619613 Saskatchewan Ltd.
Alvin Reinhard Fritz Architect Inc.
Charles Vanden Broek

Subdivision Land Assessment

7 Ave SW, Moose Jaw, SK

Plan 101220152 Ext 8

Parcel 164077106

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ARCHITECT
INC.

CITY OF
MOOSE JAW
SASKATCHEWAN

Site Assessment of the Proposed Property Development

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Moose Jaw... A Great Place to Call Home

2018 MOOSE JAW HOUSING STARTS For the period January 1 to June 30, 2018 the City issued 11 permits for new dwellings, valued at $3,354,900 compared to 24 permits issued for the same period in the prior year valued at $3,210,140. In 2016 Moose Jaw recorded 53 building permits for new dwellings valued at $20,503,339 compared to 53 permits in 2015, valued at $16,773,000. Construction of multi-family condo units remained slow in 2016, 2017 & 2018 as the high inventory of new and resale condos cooled the pace of new projects, especially multi-family units. The record for dwellings starts was set during 2012 with 132 starts valued at $37.4M.

According to CMHC's Market Outlook Report for the Prairie Region, economic conditions have remained weak, as the low commodity environment continued to negatively affect economic activity and consequently, labour market conditions. As a result, builders have lowered new production focusing instead on inventory reduction, especially multi-family units. Housing starts are forecasted to stabilize in 2018 as inventory reduction holds back growth. By 2019, reduced inventories, stronger economic and employment growth will increase housing starts. In Saskatchewan total housing starts are projected to increase to 4,600 to 5,200 units in 2017 and 4,900 to 5,500 in 2018, compared to the 5,000 units built in 2016 and 5149 units in 2015.

Housing starts are regarded as an indicator of a region's economic vitality. CMHC says in Saskatchewan there is "moderate" evidence of overbuilding and "strong" evidence of overvaluation in some markets. The scaling back of construction has helped reduce housing inventory going into 2018, but even so the trend of more homes for sale than buyers is likely to continue well into 2018.

For the same reasons, the number of resale transaction in Saskatchewan is also down but improving economic conditions should gradually lift the number of MLS sales. In Saskatchewan, resales are projected to stabilize in 2017 to a range of 11,600 to 11,900 transactions, compared to 11,500 - 11,700 MLS sales in 2016 and 12,245 sales in 2015.

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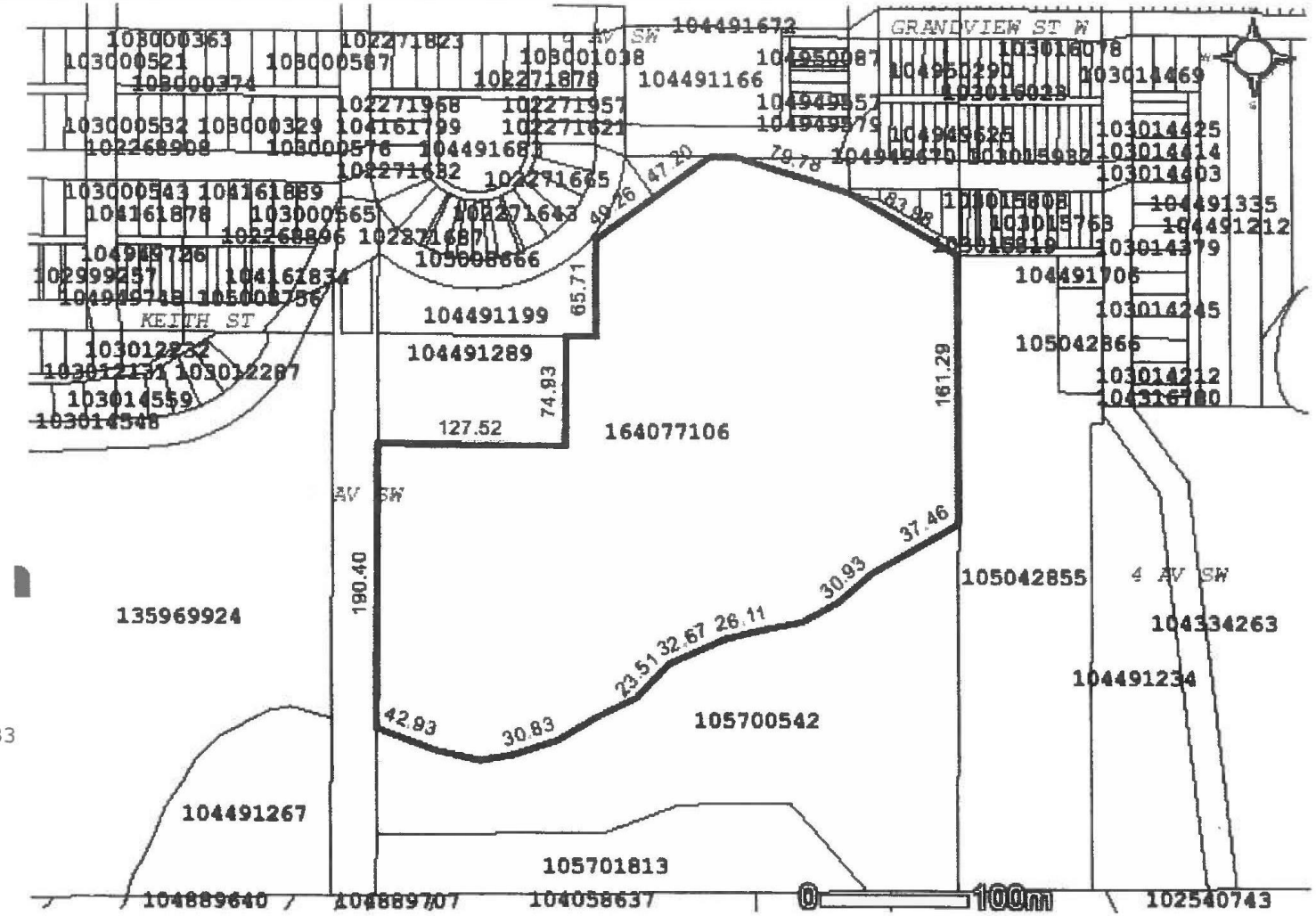
Moose Jaw Housing Market - 2018

Information Services Corporation

Surface Parcel Number: 164077106
LLD: (Parcel: H)Plan 101220152 Ext 8
Parcel Class Code: Parcel (Generic)
Area: 10.391 hectares (25.68 acres)
Request Date: 29-Jul-2014 12:56:14 o'clock PM CST



DISCLAIMER: THIS IS NOT A PLAN OF SURVEY. It is a consolidation of plans to assist in identifying the location, size and shape of a parcel in relation to other parcels Parcel boundaries and area may have been adjusted to fit with adjacent parcels. To determine actual boundaries dimensions or area of any parcel, refer to the plan, or consult a surveyor.

Related Information

Parcel	Land Description
103000318	Lot 15-Blk/Par 229 Plan EX222 Ext 0
104161834	Lot 10-Blk/Par 244 Plan EX222 Ext 0
103000420	Lot 9-Blk/Par 229 Plan EX222 Ext 0
102271968	Lot 27-Blk/Par 230 Plan EX222 Ext 0
105008723	Lot 28-Blk/Par 230 Plan 101113524 Ext 33
105701813	(Parcel: G)Plan 101113568 Ext 62
104949669	Lot 38-Blk/Par 232 Plan O4753 Ext 56
104949658	Lot 37-Blk/Par 232 Plan O4753 Ext 55
105700542	(Parcel: G)Plan EX1556A Ext 55

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FROM 7 AVE SW

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FROM 7 AVE SW

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FROM 7 AVE SW
ALVIN REINHARD FRITZ
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FROM 4 AVE SW

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FROM KEITH CRESCENT

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Only 1km from Riverview Secondary School
and Empire Primary School

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Only 1km from Riverview Secondary School
and Empire Primary School

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2 Km's from groceries, Tim Horton's,
and the local bakery

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2 Km's from groceries, Tim Horton's,
and the local bakery

