Appeal of Rejection of Site Plan Submittal without Geohazard Report/Waiver

506 Hawthorne Place

Single Family Residence

Appellant: Michael Lowery
Resident of Colorado Springs since 1974

Introduction

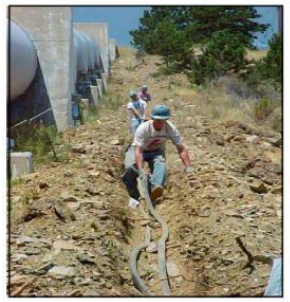
My Construction Projects
1995-2007

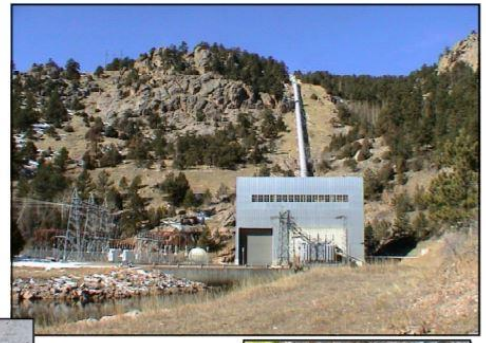
Project Highlight

ESS
Electronic Site Services

Build a 2200' Electrical Conduit down a 45degree slope,
meet all NEC, Electrical, Safety and Fire Prevention Standards.
Electrical Hookup, Remove Existing Power Poles, Transformers & Rigging.

Customer: U. S.Bureau of Reclamation Site: 9,000' mountain West of Loveland, CO





Pull Boxes
Every 300'

Epoxied Unistrut
Conduit Supports
in Solid Rock

Actual Slope of Project Site

Finished Buried Conduit
prior to Erosion Control

Experience Factors:
Site Survey, Design and Layout
Extreme Terrain Work , Buried & Above Ground
Electrical & Grounding
Intermixed PVC Coated GRC, GRC & HDPE
Demolition on Mountainous Terrain

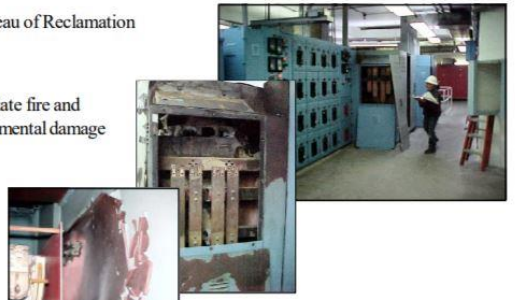
Project Highlight

ESS
Electronic Site Services

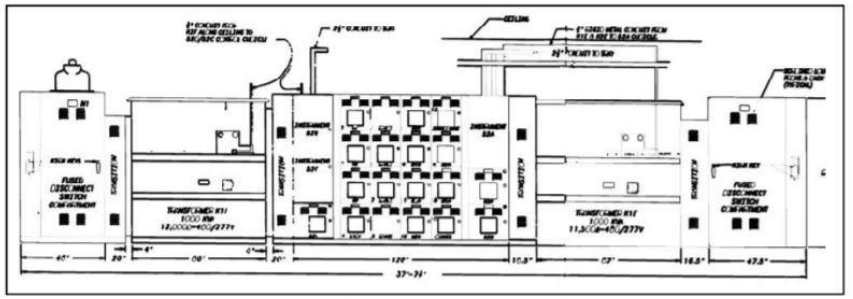
Remove and replace 2-15 KV fire damaged transformers and associated monitoring and switchgear at the Mount Elbert Power Plant near Buena Vista, Colorado.
Estimated completion June 2003.

Customer: U.S. Bureau of Reclamation

Remediate fire and
environmental damage



Rebuild High and
Low Voltage Bus
Systems



Rebuild Switchgear

Experience Factors:
Environmental Cleanup
Electrical Demo and Installation
Removing and Replacing Major Electrical
Power Plant Safety
Heavy Lift (9600 lbs)
HV & MV Electrical

Project Highlight

Site: Ledbetter, TX

ESS
Electronic Site Services

Build a 405 Mhz. Wind Profiler Radar for the Forecast Systems Laboratory, National Oceanic and Atmospheric Agency (NOAA).

Survey Work Area
Layout Site
Fill & Compact
Excavate 10 Piers

Concrete Testing

Underground Electrical,
Phone and Signal

Precision Anchor Bolt
Placement

Experience Factors:
Site Survey and Layout
Concrete Forms & Footing
Electrical
Ground Grid
Assembly & Align Radar Base
12' Grounded Fence

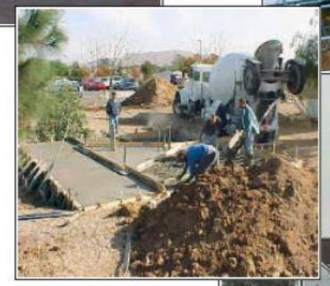
Ground System includes 1200' of 4/0 Copper cable,12 ground rods, exothermic connections tested to FAA specifications.

Project Highlight

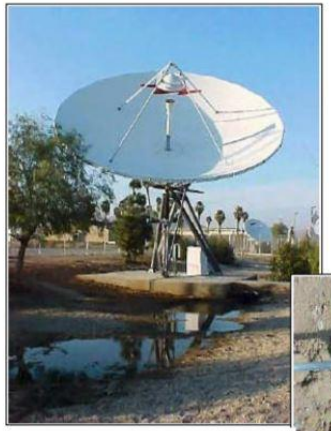
ESS
Electronic Site Services

9.3 Meter dish install at March Air Force Base, Riverside, California for the Armed Forces Radio & Television Service (AFRTS).

Anchoring pads



Experience Factors:
Site Layout
Construction
Electrical
Assembly & Align
3 Motor Drives
Install Electronics



Grounding - 9 ground rods with CadWeld connections

Electrical - Installed two conduit runs of 270' and electrical distribution system.

Project Highlight

ESS
Electronic Site Services

Design/build studio renovation of new digital-ready studio for International Broadcasting Bureau Radio Cuba in Miami, Florida.
Client: IBB/Radio Cuba

Design & fabricate control rooms and news booths out of existing prefabricated studio metal walls. Cut & install soundproof windows in 4" metal panels.

Move prefabricated 4" thick metal walls and room divider units, reroute electrical, signal, video mounts, speaker mount, fire alarm flashers, house clock sync.

Match existing acoustic panels, match & replace covering fabric.

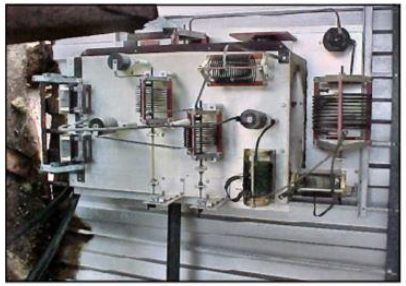
Experience Factors:
Design/Build
Electrical & HVAC
Sound Transmission Engineering
Sound/Video Engineering
Acoustic Surfaces
Fit & Finish

Project Highlight

ESS
Electronic Site Services

Demolish hurricane damaged buildings and restore a 4 Tower AM Directional Transmitter site for the International Broadcasting Bureau, Office of Cuba Broadcasting, Miami, Florida.
Site Location: Saddlebunch Key, FL

Restore electrical, lighting, lighting control, and ground system at each tower.



Much of the site was covered by water.

Remove, evaluate and salvage the antenna tuning units and phasing equipment.

Experience Factors:
Construction
Electrical & RF Engineering
High Security Area

100’ Tower for City of Colorado Springs

100’ tower on Badger Mountain (Wilkerson pass) for the City of Colorado Springs, CSFD contract, attitude 11,250’ at the end of a 14 mile jeep trail, 18 hour concrete pour from Buena Vista, 5AM-11PM.

Project Highlight

Design/Build 100’ Communications Tower for City of Colorado Springs at Badger Mountain, near Wilkerson Pass, CO

ESS

Electronic Site Services

Site at 11200’ located at the end of a 11-mile rocky road.

Move existing Forest Service Antennas, Demo Antenna and Piers.

Move this shelter to new location, install customer’s equipment for temporary service.

Ground system installed, tested and certified to Motorola R-56 Standards

Experience Factors:

Tower & Antenna Work
Remote Site Construciton
Grounding & Lightning Protection

OBNA revived following decade-long silence

By William J. Dagendesh Mar 29, 2017

1 of 4

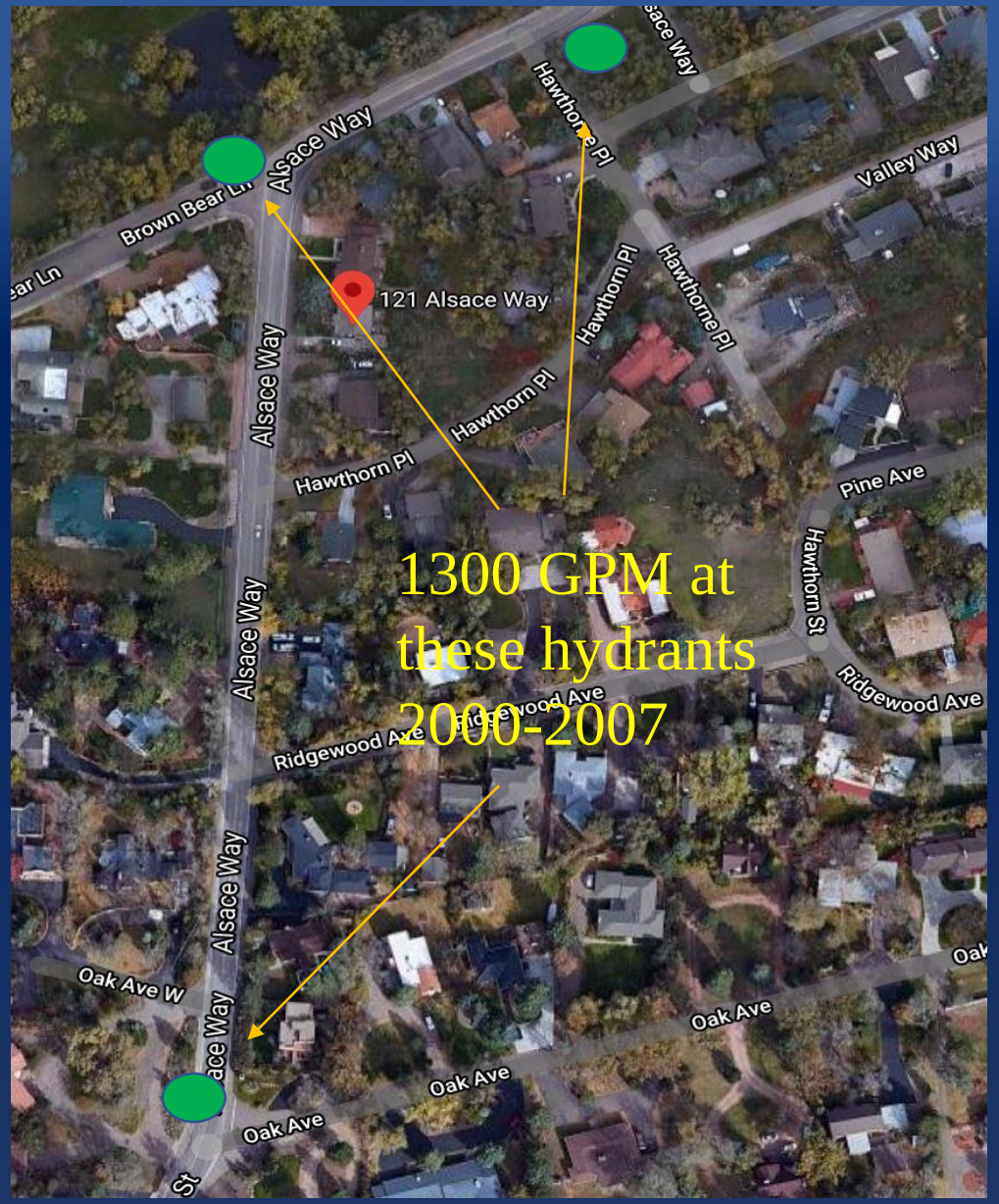
The revitalized Old Broadmoor Neighborhood Association officers are, from left, John Bunka, president; Jim Sceats, vice president; Mike Lowery, secretary; and Javier Mazzetti, treasurer. Officers will serve a temporary six-month term after which a formal election will be held. Photo by William J. Dagendesh

