



# MEMORANDUM

**DATE:** April 20, 2023

**TO:** City of Missoula Public Works and Mobility

**FROM:** IMEG Corp.  
Cory Davis, P.E. ([Cory.S.Davis@imegcorp.com](mailto:Cory.S.Davis@imegcorp.com))

**RE:** Missoula Loft Homes on Mary Jane Storm Drainage  
Preliminary Storm Drainage Memorandum (as part of Stage 2 submittal)

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To Whom This Concerns,

As part of the preliminary design of the Missoula Loft Homes on Mary Jane Major Subdivision, IMEG is designing the high-altitude layout of the development's stormwater infrastructure.

A geotechnical analysis, performed by Allwest Testing in March 2023, showed soils with differing infiltration rates across the project area. As can be seen in the attached Test Pit Location Map and Infiltration Rate Table (within the included report), half of the tested infiltration sites produced rates between 4,600 and 9,900 inches/hour, while the other half drained significantly less freely – with rates between 4.0 and 42.0 inches/hour. Unfortunately, the locations of these two distinct classes of infiltration rate are not in uniform blocks onsite. The slower rates do seem to cluster in the SE corner of the site and along the centerline in the proposed Mary Jane Boulevard right-of-way – something that is supported by infiltration testing done during the Mullan BUILD grant development (included). However, infiltration results from the Hellgate Village East and Snowfarm developments (to the north and south, respectively) show higher rates along the same N/S corridor. The geotechnical report speculates that this infiltration rate variability can be a result of scattered lenses of silt and clay within the larger poorly graded gravel with sand and cobbles or the potential of large cobbles hampering drainage adjacent to a test pit.

The areas of the proposed development that displayed high infiltration rates will be drained by standard 8' drywell sumps that will be arranged within the right-of-way so that the basin draining to each sump corresponds to a peak flow and volume such the entirety of the 100-year storm can be retained and infiltrated. These sumps will be designed as catch basins in the proposed curb and gutter being pumped to beehive-grated drywell sumps in the boulevard. Largely speaking, these areas correspond to the northeastern corner of the site (near the intersection of Geary and Flanagan Lanes) and the western portion of the site (the portions of Flanagan Lane and O'Leary Street west of Mary Jane Boulevard).

The areas of the proposed development that have shown mixed or low infiltration rates will not be as straight-forward. Further infiltration testing will be conducted with deeper test pits at locations TP-02, TP-05, and TP-06 and more test pits along the east-west centerline of the site. The deeper pits will help determine whether the low infiltration rates may be caused by lenses of silt or clay that could be punched through with a 12' drywell sump and the additional test pits will help sharpen the resolution of where the site's various infiltration rates exist.

If it is found that higher infiltration rates exist at deeper depths, a similar strategy as described above for the high infiltration zones of the site will be ascribed to the central and southeastern portions of the site

using 12' drywell sumps. If infiltration rates are not shown to improve with depth, sumps will still be proposed within the right-of-way. However, the drainage basins for each sump will be designed such that the 10-year peak flow and volume can be mitigated with the drywell sumps, with storm runoff from larger ponding in the right-of-way until it can be infiltrated. This secondary strategy will be consistent with the City requirement that the 10-year storm cannot overtop roads and the 100-year storm cannot inundate structures.

This is a preliminary narrative for potential and proposed options for collecting, routing, and disposal of storm water runoff. Preliminary layouts and locations of storm infrastructure are shown on the included preliminary construction plans.

**Attachments:**

- Geotechnical Report by Allwest Testing, dated April 3, 2023, including:
  - Test Pit Location Map
  - Infiltration Rate Table
- Overall Infiltration Rate Exhibit showing rates from the above report and surrounding projects.

**Prepared By:**

IMEG Corp.



David Friedlander, E.I.