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WATER FEATURES

Paddling the Moose Jaw River

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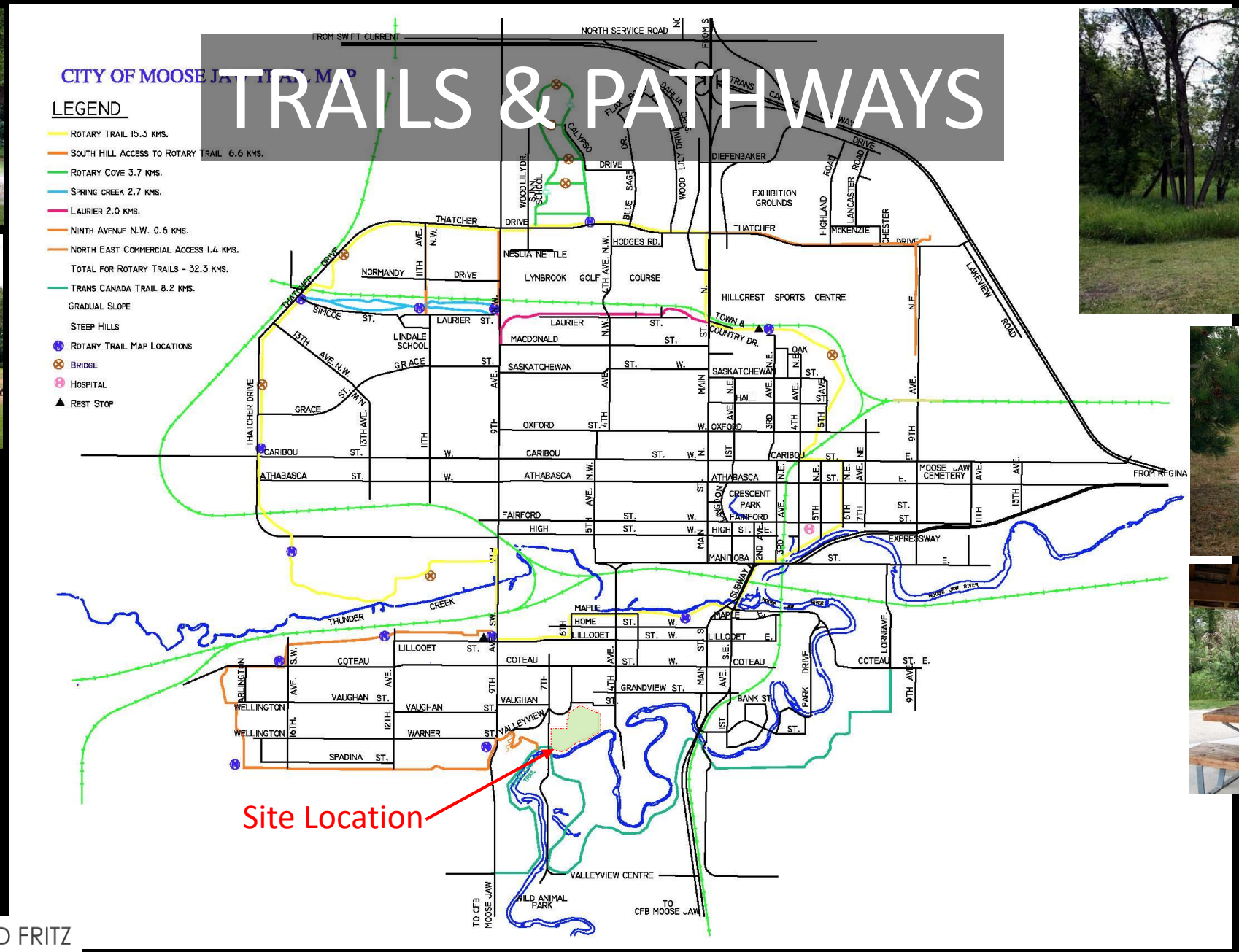
Ice Fishing, skating, hockey, are all readily available in Moose Jaw on the River

TRAILS & PATHWAYS



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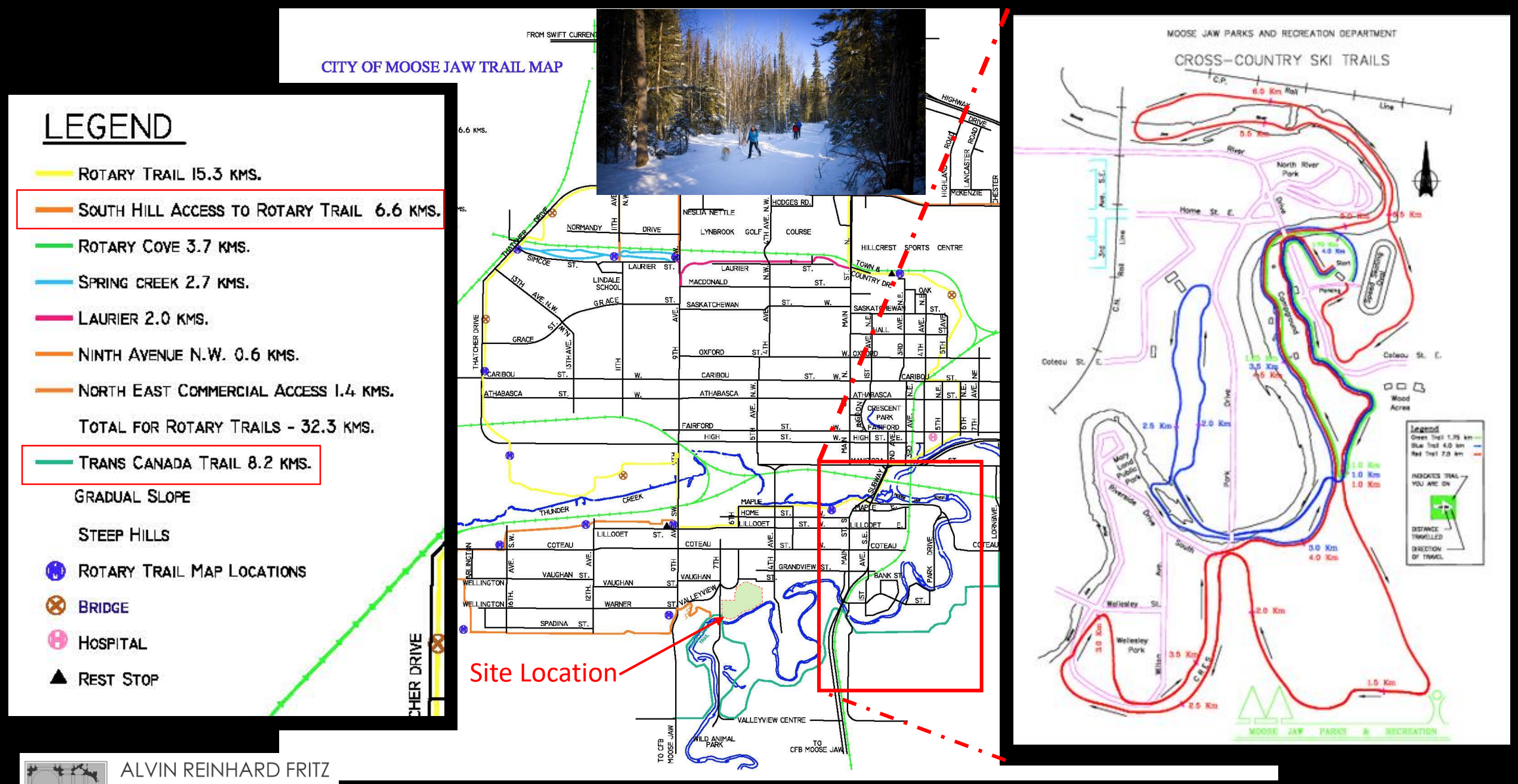
Walking and biking trails are nearby and could expand onto this site



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Cross Country Ski trails are nearby and could connect

PARKS & PLAY AREAS

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PROPOSED SITE DEVELOPMENT

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Archaeological Site
- Protected
Utility Right of Way
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Tree area to keep on the site
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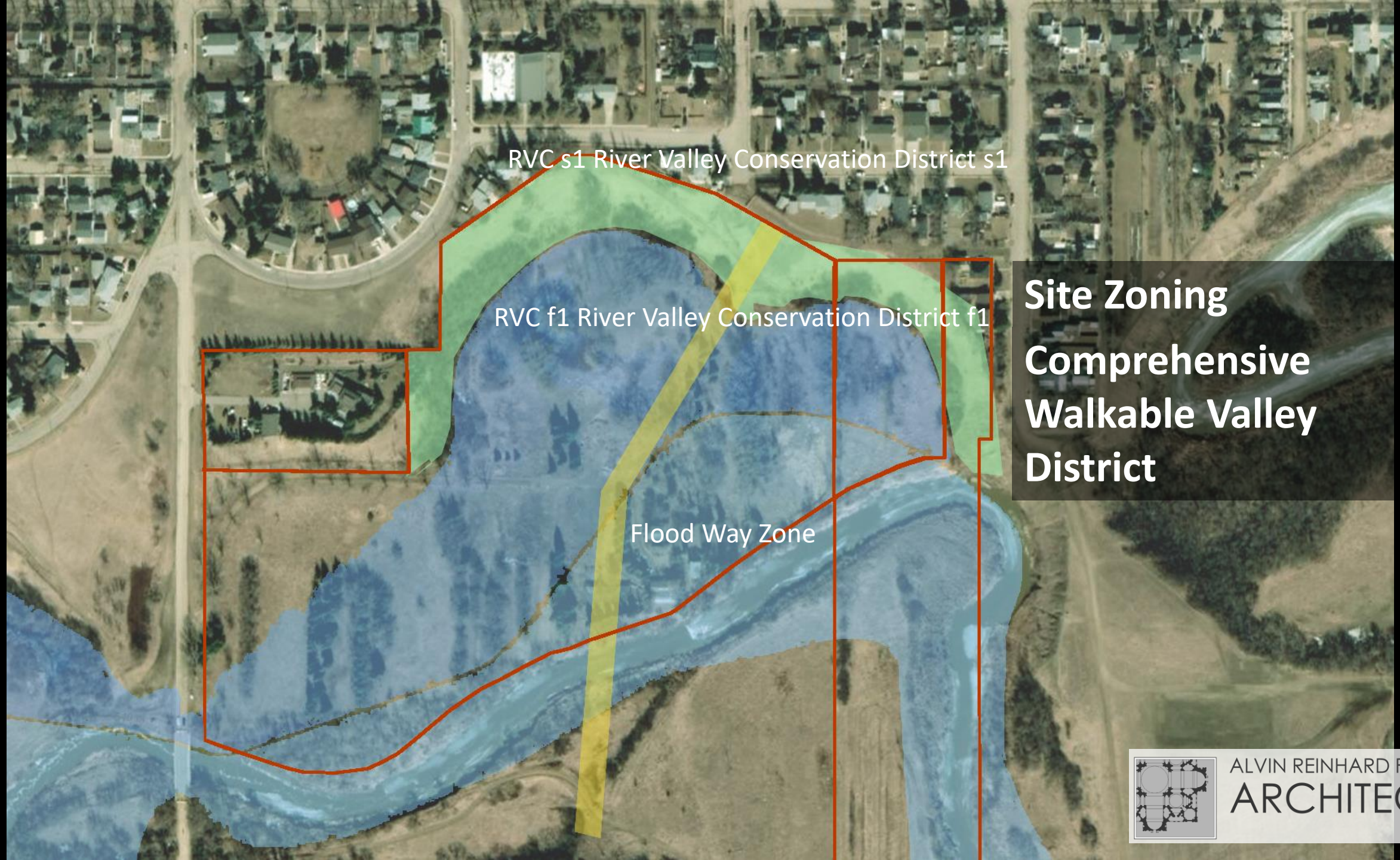

