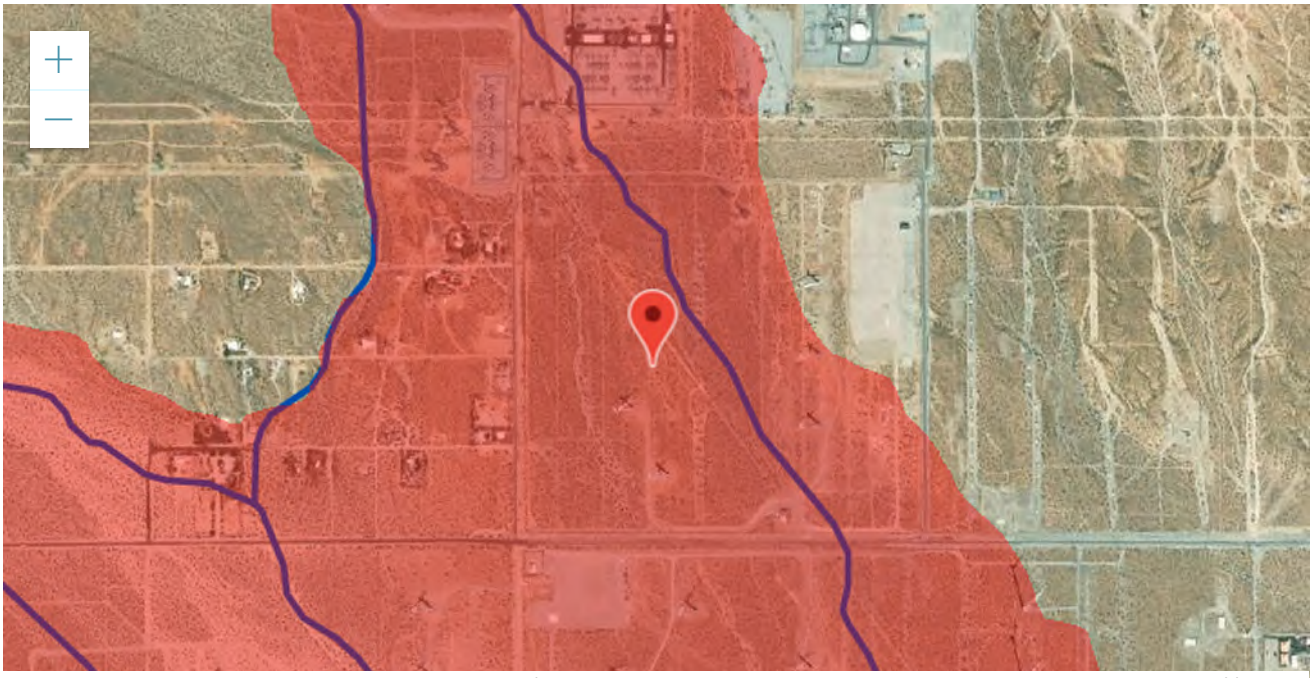
Appendix C

California Department of Water Resources
Floodplain Information

CALIFORNIA DEPARTMENT OF
WATER RESOURCES

Floodplain Information

Latitude: 33.93145, Longitude: -116.57561

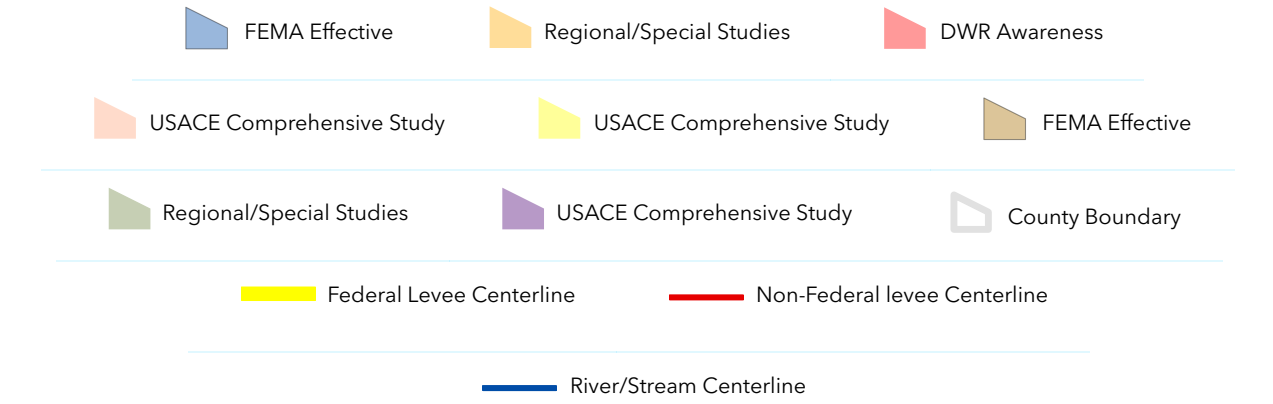


County: Riverside (33.93145, -116.57561)

Floodplain Layer	100-YR	200-YR	500-YR
FEMA Effective	N✓	N/A	N✓
DWR Awareness	Y✓	N/A	N/A
Regional/Special Studies	N✓	N/A	N✓
USACE Comp. Study	N✓	N✓	N✓

Y: The location is within the floodplain
N: The location is not within the floodplain
N/A: Data not available
✓ = Active Layer(s)

Floodplains are displayed using semi transparent colors. When viewing overlapping floodplains, the combination of multiple semi transparent colors will not match the legend colors. For accurate color representation, view floodplains individually.



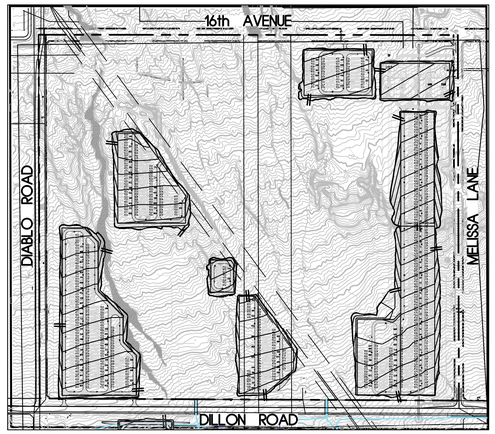
Appendix D

Preliminary Grading and Drainage Plans

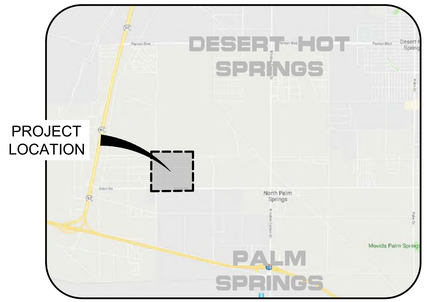
IN THE CITY OF PALM SPRINGS, STATE OF CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE I

PRELIMINARY GRADING & DRAINAGE PLAN



SITE MAP
SCALE: 1"=600'



VICINITY MAP
N.T.S.

APN AND LEGAL DESCRIPTION

APN 668-270-013 AND 668-270-015

PARCEL A AS SHOWN ON CERTIFICATE OF COMPLIANCE FOR PARCEL MAP WAIVER COC 17-02A, RECORDED OCTOBER 17, 2017 AS INSTRUMENT NO. 2017-0429897 OF OFFICIAL RECORDS. BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

ALL THAT PORTION OF THE WESTERLY 2,929.00 FEET OF SECTION 9, TOWNSHIP 3 SOUTH, RANGE 4 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF PALM SPRINGS, THE COUNTY OF RIVERSIDE, THE STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING NORTHERLY OF THE NORTHERLY LINE OF DILLON ROAD AS DESCRIBED IN DEEDS TO THE COUNTY OF RIVERSIDE, RECORDED JUNE 9, 1964 AS INSTRUMENT NO. 70659 AND JUNE 8, 1966, AS INSTRUMENT NO. 59449, BOTH OF OFFICIAL RECORDS OF SAID RIVERSIDE COUNTY, MORE PRECISELY DESCRIBED AS FOLLOWS:

EXCEPTING THEREFROM, THE NORTHERLY 1,100.00 FEET OF THE EASTERLY 550.00 FEET.

PARCEL B AS SHOWN ON CERTIFICATE OF COMPLIANCE 17-02B, AS EVIDENCED BY DOCUMENT RECORDED OCTOBER 17, 2017 AS INSTRUMENT NO. 2017-0429898 OF OFFICIAL RECORDS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEING THE NORTHERLY 1,100.00 FEET OF THE EASTERLY 550.00 FEET OF THAT PORTION OF THE WESTERLY 2,929.00 FEET OF SECTION 9, TOWNSHIP 3 SOUTH, RANGE 4 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF PALM SPRINGS, THE COUNTY OF RIVERSIDE, THE STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING NORTHERLY OF THE NORTHERLY LINE OF DILLON ROAD AS DESCRIBED IN DEEDS TO THE COUNTY OF RIVERSIDE, RECORDED JUNE 9, 1964 AS INSTRUMENT NO. 70659 AND JUNE 8, 1966, AS INSTRUMENT NO. 59449, BOTH OF OFFICIAL RECORDS OF SAID RIVERSIDE COUNTY.

LEGEND

- CENTERLINE
- RIGHT OF WAY
- PROPERTY/BOUNDARY LINE
- EX. GUTTER
- EX. CURB
- EX. CONTOUR
- CONSTRUCTION LIMITS
- EX. ELECTRICAL
- WIND TURBINE
- POWER POLE
- EXISTING FENCE
- SECURITY LIGHTING (14' MAX)

BASIS OF BEARINGS

NAD 83 (2011) STATE PLAN COORDINATES, CALIFORNIA ZONE 6, BASED ON NGS STATIONS TOMTIT2 AND RAMO

BENCHMARK

NAVD 88

UTILITIES

ELECTRIC	SOUTHERN CALIFORNIA EDISON	(760) 202-4217
GAS	THE GAS CO.	(760) 335-7625
TELEPHONE	VERIZON	(760) 778-3603
FIBER OPTIC	VERIZON	(760) 778-3603
WATER	DESERT WATER AGENCY	(760) 323-4917
SEWER	CITY OF PALM SPRINGS	(760) 323-8253
STORM DRAIN	CITY OF PALM SPRINGS	(760) 323-8253
TV CABLE	TIME WARNER CABLE	(760) 340-1312
USA	UNDERGROUND SERVICE ALERT	811

SHEET INDEX

SHT. NO.	DESCRIPTION
1	TITLE SHEET
2	KEY MAP,SECTIONS & DETAILS
3	PRELIMINARY GRADING & DRAINAGE PLAN
4	PRELIMINARY GRADING & DRAINAGE PLAN
5	PRELIMINARY GRADING & DRAINAGE PLAN

811 Know what's below. Call 811 before you dig.

ABBREVIATIONS

AC	ASPHALT CONCRETE	PP	POWER POLE
AGG.	AGGREGATE	PVMT.	PAVEMENT
C	CENTERLINE	REQ'D.	REQUIRED
CO	CLEANOUT	RW R/W	RIGHT-OF-WAY
CONC.	CONCRETE	S	SLOPE
E	ELECTRICAL LINES	SEC.	SECTION
EG	EXISTING GRADE	SHT.	SHEET
EP	EDGE OF PAVEMENT	STD.	STANDARD
ESMT.	EASEMENT		
EXIST.	EXISTING	TC	TOP OF CURB
FG	FINISHED GRADE	TW	TOP OF WALL
FH	FIRE HYDRANT	TYP.	TYPICAL
FL	FLOWLINE		
FS	FINISHED SURFACE	UG	UNDERGROUND
G	GAS	VAR.	VARIES
GB	GRADE BREAK	VERT.	VERTICAL
HP	HIGH POINT	W	WATER
		WL	WATER LEVEL
LF	LINEAR FOOT		
MAX.	MAXIMUM		
MH	MANHOLE		
MIN.	MINIMUM		

