

EARL "GARY" KEEN, PE
P.O. BOX 891200
OKLAHOMA CITY, OK 73189
May 29, 2023

ENGINEER'S REPORT
216 SOUTH LAHOMA AVE
NORMAN, OK

This report was prepared to accompany a floodplain permit application to the City of Norman for the proposed elevation of a residence located at 216 South Lahoma Avenue to meet FEMA and City of Norman floodplain requirements. The existing development at this property includes the residence, which the owner wishes to elevate to a minimum of two feet above the BFE and to meet other floodplain requirements, including elevating the outside HVAC unit and removing soil from the floodplain to compensate for the volume of materials installed to elevate the HVAC unit and to install steps to access the front porch and access an exterior door. In addition, flood vents will be installed in the crawl space to meet FEMA requirements. The owner proposes to remove a small storage building that is currently located in the back yard of this property. Also, it is proposed to repair a chain-link fence that exists along the north side of this property.

This engineer recently assisted the owner in submitting an application to remodel this residence, without elevating the structure. This application was denied by the Floodplain Committee for reasons stated in the letter sent to the owner. The intent of this second application is to seek approval of a permit to elevate this structure. Successful elevation of this structure is not certain, so the owner is not seeking approval to do any interior remodeling at this time. It is our understanding that if this structure is successfully elevated then a floodplain permit will not be required to perform interior remodeling at a later date. It will be required to remove the brick from this house prior to lifting the house, and it will be necessary to replace the brick or other siding at this time to protect the structure from the elements.

The legal description of this property per Cleveland County Assessor records is Lot 6, Block 2, Eagleton Addition. The residence was constructed in 1930. This property has been evaluated by both the assessor's office and a private assessor, and both show this structure to be in good condition. This evaluation is based on visual inspection of the inside and outside of the house. This engineer agrees with this visual assessment, but the previous assessments did not involve evaluating structural components of this residence, such as the beams concealed within the crawl space. Several photographs showing the exterior of this home and yard are attached.

This property is located in the designated floodplain and floodway of Imhoff Creek. Imhoff Creek was studied in the FEMA FIS Study; therefore base flood elevations for the 1% chance flood are published therein. The base flood elevation for this residence was determined from the profile in the effective FEMA FIS study to be 1153.1' NAVD. A copy of this profile is enclosed as an exhibit. A Licensed Land Surveyor determined that the elevation of the adjacent grade at the NE corner of the residence is 1149.3' NAVD and that the lowest finished floor of this structure is 1149.92' NAVD. To fully meet the floodplain requirement, the finished floor would have to be at an elevation of 1155.1' NAVD or higher. This engineer recommends a target finished floor elevation of 1155.3' to allow for possible construction deviations.

The owner's intent is to bring this structure into compliance with all pertinent floodplain regulations and use it as student housing. His son is attending OU and will be the primary resident. The owner's intent is to leave the residence in its exact existing location on the property. The footprint of the structure will not be enlarged. The outside HVAC unit must be elevated to a minimum of two feet above the BFE. This will be done by constructing a platform to accommodate the HVAC unit. This engineer recommends that four steel posts measuring 4-inch by 4-inch be installed to support a platform that will, in turn, support the HVAC unit. The top of the platform will be a minimum of two feet above the BFE (1155.3' NAVD), same as the residence. The volume of the four post will displace approximately two cubic feet of floodplain volume.

Also, steps will be required to access the exterior doors to this structure. One door is at the front porch and the other is on the north side of the residence. The front porch will be removed prior to lifting the structure and this porch will be replaced after the house is elevated. This engineer recommends that the steps be a type that will minimize fill in the floodplain. The existing threshold at the front porch will constitute removal of material from the floodplain (if removed) and this volume will exceed the volume of stringers and steps to be constructed at this location. At the exterior door on north side of the house, there is not a permanent threshold—temporary concrete blocks are being used instead. This engineer recommends that the steps for this house be constructed similar to steps commonly found in industrial settings, which consist of metal stringers and metal steps (welded) to minimize the volume of material added to the floodplain. The International Residential Code states the requirements for rise and run for residential steps. Any new concrete placed at the approach to the steps must be placed so that the top of the new concrete is not higher than existing grade at that precise location. This can be accomplished by removing soil to a depth equal to the thickness of the concrete slab to be removed. Soil removed from the site must be transported to a disposal site acceptable to the City.

