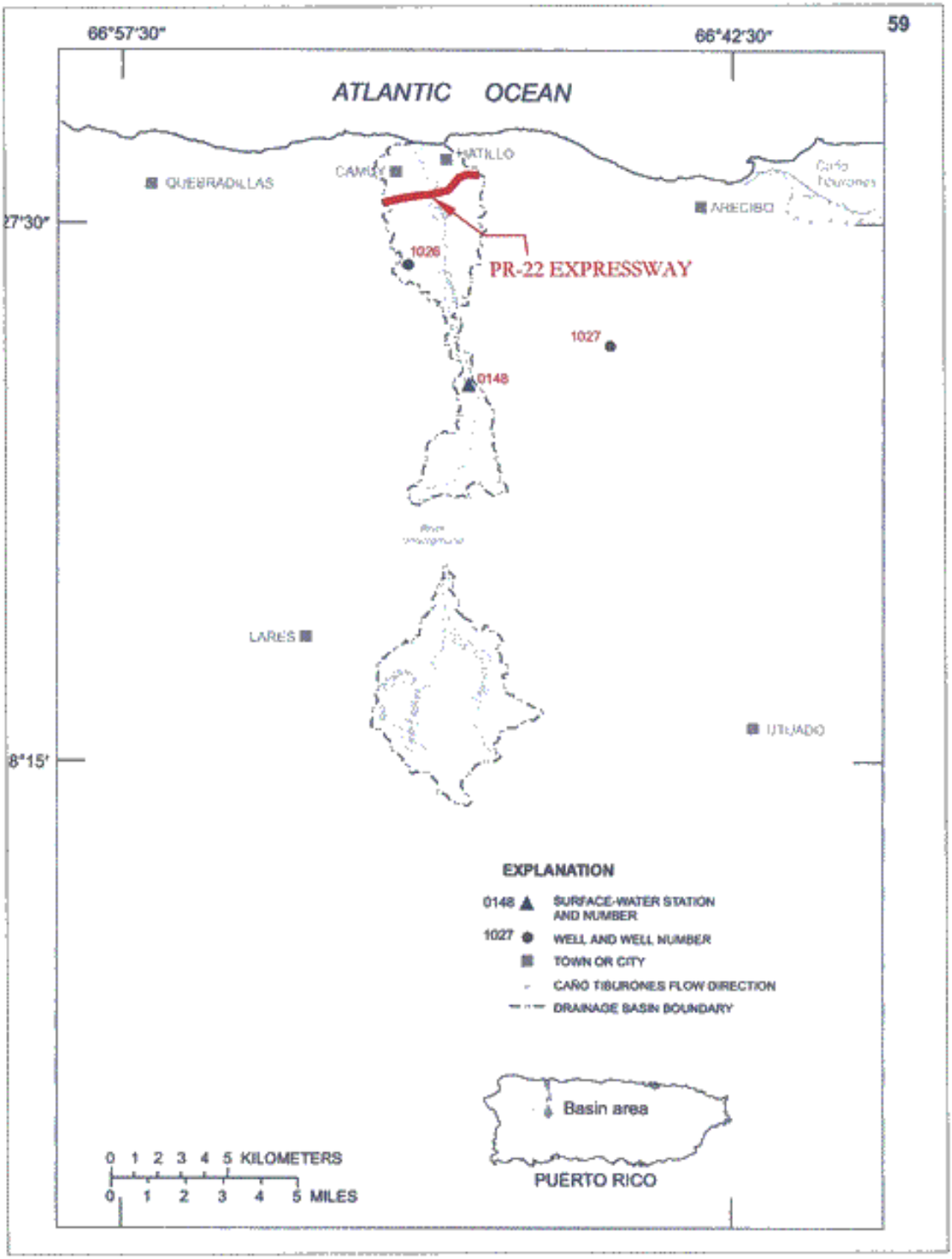
# LIST OF FIGURES

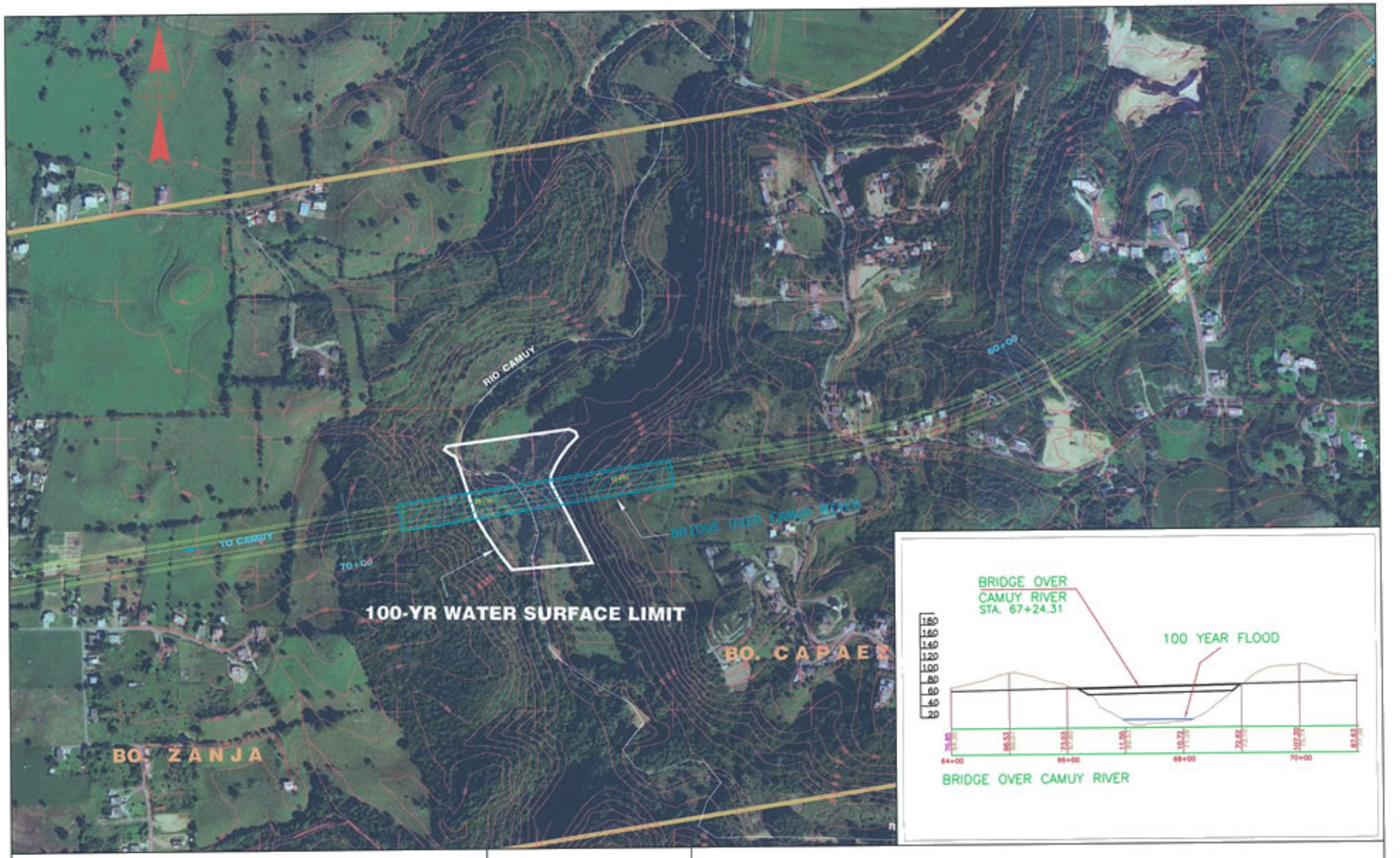



**IVÁN VELÁZQUEZ & ASSOCIATES**
**HYDROLOGIC AND HYDRAULIC ENGINNERS**

FIGURE 1 - RIO CAMUY BASIN

SOURCE : US GEOLOGICAL SURVEY

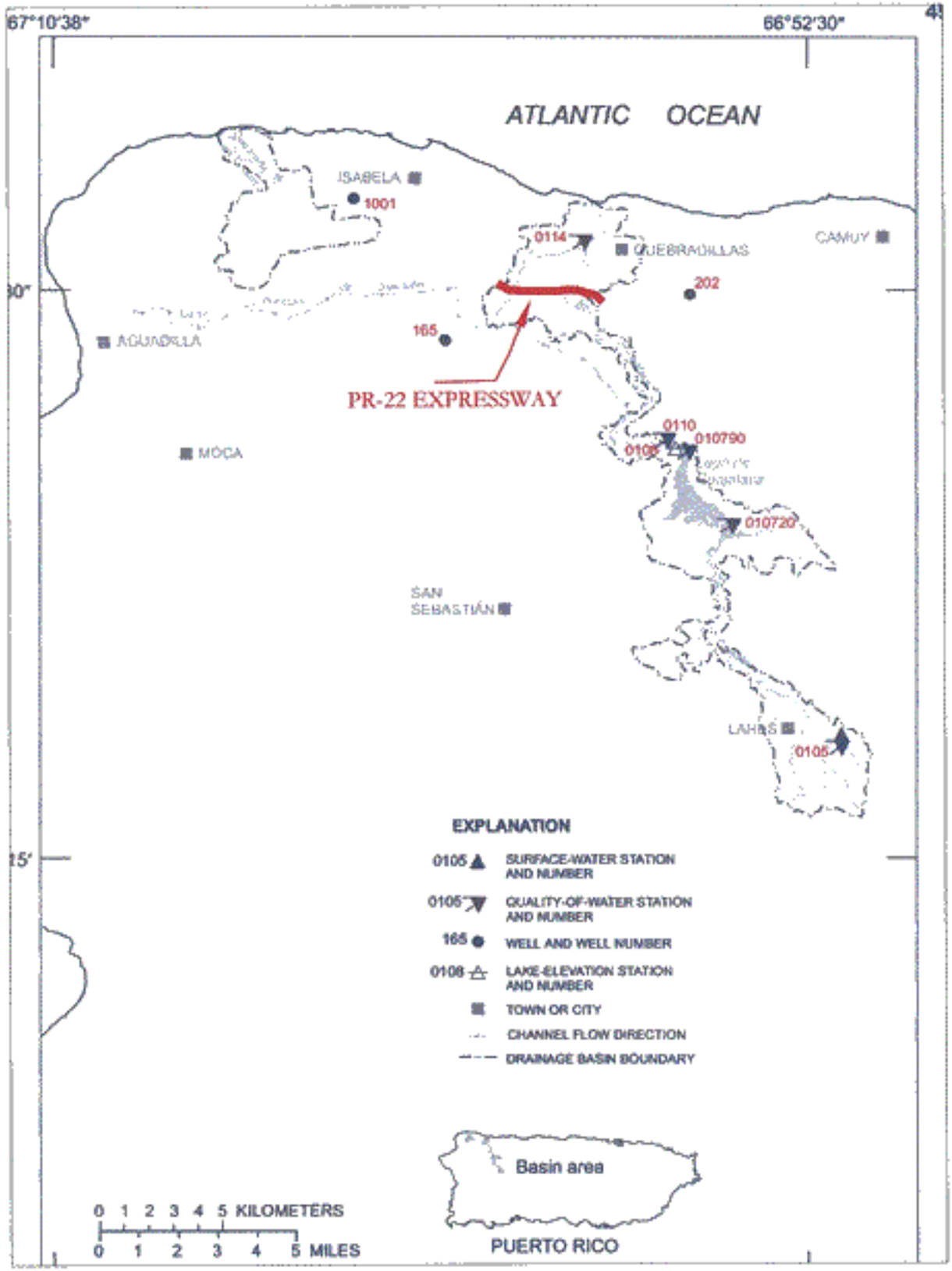
NOT TO SCALE




**IVÁN VELÁZQUEZ & ASSOCIATES**
HYDROLOGIC AND HYDRAULIC ENGINNERS

SCALE 1:5000

**FIGURE 2 - CAMUY RIVER BRIDGE CROSSING**

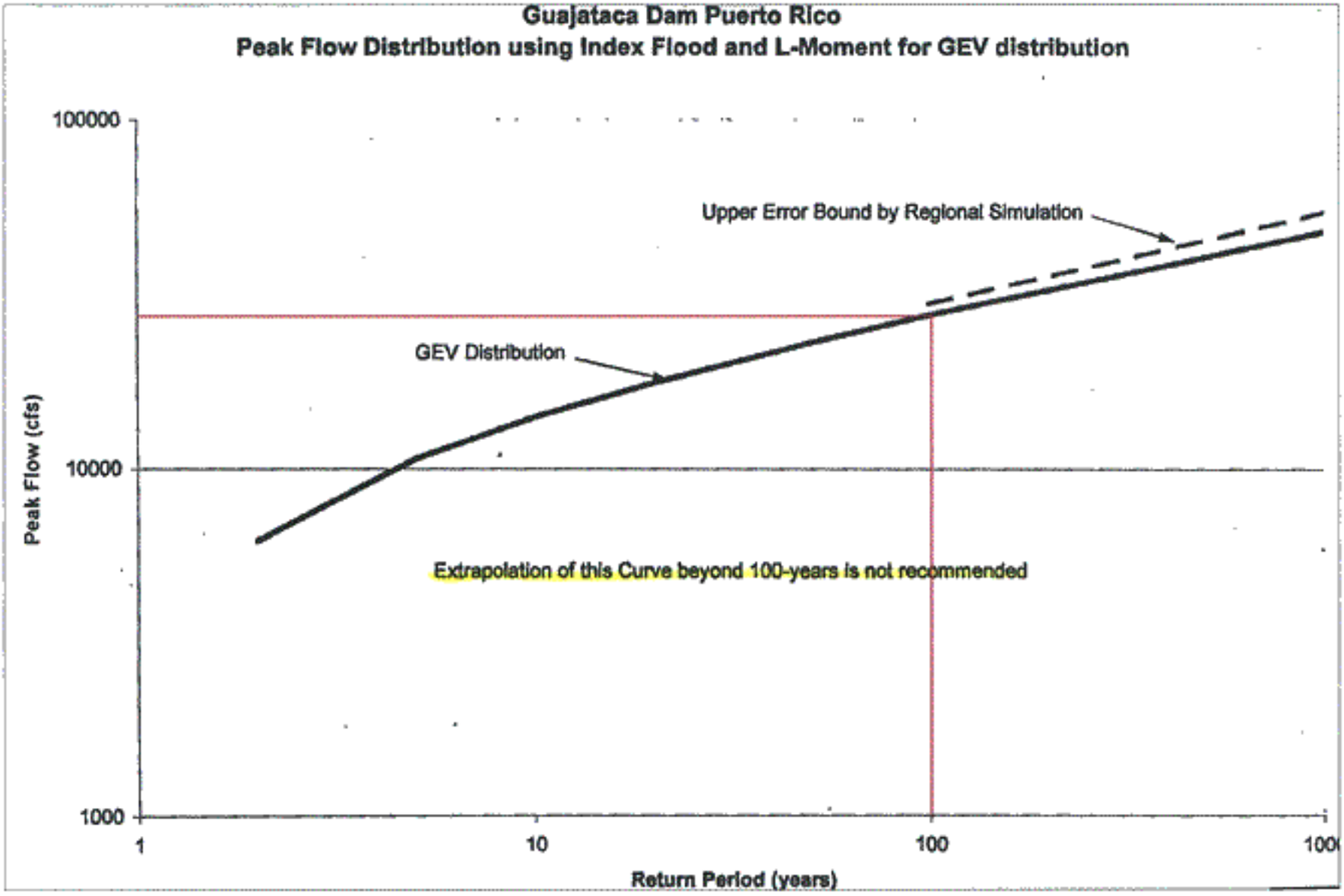



**IVÁN VELÁZQUEZ & ASSOCIATES**
**HYDROLOGIC AND HYDRAULIC ENGINNERS**

FIGURE 3 - RIO GUAJATACA BASIN

SOURCE : US GEOLOGICAL SURVEY

NOT TO SCALE



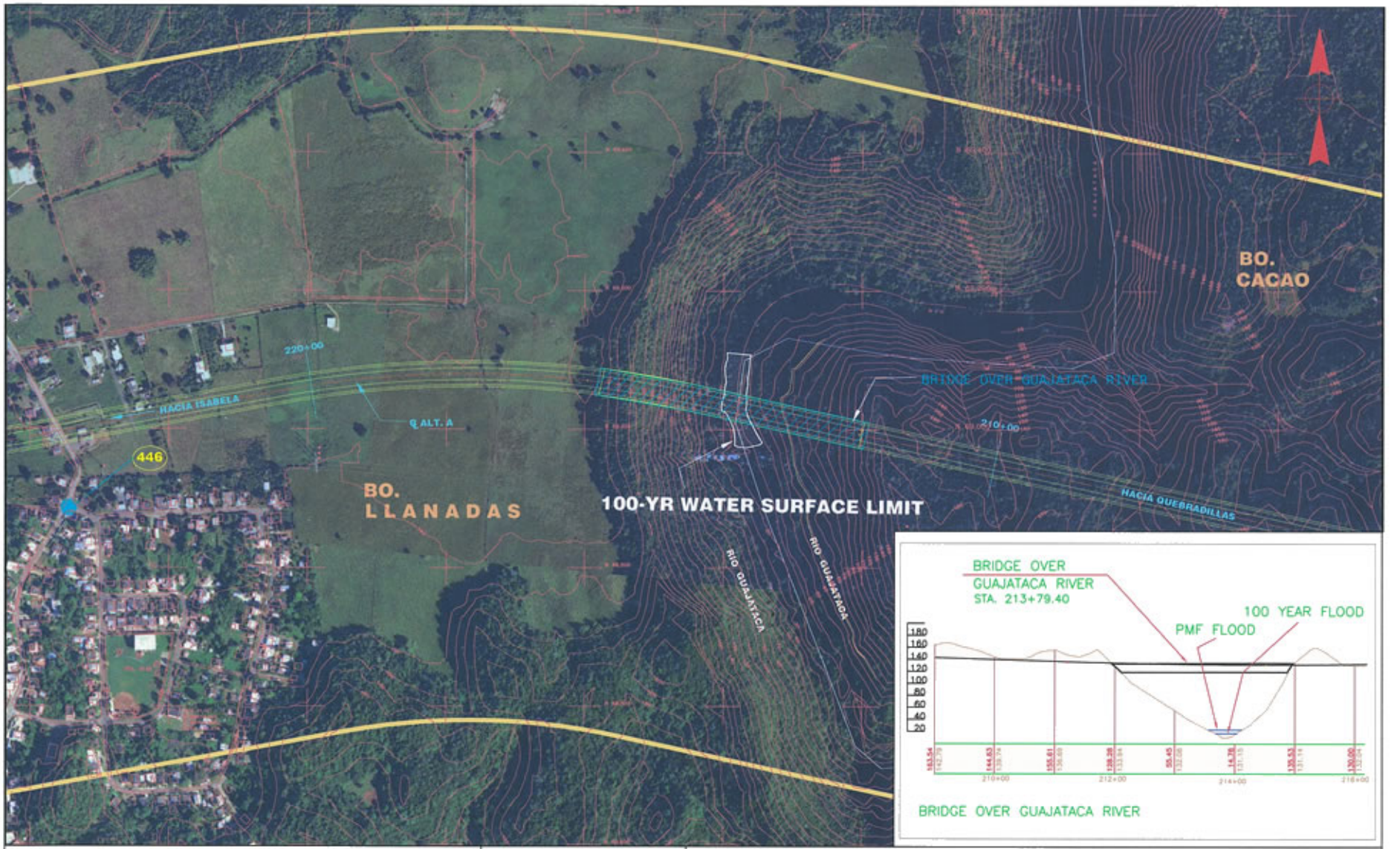

**IVÁN VELÁZQUEZ & ASSOCIATES**

**HYDROLOGIC AND HYDRAULIC ENGINNERS**

**FIGURE 4- GENERAL EXTREME VALUE CURVE FOR GUAJATACA DAM**

SOURCE : US DEPARTMENT OF THE INTERIOR

NOT TO SCALE




