CITY OF NORMAN, OK
FLOODPLAIN PERMIT COMMITTEE MEETING

Development Center, Conference Room, 225 N. Webster Avenue, Norman, OK 73069
Tuesday, June 20, 2023 at 3:30 PM

AGENDA

AMENDED

It is the policy of the City of Norman that no person or groups of persons shall on the grounds of race, color, religion, ancestry, national origin, age, place of birth, sex, sexual orientation, gender identity or expression, familial status, marital status, including marriage to a person of the same sex, disability, relation, or genetic information, be excluded from participation in, be denied the benefits of, or otherwise subjected to discrimination in employment activities or in all programs, services, or activities administered by the City, its recipients, sub-recipients, and contractors. In the event of any comments, complaints, modifications, accommodations, alternative formats, and auxiliary aids and services regarding accessibility or inclusion, please contact the ADA Technician at 405-366-5424, Relay Service: 711. To better serve you, five (5) business days' advance notice is preferred.

ROLL CALL

MINUTES

1. Approval of minutes from the June 5, 2023 meeting.

ACTION ITEMS

2. **Floodplain Application Permit No. 673 -** This permit is for the construction of a private drive off of Rock Creek Road for a residence at 2451 60th Ave. NW. This permit was postponed during the June 5, 2023 meeting pending a modification of the application by the applicant.

3. **Floodplain Permit Application No. 676 -** This permit is for the construction of an elevated single-family residence at 1030 W. Brooks St. in the Imhoff Creek floodplain.

4. **Floodplain Permit Application No. 677-** This permit is for the elevation of an existing single-family residence located at 216 S. Lahoma located in the Imhoff Creek floodplain.

MISCELLANEOUS COMMENTS

ADJOURNMENT

CITY OF NORMAN, OK
FLOODPLAIN PERMIT COMMITTEE MEETING

Development Center, Conference Room B, 225 N. Webster Avenue, Norman, OK 73069
Monday, June 5, 2023 at 3:30 PM

MINUTES

ROLL CALL

The meeting was called to order by Mr. Shawn O'Leary at 3:30 p.m. Roll was called and all members were present. Others in attendance included, Jason Murphy, Stormwater Program Manager; Amy Shepard, Staff; Gary Keen, Keen Engineering; Derek Harris, Applicant; Jason Emmett, PE Cedar Creek; Lollie Lenker, resident; Jason Vincent, resident; Michael Dern, resident; Casey Murray, Spartan Pool & Patio, Zach Abell, staff.

MINUTES

1. Approval of minutes from the May 15, 2023 meeting

Mr. O'Leary called for a motion to approve the minutes from the meeting of May 15, 2023. The motion was made by Ms. Sherri Stansel, and seconded by Mr. Bill Scanlon. The minutes were approved 7-0.

ACTION ITEMS

2. Floodplain Permit No. 671

Mr. O'Leary said this application was postponed at the May 15, 2023 meeting pending elevation information for the road. Mr. O'Leary asked Mr. Murphy to present the updated staff report. Mr. Murphy said the Applicant is Derek Harris and the Engineer is Jason Emmett, P.E., Cedar Creek for the project. Mr. Murphy said the Applicant is currently going through the Norman Rural Certificate of Survey process to subdivide approximately 115 acres on the north side of West Rock Creek Road between 48th Ave NW and 60th Ave NW in the 10 Mile Flat Creek floodplain. The 115 acres will be subdivided into four 20 acre tracts and one 35 acre tract. The name of the proposed subdivision is Golden Valley.

Mr. Murphy said Norman's subdivision regulations require that a 20 ft. wide private road be constructed to provide access to the tracts. The road will be approximately 3200 ft. long with 18 inch culverts installed at the intersection with West Rock Creek Road and approximately 2650 ft. north of West Rock Creek Road.

Mr. Murphy said the Applicant will use most of the material excavated from the bar ditches to construct the road and crown. Approximately 1250 cubic yards of rock will be placed on the road for the required 6 inch rock driving surface. This will require that 1250 cubic yards of material be hauled off and placed outside the floodplain to provide the necessary compensatory storage. Mr. Murphy said this material will be stockpiled on Tract 5 out of the floodplain.

Mr. Murphy said since portions of the road surface will be located at or below the Base Flood Elevation (BFE), the City of Norman cannot guarantee that citizens located on tracts served by the new road will be evacuated during a flooding emergency.

Mr. Murphy said the Floodplain Permit Committee voted 5-0 to postpone this application pending additional information related to the elevation of the road. Mr. Murphy said the Applicant submitted Addendum 01 to City Staff with a profile of the road in order to portray the existing BFE and the proposed road elevations. Mr. Murphy said according to the applicant, approximately 1396 ft. of the road will be exposed during a 100-year flood event and the remaining footage of the private road will have 46 inch reflectors spaced at 200 foot intervals and at all curves in the event that there is standing water on the road. The maximum depth of the flood elevation over the road during a 100-year flood event is approximately 8 inches. Mr. Murphy said the applicant also indicated that additional culverts may be added under the alignment of the private road if determined to be necessary during construction.

Mr. Murphy reviewed the updated plans and aerial maps of the project location provided to members in their packets. Mr. Murphy confirmed all ordinance requirements have been met and said staff recommends Floodplain Permit Application No. 671 be approved.

Mr. O'Leary asked for comments or additions from the Applicant or Engineer. Hearing none, Mr. O'Leary asked for additional questions by the committee or any public comments. Mr. Scanlon expressed concern about emergency access to residents during flooding. Mr. Scanlon said the updates to the application do not relieve his concerns. Mr. O'Leary said this application is in advance of the remaining steps in the development process and that the floodplain regulation requirements have been met. Mr. Harris said the covenants, conditions, and restrictions for the property would be filed with County Clerk to include the information about the road during flooding events. Mr. Harris said this information would be disclosed to any buyers and would have to be signed for all tracts accessed by the road. Mr. Harris read the language that would be included. Mr. Harris acknowledged the concerns and said that many roads experience water over the road during rain events. Mr. Ken Danner said another application was brought before the committee in 2007 that had similar circumstances, the committee was satisfied with the language being added to the covenants, conditions, and restrictions. Mr. Danner said a note could be added to the Certificate of Survey in regards to City liability for evacuation of property owners on this road.

Mr. Scott Sturtz said an as-built survey would be needed to verify compensatory storage for the road. Mr. Danner said a condition should be added that each tract must obtain a floodplain permit before building permits are issued. Mr. O'Leary clarified that the application meets the floodplain regulations to build a road in the floodplain. Mr. Scanlon referred to the floodplain ordinance where general guidance regarding health and safety can be considered as the basis to approve or deny the Application accordingly. Ms. Lora Hoggatt expressed concerns about the safety of the homeowners during flooding. Mr. Danner and Mr. Sturtz expressed other examples of when a similar road has come before the committee. Ms. Jane Hudson expressed even if the road is impassible there are other ways to exit the property, but that the floodplain ordinance requirements have been met.

Mr. O'Leary clarified that if this development secures a floodplain permit for the road this property would still be heard at a Planning Commission Meeting and presented before City

Council. Mr. O'Leary anticipated the concerns would be discussed throughout the development process.

Mr. Scanlon reminded the committee of the portion of the floodplain ordinance regarding flood damage to owners and safety. Mr. Scanlon expressed concerned that buyers may be willing to sign the disclosure not fully aware of the ramifications of the statement in the covenants, conditions, and restrictions. Mr. Gary Keen spoke to his experience with a previous property and their experience with flooding.

Mr. O'Leary called for a motion. Mr. Scott Sturtz motioned to approve Floodplain Application No. 671 with the conditions an as-built survey for the road and compensatory storage be submitted, a note be added to the Certificate of Survey, each development lot must obtain a Floodplain Permit, and that the minutes of this meeting be attached to the Certificate of Survey. Mr. Danner seconded the motion. The committee voted to approve Floodplain Permit No. 671 with conditions the application 5-2.

3. Floodplain Permit No. 673

Mr. O'Leary said this Floodplain Permit application is for the construction of a private driveway at 2451 60th Ave. NW in the 10-Mile Flat Creek Floodplain. Mr. O'Leary asked Mr. Murphy to present the staff report. Mr. Murphy said the Applicant is Jason Vincent and the Engineer is Gary Keen, P.E. for the project. Mr. Murphy said the applicant is requesting a floodplain permit for constructing a gravel driveway to serve lots addressed as 2401, 2421, and 2501 60th Ave. NW. Mr. Murphy said these lots are partially located in the Ten-Mile Flat Creek floodplain. The applicant owns the properties through a trust and has obtained a 50- foot wide roadway easement crossing the property addressed as 2401 60th Ave. NW.

Mr. Murphy said the owner plans to access these properties not from 60th Ave. NW but rather from Rock Creek Road to the south due to the high cost of constructing suitable culverts and entryways from 60th Ave. NW. Mr. Murphy said the Applicant currently plans to build a barn and residence on the middle lot of the three separate 5-acre lots indicated in the site plans for this permit application. Mr. Murphy said the house and barn will be located outside the 100-year floodplain, but according the engineer, the applicant plans on elevating the structures to two feet above the BFE. The engineer has indicated that while no plans currently exist to develop the additional two lots that could change in the future.

Mr. Murphy said the proposed driveway will a 12 foot wide gravel driveway with a six-inch thick layer of crushed rock. Mr. Murphy said to avoid any additional compensatory storage requirements, the owner proposed to excavate six inches of soil prior to placing six inches of crushed rock. The owner will transport the soil removed to portions of his lots that are located outside of the floodplain. This includes all soil removed from the road, the bar ditches and any other soil removed from the floodplain. Bar ditches will be constructed to aid in draining water from the property and to protect the roadway by reducing moisture in the subgrade. Mr. Murphy said based on concerns raised by the Floodplain Permit Committee in previous meetings, the owner has proposed to place T-posts with reflectors along the drive so that the road is visible during flooding conditions. Mr. Murphy said at the deepest point during a 100-year flood event, water could be expected to cover the road by up to 14 inches. The roadway is located at the edge of the floodplain, so floodwater velocities would be expected to be very low.

Mr. Murphy reviewed plans and aerial maps of the project location provided to members in their packets. Mr. Murphy reviewed the footprint of the floodplain and the location of the gravel driveway.

Mr. Murphy confirmed all ordinance requirements have been met and staff recommends approval for Floodplain Permit Application No. 673.

Mr. O'Leary asked for comments or additions from the Applicant or Engineer. Mr. Keen said the fill removed for the bar ditches will be stockpiled out of the floodplain for future use. Mr. O'Leary asked if this property would be returning for additional steps in the development process. Mr. Danner said these tracts are individual and will not require additional steps. Mr. O'Leary pointed out that this application differs from the previous application because this will not be heard at any other public boards. Ms. Stansel asked about the history of these parcels.

Mr. O'Leary asked for additional questions from the committee. Mr. Scanlon noted that this private drive may have water up to 14 inches over the road and speaks to his concerns from the previous application. Mr. Scanlon asked about the lack of notification on this application and if it was due to this being a private drive. Mr. O'Leary said the difference is in the process for a Certificate of Survey in the development process the current applicant is not currently planning to subdivide.

Mr. Danner asked if the private drive could be relocated out of the floodplain to the west side of the properties. Mr. Vincent said his 50 foot easement for the private drive is on the eastern side of the properties and is more feasible for future sale of the other lots. Ms. Hudson asked clarifying questions about the private drive and the possibility of requirements to change if the other lots are developed. Mr. Danner said he has concerns about the private drive but thought that it would continue to qualify as a private driveway. Mr. Sturtz expressed concern about the address of the property being assigned on 60th Ave with the only access from this private drive off Rock Creek Road and the feasibility of emergency vehicles having access.

Mr. Sturtz noted that 14 inches of water can lift and float a car off the roadway. Mr. Sturtz said this application is different than the previous application due to the depth of water on the drive. Mr. Vincent said speed, traffic and cost have are his main concerns with a drive off 60th Ave N.W. Mr. Vincent said over half of the road will be outside the floodplain and the risks of an entrance on 60th Ave N.W are a larger concern for him. Mr. Danner asked about the details of the permanent easement allowing the drive to cross one of the properties. Mr. Vincent provided the details of the easement filing and number. Mr. Danner said the address could be adjusted if the drive was a private named road that spanned all lots for location purposes.

Mr. O'Leary noted this application is similar but different in many ways from the previous application. Mr. O'Leary expressed concerns about a lack of further review of development issues, addresses, public safety and flooding concerns. Mr. O'Leary said access from 60th Ave N.W., which could be used for all four properties would eliminate many of the concerns and may be a good option to look into. Mr. Sturtz noted for the Applicant there is a possibility when this came to Engineering for a right-of-way permit for the driveway access it wouldn't be approved due to the lack of access from the addressed location. Mr. Keen asked about requirements of a private road. General discussion ensued regarding the depth of water and the location of the 14 inches of water over the road. Mr. Danner asked again about potentially moving the road slightly to the west. Mr. Keen said the Applicant's desire to put as much space

between 60th Ave N.W. and his home and barn. Mr. Vincent expressed his concern about cutting into his backyard area if he shifts the drive to the west.

Mr. O'Leary called for a motion. Mr. Stansel asked if more information could be requested to make a more informed decision. Mr. Sturtz said he would be happy to work with the Applicant on a solution that would be in the 6 to 8 inch range for water over the road. Mr. Sturtz motioned to postpone Floodplain Application No. 673 to investigate ways to create a private roadway and reduce the depth of water on the roadway. Mr. O'Leary expressed his support for further discussion and investigation. Ms. Hudson supported the motion as well to ensure the Applicant doesn't run into issues during building permitting. Mr. Danner seconded the motion. The committee voted to postpone the application 7-0.

1. Floodplain Permit No. 674

Mr. O'Leary said this Floodplain Permit application is for installation of a residential swimming pool and fine grading of residential yard at 5400 West Franklin Road in the Ten-Mile Flat Creek Floodplain. Mr. O'Leary asked Mr. Murphy to present the staff report. Mr. Murphy said the Applicant is Robby and Holly Frantz, the builder is Spartan Pool and Patio, and the Engineer is Gary Keen, P.E. for the project. Mr. Murphy said the property is located on the south side of Franklin Road, approximately ½ mile east of 60th Ave. NW. Mr. Murphy said this property was granted Floodplain Permit No. 609 in August of 2019 for construction of a residence and barn. These structures were constructed in accordance with the permit.

Mr. Murphy said according the engineering report, the land ownership has changed, and the new owner is requesting a permit to install a below ground pool south of the existing residence. Mr. Murphy said when the residence and barn were constructed, fill material was placed to elevate pads for both. Mr. Murphy said according the engineering report, it appears that a pond was constructed near the west corner of the property and that the material excavated was used to construct the pads for the barn and house.

Mr. Murphy said the engineer did not locate any available contours that were generated after this barn and house were constructed. Therefore, arrangements were made for a surveyor to make a topo survey of this property and generate contours for use in performing a careful analysis of the proposed project. Mr. Murphy said these contours were utilized to determine the boundary of the 100-year floodplain on the portion of the property being utilized for this project. The existing ground in the area to be covered by the pool and accessories is located almost entirely above the BFE (elevation 1137.0').

Mr. Murphy said soil removed for the construction of the pool will be transported off the site for disposal. The engineer estimates that constructing the pool will require placing approximately 16 cubic yards of material with the existing floodplain. Soil excavated for the remainder of the pool may be used for this purpose. However, it will be necessary to remove 16 cubic yards of soil from the floodplain. Mr. Murphy The engineer recommends removing this volume from the north edge of the existing pond that was created for the previous permit.

Mr. Murphy reviewed plans and aerial maps of the project location provided to members in their packets. Mr. Murphy reviewed the contour maps of the location provided by the Engineer and the location of the pool. Mr. Murphy said the Applicant is also asking to complete fine grading to fill in low spots in the yard. Mr. Murphy said the project engineer has provided a

hydraulic analysis and determined that the proposed swimming pool will not cause a rise in the BFE, which meets the ordinance requirement.

Mr. Murphy confirmed all ordinance requirements have been met and staff recommends approval for Floodplain Permit Application No. 674. Mr. Murphy asked Mr. Keen about the location of the compensatory storage and expressed concerns that the pond on the North

West corner of the property is approaching the right-of-way and asked if they had considered another location. Mr. Keen said they had discussed it and in an attempt to prevent disturbance of a grove of trees felt confident expanding the pond was the best location. Mr. Keen said after further investigation at the property he was confident there was space available without encroaching the right of way.

Mr. O'Leary asked for comments or additions from the Applicant or Engineer. Mr. Keen elaborated on the request for fine grading of the yard and explained how it would have a positive impact on the property and drainage. Mr. O'Leary asked for questions or comments from the Committee. Mr. Danner asked how much previous fill was removed from the property. Mr. Keen clarified any additional fill that needs to be removed in construction of the pool will be hauled offsite. Ms. Stansel asked about topsoil being removed. Mr. Keen clarified it was discussed as a solution to smooth the yard. Mr. O'Leary asked that the committee focus on the contents of the Application and that fine grading would not be applicable.

Mr. Scanlon motioned to approve Floodplain Application No. 674 with the condition that no additional fill will be brought into the floodplain. Ms. Stansel seconded the motion. The committee voted to approve the application 7-0.

MISCELLANEOUS COMMENTS

2. The next Floodplain Committee meeting will be on Tuesday, June 20, 2023 and will have 3 applications.

3. Ms. Stansel asked about the status and process to update the Floodplain Ordinance to include Cumulative Substantial Improvements. Mr. O'Leary said that process has begun and hope to have something before the committee soon.

ADJOURNMENT

Mr. O'Leary called for a motion to adjourn. Mr. Sturtz motioned to adjourn and was seconded by Ms. Hudson. The motion was approved 7-0. The meeting adjourned at 4:45 p.m.

Passed and approved this _____ day of _____, 2023

_____

City of Norman Floodplain Administrator, Shawn O'Leary

STAFF REPORT 06/20/2023 **PERMIT NO. 673**

ITEM: Floodplain Permit application is for the construction of a private driveway at 2451 60th Ave. NW in the 10-Mile Flat Creek Floodplain. This permit was postponed at the June 5, 2023 meeting pending additional information and modifications to be made by the applicant.

BACKGROUND:
APPLICANT: Jason Vincent
BUILDER: Armor Asphalt
ENGINEER: Earl Gary Keen, P.E.

The applicant is requesting a floodplain permit for constructing a gravel driveway to serve lots addressed as 2401, 2421, and 2501 60th Ave. NW. These lots are partially located in the Ten-Mile Flat Creek floodplain. The applicant owns the properties through a trust and has obtained a 50-foot wide roadway easement crossing the property addressed as 2401 60th Ave. NW. The owner plans to access these properties not from 60th Ave. NW but rather from Rock Creek Road to the south due to the high cost of constructing suitable culverts and entryways from 60th Ave. NW. The high cost is related to the fact that the bar ditch along 60th Ave. NW is a major drainage way. He currently plans to build a barn and residence on the middle lot of the three separate 5-acre lots indicated in the site plans for this permit application. The house and barn will be located outside the 100-year floodplain, but according to the engineer, the applicant plans on elevating the structures to two feet above the BFE. The engineer has indicated that while no plans currently exist to develop the additional two lots, that may change in the future.

As outlined in the submitted plans, the proposed driveway will a 12’ wide gravel driveway with a six-inch thick layer of crushed rock. To avoid any compensatory storage requirements, the owner proposed to excavate six inches of soil prior to placing six inches of crushed rock. The owner will transport the soil removed to portions of his lots that are located outside of the floodplain. This includes all soil removed from the road, the bar ditches and any other soil removed from the floodplain. Bar ditches will be constructed to aid in draining water from the property and to protect the roadway by reducing moisture in the subgrade. Additionally, based on concerns raised by the Floodplain Permit Committee in previous meetings, the owner has proposed to place T-posts with reflectors along both sides of the drive so that the road is visible during flooding conditions. At the deepest point during a 100-year flood event, water could be expected to cover the road by up to 14 inches. The roadway is located at the edge of the floodplain, so floodwater velocities would be expected to be very low.

Update:
From the updated engineering report submitted by Gary Keen, P.E. following a meeting with City staff, himself and the applicant, Jason Vincent:

“Staff members explain a policy of restricting the level of development in a floodplain to the minimum necessary and suggested that the length of driveways and roads in the floodplain be minimized. Accordingly, this revised proposal calls for reducing the length of roadways and driveway to be constructed in the floodplain in this development. First, the proposed driveway has been largely changed to a private road, which is to named and addressed in accordance with the City's policy. The owner is agreeable to building the private road according to the City’s private road standard (sic). In addition, the owner is agreeable to arranging for the private road to serve the first three lots north of Rock Creek Road. This private road will not serve the 4th lot north of Rock Creek Road, which is currently addressed as 2501 60th Avenue NW. As part of this development, a private driveway will be constructed to serve the 3rd lot north of Rock Creek Road. This lot is currently addressed as 2451. Furthermore, the location of the proposed house and barn on lot 2451 has been changed, and this change has resulted in a further reduction of the length of driveway and private road located in the floodplain.

During the previous Floodplain Committee Meeting, concerns were expressed about portions of the proposed roadways/ driveways being subject to flooding during a one percent chance flood. Currently, this amended proposal is to elevate all roads and driveway constructed pursuant to this application such that the top of the gravel road will be a minimum of 0.25 feet (3") above the base flood elevation (BFE).

Soil used to elevate the portion of the road/ driveway located in the floodplain will be obtained onsite for areas located within the floodplain. An extra-wide bar-ditch will be constructed on the west side of the private road to drain to Rock Creek Road. This bar-ditch will be construted to a depth 1.5 feet lower than the historic ground elevation or lower. One of the objectives of this wide bar-ditch is to provide a source of fill dirt and to meet the requirement for compensatory floodplain storage. During construction of this bar ditch, 499 cubic yards of soil will be removed from below the BFE in floodplain. Fill placed below the BFE when constructing the private road is calculated to be 274 cubic yards and fill placed below the BFE in construction of the driveway is 85 cubic yards for a total of 359 cubic yards, which is less that the 499 cubic yards of storage created during the construction of the private road.

In case it is discovered during construction that additional fill or compensatory storage is required, then soil can be removed from lot 2501, within the floodplain as shown on the exhibit . Removing soil two inches deep within the floodplain of lot 2501 will generate an additional 373 cubic yards of compensatory storage, if needed.

The owner intends to obtain all other permits required by the City of Norman, which includes a permit for the approach connecting to Rock Creek Road."

Staff has reviewed the amended plans and drawings and finds the information provided in the engineering report to be accurately represented.

STAFF ANALYSIS:
Site located in Little River Basin or its Tributaries? yes__ no✓

According to the DFIRM, the vast majority of the new road will be in the 10 Mile Flat Creek floodplain Zone AE. The BFE along the planned road drive is ~1128.0 feet.

Applicable Ordinance Sections:		Subject Area:
36-533	(e)(2)(a)……..……..	Fill Restrictions in the Floodplain
	(e)(2)(e)...……..….	Compensatory storage
	(f)(3)(a)(8) ……	No Rise Considerations

(e)(2)(a) and (e)(2)(e) Fill Restrictions in the Floodplain and Compensatory Storage – The use of fill in the floodplain is restricted. However, the placement of fill is allowed to elevate structures and construct drives and roads providing access to the structures. The applicant has indicated through their engineer's report that 6 inches of soil will be excavated before the 6 inches of crushed rock are brought in for the road construction, so additional compensatory storage should not be necessary. All spoils from construction and excavation will be removed from the floodplain.

(f)(3)(8) No Rise Considerations – For proposed development within any flood hazard area (except for those designated as regulatory floodways), certification that a rise of no more than 0.05 ft. will occur in the BFE on any adjacent property as a result of the proposed work must be provided. For proposed development within a regulatory floodway, certification of no increase in the BFE is required. The engineer has certified that the project will not cause a rise in the BFE which meets this ordinance requirement.

RECOMMENDATION: Staff recommends that Floodplain Permit Application #673 be approved.

ACTION TAKEN: _____

Earl “Gary” Keen, PE
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AMENDED (June 12, 2023)
ENGINEERING REPORT
2401, 2421, 2451 AND 2501 60th Ave. NW

This report covers a floodplain permit application for constructing a gravel driveway to serve lots addressed as 2401, 2421, and 2501 60th Avenue NW, Norman, OK. These properties are located in the famous Ten Mile Flat Area and these properties are located partially in the floodplain of Ten Mile Flat Creek. A Vincent Trust, with Jason Vincent being the trustee, owns the properties addressed as 2421, 2451, and 2501 60th Ave. NW, and this trust has obtained a 50-foot wide roadway easement crossing the property addressed as 2401 60th Avenue NW. All of these properties abut 60th Avenue NW, but the owner plans to take access off Rock Creek Road due to the high cost of constructing suitable culverts and entryways at 60th Avenue NW. The high cost is due to the fact that the bar-ditch of 60th Avenue NW is actually a major drainage way. As shown by the attached site plan, the owner intends to construct a private driveway to serve his three lots. He has current plans to construct a home and a barn on the property addressed as 2501. This is the middle lot of his three five-acre lots. For now, he plans to develop the middle lot and use the two adjacent lots as buffer zones, but his plans might change in the future.