The door on the north side of the structure must have steps constructed in a similar manner as described above. Eight cubic feet of floodplain storage will be displaced by each set of steps at each exterior door. And, approximately sixteen cubic feet of soil must be removed from this property and transported from the site to compensate for the volume of the steps to be constructed at both exterior doors.

This engineer recommends removal of a deteriorated storage building that exists in the back yard of this property. This building has dimensions of approximately 8' by 8' and is located in both the floodway and floodplain. Removal of this building will be an improvement to the floodplain as it will increase the conveyance across this property. This engineer estimated the cost of removal and disposal of this building to be \$1,000. Also, a chain link fence that exists on the north side of the fence has accumulated a lot of debris such as leaves, tree branches, trash, floaters, etc. This debris should be removed for disposal to increase the conveyance. Also, the pressure from the floodwaters has caused portion of this fence to lay-down. This engineer suggests that this fence be erected by replacing damaged metal posts. This fence is a standard chain-link fence that will have a minor impact on the conveyance when maintained in a clean condition free of debris. Many similar fences of this type are existing in the floodplain of this creek. This engineer has estimated that the fence can be cleaned and repaired at a cost of \$1,000,

No remodeling is proposed for this house at this time, but remodeling might be desired at a future time, depending on success of the efforts to elevate this home and the availability of funds.

The footprint of the existing residence will not be increased. But steps must be constructed at exterior doors, as discussed above. Also, the four posts supporting the platform will displace approximately

two cubic feet of storage volume. All together, the volume of soil that should be removed from the back yard, to compensate for the volume of floodplain storage displaced by the two sets of steps and the supports for the HVAC platform is 18 cubic feet (8 cf for each set of steps and 2 cf for the HVAC support). This engineer recommends increasing the volume to be remove from the floodplain to 27 cubic feet, which is one cubic yard; to be conservative.

Existing fences should be discussed. Several sections of fence are present on or near the property. The previously mentioned chain-link fence exists along the north line of the lot. Actually, the ownership of this fence is unknown at this time. This is not unusual on older developments where the fence may have existed for decades. It may be a shared fence, or it may be owned by either of the owners of adjoining property. In either case, the debris caught on this fence needs to be removed to reestablish conveyance of the stream, and the owner agrees to do this if permitted. Two other short sections of fence exist along the north line of said lot. One is chain link and is limited to the area adjacent to the residence. A short section of stockade fence exists in this area also. Both of these sections run parallel and adjacent to the long section of chain link fence mention previously that should be cleaned. No work is proposed for these fences. A pipe fence (horizontal pipes) exists on the top of the east bank of the lined creek channel. This fence runs parallel to the flow of the stream and therefore has reduced impact on the conveyance of the stream. No work is proposed on this fence as it appears to be fairly good condition.

Another fence, a wire fence that is shown in photos runs from the southwest corner of the residence westward to the northwest corner of the concrete driveway. Then it run southward across the south property line of the subject lot, where it connects to another fence on the adjacent lot. This fence is erect and appears to be in good condition. No work is proposed for this fence.

It is this engineer's opinion that the modifications proposed herein will comply with the City of Norman's floodplain regulations and that this application should be approved. However, it is important to clarify that the base flood elevation is approximately 4-feet above the adjacent grade at this structure and that the proposed work will not alter that situation. This condition places this driveway and yard at high risk of flooding from the one-percent chance flood (aka 100-year flood) and perhaps from smaller storms having a shorter return period. In addition, the ground on this property might be flooded to a depth of approximately four feet. This depth of water will be adequate to damage vehicles located thereon and might even cause vehicles to float and/or be transported downstream. Everybody associated with this property should be aware of the potential hazards of flooding of this property.

However, the proposed work will not increase the risks of driveway and yard flooding and associated damage at this location. Incidentally, portions of Lahoma Avenue are also subject this this degree of flooding as are other nearby properties. After it is properly elevated, this house should be reasonably safe from flooding.

