



April 13, 2020

City of Laramie
City Manager's Office
P.O. Box C
Laramie, Wyoming 82073

Attn.: Mr. Darren Parkin
Water Resources Manager

Re: Site Specific Investigation
Z Homes and Properties Subdivision
(Little Valley Condos)
Addendum #1 Technical Review

Dear Mr. Parkin:

This letter serves to present the findings of our technical review of Addendum #1 to the site-specific investigation (SSI) prepared by Trihydro Corporation and presented to the City of Laramie for the proposed Z Homes and Properties Subdivision located within the Casper Aquifer Protection Area formerly called Little Valley Subdivision and now referred to as Little Valley Condos. Our review comments will be presented to address the adequacy of this Addendum #1 to site specific investigation in fulfilling the requirements of the City of Laramie's Unified Development Code, subsection 15.08.040.A.8.

Addendum #1 prepared by Trihydro Corporation makes reference to: 1) their original site-specific investigation (SSI) report submitted to the City on March 7, 2019; 2) the independent review report prepared by Engineering Associates (EA) dated April 30, 2019; and 3) the response to EA's comments by Trihydro in a letter dated May 21, 2019 as the majority of technical information provided in this SSI addendum. The letter addendum submitted and reviewed addressed the following issues:

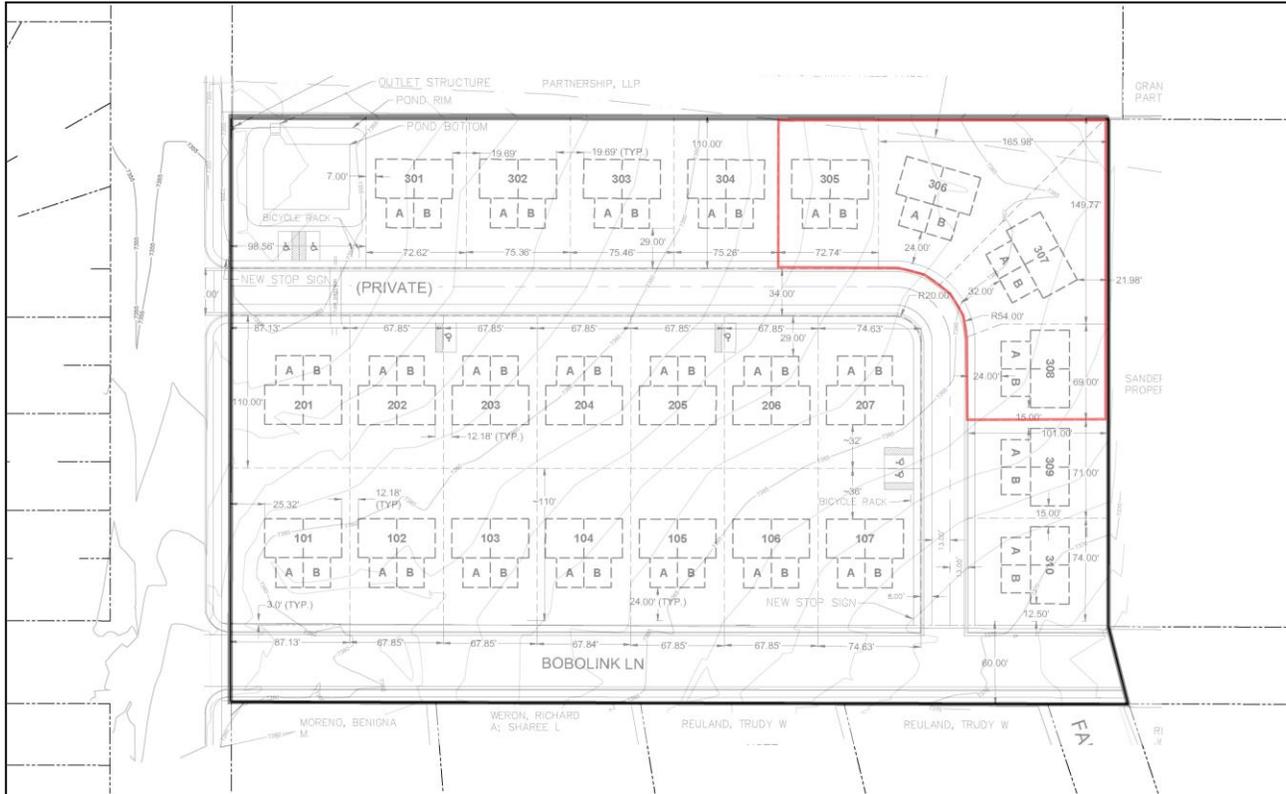
- 1) Updated lot layout details;
- 2) Updated road alignment; and
- 3) Updated site drainage information.