COS Con

SUPPORTED

GazetteCharities

COS Connect brings together vo organizations in need and match the people who need a little help



All the Issues in 7.4.501 “Purpose” are Fully Accounted For:

A. Expansive soils and expansive rock;
B. Unstable or potentially unstable slopes;
C. Landslide areas or potential landslide areas;
D. Debris flow and debris fans;
E. Rockfall;
F. Subsidence and abandoned mining activity;
G. Shallow water tables;
I. Flood prone areas;
J. Collapsible soils;
K. Faults;
L. Landfills and areas of uncontrolled and undocumented fill; and
M. Steeply dipping bedrock. (Ord. 96-74; Ord. 01-42; Ord. 11-7

All the Solutions in 7.4.501 “Remediation” are Fully Accounted For:

1. Identify the geologic hazards affecting the development site;

2. Analyze the potential negative impacts the geologic hazards will have upon the proposed project;

3. Provide mitigation techniques, which will reduce to acceptable standards the risk posed to the development by any identified geologic hazards;

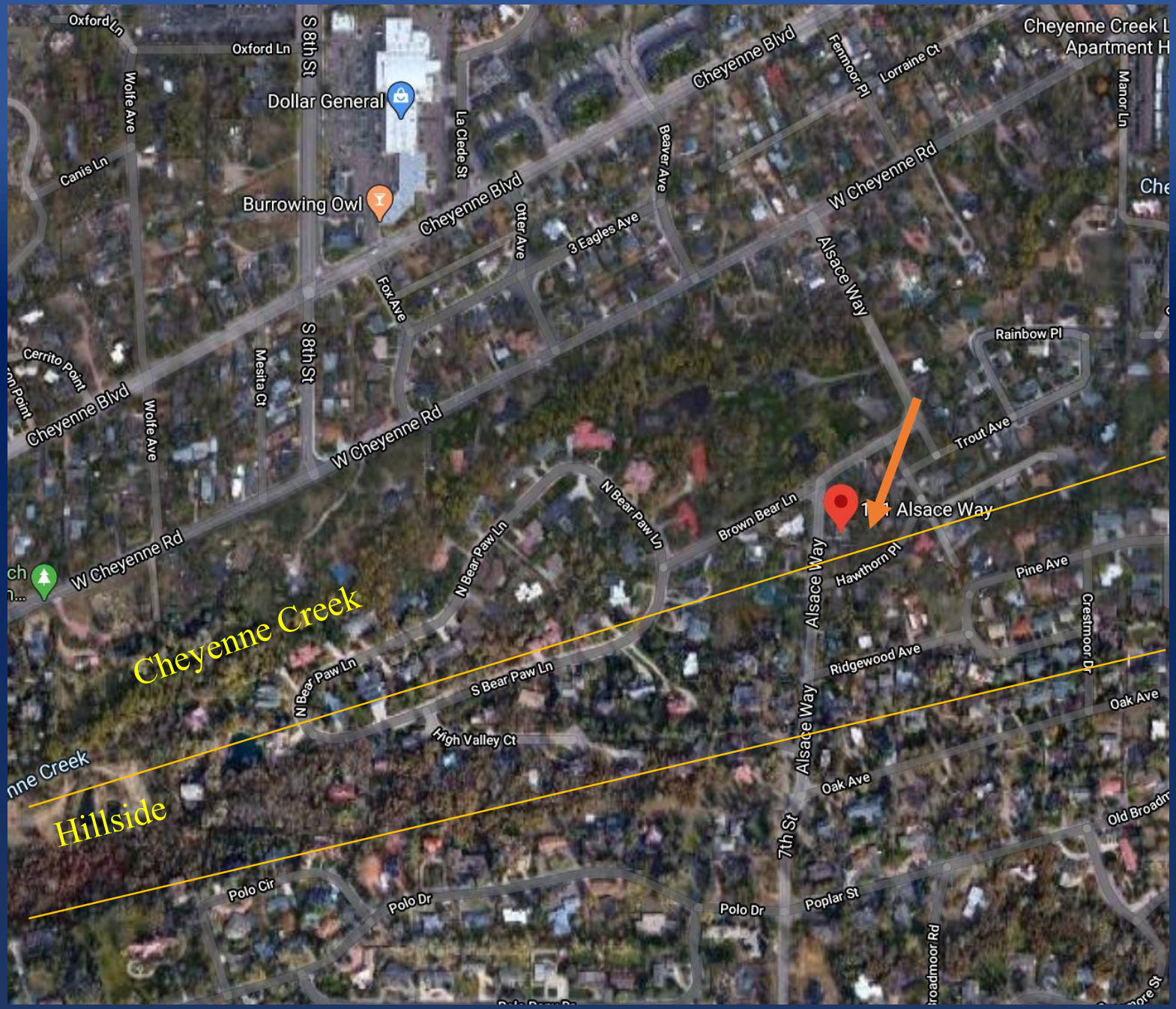
4. Analyze potential impacts the proposed project will have on surrounding properties or public facilities related to existing geologic hazards; and

5. Provide recommendations to be incorporated into the proposed project which mitigate significant potential impacts to surrounding properties or public facilities.