Site Zoning

Comprehensive Walkable Valley District

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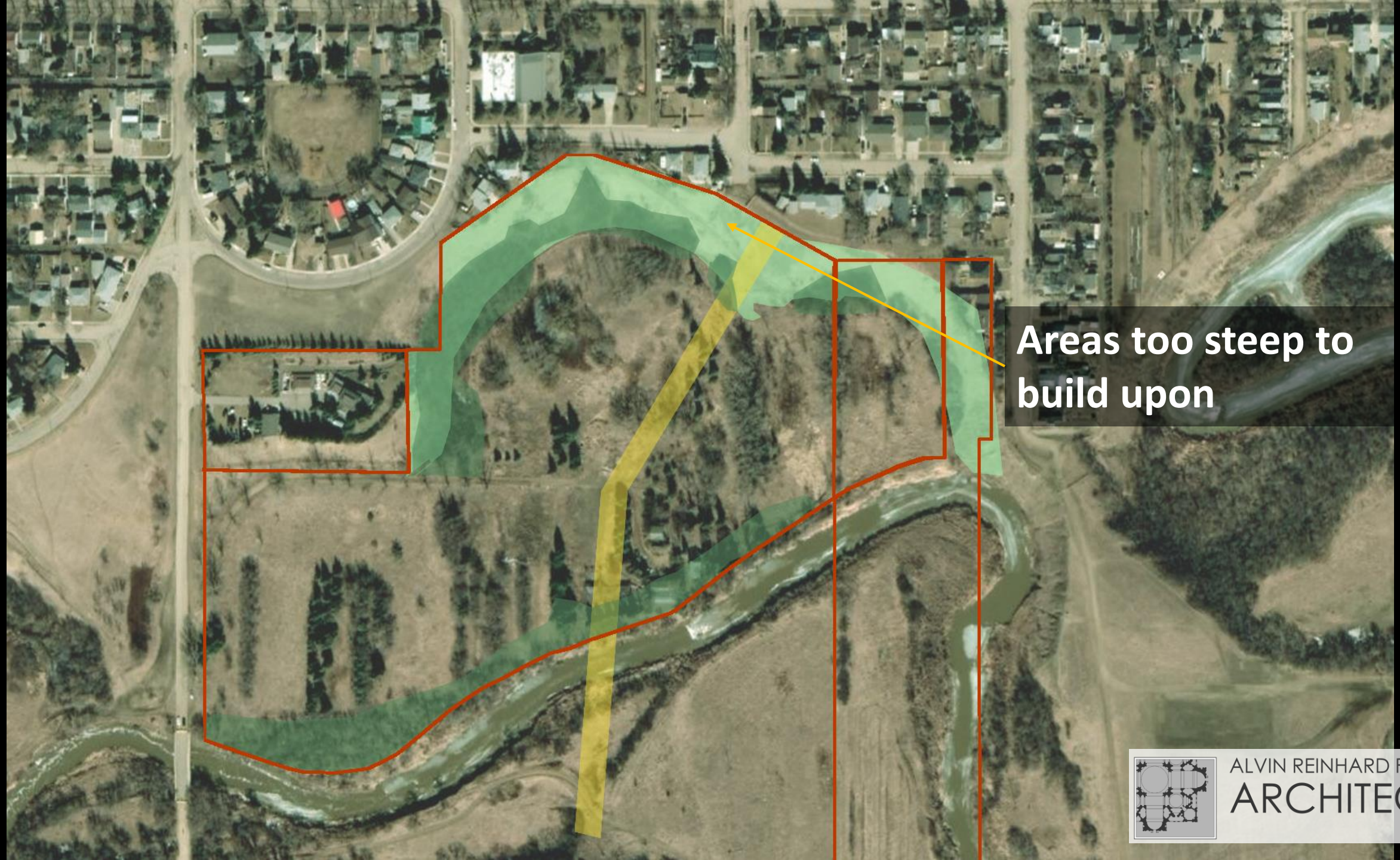
Areas too steep to build upon
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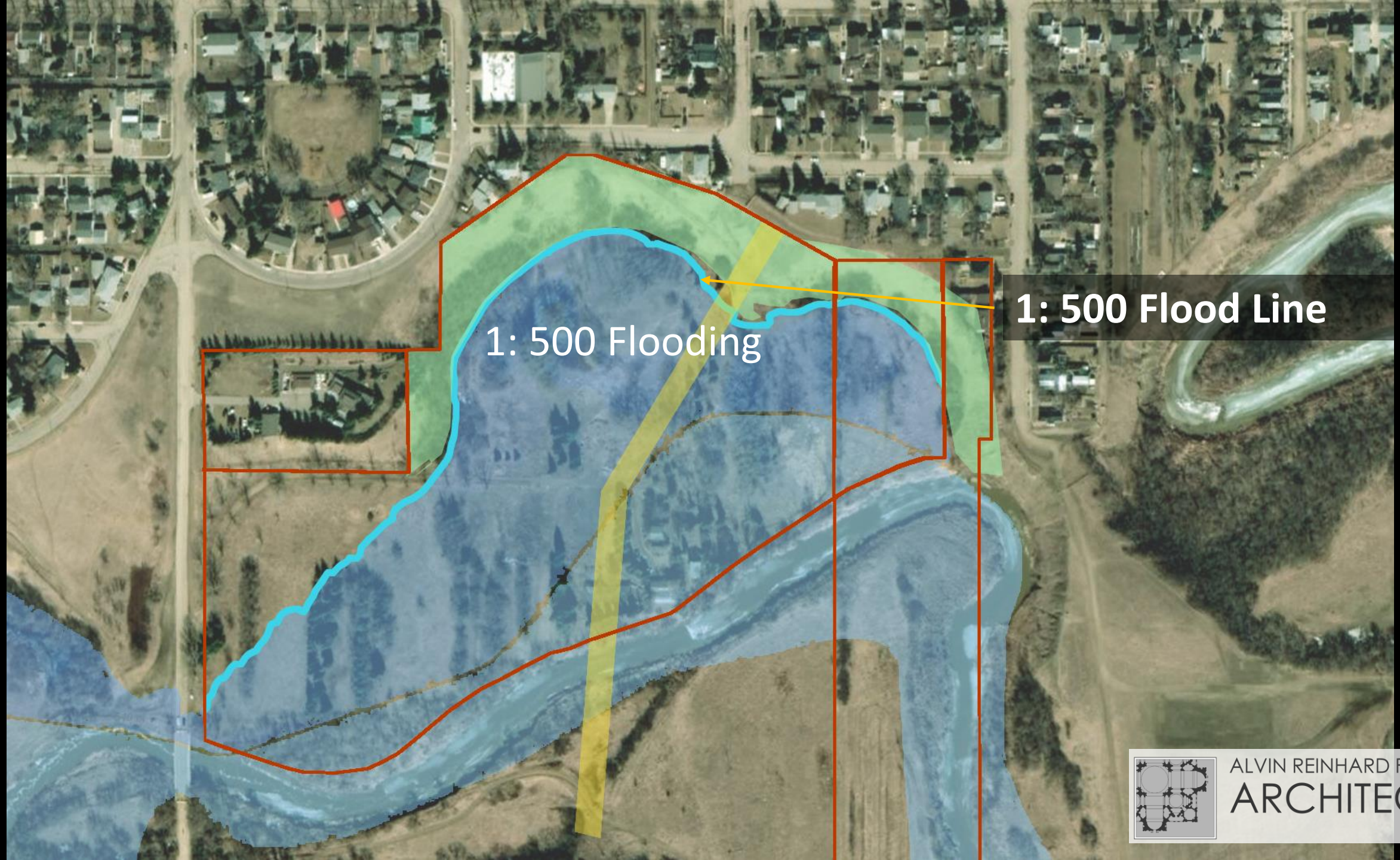
1: 500 Flood Line
1: 500 Flooding
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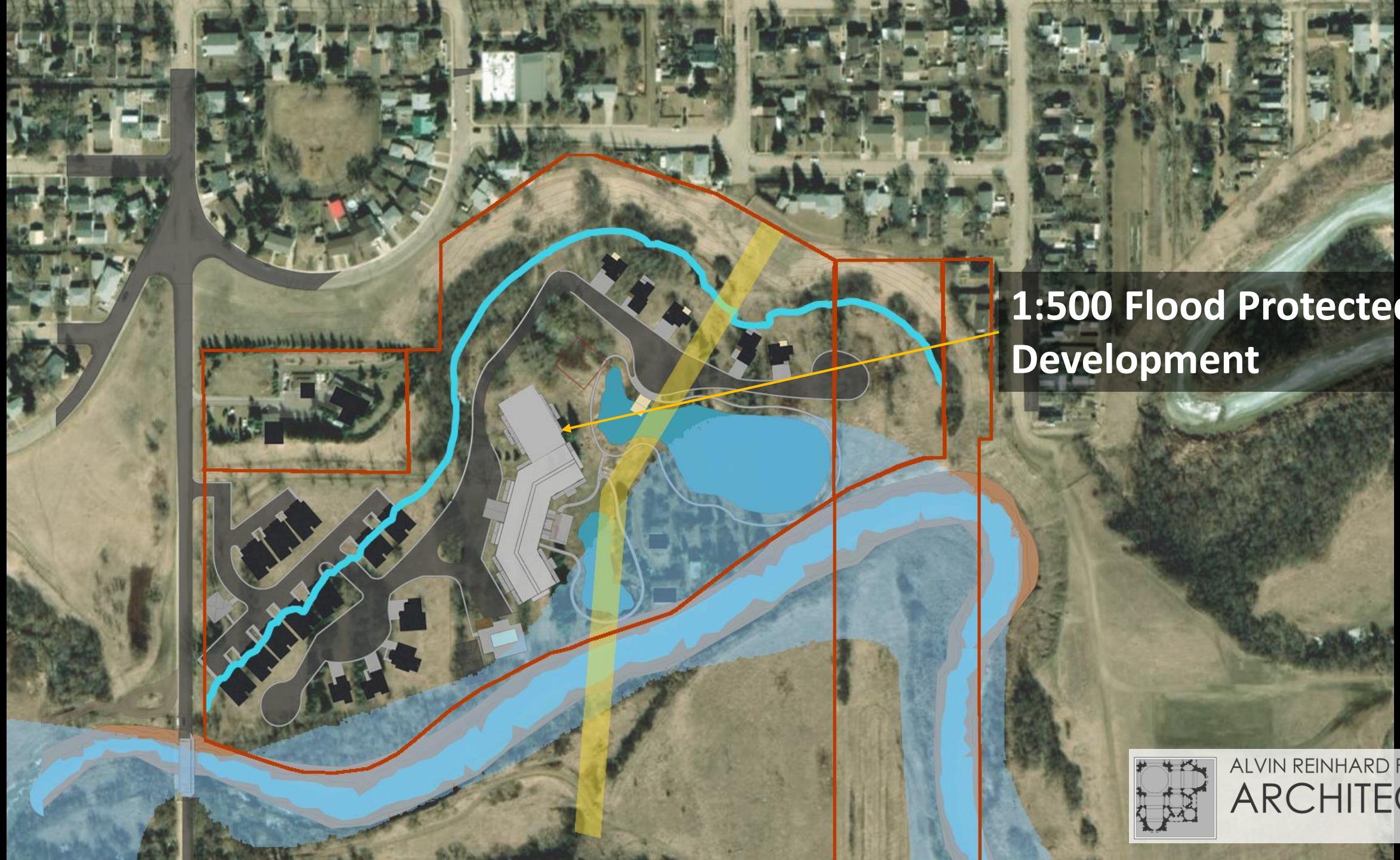
1:500 Flood Protected Development
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Apartment Building Development
Mid-sized Lot Development
Duplex Development
Water Feature
Park and Amenity
Water Feature
Large Lot Development
Proposed River Development to augment walkable valley of Moose Jaw & provide wildlife area
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PROPOSED SITE DEVELOPMENT