| IVÁN VELÁZQUEZ & ASSOCIATES<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1 : 5000 | FIGURE 5 - GUAJATACA RIVER BRIDGE CROSSING |
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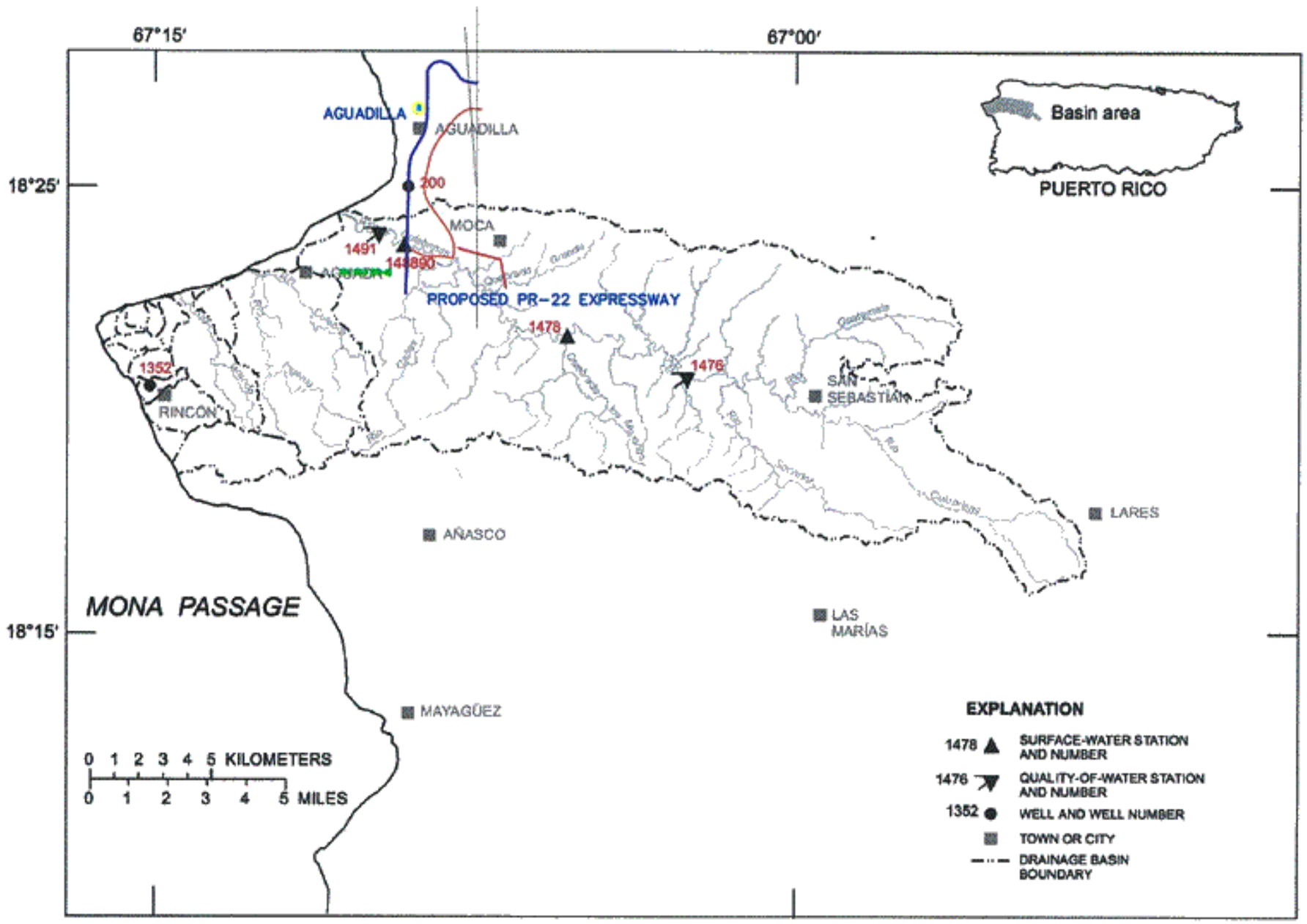



Río Culebrinas basin.

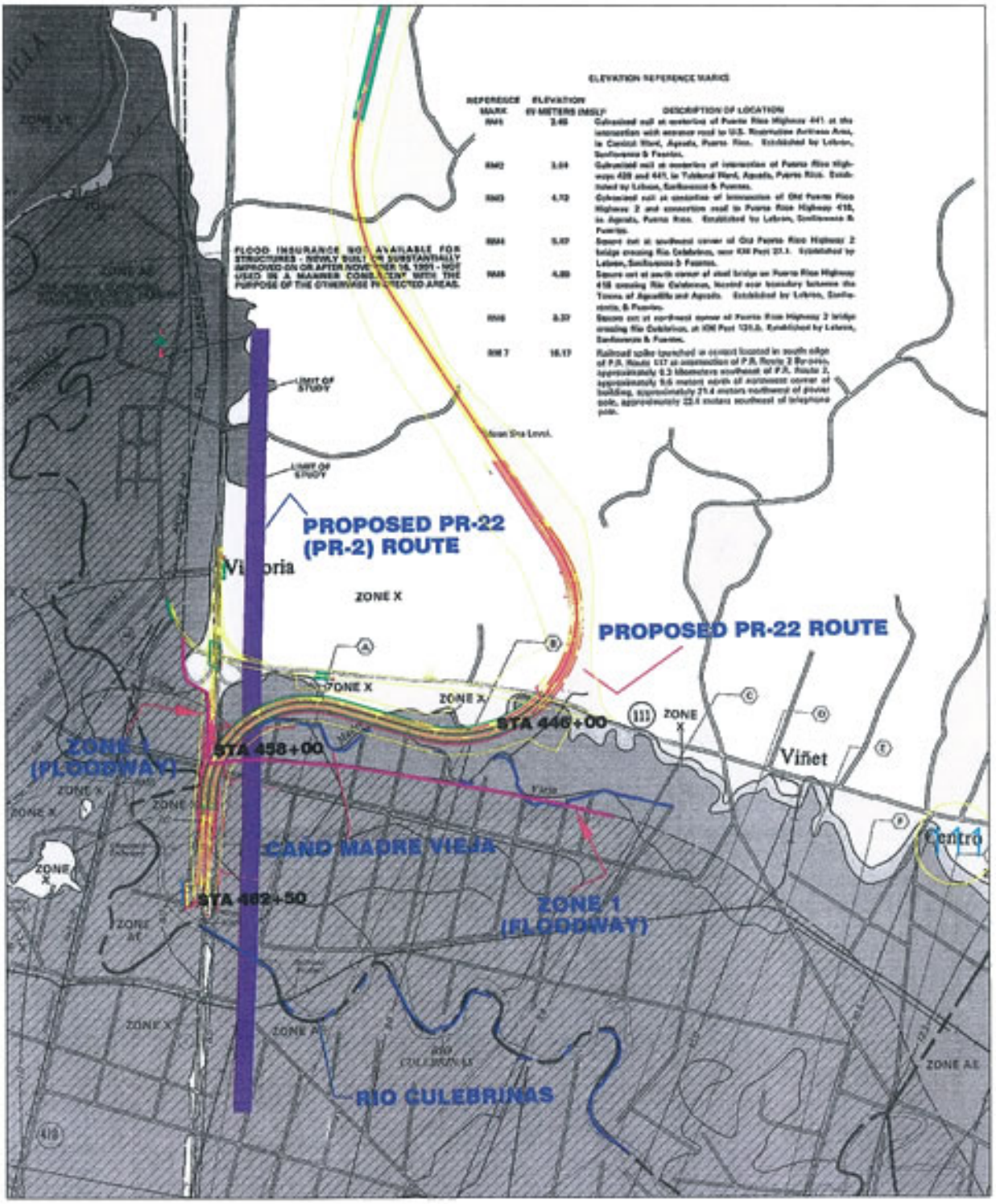
**IVÁN VELÁZQUEZ & ASSOCIATES**

**HYDROLOGIC AND HYDRAULIC ENGINNERS**

FIGURE 6 - RIO CULEBRINAS BASIN

SOURCE : US GEOLOGICAL SURVEY

NOT TO SCALE

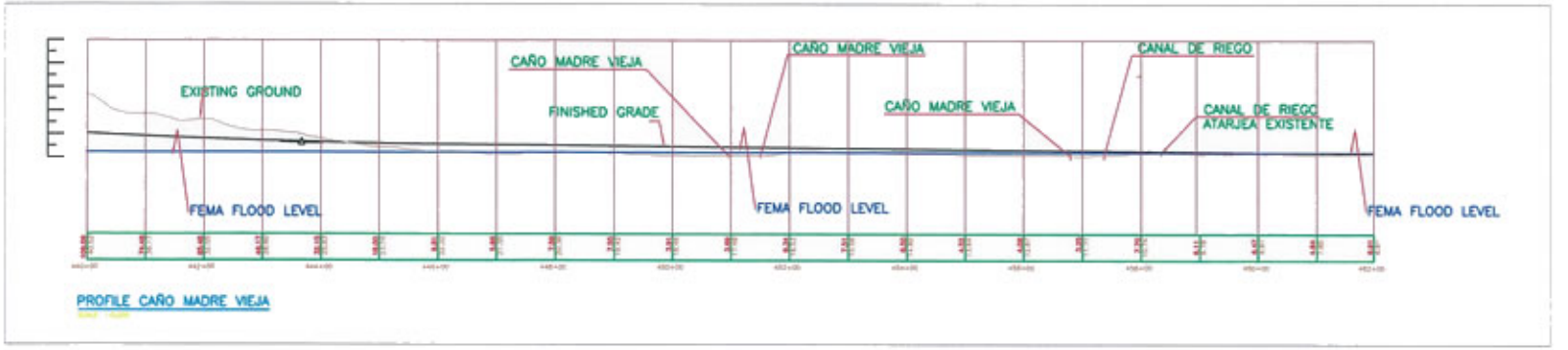


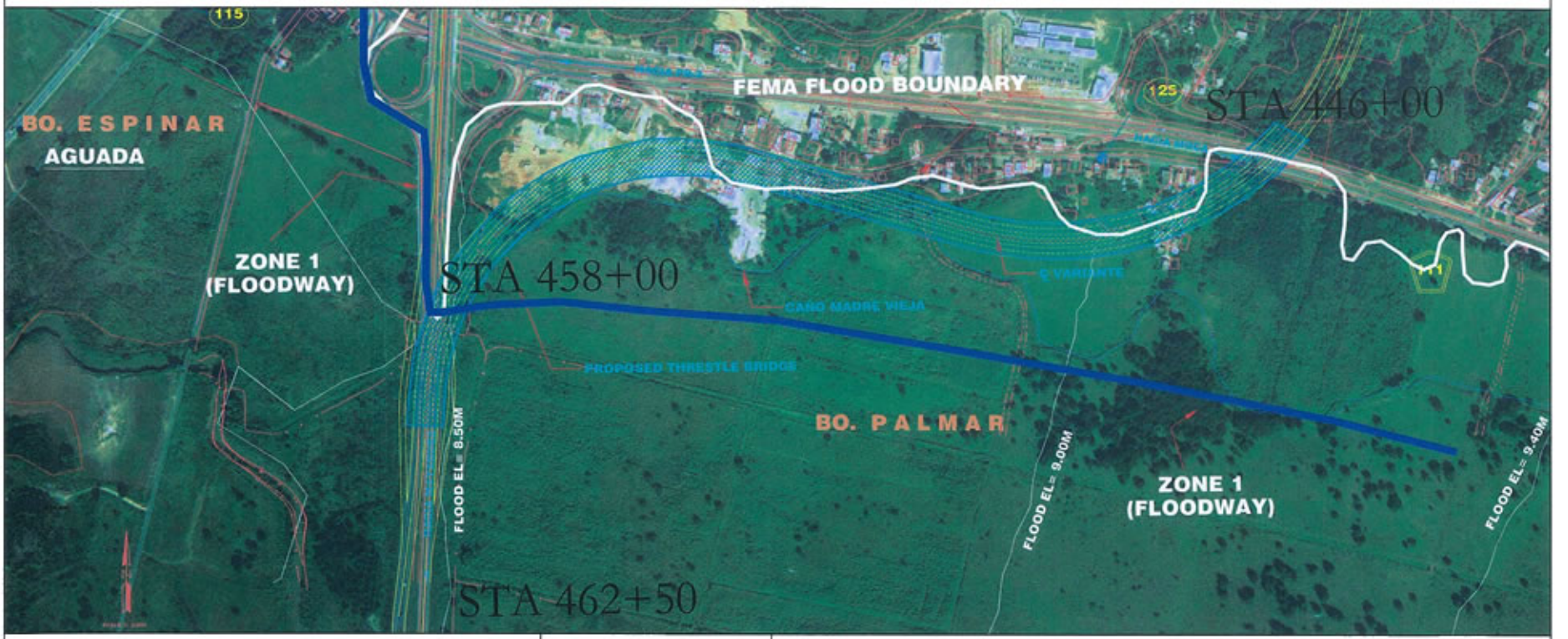

**IVÁN VELÁZQUEZ & ASSOCIATES**

**HYDROLOGIC AND HYDRAULIC ENGINNERS**

FIGURE 7 - RIO CULEBRINAS FLOOD PRONE AREA AT PROJECT SITE

SCALE 1:20000




| IVÁN VELÁZQUEZ & ASSOCIATES<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:5000 | FIGURE 8 - CULEBRINAS RIVER AREA PR-22 CROSSING |
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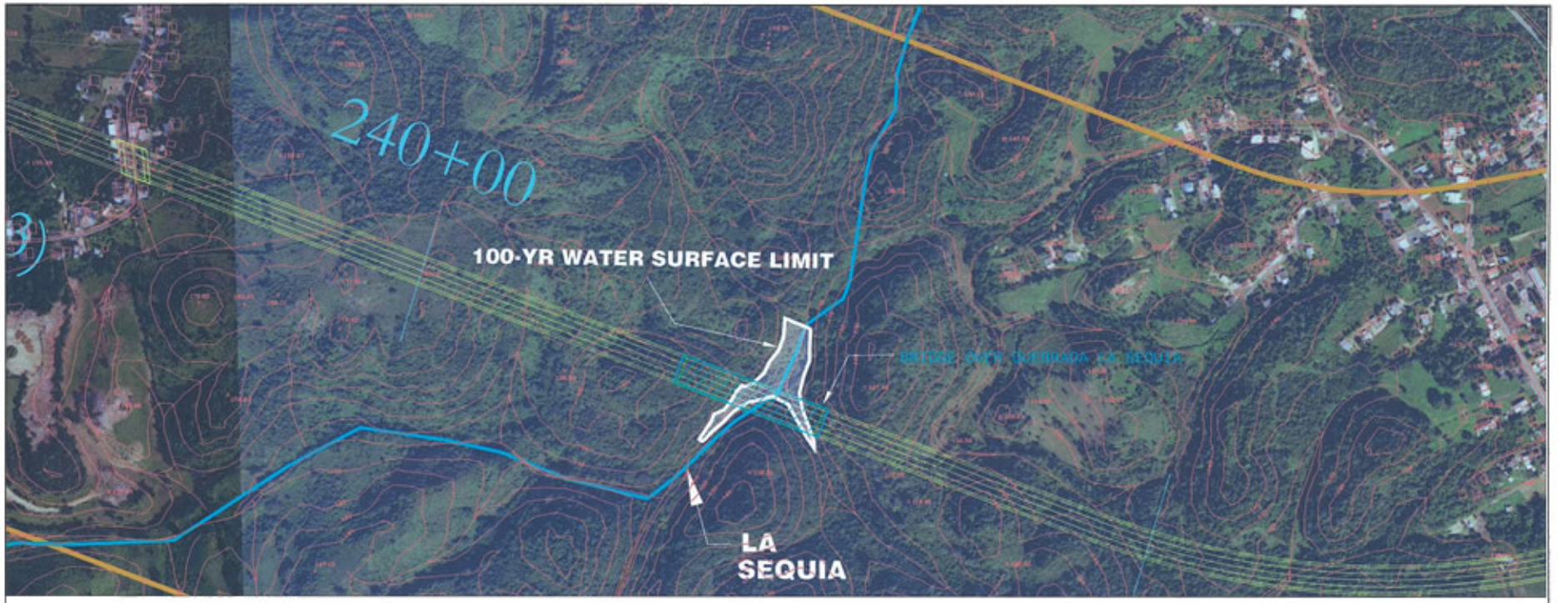