As shown by exhibits presented these properties are located at the NE corner of 60th Avenue NW and Rock Creek Road. The current plan does not include using the proposed driveway for access to the five-acre lot with a different owner and addressed as 2401; but, this might change in the future. Approval of any additional future use of this driveway is not being sought at this time. As shown by the plans, the proposed driveway is a 12' wide gravel drive paved with a six-inch thick layer of crushed rock. To avoid any compensatory storage requirements, the owner proposed to excavate six inches of soil prior to placing six inches of crushed rock. The owner will transport the soil removed to portions of his lots that are located outside the floodplain. This includes the soil removed prior to placing crushed rock, the soil removed to construct bar ditches, and any other soil removed from the floodplain. Bar ditches will be constructed on both sides of the driveway to assist in draining the property and in protecting the roadway by reducing moisture content in the subgrade. In a recent Floodplain Committee Meeting, concern was discussed about risks of traveling a roadway when the roadway is flooded, due to various issues, including visibility of the roadway. This owner is proposing to place metal “T-posts”, with light reflectors attached along the side of the roadway so that motorists can tell where the roadway is when under water. These posts will be placed on both sides of the driveway at intervals of approximately 100 feet. Similar “T-posts” are commonly used on public highways in snow country to assist motorists during periods of blowing snow known as “white-outs”. This engineer has prepared a profile of the proposed driveway, which is included in the exhibits, that shows the top of the roadway and the BFE. At the deepest point, the 1% chance flood will cover the roadway by just 1-1/8 feet (less that 14 inches). This roadway is located at the very edge of the floodplain; therefore the floodwater velocities experienced at this location are expected to be very low and of little concern. Incidentally, to accurately analyze this situation, many accurate elevation shots were taken on portions of this site by a surveyor and contours were generated (NAVD) and presented in the exhibits.

The owner proposes to construct a barn and a residence on the middle lot (2501), but these structures will be located outside the floodplain; therefore, these are not included in this permit application. Both of these structures will be elevated to place the lowest floor at an elevation at least two feet above the BFE. The BFE at this lot is 1128.2'; therefore the lowest floor of these structures must be at or above an elevation of 1130.2' NAVD.

In summary, this proposal appears to fully meet the requirements of the City's floodplain regulations, and this engineer recommends approval.

Engineer's Certification

No net fill material will be placed in the floodplain and the construction of the the roadway will not result in an increase in the elevation of the ground at that location. All other construction will be in portions of the property that are located outside the floodplain; therefore the rise on this property or any nearby properties will be minuscule. The width of the floodplain at this location exceeds 4000 feet, and this fact contributes greatly to the opinion expressed herein. Certainly, if constructed according to the proposed plans, the increase in the BFE at this property or any other properties will be less than 0.05 feet.

Signature

Signed by Earl Gary Keen

AMENDMENTS

After the Floodplain Committee Meeting when this application was initially considered, this engineer, the Jason Vincent (owner) met with Jason Murphy, Todd McLellan and Ken Danner, City staff members to discuss concerns about development of this property. This engineer and Jason Vincent are appreciative for the opportunity to meet with staff regarding this matter, and based upon additional information received and an explanation of the Staff's concerns about this development, this application is being amended to address several concerns presented. A summary of the proposed modifications is discussed below.

Staff members explain a policy of restricting the level of development in a floodplain to the minimum necessary and suggested that the length of driveways and roads in the floodplain be minimized. Accordingly, this revised proposal calls for reducing the length of roadways and driveway to be constructed in the floodplain in this development. First, the proposed driveway has been largely changed to a private road, which is to named and addressed in accordance twith the City's policy. The owner is agreeable to providing a certificate of survey that meets the City's standard. In addition, the owner is agreeable to arranging for the private road to serve the first three lots north of Rock Creek Road. This private road will not serve the 4th lot north of Rock Creek Road, which is currently addressed as 2501 60th Avenue NW. As part of this development, a private driveway will be constructed to serve the 3rd lot north of Rock Creek Road. This lot is currently addressed as 2451. Furthermore, the location of the proposed house and barn on lot 2451 has been changed, and this change has resulted in a further reduction of the length of driveway and private road located in the floodplain.

During the previous Floodplain Committee Meeting, concerns were expressed about portions of the proposed roadways/ driveways being subject to flooding during a one percent chance flood. Currently, this amended proposal is to elevate all roads and driveway constructed pursuant to this application such that the top of the gravel road will be a minimum of 0.25 feet (3”) above the base flood elevation (BFE).

Soil used to elevate the portion of the road/ driveway located in the floodplain will be obtained onsite for areas located within the floodplain. An extra-wide bar-ditch will be constructed on the west side of the private road to drain to Rock Creek Road. This bar-ditch will be construted to a depth 1.5 feet lower than the historic ground elevation or lower. One of the objectives of this wide bar-ditch is to provide a source of fill dirt and to meet the requirement for compensatory floodplain storage. During construction of this bar ditch, 499 cubic yards of soil will be removed from below the BFE in floodplain. Fill placed below the BFE when constructing the private road is calculated to be 274 cubic yards and fill placed below the BFE in construction of the driveway is 85 cubic yards for a total of 359 cubic yards, which is less that the 499 cubic yards of storage created during the construction of the private road.

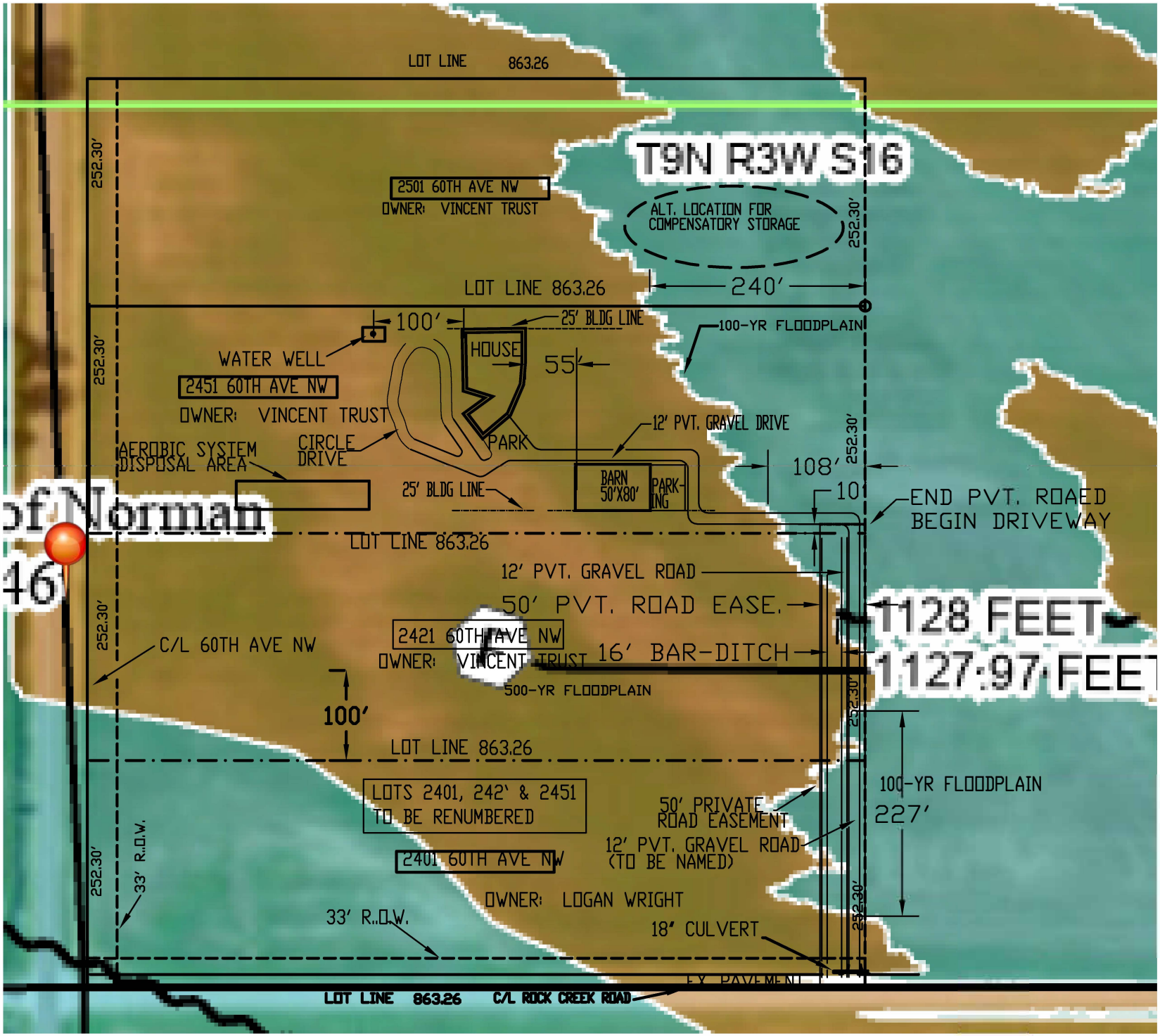
In case it is discovered during construction that additional fill or compensatory storage is required, then soil can be removed from lot 2501, within the floodplain as shown on the exhibit . Removing soil two inches deep within the floodplain of lot 2501 will generate an

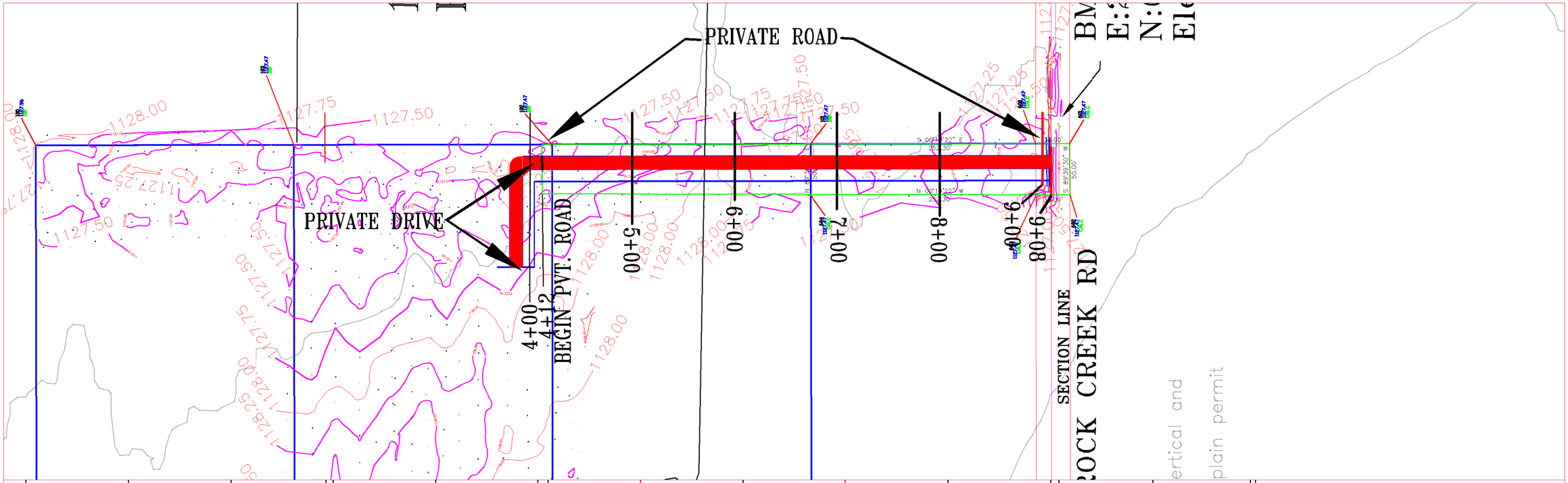
additional 373 cubic yards of compensatory storage, if needed.

The owner intends to obtain all other permits required by the City of Norman, which includes a permit for the approach connecting to Rock Creek Road. Additional information regarding the construction of the approach will be provided at this time.

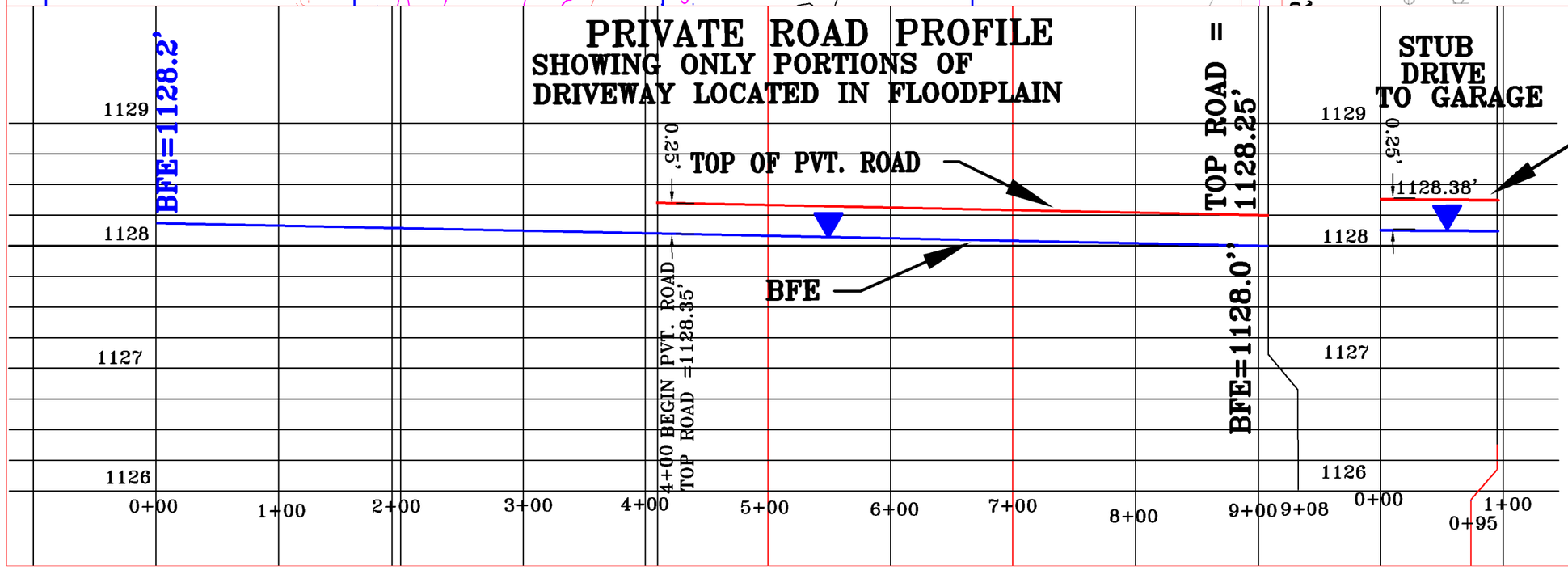
The owner is eager to obtain building permits and get started on his new house and barn, accordingly, he is hopefully that this floodplain application can be approved henceforth and quickly followed by buiding permits. This owner is eager to get started on the certificate of survey, dedication and naming of private road, easements and anything else that is needed to clear the way for building to commence.

Please let us know if there are any other concerns.

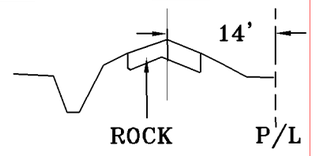

LOT LINE 863.26
T9N R3W S16
2501 60TH AVE NW
OWNER: VINCENT TRUST
ALT. LOCATION FOR COMPENSATORY STORAGE
252.30'
LOT LINE 863.26
240'
100'
25' BLDG LINE
100-YR FLOODPLAIN
WATER WELL
HOUSE
55'
2451 60TH AVE NW
OWNER: VINCENT TRUST
12' PVT. GRAVEL DRIVE
AEROBIC SYSTEM DISPUSAL AREA
CIRCLE DRIVE
PARK
108'
BARN 50'X80'
PARK-ING
25' BLDG LINE
10'
END PVT. ROAED
BEGIN DRIVEWAY
LOT LINE 863.26
12' PVT. GRAVEL ROAD
50' PVT. ROAD EASE.
1128 FEET
2421 60TH AVE NW
OWNER: VINCENT TRUST
16' BAR-DITCH
C/L 60TH AVE NW
500-YR FLOODPLAIN
1127.97 FEET
100'
LOT LINE 863.26
LOTS 2401, 242' & 2451 TO BE RENUMBERED
100-YR FLOODPLAIN
227'
50' PRIVATE ROAD EASEMENT
12' PVT. GRAVEL ROAD (TO BE NAMED)
2401 60TH AVE NW
OWNER: LOGAN WRIGHT
33' R.O.W.
18" CULVERT
LOT LINE 863.26
C/L ROCK CREEK ROAD



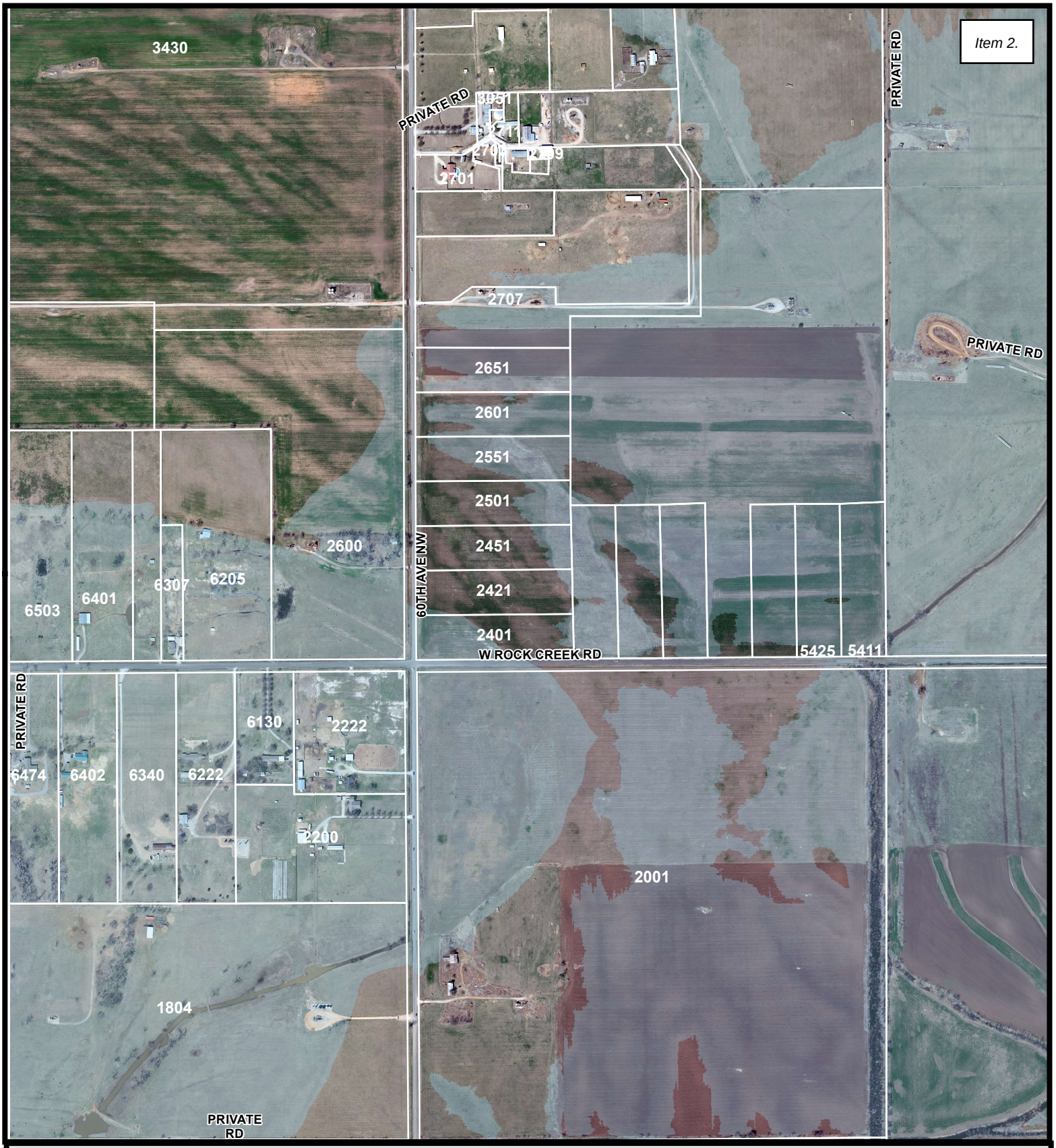
PRIVATE ROAD PROFILE
SHOWING ONLY PORTIONS OF DRIVEWAY LOCATED IN FLOODPLAIN



TYPICAL
DRIVEWAY DETAIL



6" DEEP CRUSHED ROCK
12' WIDE
2' SHOULDERS
WEST BAR-DITCH ONLY
4:1 SIDE SLOPES
DEPTH 1.5' BELOW NAT. GROUND.
BOTTOM WIDTH =12'
C/L GRAVEL ROAD IS 14' WEST OF EAST P/L



2451 60th Ave. NW

Legend

- Address Number
- Street Labels (<1:10,000)
- Parcel
- 1% Chance Floodplain
- Floodway

N
W E
S

1 inch = 721 feet

0 0.05 0.1 0.2 M

The City of Norman assumes no responsibility for errors or omissions in the information presented.

City of Norman

Floodplain Permit Application

Floodplain Permit No. 673

Building Permit No. _____

Date _____

FLOODPLAIN PERMIT APPLICATION
($100.00 Application Fee Required)

SECTION 1: GENERAL PROVISIONS (APPLICANT to read and sign):

1. No work may start until a permit is issued.
2. The permit may be revoked if any false statements are made herein.
3. If revoked, all work must cease until permit is re-issued.
4. Development shall not be used or occupied until a Certificate of Occupancy is issued.
5. The permit will expire if no work is commenced within 2 years of issuance.
6. Applicant is hereby informed that other permits may be required to fulfill local, state and federal regulatory requirements and must be included with this floodplain permit application.
7. Applicant hereby gives consent to the City of Norman or his/her representative to access the property to make reasonable inspections required to verify compliance.
8. The following floodplain modifications require approval by the City Council:
   (a) A modification of the floodplain that results in a change of ten percent (10%) or more in the width of the floodplain.
   (b) The construction of a pond with a water surface area of 5 acres or more.
   (c) Any modifications of the stream banks or flow line within the area that would be regulatory floodway whether or not that channel has a regulatory floodplain, unless the work is being done by the City of Norman staff as part of a routine maintenance activity.
9. All supporting documentation required by this application is required along with the permit fee by the submittal deadline. Late or incomplete applications will not be accepted.
10. I, THE APPLICANT, CERTIFY THAT ALL STATEMENTS HEREIN AND IN ATTACHMENTS TO THIS APPLICATION ARE, TO THE BEST OF MY KNOWLEDGE, TRUE AND ACCURATE.

SECTION 2: PROPOSED DEVELOPMENT (To be completed by APPLICANT.)

APPLICANT: Jason Vincent ADDRESS: 4100 Hidden Lake Cir Moore, Ok 7316
TELEPHONE: (405) 408-5192 SIGNATURE: Jason M Vincent

BUILDER: Armor Asphalt ADDRESS: 2916 NE 36th St OKCOK 73111
TELEPHONE: (405) 655-4494 SIGNATURE: X Kent Cox
(405) 888-7585 (Richard)

ENGINEER: Earl Gary Keen ADDRESS: PO BOX 891200, OKC 73189
TELEPHONE: 405-823 8240 SIGNATURE: Earl Gary Keen
gary keen47@att.net

PROJECT LOCATION

To avoid delay in processing the application, please provide enough information to easily identify the project location. Provide the street address, subdivision addition, lot number or legal description (attach) and, outside urban areas, the distance to the nearest intersecting road or well known landmark. A sketch attached to this application showing the project location would be helpful.

ASSIGNED ADDRESS IS 2451 60TH AVE NW BUT PROPOSED ACCESS IS FROM ROCK CREEK POND. LOCATION MAP IS PROVIDED. DRIVEWAY IS APPROX 800 FT EAST OF INT. OF 60TH NW & ROCK CREEK ROAD. COUNTY INFO SHOWING LEGAL IS ATTACHED.

DESCRIPTION OF WORK (Check all applicable boxes): DRIVEWAY IS IN REG. FLOOD PLAIN.

A. STRUCTURAL DEVELOPMENT

ACTIVITY	STRUCTURE TYPE
☒ New Structure	☐ Residential (1-4 Family)
☐ Addition	☐ Residential (More than 4 Family)
☐ Alteration	☐ Non-Residential (Flood proofing? ☐ Yes)
☐ Relocation	☐ Combined Use (Residential & Commercial)
☐ Demolition	☐ Manufactured (Mobile) Home
☐ Replacement	☐ In Manufactured Home Park? ☐ Yes

PROPOSED BUILDINGS ARE OUTSIDE FLOOD PLAIN.

ESTIMATED COST OF PROJECT $35,000 — FOR DRIVEWAY Work that involves substantial damage/substantial improvement requires detailed cost estimates and an appraisal of the structure that is being improved.

B. OTHER DEVELOPMENT ACTIVITIES:

NOTE: HOUSE & BARN TO BE PLACED OUTSIDE THE FLOOD PLAIN

☐ Fill ☐ Mining ☐ Drilling ☐ Grading

☐ Excavation (Beyond the minimum for Structural Development)

☐ Watercourse Alteration (Including Dredging and Channel Modifications)

☒ Drainage Improvements (Including Culvert Work) ☐ Road, Street or Bridge Construction

BAR DITCH & CULVERT FOR PRIVATE DRIVE

☐ Subdivision (New or Expansion) ☐ Individual Water or Sewer System

In addition to items A. and B. provide a complete and detailed description of proposed work (failure to provide this item will be cause for the application to be rejected by staff). Attach additional sheets if necessary.

SEE ATTACHED PLANS. EXCAVATE FOR 12' WIDE PRIVATE DRIVE AND BAR-DITCHES. PLACE CRUSHED ROCK, 12' WIDE X 6" DEEP.

C. ATTACHMENTS WHICH ARE REQUIRED WITH EVERY APPLICATION:

The applicant must submit the documents listed below before the application can be processed. If the requested document is not relevant to the project scope, please check the Not Applicable box and provide explanation.

A. Plans drawn to scale showing the nature, location, dimensions, and elevation of the lot, existing or proposed structures, fill, storage of materials, flood proofing measures, and the relationship of the above to the location of the channel, floodway, and the regulatory flood-protection elevation.
ATTACHED

B. A typical valley cross-section showing the channel of the stream, elevation of land areas adjoining each side of the channel, cross-sectional areas to be occupied by the proposed development, and high-water information. GIS MAP ATTACHED.

