# MARSHALL RANCH FLOW ENHANCEMENT PROJECT (APN 220-061-011) **DRAFT 100% DESIGN PLANS**



### **PROJECT DESCRIPTION:**

THE PRIMARY OBJECTIVE OF THIS PROJECT IS CONSTRUCTION OF 10 MILLION GALLONS OF OFF-CHANNEL WATER STORAGE AND ASSOCIATED PLUMBING INFRASTRUCTURE DESIGNED TO DELIVER APPROXIMATELY 30 GALLONS PER MINUTE OF FLOW AUGMENTATION TO REDWOOD CREEK DURING THE 5-MONTH DRY SEASON TO IMPROVE INSTREAM AQUATIC HABITAT. STORAGE WILL BE IN TWO PONDS AND FIVE TANKS FILLED WITH WET-SEASON RUNOFF INCLUDING RAINWATER CATCHMENT AND WATER DIVERTED FROM TWO SMALL REDWOOD CREEK TRIBUTARIES. OTHER ANCILLARY **PROJECT COMPONENTS INCLUDE:** 

- INSTALLATION OF LARGE WOOD HABITAT ENHANCEMENT AND BANK STABILIZATION STRUCTURES IN REDWOOD CREEK.
- STABILIZATION OF THREE GULLIED TRIBUTARIES WITH APPROXIMATELY 15 ROCK ARMOR GRADE CONTROL STRUCTURES AND REGRADING.
- CONSTRUCTION OF A PASSIVE COOLING AND FILTRATION GALLERY IN THE EXISTING GULLY TO IMPROVE WATER QUALITY AND DECREASE WATER TEMPERATURE IN THE AUGMENTED FLOWS.
- CONSTRUCTION OF A SOLAR POWER SYSTEM INCLUDING A 2 KW SOLAR ARRAY, BATTERY BANK, INVERTER, INTERNET CONNECTION, AND SMALL CONTROL CENTER BUILDING TO SUPPORT OPERATIONS AND MONITORING CAPABILITIES.
- UPGRADING ACCESS ROADS WITHIN THE PROJECT AREA INCLUDING THREE ROAD/STREAM CROSSING UPGRADES AND GRAVEL SURFACING TO PROVIDE YEAR-ROUND ACCESS.
- CONSTRUCT CATTLE EXCLUSION FENCING TO PROTECT RIPARIAN AREAS WITHIN THE PROJECT VICINITY.
- INSTALLATION OF PLUMBING INFRASTRUCTURE TO ALLOW FOR A PORTION OF THE WATER STORED IN THE TANKS TO BE UTILIZED FOR DOMESTIC, RANCH, AND FIRE SUPPRESSION NEEDS INCLUDING TWO FIRE HYDRANTS.

### **ADDITIONAL NOTES:**

1. NORTH AND WEST PARCEL BOUNDARIES FROM 2021 SURVEY. NORTHWEST BOUNDARY IS THE CENTERLINE OF REDWOOD CREEK AND IS DRAWN BASED ON 2018 USGS LIDAR. SOUTH AND EAST PARCEL BOUNDARIES TAKEN FROM HUMBOLDT COUNTY GIS AND MODIFIED BASED ON NORTH AND WEST BOUNDARIES, APPROXIMATE ONLY.

#### **OWNER:**

# **BRICELAND, CA**

#### **APPLICANT:**

THE MARSHALL RANCH, LLC VELMA V. MARSHALL ESTATE **5720 OLD BRICELAND ROAD** GARBERVILLE. CA 95542

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AGENT:

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### VICINITY MAP



SHEET LIST TABLE				
SHEET NUMBER	SHEET TITLE			
1	TITLE SHEET			
2	OVERVIEW			
3	SITE PLAN			
4	SITE PROTECTION STAGING AND TEMPORARY ACCESS			
5	GRADING PLAN			
6	RESERVOIR SECTIONS AND DETAILS			
7	SPILLWAY PLAN AND PROFILE			
8	REDWOOD CREEK-DEWATERING			
9	REDWOOD CREEK-INSTREAM COMPONENTS			
10	WEST GULLY PLAN & PROFILE			
11	PERMANENT ACCESS ROAD PLAN			
12	ELECTRICAL PLAN			
13	13 WATER INFRASTRUCTURE PLAN			
14	FENCING PLAN			
15	MONITORING AND INSTRUMENTATION PLAN			
16	EROSION CONTROL & REVEGETATION			
17	DETAILS - 1			
18	DETAILS - 2			
19	DETAILS - 3			

### PROJECT LOCATION MAP



### EARTHWORK ESTIMATES:

35,630 CY CUT/CY FILL BALANCED ON SITE

**IMPORT:** POND SPILLWAYS - 100 CY (BACKING TO  $\frac{1}{4}$  TON) FRENCH DRAIN - 50 CY DRAIN ROCK ROAD SURFACING - 530 CY GRAVEL LARGE WOOD - 8 PIECES

### ABBREVIATIONS AND SYMBOLS:

- (E) EXISTING
- PROPOSED (P)



# MARSHALL RANCH FLOW ENHANCEMENT PROJECT

BRICELAND, CA





INSTREAM FEATURES & GULLY REPAIR - 100 CY RIPRAP ROCK (BACKING TO 4 TON)



SHEET 1 OF 19



## MARSHALL RANCH FLOW ENHANCEMENT PROJECT

P: (707) 822-9607

PROJECT NUMBER: 603.04 SCALE: AS NOTED DATE: 12/15/2021

DESIGN: JM DRAWN: CL,TC CHECKED: JM APPROVED: JM



# OVERVIEW

SHEET 2 OF 19









2+00

2+50

3+00

560 550

0+50

1+00

1+50









SECTION B-B'





30 60

0









![](_page_7_Figure_6.jpeg)

![](_page_8_Figure_0.jpeg)

![](_page_8_Figure_1.jpeg)

![](_page_9_Picture_0.jpeg)

![](_page_9_Figure_1.jpeg)

![](_page_10_Picture_0.jpeg)

![](_page_11_Figure_0.jpeg)

![](_page_12_Figure_0.jpeg)

![](_page_13_Picture_0.jpeg)

![](_page_14_Picture_0.jpeg)

![](_page_15_Picture_0.jpeg)

	TOTAL AREA (ACRES):	2.6		
Type of seed	Scientific name	Common name	Species composition	Amount of sec (lbs)
Native	Bromus Carinatus	California brome	40%	26.0
grasses	Elymus glaucus subsp.	Blue wild rye	40%	26.0
Native forbs	Achillea millefolium	Common yarrow	2%	1.3
	Eschscholzia californica	California poppy	5%	3.3
	Lupinus bicolor	Miniature lupine	8%	5.2
	Sisyrinchium bellum	Western blue-eyed-grass	5%	3.3
		Total	100%	65.0

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![](_page_16_Picture_3.jpeg)

![](_page_17_Figure_0.jpeg)

![](_page_18_Figure_0.jpeg)