

soils geo V_1.pdf Markup Summary 12-15-2020

dspdparsons (3)



Subject: Text Box
Page Label: 1
Author: dsdparsons
Date: 12/11/2020 1:18:09 PM
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Colorado Geological SurveyRMG identifies hydrocompactive soils (collapsible soils), steep slopes, erosion, seismicity, and radon and geologic hazards impacting the site. They have provided mitigation for each of these hazards that should be followed. However, no discussion is provided for sulfate attack on concrete (corrosion) and the provided laboratory testing has not evaluated soil density. Extent of collapse potential (hydrocompaction) is assessed in part by depositional environment of the material, and in part on measured water content and density of the soils along with consolidation tests. Where collapsible soils may occur has not been evaluated at this time. Both the alluvium and eolian deposits at the site are susceptible to collapse (hydrocompaction).

CGS agrees with RMG that site-specific soils and foundations investigations should be conducted for individual structures. The site-specific investigations are required to develop foundation recommendations based on the engineering properties of soils and/or bedrock on-site. Exploratory borings are needed to determine depth to bedrock, groundwater and to collect samples for laboratory testing. We recommend laboratory testing include tests for density, for sulfates (corrosion to concrete) and consolidation testing. These are needed to help assess collapse potential, and extent of corrosion to concrete. Water induced collapse can occur at depth below foundations and CGS recommends collapse potential be evaluated within the full zone of influence of the foundation as determined by the engineer at the time of site-specific soils and foundation investigations. RMG recommends surface and

RESPONSE: No basements or below grade storage or otherwise habitable basements will be permitted within the subdivision.

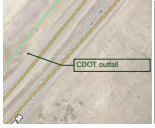
subsurface drainage systems be considered. They also recommend exterior, perimeter foundation drains be installed around below-grade habitable or storage spaces. It would be prudent for the county to require foundation drains for all habitable or useable (storage) below grade as recommended by RMG. These types of drains require

in maximum stress, increasing gray stain, moisture, or
equity. However, occasional features are present near the
features indicating settlement or subsidence such as the
to were not observed on the study site or surrounding
to masses in bedrock and surficial deposits were not observed
to this property; is that a
constraint to be avoided
to be avoided
fairly level with a gentle slope from northeast to south
the top bedrock, professional site, this study, (water)
to and are not anticipated to affect foundation construction.

AL RESOURCES

Subject: Callout
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Author: dsdparsons
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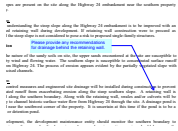
there is CDOT drainage outfall to this property; is that a constraint to be avoided



Subject: Callout
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Author: dsdparsons
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CDOT outfall

Daniel Torres (1)



Subject: Callout
Page Label: 11
Author: Daniel Torres
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Please provide any recommendations for drainage behind the retaining wall.

RESPONSE: The retaining wall will be designed with an industry standard integral drainage system behind the wall. The drainage system will likely include a network of perforated drain pipes embedded in a geotextile fabric in the aggregate backfill behind the wall with outfalls through the wall at regular intervals, in addition to a concrete valley gutter at finished grade at the top back of wall to convey large rain events around the wall to swales and the detention pond.