☐ Not Applicable:

C. Subdivision or other development plans (If the subdivision or other developments exceeds 50 lots or 5 acres, whichever is the lesser, the applicant **must** provide 100-year flood elevations if they are not otherwise available).

☒ Not Applicable:
BUT, FLOOD ELEVATIONS ARE AVAILABLE & SHOWN.

D. Plans (surface view) showing elevations or contours of the ground; pertinent structure, fill, or storage elevations; size, location, and spatial arrangement of all proposed and existing structures on the site; location and elevations of streets, water supply, sanitary facilities; photographs showing existing land uses and vegetation upstream and downstream, soil types and other pertinent information.

☐ Not Applicable:
DATA PROVIDED IN EXHIBITS

E. A profile showing the slope of the bottom of the channel or flow line of the stream.

☐ Not Applicable:
PROFILE FROM FIS STUDY PROVIDED

F. Elevation (in relation to mean sea level) of the lowest floor (including basement) of all new and substantially improved structures.

☒ Not Applicable:

G. Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development.

☐ Not Applicable: CULVER UNDER DRIVEWAY AT R.C. ROAD.
BAR DITCHES ALONG DRIVE.

3

H. For proposed development within any flood hazard area (except for those areas designated as regulatory floodways), certification that a rise of no more than five hundredths of a foot (0.05') will occur on any adjacent property in the base flood elevation as a result of the proposed work. For proposed development within a designated regulatory floodway, certification of no increase in flood levels within the community during the occurrence of the base flood discharge as a result of the proposed work. All certifications shall be signed and sealed by a Registered Professional Engineer licensed to practice in the State of Oklahoma.

PROVIDED IN EXHIBIT.

I. A certified list of names and addresses of all record property owners within a three hundred fifty (350) foot radius of the exterior boundary of the subject property not to exceed 100 feet laterally from the Special Flood Hazard Area. The radius to be extended by increments of one hundred (100) linear feet until the list of property owners includes not less than fifteen (15) individual property owners of separate parcels or until a maximum radius of one thousand (1,000) feet has been reached.

PROVIDED

J. A copy of all other applicable local, state, and federal permits (i.e. U.S. Army Corps of Engineers 404 permit, etc). NONE REQUIRED BUT OWNER WILL GET ALL BUILDING PERMITS NEEDED.

After completing SECTION 2, APPLICANT should submit form to Permit Staff for review.

SECTION 3: FLOODPLAIN DETERMINATION (To be completed by Permit Staff.)

The proposed development is located on FIRM Panel No.:_____, Dated: _____

The Proposed Development:

☐ Is NOT located in a Special Flood Hazard Area
(Notify the applicant that the application review is complete and NO FLOODPLAIN PERMIT IS REQUIRED).

☐ Is located in a Special Flood Hazard Area.

☐ The proposed development is located in a floodway.

☐ 100-Year flood elevation at the site is_____ Ft. NGVD (MSL) ☐ Unavailable

See Section 4 for additional instructions.

SIGNED: _____ **DATE:** _____

4

SECTION 4: ADDITIONAL INFORMATION REQUIRED (To be completed by Permit Staff.)

The applicant must also submit the documents checked below before the application can be processed.

☐ Flood proofing protection level (non-residential only) _____ Ft. NGVD (MSL). For flood proofed structures applicant must attach certification from registered engineer.

☐ Certification from a registered engineer that the proposed activity in a regulatory floodway will not result in any increase in the height of the 100-year flood (Base Flood Elevation). A copy of all data and calculations supporting this finding must also be submitted.

☐ Certification from a registered engineer that the proposed activity in a regulatory flood plain will result in an increase of no more than 0.05 feet in the height of the 100-year flood (Base Flood Elevation). A copy of all data and calculations supporting this finding must also be submitted.

☐ All other applicable federal, state, and local permits have been obtained.

Other: _____

_____

_____

SECTION 5: PERMIT DETERMINATION (To be completed by Floodplain Chairman.)

The proposed activity: (A) ☐ **Is**; (B) ☐ **Is Not** in conformance with provisions of Norman's City Code Chapter 22, Section 429.1. The permit is issued subject to the conditions attached to and made part of this permit.

SIGNED: _____ DATE: _____

If **BOX A** is checked, the Floodplain committee chairman may issue a Floodplain Permit.

If **BOX B** is checked, the Floodplain committee chairman will provide a written summary of deficiencies. Applicant may revise and resubmit an application to the Floodplain committee or may request a hearing from the Board of Adjustment.

APPEALS: Appealed to Board of Adjustment: ☐ Yes ☐ No

Hearing date: _____

Board of Adjustment Decision - Approved: ☐ Yes ☐ No

Conditions:

_____

_____

_____

5

SECTION 6: AS-BUILT ELEVATIONS (To be submitted by APPLICANT before Certificate of Occupancy is issued.)

1. FEMA Elevation Certificate
   and/or
2. FEMA Floodproofing Certificate

NOTE: The completed certificate will be reviewed by staff for completeness and accuracy. If any deficiencies are found it will be returned to the applicant for revision. A Certificate of Occupancy for the structure will not be issued until an Elevation and /or Floodproofing Certificate has been accepted by the City.

Earl "Gary" Keen, PE
P O Box 891200
Oklahoma City, OK 73189
(405) 823-8240
garykeen47@att.net

ENGINEERING REPORT
2401, 2421, 2451 AND 2501 60th Ave. NW

This report covers a floodplain permit application for constructing a gravel driveway to serve lots addressed as 2401, 2421, and 2501 60th Avenue NW, Norman, OK. These properties are located in the famous Ten Mile Flat Area and these properties are located partially in the floodplain of Ten Mile Flat Creek. A Vincent Trust, with Jason Vincent being the trustee, owns the properties addressed as 2421, 2451, and 2501 60th Ave. NW, and this trust has obtained a 50-foot wide roadway easement crossing the property addressed as 2401 60th Avenue NW. All of these properties abut 60th Avenue NW, but the owner plans to take access off Rock Creek Road due to the high cost of constructing suitable culverts and entryways at 60th Avenue NW. The high cost is due to the fact that the bar-ditch of 60th Avenue NW is actually a major drainage way. As shown by the attached site plan, the owner intends to construct a private driveway to serve his three lots. He has current plans to construct a home and a barn on the property addressed as 2501. This is the middle lot of his three five-acre lots. For now, he plans to develop the middle lot and use the two adjacent lots as buffer zones, but his plans might change in the future.

As shown by exhibits presented these properties are located at the NE corner of 60th Avenue NW and Rock Creek Road. The current plan does not include using the proposed driveway for access to the five-acre lot with a different owner and addressed as 2401; but, this might change in the future. Approval of any additional future use of this driveway is not being sought at this time. As shown by the plans, the proposed driveway is a 12' wide gravel drive paved with a six-inch thick layer of crushed rock. To avoid any compensatory storage requirements, the owner proposed to excavate six inches of soil prior to placing six inches of crushed rock. The owner will transport the soil removed to portions of his lots that are located outside the floodplain. This includes the soil removed prior to placing crushed rock, the soil removed to construct bar ditches, and any other soil removed from the floodplain. Bar ditches will be constructed on both sides of the driveway to assist in draining the property and in protecting the roadway by reducing moisture content in the subgrade. In a recent Floodplain Committee Meeting, concern was discussed about risks of traveling a roadway when the roadway is flooded, due to various issues, including visibility of the roadway. This owner is proposing to place metal "T-posts", with light reflectors attached along the side of the roadway so that motorists can tell where the roadway is when under water. These posts will be placed on both sides of the driveway at intervals of approximately 100 feet. Similar "T-posts" are commonly used on public highways in snow country to assist motorists during periods of blowing snow known as "white-outs". This engineer has prepared a profile of the proposed driveway, which is included in the exhibits, that shows the top of the roadway and the BFE. At the deepest point, the 1% chance flood will cover the roadway by just 1-1/8 feet (less that 14 inches). This roadway is located at the very edge of the floodplain; therefore the floodwater velocities experienced at this location are expected to be very low and of little concern. Incidentally, to accurately analyze this situation, many accurate elevation shots were taken on portions of this site by a surveyor and contours were generated (NAVD) and presented in the exhibits.

The owner proposes to construct a barn and a residence on the middle lot (2501), but these structures

will be located outside the floodplain; therefore, these are not included in this permit application. Both of these structures will be elevated to place the lowest floor at an elevation at least two feet above the BFE. The BFE at this lot is 1128.2'; therefore the lowest floor of these structures must be at or above an elevation of 1130.2' NAVD.

In summary, this proposal appears to fully meet the requirements of the City's floodplain regulations, and this engineer recommends approval.

Engineer's Certification

No net fill material will be placed in the floodplain and the construction of the the roadway will not result in an increase in the elevation of the ground at that location. All other construction will be in portions of the property that are located outside the floodplain; therefore the rise on this property or any nearby properties will be minuscule. The width of the floodplain at this location exceeds 4000 feet, and this fact contributes greatly to the opinion expressed herein. Certainly, if constructed according to the proposed plans, the increase in the BFE at this property or any other properties will be less than 0.05 feet.

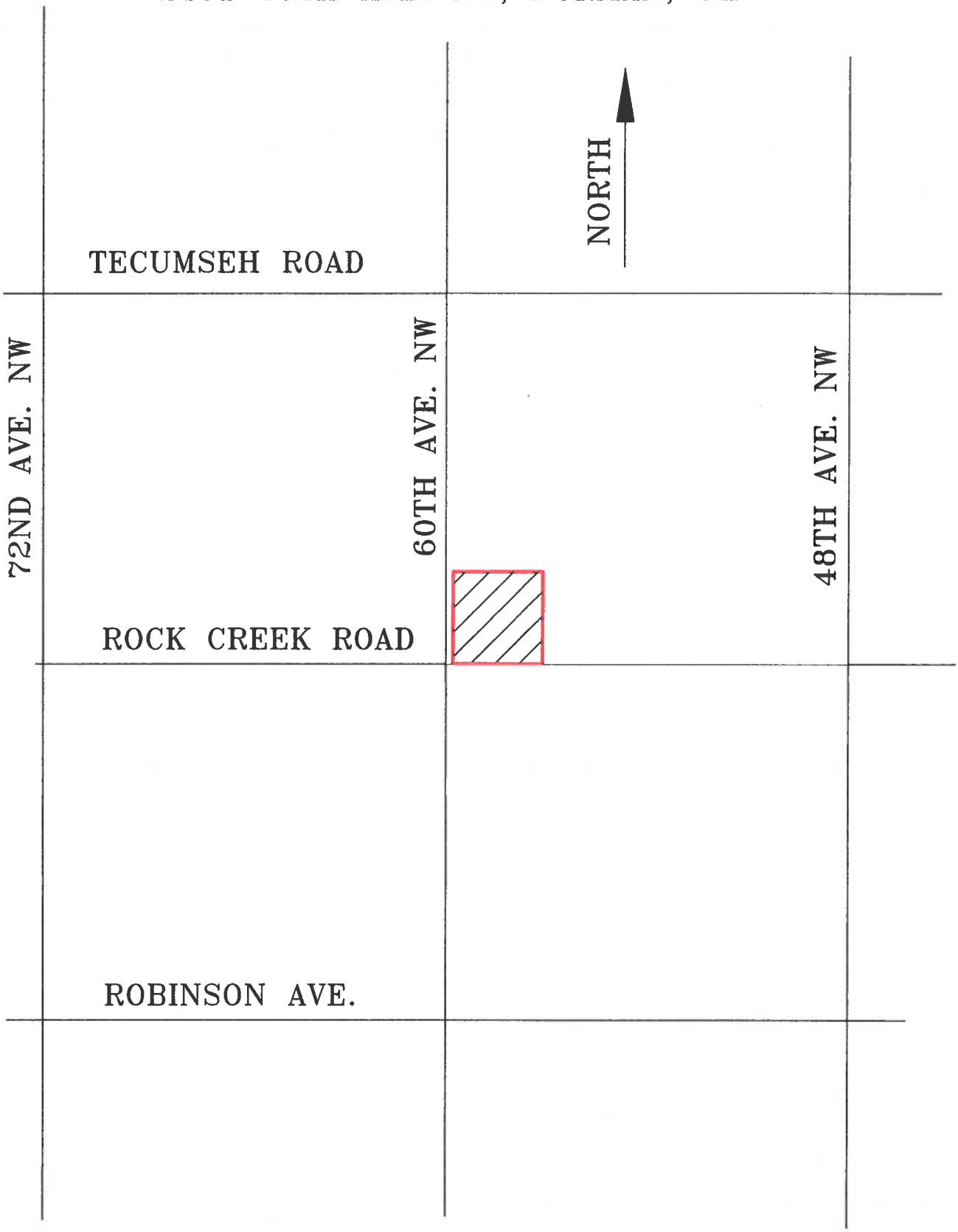
Signature Earl Gary Keen

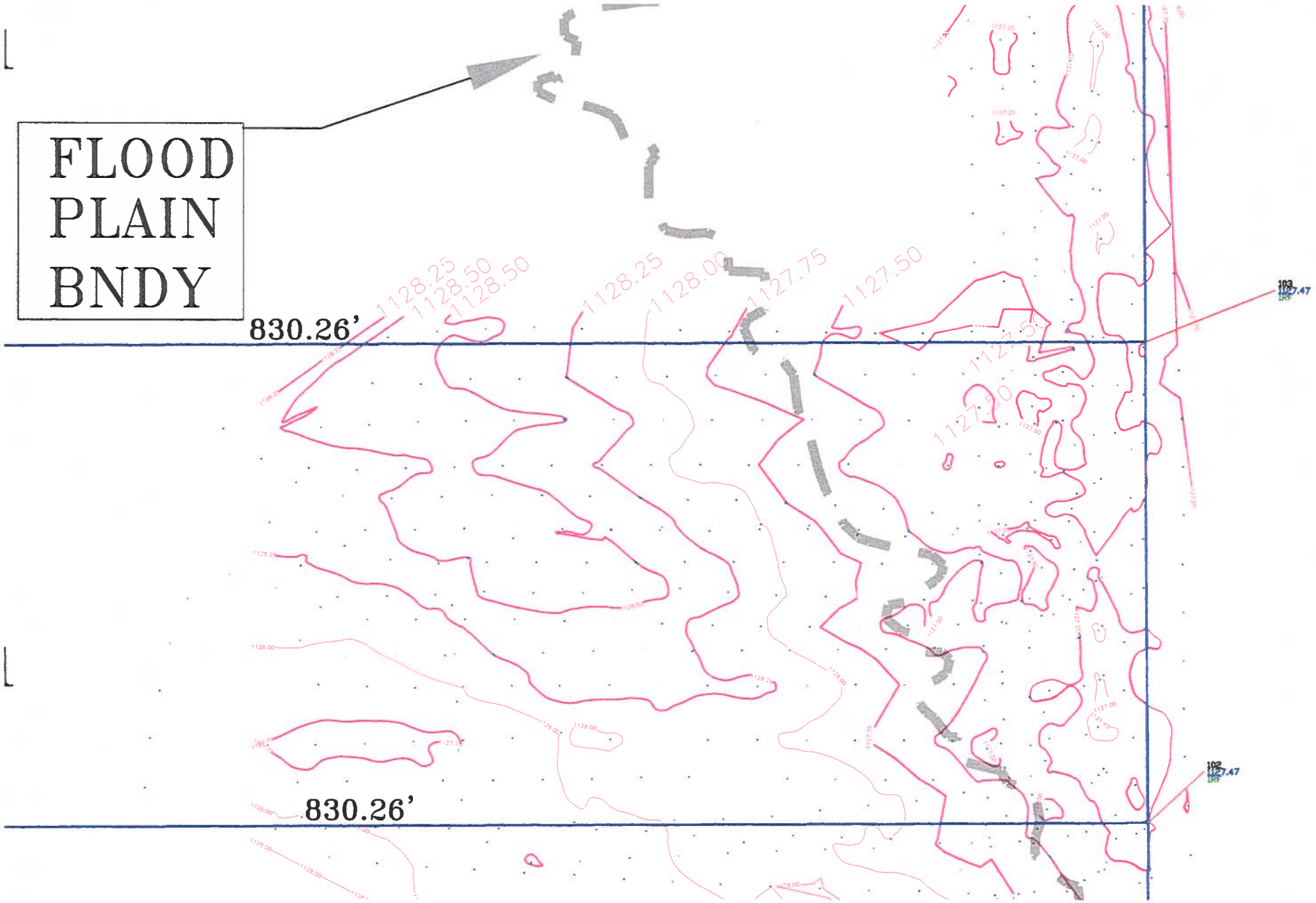
Seal and Date

05/15/2023

LOCATION MAP

2451 60TH AVE. NW, NORMAN, OK

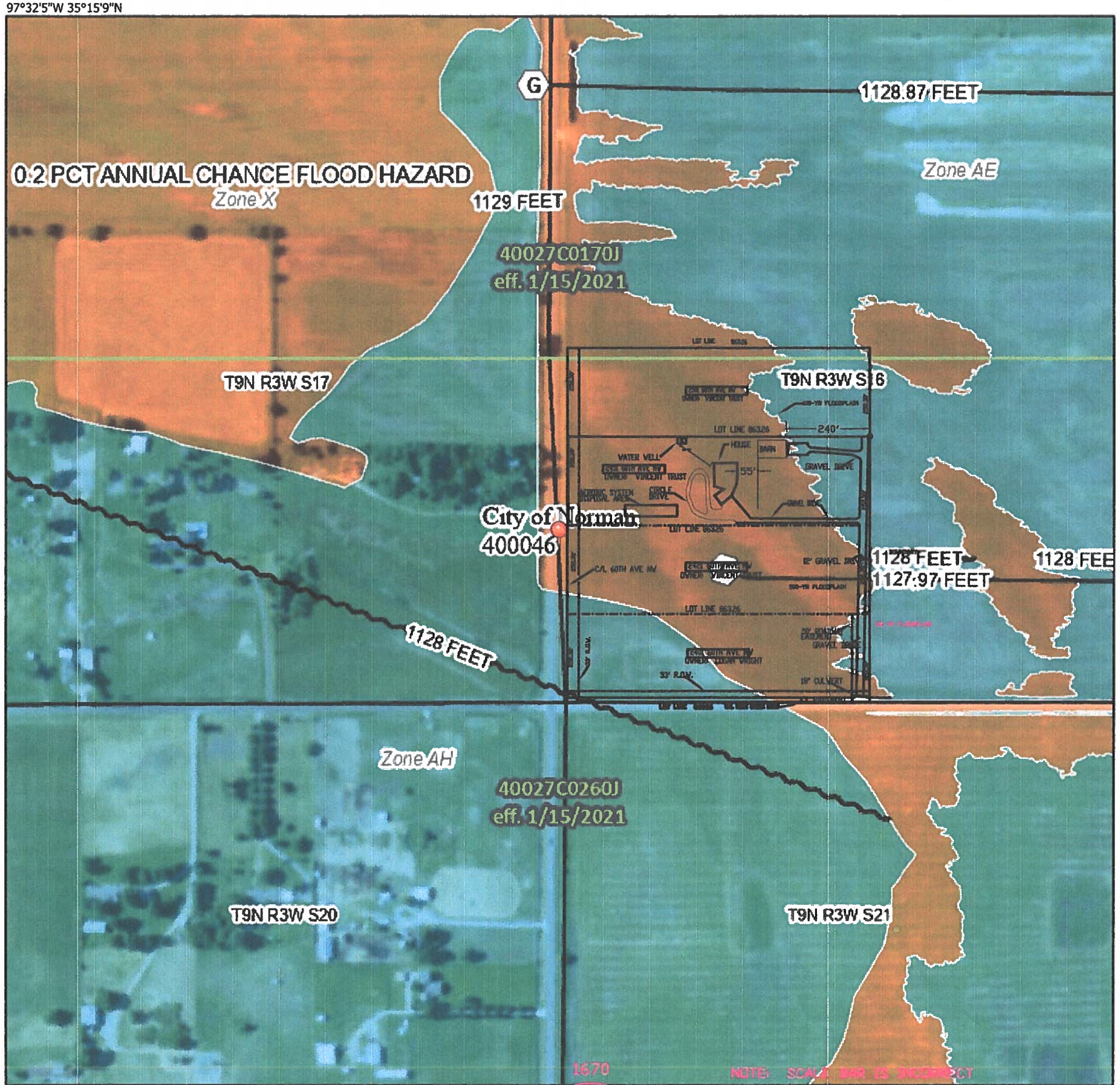



FLOOD
PLAIN
BNDY
830.26'
830.26'
1128.25
1128.50
1128.50
1128.25
1128.00
1127.75
1127.50
1127.50
1127.50
103
1127.47
102
1127.47

National Flood Hazard Layer FIRMette

FEMA

97°32'5"W 35°15'9"N



97°31'28"W 35°14'40"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

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

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- 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 D*

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

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 — 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

N

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 5/15/2023 at 2:09 AM 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, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

830.26'

252.3'

830.26'

252.3'

830.26'

252.3'

F

830.26'

1128 FEET

1127.09 FEET

60TH AVE. N.W.

1128 FEET

SECTION LINE

W. ROCK CREEK RD

N

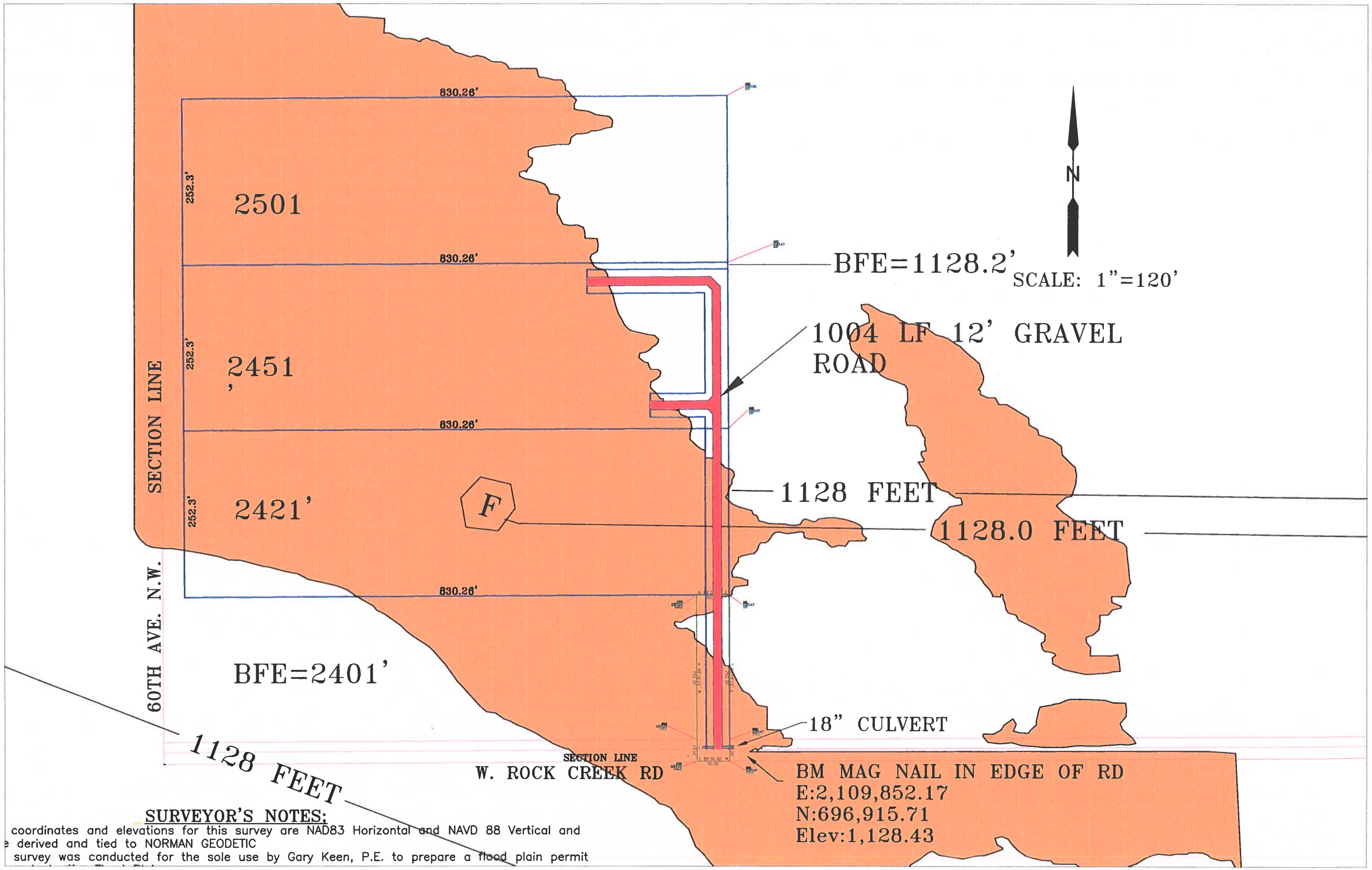
0 120 240

SCALE: 1"=120'

BM MAG NAIL IN EDGE OF RD
E:2,109,852.17
N:696,915.71
Elev:1,128.43

SURVEYOR'S NOTES;

1. The coordinates and elevations for this survey are NAD83 Horizontal and NAVD 88 Vertical and were derived and tied to NORMAN GEODETIC
2. This survey was conducted for the sole use by Gary Keen, P.E. to prepare a flood plain permit and evaluate the Flood Plain.
3. No utilities were located with this survey.