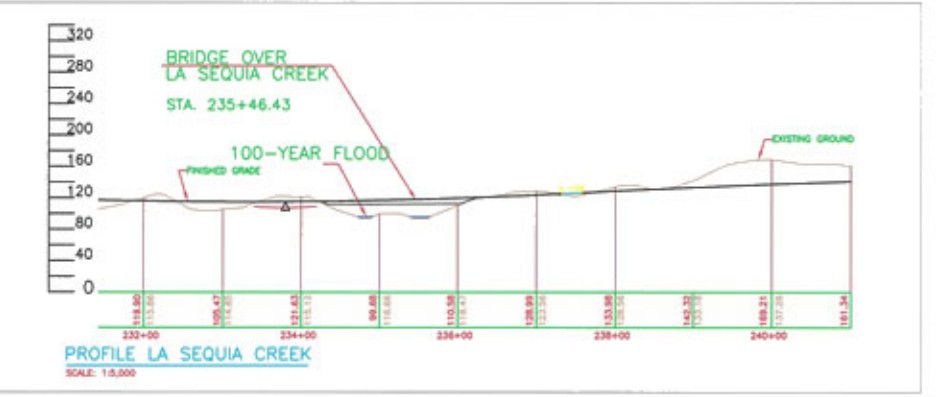


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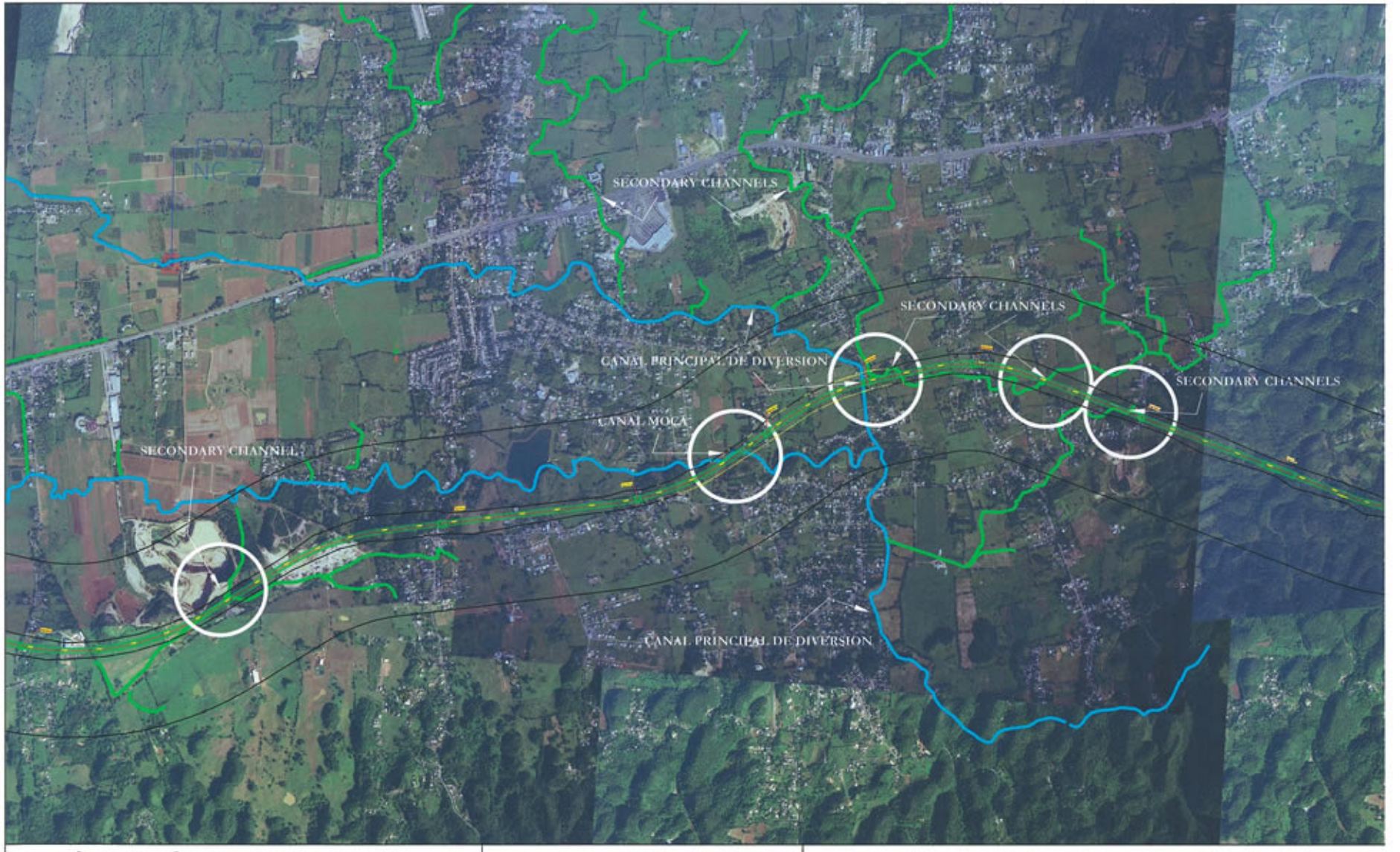
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:5000 | **FIGURE 9 - QUEBRADA LA SEQUIA BRIDGE CROSSING** |

| | | |
|---|---|---|
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:5000 | **FIGURE 10 - QUEBRADA LA SECA CROSSING** |

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| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>**HYDROLOGIC AND HYDRAULIC ENGINNERS** | SCALE 1:20000 | **FIGURE 11 - MAIN AND SECONDARY IRRIGATION CANAL - PR-22 CROSSINGS** |

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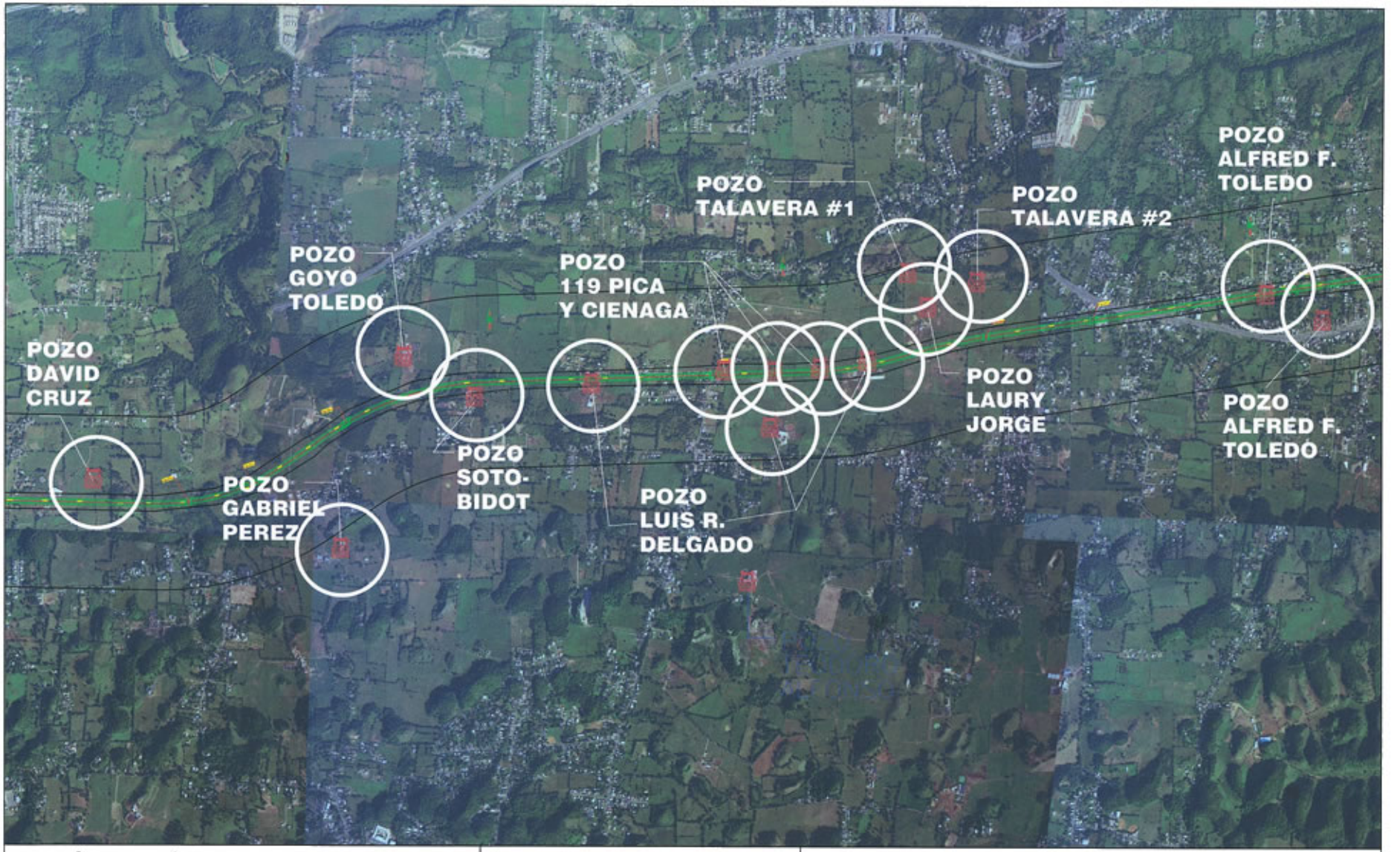
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>**HYDROLOGIC AND HYDRAULIC ENGINNERS** | SCALE 1:20000 | **FIGURE 11A - MAIN AND SECONDARY IRRIGATION CANAL - PR-22 CROSSINGS** |

| | | |
|---|---|---|
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | **SCALE** 1:20000 | FIGURE 12 - WELLS LOCATION ALONG PR-22 ROUTE |

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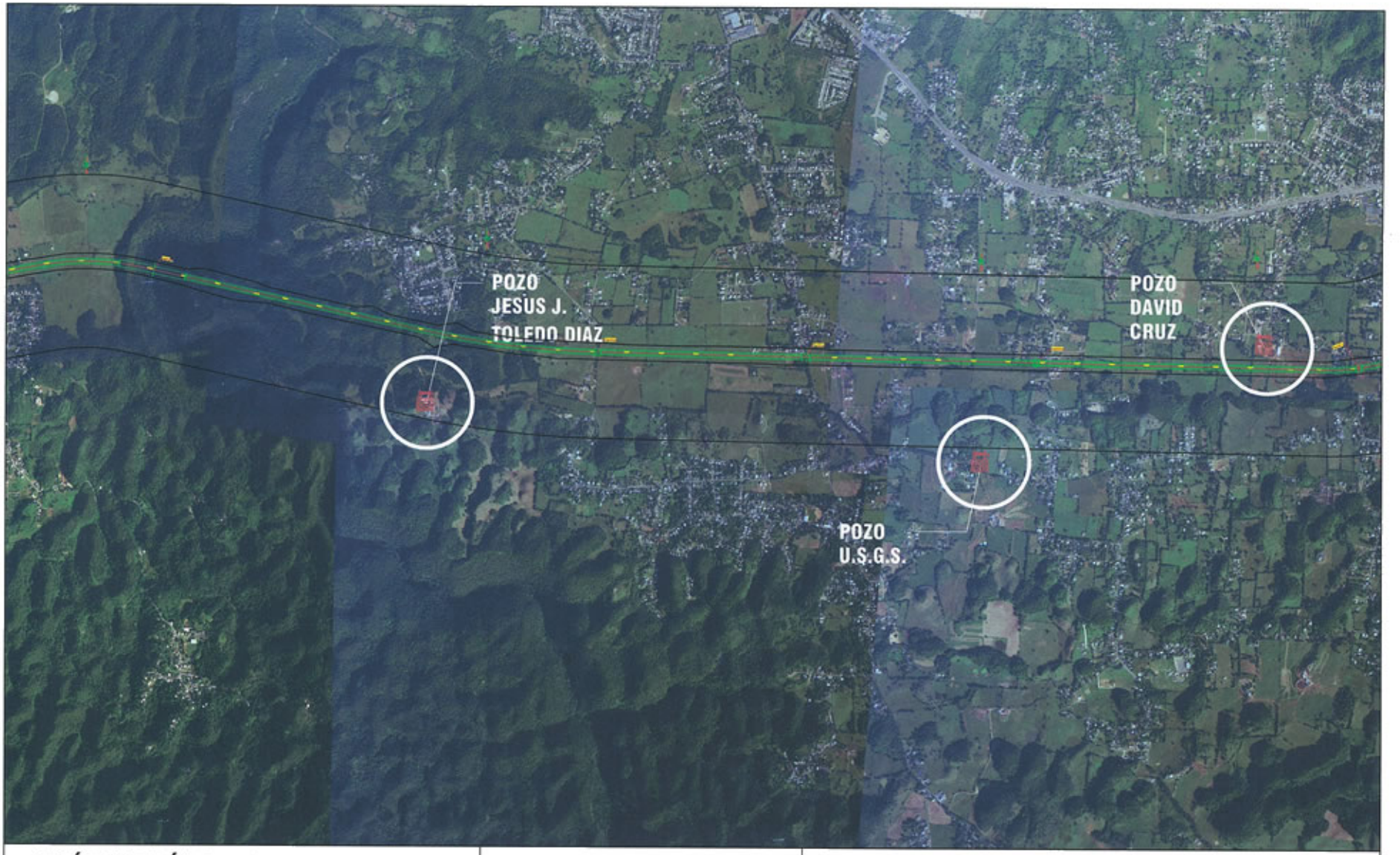
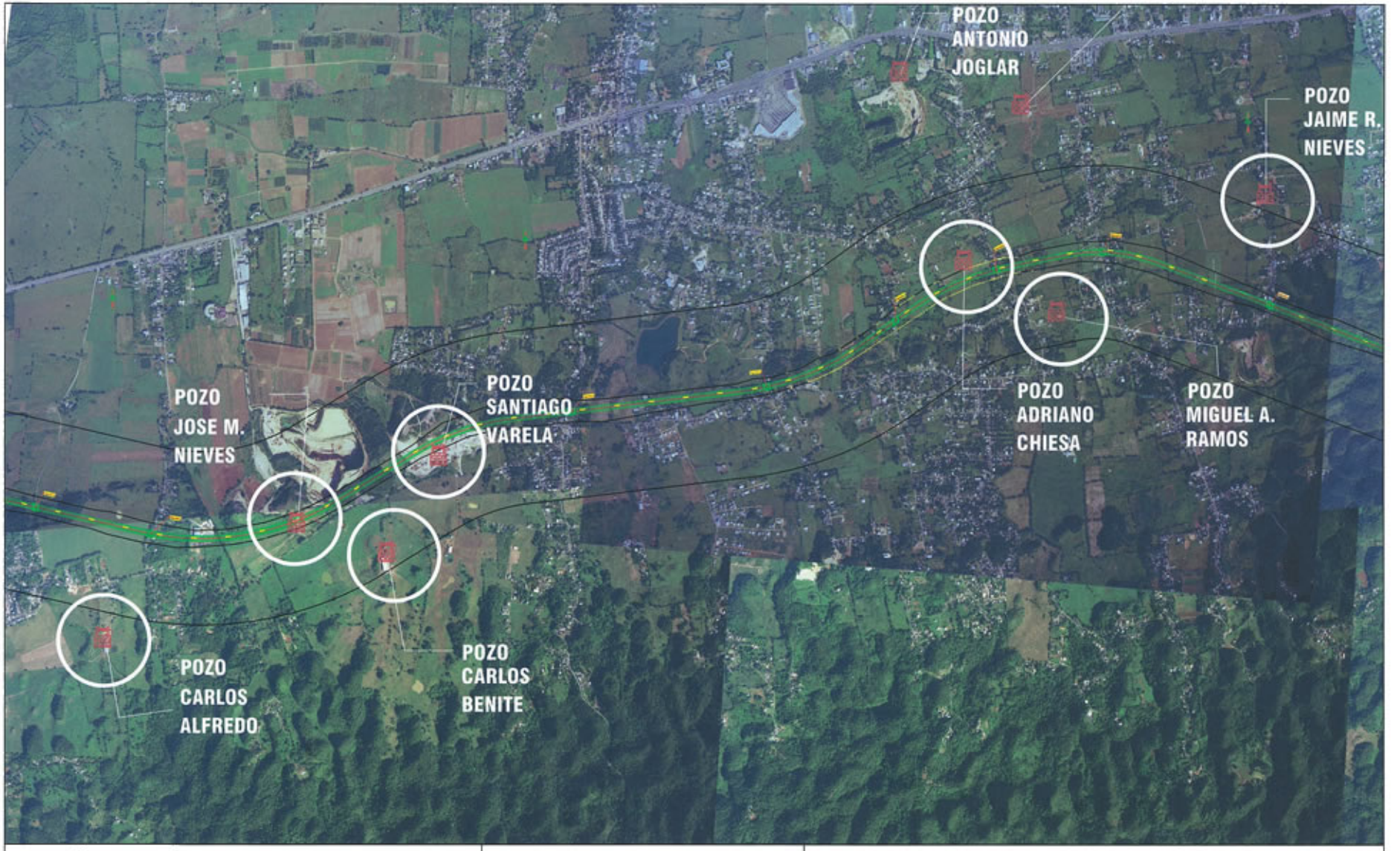
| IVÁN VELÁZQUEZ & ASSOCIATES<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:20,000 | FIGURE 12A - WELLS LOCATION ALONG PR-22 ROUTE |




**IVÁN VELÁZQUEZ & ASSOCIATES**
HYDROLOGIC AND HYDRAULIC ENGINNERS

SCALE 1:20,000

**FIGURE 12B - WELLS LOCATION ALONG PR-22 ROUTE**

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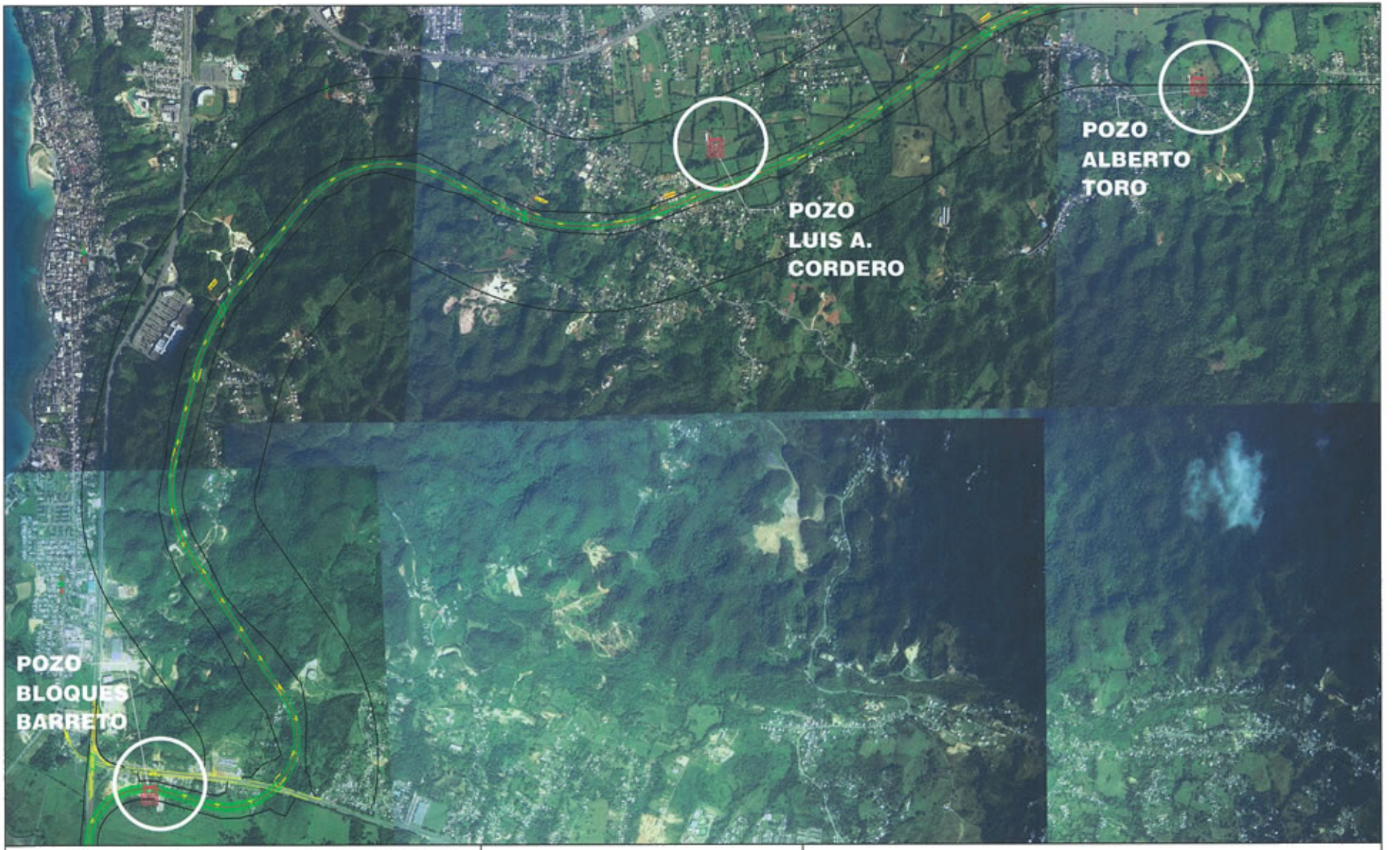
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:20,000 | **FIGURE 12C - WELLS LOCATION ALONG PR-22 ROUTE** |