GRADING PLAN GENERAL NOTES

1. THE WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD DRAWINGS OF THE CITY OF PALM SPRINGS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2012 EDITION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN EFFECTIVE MEANS OF DUST CONTROL WHICH SHALL INCLUDE PROVISIONS FOR ADEQUATE WATERING DURING THE GRADING PROCESS AND PROVISIONS FOR CONTINUANCE OF DUST CONTROL UNTIL THE GRADED SURFACE PRESENTS SUFFICIENT COVER AGAINST WIND OR WATER EROSION, SO THAT SPECIAL DUST CONTROL MEASURES ARE NO LONGER NECESSARY.
3. NOTHING IN THESE PLANS SHALL RELIEVE THE CONTRACTOR FROM OBTAINING PERMITS AS REQUIRED BY THE CITY OF PALM SPRINGS.
4. THE CONTRACTOR SHALL SET AN APPOINTMENT FOR INSPECTION WITH THE ENGINEERING INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO THE DATE OF INSPECTION.
5. ALL GRADING SHALL COMPLY WITH SECTION 1804 AND APPENDIX J OF THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE.
6. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE TO BE SHOWN IN A SCHEMATIC MANNER ONLY. SUBJECT TO THE PROVISIONS OF SECTION 4215 OF THE CALIFORNIA GOVERNMENT CODE, THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING THE WORK. CONTACT UNDERGROUND SERVICE ALERT (U.S.A.) AT 1-800-227-2600 TWO WORKING DAYS PRIOR TO ANY EXCAVATION.
7. DIMENSIONING TO CURBS SHALL BE TO FACE OF CURB.
8. CONTRACTOR SHALL DISPOSE OF ALL DEBRIS OFF-SITE DAILY, UNLESS OTHERWISE SPECIFIED BY THE CITY ENGINEER.
9. CONTRACTOR SHALL REMOVE ANY ABANDONED UTILITY FACILITIES AND SHOW LIMIT OF REMOVALS ON THE RECORD DRAWINGS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL, REPLACEMENT OR RELOCATION OF ALL REGULATORY, WARNING AND GUIDE SIGNS.
11. NOT USED.
12. CONSTRUCTION SIGNING, LIGHTING AND BARRICADING SHALL BE PROVIDED ON ALL PROJECTS AS REQUIRED BY CITY STANDARDS. AS A MINIMUM, ALL CONSTRUCTION SIGNING, LIGHTING AND BARRICADING SHALL BE IN ACCORDANCE WITH PART 6 "TEMPORARY TRAFFIC CONTROL" OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, DATED JANUARY 13, 2012, OR SUBSEQUENT EDITIONS IN FORCE AT THE TIME OF CONSTRUCTION.
13. THE FLOW LINE OF ALL CURB AND GUTTERS AND CROSS GUTTERS SHALL BE WATER TESTED BEFORE ACCEPTANCE OF THE WORK.
14. PARKING STALLS SHALL BE CLEARLY DELINEATED WITH A 4 TO 6 INCH STRIPE "HAIRPIN" OR ELONGATED "U" DESIGN OR OTHER APPROVED STRIPING OR STALL DELINEATION.
15. NOT USED.
16. FOR PROJECTS IN EXCESS OF 1 ACRE, A NOTICE OF INTENT TO COMPLY WITH CALIFORNIA GENERAL CONSTRUCTION STORMWATER PERMIT (WATER QUALITY ORDER 2009-0009-DWQ, AS MODIFIED SEPTEMBER 2, 2009, AS WELL AS A COPY OF THE EXECUTED LETTER ISSUING A WASTE DISCHARGE IDENTIFICATION (WDID) NUMBER, IS REQUIRED PRIOR TO ISSUANCE OF GRADING OR BUILDING PERMIT, VIA COPY OF THE PROJECT-SPECIFIC STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE KEPT AT THE PROJECT SITE AT ALL TIMES. CONTRACTOR SHALL PREPARE AND SUBMIT THE SWPPP TO THE TRIBAL ENGINEER PRIOR TO COMMENCING OF CONSTRUCTION.
17. AN APPROVED FUGITIVE DUST (PM-10) CONTROL PLAN IS REQUIRED PRIOR TO ISSUANCE OF A GRADING PERMIT. ALL DUST CONTROL MEASURES DESCRIBED IN AQMD RULE 403 (BEST AVAILABLE CONTROL MEASURES) AND IN THE CITY-APPROVED FUGITIVE DUST CONTROL PLAN SHALL BE IMPLEMENTED AT ALL

    TIMES. A WIND FENCE AND PROPER SIGNAGE, SHALL BE ERECTED, INSPECTED AND APPROVED BY THE CITY'S DUST CONTROL INSPECTOR PRIOR TO INITIATION OF CLEARING, GRUBBING, GRADING OR IMPORT/EXPORT OF SOIL, OR FILL MATERIAL AT THE SITE. FAILURE TO CALL 760-323-8253, EXTENSION 8740 FOR INSPECTION 72 HOURS PRIOR TO INITIATING WORK WILL RESULT IN ISSUANCE OF CITATION BY THE CITY.
18. NOT USED.
19. NOT USED.

STREET PAVEMENT

20. THE ASPHALT CONCRETE DESIGN SHALL MEET THE CITY OF PALM SPRINGS STD. DWG. NO 110 AND STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2012 EDITION; USE TYPE B FOR THE BASE LIFT AND TYPE C2 FOR THE FINAL 1" CAP. THE DESIGN SHALL HAVE A HVEEM STABILITY OF 35 AND 33 RESPECTIVELY PER THE CALIFORNIA TEST METHOD 304 AND 366. PERFORMANCE GRADE ASPHALT (PG 70-10) MEETING THE 2010 CALTRANS STANDARD SPECIFICATIONS SHALL BE USED.

TRENCH PAVEMENT

21. NOT USED.
22. NOT USED.
23. IF, IN THE OPINION OF THE CITY ENGINEER, THE TRENCH BACKFILL IS UNSAFE TO TRAFFIC, THE CONTRACTOR SHALL PLACE PERMANENT PAVING AT THE END OF EACH WORK DAY.
24. STEEL TRENCH PLATING SHALL CONFORM TO THE CALTRANS ENCROACHMENT PERMIT MANUAL SECTION 602.1, AS REVISED JULY, 2009.
25. THE SPECIFIED MISCELLANEOUS BASE SHALL BE CRUSHED MISCELLANEOUS BASE ACCORDING TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2012 EDITION.

EROSION CONTROL NOTES

26. EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPS) SHALL BE IMPLEMENTED AND MAINTAINED TO MINIMIZE AND/OR PREVENT THE ENTRAINMENT OF SOIL IN RUNOFF FROM DISTURBED SOIL AREAS ON CONSTRUCTION SITES.
27. SEDIMENT CONTROL BMPS SHALL BE IMPLEMENTED AND MAINTAINED TO PREVENT AND/OR MINIMIZE THE TRANSPORT OF SOIL FROM THE CONSTRUCTION SITE.
28. STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO ELIMINATE OR REDUCE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.
29. APPROPRIATE BMPS FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS OR RESIDUES SHALL BE IMPLEMENTED TO ELIMINATE OR REDUCE TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTIES BY WIND OR RUNOFF.
30. BMPS SHALL BE INSPECTED PRIOR TO PREDICTED STORM EVENTS AND FOLLOWING STORM EVENTS, AND SHALL BE PROPERLY MAINTAINED.
31. RUNOFF FROM EQUIPMENT AND VEHICLE WASHING SHALL BE CONTAINED AT CONSTRUCTION SITES AND MUST NOT BE DISCHARGED TO RECEIVING WATERS, ADJACENT ROADWAYS, CATCH BASINS, OR OTHER COMPONENTS OF THE LOCAL STORM DRAIN SYSTEM.
32. ALL CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR PERSONNEL ARE TO BE MADE AWARE OF THE REQUIRED BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING MEASURES FOR THE PROJECT SITE AND ANY ASSOCIATED CONSTRUCTION STAGING AREAS.
33. AT THE END OF EACH DAY OF CONSTRUCTION ACTIVITY, ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND PROPERLY DISPOSED OF IN COVERED TRASH OR RECYCLE BINS.
34. CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT A STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE. DISCHARGES OTHER THAN STORMWATER (I.E., NON-STORMWATER DISCHARGES) ARE PROHIBITED, EXCEPT AS AUTHORIZED BY AN INDIVIDUAL NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT, THE GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, OR THE GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM SMALL LINEAR UNDERGROUND/OVERHEAD PROJECTS. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, SOLVENTS, DETERGENTS, GLUES, LIME, PESTICIDES, HERBICIDES, FERTILIZERS, WOOD PRESERVATIVES, ASBESTOS FIBERS; PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS; CONCRETE AND RELATED CUTTING OR CURING RESIDUES; CONCRETE WASHOUT; FLOATABLE WASTES; WASTES FROM ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING; WASTES FROM STREET CLEANING; AND SUPER-CHLORINATED POTABLE WATER FROM LINE FLUSHING AND TESTING. DURING CONSTRUCTION, DISPOSAL OF SUCH MATERIALS SHOULD OCCUR IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE, PHYSICALLY SEPARATED FROM POTENTIAL STORMWATER RUNOFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
35. DISCHARGING CONTAMINATED GROUNDWATER PRODUCED BY DEWATERING GROUNDWATER THAT HAS INFILTRATED INTO THE CONSTRUCTION SITE IS PROHIBITED. DISCHARGING OF CONTAMINATED SOILS VIA SURFACE EROSION IS ALSO PROHIBITED. DISCHARGING NON-CONTAMINATED GROUNDWATER PRODUCED BY DEWATERING ACTIVITIES MAY REQUIRE A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT OR WASTE DISCHARGE REQUIREMENTS (WDRS) ISSUED BY THE COLORADO RIVER BASIN REGIONAL WATER QUALITY CONTROL BOARD.
36. CONSTRUCTION SITES SHALL BE MANAGED TO MINIMIZE THE EXPOSURE TIME OF DISTURBED SOIL AREAS THROUGH PHASING AND SCHEDULING OF GRADING TO THE EXTENT FEASIBLE AND THE USE OF TEMPORARY AND PERMANENT SOIL STABILIZATION.

CIVIL ENGINEER
DUDEK
CHARLES GREELY, P.E.
78075 MAIN ST. Suite. 203-G
LA QUINTA, CA. 92253
(760) 601-3411

OWNER:
D&E LAND CO., LLC and MELISSA LANE PARTNERS, LLC
2045 E. TAHQUITZ CANYON WAY
ATTENTION: FREDERICK W. NOBLE
PHONE: (760) 323-9490

APPLICANT:
DESERT PEAK ENERGY CENTER LLC
700 UNIVERSE BLVD, ESE/JB
JUNO BEACH, FL 33408

FEMA FLOOD DATA:

FLOOD ZONE:	ZONE X
PANEL:	06065C0890G
DATE:	8-28-08
ZONE DEFINITION:	ZONE X: AREAS DETERMINED TO BE OUTSIDE 0.2% ANNUAL CHANCE FLOODPLAIN.