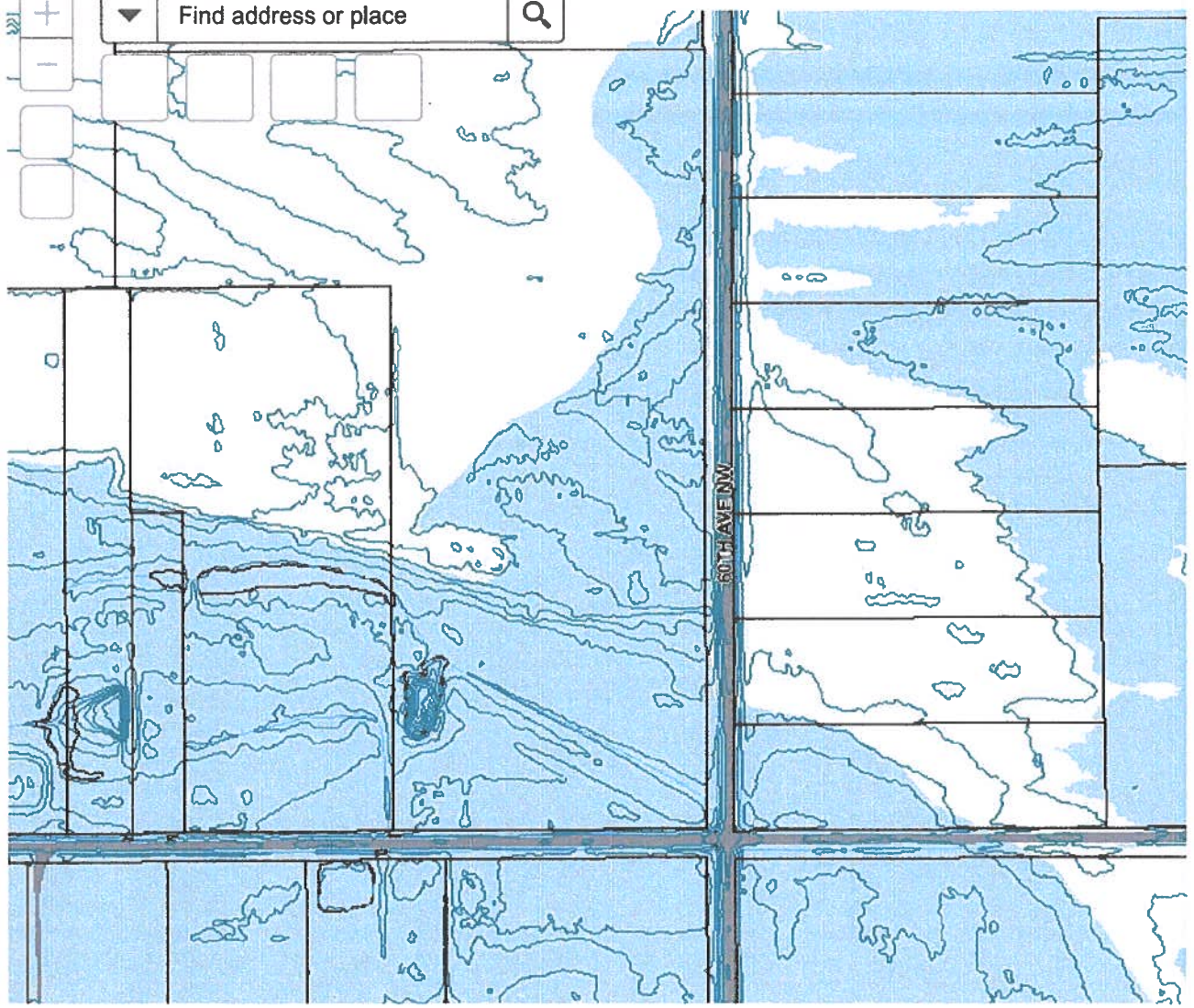
SURVEYOR'S NOTES:

coordinates and elevations for this survey are NAD83 Horizontal and NAVD 88 Vertical and
e derived and tied to NORMAN GEODETIC
survey was conducted for the sole use by Gary Keen, P.E. to prepare a flood plain permit

Interactive Map

City of Norman, Oklahoma

Find address or place



400ft

2,108,832.924 698,017.159 Feet

Layer List

CCFBC Parking Setback

CCFBC Building Form Standard

CCFBC Legacy Zoning

Central Norman Zoning Overlay District

Porter Commercial Limit

Historic Districts

Stream Planning Corridors

Flood Hazard Zone

100

floodway

Zoning

Planning

APPPA Permit Required

OEAAA Review Required

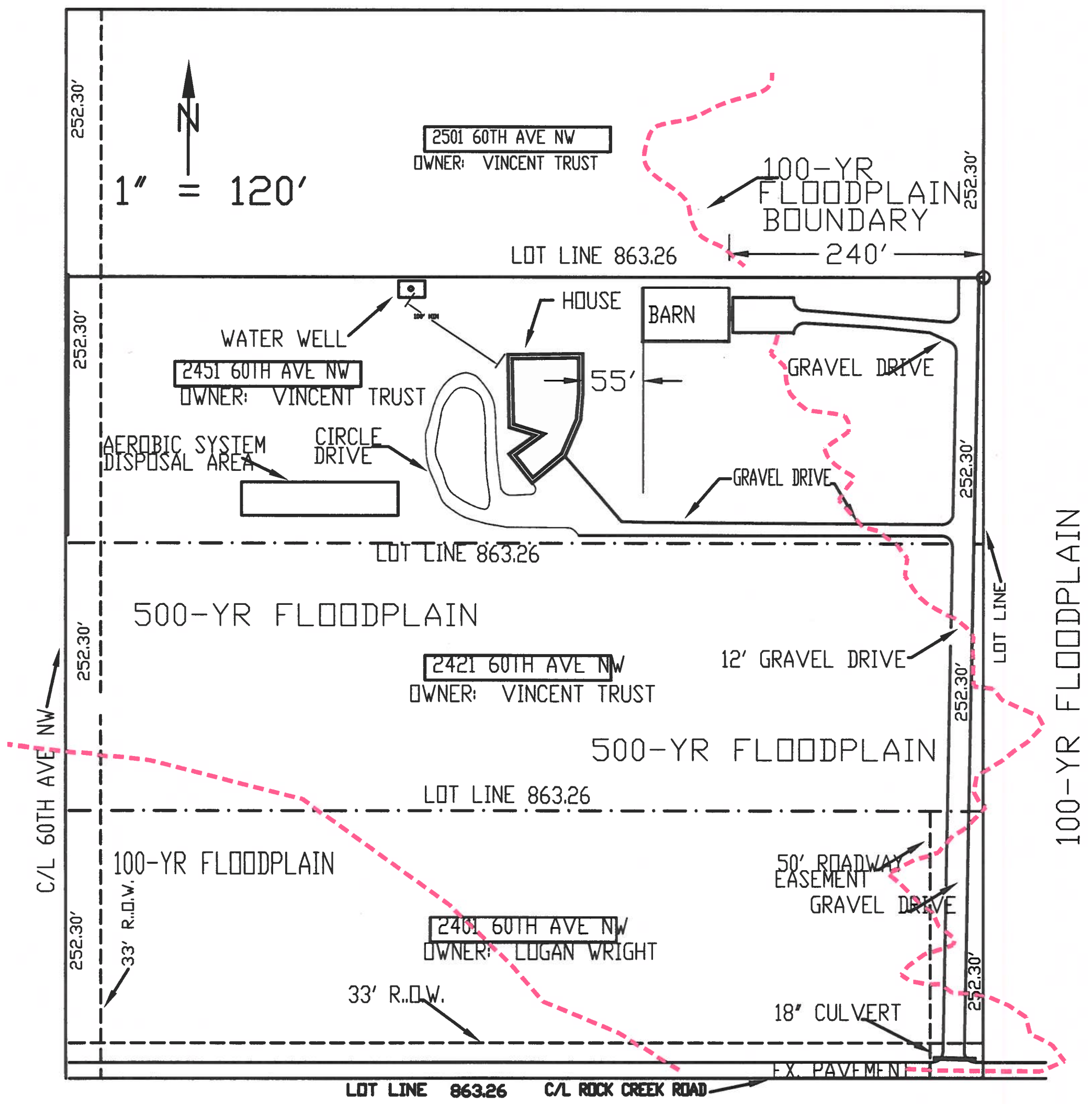
Norman 2025

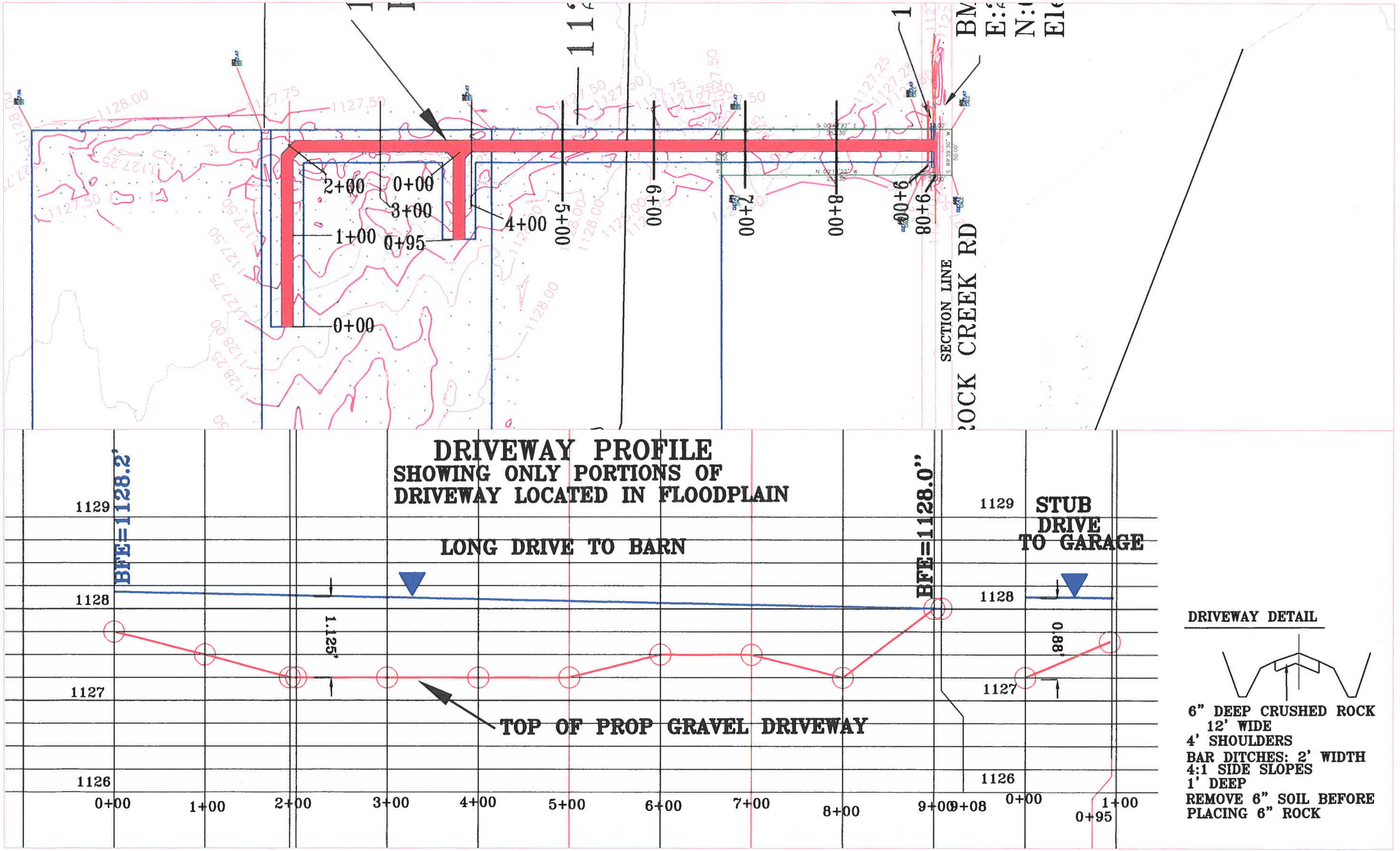
Ten Mile Flats 2025

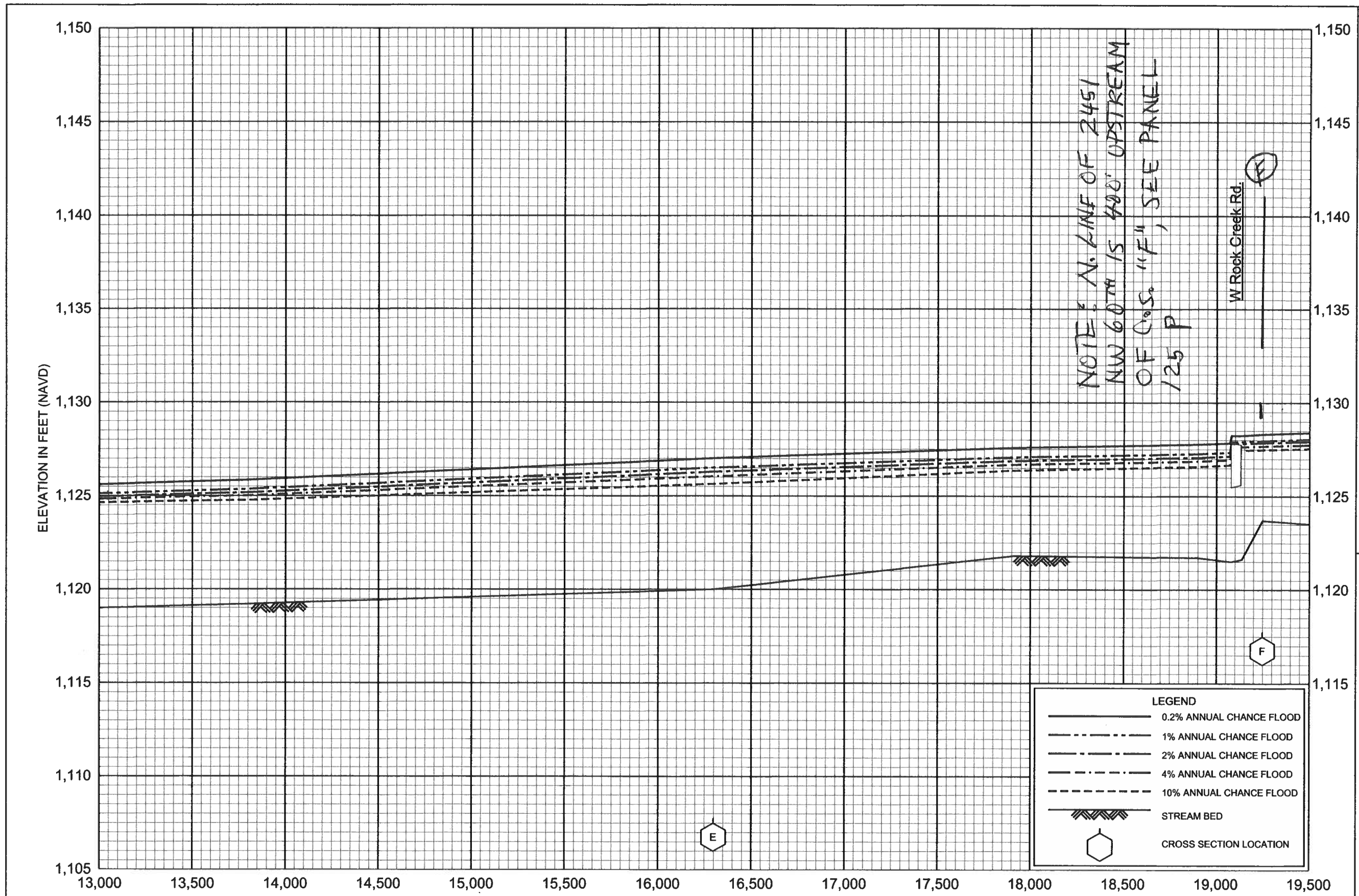
Community Separator 2025

Core Area

VINCENT PROJECT
OFF ROCK CREEK ROAD




0+00
2+00
0+00
3+00
1+00
0+95
4+00
5+00
6+00
7+00
8+00
9+00
9+08
SECTION LINE
ROCK CREEK RD
DRIVEWAY PROFILE
SHOWING ONLY PORTIONS OF
DRIVEWAY LOCATED IN FLOODPLAIN
LONG DRIVE TO BARN
BFE=1128.2'
BFE=1128.0''
1.125'
0.88'
TOP OF PROP GRAVEL DRIVEWAY
STUB
DRIVE
TO GARAGE
1129
1128
1127
1126
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
9+08
0+00
1+00
0+95
DRIVEWAY DETAIL
6" DEEP CRUSHED ROCK
12' WIDE
4' SHOULDERS
BAR DITCHES: 2' WIDTH
4:1 SIDE SLOPES
1' DEEP
REMOVE 6" SOIL BEFORE
PLACING 6" ROCK



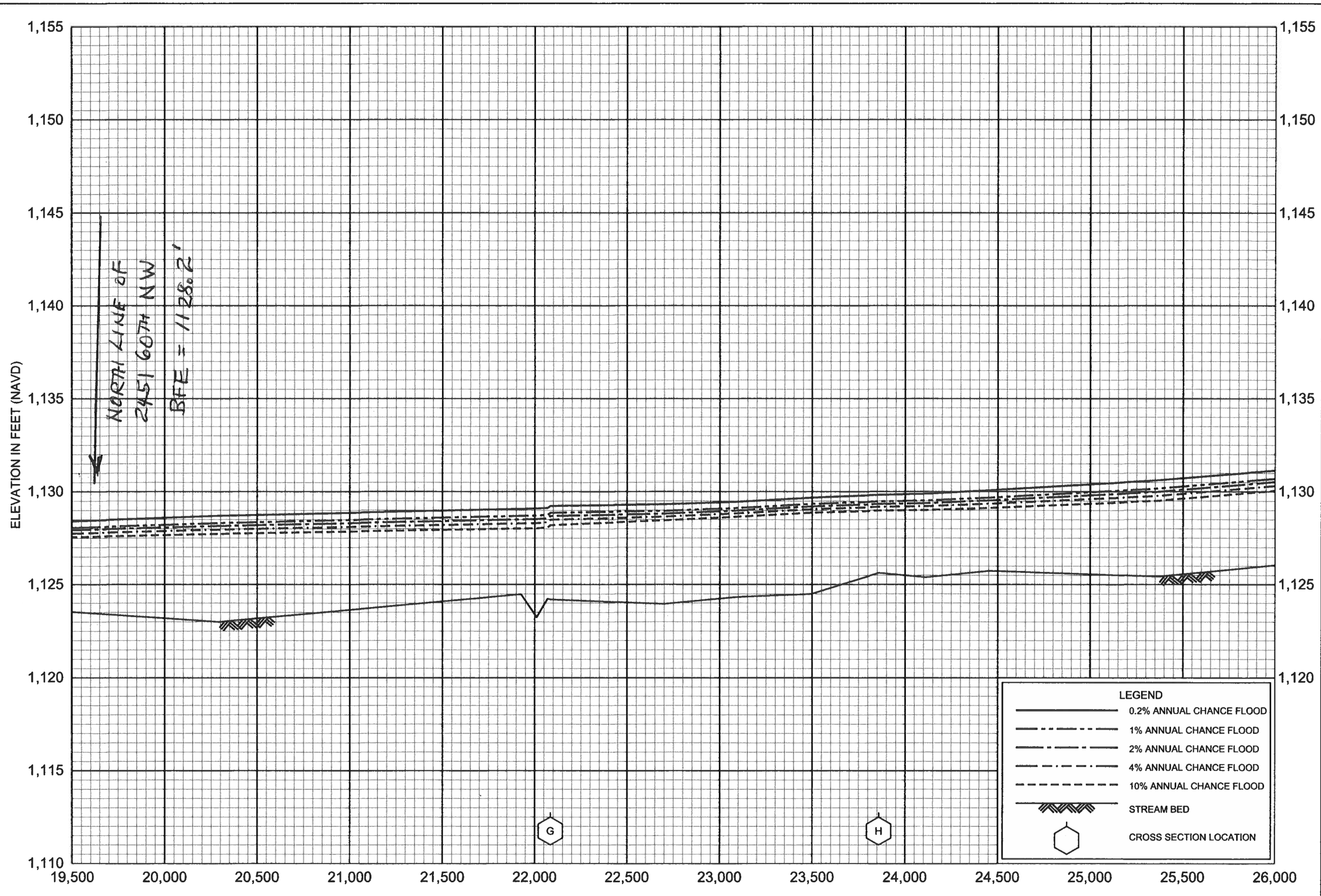
FLOOD PROFILES

TEN MILE FLAT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLEVELAND COUNTY, OK
AND INCORPORATED AREAS

124P



FLOOD PROFILES

TEN MILE FLAT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLEVELAND COUNTY, OK
AND INCORPORATED AREAS

125P


811
NOTICE: DAMAGE OR REMOVAL OF THIS SIGN IS A FEDERAL OFFENSE
SUBJECT TO A $5000 FINE AND/OR 1 YEAR IMPRISONMENT
WARNING
NATURAL GAS
PIPELINE
BEFORE EXCAVATING OR IN EMERGENCY
CALL
ONEOK GAS TRANSPORTATION, L.L.C.
1-888-215-5137

STAFF REPORT 06/20/2023 **PERMIT NO. 676**

ITEM: This Floodplain Permit Application is for the construction of an elevated residential structure in the Imhoff Creek Floodplain.

BACKGROUND:
APPLICANT: Brenda T. Dean, LLC V
BUILDER: Michael T. Dean
ENGINEER: Earl Gary Keen, P.E.

The property is located at 1030 W. Brooks St. in the Imhoff Creek floodplain/floodway. It is located between Carey Drive and South Pickard Avenue on the south side of Brooks Ave. and east of Imhoff Creek. The location of the proposed house is in the floodplain but not within the floodway. The BFE for this location is 1143.5'. The east edge of the proposed building would be out of the floodplain as the ground in this location slopes steeply down to the west towards Imhoff Creek. There is an existing building that will remain as an art studio on this property.

The proposed home would be built on stilts at an elevation approximately 8 feet above the lowest existing ground elevation at the site. The applicant proposes to use the area under the house as parking. The lowest finished floor elevation would be 1149.0' which is approximately 5.5' above the BFE and 3.5' above the Ordinance elevation requirements. The applicant has also indicated that utility structures, such as the HVAC unit will be installed on a platform at minimum elevation of 1145.5' or two feet above the BFE. Piers, stilts for HVAC unit and stairs to access the building will be constructed of steel or welded metal to minimize volume added to the floodplain. The proposed construction method recommended by the applicant's engineer focuses on strength and stability while minimizing surface area. Staff believes this would help meet the requirement of structures being built to withstand flotation, collapse and lateral movement in a flood. The engineering report also indicates that a geotechnical engineering company has located bedrock at a depth of 22 feet below ground at the site and a structural engineer has been retained to design a pier and foundation system that would bear directly on the rock layer rather than in the sandy soils that exist at the site.

In addition to the existing parking area on the north east side of the lot, the applicant wishes to install a driveway off of Brooks St. immediately east of the bridge over Imhoff Creek and through the floodplain to the parking area under the house. The engineer has provided fill and cut calculations for the proposed project, that includes both cut necessary for the drive, the house and accessory structures. The proposed plan includes a net removal of 218.5 cubic yards of soil from the floodplain. 18.5 cubic yards of soil is to be removed from the edge of the main channel of Imhoff Creek to ensure that the conveyance of Imhoff Creek is not reduced according the engineering report.

STAFF ANALYSIS:
Site located in Little River Basin or its Tributaries? yes__ no✓

According to the latest FIRM, the site of the proposed work is located in the Imhoff Creek floodplain (Zone AE). At the proposed site, the BFE is 1143.5 ft.

Applicable Ordinance Sections:		Subject Area:
36-533	(e)2(a)……	Fill restrictions
	(e)2(b)……..……..…….	New construction designed and adequately anchored to prevent flotation, collapse or lateral movement
	(e)2(e)…….……	Compensatory storage and fill restrictions
	(e)3(a)(1)……	Residential structures and accessory structures elevated 2 feet above BFE
	(f)3(a)(8)……..……	No rise considerations

(e)2(b) All new construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent floatation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

The engineering report indicates that the pier foundation system for the house will be anchored to bedrock. In addition, piers, stairs and accessory structures will manufactured using steel or other metal material and welded joints for strength and to minimize volume of the structure. This satisfies ordinance requirements.

2(a) and 2(e) Fill Restrictions in the Floodplain and Compensatory Storage – Fill is restricted because storage capacity is removed from floodplains, natural drainage patterns are adversely altered, and erosion problems can develop. Compensatory storage must be provided within the general location of any storage that is displaced by fill or other development activity and must serve the equivalent hydrologic function as the portion which is displaced with respect to the area and elevation of the floodplain.

According the engineer a net of approximately 218.5 cubic yards of fill will be removed from floodplain satisfying ordinance requirements.

(f)3(a)(8) No Rise Considerations – For proposed development within any flood hazard area (except for those designated as regulatory floodways), certification that a rise of no more than 0.05 ft. will occur in the BFE on any adjacent property as a result of the proposed work is required. For proposed development within a designated regulatory floodway, certification that no increase in the BFE on any adjacent property as a result of the proposed work is required.

The project engineer has provided a hydraulic analysis and determined that the proposed project will not cause a rise in the BFE, which meets the ordinance requirement.

(e)3(a)(1) Residential structures, including both site-built and manufactured homes, shall be constructed On fill so that the lowest floor including basement, ductwork, mechanical and electrical equipment including furnaces, water heaters, and air conditioners, etc. is at least two (2) feet above the base flood elevation…

The project engineer has indicated in the plans that the lowest floor of the proposed structure will be built at a minimum of 5.5’ above the BFE exceeding the requirements of the ordinance.

RECOMMENDATION: Staff recommends Floodplain Permit Application #676 be approved with the following conditions:

1. A surveyor provide elevation of the lowest floor to verify elevation requirements have been met prior to going vertical with the walls;
2. An elevation certificate be submitted at completion of the construction to verify compliance;
3. The driveway be located on the east side of the site out of the floodplain and away from the bridge;
4. Stabilization of all excavated areas to prevent erosion.