506 Hawthorne Place

SW Colorado Springs

South of Cheyenne Road

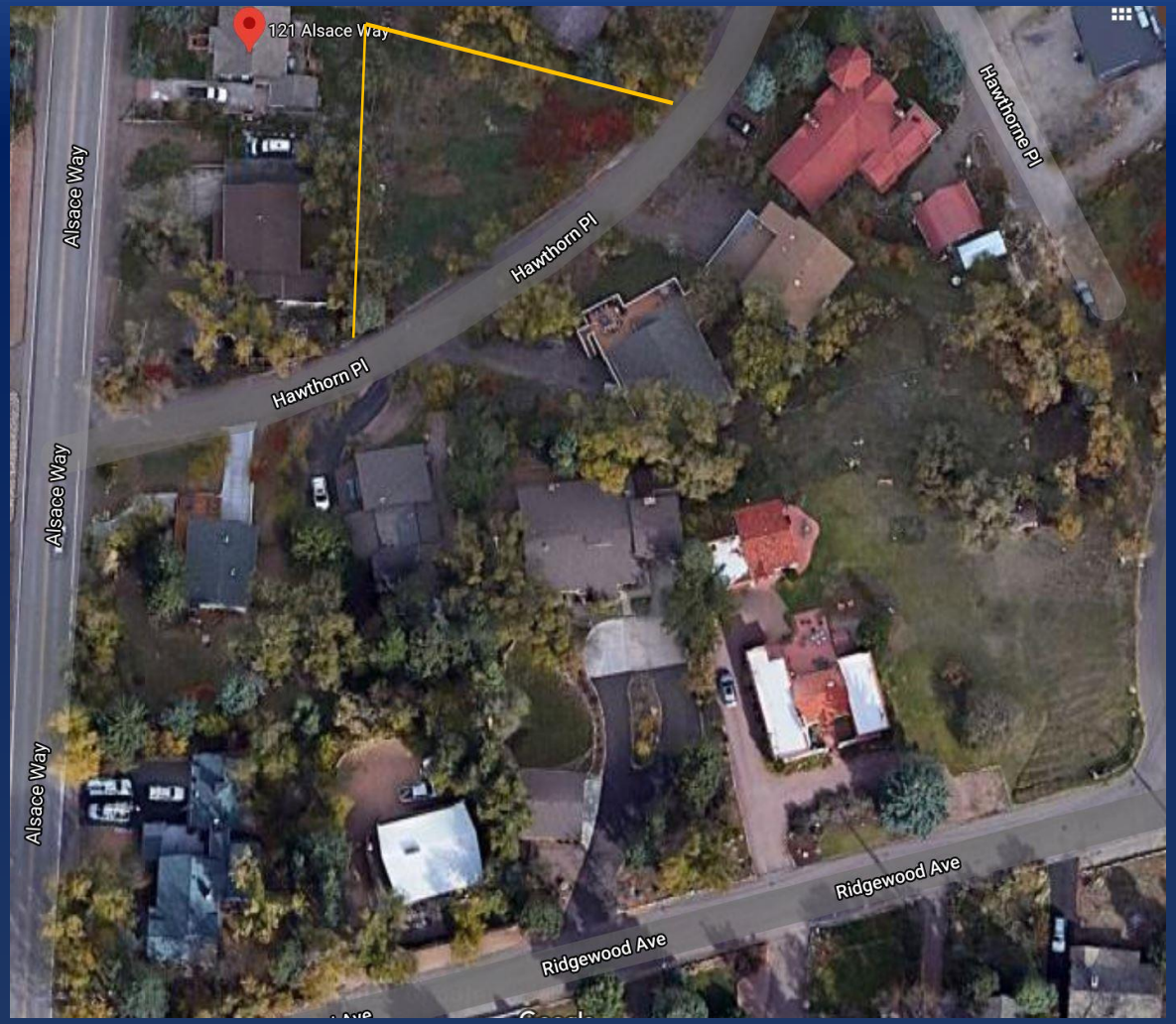


Side View
Looking East

506 Hawthorne Place
SW Colorado Springs
South of Cheyenne Road

Satellite View
Of 506 Hawthorne

Proposed Site Plan prior to Foundation Design

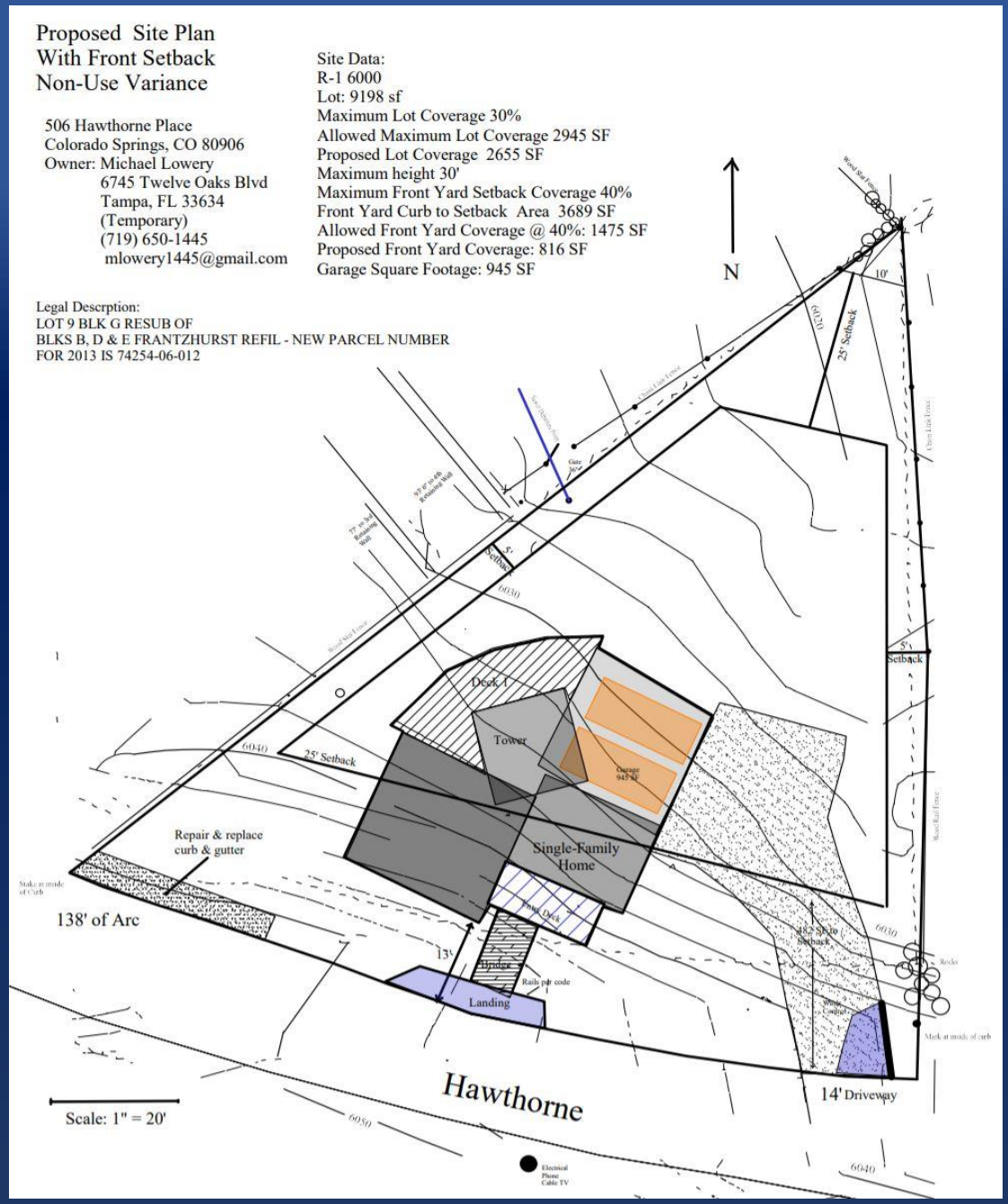


Proposed Site Plan
With Front Setback
Non-Use Variance

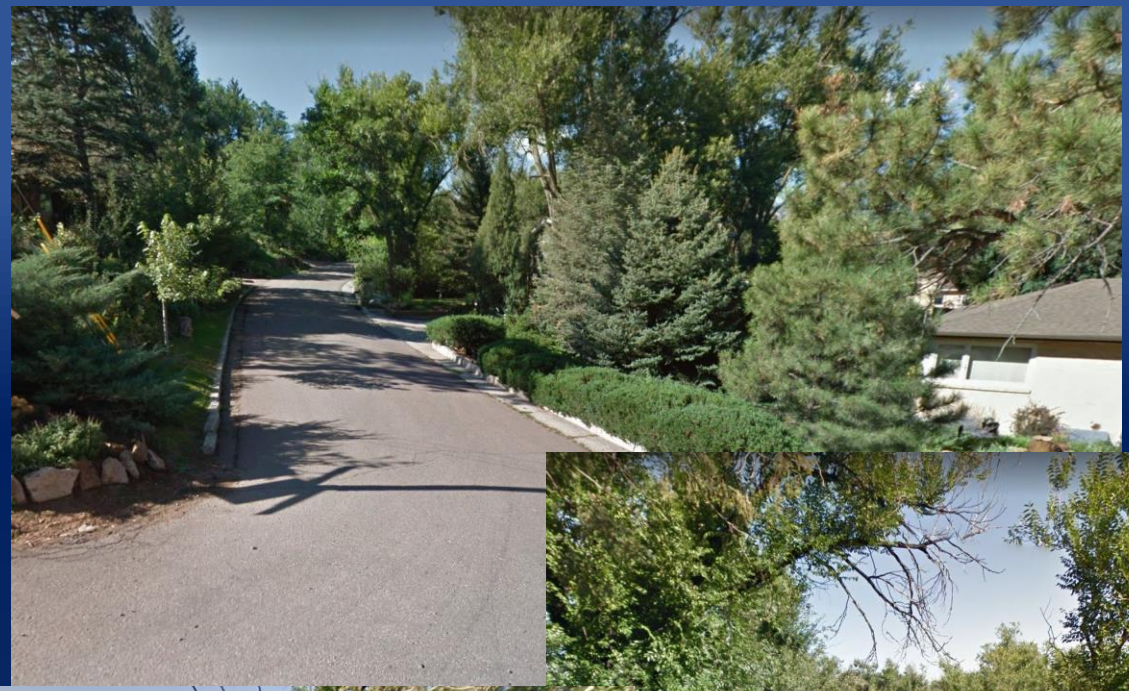
506 Hawthorne Place
Colorado Springs, CO 80906
Owner: Michael Lowery
6745 Twelve Oaks Blvd
Tampa, FL 33634
(Temporary)
(719) 650-1445
mlowery1445@gmail.com

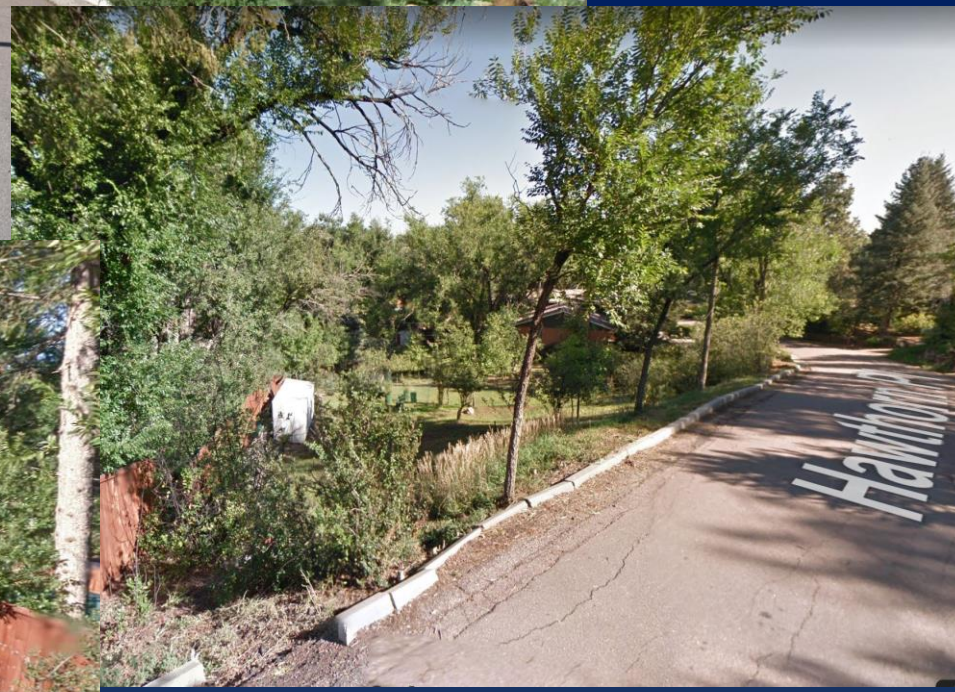
Site Data:
R-1 6000
Lot: 9198 sf
Maximum Lot Coverage 30%
Allowed Maximum Lot Coverage 2945 SF
Proposed Lot Coverage 2655 SF
Maximum height 30'
Maximum Front Yard Setback Coverage 40%
Front Yard Curb to Setback Area 3689 SF
Allowed Front Yard Coverage @ 40%: 1475 SF
Proposed Front Yard Coverage: 816 SF
Garage Square Footage: 945 SF