On the application form, the owner identifies himself as the contractor for this work. The owner plans to contract with firms or individuals highly qualified in performing this type of work as sub-contractors. As part of establishing responsibility for this work and insuring the City of Norman that the contractors are qualified and legitimate, the owner intends to require all such sub-contractors to sign a statement that shows that the contractor agrees to perform work in accordance with the provisions of the Floodplain Permit, and that the contractor agrees to obtain all required building permits and meet all of the applicable building codes promulgated by the City. Furthermore, the owner will forward copies of these documents to the City before the contractor performs any work.

ENGINEER'S CERTIFICATION

216 SOUTH LAHOMA AVE
NORMAN, OK

The owner of the property located at the above address has applied for a floodplain permit to allow elevation of the residential structure located thereon, to repair a fence, to remove debris from same fence, and to remove a storage building. Imhoff Creek flows across this property and a designated floodway and floodplain associated with Imhoff Creek exist on this site. The subject property is located totally within the floodplain and floodway. This proposed work, as presented in the application and engineer's report will not result in an increase in the elevation of the floodplain nor an increase in the width or elevation of the floodway at any location in the community. Removing the storage building is a significant plus as its removal will increase the conveyance of floodwater across this property.

Engineer's Seal



Address: PO Box 891200
Norman, OK 73189

Phone: 405-823-8240
PE - 11438
License Expires: May 31, 2024

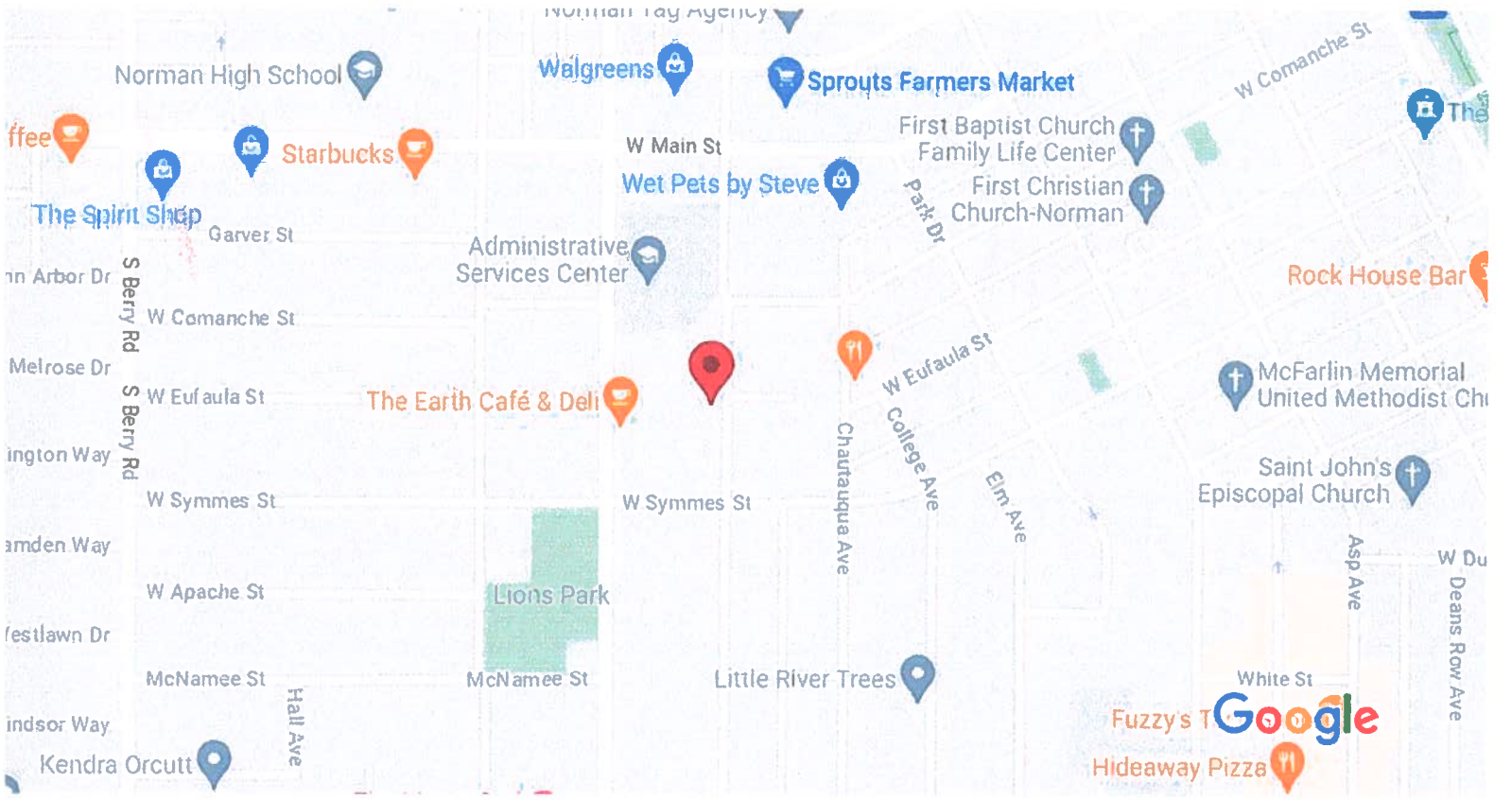
Signature

Date: May 29, 2023

Earl Gary Keen

Google Maps

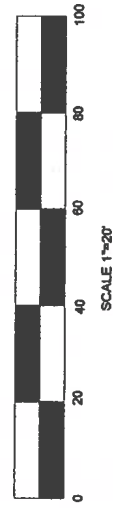
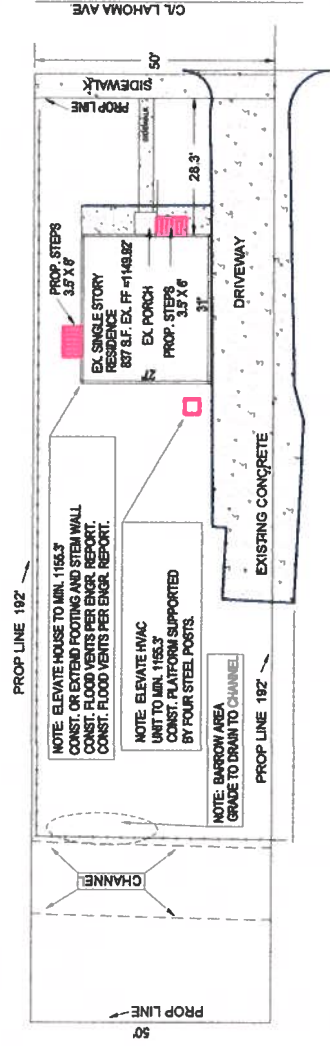
216 S Lahoma Ave