ACTION TAKEN: _____

City of Norman
1030 W. BROOKS ST.
Floodplain Permit Application

Floodplain Permit No. 676

Building Permit No. _____

Date 6/20/2023

FLOODPLAIN PERMIT APPLICATION
($100.00 Application Fee Required)

SECTION 1: GENERAL PROVISIONS (APPLICANT to read and sign):

1. No work may start until a permit is issued.
2. The permit may be revoked if any false statements are made herein.
3. If revoked, all work must cease until permit is re-issued.
4. Development shall not be used or occupied until a Certificate of Occupancy is issued.
5. The permit will expire if no work is commenced within 2 years of issuance.
6. Applicant is hereby informed that other permits may be required to fulfill local, state and federal regulatory requirements and must be included with this floodplain permit application.
7. Applicant hereby gives consent to the City of Norman or his/her representative to access the property to make reasonable inspections required to verify compliance.
8. The following floodplain modifications require approval by the City Council:
   (a) A modification of the floodplain that results in a change of ten percent (10%) or more in the width of the floodplain.
   (b) The construction of a pond with a water surface area of 5 acres or more.
   (c) Any modifications of the stream banks or flow line within the area that would be regulatory floodway whether or not that channel has a regulatory floodplain, unless the work is being done by the City of Norman staff as part of a routine maintenance activity.
9. All supporting documentation required by this application is required along with the permit fee by the submittal deadline. Late or incomplete applications will not be accepted.
10. I, THE APPLICANT, CERTIFY THAT ALL STATEMENTS HEREIN AND IN ATTACHMENTS TO THIS APPLICATION ARE, TO THE BEST OF MY KNOWLEDGE, TRUE AND ACCURATE.

SECTION 2: PROPOSED DEVELOPMENT (To be completed by APPLICANT.)

APPLICANT: Brenda T. Dean LLC II ADDRESS: 1028 W Brooks Norman, OK 73069
TELEPHONE: 405-202-4102 SIGNATURE: [signature]

BUILDER: Michael T. Dean ADDRESS: 1126 Caddell Ln Norman, OK 73069
TELEPHONE: 405-202-4102 SIGNATURE: [signature]

ENGINEER: EARL "GARY" KEEN ADDRESS: P.O. BOX 891200, OKLAHOMA CITY, OK 73189
TELEPHONE: 405-823-8240 SIGNATURE: Earl Gary Keen

garykeen47@att.net

PROJECT LOCATION

To avoid delay in processing the application, please provide enough information to easily identify the project location. Provide the street address, subdivision addition, lot number or legal description (attach) and, outside urban areas, the distance to the nearest intersecting road or well known landmark. A sketch attached to this application showing the project location would be helpful.

STREET ADDRESS IS 1030 W BROOKS ST. LEGAL DESCRIPTION IS SHOWN ON INFO SHEET FROM CLEVELAND COUNTY ASSESSOR.

A LOCATION MAP IS INCLUDED IN THE EXHIBITS.

IMHOFF CREEK IS THE STREAM THAT IMPACTS THIS PROPERTY. THE FLOODWAY AND FLOODPLAIN OF THIS STREAM EXISTS PARTIALLY ON THIS PROPERTY. WORK

IS PROPOSED IN THE FLOODPLAIN BUT NOT IN THE FLOODWAY.

DESCRIPTION OF WORK (Check all applicable boxes):

A. STRUCTURAL DEVELOPMENT

ACTIVITY	STRUCTURE TYPE
☑ New Structure	☑ Residential (1-4 Family)
☐ Addition	☐ Residential (More than 4 Family)
☐ Alteration	☐ Non-Residential (Flood proofing? ☐ Yes)
☐ Relocation	☐ Combined Use (Residential & Commercial)
☐ Demolition	☐ Manufactured (Mobile) Home
☐ Replacement	☐ In Manufactured Home Park? ☐ Yes

ESTIMATED COST OF PROJECT $ 275,000.00 Work that involves substantial damage/substantial improvement requires detailed cost estimates and an appraisal of the structure that is being improved.

B. OTHER DEVELOPMENT ACTIVITIES:

☐ Fill ☐ Mining ☐ Drilling ☑ Grading

☑ Excavation (Beyond the minimum for Structural Development)

☐ Watercourse Alteration (Including Dredging and Channel Modifications)

☐ Drainage Improvements (Including Culvert Work) ☑ Road, Street or Bridge Construction

☐ Subdivision (New or Expansion) ☐ Individual Water or Sewer System

In addition to items A. and B. provide a complete and detailed description of proposed work (failure to provide this item will be cause for the application to be rejected by staff). Attach additional sheets if necessary.

PROPOSED WORK IS CONSTRUCTION OF NEW SINGLE FAMILY RESIDENCE, WHICH WILL BE IN FLOODPLAIN BUT OUTSIDE THE FLOODWAY. ALSO, INCLUDED IS A DRIVEWAY AND PARKING

BENEATH THE NEW HOUSE. THIS RESIDENCE WILL BE CONSTRUCTED ON PIERS TO PLACE THE FINISHED FLOOR ABOVE THE B.F.E. EIGHT FEET OF VERTICAL SPACE IN PLANNED

BENEATH THE STRUCTURE TO ALLOW FOR VEHICULAR PARKING.

C. ATTACHMENTS WHICH ARE REQUIRED WITH EVERY APPLICATION:

The applicant must submit the documents listed below before the application can be processed. If the requested document is not relevant to the project scope, please check the Not Applicable box and provide explanation.

A. Plans drawn to scale showing the nature, location, dimensions, and elevation of the lot, existing or proposed structures, fill, storage of materials, flood proofing measures, and the relationship of the above to the location of the channel, floodway, and the regulatory flood-protection elevation.

B. A typical valley cross-section showing the channel of the stream, elevation of land areas adjoining each side of the channel, cross-sectional areas to be occupied by the proposed development, and high-water information.

☐ Not Applicable:
SEVERAL EXHIBITS ARE ENCLOSED TO SHOW INFO REQUESTED IN 'A' AND 'B' ABOVE.

C. Subdivision or other development plans (If the subdivision or other developments exceeds 50 lots or 5 acres, whichever is the lesser, the applicant **must** provide 100-year flood elevations if they are not otherwise available).

☑ Not Applicable:
NOT A NEW SUBDIVISION DEVELOPMENT. THIS IS AN OLDER PART OF THE cITY AND ONLY ONE LOT IS INVOLVED.

D. Plans (surface view) showing elevations or contours of the ground; pertinent structure, fill, or storage elevations; size, location, and spatial arrangement of all proposed and existing structures on the site; location and elevations of streets, water supply, sanitary facilities; photographs showing existing land uses and vegetation upstream and downstream, soil types and other pertinent information.

☐ Not Applicable:
A SITE PLAN WITH SURVEYED CONTOURS AND EXISTING BUILDING AND PROPOSED RESIDENCE IS SUBMITTED. CONTOURS ARE PROVIDED.
THIS LOT IS SERVED BY PUBLIC WATER AND SEWER SERVICE. PHOTOGRAPHS OF THE SITE ARE PROVIDED.

E. A profile showing the slope of the bottom of the channel or flow line of the stream.

☐ Not Applicable:
A STREAM PROFILE OBTAINED FROM THE EFFECTIVE FIS STUDY IS PROVIDED.

F. Elevation (in relation to mean sea level) of the lowest floor (including basement) of all new and substantially improved structures.

☐ Not Applicable:
ELEVATIONS ARE PROVIDED IN THE ENGINEER'S REPORT.

G. Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development.

☐ Not Applicable:
THE STREAM WILL NOT BE RELOCATED AND NO WORK WILL BE DONE IN THE FLOODWAY. SOIL WILL BE REMOVED FROM WITHIN THE FLOODPLAIN.

H. For proposed development within any flood hazard area (except for those areas designated as regulatory floodways), certification that a rise of no more than five hundredths of a foot (0.05') will occur on any adjacent property in the base flood elevation as a result of the proposed work. For proposed development within a designated regulatory floodway, certification of no increase in flood levels within the community during the occurrence of the base flood discharge as a result of the proposed work. All certifications shall be signed and sealed by a Registered Professional Engineer licensed to practice in the State of Oklahoma.

I. A certified list of names and addresses of all record property owners within a three hundred fifty (350) foot radius of the exterior boundary of the subject property not to exceed 100 feet laterally from the Special Flood Hazard Area. The radius to be extended by increments of one hundred (100) linear feet until the list of property owners includes not less than fifteen (15) individual property owners of separate parcels or until a maximum radius of one thousand (1,000) feet has been reached.

J. A copy of all other applicable local, state, and federal permits (i.e. U.S. Army Corps of Engineers 404 permit, etc).

After completing SECTION 2, APPLICANT should submit form to Permit Staff for review.

SECTION 3: FLOODPLAIN DETERMINATION (To be completed by Permit Staff.)

The proposed development is located on FIRM Panel No.: 0280 J, Dated: 1/15/2021

The Proposed Development:

☐ Is NOT located in a Special Flood Hazard Area
(Notify the applicant that the application review is complete and NO FLOODPLAIN PERMIT IS REQUIRED).

☑ Is located in a Special Flood Hazard Area.

☐ The proposed development is located in a floodway.

☑ 100-Year flood elevation at the site is 1143.5 Ft. NGVD (MSL) ☐ Unavailable

See Section 4 for additional instructions.

SIGNED: _____ **DATE:** 6/14/2023

SECTION 4: ADDITIONAL INFORMATION REQUIRED (To be completed by Permit Staff.)

The applicant must also submit the documents checked below before the application can be processed.

☐ Flood proofing protection level (non-residential only) _____ Ft. NGVD (MSL). For flood proofed structures applicant must attach certification from registered engineer.

☐ Certification from a registered engineer that the proposed activity in a regulatory floodway will not result in any increase in the height of the 100-year flood (Base Flood Elevation). A copy of all data and calculations supporting this finding must also be submitted.

☐ Certification from a registered engineer that the proposed activity in a regulatory flood plain will result in an increase of no more than 0.05 feet in the height of the 100-year flood (Base Flood Elevation). A copy of all data and calculations supporting this finding must also be submitted.

☐ All other applicable federal, state, and local permits have been obtained.

Other: _____

_____

_____

SECTION 5: PERMIT DETERMINATION (To be completed by Floodplain Chairman.)

The proposed activity: **(A)** ☐ **Is**; **(B)** ☐ **Is Not** in conformance with provisions of Norman's City Code Chapter 22, Section 429.1. The permit is issued subject to the conditions attached to and made part of this permit.

SIGNED: _____ DATE: _____

If **BOX A** is checked, the Floodplain committee chairman may issue a Floodplain Permit.

If **BOX B** is checked, the Floodplain committee chairman will provide a written summary of deficiencies. Applicant may revise and resubmit an application to the Floodplain committee or may request a hearing from the Board of Adjustment.

APPEALS: Appealed to Board of Adjustment: ☐ Yes ☐ No

Hearing date: _____

Board of Adjustment Decision - Approved: ☐ Yes ☐ No

Conditions:

_____

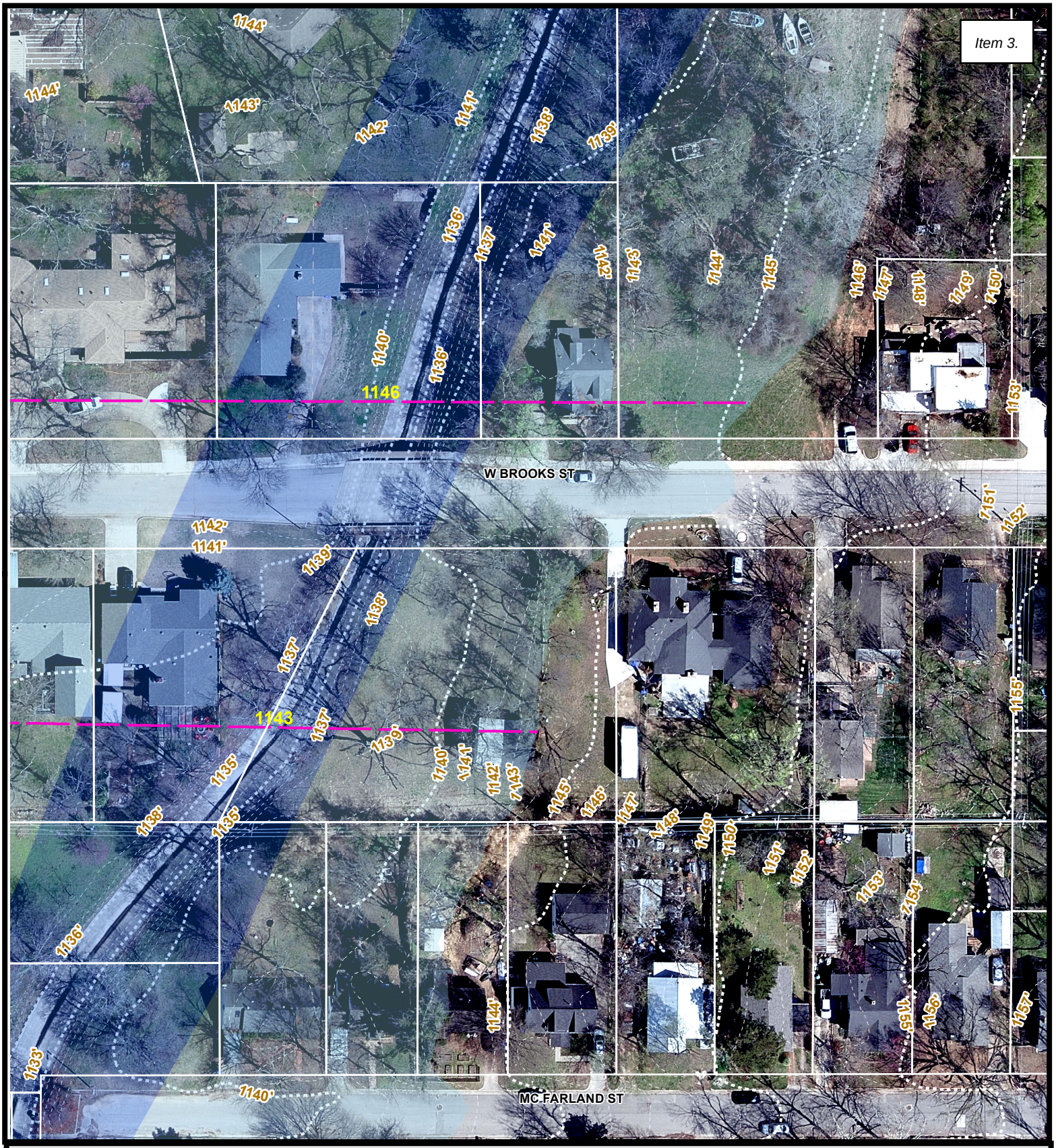
_____

_____

SECTION 6: AS-BUILT ELEVATIONS (To be submitted by APPLICANT before Certificate of Occupancy is issued.)

1. FEMA Elevation Certificate
   and/or
2. FEMA Floodproofing Certificate

NOTE: The completed certificate will be reviewed by staff for completeness and accuracy. If any deficiencies are found it will be returned to the applicant for revision. A Certificate of Occupancy for the structure will not be issued until an Elevation and /or Floodproofing Certificate has been accepted by the City.



1030 W. Brooks St.

N
W E
S

1 inch = 72 feet

Legend

- BFE 2021
- 1% Chance Floodplain
- Floodway

0 0.005 0.01 0.0

50

The City of Norman assumes no responsibility for errors or omissions in the information presented.

EARL "GARY" KEEN, PE
P.O. BOX 891200
OKLAHOMA CITY, OK 73189
May 30, 2023

ENGINEER'S REPORT

1030 W BROOKS ST.
NORMAN, OK

This report was prepared to accompany a floodplain permit application to the City of Norman for the proposed construction of a residence located at 1030 W Brooks Street to meet FEMA and City of Norman floodplain requirements. The existing development at this property consists of a building curently used as a private art studio, which the owner wishes to keep. The FF elevation of the existing building is 1144.48 feet, which is about one foot above the BFE. The owner's proposal is to construct a new residence located immediately north of the existing building. A floor plan and vertical section view of the proposed building is attached.

A floodway and floodplain associated with Imhoff Creek impacts this property as both the floodway and the floodplain exist on a portion of the subject property. A location map is attached to show that this lot is located on the south side of Brooks Street on the east bank of Imhoff Creek. This property is located between Carey Drive and South Pickard Avenue. A GIS map obtained from the City's resources shows the floodplain and floodway and 2007 GIS contours. The BFE at this site was determined from a profile contained in the effective FIS study and this BFE elevation is 1143.5'.

The location of the new house is within the floodplain but is not in the floodway. The lowest ground to be covered by the proposed structure is located several feet below the BFE (BFE=1143.5' NAVD). The ground is steeply sloping at this location and the ground at the east edge of he house is slightly higher than the BFE. The ground at the west edge of the structure is approximately 3.5' below the BFE. The owner plans to construct a house that is supported by piers that will place the floor joist approximately eight feet above the lowest existing ground elevation at the site. The lowest ground adjacent to this location is 1140.0', and this will place the elevation of the lowest floor at a elevation of approximately 1149.0 feet NAVD. This will place the lowest floor approximately 5.5' above the BFE, which is higher than the required finished floor elevation of 1145.5' by about 3.5'.

The owner plans to excavate soil from beneath the house to allow for vehicular parking; therefore, a significant volume of soil will be excavated and this this soil will be removed from the site and disposed of at a location approved by the City's staff. A driveway will be located immediately east of the bridge abutment on Brooks Street that is associated with Imhoff Creek. Construction of this driveway will be focused on cutting more than filling, and excess soil removed will be transported off this site. The width of the proposed driveway is 12 feet and the driveway will be located on sloping ground and this will necessitate creating a flatter roadway surface to make it safer for use. Soil will be cut on the high side of the driveway and soil removed from this area will be transported off site. The volume of soil to be removed from the site as a result of driveway construction is 16 cubic yards. Sufficient soil will be removed to place the concrete paving for the driveway on the low side at or below the elevation of the original ground. Placing the paving in this manner is intended to avoid any reduction in floodway conveyance across this property. Major fill cannot be placed in this area without impacting the conveyance of Imhoff Creek.

The plan calls for preparing approximately 1/4 of the space beneath this structure for vehicular parking. The estimated volume of soil to be excavated from beneath the house per this plan for parking is approximately 86 cubic yards. This soil will be transported off site, which will significantly increase floodplain storage at this site. The space under this house will remain open, without walls so flood waters can readily occupy the space under the house during periods of flooding.
So flood vents will not be required. And, additional soil will not have to be removed to meet the requirement for floodplain storage preservation.

To insure that the conveyance of the stream is not reduced, this proposal includes removing soil along the top of bank of Imhoff Creek and transporting this soil off site. It is proposed to remove an average depth of one foot of soil along the east bank of the channel, Soil will be removed in an area that is 10 feet wide and the length of the channel. Soil removal will begin near the south-west corner of this lot and extend northward and parallel to the channel. This soil will be transported for disposal off this site. The estimated volume of this soil removal at this location is 62 cubic yards.

The total volume of soil to be removed from this site is 164 cubic yards. The volume of added material below the BFE is approximately five cubic yards, which is primarily comprised of piers, stairways and supports for the HVAC equipment. Therefore floodplain storage will be greatly increased on this property. And, the conveyance across the property will be increased also due to the removal of material beneath the house, along the driveway and along the channel bank.

Property information obtained from the Cleveland Counter Assessor's Office is submitted to show the legal description.

The outside HVAC unit and other utilities must be elevated to a minimum elevation of 1145.5', which is 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 supports 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 (1145.5' NAVD). The volume of the four post will displace approximately two cubic feet of floodplain volume.

Also, stairs will be required to access the exterior doors to this structure. One stair is at the NE corner of the structure and the other is on the west side. This engineer recommends that the stairs be a type that will minimize fill in the floodplain. . 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 Residental Code states the requirements for rise and run for residential steps. It is estimated that each set of steps will occupy about 0.5 cubic yards of floodplain storage.

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 the west side of 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. This depth of water will be adequate to damage vehicles located thereon and might even cause vehicles to float and/or be transported downstream. In addition, the depth of water within the channel of the creek may be 12 feet deep or greater and may have high velocities at times. Everybody associated with this property should be

aware of the potential hazards of flooding associated with Imhoff Creek.

The potential for flooding of this yard, driveway and parking area is significant but not unique. Incidentally, other properties along Imhoff Creek are also subject this this degree of flooding as are other nearby properties. The proposed finished-floor elevation will be approximately 3.5' higher than required by regulations of the City of Norman. When constructed as proposed, this new house should be reasonably safe from flooding. This development plan meets the requirements of FEMA and the City in regard to construction in flood prone area, and should be approved.

Incidentally, a geotechnical engineering company has found bedrock to exist at a depth of about 22 feet below ground at this site. The report generated by the geotechnical company shows that soils at this site contain a high fraction of sand, and this caused that company to issue a caution regarding the design of the foundation and/or pier construction. A structural engineer has been retained to design a pier and foundation system to support to support this structure. Most likely, piers will be placed to bear directly upon the existing rock layer (that exists at a depth of approximately 22 feet), which should give excellent support.

ENGINEER'S CERTIFICATION

1030 West Brooks Street
NORMAN, OK

The owner of the property located at the above address has applied for a floodplain permit to allow for construction of a new residence in the floodplain associated with Imhoff Creek, which exist on this site. The subject property is located totally within the floodplain but only partially in the floodway. The proposed plan includes removing approximately 218.5 net cubic yards of soil from the floodplain. A volume of 18.5 cubic yards of this soil is to removed from the edge of the main channel of Imhoff Creek to insure that the conveyance of Imhoff Creek is not reduced. Provided that this work is performed in accordance with the provisions contained in the application for a Floodplain Permit and the conditions discussed in the engineering report, it is this engineer's opinion that this project will not result in an increase in the elevation of the floodplain nor in an increase in the width or elevation of the floodplain at any location in the community.

Engineer's Seal

Address: PO Box 891200
Norman, OK 73189

Phone: 405-823-8240

License Expires: May 31, 2024

Signature

Date: May 29, 2023

aware of the potential hazards of flooding associated with Imhoff Creek.

The potential for flooding of this yard, driveway and parking area is significant but not unique. Incidentally, other properties along Imhoff Creek are also subject this this degree of flooding as are other nearby properties. The proposed finished-floor elevation will be approximately 3.5' higher than required by regulations of the City of Norman. When constructed as proposed, this new house should be reasonably safe from flooding. This development plan meets the requirements of FEMA and the City in regard to construction in flood prone area, and should be approved.

Incidentally, a geotechnical engineering company has found bedrock to exist at a depth of about 22 feet below ground at this site. The report generated by the geotechnical company shows that soils at this site contain a high fraction of sand, and this caused that company to issue a caution regarding the design of the foundation and/or pier construction. A structural engineer has been retained to design a pier and foundation system to support to support this structure. Most likely, piers will be placed to bear directly upon the existing rock layer (that exists at a depth of approximately 22 feet), which should give excellent support.

ENGINEER'S CERTIFICATION

1030 West Brooks Street
NORMAN, OK

The owner of the property located at the above address has applied for a floodplain permit to allow for construction of a new residence in the floodplain associated with Imhoff Creek, which exist on this site. The subject property is located totally within the floodplain but only partially in the floodway. The proposed plan includes removing approximately 218.5 net cubic yards of soil from the floodplain. A volume of 18.5 cubic yards of this soil is to removed from the edge of the main channel of Imhoff Creek to insure that the conveyance of Imhoff Creek is not reduced. Provided that this work is performed in accordance with the provisions contained in the application for a Floodplain Permit and the conditions discussed in the engineering report, it is this engineer's opinion that this project will not result in an increase in the elevation of the floodplain nor in an increase in the width or elevation of the floodplain at any location in the community.