PROJECT LOCATION:
62125 DILLON ROAD
DESERT HOT SPRINGS, CA. 92240

NO.	REVISION	APPROVED	DATE

BENCHMARK: ELEV.: RIV. CO. NO. 603-73-68 NAVD88 1095.11

LOCATION: LOCATED APPROXIMATELY 5,970 WEST OF THE SUBJECT PROPERTY

REGISTERED PROFESSIONAL ENGINEER ARMANDO MADANI No. 59563 CIVIL STATE OF CALIFORNIA

1/18/22

DUDEK Engineering, Planning, Environmental Sciences and Management Services
78075 Main St., Ste. 203-G, La Quinta, CA. 92253
TEL 760.341.6660 FAX 760.346.6118

DESIGN BY: AM	CITY CHECK	RIGHT-OF-WAY	INITIALS	DATE:	REVIEWED BY: JOHN M. BRUDIN		APPROVED BY: MARCUS L. FULLER	
DRAWN BY: JPV		TRAFFIC ENG'G						
REVIEWED BY: CG	DATE	FIELD ENG'G			R.C.E. NO. 41836	EXP. DATE: 3/31/__	DATE:	R.C.E. NO. 57271	EXP. DATE: 12/31/__	DATE:

CITY OF PALM SPRINGS, CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE I

TITLE SHEET

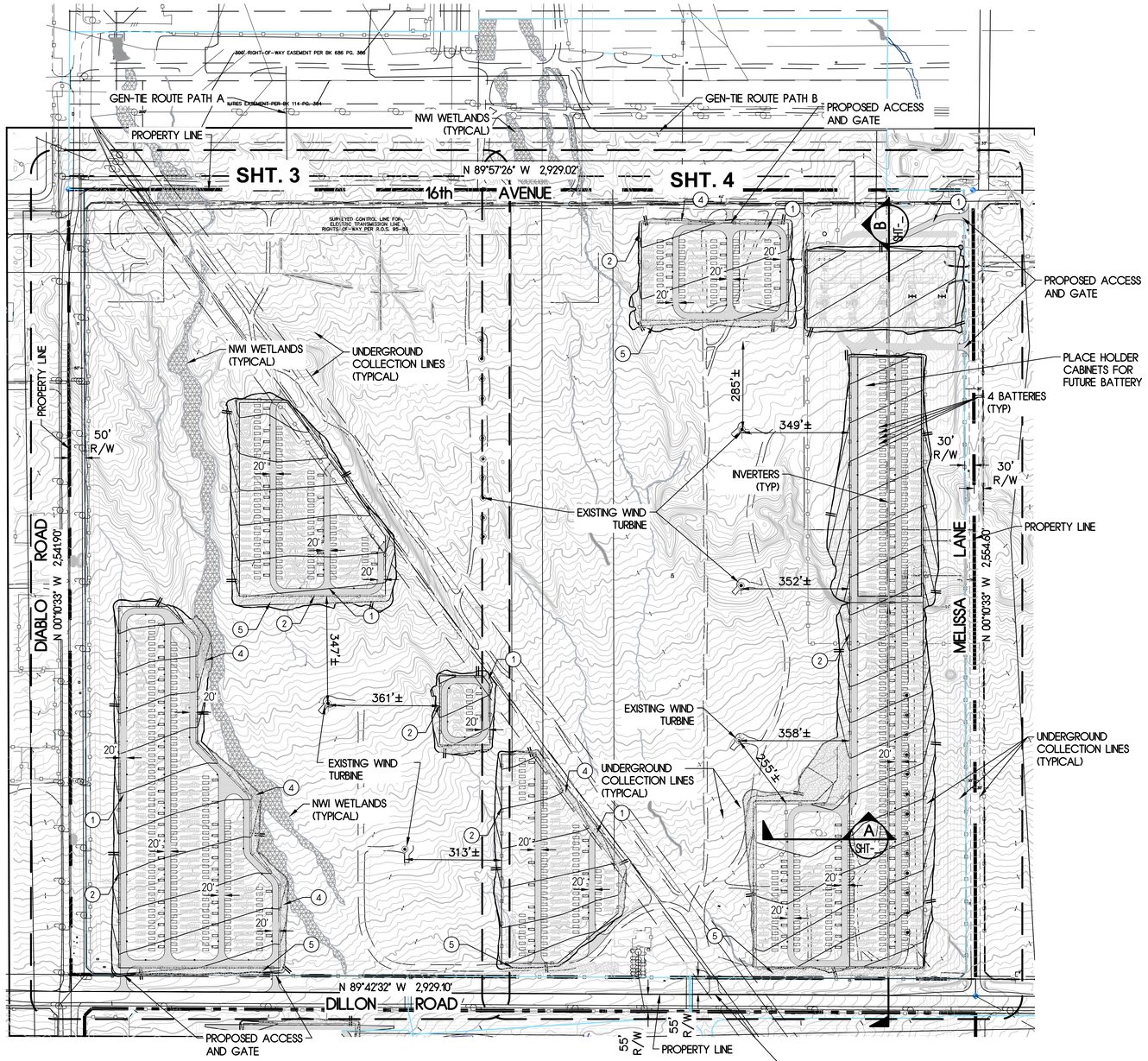
FILE NO. -_____

DWG. NO.

CADD FILE NAME

SHEET 1 OF 5 SHTS.

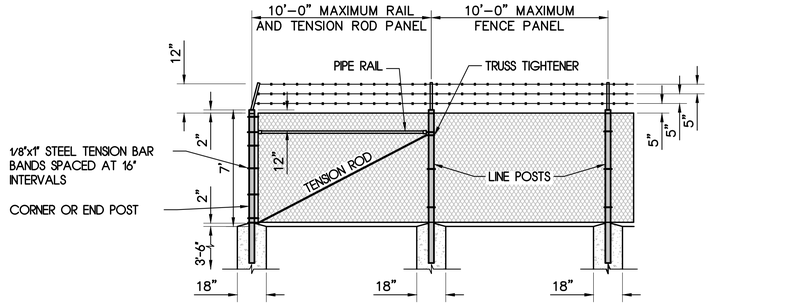
C:\Email\Temp\Desert Peak\Noble Site\CAD\13128 Shts 1-5.dwg Jan 18, 2022, 3:20pm



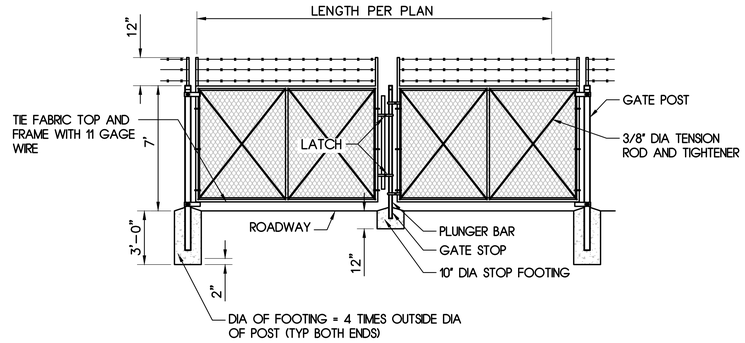
PLAN
SCALE: 1" = 200'

CONSTRUCTION NOTES

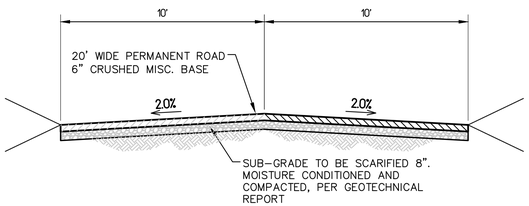
1. CONSTRUCT 6" A.C. CLASS–II AGGREGATE BASE OVER 8" COMPACTED NATIVE
2. INSTALL CHAIN LINK SECURITY FENCE, PER DETAILS SHOWN ON SHEET 2
3. INSTALL SECURITY LIGHTING (14' MAX)
4. INSTALL RIP RAP SLOPE ARMORING PER DETAIL 1 ON SHEET 5
5. INSTALL RIP RAP DISSIPATERS PER DETAIL 2 ON SHEET 5



BARBED WIRE FENCE DETAIL
NOT TO SCALE



BARBED WIRE FENCE VEHICLE GATE
NOT TO SCALE



SECTION A
NOT TO SCALE

GRAPHIC SCALE
0 200' 400'
SCALE: 1" = 200'

NO.	REVISION	APPROVED	DATE

BENCHMARK: RIV. CO. NO. 603–73–68 NAVD88 ELEV.: 1095.11

LOCATION: LOCATED APPROXIMATELY 5,970 WEST OF THE SUBJECT PROPERTY

REGISTERED PROFESSIONAL ENGINEER ARMANDO MARAN No. 59563 CIVIL STATE OF CALIFORNIA

1/18/22

DUDEK Engineering, Planning, Environmental Sciences and Management Services
78075 Main St., Ste. 203-G, La Quinta, CA, 92253
TEL 760.341.6660 FAX 760.346.6118

DESIGN BY:	CITY CHECK	RIGHT-OF-WAY	INITIALS	DATE:
AM		TRAFFIC ENG'G		
DRAWN BY: JPV				
REVIEWED BY: CG	DATE	FIELD ENG'G		

REVIEWED BY: JOHN M. BRUDIN — R.C.E. NO. 41836 — EXP. DATE: 3/31/__ — DATE:

APPROVED BY: MARCUS L. FULLER — R.C.E. NO. 57271 — EXP. DATE: 12/31/__ — DATE:

CITY OF PALM SPRINGS, CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE I
KEY MAP, SECTIONS AND DETAILS

FILE NO. -

DWG. NO.

CADD FILE NAME

SHEET 2 OF 5 SHTS.

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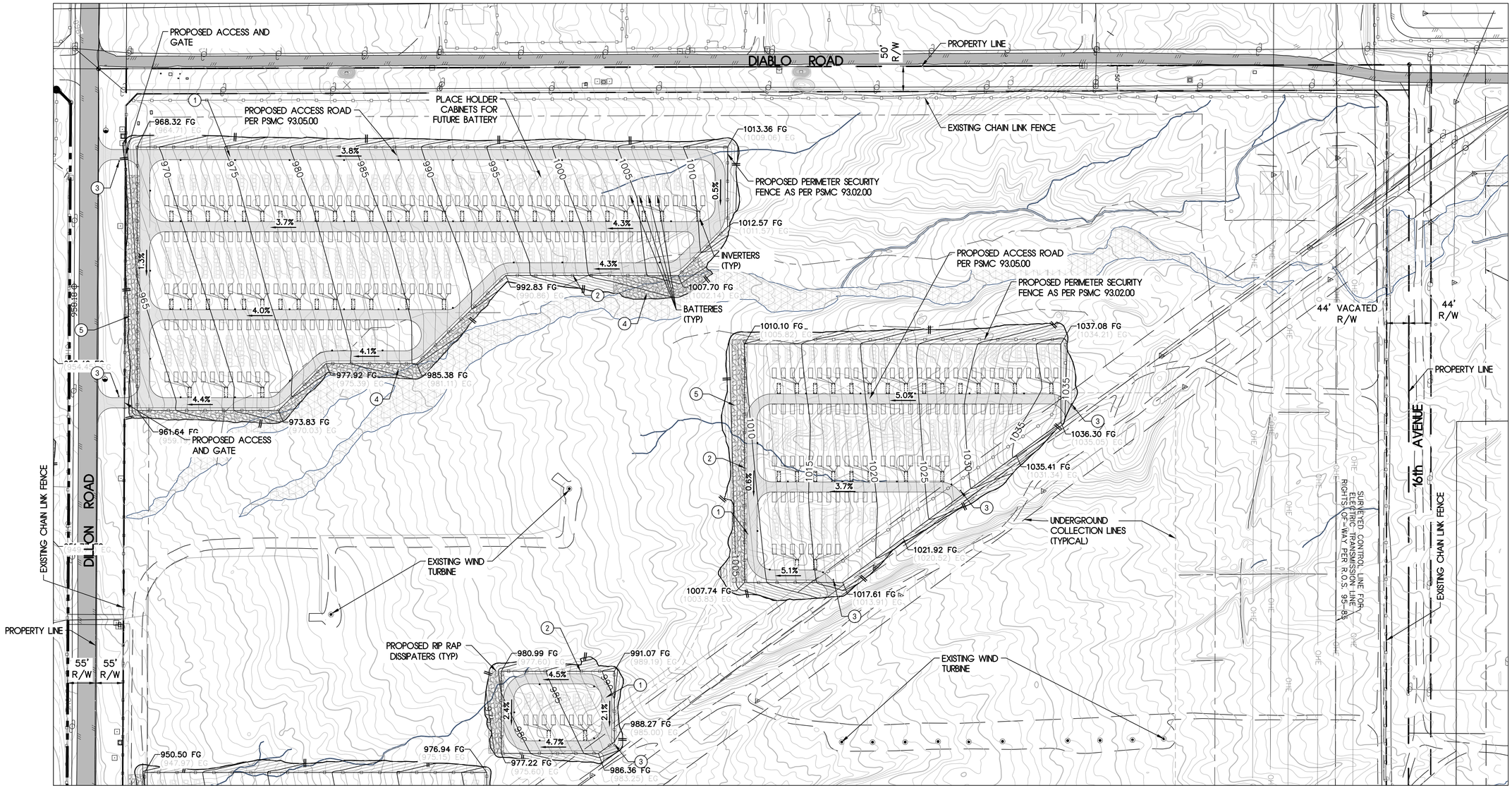

