

GRAVITY SEWER FEASIBILITY ANALYSIS
Babcock Lots 1-6 and Tremaine Park Neighborhood



The Developer (Babcock) owns three lots (302-24-020C, 302-24-034C, & 302-24-049C), generally fronting Arizona Avenue and adjacent to the existing Tremaine Park Neighborhood, near the cross streets of Arizona Avenue and Campbell Road in Chandler, Arizona. The developer has made several attempts over the last decade to develop these lots. The Arizona Avenue Sewer Extension project was constructed approximately 10- years ago with an as-built date of 10-21-16 and was required by the City of Chandler to serve as the off-site gravity sewer for the proposed Babcock development. Babcock is currently proposing to rezone and split the three lots into a total of six (6) lots.

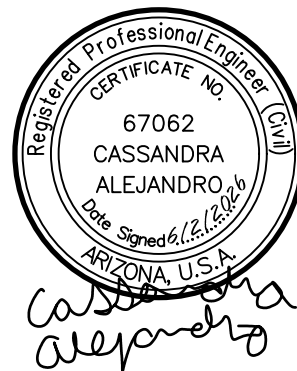
The purpose of this analysis is to reassess the extent and area of potential gravity sewer service connections to the Babcock 6-lot residential development and the Tremaine Park Neighborhood based on the Arizona Avenue Sewer Extension approved as-built plans and the current January 2025 City of Chandler Engineering & Design Standards Manual.

The gravity sewer located at the termination manhole (MH) 5 (see sewer exhibit) serves as the downstream gravity outlet. Section 2.2.7.2 of City of Chandler Design Manual requires that sewer lines are installed with minimum of depth of 5-ft, additionally, section 2.2.10 requires that all sewer service taps are installed at a depth of 4.5-ft at the property line. MH rim elevations for this analysis were obtained from USGS, 1-foot contours. Manning’s equation was used to calculate the potential sewer extension. To meet City of Chandler requirements for sewer depth, the maximum extension for the proposed gravity sewer running north out of existing MH 5 is 500 LF along Washington Street (see sewer exhibit and calculations attached). Extension of gravity sewer pipe past this limit would not be feasible because the sewer would be too shallow to meet Chandler’s minimum cover requirements.

The Babcock 6-lots and four (4) additional lots have frontage along the potential gravity sewer extension shown in the sewer exhibit. The four (4) additional lots Assessor Parcel Numbers (APN) are:

302-24-021B
302-24-033A

302-24-035A
302-24-048H



Review of the existing on-site plumbing piping for: alignment, elevation, and connection to the septic systems would be required to determine which, if any, of the four (4) existing Tremaine Park home sewer services have enough depth and slope to functionally connect to the gravity sewer and meet plumbing code.

The following list of seventy-eight (78) properties in the Tremaine Park Neighborhood are not candidates to connect by gravity to the public sewer in the future because they are too low in elevation.

Assessor's Parcel Numbers:

- 302-24-004D
- 302-24-004E
- 302-24-005A
- 302-24-005B
- 302-24-006A
- 302-24-006B
- 302-24-007B
- 302-24-007D
- 302-24-008A
- 302-24-008B
- 302-24-009E
- 302-24-009F
- 302-24-010A
- 302-24-010B
- 302-24-011B
- 302-24-012F
- 302-24-012G
- 302-24-013A
- 302-24-013B
- 302-24-014A
- 302-24-014B
- 302-24-015B
- 302-24-016
- 302-24-017A
- 302-24-017B
- 302-24-018B
- 302-24-018C
- 302-24-018D
- 302-24-019C
- 302-24-021A
- 302-24-022A
- 302-24-022B
- 302-24-023A
- 302-24-023B
- 302-24-024C
- 302-24-025A
- 302-24-025B
- 302-24-026A
- 302-24-026B
- 302-24-027C
- 302-24-027E
- 302-24-028A
- 302-24-028B
- 302-24-029A
- 302-24-029B
- 302-24-030B
- 302-24-030C
- 302-24-030D
- 302-24-031
- 302-24-032F
- 302-24-032G
- 302-24-032H
- 302-24-035A
- 302-24-036A
- 302-24-037A
- 302-24-037B
- 302-24-038C
- 302-24-038D
- 302-24-039A
- 302-24-039B
- 302-24-040A
- 302-24-040B
- 302-24-041A
- 302-24-041B
- 302-24-043G
- 302-24-043H
- 302-24-044B
- 302-24-044J
- 302-24-044K
- 302-24-045C
- 302-24-046G
- 302-24-046H
- 302-24-047G
- 302-24-047H
- 302-24-048G
- 302-24-433
- 302-24-434

Conclusion:

The existing gravity sewer can be extended a maximum of 500 linear feet north from the existing manhole (MH 5) while maintaining proper hydraulic performance. The six (6) Babcock lots fronting the gravity sewer have sufficient cover and can be designed with finished floor elevations that comply with plumbing code requirements. However, the majority (78) of the parcels within the Tremaine Park Neighborhood are not viable candidates for future connection to this gravity sewer. Only four (4) additional parcels meet the depth of cover requirement for the public gravity sewer main located in Washington Street. Coordination with the City of Chandler determined that a standard 8-inch gravity sewer line would not achieve sufficient velocity under the anticipated low flow conditions, so a 6-inch public line at a steeper slope has been proposed to achieve self-cleaning velocities. Additionally, due to the expected low sewer flows, the public sewer system will not be extended east along Campbell Road.