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Required Deliverables

- Environmental Study including Flood Plain criteria
- Geotechnical Study with a focus on Slope Stability
- Marketing Study (Optional – By Owner)
- Area Structure Plan (Jurisdictional Requirement & Architect)
- City Council Directed Design Decisions (Jurisdictional) (Direct Control Zoning)
- Subdivision Plans (Architect)
- Architectural Designs (Architect)
- Development Permit (Architect)

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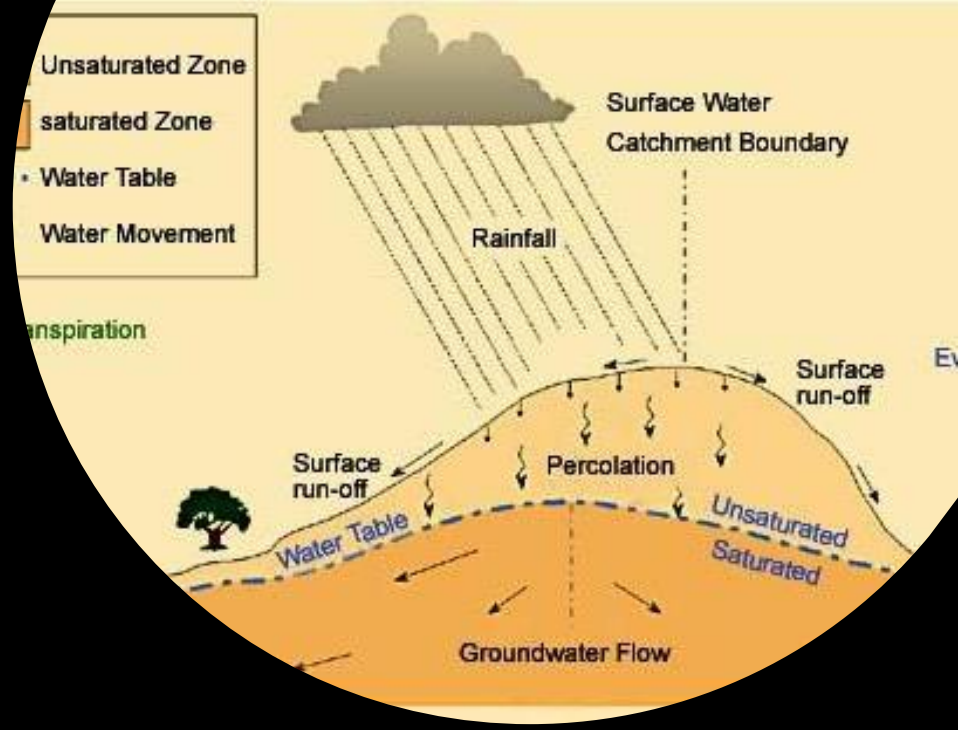
Moose Jaw
SURPRISINGLY UNEXPECTED

Westhoff
Engineering
Resources, Inc.
Land & Water Resources Management Consultants

- **Biophysical Assessments**
  - Biophysical assessment assesses biological and physical elements for the purposes of reducing the potential impacts of a proposed development on the natural environment.

Westhoff
Engineering
Resources, Inc.
Land & Water Resources Management Consultants



- **Hydrological Assessment**
  - Hydrology is the study of the processes of the water cycle such as evaporation, evapotranspiration, rainfall, runoff, infiltration and storage of water.
  - In engineering, a hydrological assessment is carried out to quantify the flow or volume of water in a river or stream, over land, in soils, in a pond or in a reservoir. This is used to assess the pluvial, fluvial or groundwater flood risk to a site or to evaluate the capacity of a soakaway, storage pond, reservoir or culvert.

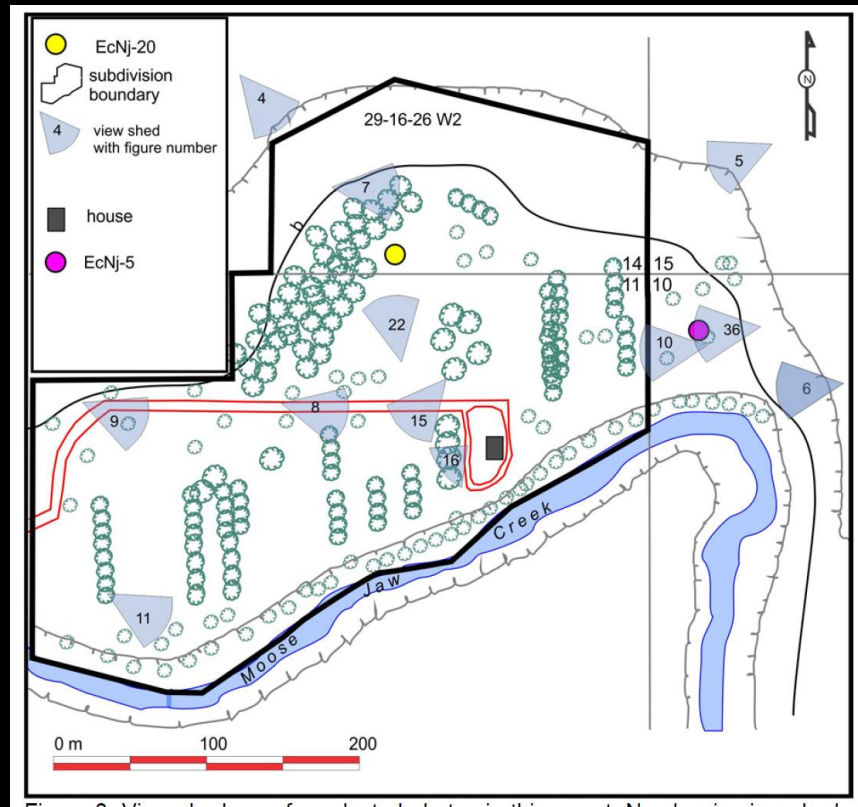
- **Geotechnical Investigations**
  - Are performed by geotechnical engineers or engineering geologists to obtain information on the physical properties of soil earthworks and foundations for proposed structures and for repair of distress to earthworks and structures caused by subsurface conditions.
  - This type of investigation is called a site investigation. Additionally, geotechnical investigations are also used to measure the thermal resistivity of soils or backfill materials required for underground transmission lines, oil and gas pipelines, radioactive waste disposal, and solar thermal storage facilities. A geotechnical investigation will include surface exploration and subsurface exploration of a site.

