

**HILGARTWILSON**

HAS JOINED COLLIERS ENGINEERING & DESIGN

## MEMORANDUM

Prepared by: HILGARTWILSON  
Date: October 10, 2023  
RE: Casa Grande Hwy & N. Bianco & Rodeo Road – Rezone Master Drainage Summary

### INTRODUCTION AND BACKGROUND

HILGARTWILSON has prepared an assessment of the existing drainage conditions for the property located at the southeast corner of the Maricopa Casa Grande Highway (State Route 238) and Bianco Road. The Project is approximately 22 acres of undeveloped desert in unincorporated Pinal County. The Project includes a portion of Section 10 Township 6 South, Range 5 East of the Gila and Salt River Base Meridian. The Project is bounded by Cowtown Road and the Union Pacific Railroad (UPRR) railway to the north and by the North Branch Santa Cruz Wash (NBSCW) to the south. Refer to the Vicinity Map below (Figure 1 in the Appendix) for an overview of the Project location and surrounding area.



Figure 1: Vicinity Map





## FEMA FLOOD HAZARDS

The property is located within the Federal Emergency Management Agency's (FEMA) Zone A as delineated on the FEMA Flood Insurance Rate Map (FIRM) panel 04021C1175E dated December 4, 2007. Flood Zone A is defined as:

### Zone A:

Areas subject to inundation by the 1% annual chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown.

## GRADING AND DRAINAGE

The Project grading and drainage design will comply with the drainage policies outlined in the Pinal County Drainage Manual Volume I – Design Criteria, Drainage Manual Volume II – Design Methodology and Procedures (PCDM) (Pinal County 2004).

The Project is currently undeveloped natural desert with sparse vegetation and under existing conditions drains northeast to southwest at an approximate slope of 0.4 percent. The property is entirely within the existing Zone A North Branch Santa Cruz Wash floodplain. The flows conveyed within the North Branch of the Santa Cruz Wash would traverse the property from east to west. Refer to Figure 3 Master Drainage and Hydrology Plan in the Appendices for the existing flow pattern and topography. The existing drainage pattern will continue in developed conditions and during large storm events the Property may be subject to flooding along the northern overbank of the North Branch Santa Cruz Wash. The property will be accessed from the south via Bianco Road. The existing at-grade crossing of Bianco Road at the North Branch of the Santa Cruz Wash will be improved with a paved low flow crossing. The low flow crossing at Bianco Road will serve to provide access to the Project during dry conditions and will convey minor flows during smaller storm events.

Due to the level of impact caused by the North Branch Santa Cruz Wash, the existing drainage pattern is not currently proposed to be significantly modified or channelized. Drainage improvements on the site may include elevated fill where necessary to ensure that any habitable structures built within the Project are elevated a minimum of 12 inches above the 100-year water surface elevation within the NBSCW, in compliance with the PCDM. The Project will provide stormwater retention in compliance with the PCDM, thus ensuring that the post development flowrates are below the existing condition flowrates exiting the property. Retention basins will provide a means of dewatering within the mandatory 36-hours and this will be achieved either through the use of natural infiltration, drywells or bleed-off pipes. The historical drainage patterns will be observed and flows will exit the Project at the southwest corner following the historical outfall location.





## REFERENCES

Pinal County, (August 2004). *Pinal County Drainage Design Manual, Arizona, Volume I – Design Criteria*. Phoenix, Arizona.

Pinal County, (August 2004). *Pinal County Drainage Design Manual, Arizona, Volume II – Design Methodology and Procedures*. Phoenix, Arizona.

## APPENDICES

- Figure 1 Vicinity Map
- Figure 2 FEMA Flood Map
- Figure 3 Master Drainage and Hydrology Plan





**ATTACHMENT 1**  
**FIGURES**





PROJ.NO.:	2084	W. MARICOPA - CASA GRANDE HWY. & N. BIANCO RD. S.E.C. OF BIANCO ROAD & CASA GRANDE HWY CASA GRANDE, ARIZONA
DATE:	OCT 2023	
SCALE:	1" = 2,000'	
DRAWN BY:	SL	
CHECKED BY:	AT	
<b>FIG 1: VICINITY MAP</b>		