As described in the technical documents cited by Trihydro in support of this Addendum #1, stormwater runoff from the proposed development crossing the Sherman Hills Fault area has the most potential for impacting the Casper Aquifer. Trihydro's approach, which EA was in agreement with in their original SSI technical review, was to implement engineering controls to control/regulate/treat the stormwater runoff prior to the Sherman Hills Fault area as being the most practical approach to minimizing the impact to the aquifer.

The items addressed in Addendum #1 do somewhat address the concerns associated with the stormwater runoff originating in the subdivision crossing the Sherman Hills Fault area. The



new lot layout will include approximately four (4) single-family homes. Based on the Addendum letter's reference to these homes being located in the area identified as "future development" on the preliminary plat, these single-family homes would be located on the four lots outlined in red in the figure below.



Implementing the single-family homes/lots into the subdivision will eliminate some of the stormwater runoff generated within the subdivision because single-family lots tend to have less paved and roofed surfaces and therefore, more of the precipitation is able to percolate into the soils rather than running overland. Additionally, the smaller paved area will result in less volume of leaked oil/gas on the paved surfaces to be carried off the subdivision site by the stormwater runoff.

The updated road alignment (extension of Warbler Lane to connect with Bobolink Lane) will provide a more controlled collection of the stormwater runoff from the lots to the east of Warbler Lane. This runoff will be collected in the curb and gutters associated with Warbler Lane and conveyed to the proposed detention pond to be located in the northwest area of the subdivision.

The addendum also noted an update to the site drainage. There was no corresponding figure presented with Addendum #1 to the SSI report for review to evaluate these stated drainage improvements. The addendum does discuss an increase in the size of the detention pond.



However, in EA’s original technical review document it stated in Section 15.08.040.A.8(d)(x) “*The proposed site grading plan also does not totally agree with Trihydro’s description of the runoff collection. The lots on the north side of the proposed Warbler Lane will flow to the northwest and will not intercept the curb and gutters in Warbler Lane to be then directed to the described control conduit across the Sherman Hills Fault area. Containment and redirection of the stormwater flow on the north side of the proposed development is the most critical since this area is the closest to the vulnerable feature - Sherman Hills Fault.*” In Trihydro’s response to EA’s comments they offered the following: “*Z Homes intends to convey stormwater across the Sherman Hills Fault via 12-inch diameter piping. Additionally, as indicated above, the grading revisions will be addressed in the design report to accompany the final plat.*”

The 12-inch culvert to convey the stormwater collected in the detention pond across the Sherman Hills Fault area is discussed in Addendum #1, however, there is no indication that stormwater runoff control at the northern boundary of the subdivision has been addressed. The volume that could potentially exit the subdivision across the northern boundary is limited, however, the point of this discussion was to address the lack of information presented in Addendum #1 with respect to any upgrades to the site drainage.

The final item described in Addendum #1 to address the stormwater conveyance across the Sherman Hills Fault area was the proposed 12-inch CMP culvert that would be approximately 287 feet in length. This stormwater pipe would extend from the detention pond, across the vulnerable fault area and then be conveyed via open trenches to culverts under Vista Drive. The proposed diameter is adequate to convey the discharge rate discussed in Trihydro’s response to EA’s comments letter dated May 21, 2019 of 0.7 cfs. The length of the proposed culvert is adequate to convey the stormwater across the fault area. The use of a fused plastic corrugated pipe might be evaluated as an alternative to the CMP to provide a more dependable water-tight seal at the pipe joints.

Respectfully submitted,
Engineering Associates

John Wetstein