Legal Descrption:
LOT 9 BLK G RESUB OF
BLKS B, D & E FRANTZHURST REFIL - NEW PARCEL NUMBER
FOR 2013 IS 74254-06-012



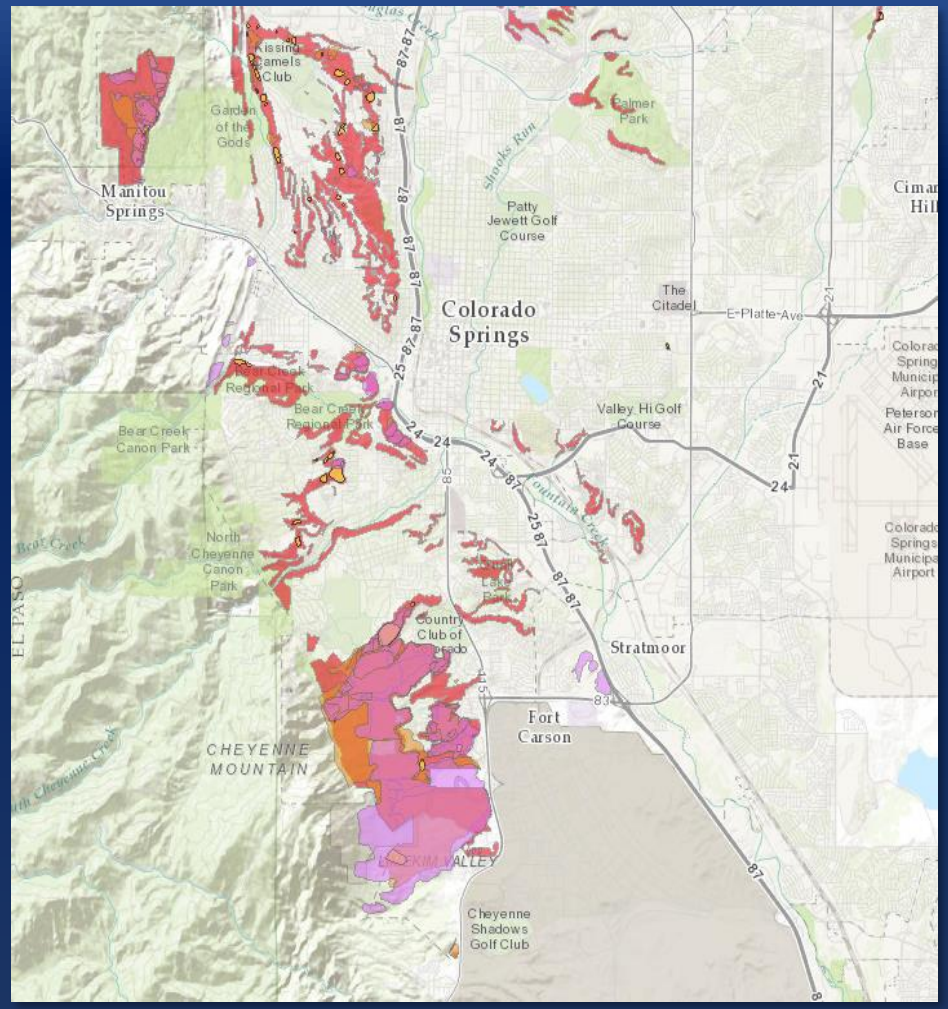
The 506 Hawthorne Neighborhood





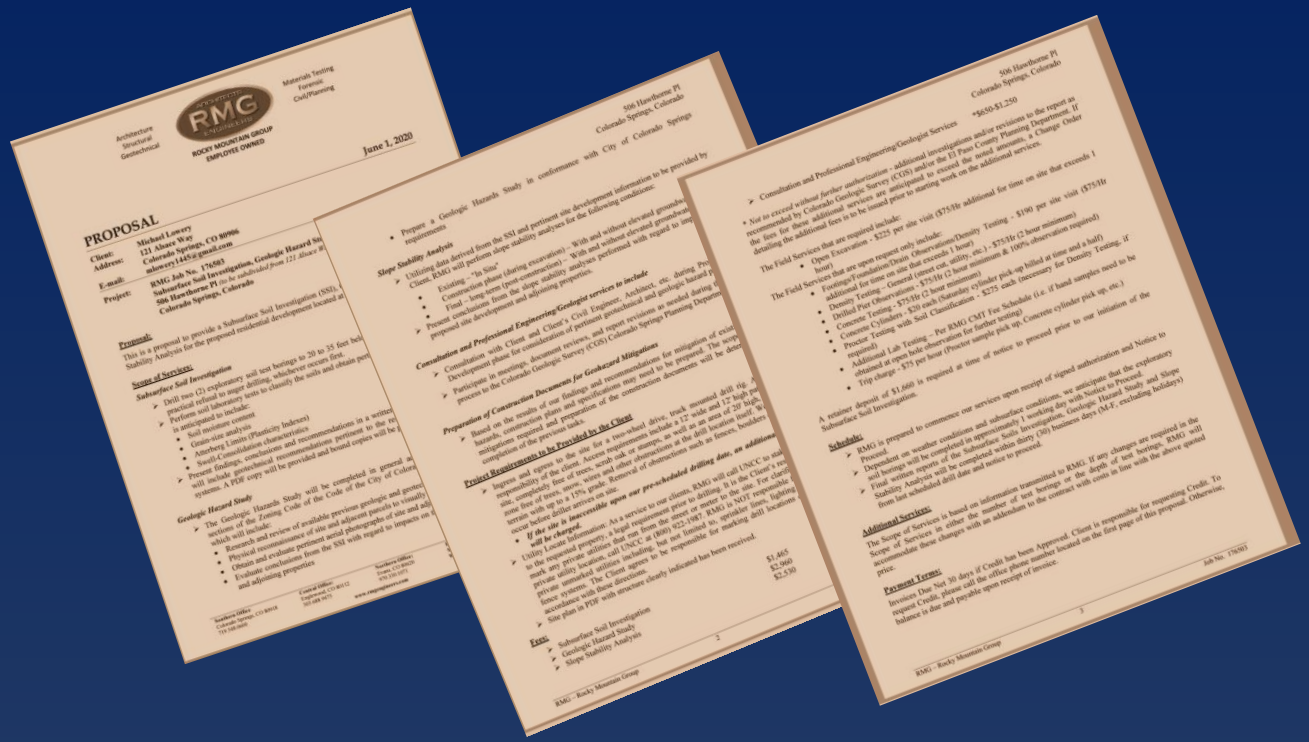
Why a Geohazard Report or Waiver Requirement is Unreasonable

1. Cost
2. Benefits
3. Site Access
4. Landslide Zone Methodology
5. Geohazard Report Methodology
6. Alternative Test & Foundation Engineering
7. Applicability to 506 Project
8. Summary



Cost of a Geohazard Report

Subsurface Soil Investigation	$1,465
Geologic Hazard Study	$2,960
Slope Stability Analysis	$2,530
Consultation and Professional Engineering/Geologist Services	$650-$1,250
	$7,206



"Residential construction inflation in 2019 was only 3.6%. However, the average inflation for six years from 2013 to 2018 was 5.5%. It peaked at 8% in 2013 but dropped to 4.3% in 2018 and only 3.6% in 2019. Forecast residential inflation for the next three years is level at 3.8%."

Construction Analytics 2020. https://edzarenski.com/2020/01/28/construction-inflation-2020/

GHR Estimate			
Temporary Driveway Engineering	est	$	2,500
Temporary Driveway Permit	est	$	250
Temporary Driveway Construction	est	$	12,000
Geohazard Report		$	7,200
		$	**21,950**

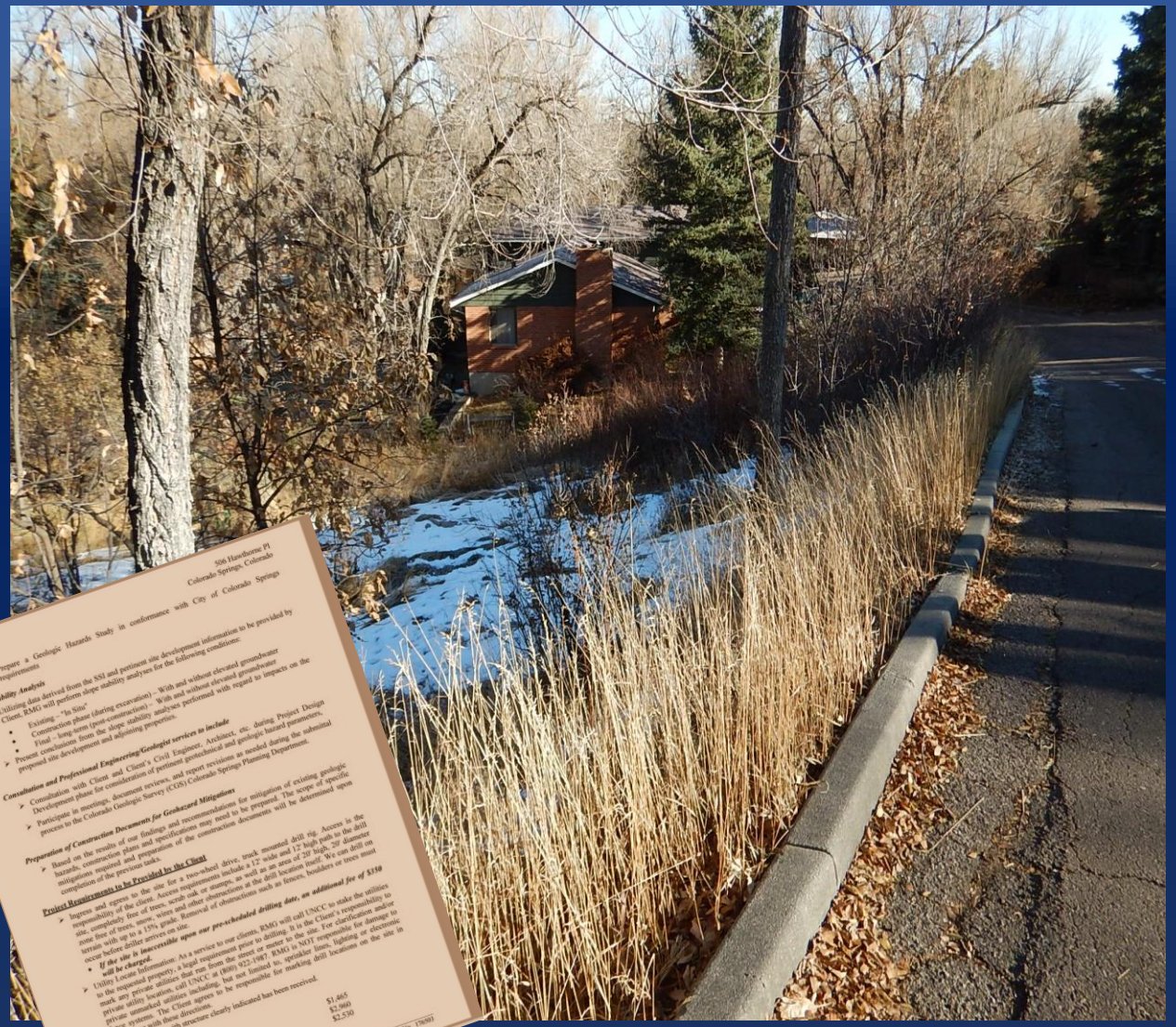
Pre-Permit Estimates				
Water Development Fee				$ 10,197
Residential water connection 3/4"				$ 9,292
Wastewater 3/4"				$ 1,868
Wastewater Permit & tap fees				$ 380
Variance				$ 802
3 lot signs and postage			est	$ 245
Gas	Stub install Fee			$ 1,466
Gas Fee (submit usage plan)			est	$ 350
Soil Test at Curb Repair			est	$ 1,250
Design of Curb Repair in ROW			est	$ 2,200
Permit for Curb Repair in ROW			est	$ 250
Soil Test at Front Door Landing			est	$ 1,250
Design of Front Door Landing in ROW			est	$ 2,200
Temporary Driveway Engineering			est	$ 2,500
Temporary Driveway Permit			est	$ 250
Temporary Driveway Construction			est	$ 12,000
Geohazard Report				$ 7,200
Foundation Engineering prior to permit			est	$ 2,400
Structural Engineering prior to permit			est	$ 7,000
Electrical Stamp prior to permit			est	$ 2,200
HVAC review & stamp prior to permit			est	$ 2,200
Architect				$ 25,000
Plan Review fee(% of Sq. Ft.)				$ 3,500
				$ 96,000