- **Environment Site Assessment**
  - ESA will help identify the existence and scope of soil or groundwater contamination (e.g., from petroleum, heavy metals, pesticides or herbicides), as well as the presence in buildings of products such as asbestos, lead paint or mould.
  - It is a critical aspect of due diligence when assessing a site, it ensures the site is a known entity and that unexpected costs of clean up or reclamation are mitigated.

- **Traffic Impact Assessment**
  - The purpose of a **Traffic Impact Assessment** (TIA) is to **assess** the **impacts** of a development on the **transport** network and identify reasonable solutions to address these **impacts**. ... If a development abuts an arterial road, these movements can disrupt through **traffic** resulting in reduced levels of safety and efficiency

Arrow Archaeology Limited

- **Archaeology Report – Heritage Resources Impact Assessment**
  - The HRIA is intended to locate, assess and report on heritage resources, determine any conflicts between the development and heritage resources that could be disturbed or impacted by the development and to provide recommendations for avoidance, mitigation and preservation of those resources.



Precedent – Watermark at Bearspaw, Calgary, AB

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Precedent Project to inform development for the Moose Jaw River Site

Precedent – Emerald Beach Villas, Lake Country, BC

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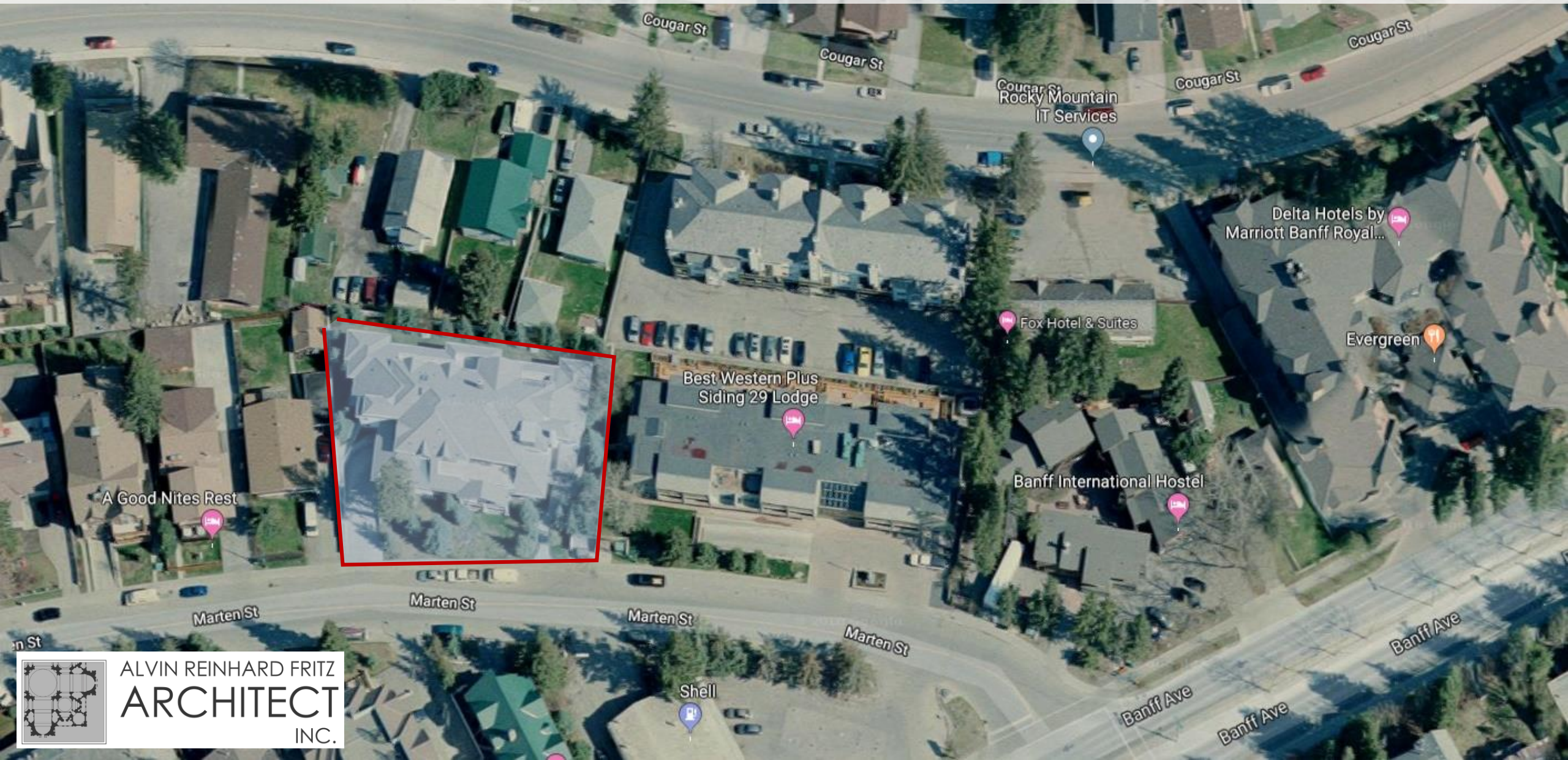
Precedent – Henderson Apartments, Banff, AB



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The Henderson Apartments located right beside the Siding 29 Lodge is in the 1:500 flood plain of the Bow River so we had to flood proof the UG Parking

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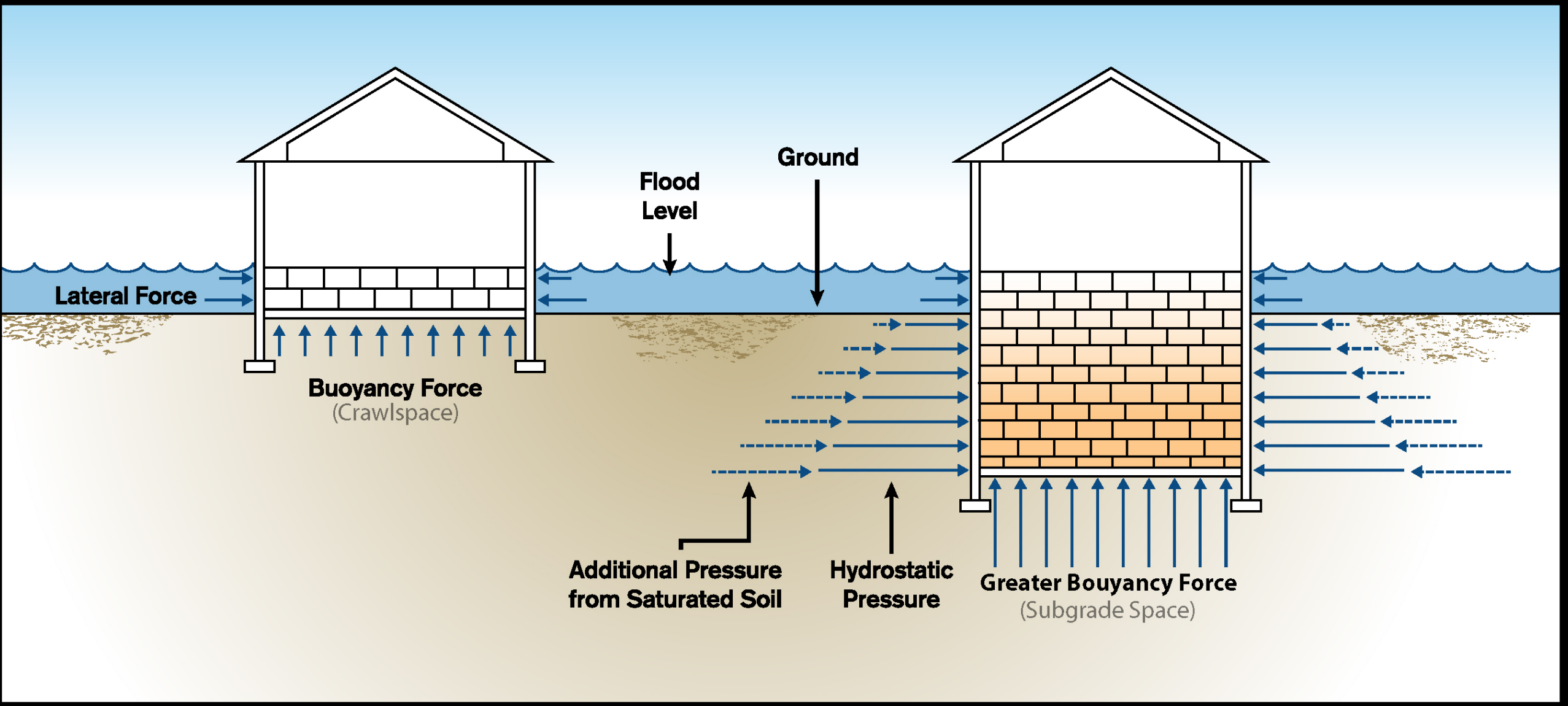
The Henderson Apartments showing the ramp to the underground parking. All mechanical equipment was kept to the main floor and the electrical penetrated the main slab only to serve the lights. The lower level was designed to flood.