CONSTRUCTION NOTES

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3. INSTALL SECURITY LIGHTING (14' MAX)
4. INSTALL RIP RAP SLOPE ARMORING PER DETAIL 1 ON SHEET 5
5. INSTALL RIP RAP DISSIPATERS PER DETAIL 2 ON SHEET 5

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

NO.	REVISION	APPROVED	DATE

BENCHMARK: RIV. CO. NO. 603–73–68 NAVD88 ELEV.: 1095.11

LOCATION: LOCATED APPROXIMATELY 5,970 WEST OF THE SUBJECT PROPERTY

REGISTERED PROFESSIONAL ENGINEER ARMANDO MAGANA No. 59563 CIVIL STATE OF CALIFORNIA

DUDEK Engineering, Planning, Environmental Sciences and Management Services
78075 Main St., Ste. 203-G, La Quinta, CA. 92253
TEL 760.341.6660 FAX 760.346.6118

1/18/22

DESIGN BY:	CITY CHECK	RIGHT-OF-WAY	INITIALS	DATE:
AM		TRAFFIC ENG'G		
DRAWN BY: JPV		FIELD ENG'G		
REVIEWED BY: CG	DATE			

REVIEWED BY: JOHN M. BRUDIN — R.C.E. NO. 41836 — EXP. DATE: 3/31/__ — DATE:

APPROVED BY: MARCUS L. FULLER — R.C.E. NO. 57271 — EXP. DATE: 12/31/__ — DATE:

CITY OF PALM SPRINGS, CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE I

PRELIMINARY GRADING & DRAINAGE PLAN

FILE NO. _-_____
DWG. NO.
CADD FILE NAME

SHEET 3 OF 5 SHTS.

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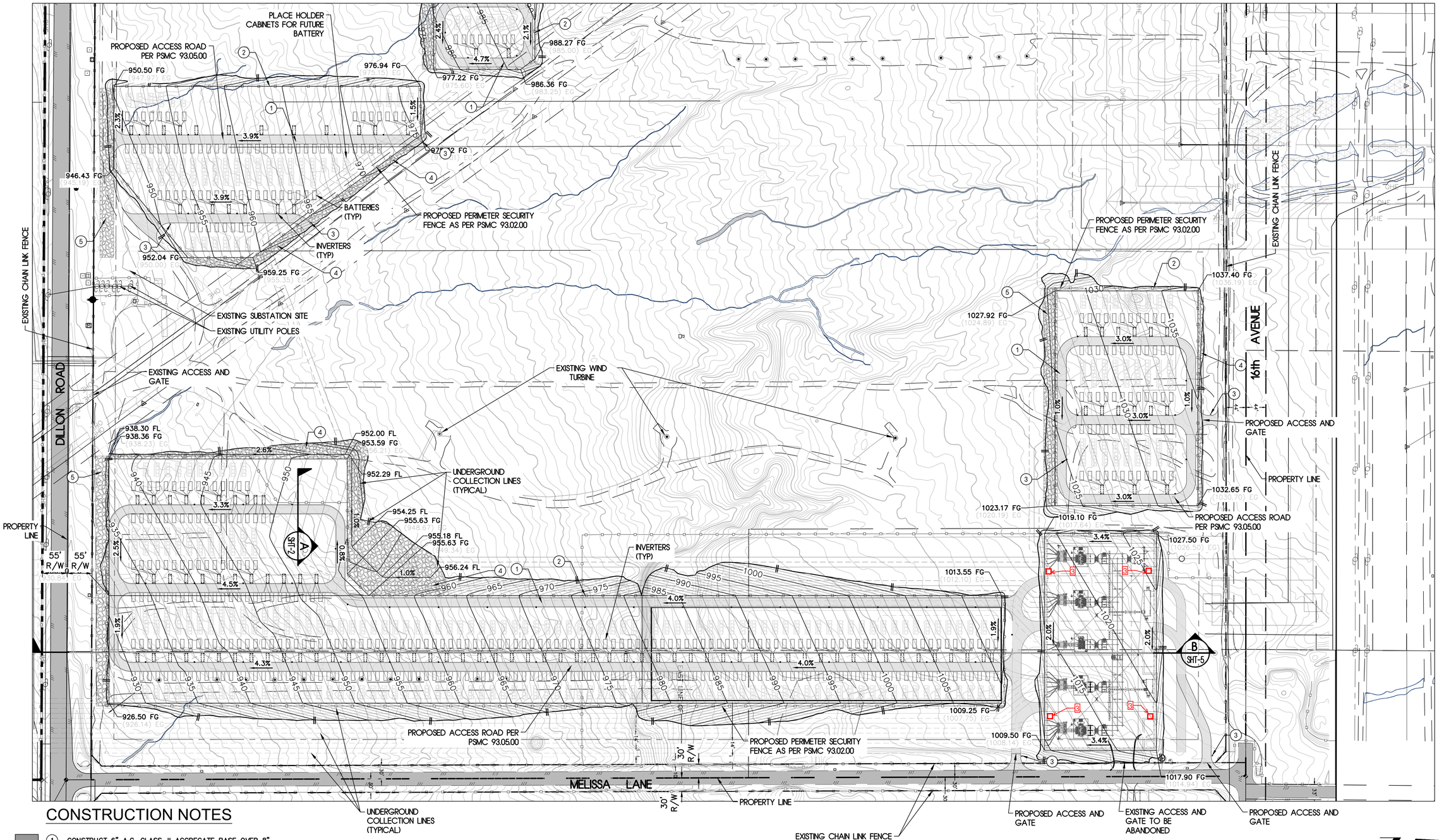

CONSTRUCTION NOTES

1. CONSTRUCT 6" A.C. CLASS-II AGGREGATE BASE OVER 8" COMPACTED NATIVE
2. INSTALL CHAIN LINK SECURITY FENCE, PER DETAILS SHOWN ON SHEET 2
3. INSTALL SECURITY LIGHTING (14' MAX)
4. INSTALL RIP RAP SLOPE ARMORING PER DETAIL 1 ON SHEET 5
5. INSTALL RIP RAP DISSIPATERS PER DETAIL 2 ON SHEET 5

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

NO.	REVISION	APPROVED	DATE

BENCHMARK: RIV. CO. NO. 603-73-68 NAVD88 ELEV.: 1095.11

LOCATION: LOCATED APPROXIMATELY 5,970 WEST OF THE SUBJECT PROPERTY

REGISTERED PROFESSIONAL ENGINEER ARMANDO MARANAN No. 59563 CIVIL STATE OF CALIFORNIA

1/18/22

DUDEK Engineering, Planning, Environmental Sciences and Management Services
78075 Main St., Ste. 203-G, La Quinta, CA, 92253
TEL 760.341.6660 FAX 760.346.8118

DESIGN BY:	CITY CHECK	RIGHT-OF-WAY	INITIALS	DATE:
AM				
DRAWN BY:		TRAFFIC ENG'G		
JPV				
REVIEWED BY:	DATE	FIELD ENG'G		
CG				

REVIEWED BY: JOHN M. BRUDIN — R.C.E. NO. 41836 — EXP. DATE: 3/31/__ — DATE:

APPROVED BY: MARCUS L. FULLER — R.C.E. NO. 57271 — EXP. DATE: 12/31/__ — DATE:

CITY OF PALM SPRINGS, CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE I

PRELIMINARY GRADING & DRAINAGE PLAN

FILE NO. --____
DWG. NO.
CADD FILE NAME

SHEET 4 OF 5 SHTS.

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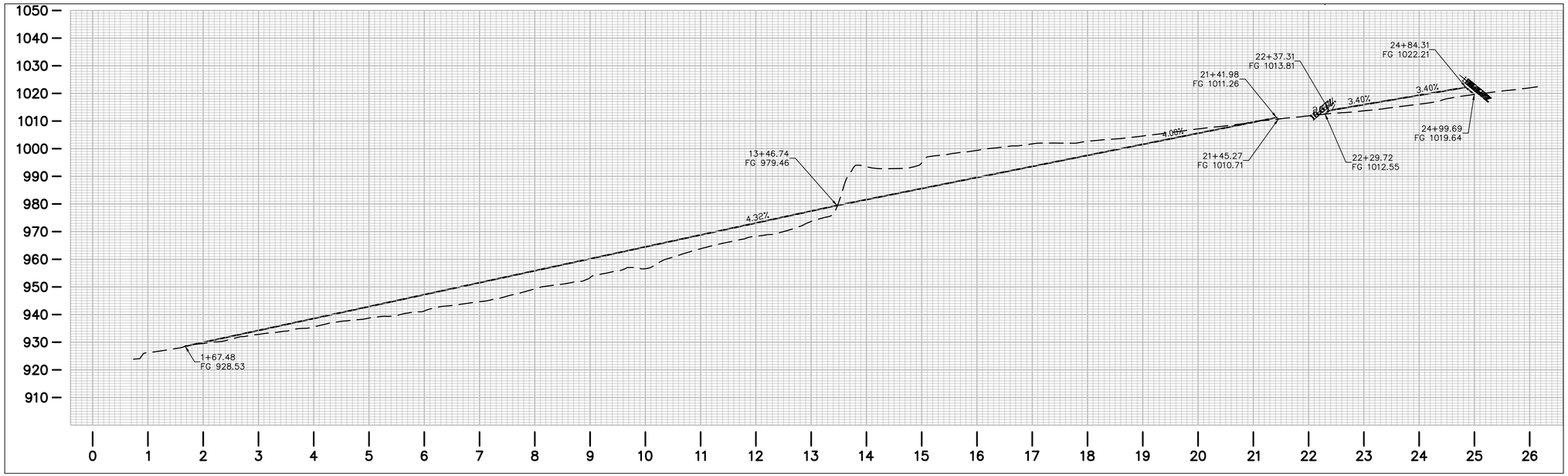
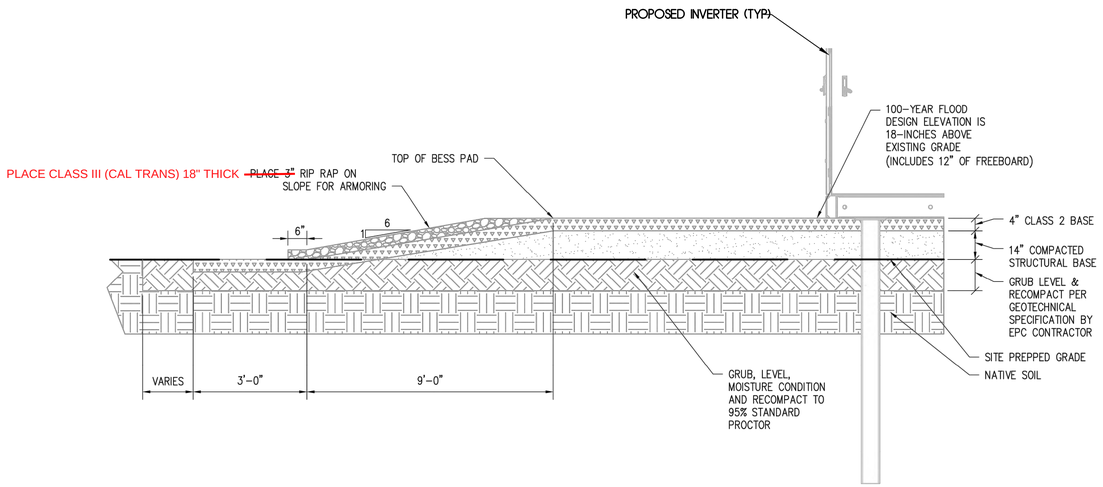