Benefits to City - Financial				
Property Tax over 10 Years		10	$ 2,500	$ 25,000
Sales taxes paid by typical family		10	$ 3,700	$ 37,000
Sales taxes on construction materials				$ 7,500
Construction crew wages in local economy				$ 28,000
Parking Meter income				$ 1,400
City Utilites revenue		10	$ 3,000	$ 30,000
Parking tickets & speeding fines				$ 1,500
Water Development Fee				$ 10,197
Residential water connection 3/4"				$ 9,292
Wastewater 3/4"				$ 1,868
Wastewater Permit & tap fees				$ 380
Electric	No load data form Req'd			N/C
Gas	Stub install Fee			$ 1,466
Plan Review fee(% of Sq. Ft.)				$ 3,500
	Net 10 Year Benefits to City			$ 157,103

Benefits to City - Council Initatives		
Infill Project		Yes
Existing Utilities		Yes
Existing Fire		Yes
Existing Police		Yes
Existing Schools		Yes
Energy Efficient House		Yes
Radon Remediated		Yes
Latest fire code		Yes
Addition to housing stock		Yes
Near Downtown		Yes
East-West traffic problem		No

Lack of Site Access for Test Drilling

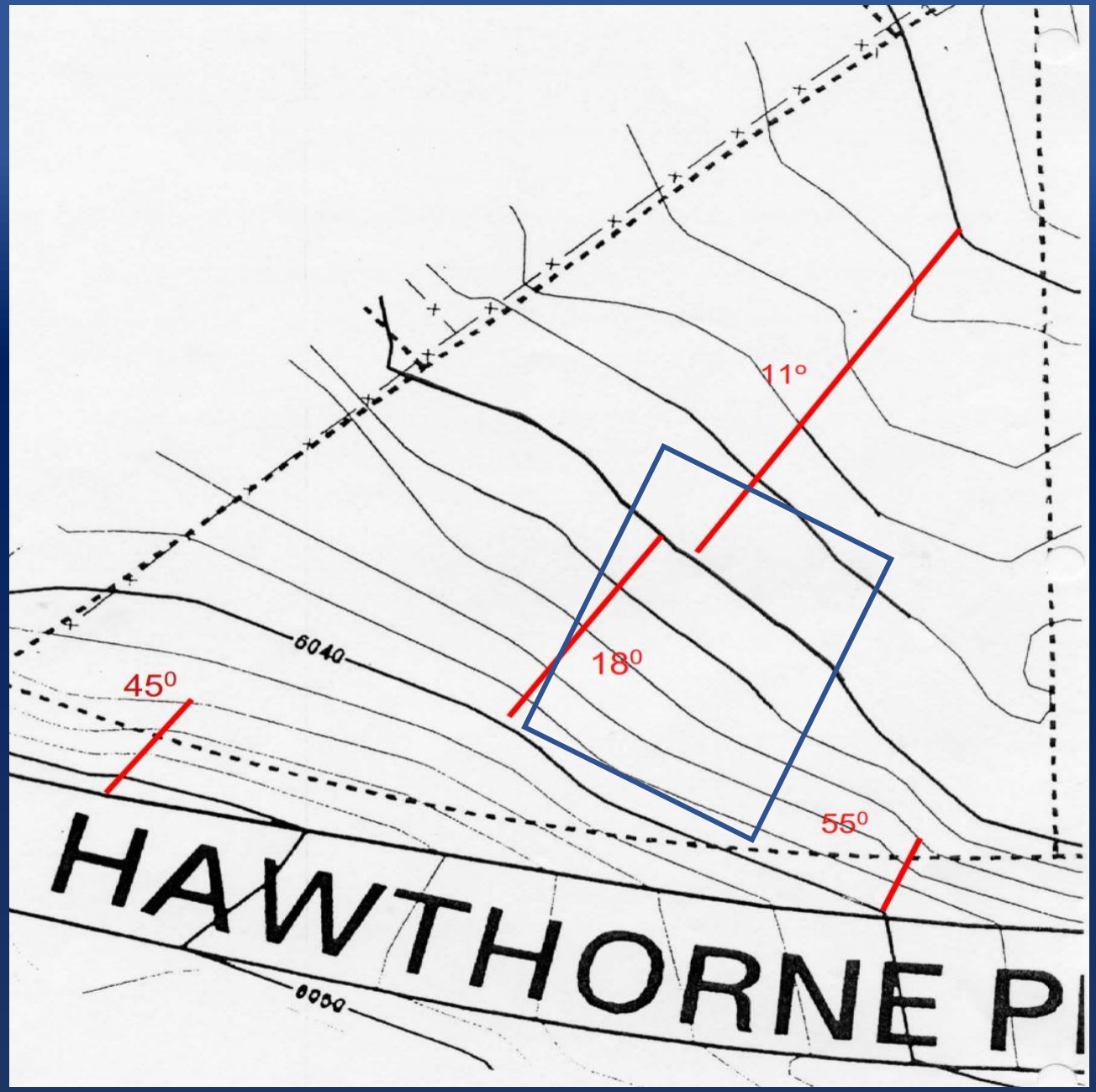
"Ingress and egress to the site for a two-wheel drive, truck mounted drill rig. Access is the responsibility of the client. Access requirements include a 12' wide and 12' high path to the drill site, completely free of trees, scrub oak or stumps, as well as an area of 20' high, 20' diameter zone free of trees, snow, wires and other obstructions at the drill location itself. We can drill on terrain with up to a 15% grade. Removal of obstructions such as fences, boulders or trees must occur before driller arrives on site."



RMG Proposal
6-2020

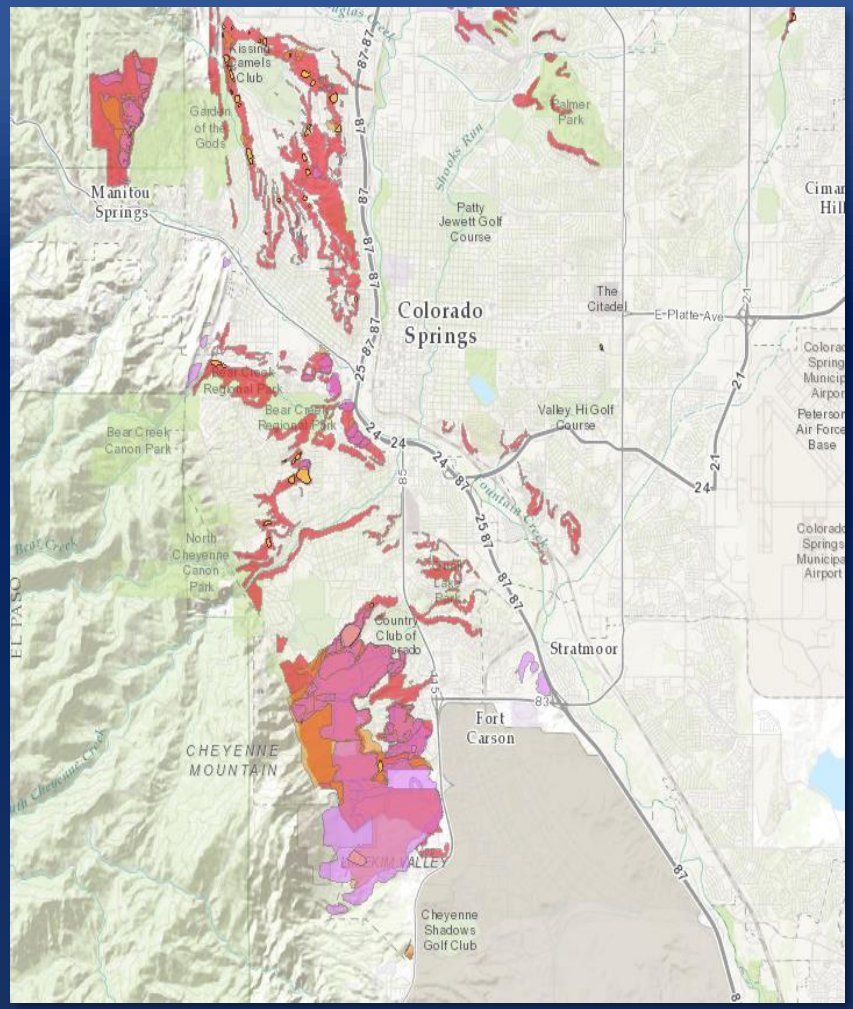
Lack of Site Access for Test Drilling

7.4.503.2 Slopes (existing or proposed) exceeding thirty three percent (33%) or which are otherwise unstable or potentially unstable.