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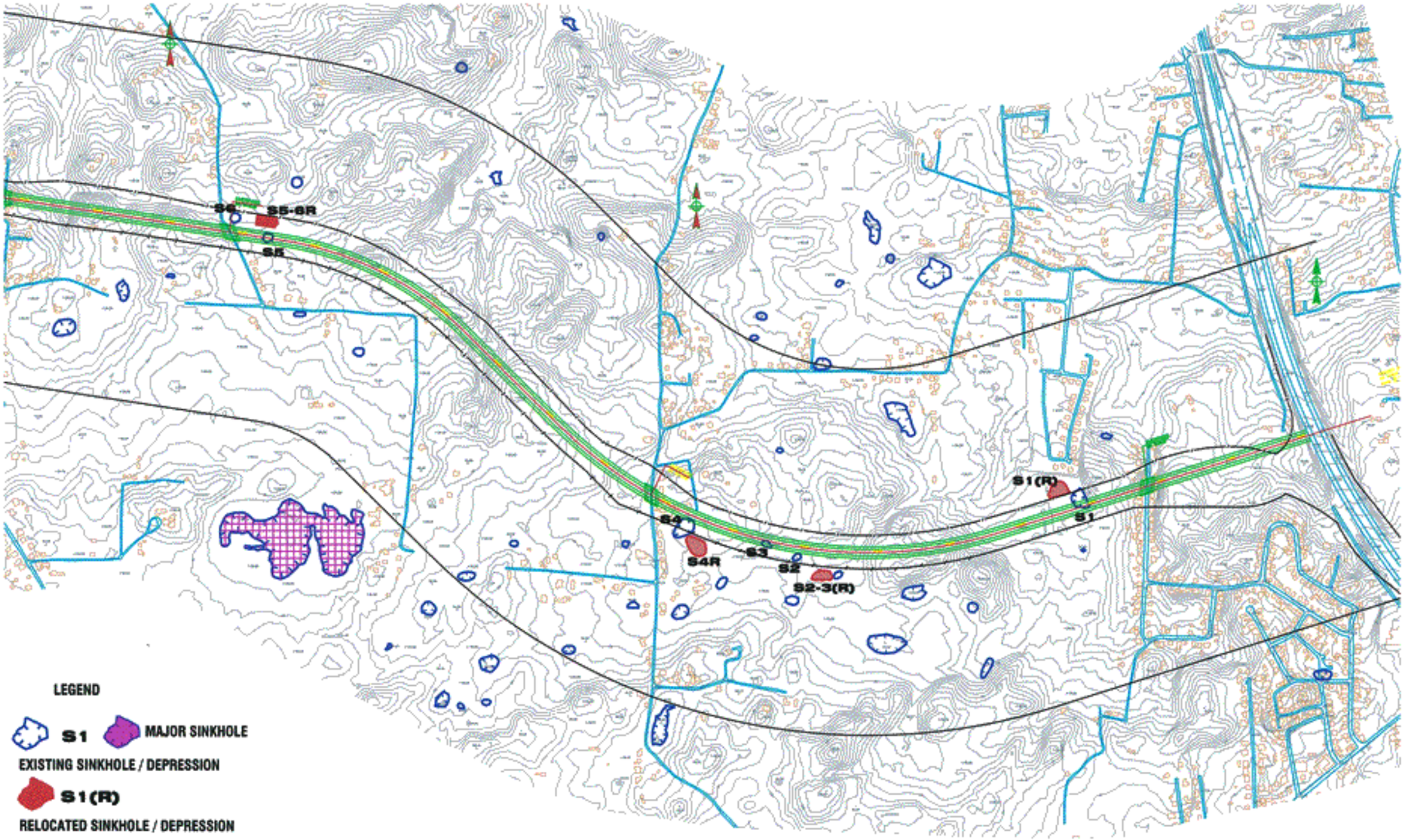
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:20,000 | **FIGURE 12D - WELLS LOCATION ALONG PR-22 ROUTE** |

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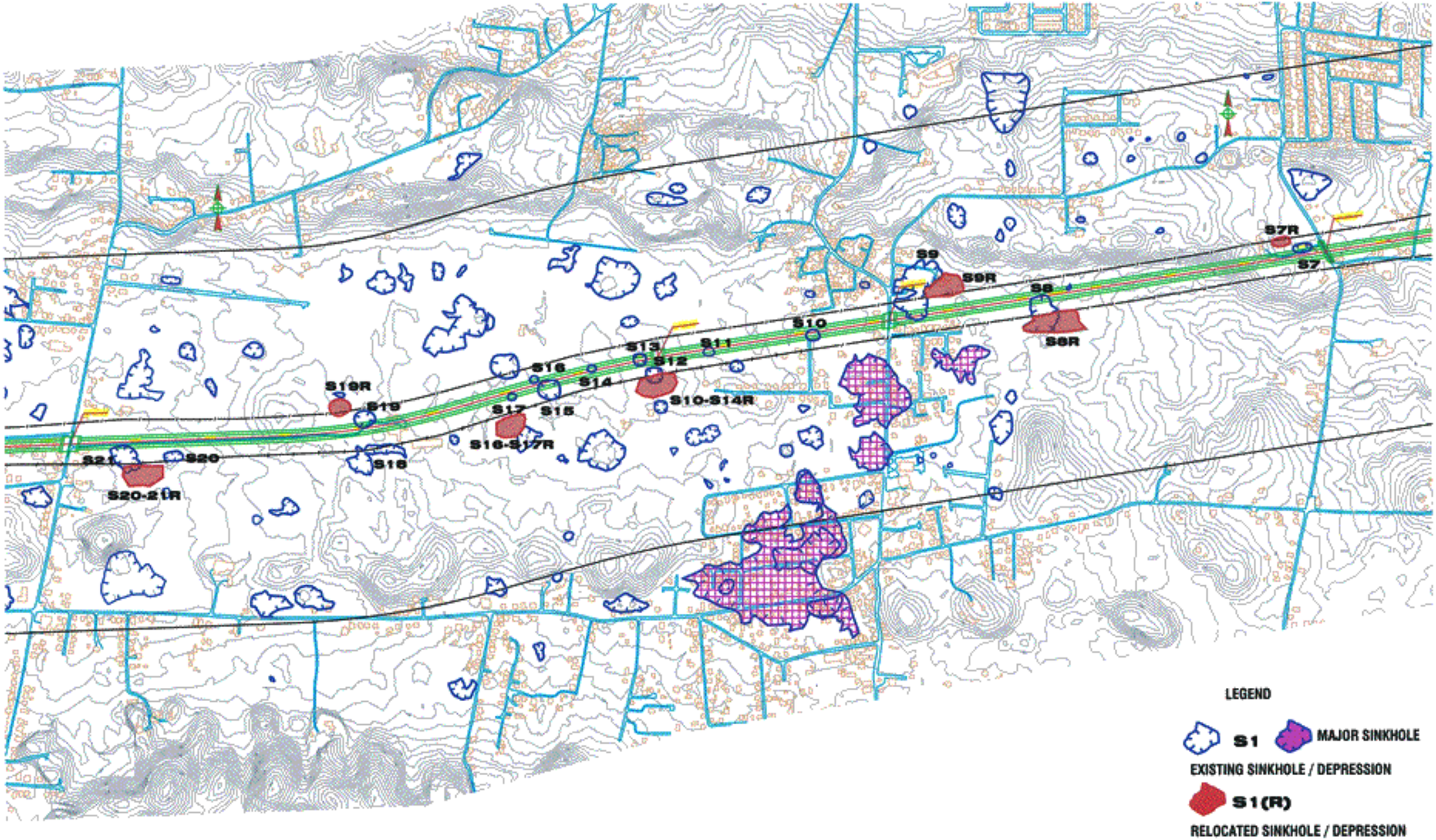
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGURE 13 - SINKHOLES AT PR-22 ROUTE**<br>**(STA 2+00 - 36+00)** |

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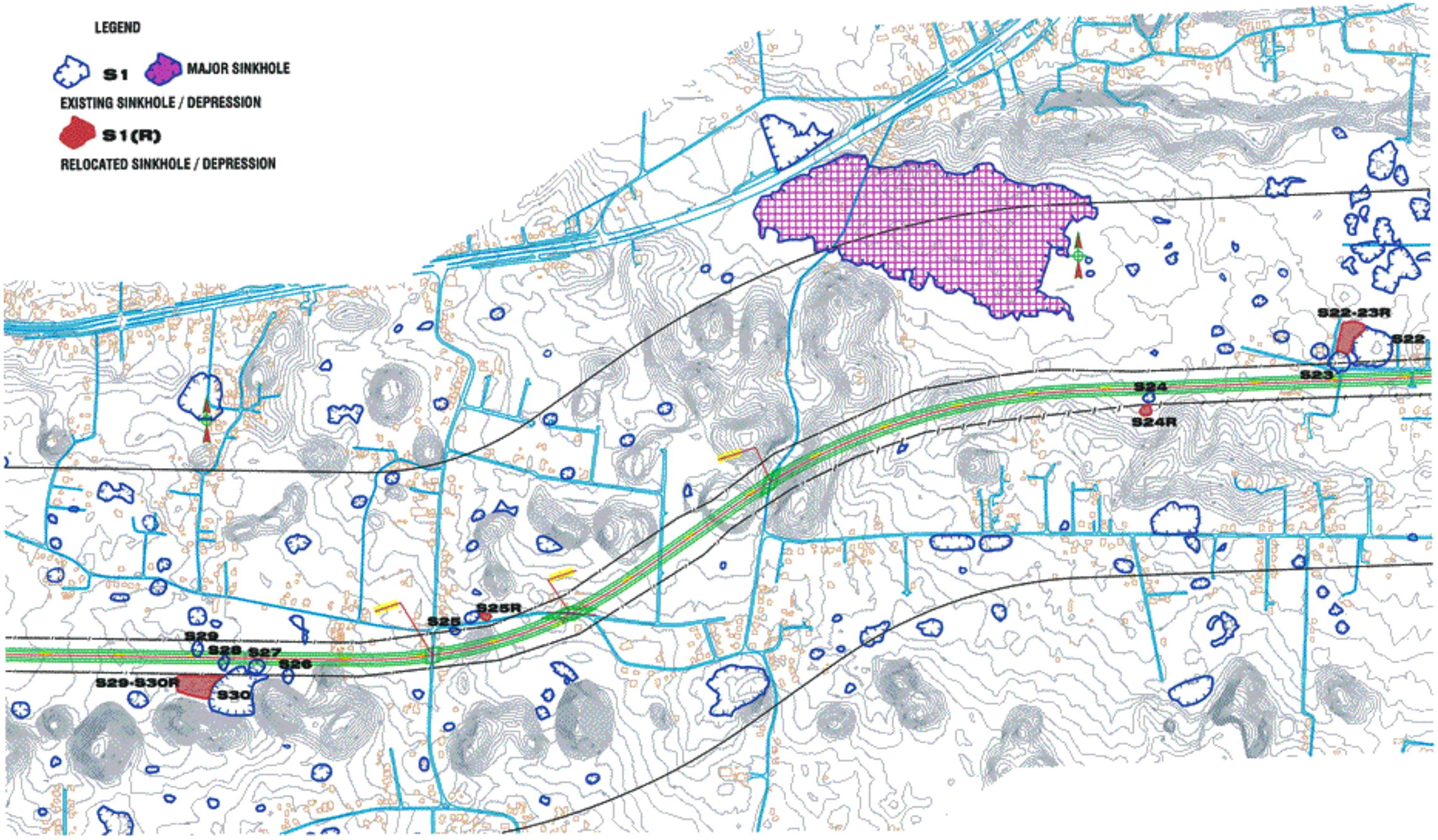
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGURE 13A - SINKHOLES AT PR-22 ROUTE**<br>**(STA 76+00 - 112+00)** |

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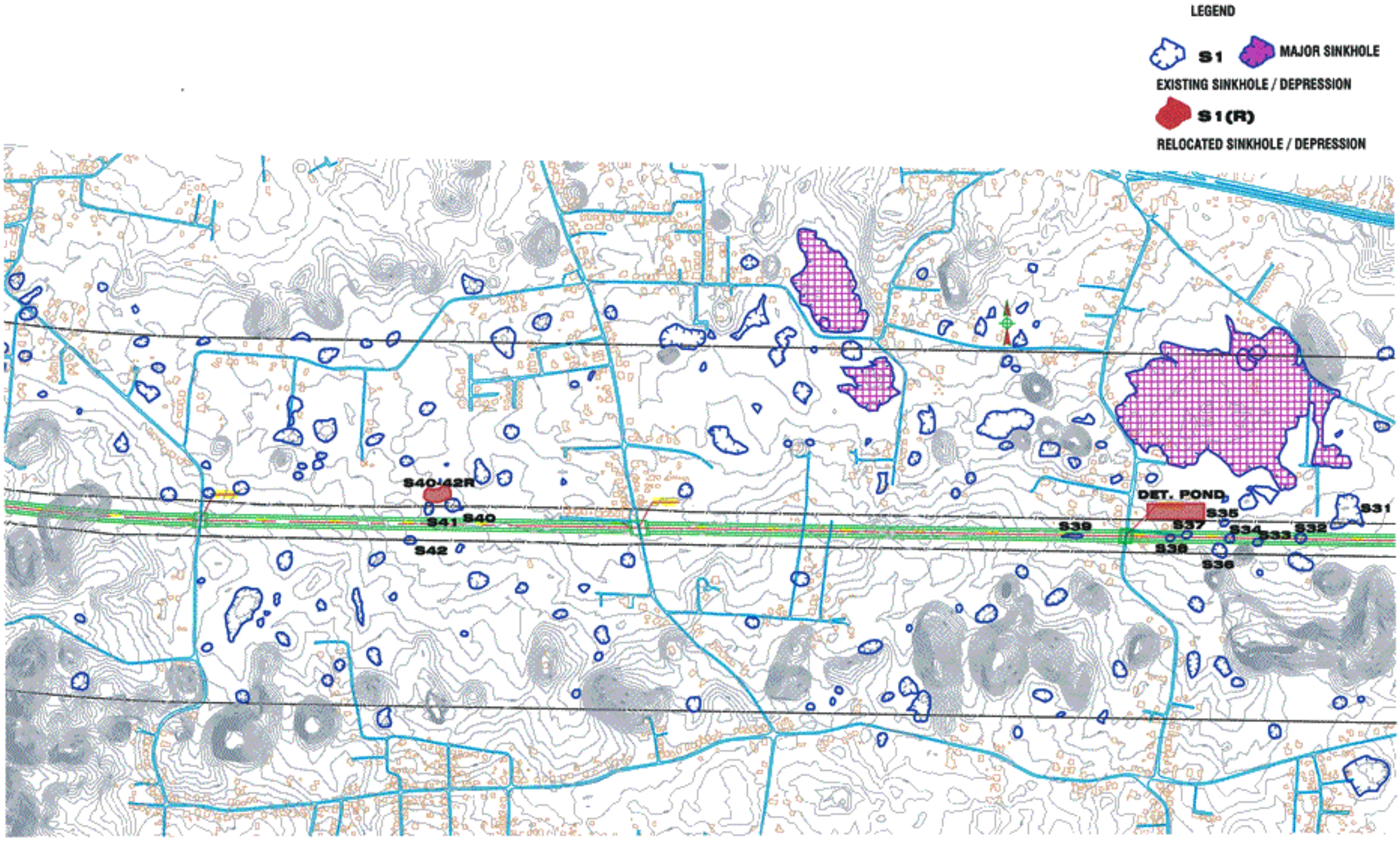
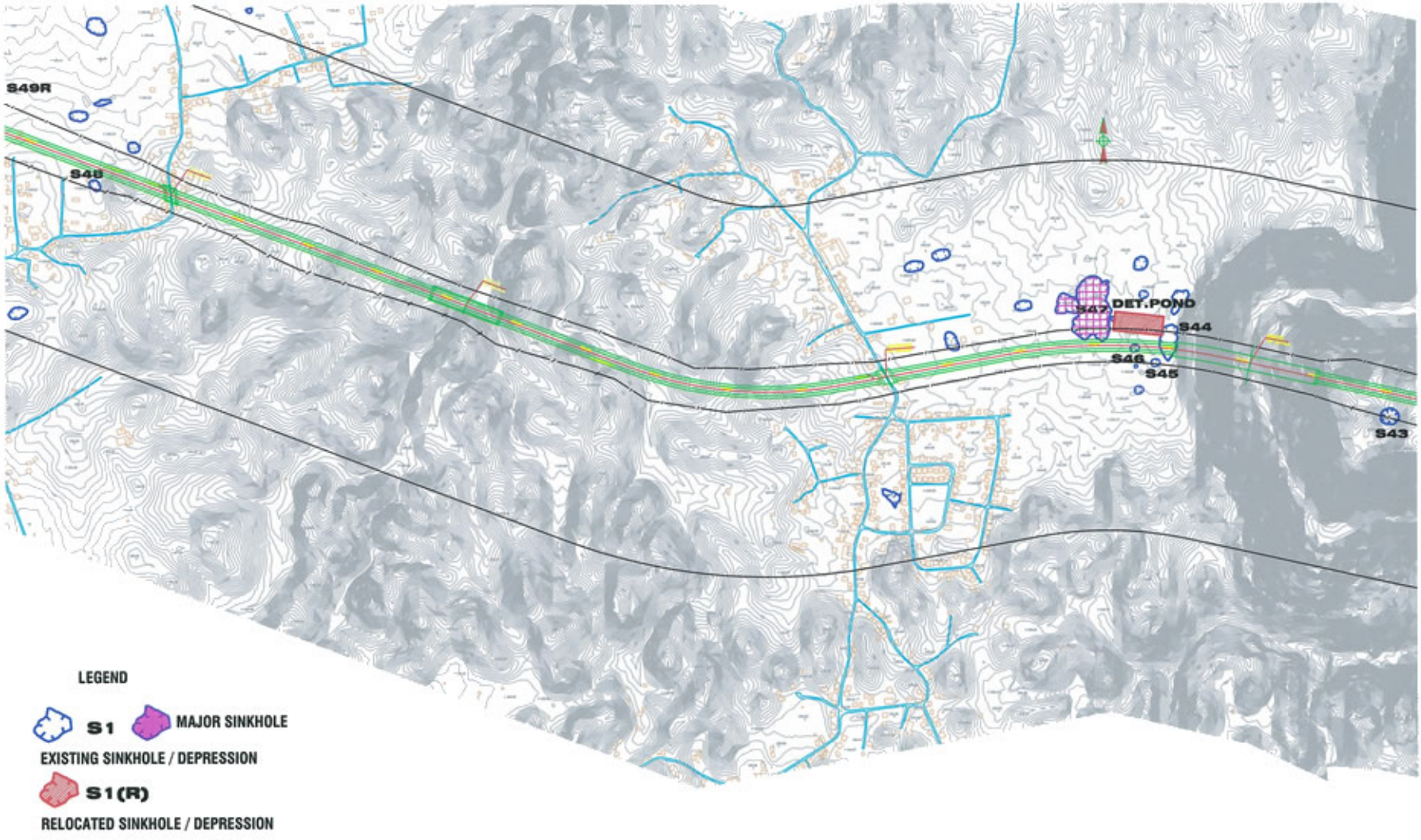
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGURE 13B - SINKHOLES AT PR-22 ROUTE**<br>**(STA 116+00 - 154+00)** |