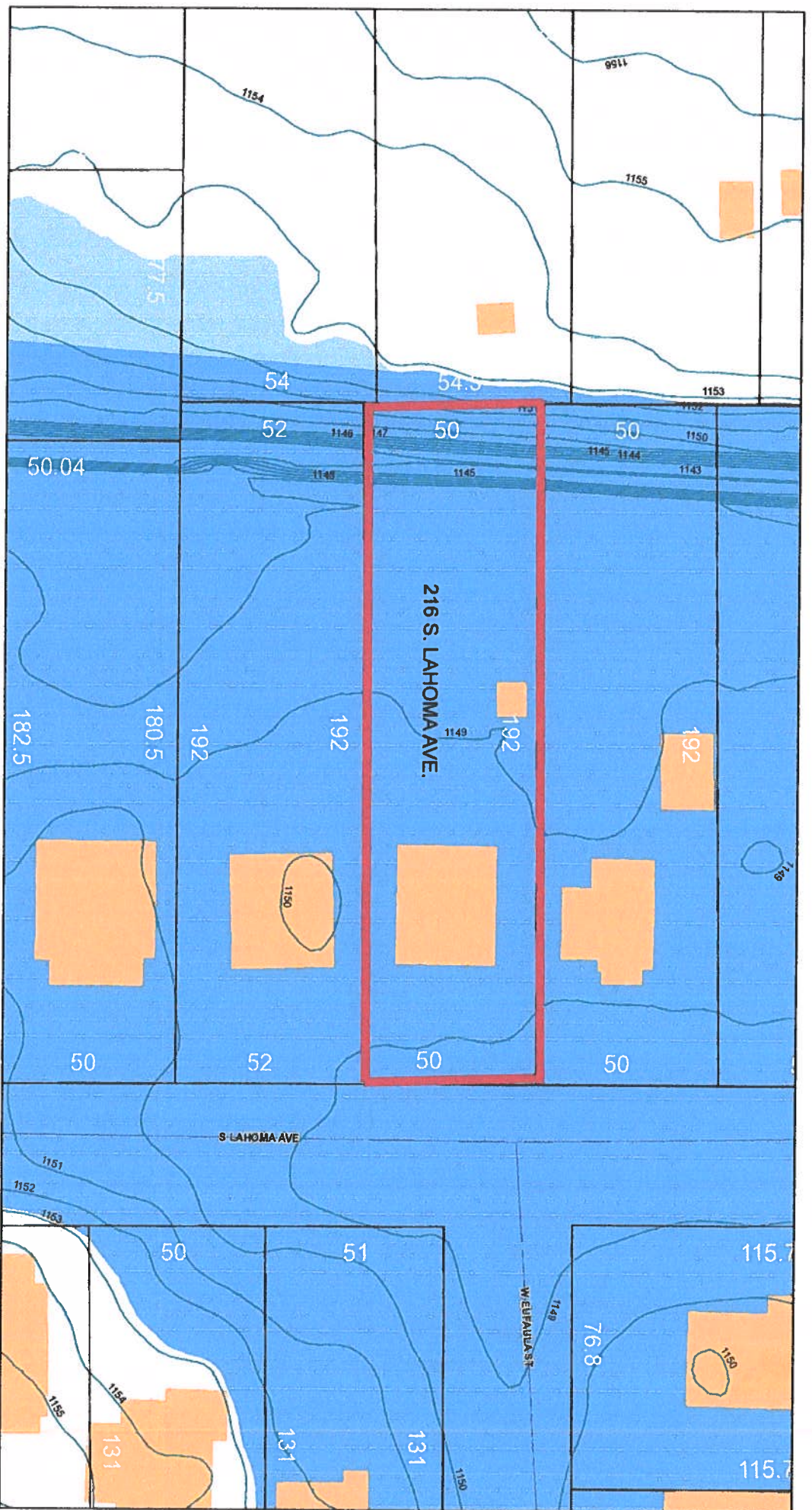
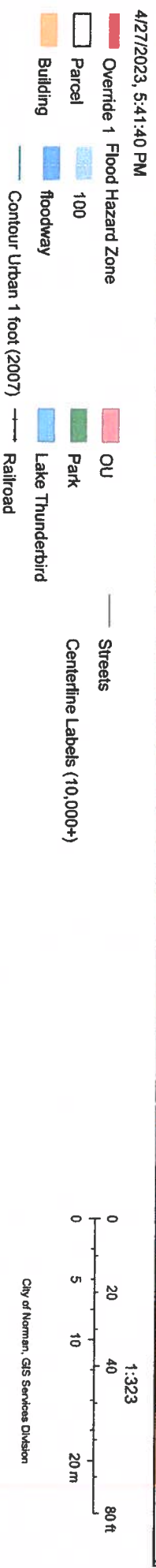
Map data ©2023 500 ft

SITE PLAN

216 SOUTH LAHOMA AVE.
LOT 6, BLOCK 2, EAGLETON ADDITION
NORMAN, OK



City of Norman WebMap



Account #: 32336 / Parcel ID: NC29EAGLE 2
6001

216 S LAHOMA AVE

CURRENT BURNETT I, GLENN & SHEILA
216 S LAHOMA AVE
NORMAN OK 73069

Current Market Value
\$97,631



KEY INFORMATION

Tax Year	2023		
Land Size	0.2200	Land Units	AC
Class	Urban Reside	School District	NORMAN CITY 29
Section	31	Township	9
Range	2W	Neighborhood	EAGLETON NC29
Legal Description	EAGLETON LOT 6 BLK 2		
Mailing Address	BURNETT, GLENN & SHEILA, 216 S LAHOMA AVE, NORMAN, 73069, 73069		