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When Are Flood Vents Required?

The NFIP Regulations and Building Codes require that any residential building constructed in Flood Zone Type A have the lowest floor, including basements, elevated to or above the Base Flood Elevation (BFE).

Enclosed areas are permitted under elevated buildings provided that they meet certain use restrictions and construction requirements such as the installation of flood vents to allow for the automatic entry and exit of flood waters.

This wet floodproofing technique is required for residential buildings.

With commercial buildings, elevation and the use of wet floodproofing techniques is the suggested form of mitigation. This technique can be a more cost-effective solution, and reduces the impacts the building has on surrounding floodplain in comparison to dry floodproofing techniques.

Where Are Flood Vents Used?

In A Crawlspace Enclosure

In A Garage Door

Floodproofing

Protect your home against flooding

Canada-Newfoundland
Flood Damage Reduction Program

Environment Canada | Environnement Canada

Conservation and Protection | Conservation et Protection

Department of Environment and Lands

Water Resources Division

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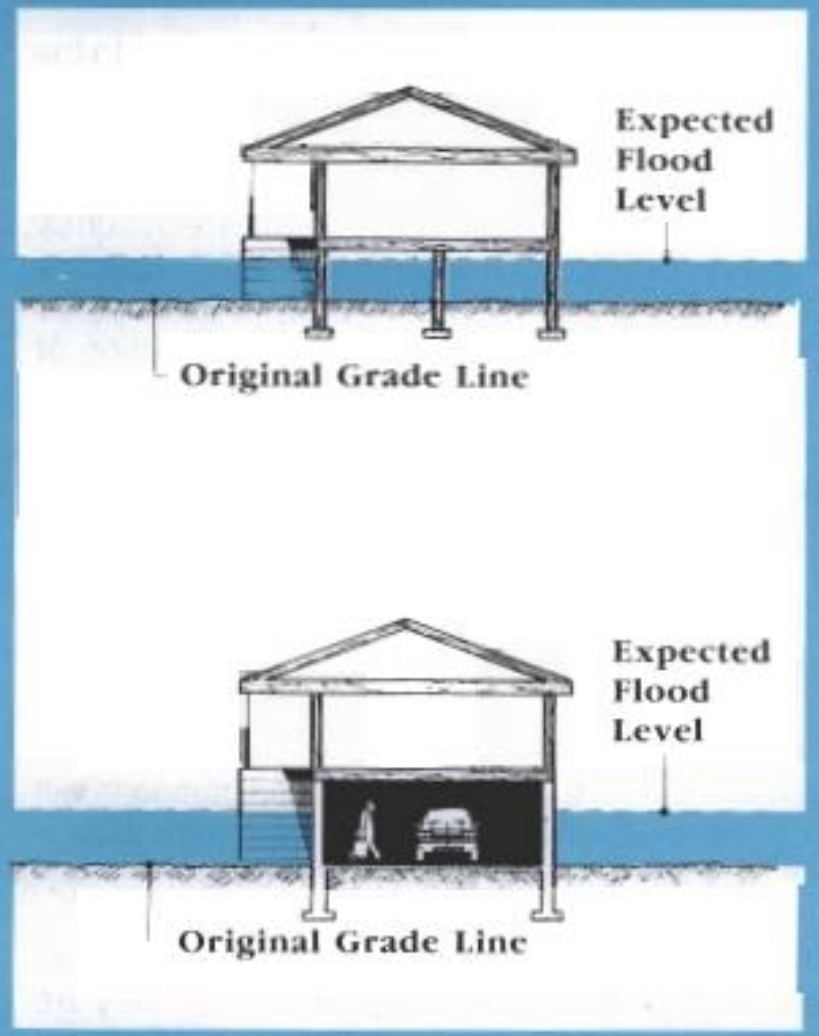
Elevation on Piers and Columns



During construction, buildings can be elevated on piers and columns as a method of floodproofing. The open area under the building can be used for other purposes, such as parking, outside of the flood season.

The elevation of a building on piers and columns is usually limited to new or small structures, since it is often too expensive for large or heavy buildings to be raised.

Engineering or architectural expertise should be obtained because the supporting piers and columns must also be designed to withstand the force of the floodwaters and the possible impact of ice and debris, as well as to support the structure. Care must also be taken to protect water and sewer lines from freezing.

Outside of the flood season, the open area under the building can be used for other purposes such as parking or as a sheltered play area.

In these circumstances, wet floodproofing (the deliberate flooding of a structure to balance the water pressure on the interior and exterior) may be necessary.

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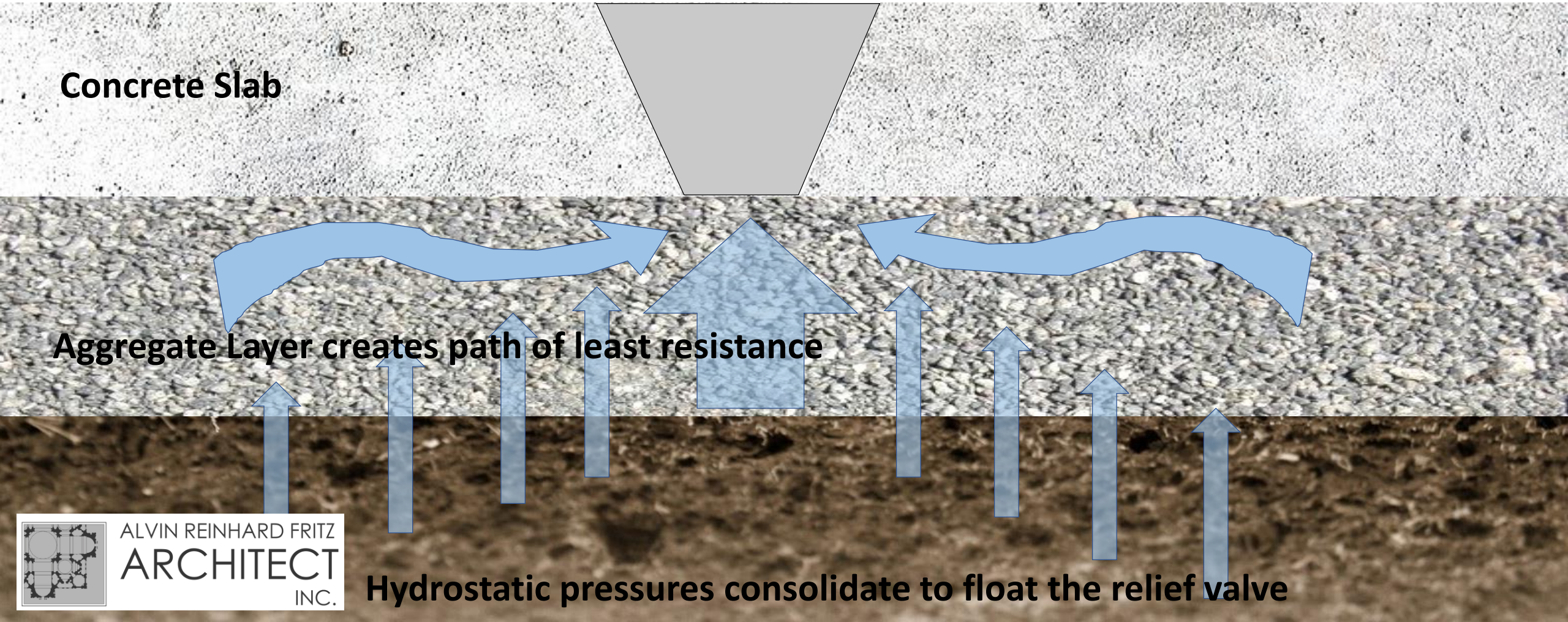
Hydrostatic Pressure Relief Valve