**IVÁN VELÁZQUEZ & ASSOCIATES**
HYDROLOGIC AND HYDRAULIC ENGINNERS

SCALE 1:10000

**FIGURE 13C - SINKHOLES AT PR-22 ROUTE (STA 156+00 - 192+00)**

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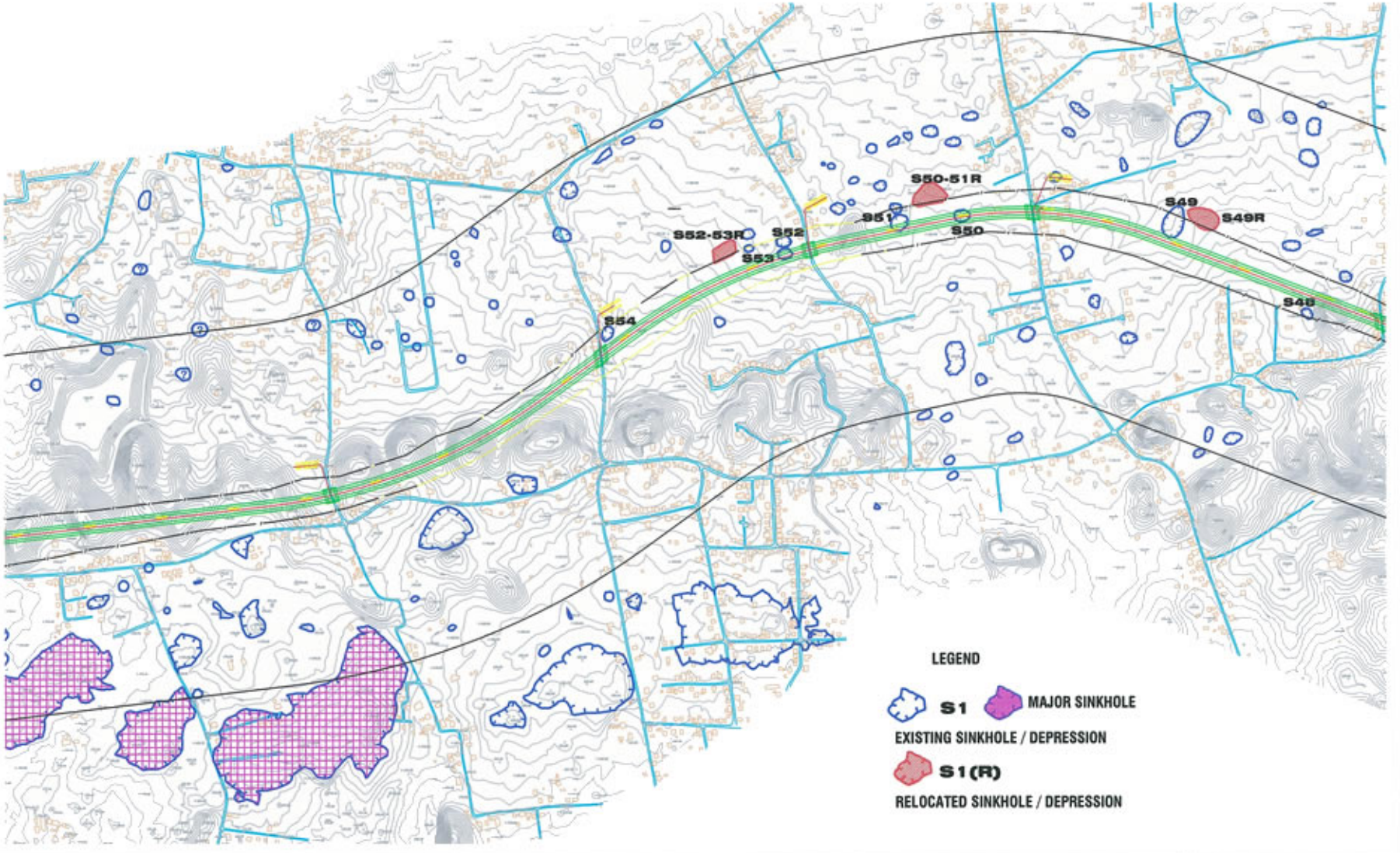
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1 : 10000 | **FIGURE 13D - SINKHOLES AT PR-22 ROUTE**<br>**(STA 210+00 - 248+00)** |

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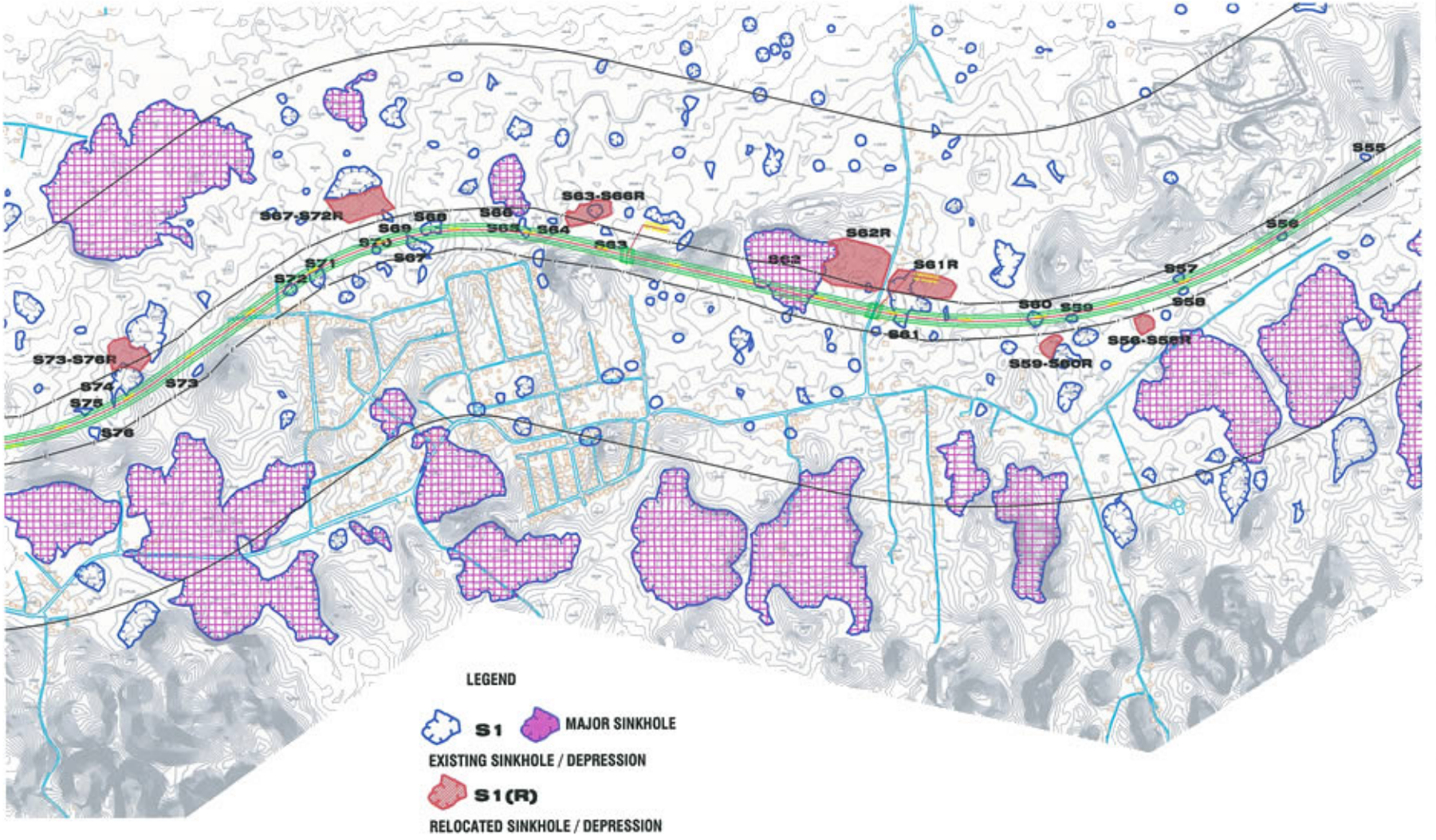
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1 : 10000 | **FIGURE 13E - SINKHOLES AT PR-22 ROUTE**<br>**(STA 244+00 - 284+00)** |

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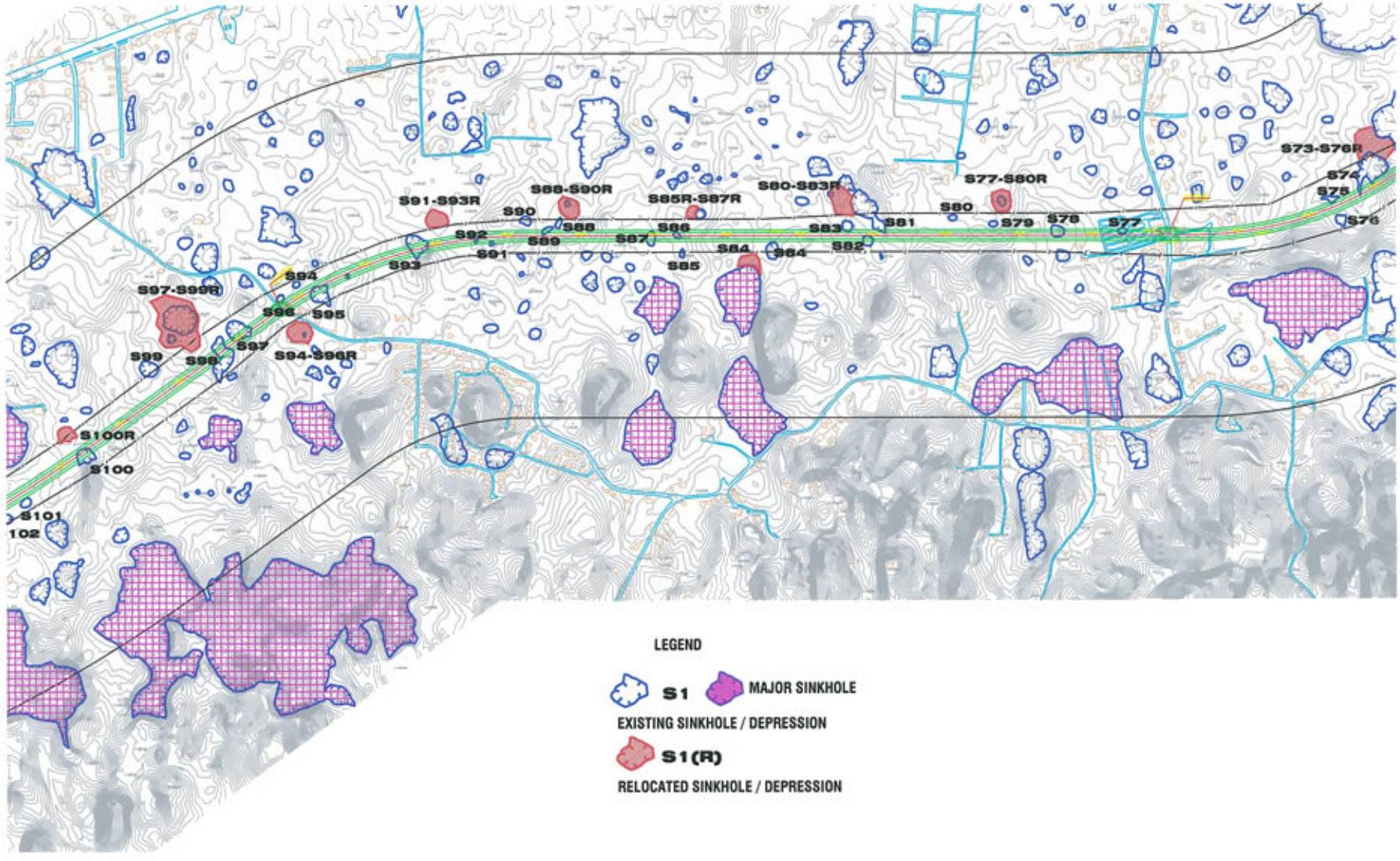
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1 : 10000 | **FIGURE 13F - SINKHOLES AT PR-22 ROUTE**<br>**(STA 298+00 - 336+00)** |

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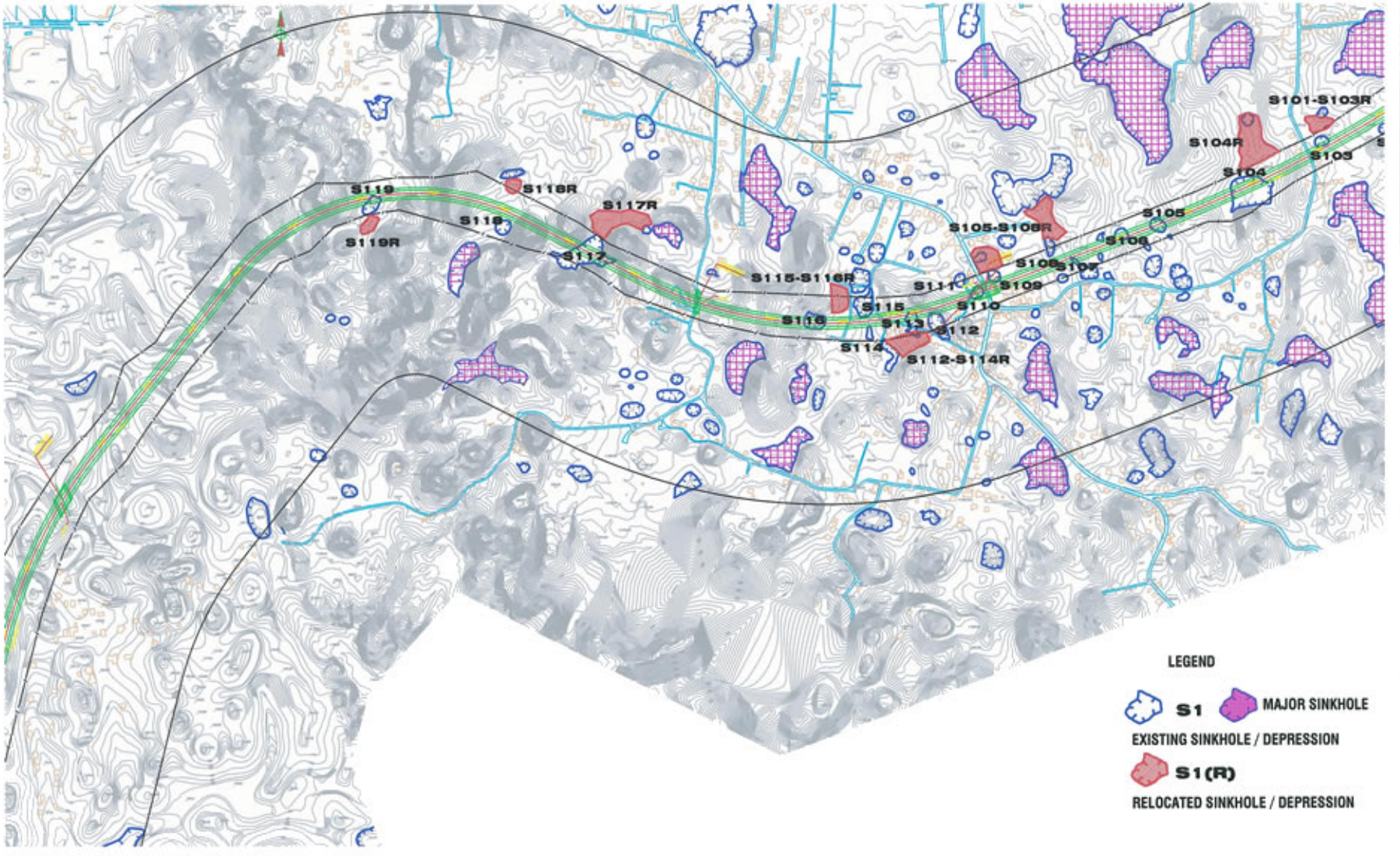
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1 : 10000 | **FIGURE 13G - SINKHOLES AT PR-22 ROUTE**<br>**(STA 334+00 - 374+00)** |

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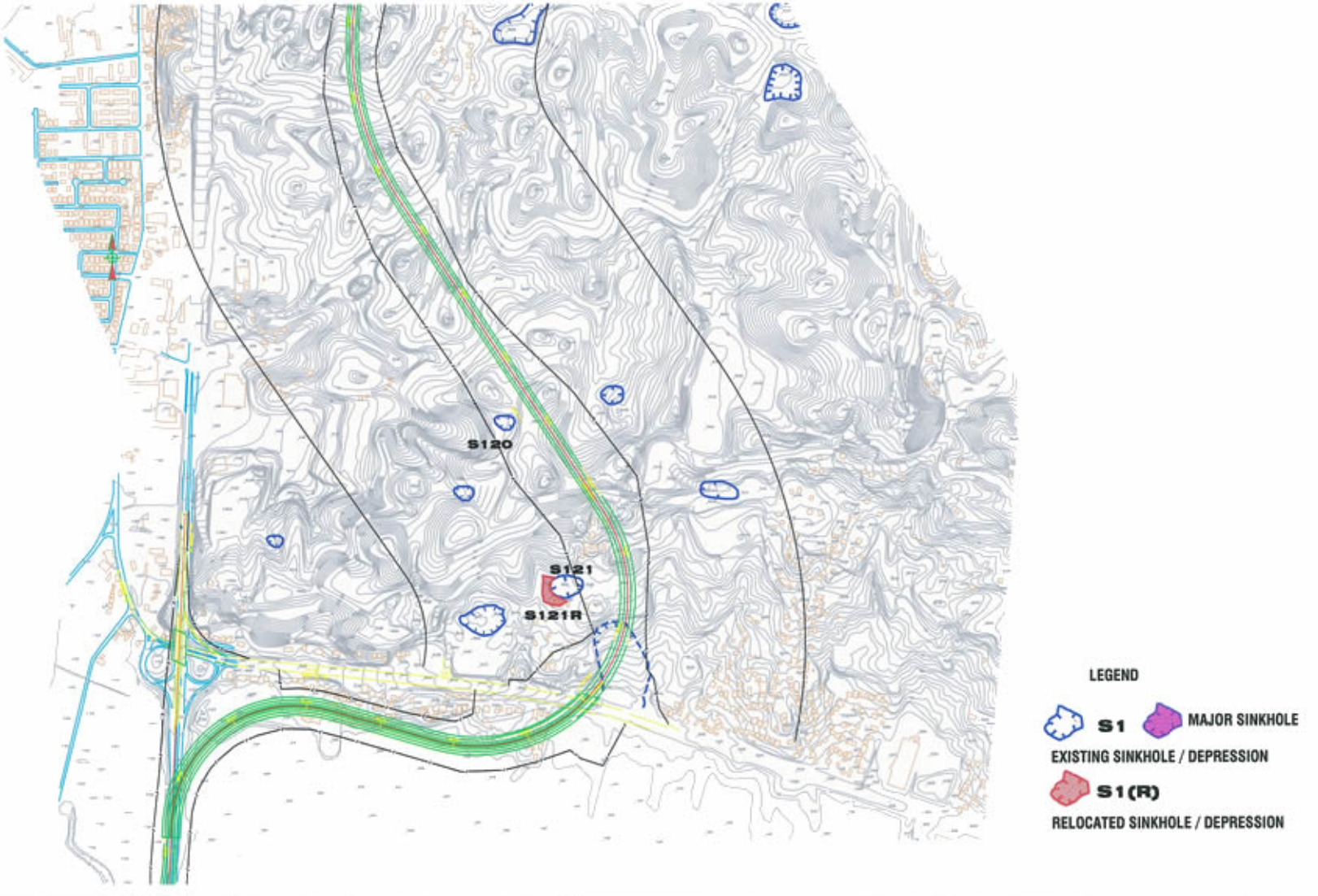
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1 : 10000 | **FIGURE 13H - SINKHOLES AT PR-22 ROUTE**<br>**(STA 374+00 - 420+00)** |