ASSESSMENT DETAILS

Market Value	\$97,631
Taxable Value	\$97,631
Land Value	\$40,000
Gross Assessed Value	\$11,715
Adjustments	\$0
Net Assessed Value	\$11,715
View Taxes for R0032336	

RESIDENTIAL

Account #: 32336 / Parcel ID: NC29EAGLE 2
6001

CURRENT BURNETT, GLENN & SHEILA
216 S LAHOMA AVE
NORMAN OK 73069

Current Market Value
\$97,631

216 S LAHOMA AVE

Type	Value	Description	Conventional 1 Story
Quality	Fair Plus	Stories	1.0
Condition	Good	Year Built	1930
Interior	Drywall	Exterior Walls	Frame Masonry Veneer
Full Baths	1	Additional Full Bath	0
Half Baths	0	Three Quarter Baths	0
Total Bathrooms	1.00	Roof Type	Gable
Bedrooms	2	Roof Cover	Comp Shingle
Foundation	Conventional Frame	Floor Cover	Allowance
Cooling	Central H/A	Total Finished Area	837

SALES

SALE DATE	SALE PRICE	DEED BOOK	DEED PAGE	GRANTOR	GRANTEE	DEED TYPE
11/01/2022	\$142,500	6492	264	SU, ZHONGJIANG	BURNETT, GLENN & SHEILA	WD
09/23/2019	\$60,000	5970	1169	CLEAR WATER PROPERTIES, LLC	SU, ZHONGJIANG	WD
09/04/2019	-	5965	744	SAM INVESTMENTS, LLC	CLEAR WATER PROPERTIES, LLC	WDN
02/28/2014	\$100,000	5266	1456	RAYL, CHARLES H-REV TRT	SAM INVESTMENTS, LLC	WD
10/24/2007	\$105,000	4415	383	LOWE, LYLE & CHERI	RAYL, CHARLES H-REV TRT	WD
06/10/1996	\$0	2738	18	POSTON, SUZANNE T	LOWE, LYLE & CHERI	WD

LAND

UNIT CODE	DESCRIPTION	USE CODE	ACRES / LOTS	USE VALUE
SF	Square Feet	Residential	9600.00	\$9,600

PERSONAL PROPERTY

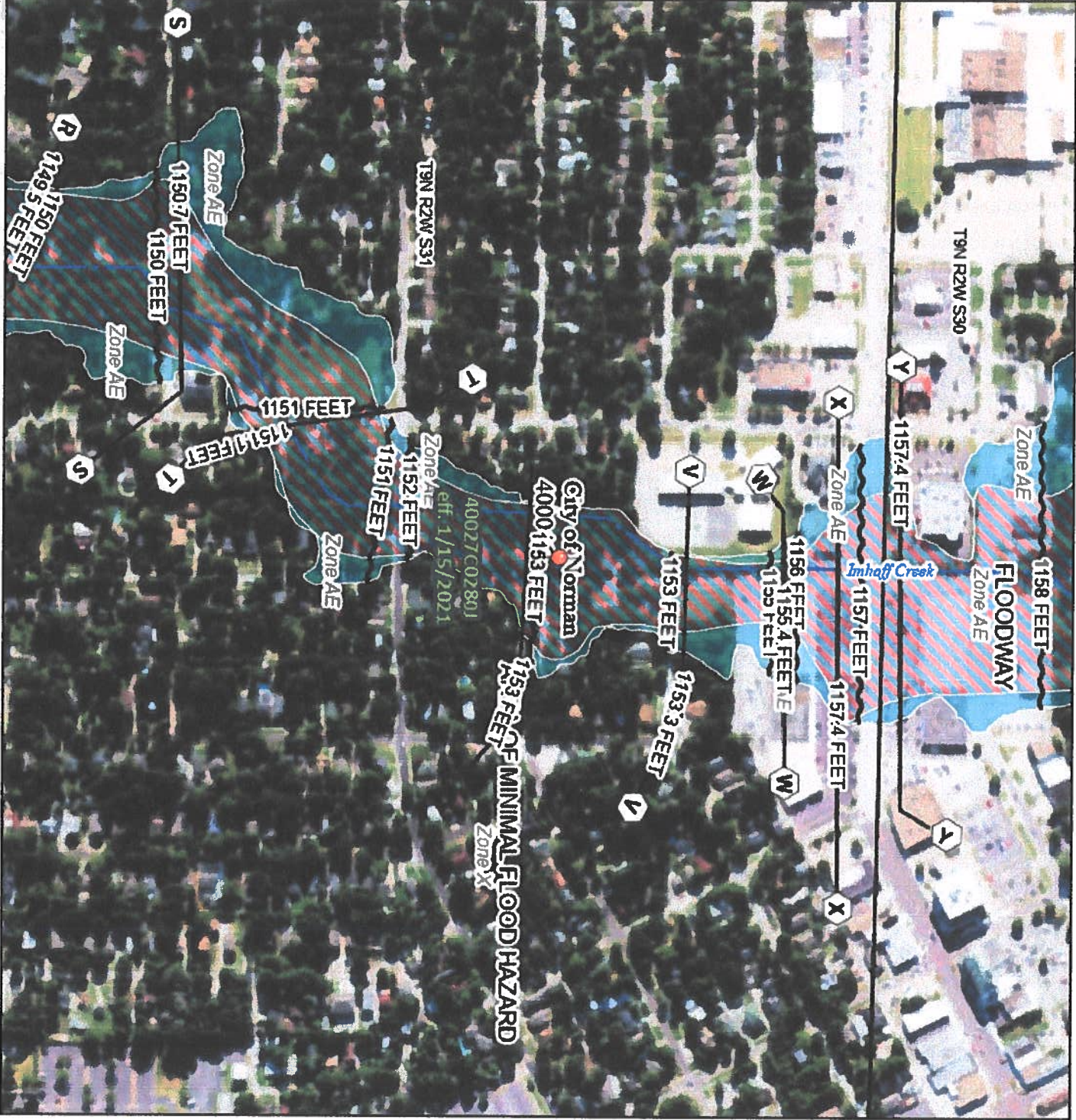
BUSINESS NAME	VIEW PERSONAL PROPERTY
No items to display	