Engineer's Seal

Address: PO Box 891200
Norman, OK 73189

Phone: 405-823-8240

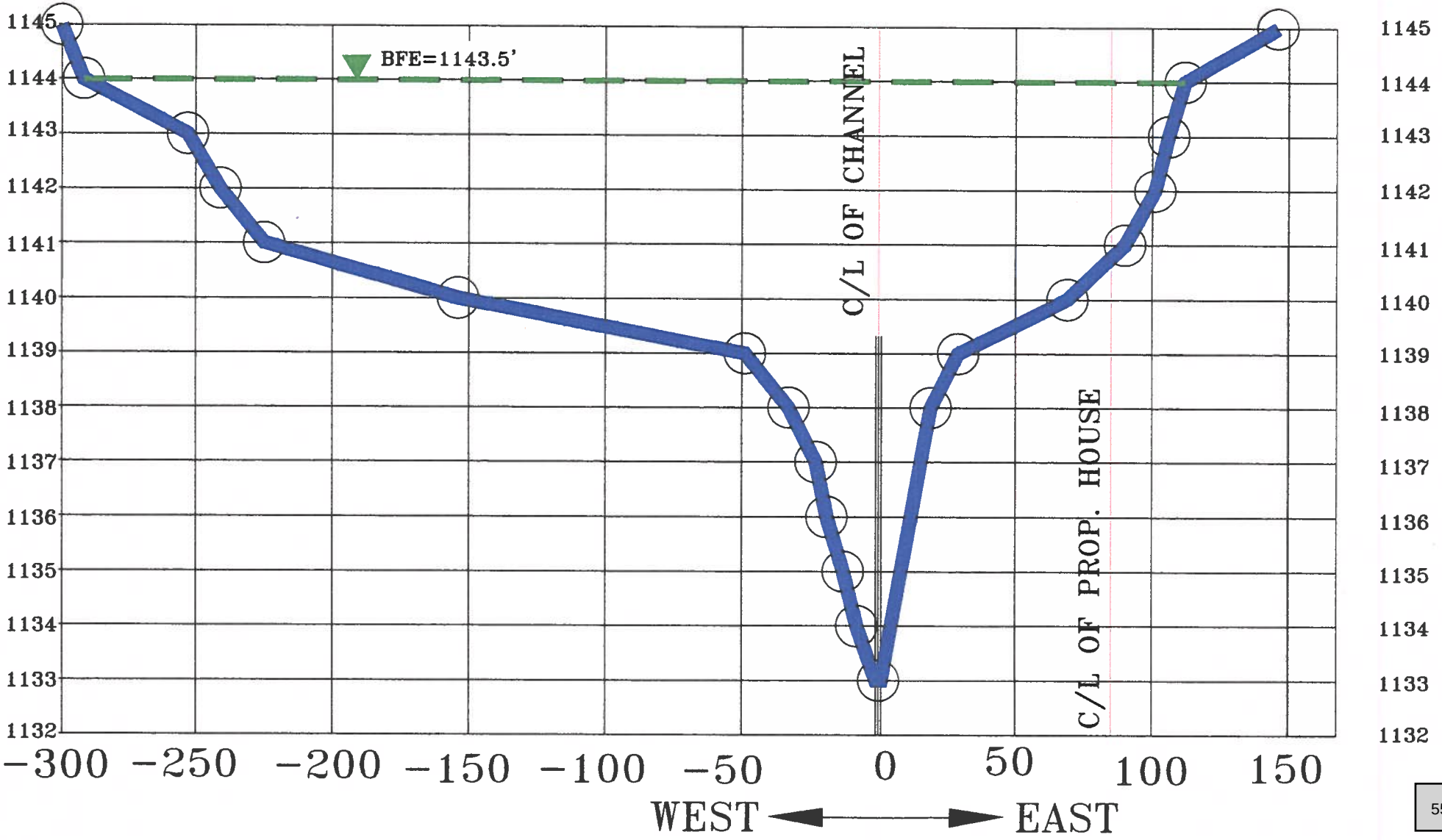
PE-11438

License Expires: May 31, 2024

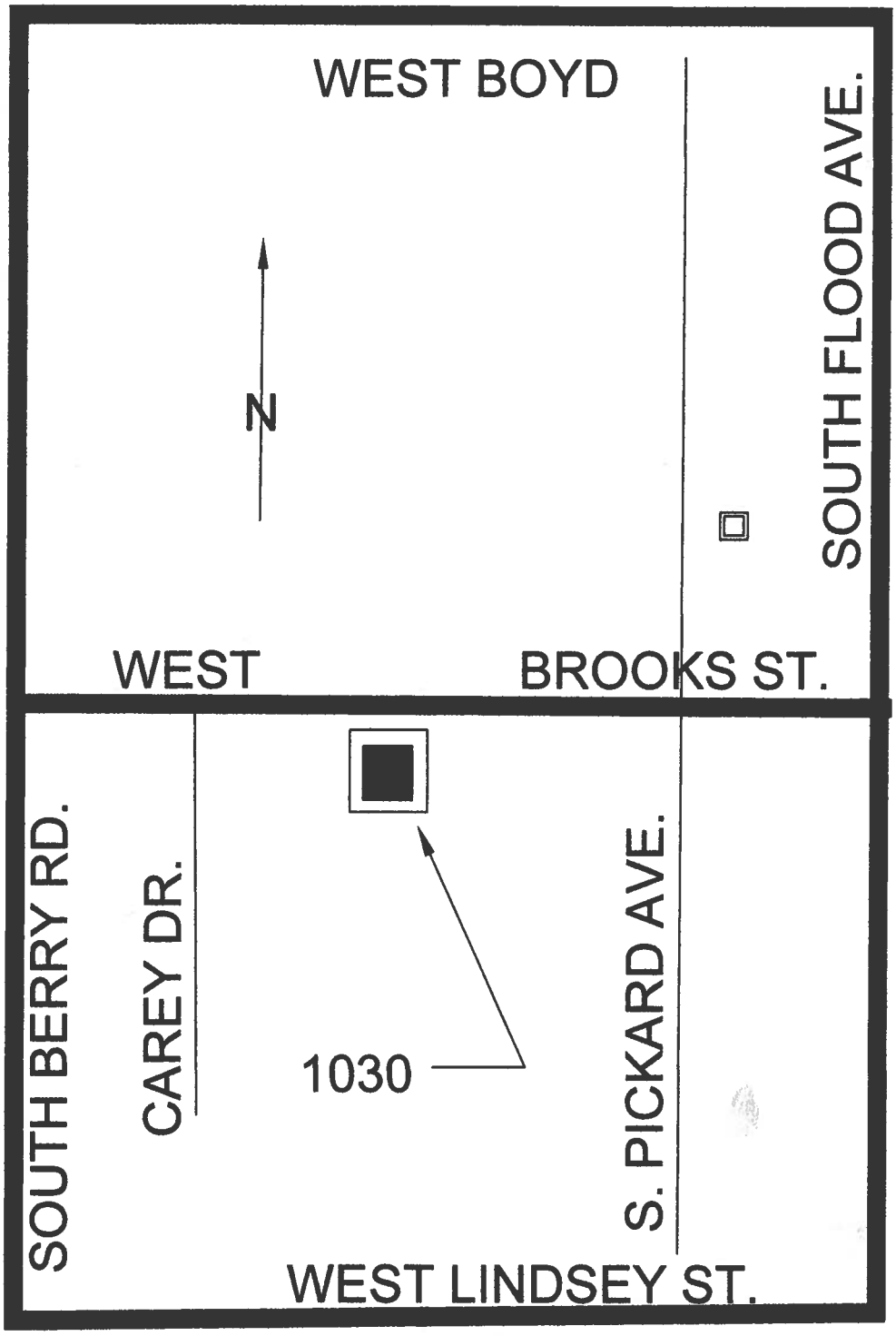
Signature: Earl Gary Reed

Date: May 29, 2023

CROSS-SECTION IMHOFF CREEK
1030 W. BROOKS ST., NORMAN, OK
CROSS-SECTION IS LOCATED AT THE FRONT BUILDING LINE.



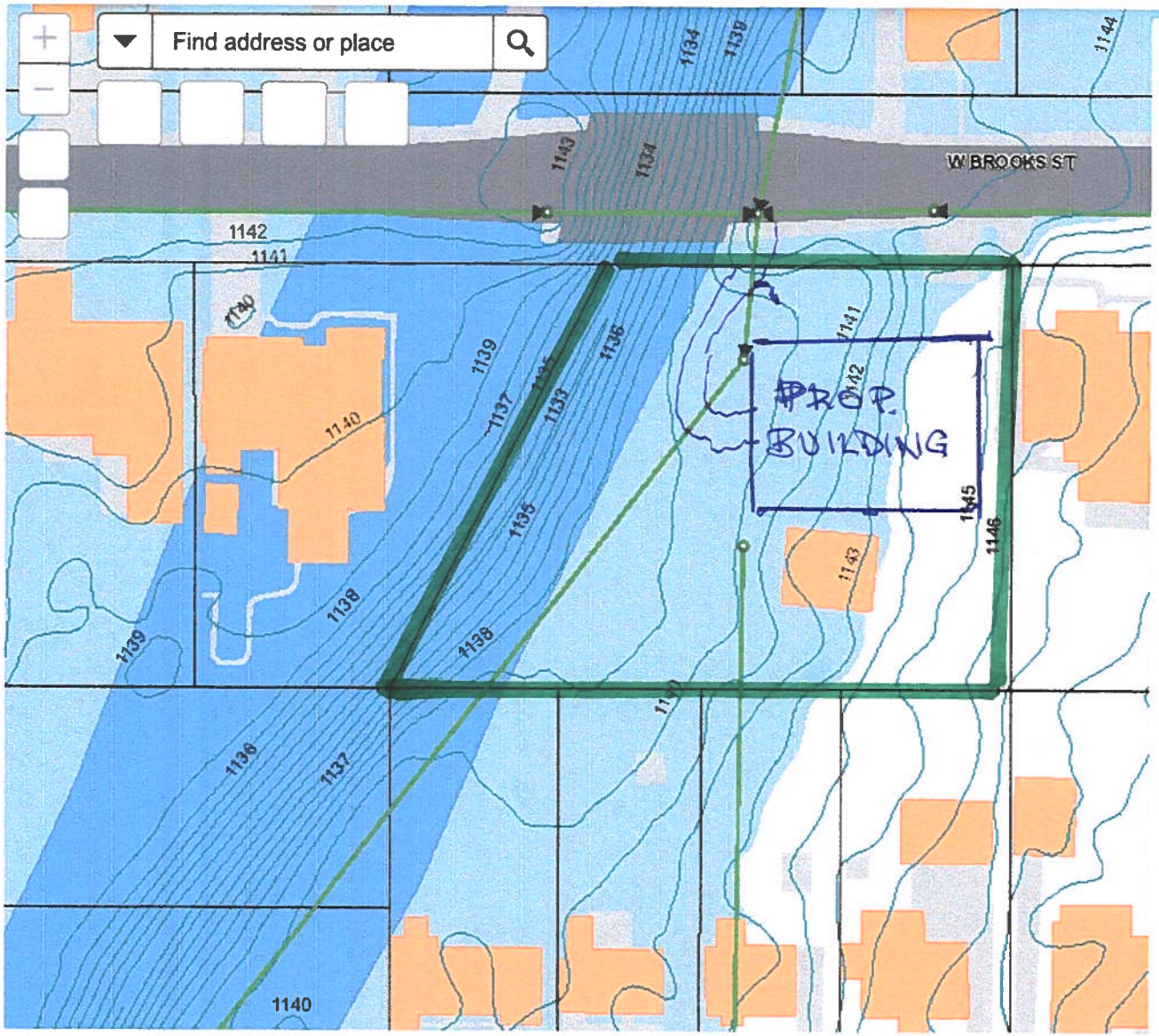
LOCATION MAP
1030 W. BROOKS ST.



1030 W. BROOKS ST.

Interactive Map

City of Norman, Oklahoma



Layer List

- CCFBC Exception
- CCFBC Required Build Line
- CCFBC Parking Setback
- CCFBC Building Form Standard
- CCFBC Legacy Zoning
- Central Norman Zoning Overlay District
- Porter Commercial Limit
- Historic Districts
- Stream Planning Corridors
- Flood Hazard Zone
- Zoning

Planning

- APPPA Permit Required
- OEAAA Review Required
- Norman 2025
- Ten Mile Flats 2025
- Community Separator 2025
- Core Area

60ft

2,131,056.567 682,370.472 Feet

Account #: 41381 / Parcel ID: NC29PICAC 8 4006

1030 W BROOKS ST

CURRENT DEAN, BRENDA TOMMEY LLC FIVE
1028 W BROOKS ST
NORMAN OK 73069

Current Market Value
$88,110

KEY INFORMATION

Tax Year	2023		
Land Size	0.6300	Land Units	AC
Class	Urban Reside	School District	NORMAN CITY 29
Section	31	Township	9
Range	2W	Neighborhood	PICKARD ACRES NC29
Legal Description	PICKARD ACRES N/2 LOT 4 LESS BEG SW/C OF N/2 LT 4 N151.25` E75` SWLY TO POB BLK 8		
Mailing Address	DEAN, BRENDA TOMMEY LLC FIVE, 1028 W BROOKS ST, NORMAN, 73069, 73069		

ASSESSMENT DETAILS

Market Value	$88,110
Taxable Value	$88,110
Land Value	$45,000
Gross Assessed Value	$10,573
Adjustments	$0
Net Assessed Value	$10,573

View Taxes for R0041381

RESIDENTIAL

RESIDENTIAL BUILDING (1)

Type	0008	Description	2 Story
Quality	Fair	Stories	2.0
Condition	Average	Year Built	1956
Interior	Drywall	Exterior Walls	Frame Shingle
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	Floor/Wall/WindowAC	Total Finished Area	1,200

SALES

SALE DATE	SALE PRICE	DEED BOOK	DEED PAGE	GRANTOR	GRANTEE	DEED TYPE
08/28/2004	$0	3906	961	DEAN, CARL R & BRENDA TOMMEY	DEAN, BRENDA TOMMEY LLC FIVE	WD

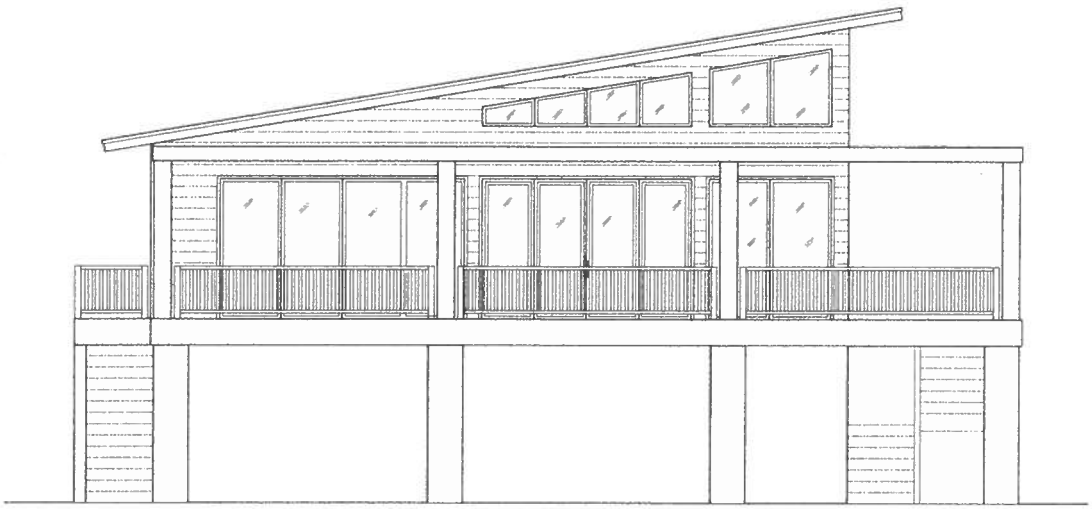
LAND

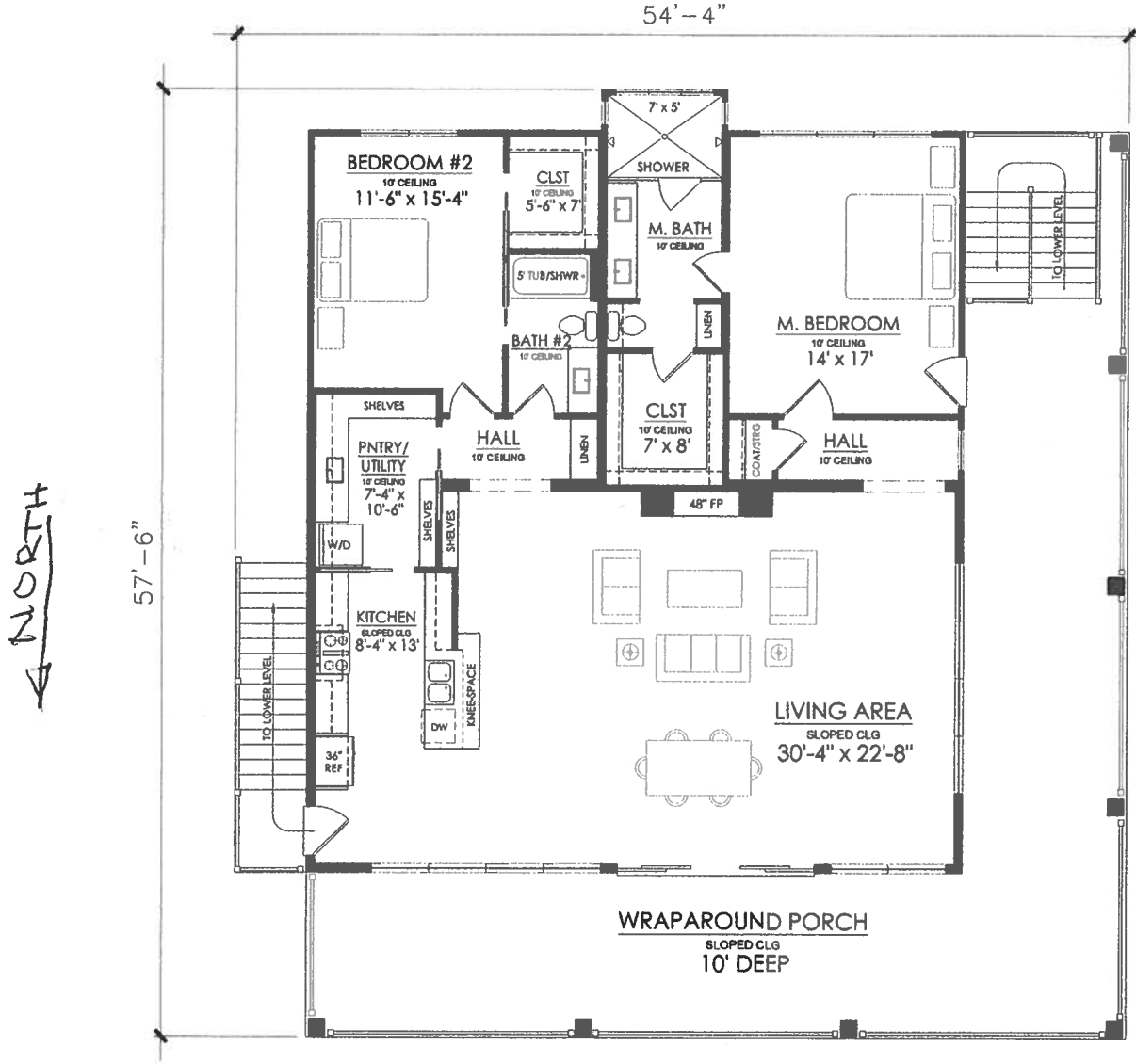
UNIT CODE	DESCRIPTION	USE CODE	ACRES / LOTS	USE VALUE
SF	Square Feet	Residential	27595.00	$55,190

PERSONAL PROPERTY

BUSINESS NAME	VIEW PERSONAL PROPERTY
No items to display	

Data last updated: 05/08/2023





DEAN RESIDENCE

1,819 SQ FT

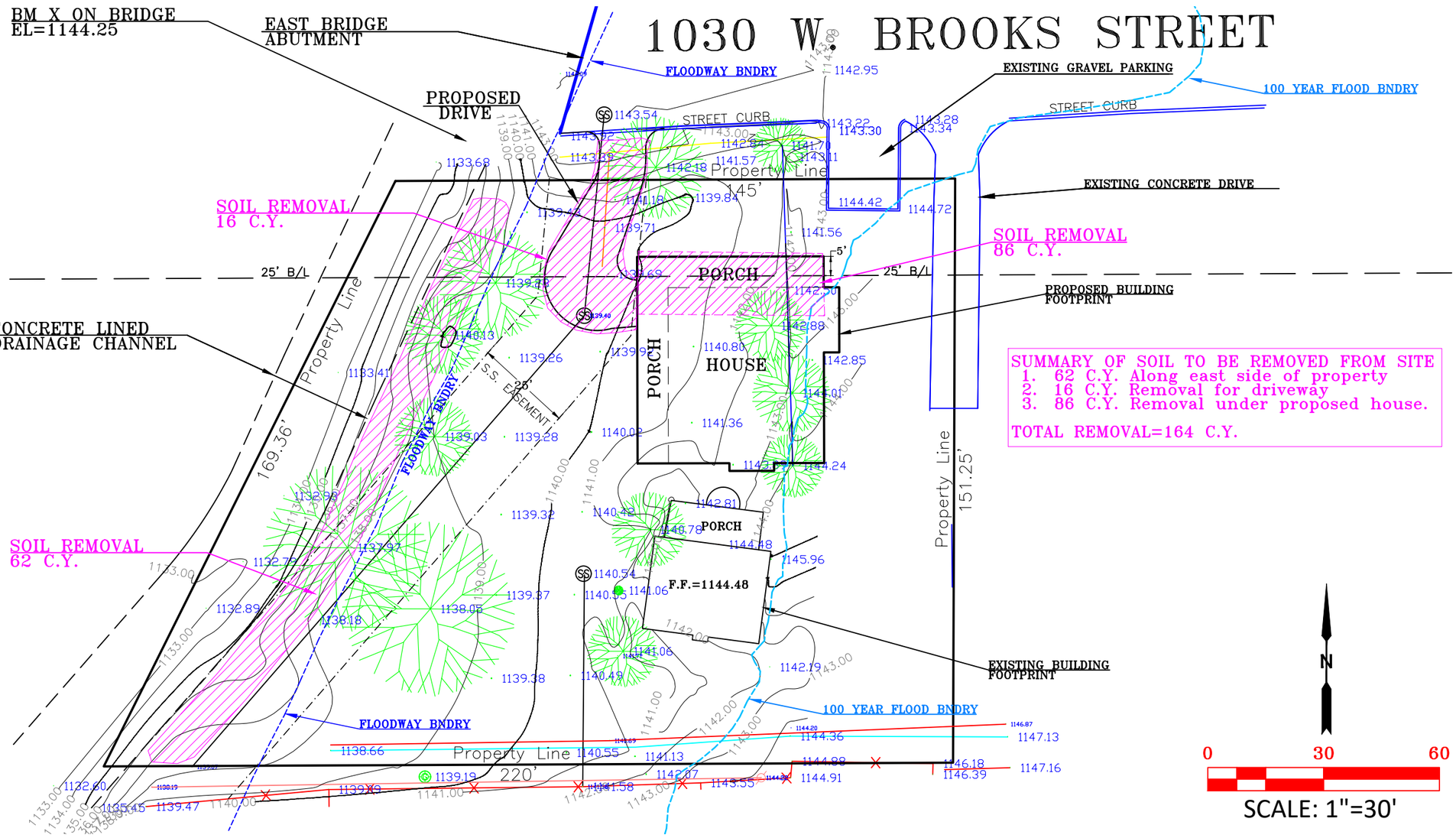

FINES
HIGHER
NO
PARKING
THIS SIDE
OF STREET
MANATEE
1030 W. BROOKS ST.
EXIST. BUILDING


Mon, May
2023 at 16:28:51 CDT
S87E 1653mils True


Mon, May 22, 2023 at
207082° / -097.456030
ft (±9.8ft)
84
ing: 274° N86W 487 miles true (
e: -08.6°
: 101.6°

EXHIBIT

1030 W. BROOKS



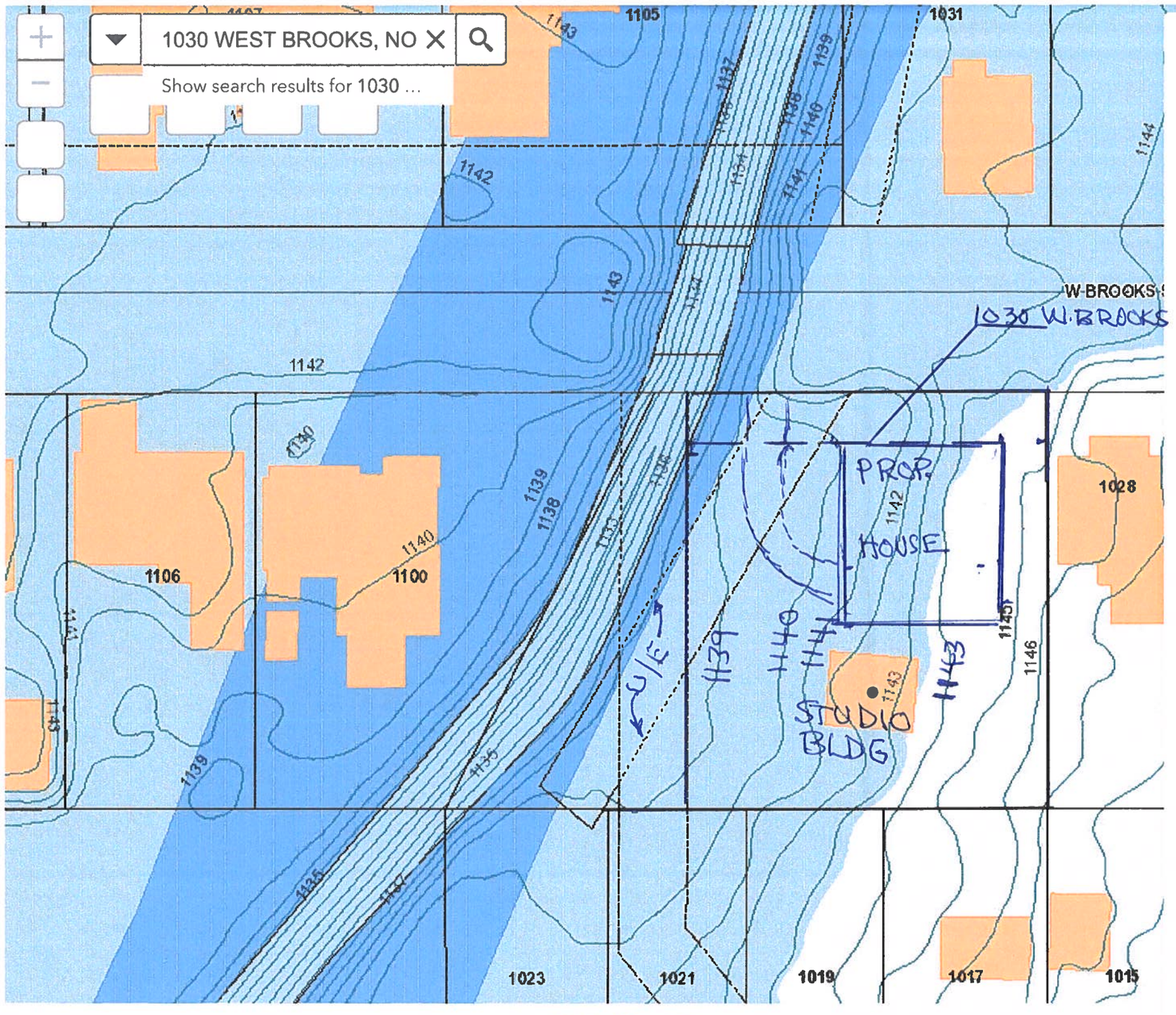
BOBBY SKAGGS LAND SURVEYING, LLC
Certificate of Authorization No. 7527
(expires 06/01/2024)
903 N. MADISON AVE
BLANCHARD, OK 73010
Telephone: (405) 831-8053