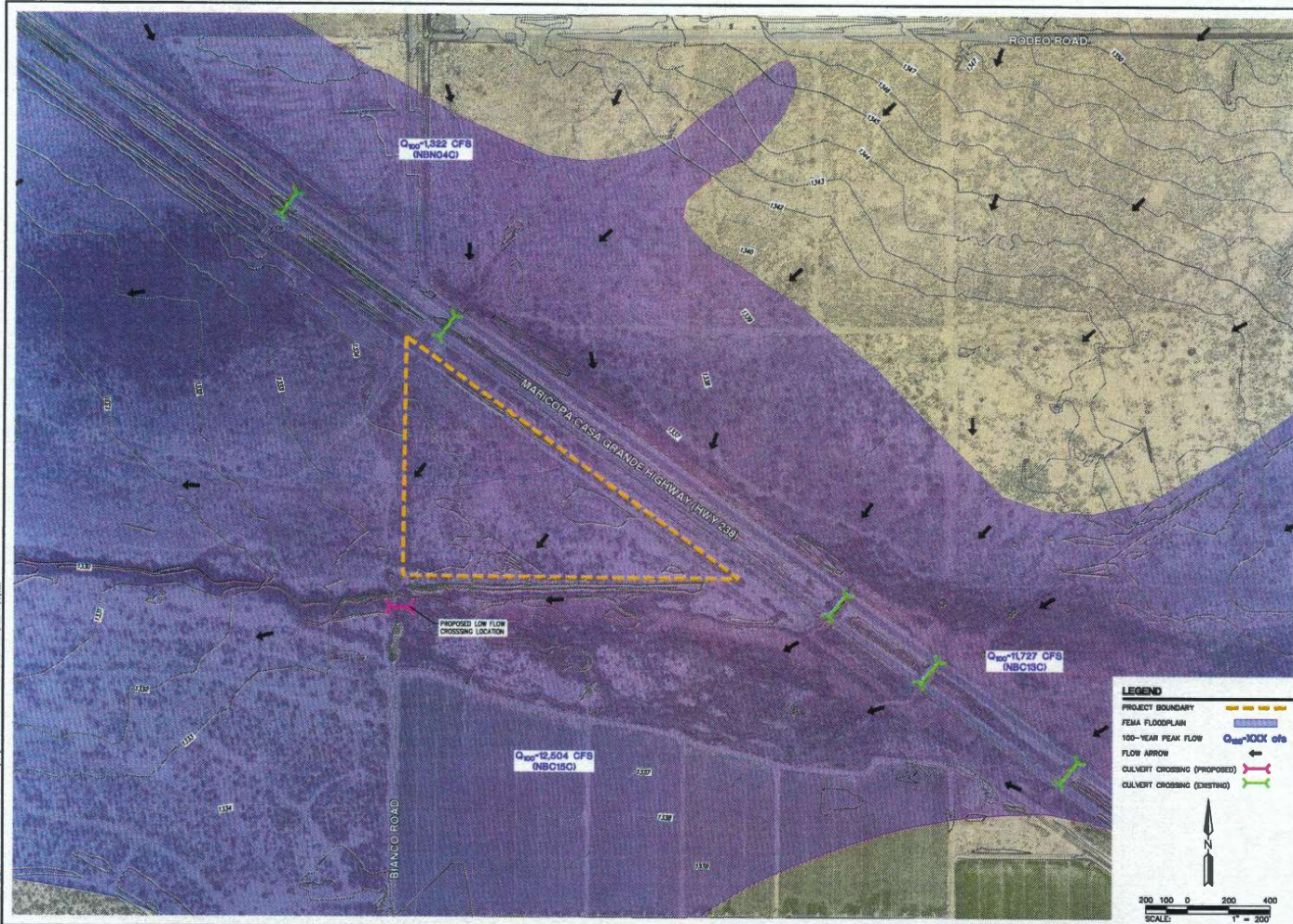
  
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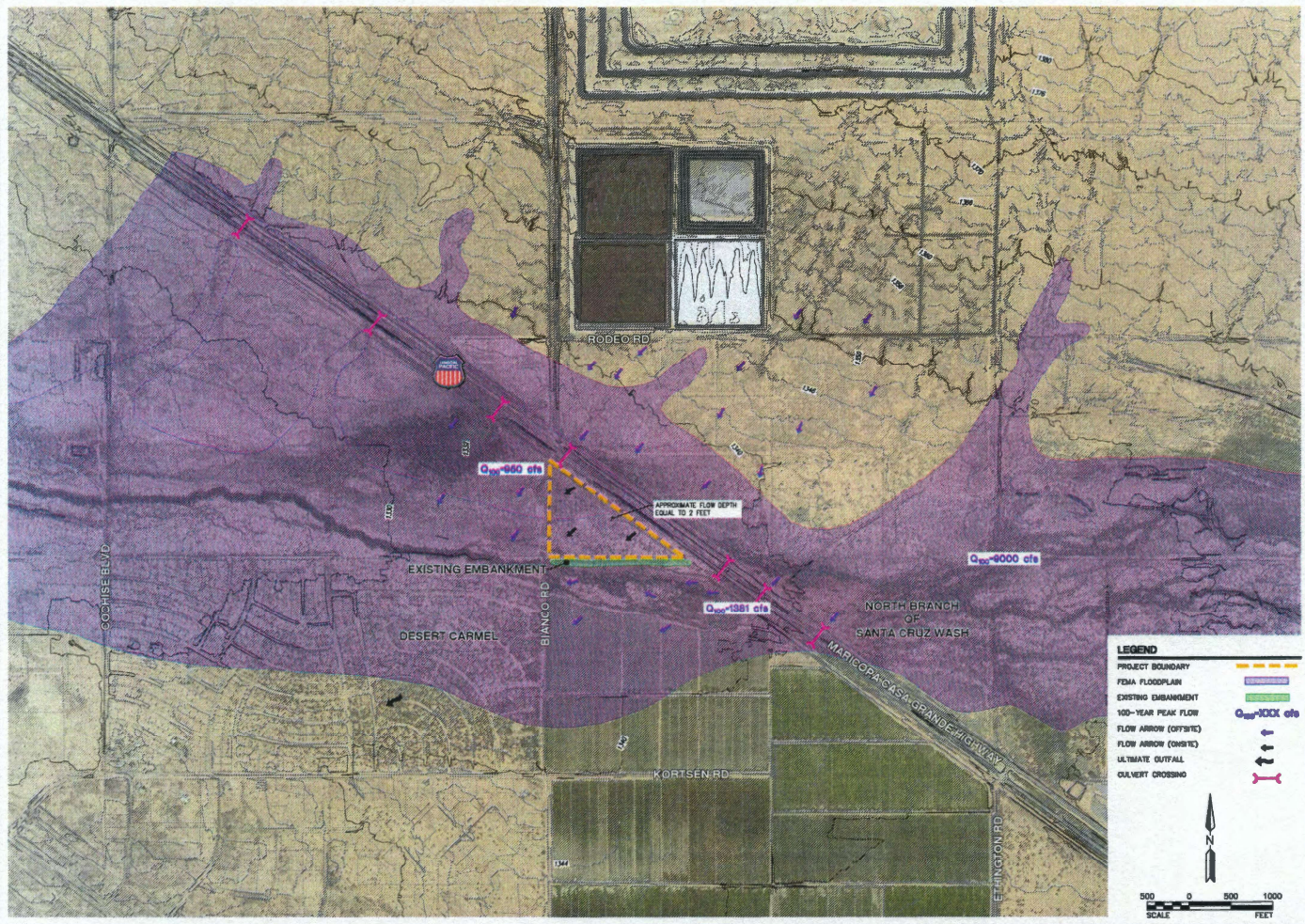
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<p><b>W. MARICOPA - CASA GRANDE HWY. &amp; N. BLANCO RD.</b>          S.E.C. OF BLANCO ROAD &amp; CASA GRANDE HWY          PINAL COUNTY, ARIZONA</p>	
<p><b>FIG 3-MASTER DRAINAGE AND HYDROLOGY PLAN</b></p>	
<p>HILGART WILSON          PROJECT NO. 2004          DATE 2005          SCALE 1" = 200'          DRAWN BY          DESIGNED BY          APPROVED BY</p>	<p>DATE          SCALE          DRAWN BY          DESIGNED BY          APPROVED BY</p>



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<b>MARICOPA CASA GRANDE HIGHWAY</b> SEC. OF MARICOPA CO. HIGHWAY & BLANCO PINAL COUNTY, ARIZONA	
<b>DRAINAGE ANALYSIS EXHIBIT</b>	
<b>PROJECT NO.:</b> 1004.02 <b>DATE:</b> AUG 2022 <b>SCALE:</b> 1" = 500' <b>DESIGNED BY:</b> JH <b>CHECKED BY:</b> JH <b>APPROVED BY:</b> JH	<b>REV.</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 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## SUB1\_Access Crossing Detail