Landslide Zone Methodology Faults

The LSZ map was published in 2003 by the Colorado Geographical Survey. According to a paper published by the Survey: “These areas were delineated using historic landslide data, geomorphic features, bedrock geology as shown in the basic geologic mapping, slope, and aspect. Landslide-prone areas exist on slopes with grades greater than 12%, underlain by weak, clay-bearing formations such as the Cretaceous Pierre Shale. *The main purpose of the landslide susceptibility map is disclosure.*



- David C. Noe, Jonathan L. White, and T.C. Wait. Colorado Geological Survey, “MAPPING AREAS OF LANDSLIDE SUSCEPTIBILITY IN COLORADO SPRINGS, COLORADO” https://www.americangeosciences.org/sites/default/files/Environment-colorado1.pdf

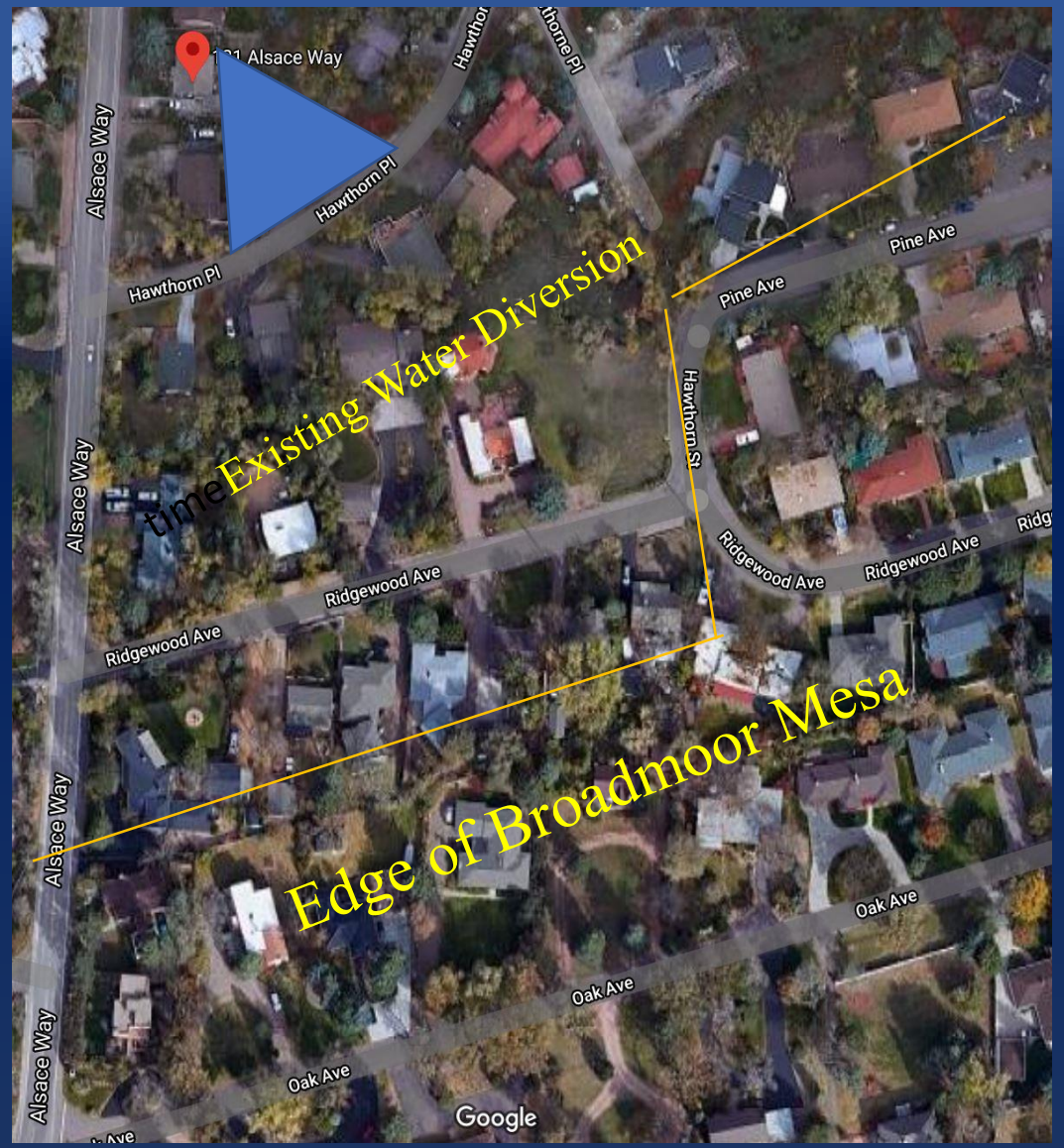
Landslide Zone Methodology Faults

"In 2003 the CGS published Map Series 42: "Potential Areas of Landslide Susceptibility in Colorado Springs, El Paso County, Colorado". These maps are based on site conditions that are similar to areas where landslides have previously occurred and are intended to show areas that have geologic, topographic, and geomorphic characteristics that indicate potential landslide susceptibility. *However, no levels of hazard assessment such as high, medium, or low were made within the susceptibility zone.* The outer boundary of this susceptibility zone closely follows the outermost boundary of inventoried landslides."

Garrett, Jordan. "GIS-BASED LANDSLIDE SUSCEPTIBILITY ANALYSIS OF SOUTHWESTERN COLORADO SPRINGS, EL PASO COUNTY, COLORADO"" https://mountainscholar.org/bitstream/handle/11124/79381/Garrett_mines_0052N_10210.pdf

Geohazard Report Methodology Fault

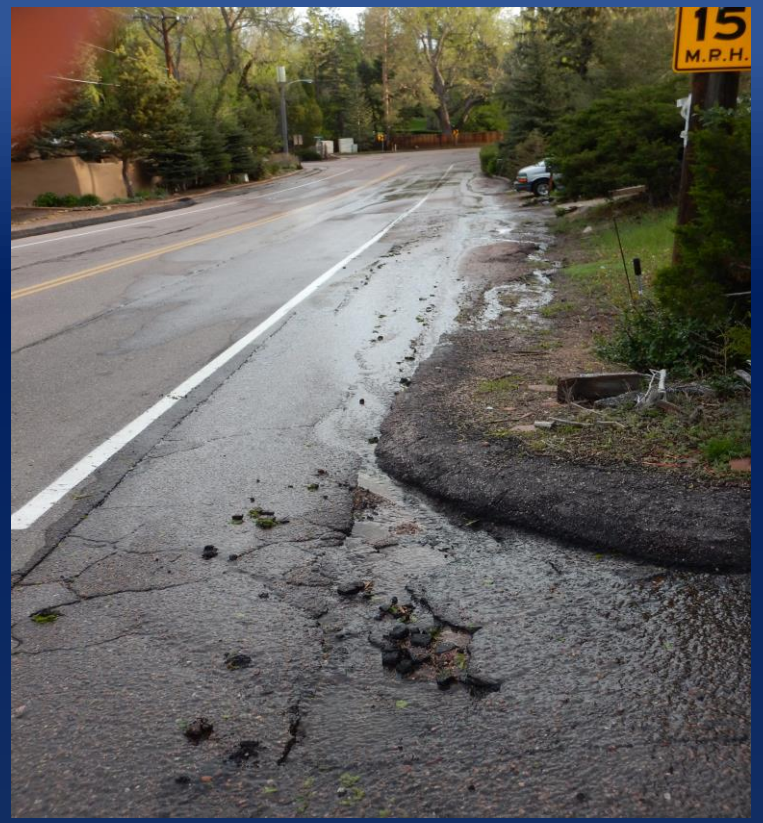
There is no consideration of the many water remediating features including roads, gutters, stormwater drainage, foundations on the current slope, retaining walls on the current slope, rooftop channeling of rainwater into available channels, number of successful, non-landslided residences on the current slope, improvements to prevent landslides and analysis of the current neighborhood. Thus the LSZ, predicting critical water flow, is a theoretical construct using old maps, disregarding stability added by improvements, to which a complex and unproven theoretical analysis has been applied. 30%, 50%, 70%, 90% of the landslide risk may have been remediated by water channeling, stabilized by house foundations, stormwater improvements.



Geohazard Report Methodology – Water issues are well known

Alsace Way Typical Water Diversion 2015

Alsace Way 2nd Day



Daily basement French drain pumping @ 40 gallons per day in 2015 rain event over 30’ basement span w/4” perf pipe @ 121 Alsace Way.

Geohazard **Waiver** Methodology – as expensive as GHR

"Per 7.4.502.B you are required to a geologic hazard study. There is an ability to request an exemption or waiver from the requirement per 7.4.503. The waiver does need to meet 5 criteria and be prepared by a geotechnical engineer. Once you have decided on which report you want to submit (a full geologic hazard report or a geologic hazard waiver), you will submit that report and then DRE, City Engineering and Colorado Geologic Survey will review the report. If you do not agree with the decision, then you can appeal to a consultant review/analysis panel per 7.4.506.C. You will be responsible for paying the panel for their time during the review of your application. Once their decision is made, if you do not agree with that decision, you can appeal to City Planning Commission." City Planning 6-18-2020

Entech proposal: $3,500 plus access to the site for drilling rig, plus analysis, + $3,500 for track-based drilling rig + panel time, no guarantee of acceptance.

Alternative Test & Foundation Engineering

This test methodolgy worked fine for the 100+ homes near 506 Hawthorne.

This foundation engineering worked perfectly well from 1880 to 2015.

Soil Type	Allowable Bearing (lb/ft2)	Drainage
BEDROCK	4,000 to 12,000	Poor
GRAVELS	3,000	Good
GRAVELS w/ FINES	3,000	Good
SAND	2,000	Good
SAND W/ FINES	2,000	Good
SILT	1,500	Medium
CLAYS	1,500	Medium
ORGANICS	0 to 400	Poor

Job No. 27085

May 6, 1996

Pinon Construction
1308 W. Colorado, Suite B
Colorado Springs, CO 80904

RMG ENGINEERS

Re: Subsurface Soil Investigation
506 Hawthorne Place
Lot 9, Block G
Resub of Blocks B,D, & E
Flantzhurst Subdivision
Colorado Springs, CO

Gentlemen:

Personnel of RMG Engineers have placed two shallow test borings at the above-referenced site on April 29, 1996. Specific findings are provided in this letter.

Soil Classification: Fill consisting of silty to clayey sand overlying silty clay and shale. The clay was encountered at approximately 11 feet in the test boring.

Allowable Bearing Capacity: See Special Considerations.

Active EFP: 45 pcf.