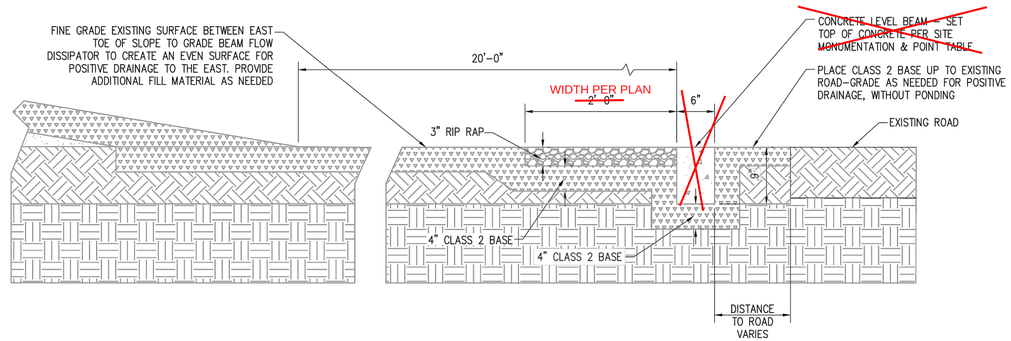
SECTION B

HORIZONTAL: 1" = 100'
VERTICAL: 1" = 20'



DETAIL 1

NOT TO SCALE



DETAIL 2

NOT TO SCALE

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NO.	REVISION	APPROVED	DATE

BENCHMARK: RIV. CO. NO. 603-73-68 NAVD88 ELEV.: 1095.11

LOCATION: LOCATED APPROXIMATELY 5,970 WEST OF THE SUBJECT PROPERTY

REGISTERED PROFESSIONAL ENGINEER ARMANDO MAGANA No. 59563 CIVIL STATE OF CALIFORNIA

DUDEK Engineering, Planning, Environmental Sciences and Management Services
78075 Main St., Ste. 203-G, La Quinta, CA. 92253
TEL 760.341.6660 FAX 760.346.6118

1/18/22

DESIGN BY:	CITY CHECK	RIGHT-OF-WAY	INITIALS	DATE:
AM				
DRAWN BY:		TRAFFIC ENG'G		
JPV				
REVIEWED BY:	DATE	FIELD ENG'G		
CG				

REVIEWED BY: JOHN M. BRUDIN
R.C.E. NO. 41836 EXP. DATE: 3/31/__ DATE:

APPROVED BY: MARCUS L. FULLER
R.C.E. NO. 57271 EXP. DATE: 12/31/__ DATE:

CITY OF PALM SPRINGS, CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE I

PRELIMINARY GRADING & DRAINAGE PLAN

FILE NO. -_-_____
DWG. NO.
CADD FILE NAME

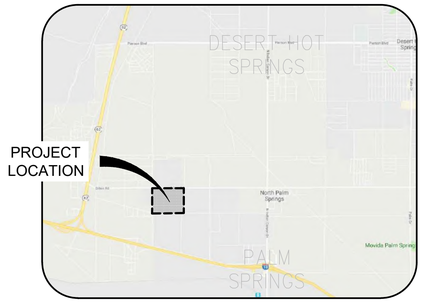
SHEET 5 OF 5 SHTS.

IN THE CITY OF PALM SPRINGS, STATE OF CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE 2

PRELIMINARY GRADING & DRAINAGE PLAN

SITE MAP
SCALE: 1"=80'



VICINITY MAP
N.T.S.

UTILITIES

ELECTRIC	SOUTHERN CALIFORNIA EDISON	(760) 202-4217
GAS	THE GAS CO.	(760) 335-7625
TELEPHONE	VERIZON	(760) 778-3603
FIBER OPTIC	VERIZON	(760) 778-3603
WATER	DESERT WATER AGENCY	(760) 323-4917
SEWER	CITY OF PALM SPRINGS	(760) 323-8253
STORM DRAIN	CITY OF PALM SPRINGS	(760) 323-8253
TV CABLE	TIME WARNER CABLE	(760) 340-1312
USA	UNDERGROUND SERVICE ALERT	811

BASIS OF BEARINGS

NAD 83 (2011), STATE PLANE COORDINATES, CALIFORNIA ZONE 6, BASED ON NGS STATIONS TOMTIT2 AND RAMO

BENCHMARK

NAVD 88

APN AND LEGAL DESCRIPTION:

APN 668-280-007 AND 668-280-017

THAT PORTION OF THE WESTERLY 2,929 FEET OF SECTION 9, TOWNSHIP 3 SOUTH, RANGE 4 EAST, SAN BERNARDINO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTHERLY OF DILLON ROAD AS DESCRIBED IN DEEDS TO THE COUNTY OF RIVERSIDE, RECORDED JUNE 9, 1964 IN BOOK 3715, PAGE 470 AS INSTRUMENT NO. 70659 AND JUNE 8, 1966 AS INSTRUMENT NO. 59449, BOTH OF OFFICIAL RECORDS.

EXCEPT THAT PORTION OF SAID LAND CONVEYED TO THE RIVERSIDE COUNTY FLOOD AND WATER CONSERVATION DISTRICT IN A DEED RECORDED SEPTEMBER 14, 1967 AS INSTRUMENT NO. 80550, OFFICIAL RECORDS.

SHEET INDEX

Know what's below. Call 811 before you dig.

LEGEND

- CENTERLINE
- RIGHT OF WAY
- PROPERTY/BOUNDARY LINE
- EX. GUTTER
- EX. CURB
- EX. CONTOUR
- CONSTRUCTION LIMITS
- EX. ELECTRICAL
- WIND TURBINE
- POWER POLE
- EXISTING FENCE
- SECURITY LIGHTING (14' MAX)

ABBREVIATIONS

AC	ASPHALT CONCRETE		
AGG.	AGGREGATE	PP	POWER POLE
		PVM'T.	PAVEMENT
℄	CENTERLINE		
CO	CLEANOUT	REQ'D.	REQUIRED
CONC.	CONCRETE	RW R/W	RIGHT-OF-WAY
E	ELECTRICAL LINES	S	SLOPE
EG	EXISTING GRADE	SEC.	SECTION
EP	EDGE OF PAVEMENT	SHT.	SHEET
ESM'T.	EASEMENT	STD.	STANDARD
EXIST.	EXISTING		
		TC	TOP OF CURB
FG	FINISHED GRADE		
FH	FIRE HYDRANT	TW	TOP OF WALL
FL	FLOWLINE	TYP.	TYPICAL
FS	FINISHED SURFACE		
		UG	UNDERGROUND
G	GAS		
GB	GRADE BREAK	VAR.	VARIES
		VERT.	VERTICAL
HP	HIGH POINT		
		W	WATER
LF	LINEAR FOOT	WL	WATER LEVEL
MAX.	MAXIMUM		
MH	MANHOLE		
MIN.	MINIMUM		

CIVIL ENGINEER:

DUDEK
CHARLES GREELY, P.E.
78075 MAIN ST. Suite. 203-G
LA QUINTA, CA. 92253
TEL (760) 601-3411

FEMA FLOOD DATA:

FLOOD ZONE: ZONE X
PANEL: 06065C0890G
DATE: 8-28-08
ZONE DEFINITION: ZONE X: AREAS DETERMINED TO BE OUTSIDE 0.2% ANNUAL CHANCE FLOODPLAIN.

OWNER:

DAVID J. BUCK
BUCK ENERGY LLC
10580 NT. McCARRAN BLVD, STE. 115-541
RENO, NV. 89503
TEL (775) 742-9843

PROJECT LOCATION:

62125 DILLON ROAD
DESERT HOT SPRINGS, CA. 92240

APPLICANT:

DESERT PEAK ENERGY CENTER LLC
1 CALIFORNIA STREET
SAN FRANCISCO, CA 94111

GRADING PLAN GENERAL NOTES

1. THE WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD DRAWINGS OF THE CITY OF PALM SPRINGS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2012 EDITION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN EFFECTIVE MEANS OF DUST CONTROL WHICH SHALL INCLUDE PROVISIONS FOR ADEQUATE WATERING DURING THE GRADING PROCESS AND PROVISIONS FOR CONTINUANCE OF DUST CONTROL UNTIL THE GRADED SURFACE PRESENTS SUFFICIENT COVER AGAINST WIND OR WATER EROSION, SO THAT SPECIAL DUST CONTROL MEASURES ARE NO LONGER NECESSARY.
3. NOTHING IN THESE PLANS SHALL RELIEVE THE CONTRACTOR FROM OBTAINING PERMITS AS REQUIRED BY THE CITY OF PALM SPRINGS.
4. THE CONTRACTOR SHALL SET AN APPOINTMENT FOR INSPECTION WITH THE ENGINEERING INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO THE DATE OF INSPECTION.
5. ALL GRADING SHALL COMPLY WITH SECTION 1804 AND APPENDIX J OF THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE.
6. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE TO BE SHOWN IN A SCHEMATIC MANNER ONLY. SUBJECT TO THE PROVISIONS OF SECTION 4215 OF THE CALIFORNIA GOVERNMENT CODE, THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING THE WORK. CONTACT UNDERGROUND SERVICE ALERT (U.S.A.) AT 1-800-227-2600 TWO WORKING DAYS PRIOR TO ANY EXCAVATION.
7. DIMENSIONING TO CURBS SHALL BE TO FACE OF CURB.
8. CONTRACTOR SHALL DISPOSE OF ALL DEBRIS OFF-SITE DAILY, UNLESS OTHERWISE SPECIFIED BY THE CITY ENGINEER.
9. CONTRACTOR SHALL REMOVE ANY ABANDONED UTILITY FACILITIES AND SHOW LIMIT OF REMOVALS ON THE RECORD DRAWINGS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL, REPLACEMENT OR RELOCATION OF ALL REGULATORY, WARNING AND GUIDE SIGNS.
11. NOT USED.
12. CONSTRUCTION SIGNING, LIGHTING AND BARRICADING SHALL BE PROVIDED ON ALL PROJECTS AS REQUIRED BY CITY STANDARDS. AS A MINIMUM, ALL CONSTRUCTION SIGNING, LIGHTING AND BARRICADING SHALL BE IN ACCORDANCE WITH PART 6 "TEMPORARY TRAFFIC CONTROL" OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, DATED JANUARY 13, 2012, OR SUBSEQUENT EDITIONS IN FORCE AT THE TIME OF CONSTRUCTION.
13. THE FLOW LINE OF ALL CURB AND GUTTERS AND CROSS GUTTERS SHALL BE WATER TESTED BEFORE ACCEPTANCE OF THE WORK.
14. PARKING STALLS SHALL BE CLEARLY DELINEATED WITH A 4 TO 6 INCH STRIPE "HAIRPIN" OR ELONGATED "U" DESIGN OR OTHER APPROVED STRIPING OR STALL DELINEATION.
15. NOT USED.
16. FOR PROJECTS IN EXCESS OF 1 ACRE, A NOTICE OF INTENT TO COMPLY WITH CALIFORNIA GENERAL CONSTRUCTION STORMWATER PERMIT (WATER QUALITY ORDER 2009-0009-DWQ AS MODIFIED SEPTEMBER 2, 2009, AS WELL AS A COPY OF THE EXECUTED LETTER ISSUING A WASTE DISCHARGE IDENTIFICATION (WDID) NUMBER, IS REQUIRED PRIOR TO ISSUANCE OF GRADING OR BUILDING PERMIT, VIA COPY OF THE PROJECT-SPECIFIC STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE KEPT AT THE PROJECT SITE AT ALL TIMES. CONTRACTOR SHALL PREPARE AND SUBMIT THE SWPPP TO THE TRIBAL ENGINEER PRIOR TO COMMENCING OF CONSTRUCTION.
17. AN APPROVED FUGITIVE DUST (PM-10) CONTROL PLAN IS REQUIRED PRIOR TO ISSUANCE OF A GRADING PERMIT. ALL DUST CONTROL MEASURES DESCRIBED IN AQMD RULE 403 (BEST AVAILABLE CONTROL MEASURES) AND IN THE CITY-APPROVED FUGITIVE DUST CONTROL PLAN SHALL BE IMPLEMENTED AT ALL TIMES. A WIND FENCE AND PROPER SIGNAGE, SHALL BE ERECTED, INSPECTED AND APPROVED BY THE CITY'S DUST CONTROL INSPECTOR PRIOR TO INITIATION OF CLEARING, GRUBBING, GRADING OR IMPORT/EXPORT OF SOIL, OR FILL MATERIAL AT THE SITE. FAILURE TO CALL 760-323-8253, EXTENSION 8740 FOR INSPECTION 72 HOURS PRIOR TO INITIATING WORK WILL RESULT IN ISSUANCE OF CITATION BY THE CITY.
18. NOT USED.
19. NOT USED.