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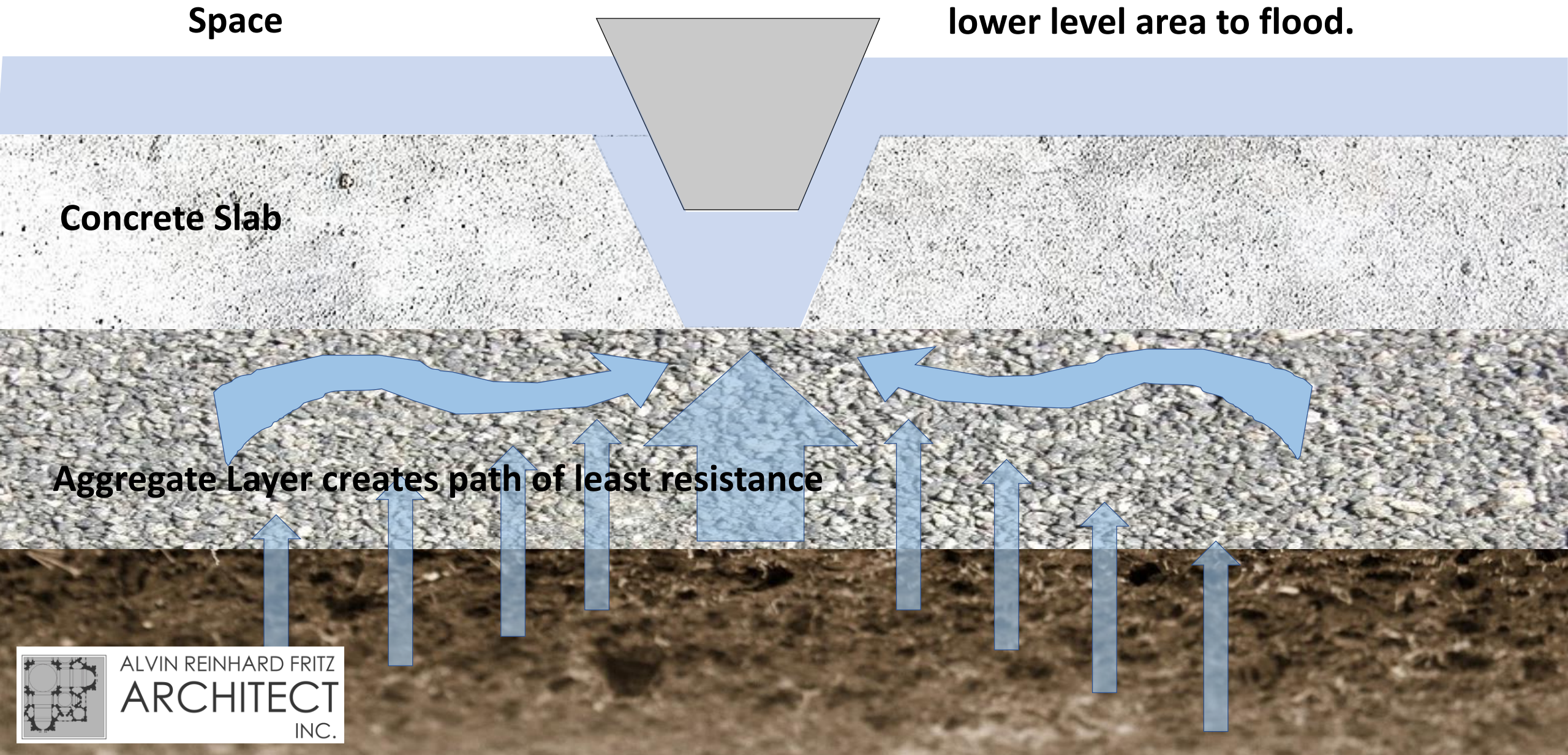
Hydrostatic Pressure Relief Valve

Concrete Valve floats into the space with the water pressure allowing lower level area to flood.



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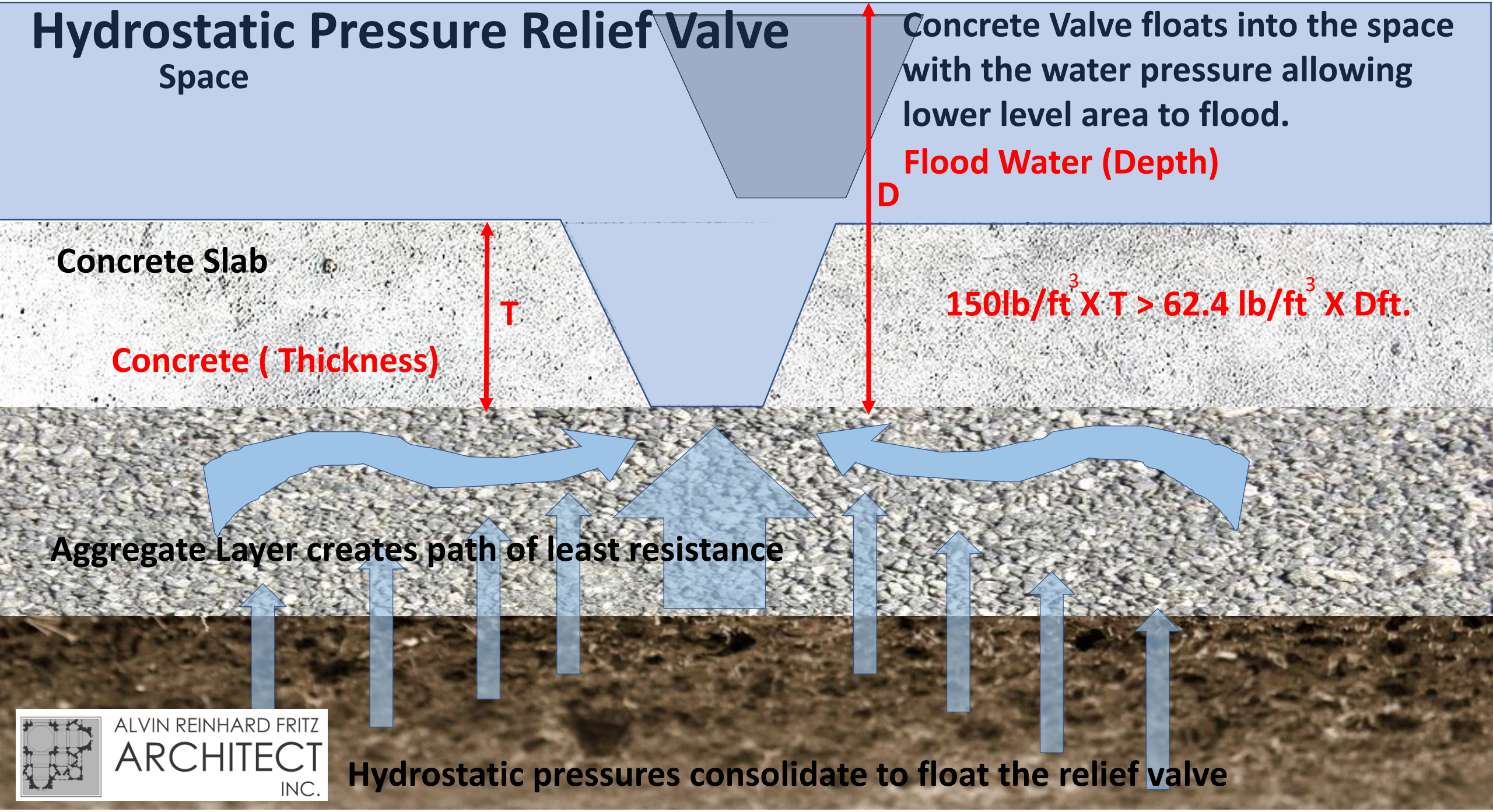
Hydrostatic Pressure Relief Valve



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Hydrostatic Pressure Relief Valve

Space

Concrete Valve floats into the space with the water pressure allowing lower level area to flood.

Flood Water (Depth)

D

Concrete Slab

T

Concrete (Thickness)

$150 lb/ft^3 X T > 62.4 lb/ft^3 X Dft.$

Aggregate Layer creates path of least resistance

The flooded basement equalizes pressure inside and outside of the foundation preventing structural damage due to the horizontal pressures from the flood water.

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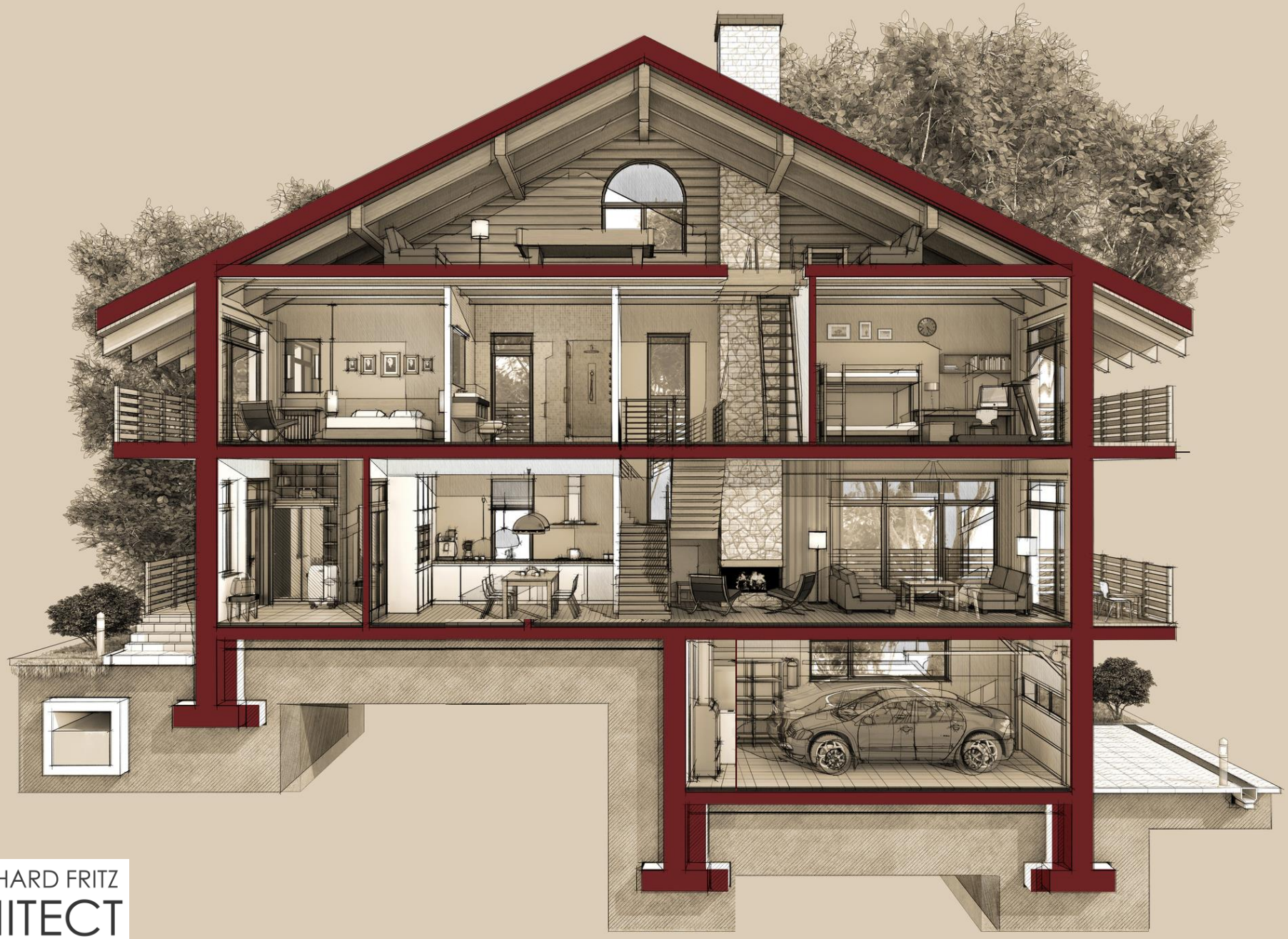