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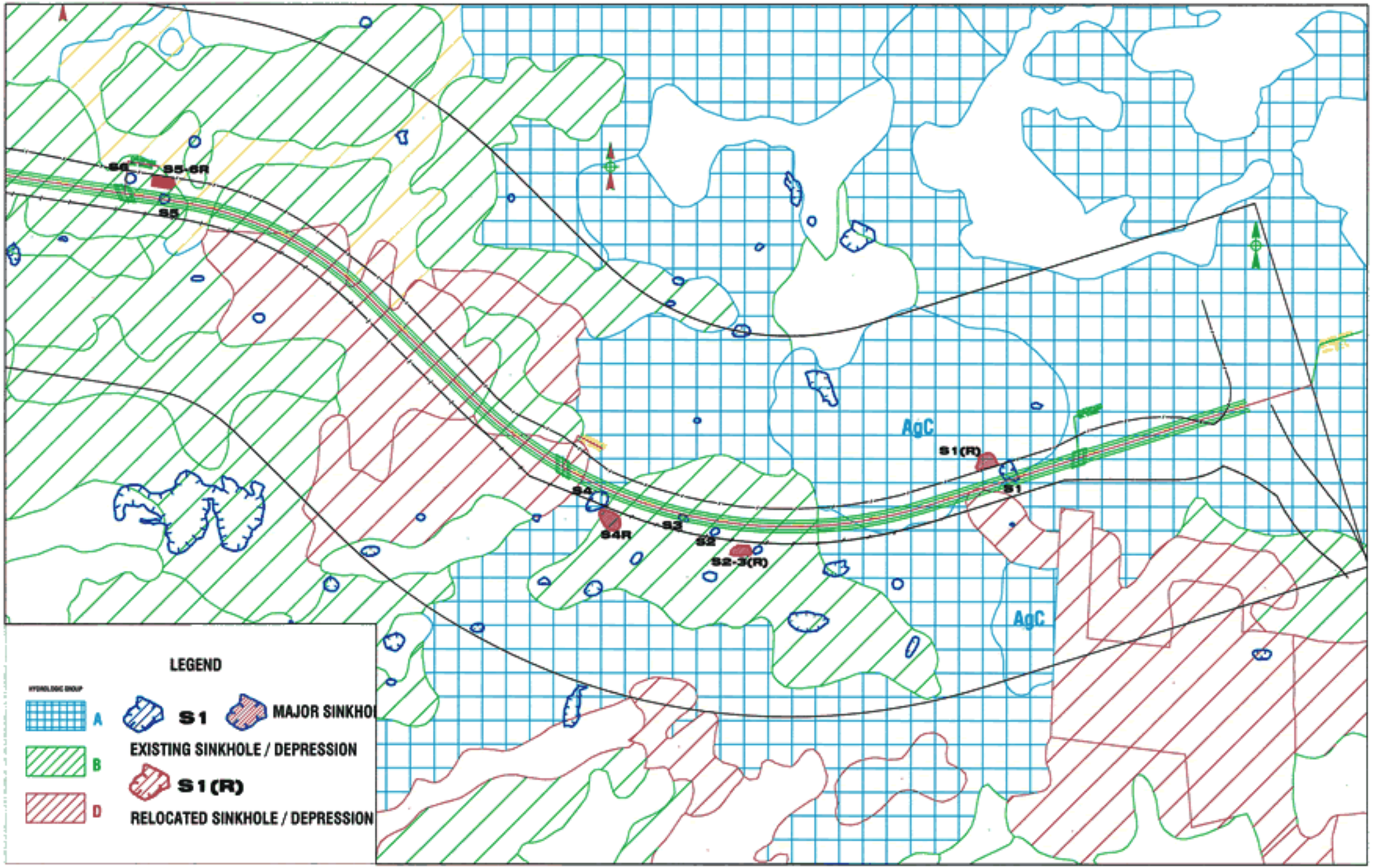
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1 : 10000 | **FIGURE 13I - SINKHOLES AT PR-22 ROUTE**<br>**(STA 426+00 - 460+00)** |

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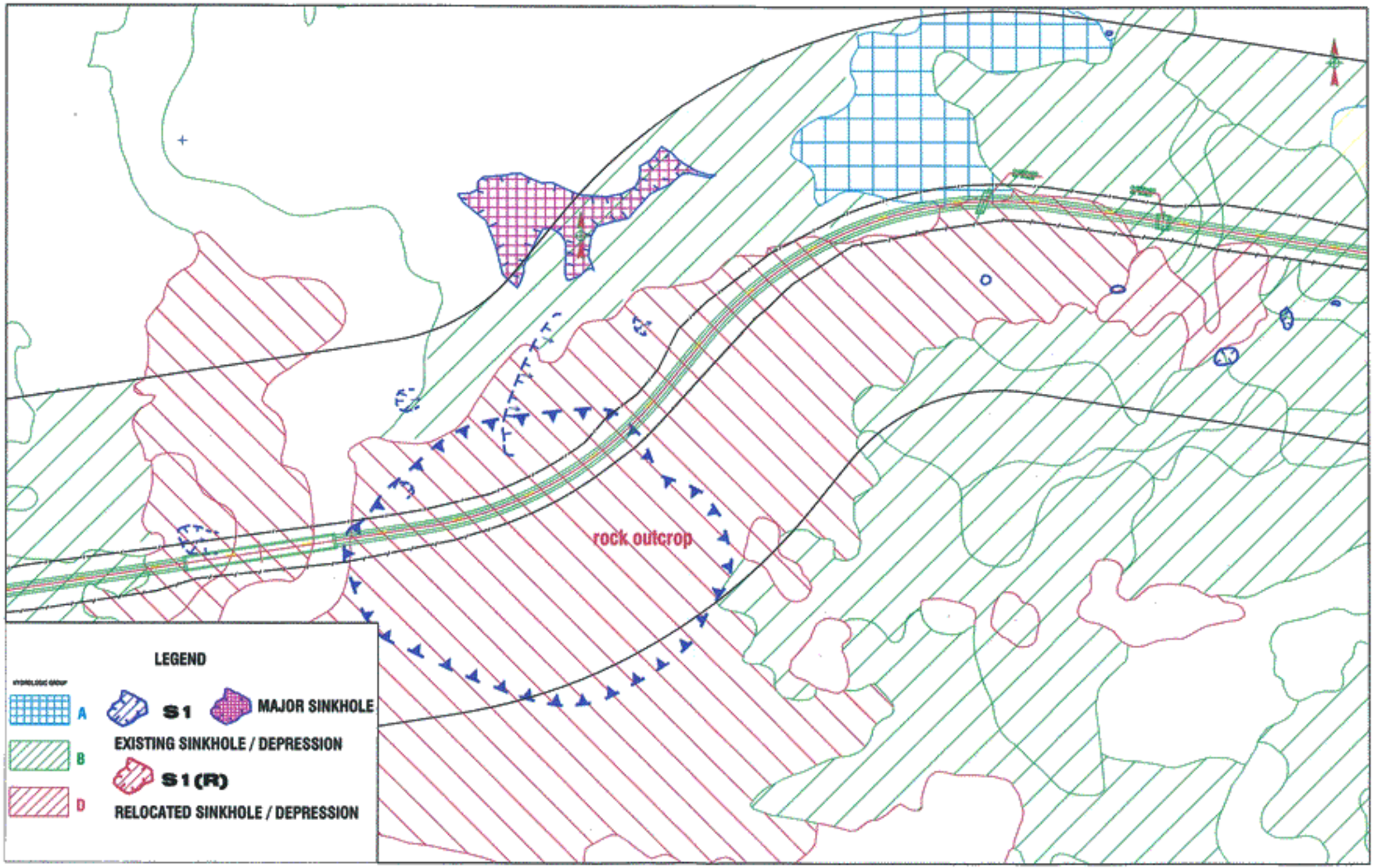
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGUR E 14 - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 0+00 TO 36+00** |

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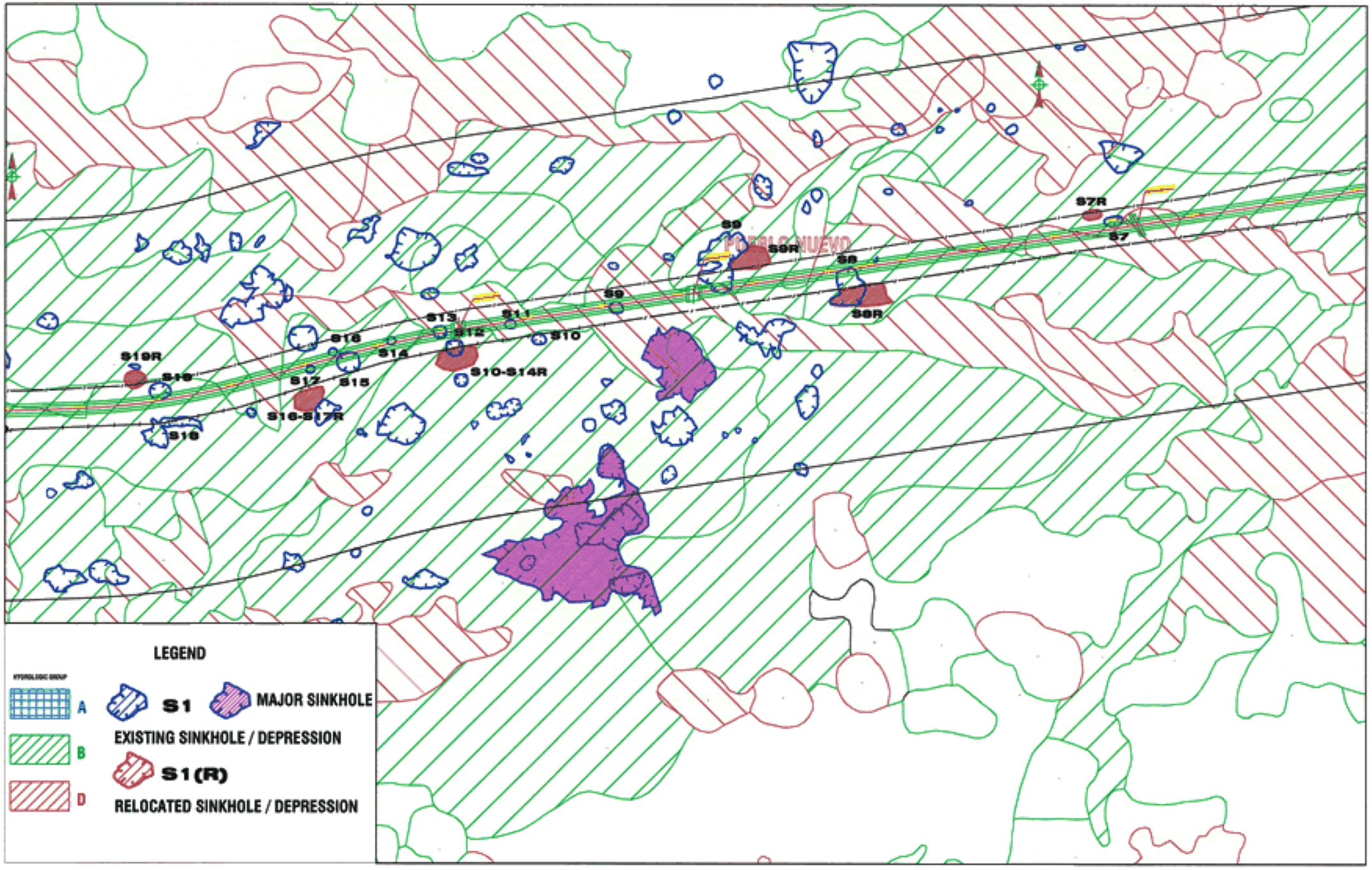
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGURE 14A - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 36+00 TO 72+00** |

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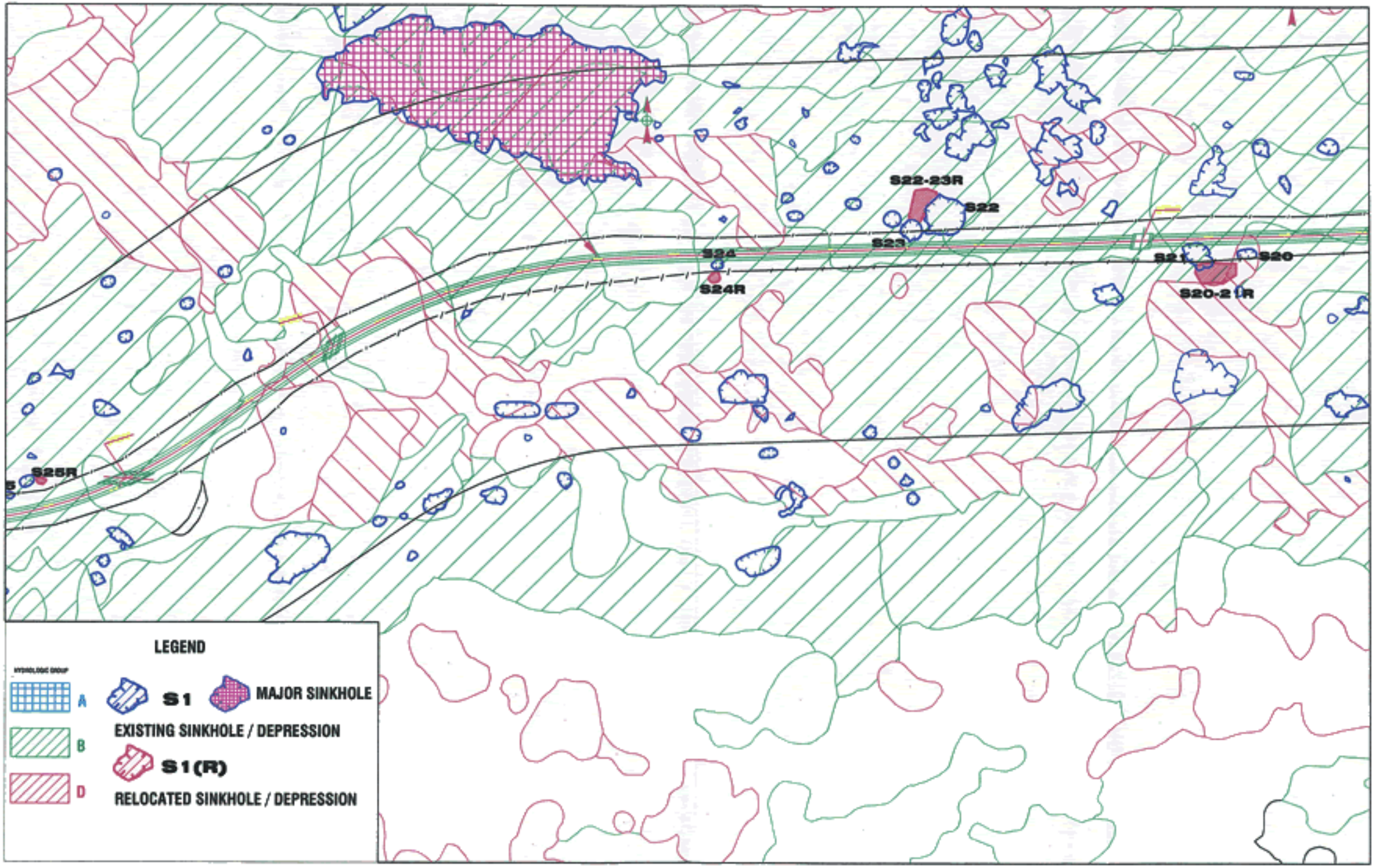
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>**HYDROLOGIC AND HYDRAULIC ENGINNERS** | SCALE 1:10000 | **FIGUR E 14B - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 72+00 TO 106+00** |

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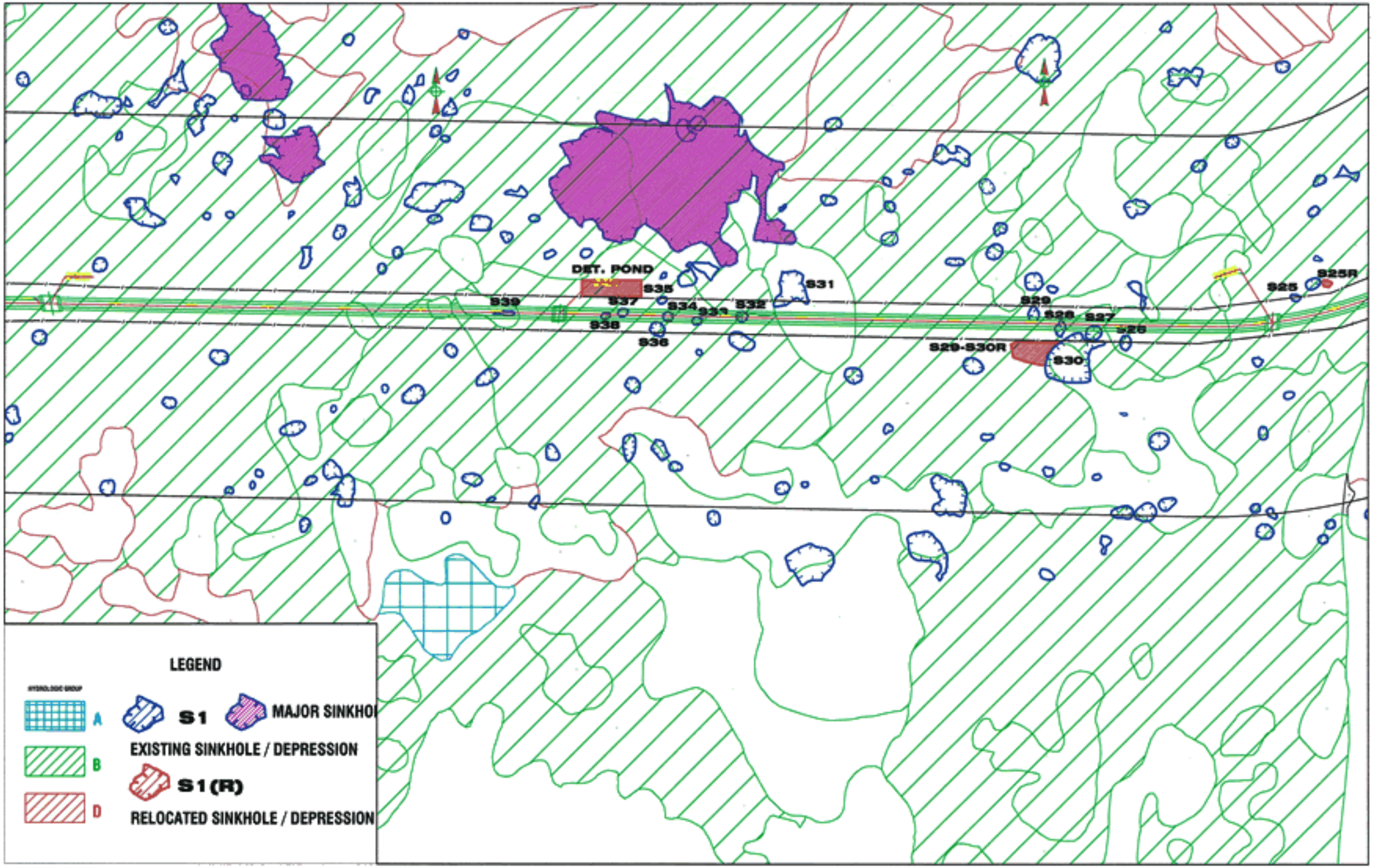
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGURE 14C - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 106+00 TO 142+00** |