Data last updated: 04/03/2023

National Flood Hazard Layer FIRMette



97°27'25"W 35°13'12"N



Legend

SEE THIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE)
Zone A, V, AH, VE, AR
With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee, See Notes, Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS

- No Screen
- Area of Minimal Flood Hazard Zone X
- Effective LOMRS
- Area of Undetermined Flood Hazard Zone I

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect, Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

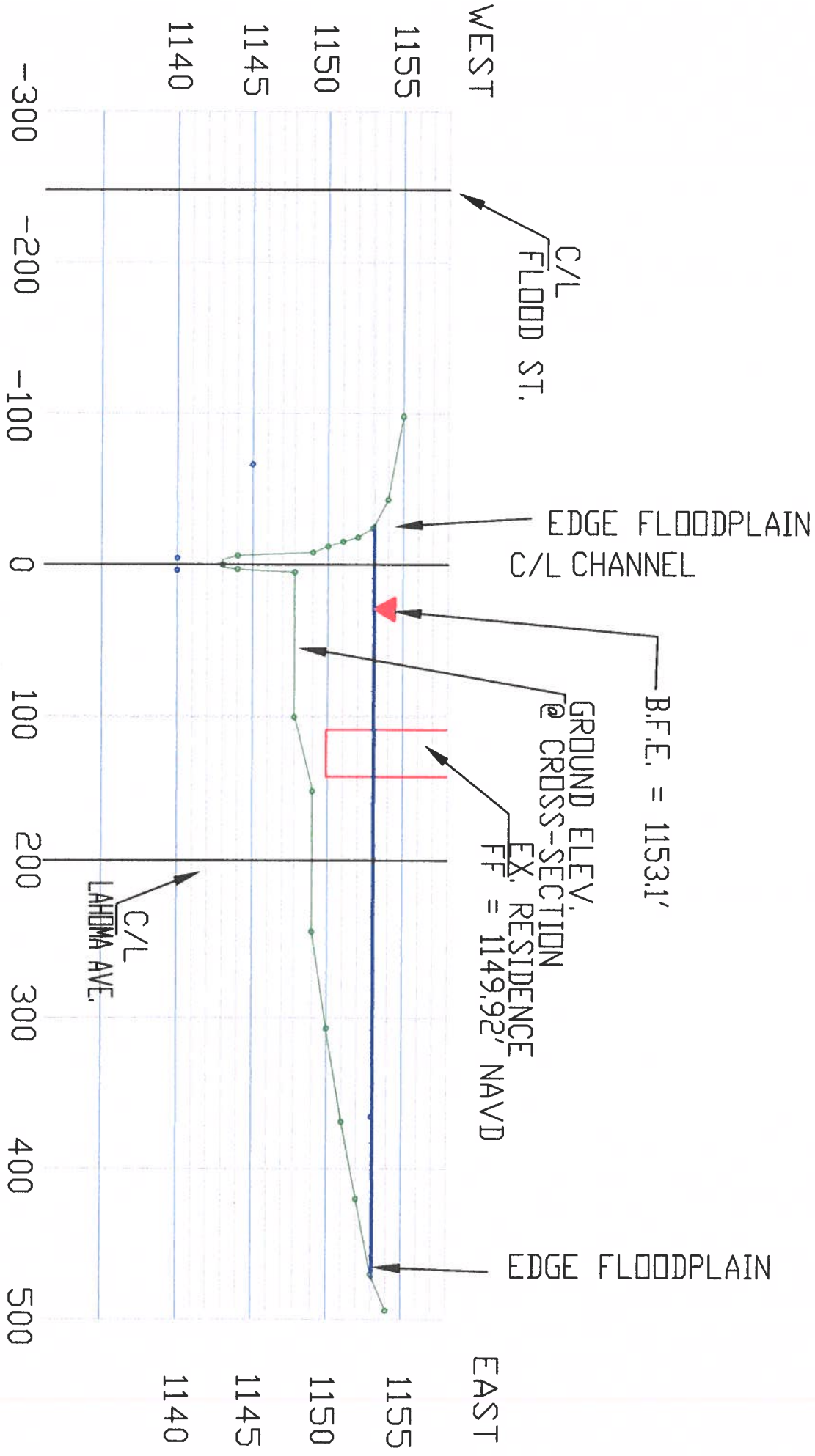
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

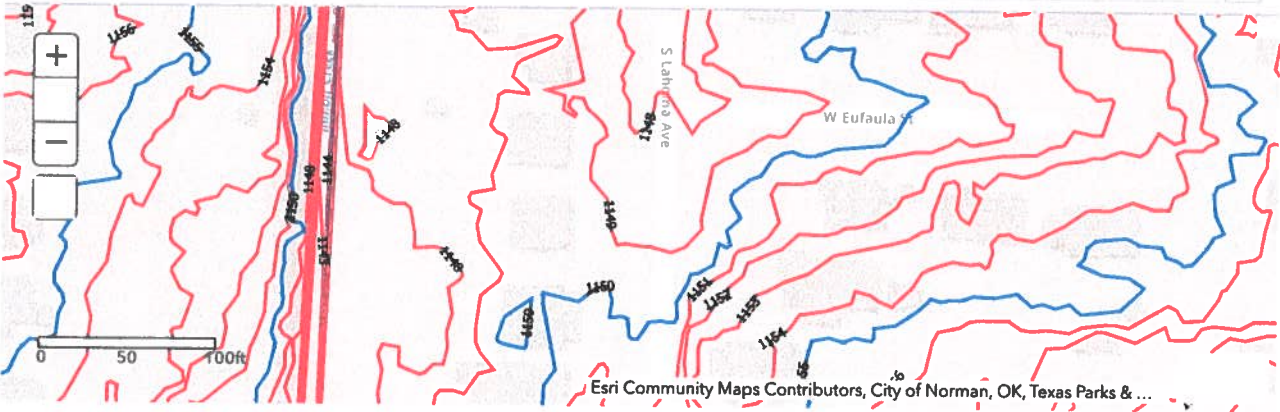
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/24/2023 at 4:39 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRMette panel number, and FIRMette effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

216 S. LAHOMA AVE., NORMAN, OK
 CROSS-SECTION OF STREAM
 AT N. EDGE OF RESIDENCE





216 S. LAHOMA AVE., NORMAN, OK
 CROSS-SECTION OF STREAM
 AT N. EDGE OF RESIDENCE