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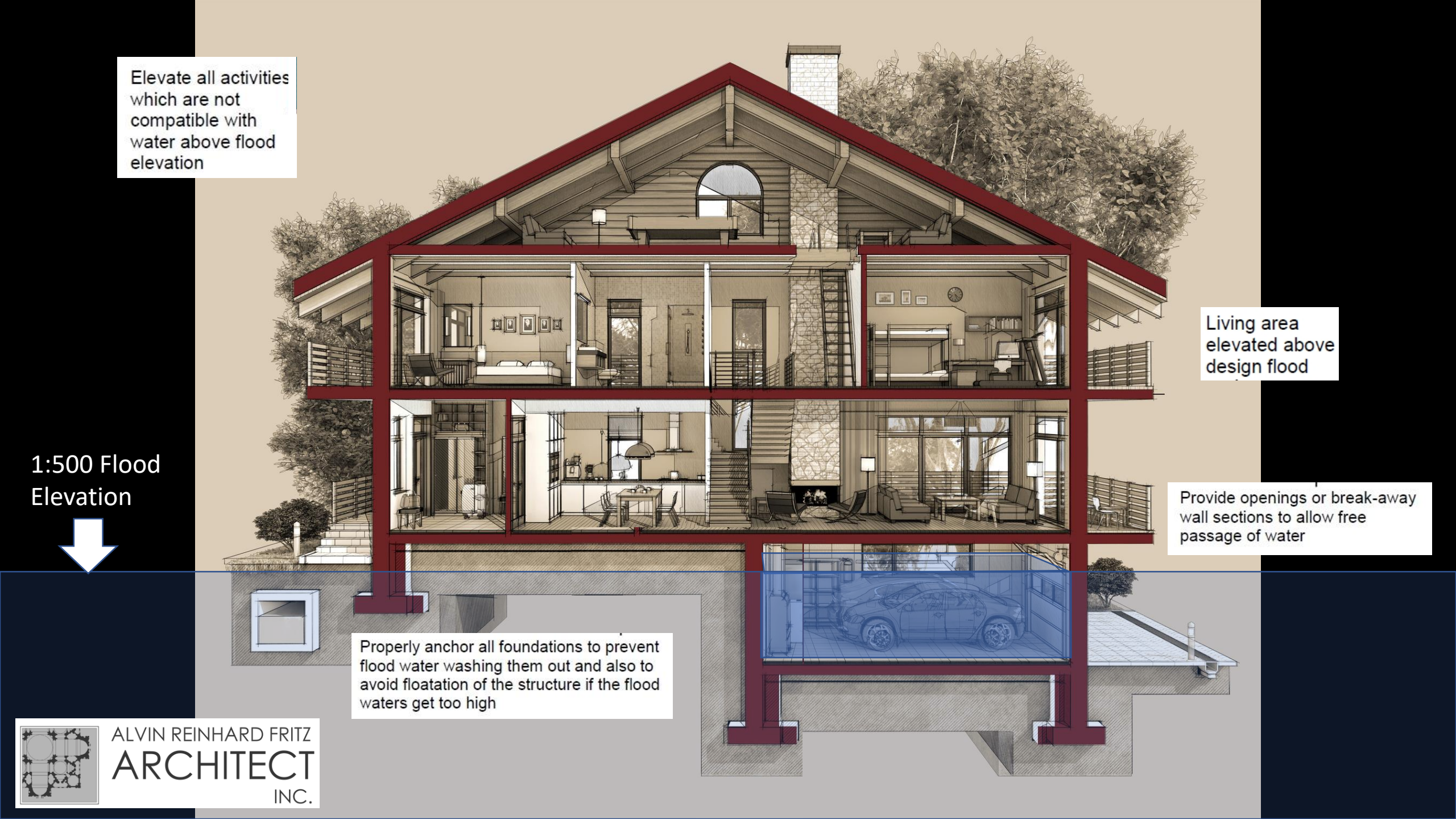
Elevate all activities which are not compatible with water above flood elevation
Living area elevated above design flood
1:500 Flood Elevation
Provide openings or break-away wall sections to allow free passage of water
Properly anchor all foundations to prevent flood water washing them out and also to avoid floatation of the structure if the flood waters get too high
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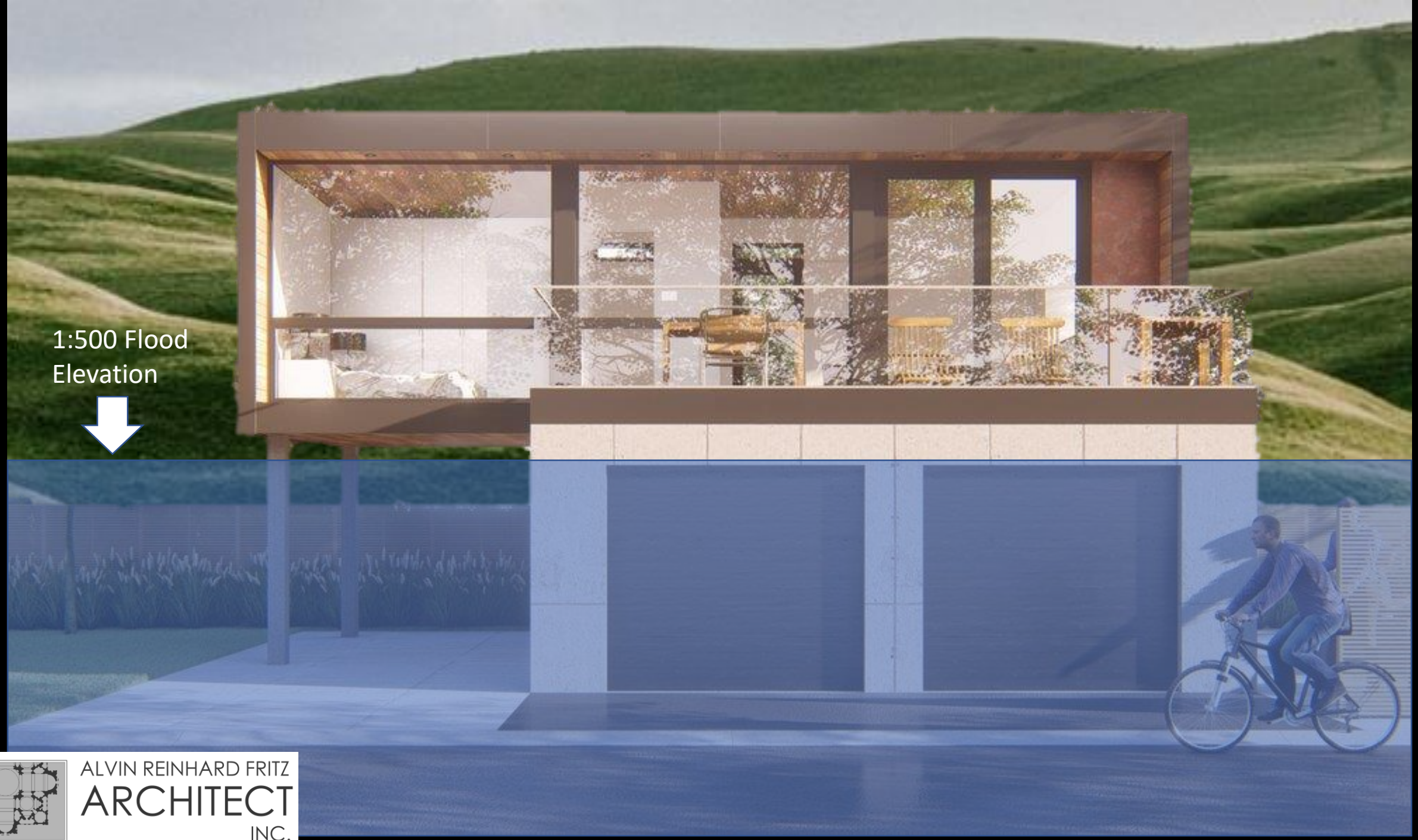

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PROPOSED SITE DEVELOPMENT

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