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NOTES:
NO DROP THROUGH MANHOLES.

LEGEND

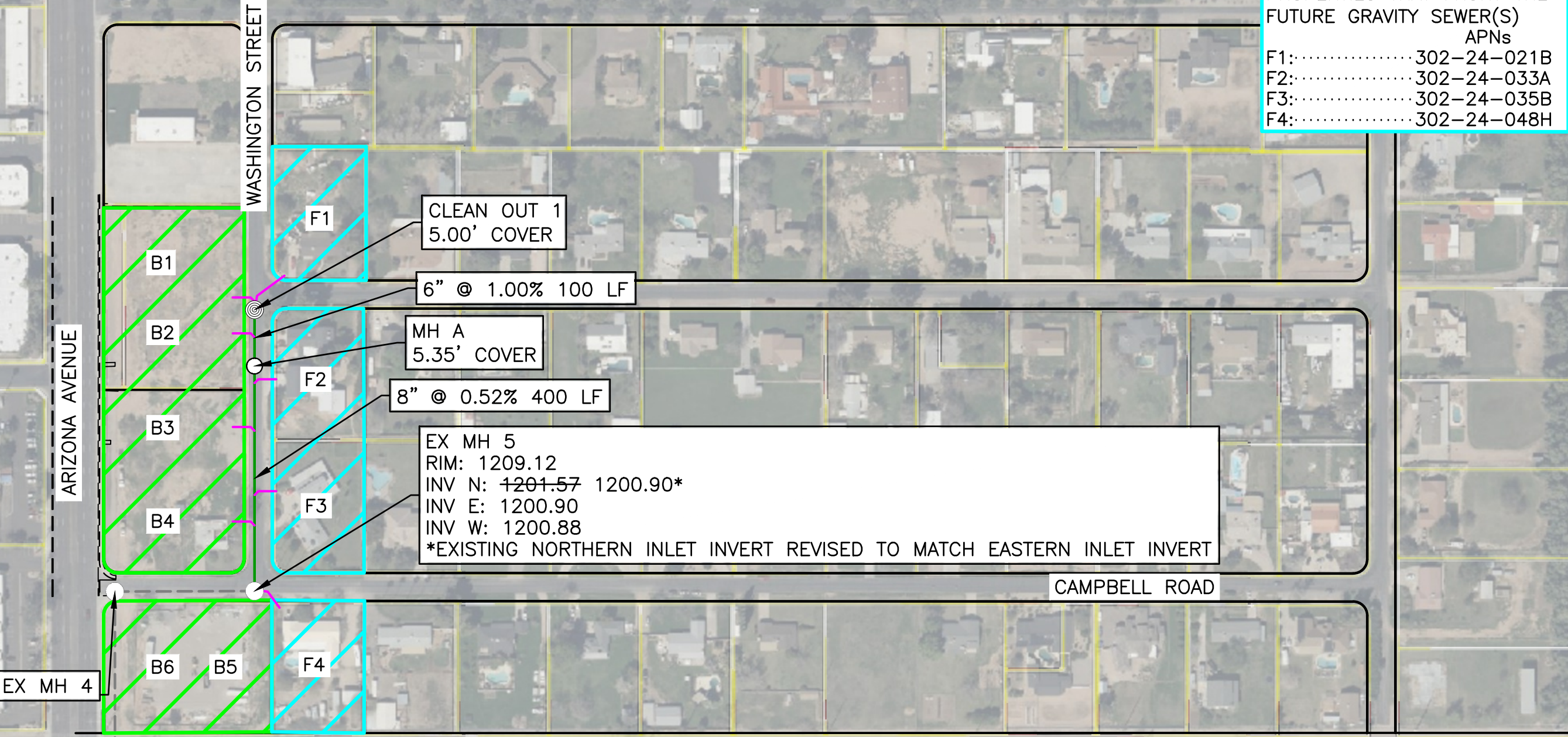
- PROPOSED GRAVITY SEWER LINE
- CLEAN OUT
- ▨ SEWER SERVICE AREA
- ▨ SEWER SERVICE STUBS
- EXISTING 8-INCH SEWER LINE
- ▨ FUTURE SEWER SERVICE AREA (PROPOSED BY OTHERS)

BABCOCK PROPERTIES

	APNs
B1&2:	302-24-020C
B3&4:	302-24-034C
B5&6:	302-24-049C

PROPERTIES THAT FRONT THE FUTURE GRAVITY SEWER(S)

	APNs
F1:	302-24-021B
F2:	302-24-033A
F3:	302-24-035B
F4:	302-24-048H



BABCOCK LOTS 1-6

SEWER EXHIBIT