STREET PAVEMENT

20. THE ASPHALT CONCRETE DESIGN SHALL MEET THE CITY OF PALM SPRINGS STD. DWG. NO 110 AND STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2012 EDITION; USE TYPE B FOR THE BASE LIFT AND TYPE C2 FOR THE FINAL 1" CAP. THE DESIGN SHALL HAVE A HVEEM STABILITY OF 35 AND 33 RESPECTIVELY PER THE CALIFORNIA TEST METHOD 304 AND 366. PERFORMANCE GRADE ASPHALT (PG 70-10) MEETING THE 2010 CALTRANS STANDARD SPECIFICATIONS SHALL BE USED.

TRENCH PAVEMENT

21. NOT USED.
22. NOT USED.
23. IF, IN THE OPINION OF THE CITY ENGINEER, THE TRENCH BACKFILL IS UNSAFE TO TRAFFIC, THE CONTRACTOR SHALL PLACE PERMANENT PAVING AT THE END OF EACH WORK DAY.
24. STEEL TRENCH PLATING SHALL CONFORM TO THE CALTRANS ENCROACHMENT PERMIT MANUAL SECTION 602.1, AS REVISED JULY, 2009.
25. THE SPECIFIED MISCELLANEOUS BASE SHALL BE CRUSHED MISCELLANEOUS BASE ACCORDING TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2012 EDITION.

EROSION CONTROL NOTES

26. EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPS) SHALL BE IMPLEMENTED AND MAINTAINED TO MINIMIZE AND/OR PREVENT THE ENTRAINMENT OF SOIL IN RUNOFF FROM DISTURBED SOIL AREAS ON CONSTRUCTION SITES.
27. SEDIMENT CONTROL BMPS SHALL BE IMPLEMENTED AND MAINTAINED TO PREVENT AND/OR MINIMIZE THE TRANSPORT OF SOIL FROM THE CONSTRUCTION SITE.
28. STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO ELIMINATE OR REDUCE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.
29. APPROPRIATE BMPS FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS OR RESIDUES SHALL BE IMPLEMENTED TO ELIMINATE OR REDUCE TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTIES BY WIND OR RUNOFF.
30. BMPS SHALL BE INSPECTED PRIOR TO PREDICTED STORM EVENTS AND FOLLOWING STORM EVENTS, AND SHALL BE PROPERLY MAINTAINED.
31. RUNOFF FROM EQUIPMENT AND VEHICLE WASHING SHALL BE CONTAINED AT CONSTRUCTION SITES AND MUST NOT BE DISCHARGED TO RECEIVING WATERS, ADJACENT ROADWAYS, CATCH BASINS, OR OTHER COMPONENTS OF THE LOCAL STORM DRAIN SYSTEM.
32. ALL CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR PERSONNEL ARE TO BE MADE AWARE OF THE REQUIRED BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING MEASURES FOR THE PROJECT SITE AND ANY ASSOCIATED CONSTRUCTION STAGING AREAS.
33. AT THE END OF EACH DAY OF CONSTRUCTION ACTIVITY, ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND PROPERLY DISPOSED OF IN COVERED TRASH OR RECYCLE BINS.
34. CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT A STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE. DISCHARGES OTHER THAN STORMWATER (I.E., NON-STORMWATER DISCHARGES) ARE PROHIBITED, EXCEPT AS AUTHORIZED BY AN INDIVIDUAL NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT, THE GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, OR THE GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM SMALL LINEAR UNDERGROUND/OVERHEAD PROJECTS. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, SOLVENTS, DETERGENTS, GLUES, LIME, PESTICIDES, HERBICIDES, FERTILIZERS, WOOD PRESERVATIVES, ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS; CONCRETE AND RELATED CUTTING OR CURING RESIDUES; CONCRETE WASHOUT; FLOATABLE WASTES; WASTES FROM ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING; WASTES FROM STREET CLEANING; AND SUPER-CHLORINATED POTABLE WATER FROM LINE FLUSHING AND TESTING. DURING CONSTRUCTION, DISPOSAL OF SUCH MATERIALS SHOULD OCCUR IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE, PHYSICALLY SEPARATED FROM POTENTIAL STORMWATER RUNOFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
35. DISCHARGING CONTAMINATED GROUNDWATER PRODUCED BY DEWATERING GROUNDWATER THAT HAS INFILTRATED INTO THE CONSTRUCTION SITE IS PROHIBITED. DISCHARGING OF CONTAMINATED SOILS VIA SURFACE EROSION IS ALSO PROHIBITED. DISCHARGING NON-CONTAMINATED GROUNDWATER PRODUCED BY DEWATERING ACTIVITIES MAY REQUIRE A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT OR WASTE DISCHARGE REQUIREMENTS (WDRS) ISSUED BY THE COLORADO RIVER BASIN REGIONAL WATER QUALITY CONTROL BOARD.
36. CONSTRUCTION SITES SHALL BE MANAGED TO MINIMIZE THE EXPOSURE TIME OF DISTURBED SOIL AREAS THROUGH PHASING AND SCHEDULING OF GRADING TO THE EXTENT FEASIBLE AND THE USE OF TEMPORARY AND PERMANENT SOIL STABILIZATION.

NO.	REVISION	APPROVED	DATE

BENCHMARK: RIV. CO. NO. 603-73-68 NAVD88 — ELEV.: 1095.11
LOCATION: LOCATED APPROXIMATELY 5,970 WEST OF THE SUBJECT PROPERTY

REGISTERED PROFESSIONAL ENGINEER AMANDO MAGANA No. 59563 CIVIL STATE OF CALIFORNIA
1/18/22

DUDEK — Engineering, Planning, Environmental Sciences and Management Services
78075 Main St., Ste. 203-G, La Quinta, CA. 92253
TEL 760.341.6660 FAX 760.346.6118

DESIGN BY: AM	CITY CHECK	RIGHT-OF-WAY	INITIALS	DATE:	
DRAWN BY: JPV		TRAFFIC ENG'G			
REVIEWED BY: CG	DATE	FIELD ENG'G			

REVIEWED BY: JOHN M. BRUDIN — R.C.E. NO. 41836 — EXP. DATE: 3/31/__ — DATE:
APPROVED BY: MARCUS L. FULLER — R.C.E. NO. 57271 — EXP. DATE: 12/31/__ — DATE:

CITY OF PALM SPRINGS, CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE 2

TITLE SHEET

FILE NO. _-____
DWG. NO.
CADD FILE NAME

SHEET 1 OF 5 SHTS.

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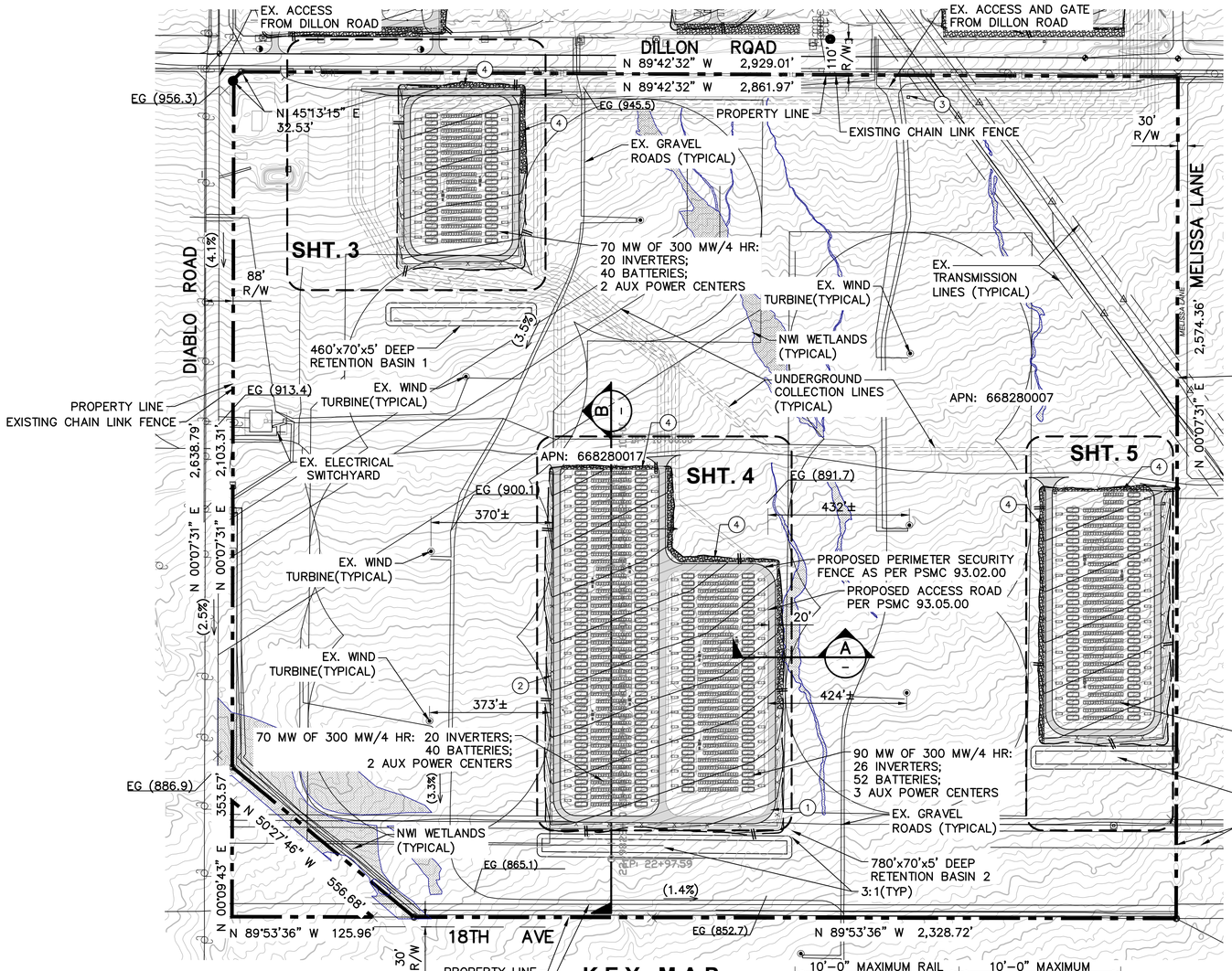
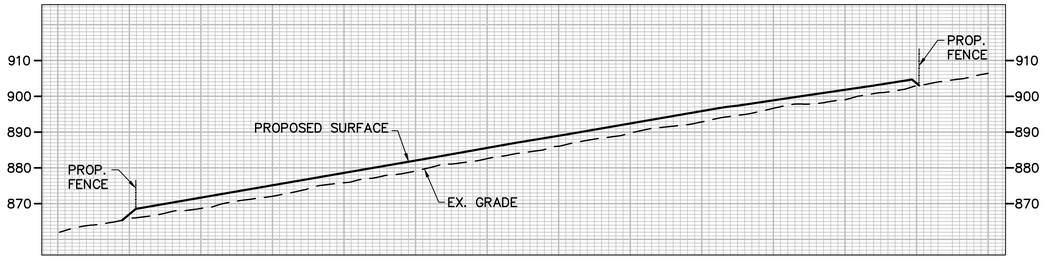