1030 W BROOKS EXHIBIT

Date(s) of Field Survey: 05/19/05 through 05/25/23
DRAWN BY: BGS CHECKED BY: BGS Date of Revisions: 06/06/23
Project No. SHEET 1 OF 1

Interactive Map

City of Norman, Oklahoma



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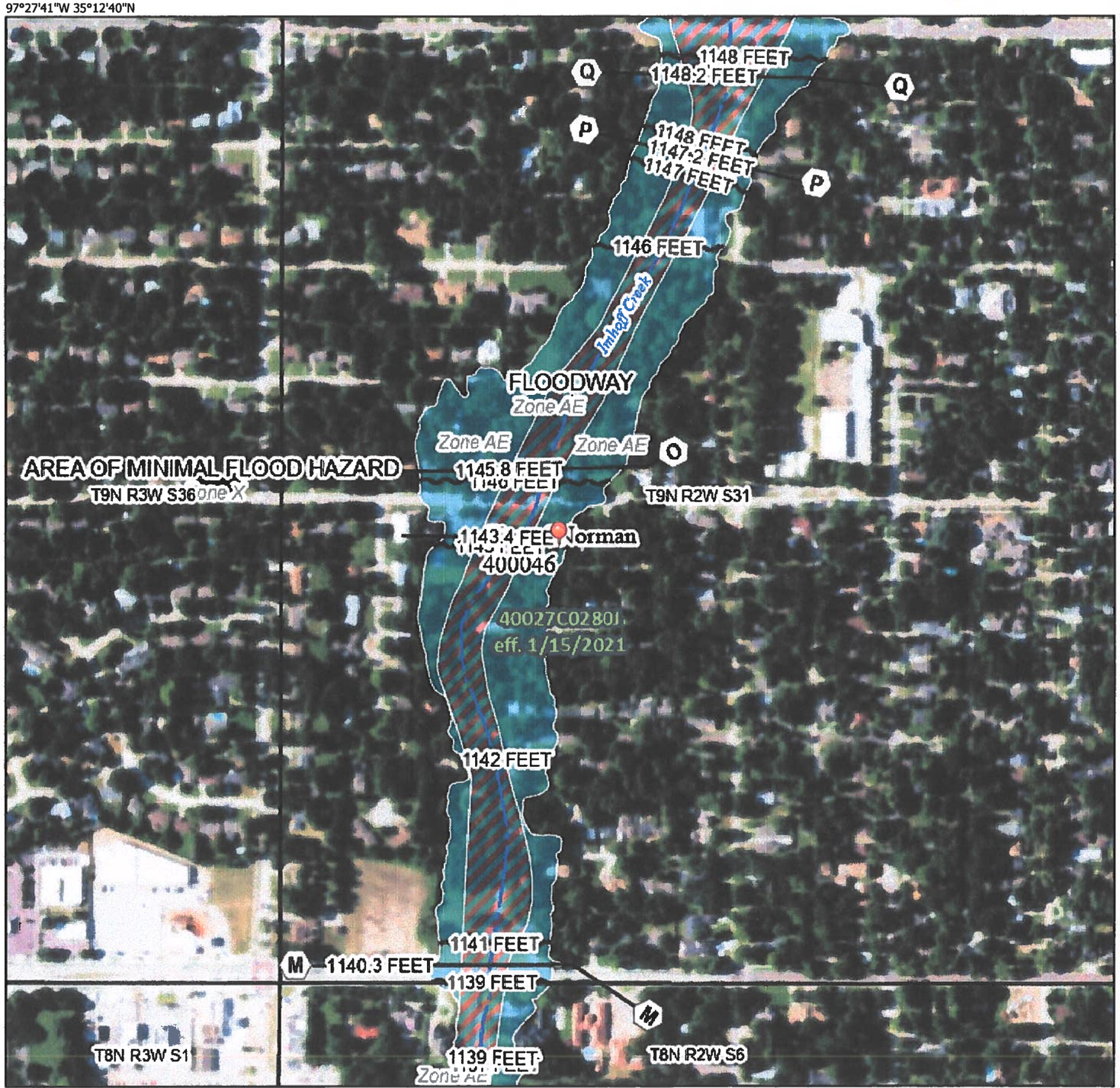
- Flood Hazard Zone
  - 100
  - floodway
- Zoning
- Planning
- APPPA Permit Required
- OEAAA Review Required
- Norman 2025
- Ten Mile Flats 2025

National Flood Hazard Layer FIRMette

FEMA

97°27'41"W 35°12'40"N



97°27'4"W 35°12'11"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

0.3" FROM QS "0" TO N. LINE OF LOT
L = 118' + 25' = 143'
FROM PROFILE
BFE = 1144.3'

SCALE BAR = 5.1" = 292'

Legend

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

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- 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 D*

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

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 — 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

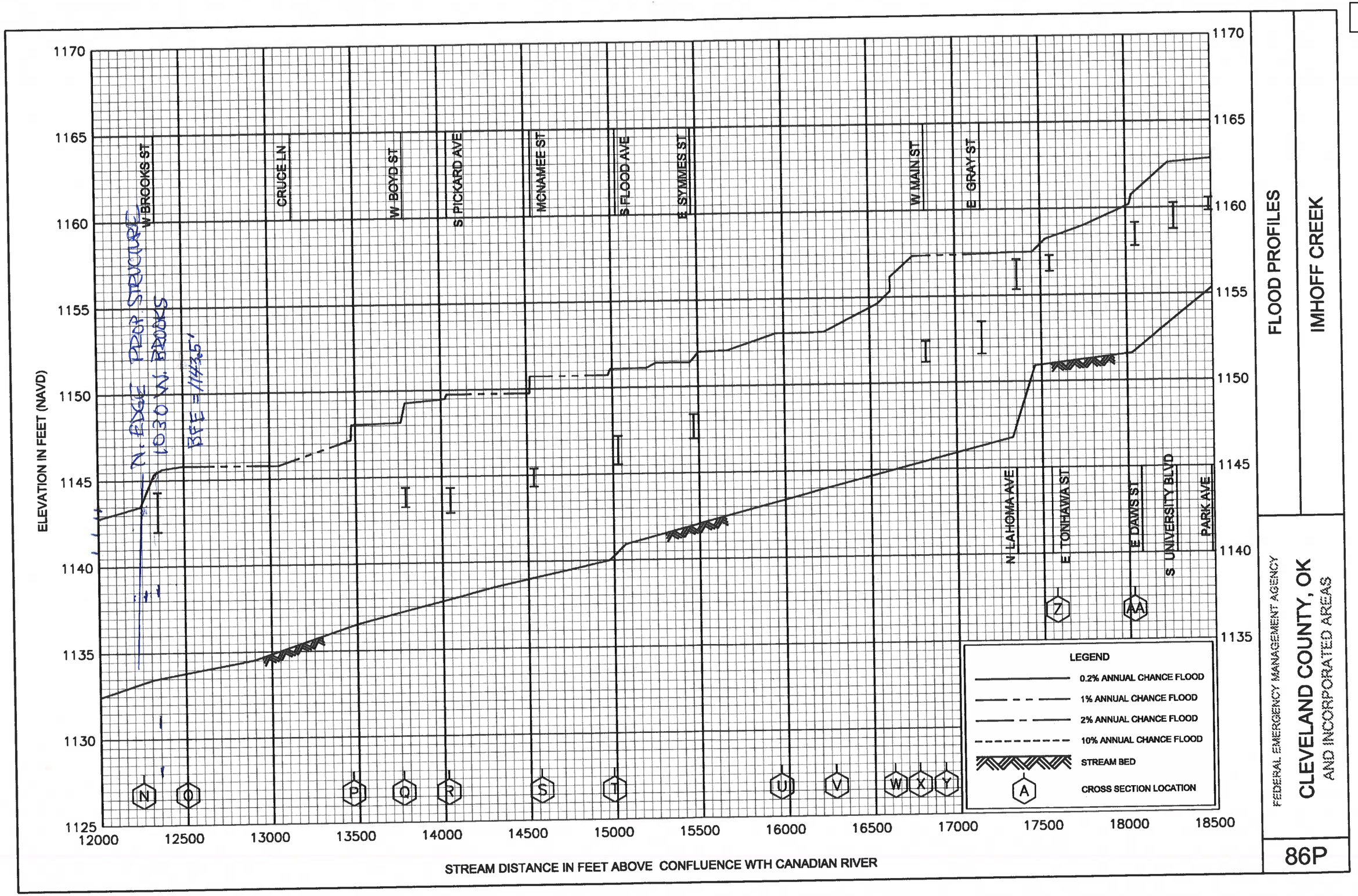
N

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 5/9/2023 at 12:50 AM 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, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



FLOOD PROFILES

IMHOFF CREEK

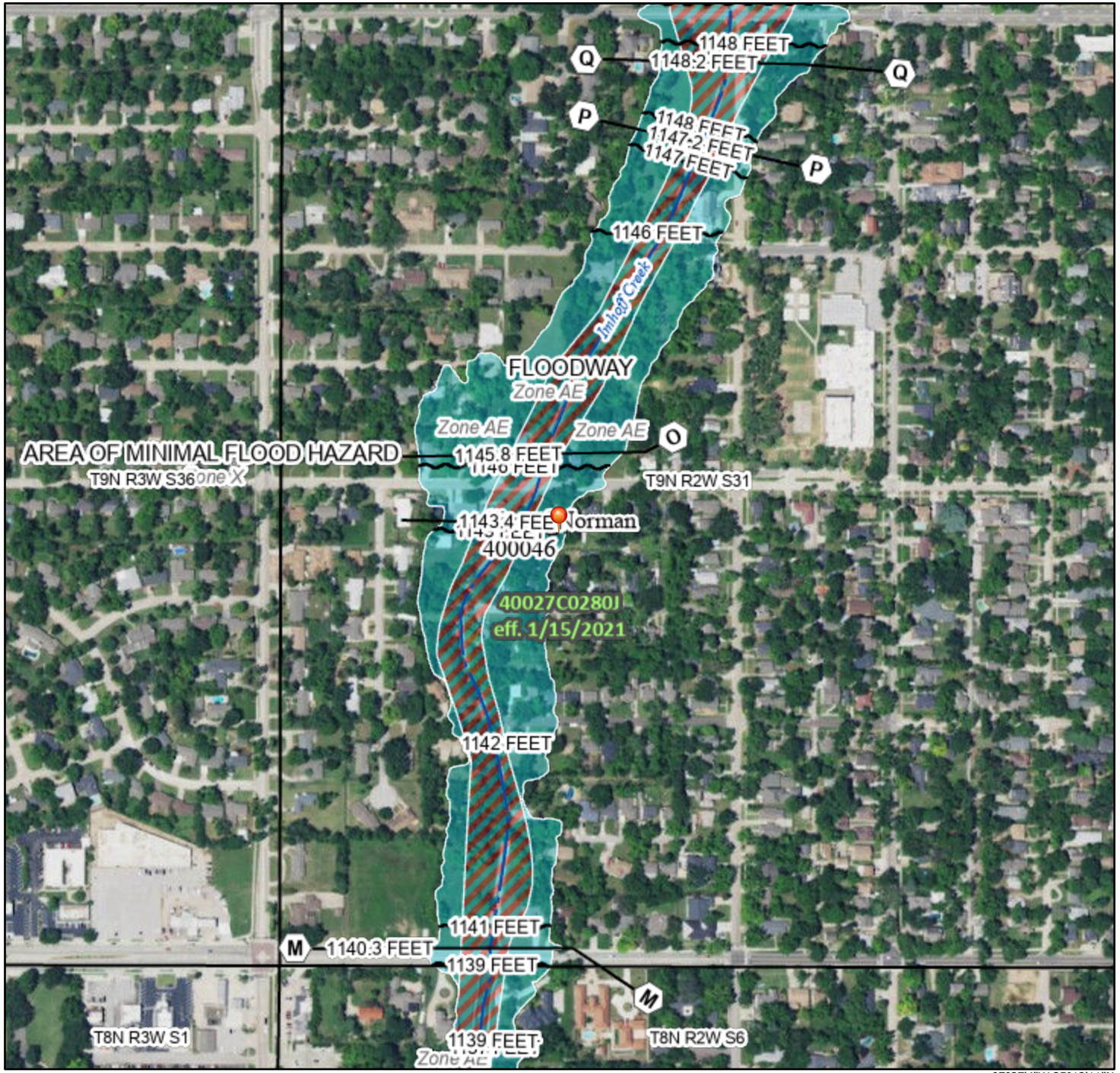
FEDERAL EMERGENCY MANAGEMENT AGENCY

CLEVELAND COUNTY, OK
AND INCORPORATED AREAS

86P

National Flood Hazard Layer FIRMette

97°27'41"W 35°12'40"N



97°27'4"W 35°12'11"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR F UT

SPECIAL FLOOD HAZARD AREAS
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STAFF REPORT 06/20/2023 **PERMIT NO. 677**

ITEM: This Floodplain Permit Application is for the elevation of a residential structure in the Imhoff Creek Floodplain.

BACKGROUND:
APPLICANT: Glenn Burnett
BUILDER: Glenn Burnett
ENGINEER: Earl Gary Keen, P.E.

The original single story, masonry house was constructed in 1930 on Lot 6 Block 2 of the Eagleton Addition and is in good condition. The entire property including the house is in the floodplain/floodway of Imhoff Creek in an area of repetitive flooding. The owner seeks a permit to elevate the structure to a minimum of two feet above the BFE, as well as elevating the HVAC system to the same height and removing soil from the floodplain to compensate for the materials used to elevate it and the steps to access the house. Additionally, the applicant seeks to repair fencing that exists along the north and west sides of the this property. The applicant seeks to bring the structure into compliance with the current Flood Hazard Ordinance so that substantial improvements can be made to this property. A previous application was denied by the committee on May 8, 2023 based on substantial improvement concerns and safety related to the property being in the floodway of Imhoff Creek in a repetitive loss area. This application is for raising the structure, the HVAC and fence repair, not for remodeling. 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 existing structure will not be enlarged.

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 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. The engineer recommends a target finished floor elevation of 1155.3' to allow for possible construction deviations. In addition the engineer indicates that flood vents would be installed in the crawl space beneath the house to meet FEMA requirements.

To construct the steps into the home after it is raised, the existing concrete porch and cement block steps would be removed from the floodplain. The engineer is recommending that steps be built using steps similar to those found in industrial settings, which consists of metal stringers and welded metal steps to minimize the footprint in the floodplain. The engineer also recommends that the platform for the HVAC unit be constructed of 4-inch by 4-inch metal steel posts. The application indicates that there is a dilapidated shed in the backyard that will be removed from the property and the multiple fence types that require repair and maintenance located along the property will be cleaned of debris and have missing/broken posts and sections replaced and maintained in the future. The total volume of soil that is required to be removed from the floodplain to account for the steps and HVAC support is 18 cubic feet. The engineer recommends increasing that amount to 27 cubic feet (1 cubic yard) to be conservative.

STAFF ANALYSIS:
Site located in Little River Basin or its Tributaries? yes__ no✓

According to the latest FIRM, the site of the proposed work is located in the Imhoff Creek floodplain (Zone AE). At the proposed site, the BFE is 1153.1 ft.

Applicable Ordinance Sections:		Subject Area:
36-533	(e)2(a)……	Fill restrictions

(e)2(b)……..……..…….New construction or substantial improvement designed and adequately anchored to prevent flotation, collapse or lateral movement
(e)2(e)…..…… Compensatory storage
(e)3(a)(1)…… Residential structures and accessory structures elevated 2 feet above BFE
(e)3(e)…… Flood Venting
(f)3(a)(8)…..……...No rise considerations

(e)2(b) All new construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent floatation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

The engineering report indicates that crawl space will be constructed with flood vents built to FEMA standards. In addition stairs and accessory structures will manufactured using steel or other metal material and welded joints for strength and to minimize volume of the structure. This satisfies ordinance requirements.

(e)2(a) and (e)2(e) Fill Restrictions in the Floodplain and Compensatory Storage – Fill is restricted because storage capacity is removed from floodplains, natural drainage patterns are adversely altered, and erosion problems can develop. Compensatory storage must be provided within the general location of any storage that is displaced by fill or other development activity and must serve the equivalent hydrologic function as the portion which is displaced with respect to the area and elevation of the floodplain.

According the engineer a net of approximately 1 cubic yard of soil will be removed from the floodplain satisfying ordinance requirements.

(f)3(a)(8) No Rise Considerations – For proposed development within any flood hazard area (except for those designated as regulatory floodways), certification that a rise of no more than 0.05 ft. will occur in the BFE on any adjacent property as a result of the proposed work is required. For proposed development within a designated regulatory floodway, certification that no increase in the BFE on any adjacent property as a result of the proposed work is required.

The project engineer has provided calculations for fill and certified that the proposed project will not cause a rise in the BFE, which meets the ordinance requirement.

(e)3(a)(1) Residential structures, including both site-built and manufactured homes, shall be constructed on fill so that the lowest floor including basement, ductwork, mechanical and electrical equipment including furnaces, water heaters, and air conditioners, etc. is at least two (2) feet above the base flood elevation…

The project engineer has indicated in the plans that the proposed structure will be built at a minimum of 2 above the BFE meeting the requirements of the ordinance.

(e)3(e) Enclosures. New construction and substantial improvements, with fully enclosed areas below the lowest floor … that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following criteria:

1. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;
2. The bottoms of all openings shall be no higher than one foot above grade;
3. Openings may be equipped with screens, louvers, valves, or other coverings or devices,

provided that they permit the automatic entry and exit of floodwaters.

The project engineer has indicated that the crawl space below the elevated structure will be built with flood vents to FEMA standards.

RECOMMENDATION: Staff recommends Floodplain Permit Application #677 be approved with the following conditions:

1. An elevation certificate be submitted at completion of the construction to verify compliance;

ACTION TAKEN: _____

City of Norman

Floodplain Permit Application

Floodplain Permit No. 677

Building Permit No. _____

Date 6/20/2023

FLOODPLAIN PERMIT APPLICATION
($100.00 Application Fee Required)

SECTION 1: GENERAL PROVISIONS (APPLICANT to read and sign):

1. No work may start until a permit is issued.
2. The permit may be revoked if any false statements are made herein.
3. If revoked, all work must cease until permit is re-issued.
4. Development shall not be used or occupied until a Certificate of Occupancy is issued.
5. The permit will expire if no work is commenced within 2 years of issuance.
6. Applicant is hereby informed that other permits may be required to fulfill local, state and federal regulatory requirements and must be included with this floodplain permit application.
7. Applicant hereby gives consent to the City of Norman or his/her representative to access the property to make reasonable inspections required to verify compliance.
8. The following floodplain modifications require approval by the City Council:
   (a) A modification of the floodplain that results in a change of ten percent (10%) or more in the width of the floodplain.
   (b) The construction of a pond with a water surface area of 5 acres or more.
   (c) Any modifications of the stream banks or flow line within the area that would be regulatory floodway whether or not that channel has a regulatory floodplain, unless the work is being done by the City of Norman staff as part of a routine maintenance activity.
9. All supporting documentation required by this application is required along with the permit fee by the submittal deadline. Late or incomplete applications will not be accepted.
10. I, THE APPLICANT, CERTIFY THAT ALL STATEMENTS HEREIN AND IN ATTACHMENTS TO THIS APPLICATION ARE, TO THE BEST OF MY KNOWLEDGE, TRUE AND ACCURATE.

SECTION 2: PROPOSED DEVELOPMENT (To be completed by APPLICANT.)

APPLICANT: Glenn Burnett ADDRESS: 1702 CREEKSIDE Dr SugarLand, TX 77478
TELEPHONE: 713-249-8640 SIGNATURE: [signature]

BUILDER: Glenn Burnett ADDRESS: 1702 CREEKSIDE Dr SugarLand, TX 77478
TELEPHONE: 713-249-8640 SIGNATURE: [signature]

ENGINEER: Earl Gary Keen, PE ADDRESS: P O BOX 891200 OKLAHOMA CITY, OK 73189
TELEPHONE: 405-823 8240 SIGNATURE: Earl Gary Keen

Barykeen47@att.net

PROJECT LOCATION

To avoid delay in processing the application, please provide enough information to easily identify the project location. Provide the street address, subdivision addition, lot number or legal description (attach) and, outside urban areas, the distance to the nearest intersecting road or well known landmark. A sketch attached to this application showing the project location would be helpful.

THE PROJECT SITE IS LOCATED ON THE WEST SIDE OF SOUTH LAHOMA AVENUE, APPROXIMATELY 900 FEET SOUTH OF WEST MAIN STRET AT THE INTERSECTION WITH WEST EUFAULA STREET. THE ADDRESS IS 216 SOUTH LAHOMA AVENUE. THE LEGAL DESCRIPTION IS LOT 6, BLOCK 2, EAGLETON ADDITION. A LOCATION MAP IS ATTACHED TO THE ENGINEERS REPORT.

DESCRIPTION OF WORK (Check all applicable boxes):

A. STRUCTURAL DEVELOPMENT

ACTIVITY	STRUCTURE TYPE
☐ New Structure	☒ Residential (1-4 Family)
☐ Addition	☐ Residential (More than 4 Family)
☒ Alteration	☐ Non-Residential (Flood proofing? ☐ Yes)
☐ Relocation	☐ Combined Use (Residential & Commercial)
☒ Demolition	☐ Manufactured (Mobile) Home
☐ Replacement	☐ In Manufactured Home Park? ☐ Yes

ESTIMATED COST OF PROJECT $ $50,000. Work that involves substantial damage/substantial improvement requires detailed cost estimates and an appraisal of the structure that is being improved.

B. OTHER DEVELOPMENT ACTIVITIES:

☐ Fill ☐ Mining ☐ Drilling ☒ Grading

☒ Excavation (Beyond the minimum for Structural Development)

☐ Watercourse Alteration (Including Dredging and Channel Modifications)

☐ Drainage Improvements (Including Culvert Work) ☐ Road, Street or Bridge Construction

☐ Subdivision (New or Expansion) ☐ Individual Water or Sewer System

In addition to items A. and B. provide a complete and detailed description of proposed work (failure to provide this item will be cause for the application to be rejected by staff). Attach additional sheets if necessary.

IN SUMMARY, ELEVATE HOME TO 2'+ ABOVE BFE; CONSTRUCT STEPS, REPAIR CHAIN-LINK FENCE; DEMOLISH/ REMOVE STORAGE BUILDING; REMOVE SOIL FROM REAR YARD, NEAR CHANNEL AND REMOVE SAME FROM PROPERTY TO COMPENSATE FOR FLOODPLAIN STORAGE VOLUME.

C. ATTACHMENTS WHICH ARE REQUIRED WITH EVERY APPLICATION:

The applicant must submit the documents listed below before the application can be processed. If the requested document is not relevant to the project scope, please check the Not Applicable box and provide explanation.

A. Plans drawn to scale showing the nature, location, dimensions, and elevation of the lot, existing or proposed structures, fill, storage of materials, flood proofing measures, and the relationship of the above to the location of the channel, floodway, and the regulatory flood-protection elevation.

B. A typical valley cross-section showing the channel of the stream, elevation of land areas adjoining each side of the channel, cross-sectional areas to be occupied by the proposed development, and high-water information.

☐ Not Applicable:
APPLICABLE PLANS ARE ATTACHED TO ENGINEER'S REPORT, INCLUDING THIS INFORMATON.
SITE PLANS, CONTORS, STREAM PROFILE AND VALLEY CROSS-SECTION ARE PROVIDED.

C. Subdivision or other development plans (If the subdivision or other developments exceeds 50 lots or 5 acres, whichever is the lesser, the applicant **must** provide 100-year flood elevations if they are not otherwise available).

☒ Not Applicable:
BASE FLOOD ELEVATIONS ARE SHOWN ON EXHIBITS.
NOT A SUBDIVISION OR OTHER SIGNIFICANT DEVELOPMENT.

D. Plans (surface view) showing elevations or contours of the ground; pertinent structure, fill, or storage elevations; size, location, and spatial arrangement of all proposed and existing structures on the site; location and elevations of streets, water supply, sanitary facilities; photographs showing existing land uses and vegetation upstream and downstream, soil types and other pertinent information.

☐ Not Applicable:

IN SUMMARY, ELEVATE HOUSE; CONSTRUCT STEPS; REPAIR FENCE; REMOVE STORAGE BUILDING; REMOVE SOIL FROMSITE TO PRESERVE FLOODPLAIN.

E. A profile showing the slope of the bottom of the channel or flow line of the stream.

☐ Not Applicable:
A STREAM PROFILE TAKEN FROM FEMA FIS STUDY IS PROVIDED AS AN EXHIBIT.

F. Elevation (in relation to mean sea level) of the lowest floor (including basement) of all new and substantially improved structures.

☐ Not Applicable:
LOWEST FLOOR ELEVATION, 1% CHANCE BFE, ETC. ARE PROVIDED ON EXHIBITS. EXISTING FLOOR IS SEVERAL FEET BELOW BFE.

G. Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development.

☐ Not Applicable:
THE WATERCOURSE AND NATURAL DRAINAGE WILL NOT BE ALTERED IN ANY WAY. COMMENTS IN ENGINEER'S REPORT.

H. For proposed development within any flood hazard area (except for those areas designated as regulatory floodways), certification that a rise of no more than five hundredths of a foot (0.05') will occur on any adjacent property in the base flood elevation as a result of the proposed work. For proposed development within a designated regulatory floodway, certification of no increase in flood levels within the community during the occurrence of the base flood discharge as a result of the proposed work. All certifications shall be signed and sealed by a Registered Professional Engineer licensed to practice in the State of Oklahoma.

ENGINEER'S CERTIFICATION IS ATTACHED TO ENGINEER'S REPORT.