**Reviewed By:**

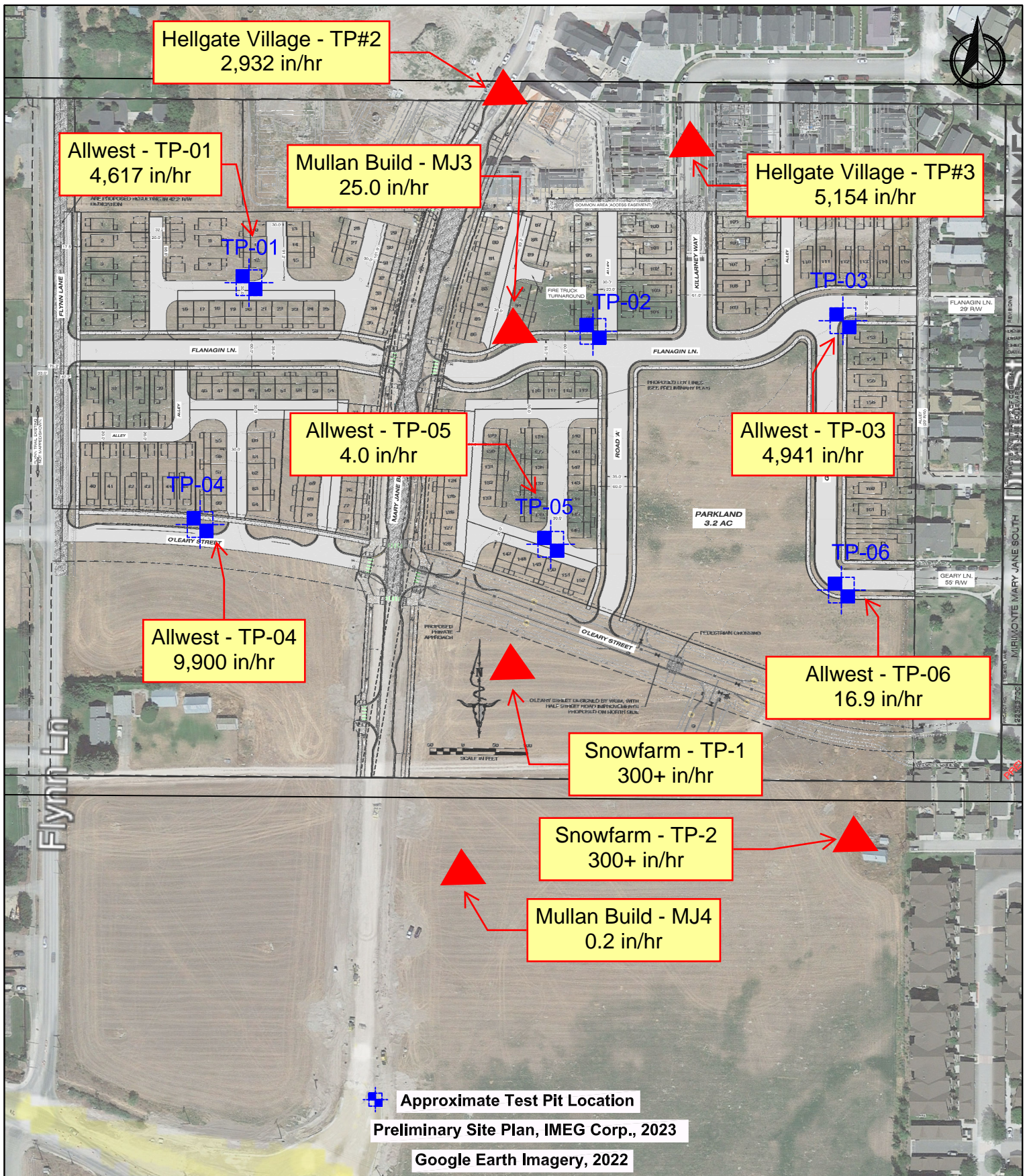
IMEG Corp.



Cory Davis, P.E.

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**FIGURE A-2: TEST PIT LOCATION MAP**

PROJECT:	723-010G - Miramonte Mary Jane South
LOCATION:	Missoula, Montana
CLIENT NAME:	IMEG Corp.
DATE:	April 2023



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