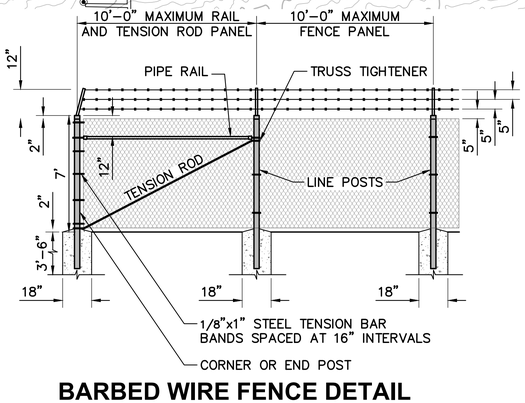
KEY MAP
SCALE: 1" = 200'



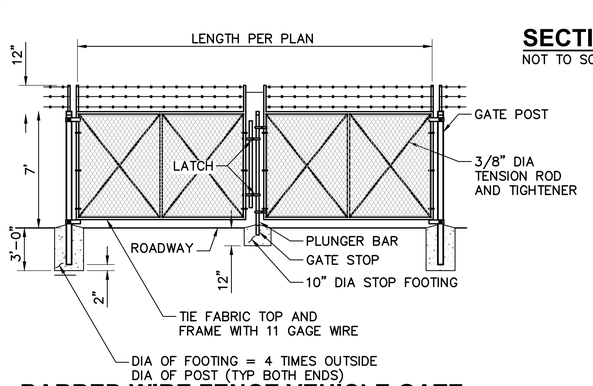
SECTION B
SCALE: 1" = 100'
1" = 20'

CONSTRUCTION NOTES

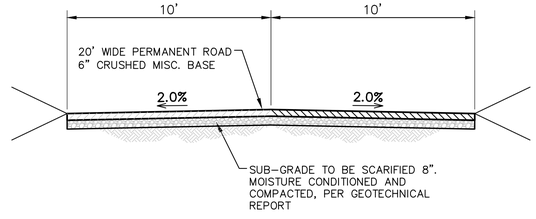
1. CONSTRUCT 6" A.C. CLASS–II AGGREGATE BASE OVER 8" COMPACTED NATIVE
2. INSTALL CHAIN LINK SECURITY FENCE, PER DETAILS SHOWN ON SHEET 2
3. INSTALL SECURITY LIGHTING (14' MAX)
4. INSTALL RIP RAP SLOPE ARMORING PER DETAIL 1 ON SHEET 5



BARBED WIRE FENCE DETAIL
NOT TO SCALE



BARBED WIRE FENCE VEHICLE GATE
NOT TO SCALE



SECTION A
NOT TO SCALE

GRAPHIC SCALE
0 200' 400'
SCALE: 1" = 200'

Know what's below. Call 811 before you dig.

NO.	REVISION	APPROVED	DATE

BENCHMARK: RIV. CO. NO. 603–73–68 NAVD88
ELEV.: 1095.11
LOCATION: LOCATED APPROXIMATELY 5,970 WEST OF THE SUBJECT PROPERTY

REGISTERED PROFESSIONAL ENGINEER ARMANDO MAMAKOS No. 59563 CIVIL STATE OF CALIFORNIA

1/18/22

DUDEK Engineering, Planning, Environmental Sciences and Management Services
78075 Main St., Ste. 203-G, La Quinta, CA, 92253
TEL 760.341.6660 FAX 760.346.6118

DESIGN BY:	CITY CHECK	RIGHT-OF-WAY	INITIALS	DATE:
AM				
DRAWN BY:		TRAFFIC ENG'G		
JPV				
REVIEWED BY:	DATE	FIELD ENG'G		
CG				

REVIEWED BY: JOHN M. BRUDIN
R.C.E. NO. 41836 EXP. DATE: 3/31/__ DATE:

APPROVED BY: MARCUS L. FULLER
R.C.E. NO. 57271 EXP. DATE: 12/31/__ DATE:

CITY OF PALM SPRINGS, CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE 2
KEY MAP, SECTIONS AND DETAILS

FILE NO. -_-_____
DWG. NO.
CADD FILE NAME

SHEET 2 OF 5 SHTS.

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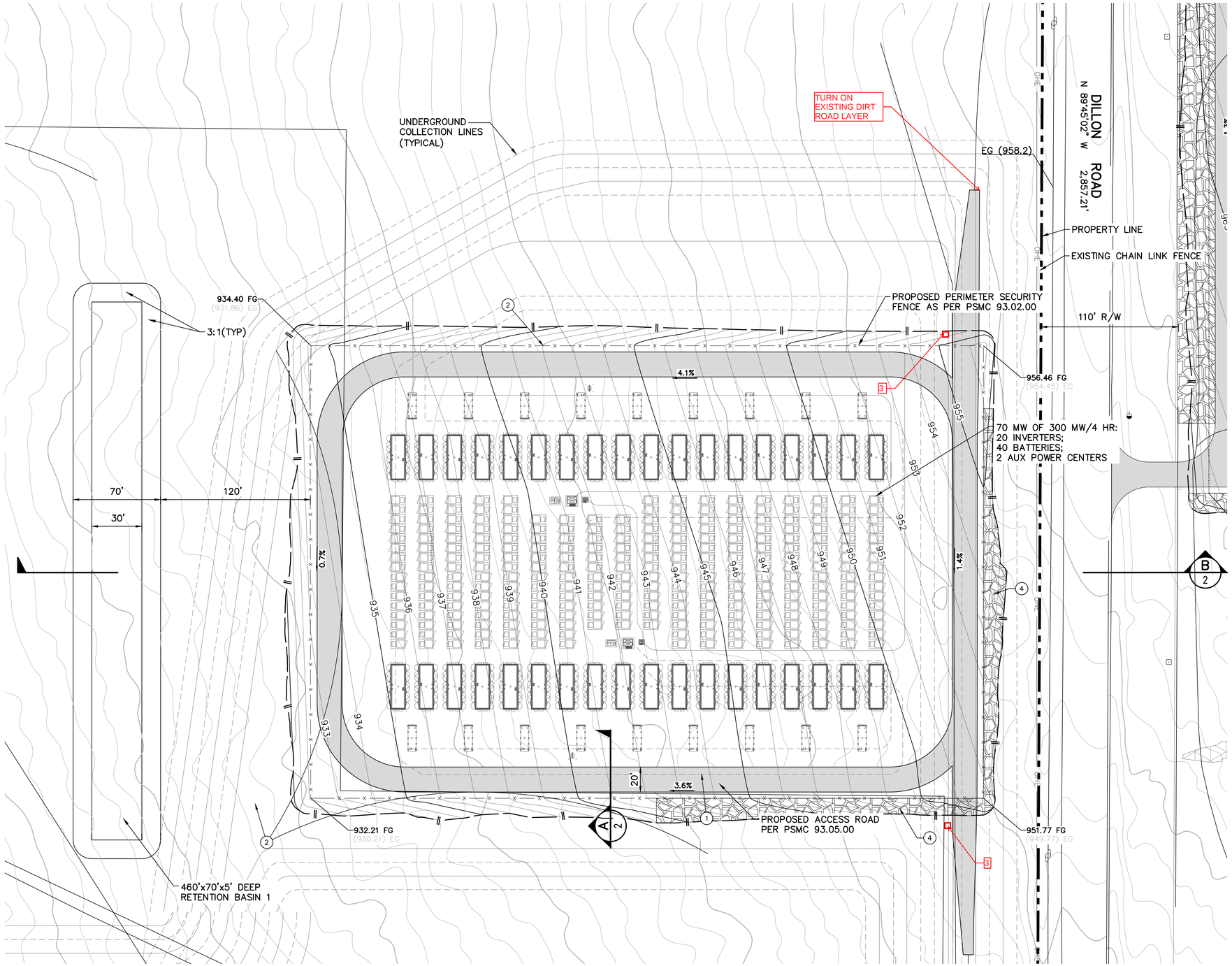

CONSTRUCTION NOTES

1. CONSTRUCT 6" A.C. CLASS–II AGGREGATE BASE OVER 8" COMPACTED NATIVE
2. INSTALL CHAIN LINK SECURITY FENCE, PER DETAILS SHOWN ON SHEET 2
3. INSTALL SECURITY LIGHTING (14' MAX)
4. INSTALL RIP RAP SLOPE ARMORING PER DETAIL 1 ON SHEET 5

GRAPHIC SCALE

0 40' 80'

SCALE: 1" = 40'

Know what's below. Call 811 before you dig.

NO.	REVISION	APPROVED	DATE

BENCHMARK: RIV. CO. NO. 603–73–68 NAVD88 — ELEV.: 1095.11

LOCATION: LOCATED APPROXIMATELY 5,970 WEST OF THE SUBJECT PROPERTY

REGISTERED PROFESSIONAL ENGINEER — ARMANDO MAGANA — No. 59563 — CIVIL — STATE OF CALIFORNIA

1/18/22

DUDEK — Engineering, Planning, Environmental Sciences and Management Services
78075 Main St., Ste. 203-G, La Quinta, CA, 92253
TEL 760.341.6660 FAX 760.346.6118

DESIGN BY:	CITY CHECK	RIGHT-OF-WAY	INITIALS	DATE:
AM				
DRAWN BY:		TRAFFIC ENG'G		
JPV				
REVIEWED BY:	DATE	FIELD ENG'G		
CG				

REVIEWED BY: JOHN M. BRUDIN — R.C.E. NO. 41836 — EXP. DATE: 3/31/__ — DATE:

APPROVED BY: MARCUS L. FULLER — R.C.E. NO. 57271 — EXP. DATE: 12/31/__ — DATE:

CITY OF PALM SPRINGS, CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE 2

PRELIMINARY GRADING & DRAINAGE PLAN

FILE NO. _-_____

DWG. NO.

CADD FILE NAME

SHEET 3 OF 5 SHTS.