Expansion Potential:

An expansion pressure of 2548 psf with 0.91% volume change and 17.2% moisture increase was determined by laboratory tests for the clay.

Moisture Conditions: Moderate

Fill:

A possible fill material consisting of silty to clayey sand with some minor debris was encountered from the ground surface to approximately 11 feet. If unsuitable fill material is encountered in the building footprint, it must be removed and replaced with a non-expansive coarse grained granular structural fill approved by the Geotechnical Engineer.

Proof of Historical Stability

There is a 100-year old irrigation ditch on the 506 lot, on the top of the slope, that has not filled in because of landslides, unstable or creeping soils. Any reasonable engineer would agree.

There are numerous retaining walls in the adjacent neighborhoods in the LSZ that have held without major issues since their construction more than 70 years ago, they can be readily examined by professional engineers as an effective remediation.


Hawthorne Embankment
Wash from Embankment
After 70 years
Proposed
Retaining
Wall, water
remediation &
foundation
100 Year
Ditch

Van Hoy Comments

Van Hoy Comments

508 Ridgeway

- Flat lot
- No Slope
- Typical 1947-1952 Floating Slab inside Stemwall foundation
- Slab moves relative to foundation, cracking sheetrock.
- All houses south of Cheyenne road do this.

Van Hoy Comments

425 Valley Way

- Vacant since 2011
- Torn down in 2017
- Replaced with a McMansion

Van Hoy Comments

425 Valley Way

- Wall circa 2015

Van Hoy Comments

505 Hawthorne

- Rocks stacked on top of each other
- No mortar at all.
- No footer
- House in repeated foreclosure since 2008.
- Wall is 70 years old.

Van Hoy House

221 Alsace Way

- Addition built by Dave Duff
- A series of Tuff Sheds grafted on to the original 1946 house.
- Foundations floating relative to each other
- No gravel under slabs
- No drainage
- Approved by City in 2002
- Bought by Van Hoys in 2009.

Van Hoy House

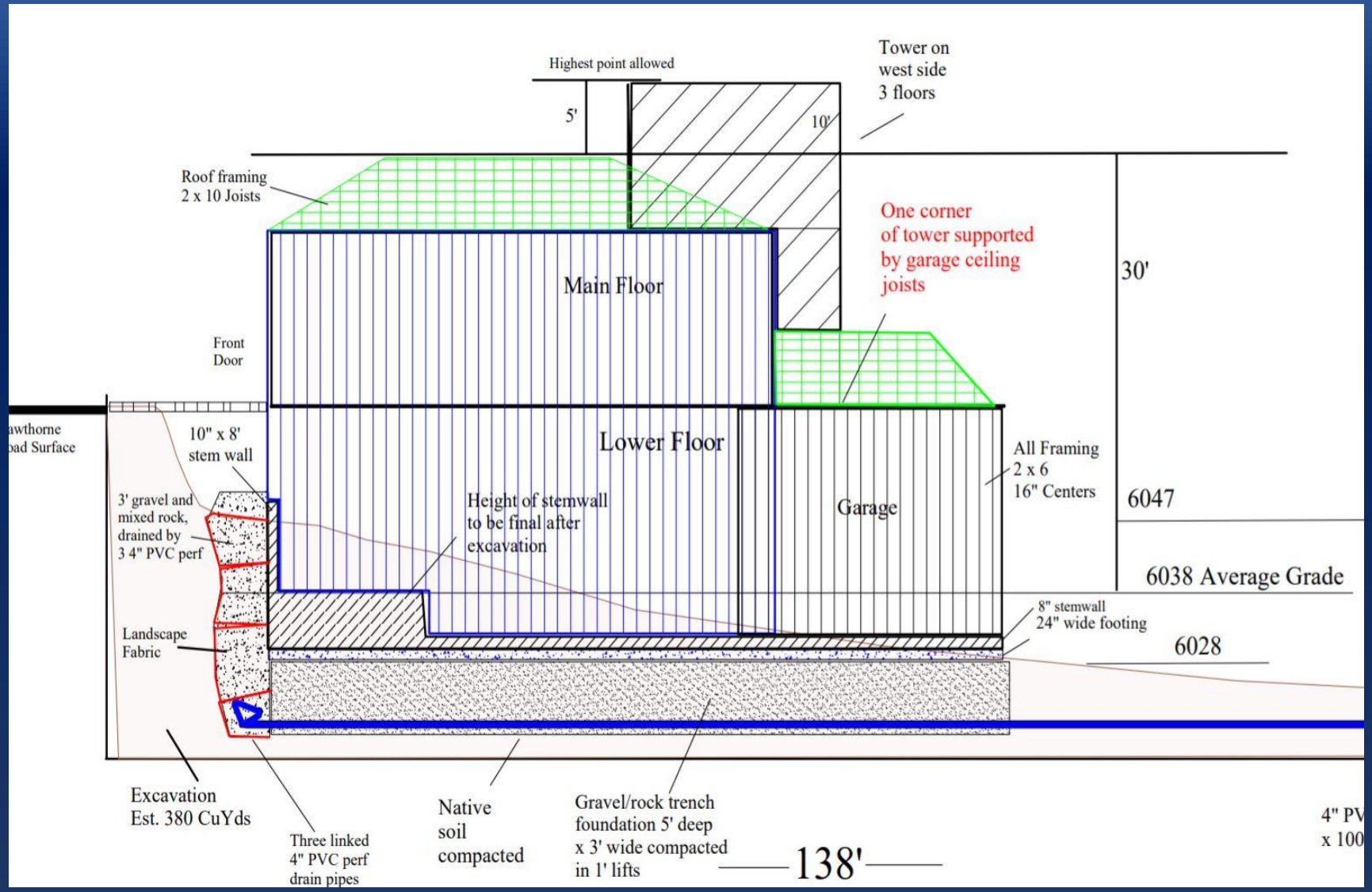
221 Alsace Way

There are three Tuff Sheds but permits for only two. They didn’t disclose these would be a living space. They didn’t file follow-on permits for electrical, HVAC or foundation, as is required.

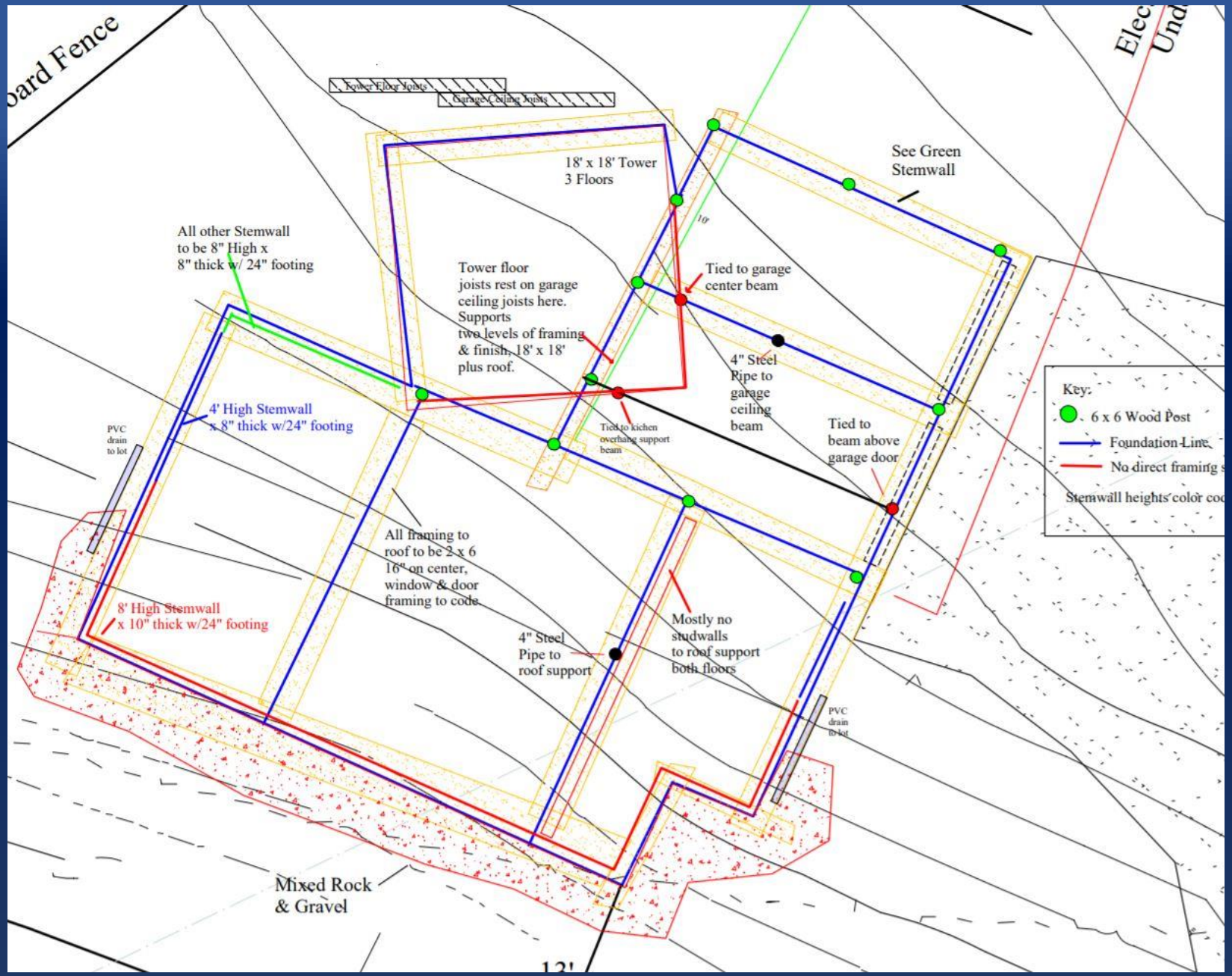
The only threat to 506 Hawthorne is the road itself, which is beyond the purview of the Appellant or professional geotechnical firms. If, during a 500 or 1000 year rain event, the hillside collapses, there is nothing than can be done to retaining walls or the house foundation that will help in the least.