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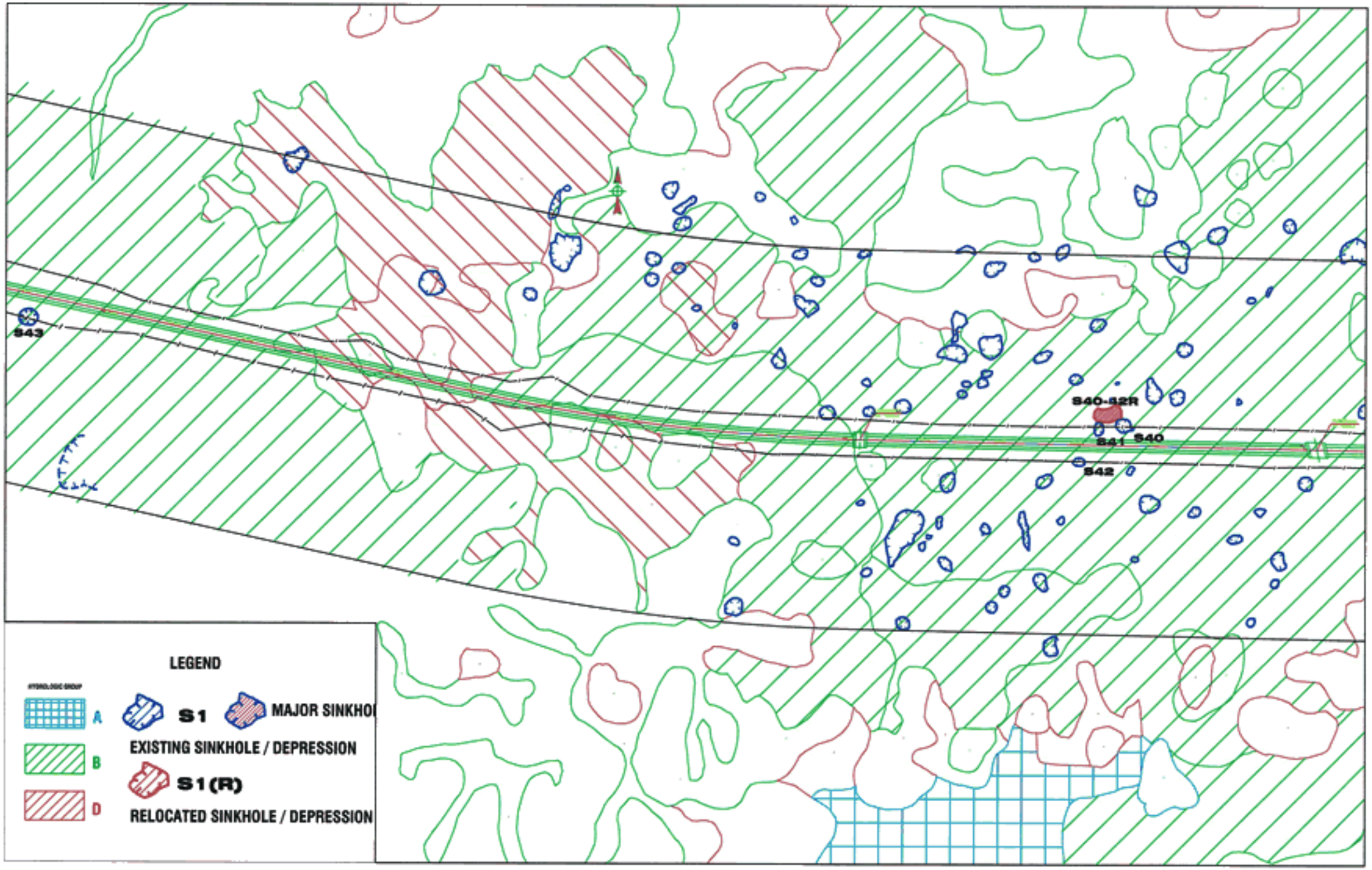
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>**HYDROLOGIC AND HYDRAULIC ENGINNERS** | SCALE 1:10000 | **FIGUR E 14D - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 142+00 TO 175+00** |

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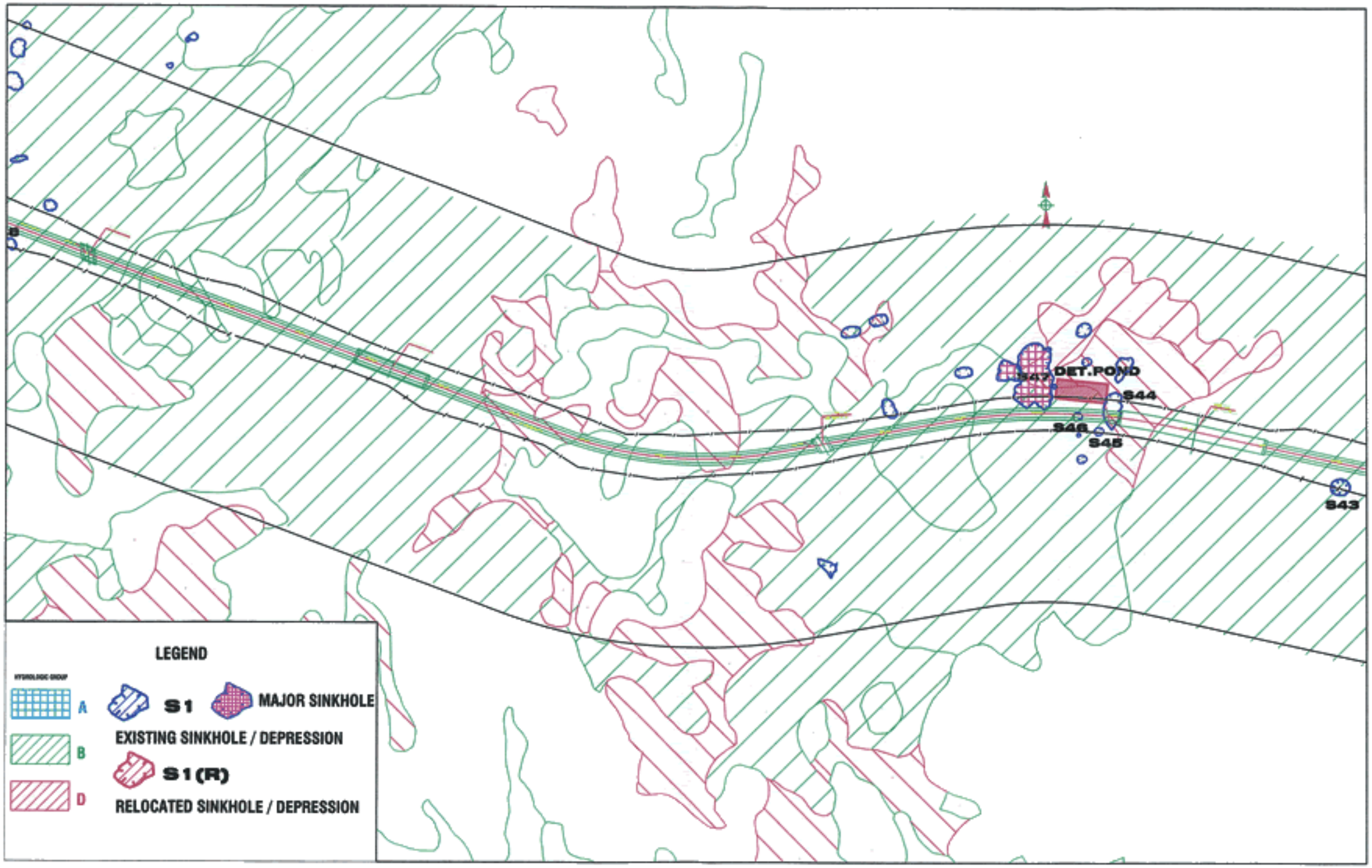
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGUR E 14E - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 176+00 TO 210+00** |

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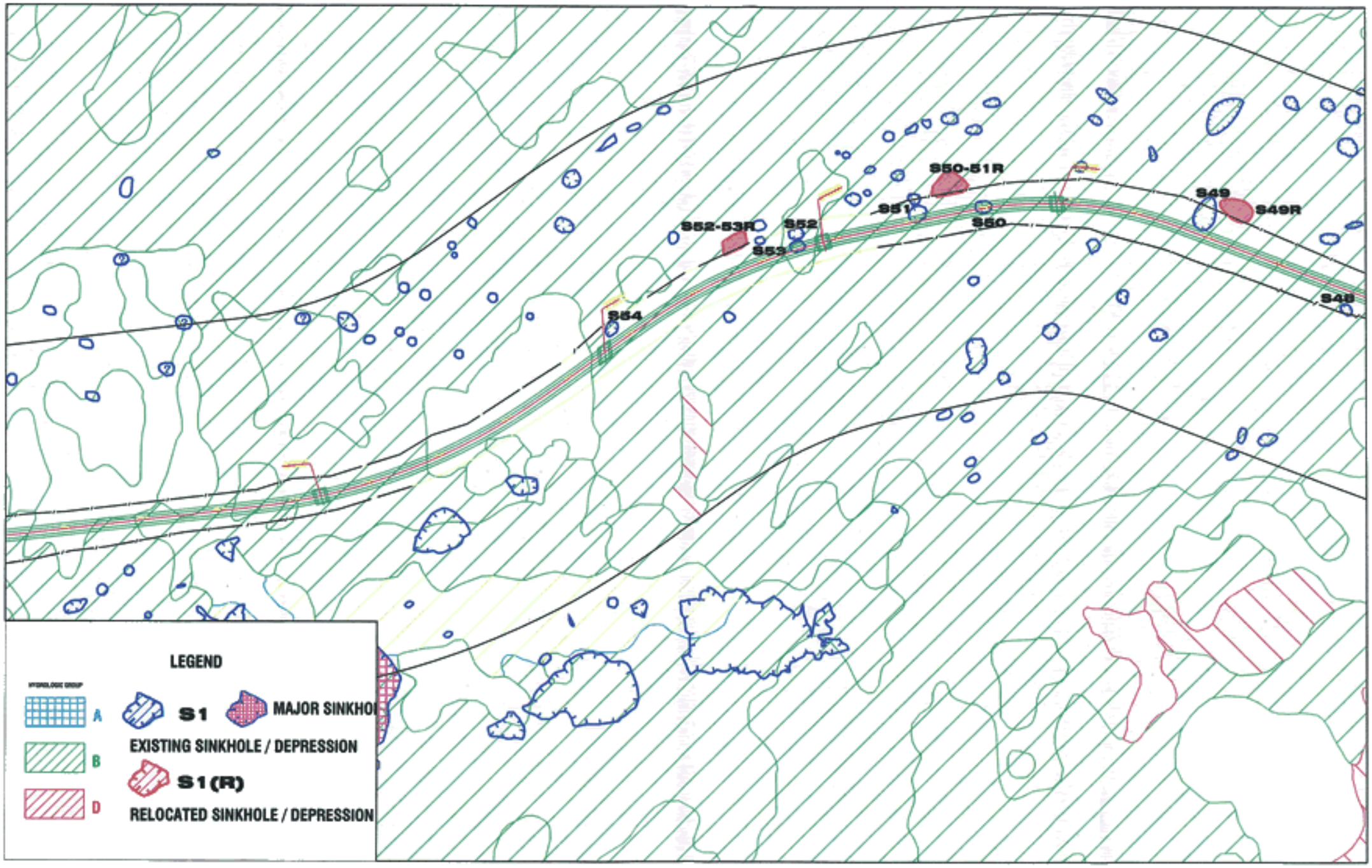
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>**HYDROLOGIC AND HYDRAULIC ENGINNERS** | SCALE 1:10000 | **FIGURE 14F - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 210+00 TO 246+00** |

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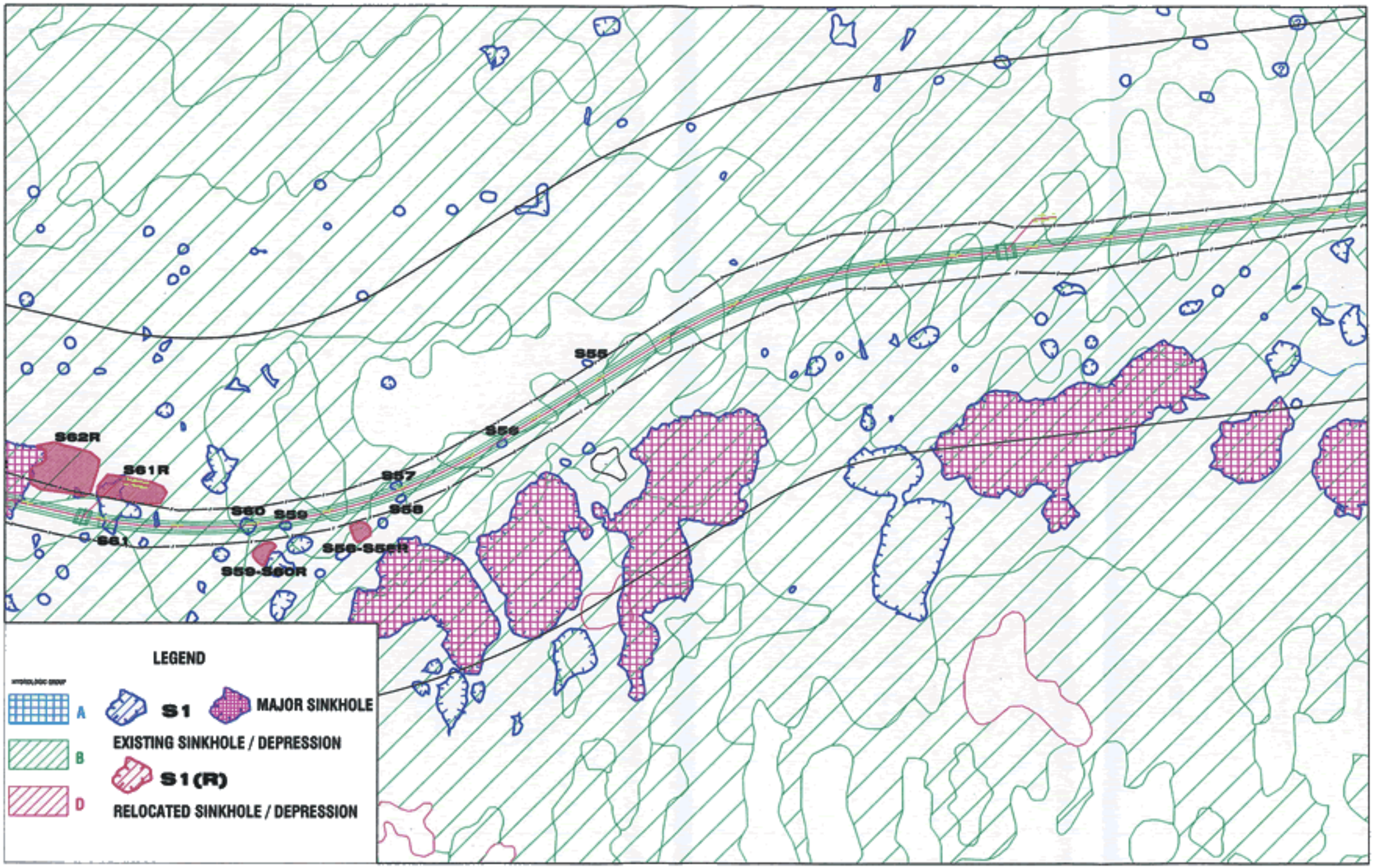
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>**HYDROLOGIC AND HYDRAULIC ENGINNERS** | SCALE 1:10000 | **FIGURE 14G - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 246+00 TO 282+00** |

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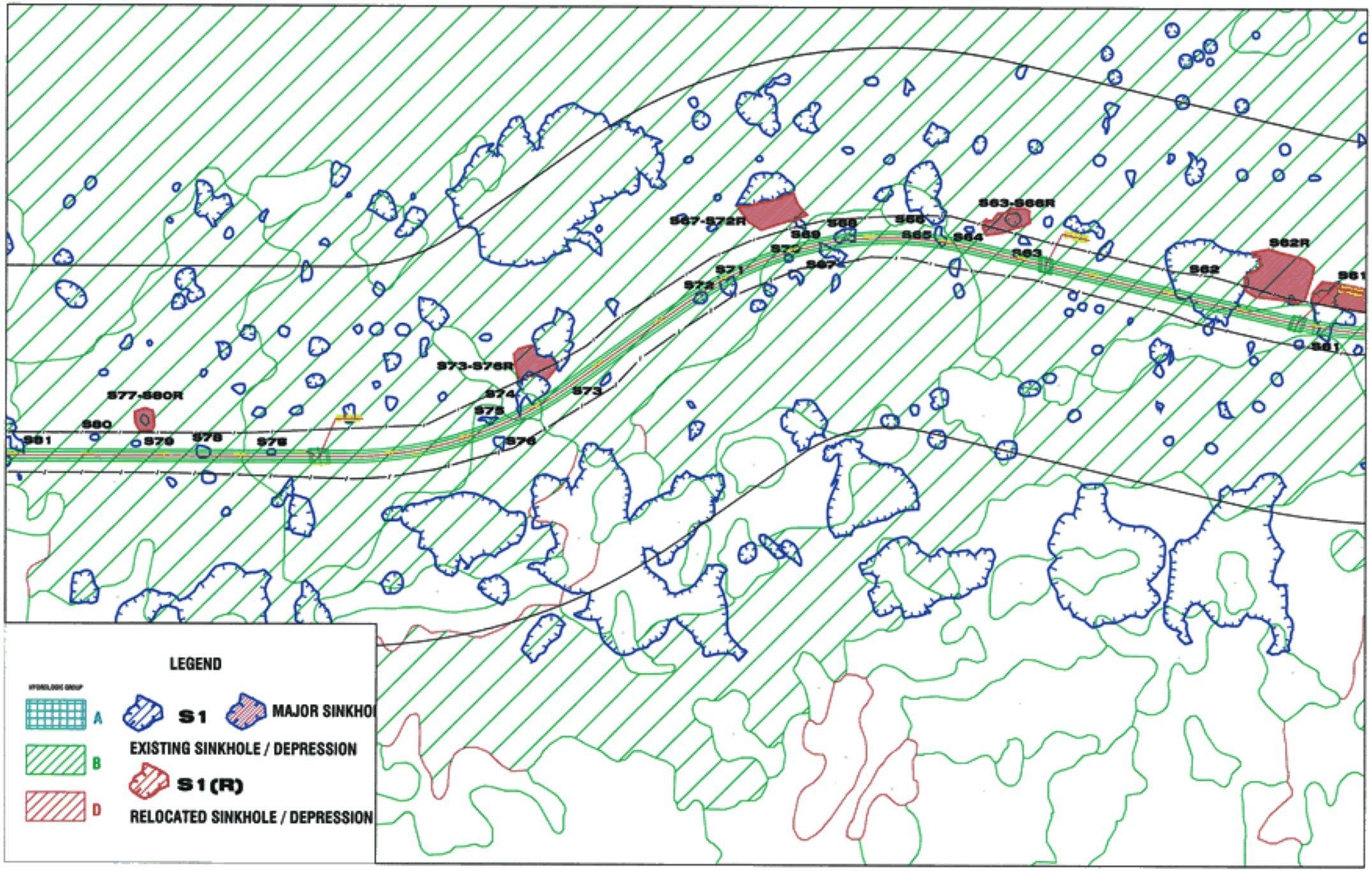
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGURE 14H - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 282+00 TO 314+00** |