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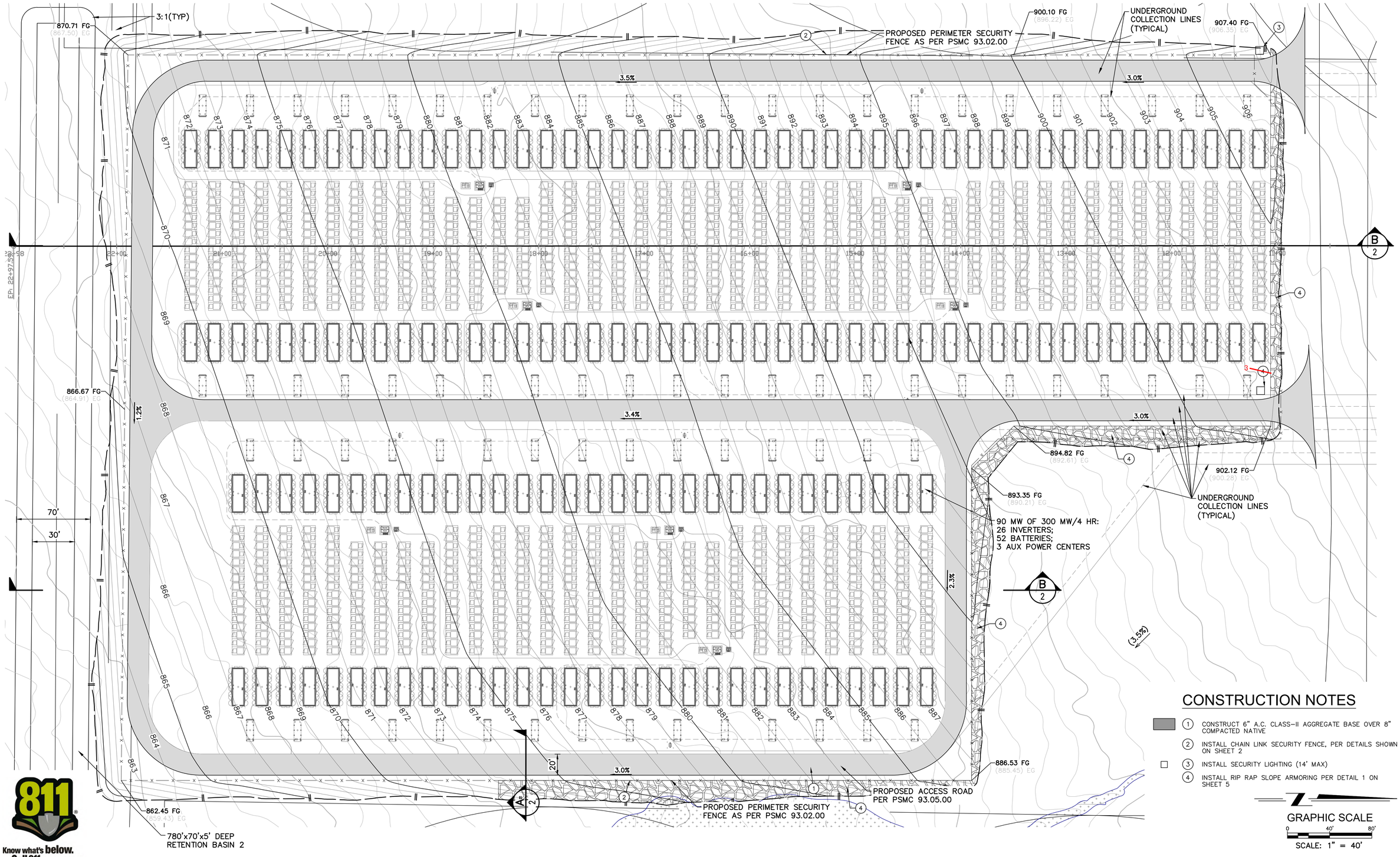

CONSTRUCTION NOTES

1. CONSTRUCT 6" A.C. CLASS–II AGGREGATE BASE OVER 8" COMPACTED NATIVE
2. INSTALL CHAIN LINK SECURITY FENCE, PER DETAILS SHOWN ON SHEET 2
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4. INSTALL RIP RAP SLOPE ARMORING PER DETAIL 1 ON SHEET 5

GRAPHIC SCALE
0 40' 80'
SCALE: 1" = 40'

Know what's below. Call 811 before you dig.

NO.	REVISION	APPROVED	DATE

BENCHMARK: RIV. CO. NO. 603–73–68 NAVD88 — ELEV.: 1095.11

LOCATION: LOCATED APPROXIMATELY 5,970 WEST OF THE SUBJECT PROPERTY

REGISTERED PROFESSIONAL ENGINEER ARMANDO MAGAÑA No. 59563 CIVIL STATE OF CALIFORNIA

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TEL 760.341.6660 FAX 760.346.6118

1/18/22

DESIGN BY:	CITY CHECK	RIGHT-OF-WAY	INITIALS	DATE:
AM		TRAFFIC ENG'G		
DRAWN BY: JPV		FIELD ENG'G		
REVIEWED BY: CG	DATE			

REVIEWED BY: JOHN M. BRUDIN — R.C.E. NO. 41836 — EXP. DATE: 3/31/__ — DATE:

APPROVED BY: MARCUS L. FULLER — R.C.E. NO. 57271 — EXP. DATE: 12/31/__ — DATE:

CITY OF PALM SPRINGS, CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE 2
PRELIMINARY GRADING & DRAINAGE PLAN

FILE NO. _-_____
DWG. NO.
CADD FILE NAME

SHEET 4 OF 5 SHTS.

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CONSTRUCTION NOTES

1. CONSTRUCT 6" A.C. CLASS–II AGGREGATE BASE OVER 8" COMPACTED NATIVE
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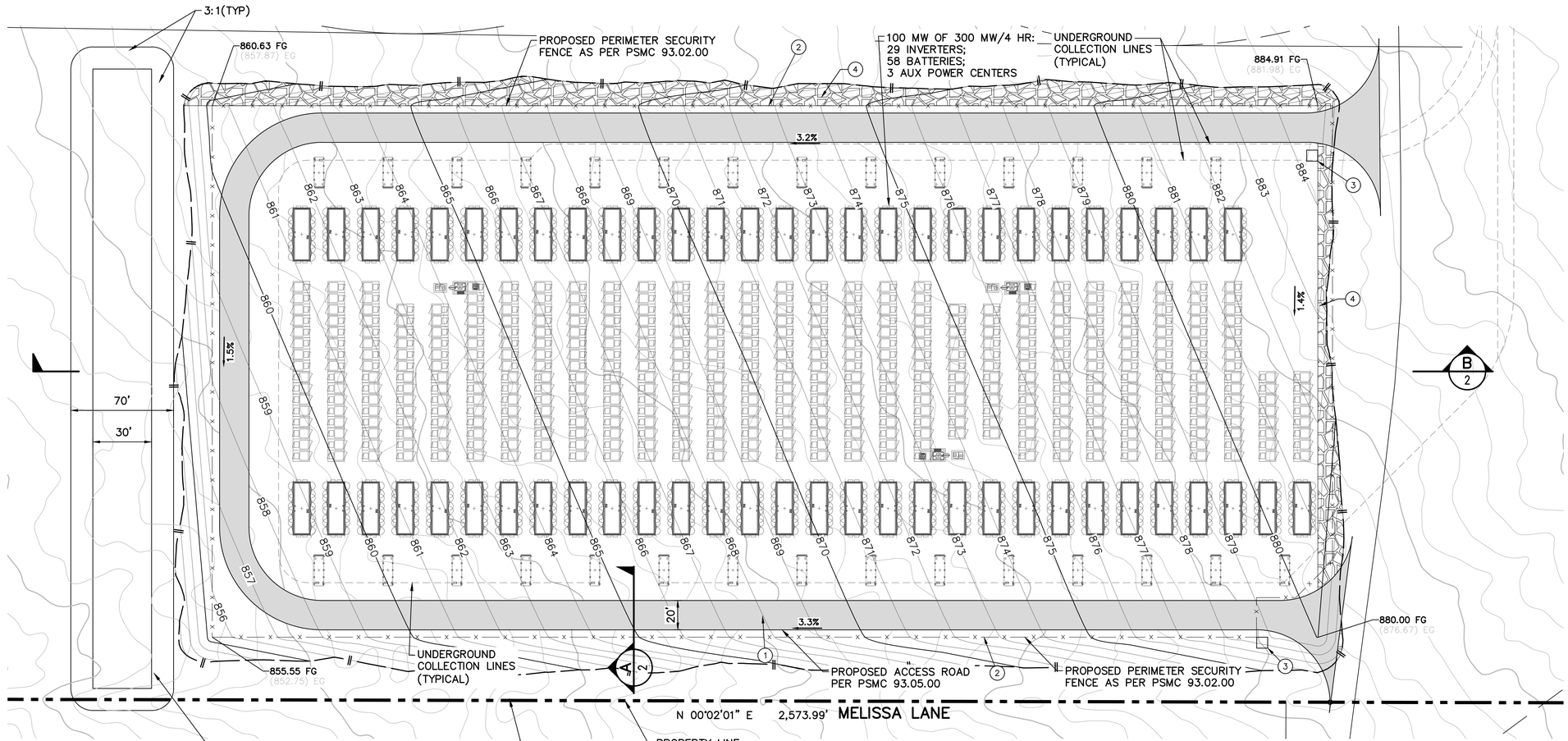

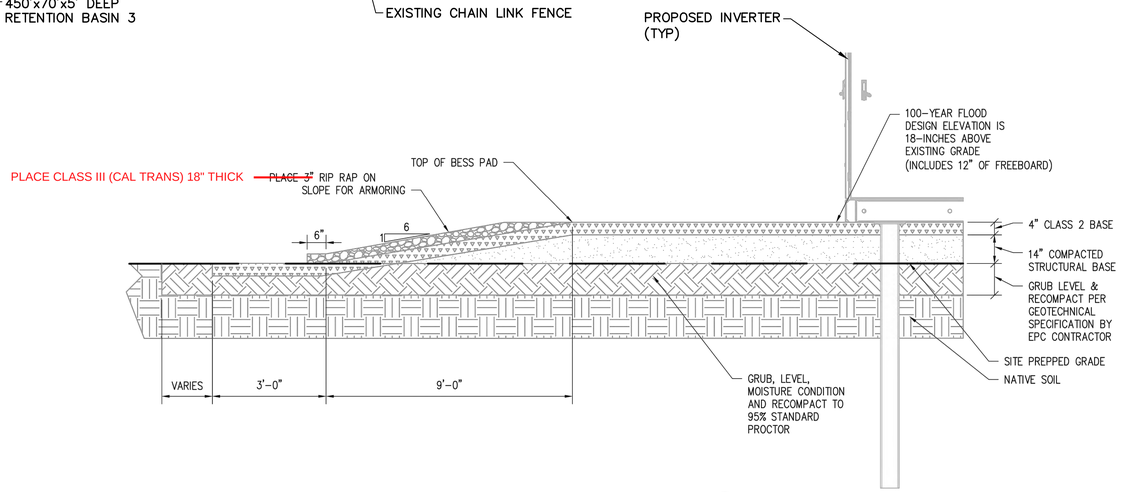

DETAIL 1
NOT TO SCALE

GRAPHIC SCALE
0 40' 80'
SCALE: 1" = 40'

811 Know what's below. Call 811 before you dig.

NO.	REVISION	APPROVED	DATE

BENCHMARK: RIV. CO. NO. 603–73–68 NAVD88 ELEV.: 1095.11

LOCATION: LOCATED APPROXIMATELY 5,970 WEST OF THE SUBJECT PROPERTY

REGISTERED PROFESSIONAL ENGINEER ARMANDO MAGALLANES No. 59563 CIVIL STATE OF CALIFORNIA

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CITY OF PALM SPRINGS, CALIFORNIA

DESERT PEAK ENERGY CENTER - PHASE 2
PRELIMINARY GRADING & DRAINAGE PLAN

FILE NO. _-____
DWG. NO.
CADD FILE NAME

SHEET 5 OF 5 SHTS.

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