Many well-known foundation designs applicable to unstable soil

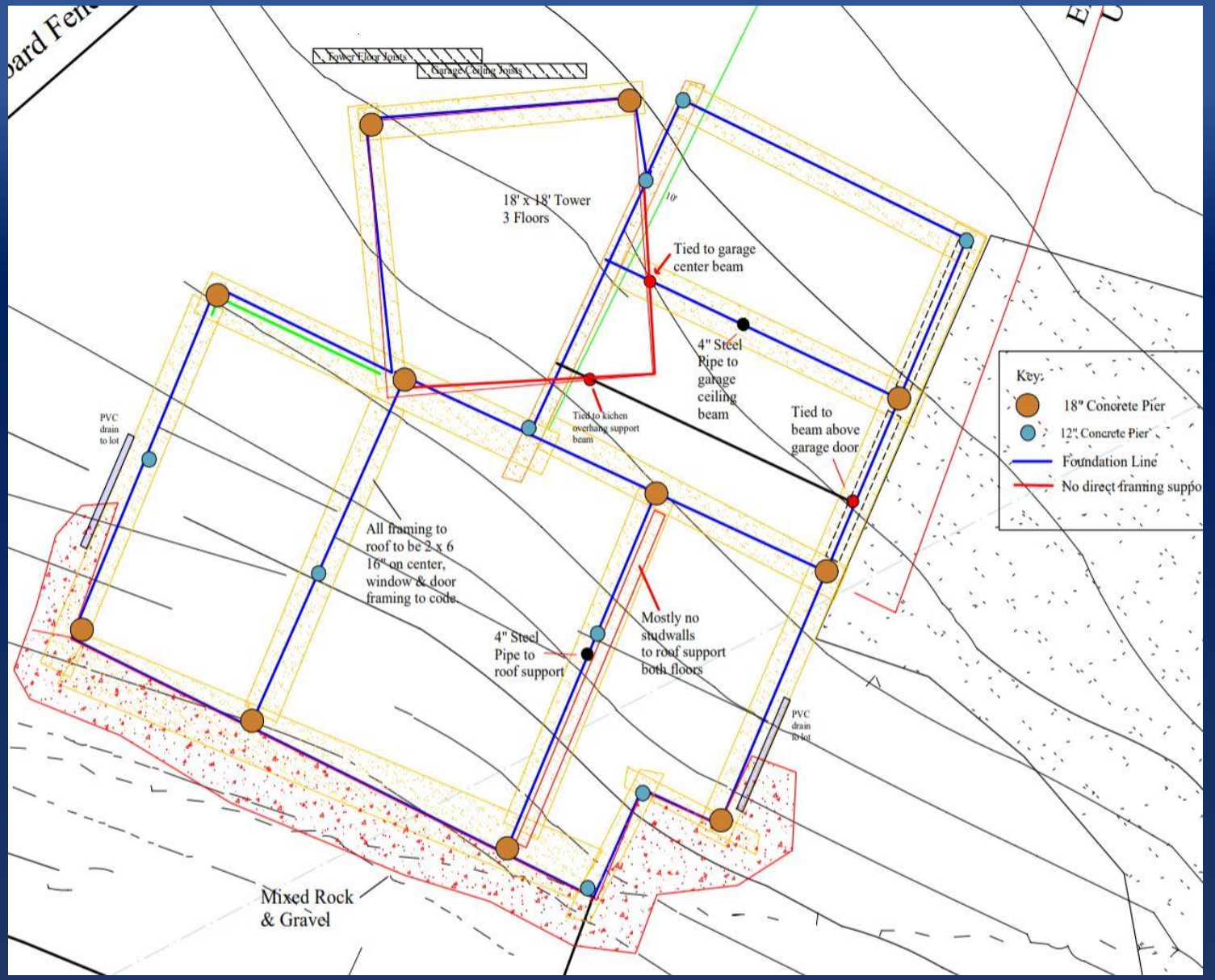
Stemwall on rock trench or 5’ gravel/rock bed



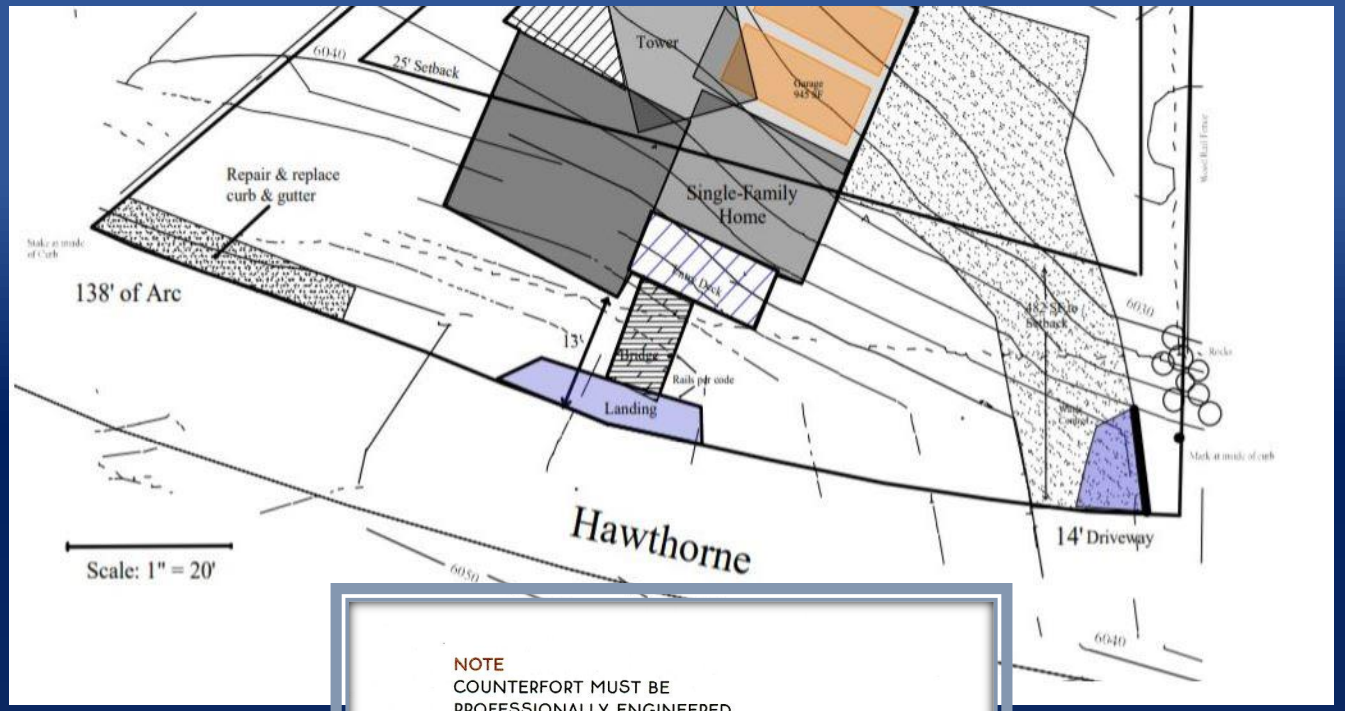
Top view of proposed water remediation, removes 300+ gallons per day over 40’ foundation span.

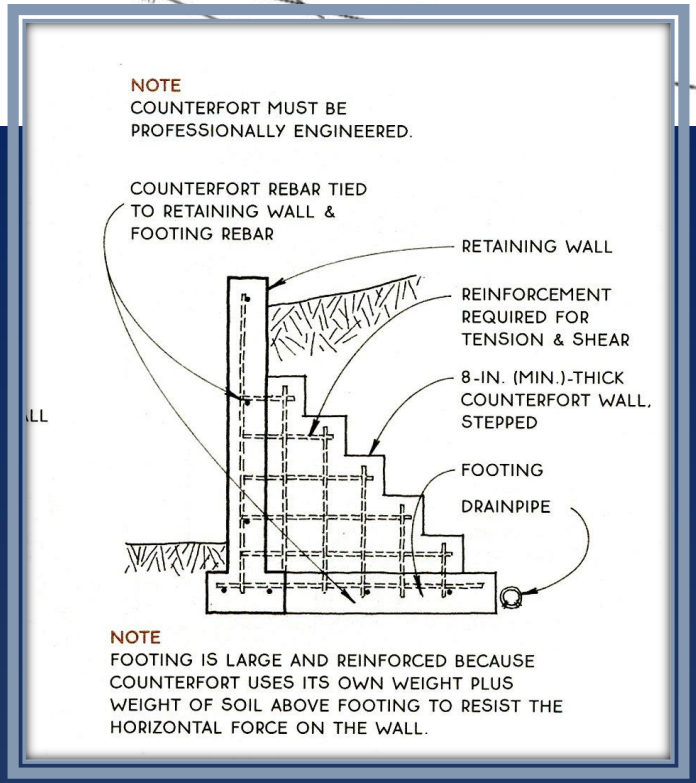


4” x 8” web I-beam foundation on 24” piers to 20’ below excavated grade. Supports estimated 3 2200 SF houses @ local shale intercept regardless of clay expansion or water permeation at a cost of $22,000.



Stabilizing the Hawthorne Embankment





The Appellant's driveway, structure, retaining walls and landscaping will be propping up the City's deteriorating Hawthorne embankment until sometime in the future, when the City can address that issue.

7.4.505.A Scope of Study is Already Complete

1. Identify the geologic hazards affecting the development site;

2. Analyze the potential negative impacts the geologic hazards will have upon the proposed project;

3. Provide mitigation techniques, which will reduce to acceptable standards the risk posed to the development by any identified geologic hazards;

4. Analyze potential impacts the proposed project will have on surrounding properties or public facilities related to existing geologic hazards; and

5. Provide recommendations to be incorporated into the proposed project which mitigate significant potential impacts to surrounding properties or public facilities.

Meets the Definition of Unreasonable Requirement

- GHR far too expensive – no new knowledge gained
- Site can’t be accessed by test drilling rig
- Slope issues due to Hawthorne embankment and not slope of lot
- Project 100% protected from landslides by Hawthorne.
- Remediates Hawthorne Place deterioration
- No problems in neighborhood with sliding house or foundation walls.
- Water issues clearly known with historical data
- Adequate soil test in hand
- Better foundation design after preliminary excavation

Additional Waivers:

1. Conditional acceptance and granting of a building permit based on a robust foundation design using the 1996 RMG soil test, to be confirmed by data submitted after the site is excavated, or a better design based on new data.

2. The Appellant requests a driveway approval with a slope over 10 degrees with the proviso that the slope > 10 degrees be heated with electric elements in the area where the slope exceeds 10 degrees in any 5’ section, identical to the heated driveway that was allowed for 711 S. Bear Paw Lane, heating to be actuated by an electronic thermostat and relay set to energize by snowfall and temperature, according to best industry practices for driveway heating.

Thank you for your time!