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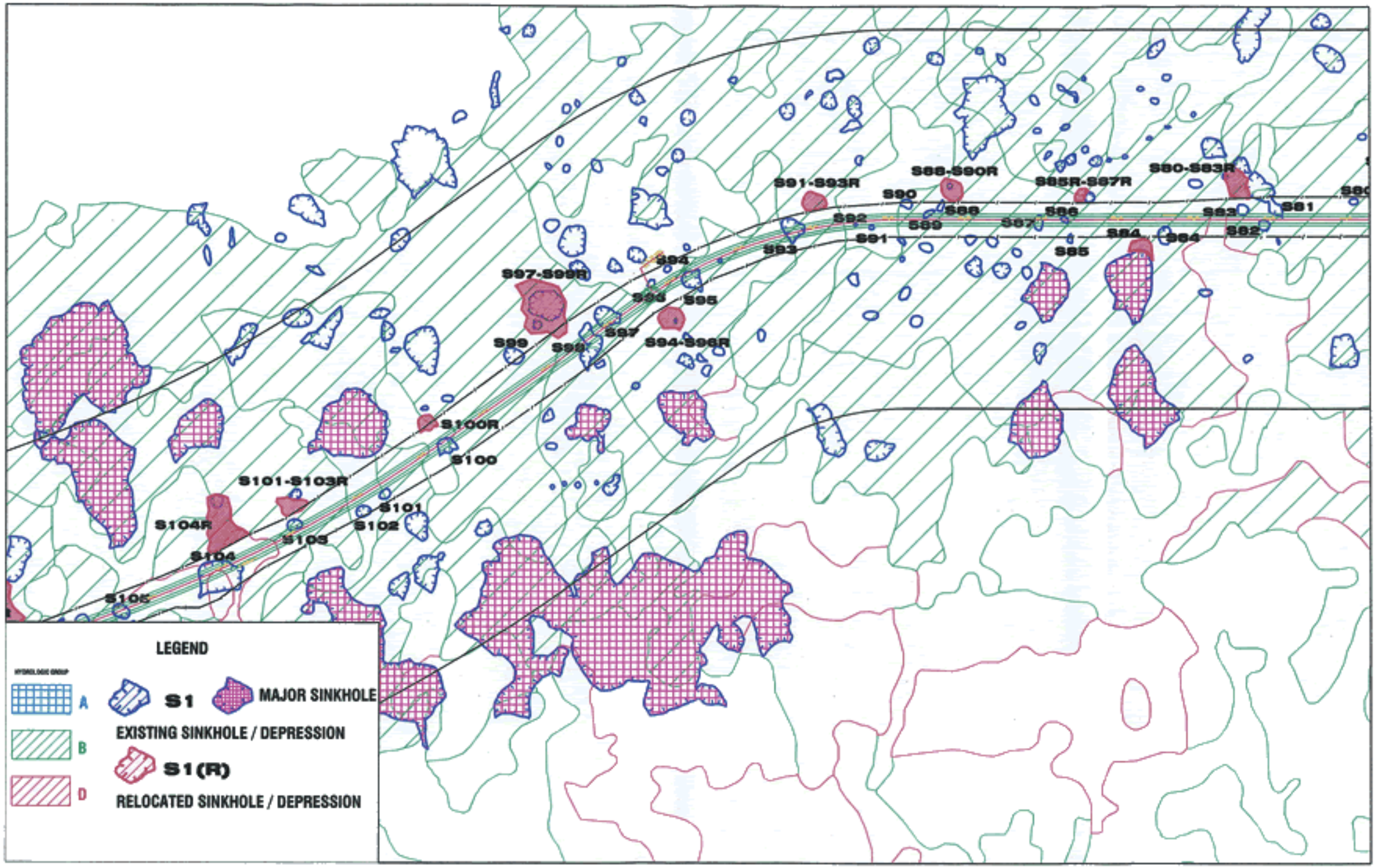
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGUR E 14I - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 314+00 TO 348+00** |

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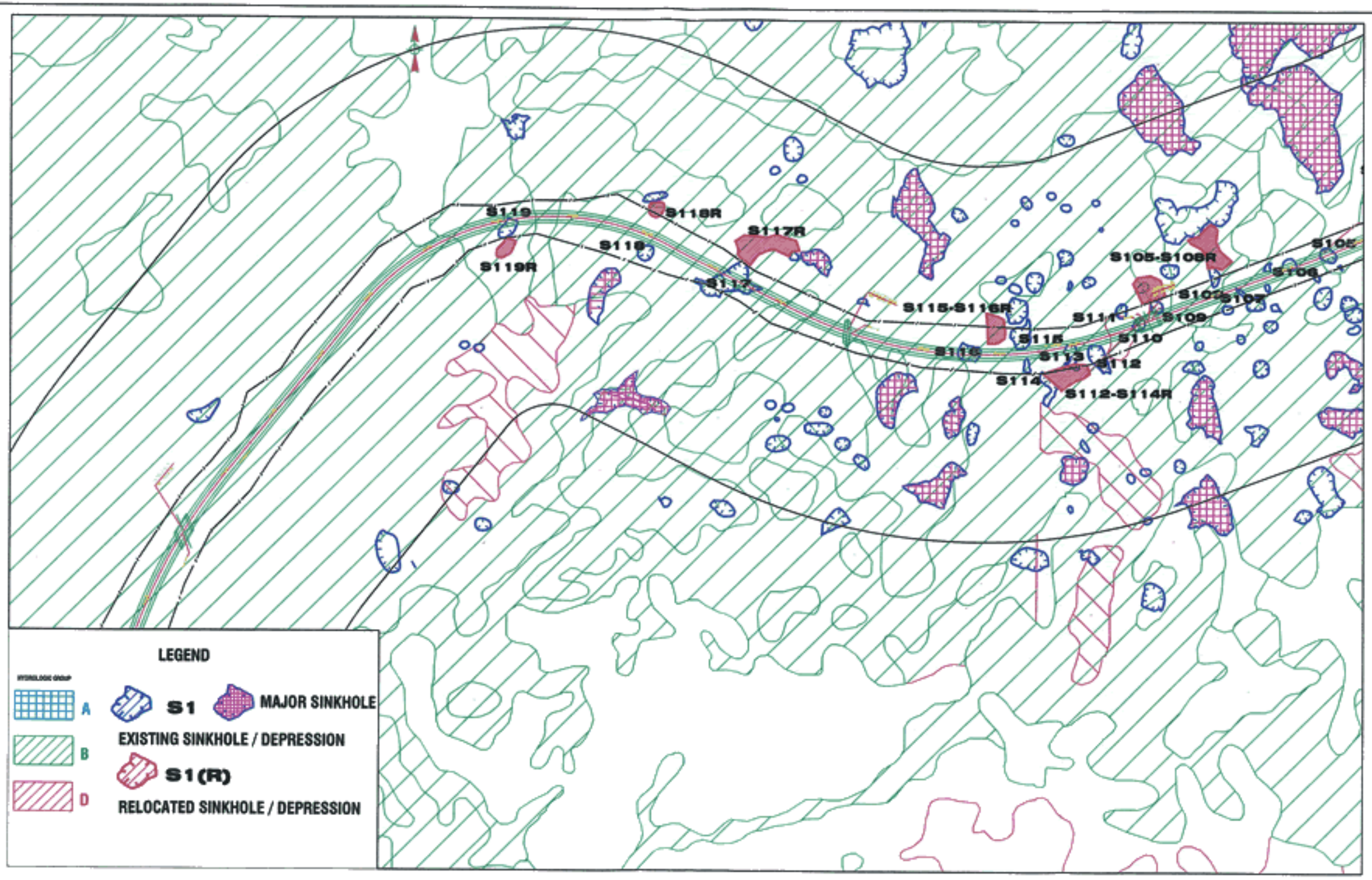
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGURE 14J - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 348+00 TO 380+00** |

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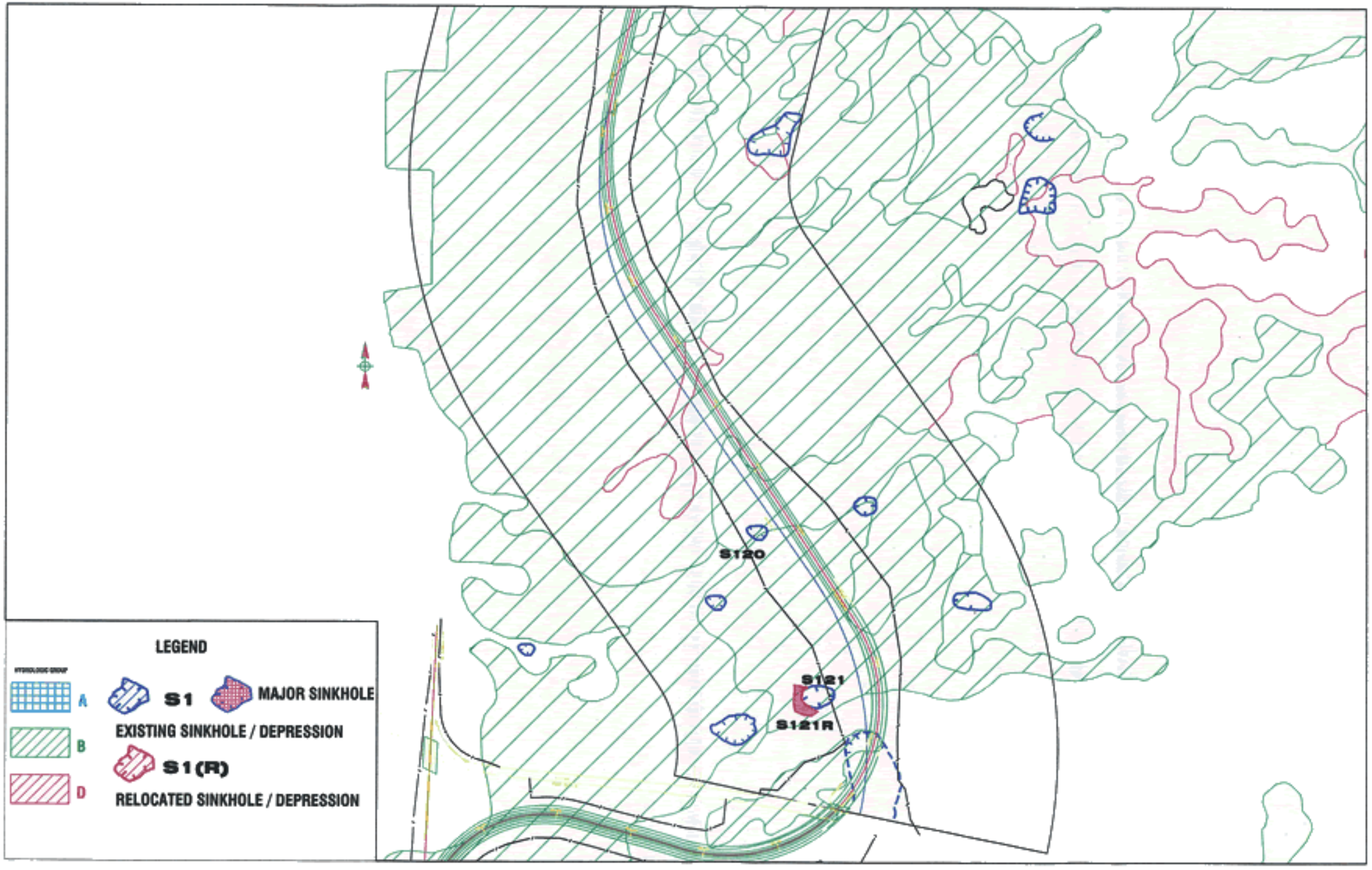
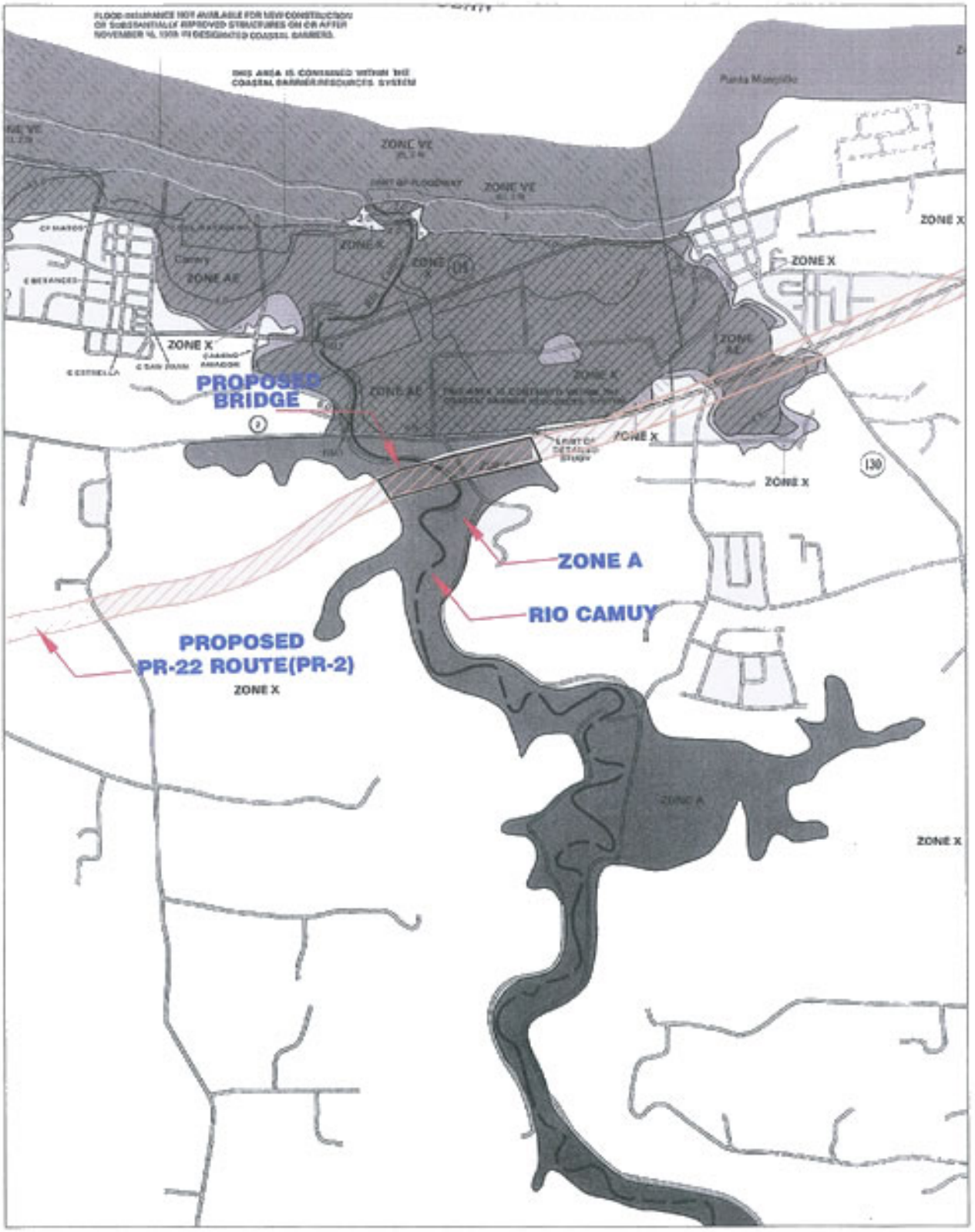
|---|---|---|
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGURE 14K - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 380+00 TO 418+00** |




| | | |
|---|---|---|
| **IVÁN VELÁZQUEZ & ASSOCIATES**<br>HYDROLOGIC AND HYDRAULIC ENGINNERS | SCALE 1:10000 | **FIGURE 14L - HYDROLOGIC GROUP SOILS CLASIFICATION**<br>**STA 418+00 TO 464+00** |

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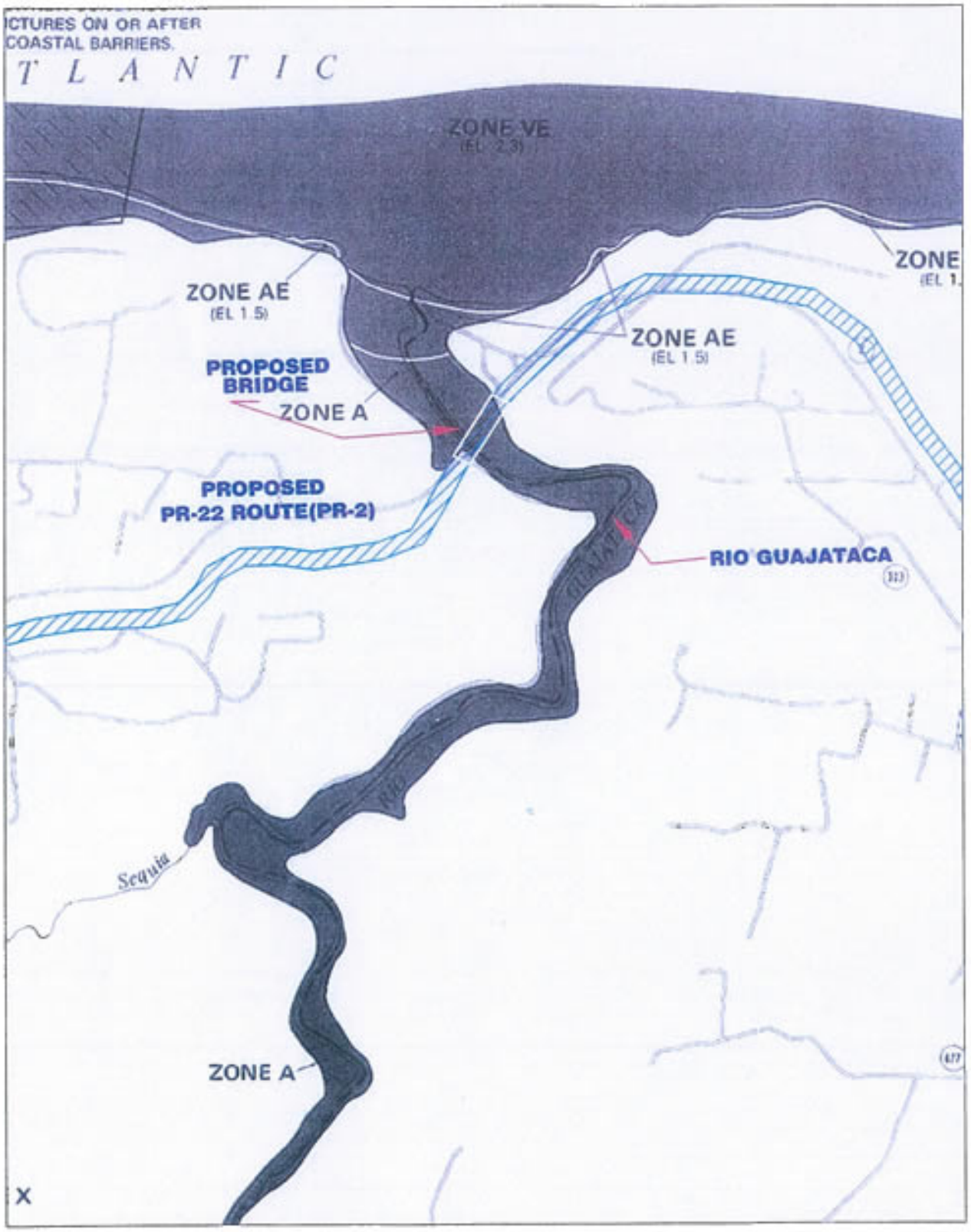
**HYDROLOGIC AND HYDRAULIC ENGINNERS**

FIGURE 15 - RIO CAMUY FLOOD PRONE AREA AT PROJECT SITE (PR-2 ROUTE)

SCALE 1:20000

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**HYDROLOGIC AND HYDRAULIC ENGINNERS**

FIGURE 16- RIO GUAJATACA FLOOD PRONE AREA AT PROJECT SITE (PR-2 ROUTE)

SCALE 1:20000