I. A certified list of names and addresses of all record property owners within a three hundred fifty (350) foot radius of the exterior boundary of the subject property not to exceed 100 feet laterally from the Special Flood Hazard Area. The radius to be extended by increments of one hundred (100) linear feet until the list of property owners includes not less than fifteen (15) individual property owners of separate parcels or until a maximum radius of one thousand (1,000) feet has been reached.

A PROPERTY RADIUS MAP AND MAILING LIST WAS PREPARED BY CITY'S GIS GROUP AND IS ATTACHED TO ENGINEERS REPORT.

J. A copy of all other applicable local, state, and federal permits (i.e. U.S. Army Corps of Engineers 404 permit, etc).

PERMITS FROM OTHER ORGANIZATIONS ARE NOT REQUIRED FOR THIS WORK. BUILDING PERMITS WILL BE OBTAINED.

After completing SECTION 2, APPLICANT should submit form to Permit Staff for review.

SECTION 3: FLOODPLAIN DETERMINATION (To be completed by Permit Staff.)

The proposed development is located on FIRM Panel No.: 0280J, Dated: 1/15/2021

The Proposed Development:

☐ Is NOT located in a Special Flood Hazard Area
(Notify the applicant that the application review is complete and NO FLOODPLAIN PERMIT IS REQUIRED).

☒ Is located in a Special Flood Hazard Area.

☒ The proposed development is located in a floodway.

☒ 100-Year flood elevation at the site is 1153.1 Ft. NGVD (MSL) ☐ Unavailable

See Section 4 for additional instructions.

SIGNED: _____ **DATE:** 6/14/2023

SECTION 4: ADDITIONAL INFORMATION REQUIRED (To be completed by Permit Staff.)

The applicant must also submit the documents checked below before the application can be processed.

☐ Flood proofing protection level (non-residential only) _____ Ft. NGVD (MSL). For flood proofed structures applicant must attach certification from registered engineer.

☐ Certification from a registered engineer that the proposed activity in a regulatory floodway will not result in any increase in the height of the 100-year flood (Base Flood Elevation). A copy of all data and calculations supporting this finding must also be submitted.

☐ Certification from a registered engineer that the proposed activity in a regulatory flood plain will result in an increase of no more than 0.05 feet in the height of the 100-year flood (Base Flood Elevation). A copy of all data and calculations supporting this finding must also be submitted.

☐ All other applicable federal, state, and local permits have been obtained.

Other: _____

_____

_____

SECTION 5: PERMIT DETERMINATION (To be completed by Floodplain Chairman.)

The proposed activity: **(A)** ☐ **Is**; **(B)** ☐ **Is Not** in conformance with provisions of Norman's City Code Chapter 22, Section 429.1. The permit is issued subject to the conditions attached to and made part of this permit.

SIGNED: _____ DATE: _____

If **BOX A** is checked, the Floodplain committee chairman may issue a Floodplain Permit.

If **BOX B** is checked, the Floodplain committee chairman will provide a written summary of deficiencies. Applicant may revise and resubmit an application to the Floodplain committee or may request a hearing from the Board of Adjustment.

APPEALS: Appealed to Board of Adjustment: ☐ Yes ☐ No

Hearing date: _____

Board of Adjustment Decision - Approved: ☐ Yes ☐ No

Conditions:

_____

_____

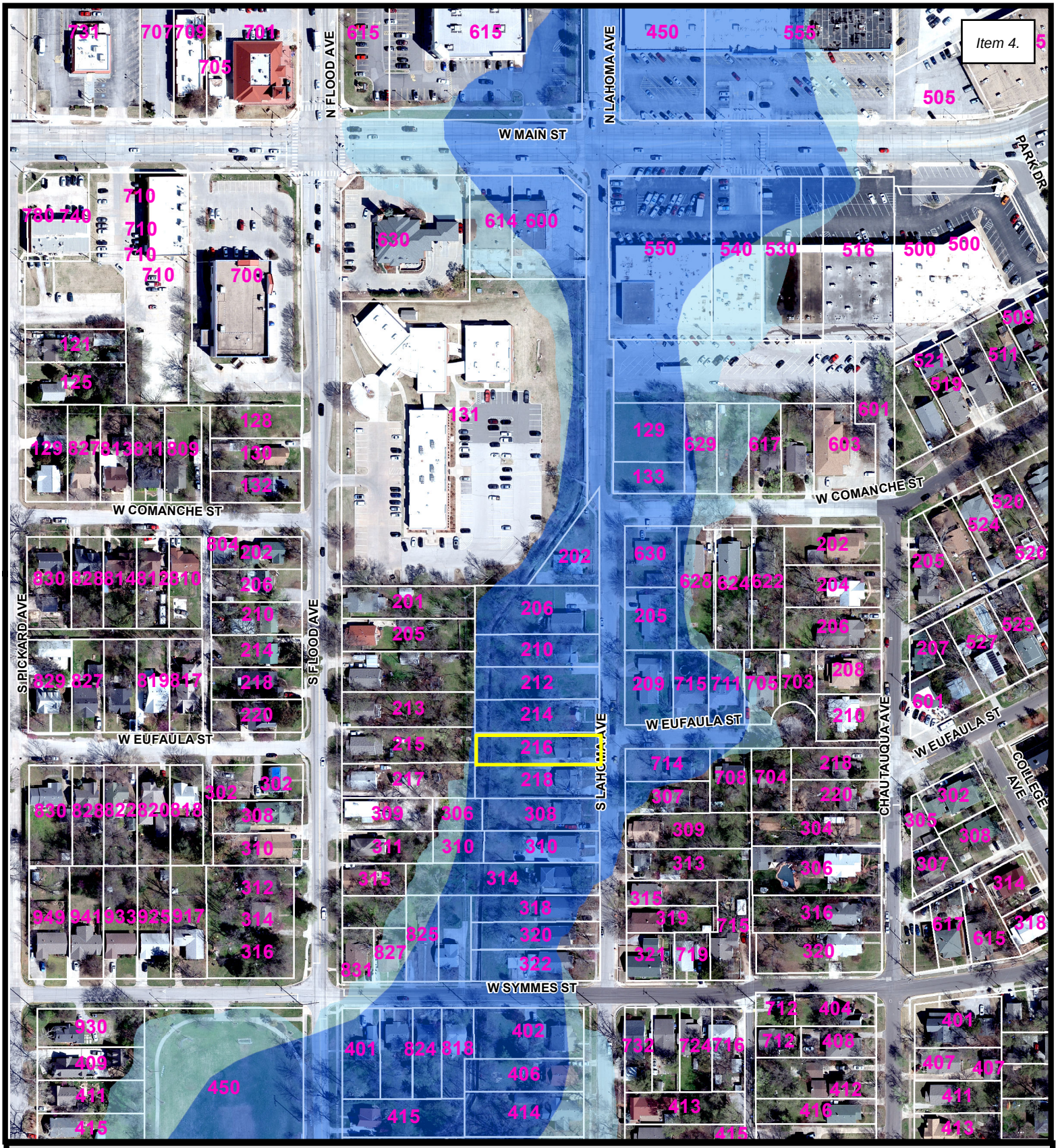
_____

SECTION 6: AS-BUILT ELEVATIONS (To be submitted by APPLICANT before Certificate of Occupancy is issued.)

1. FEMA Elevation Certificate
   and/or
2. FEMA Floodproofing Certificate

NOTE: The completed certificate will be reviewed by staff for completeness and accuracy. If any deficiencies are found it will be returned to the applicant for revision. A Certificate of Occupancy for the structure will not be issued until an Elevation and /or Floodproofing Certificate has been accepted by the City.

Form Revised 1/16



216 S Lahoma
Vicinity Map

N
W E
S

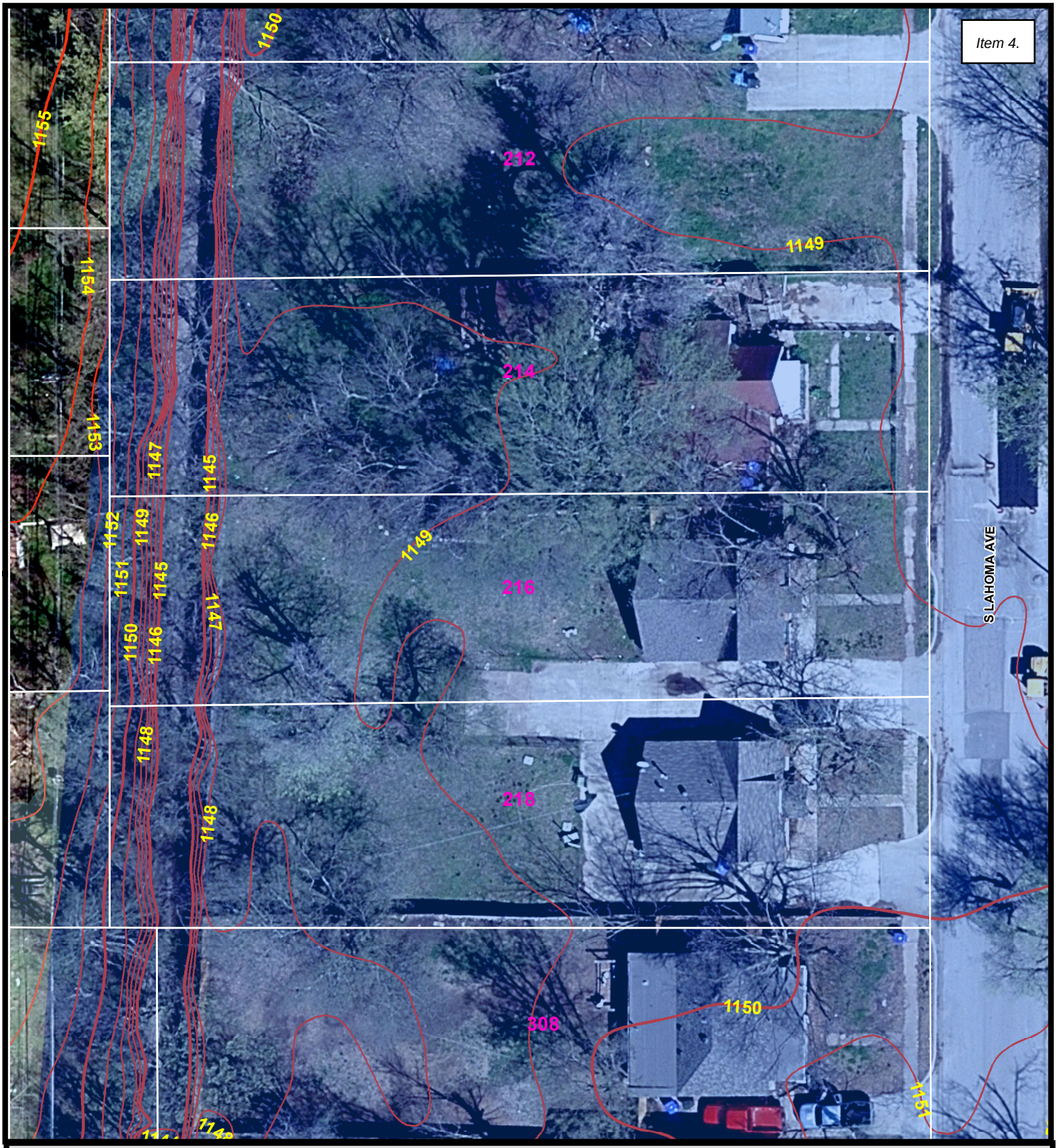
1 inch = 200 feet

Legend

Flood Hazard Zone (2021)

- 1% Chance Floodplain
- Floodway

The City of Norman assumes no responsibility for errors or omissions in the information presented.



216 S Lahoma

N
W E
S

1 inch = 30 feet

Legend

Flood Hazard Zone (2021)

1% Chance Floodplain

Floodway

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-limk 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 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 supports 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 Residental 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.

his 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

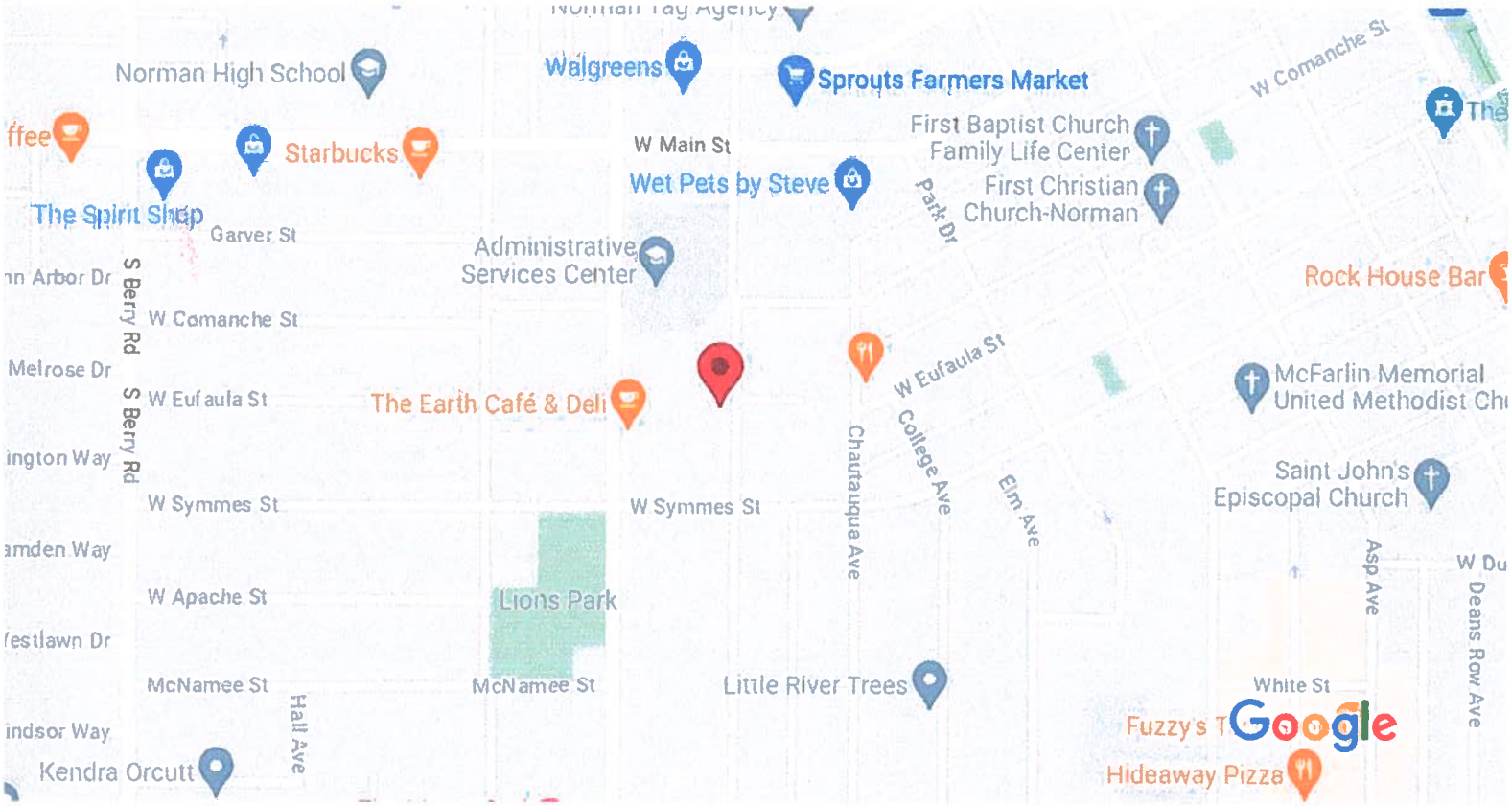
PE - 11438

License Expires: May 31, 2024

Signature Date: May 29, 2023

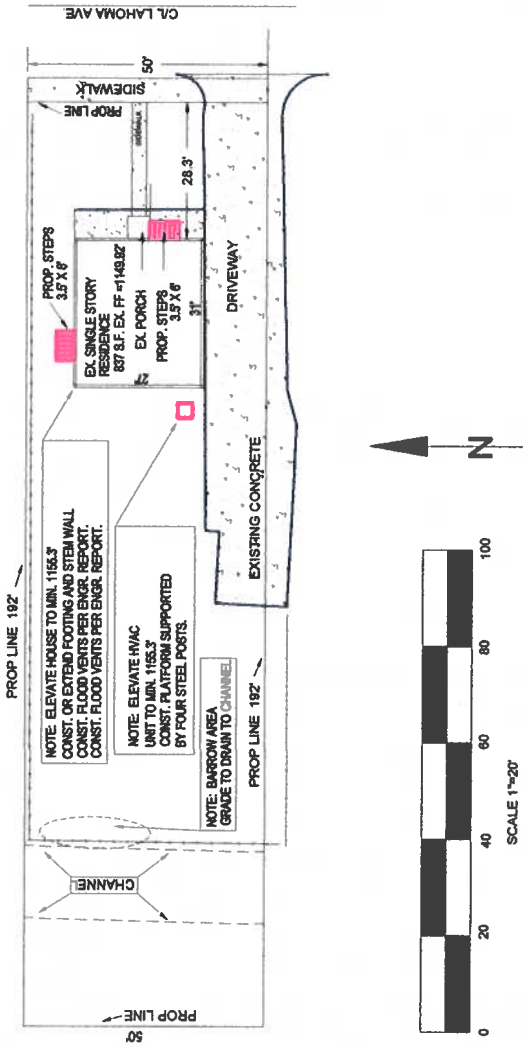
Earl Gary Keen

Google Maps 216 S Lahoma Ave

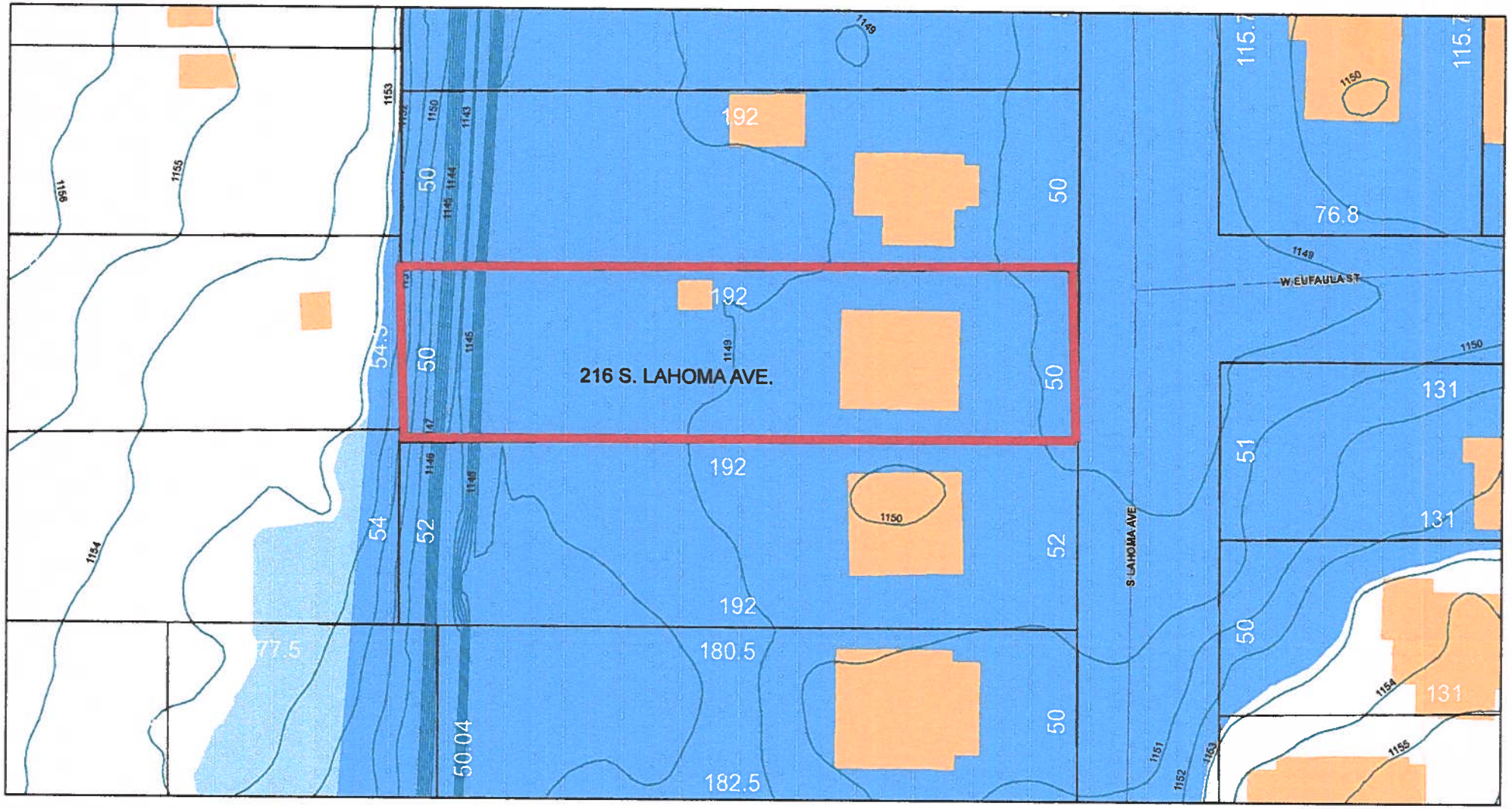


SITE PLAN

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



City of Norman WebMap



4/27/2023, 5:41:40 PM

Override 1
Parcel
Building
Flood Hazard Zone
100
floodway
Contour Urban 1 foot (2007)
OU
Park
Lake Thunderbird
Railroad
Streets
Centerline Labels (10,000+)

1:323

0 20 40 80 ft

0 5 10 20 m

City of Norman, GIS Services Division

City of Norman, Interactive Map

Account #: 32336 / Parcel ID: NC29EAGLE 2 6001

216 S LAHOMA AVE

CURRENT BURNETT, 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

Type	0001	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

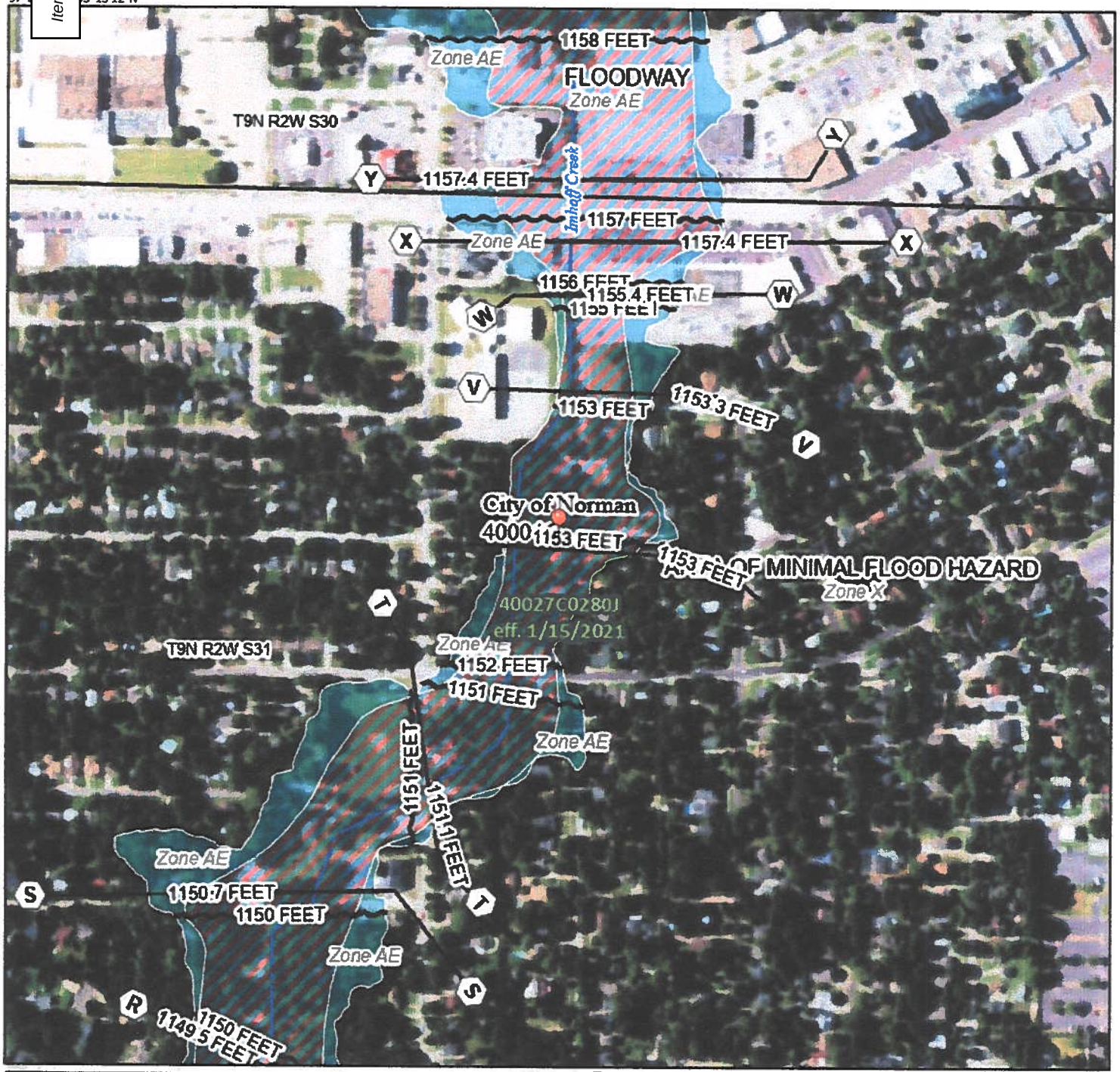
BUSINESS NAME	VIEW PERSONAL PROPERTY
No items to display	

Data last updated: 04/03/2023

National Flood Hazard Layer FIRMette

FEMA

97°26'48"W 35°13'12"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

97°26'48"W 35°12'42"N

Basemap: USGS National Map: Orthoimagery. Data refreshed October, 2020

Legend

90

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

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- 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 D*

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

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 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

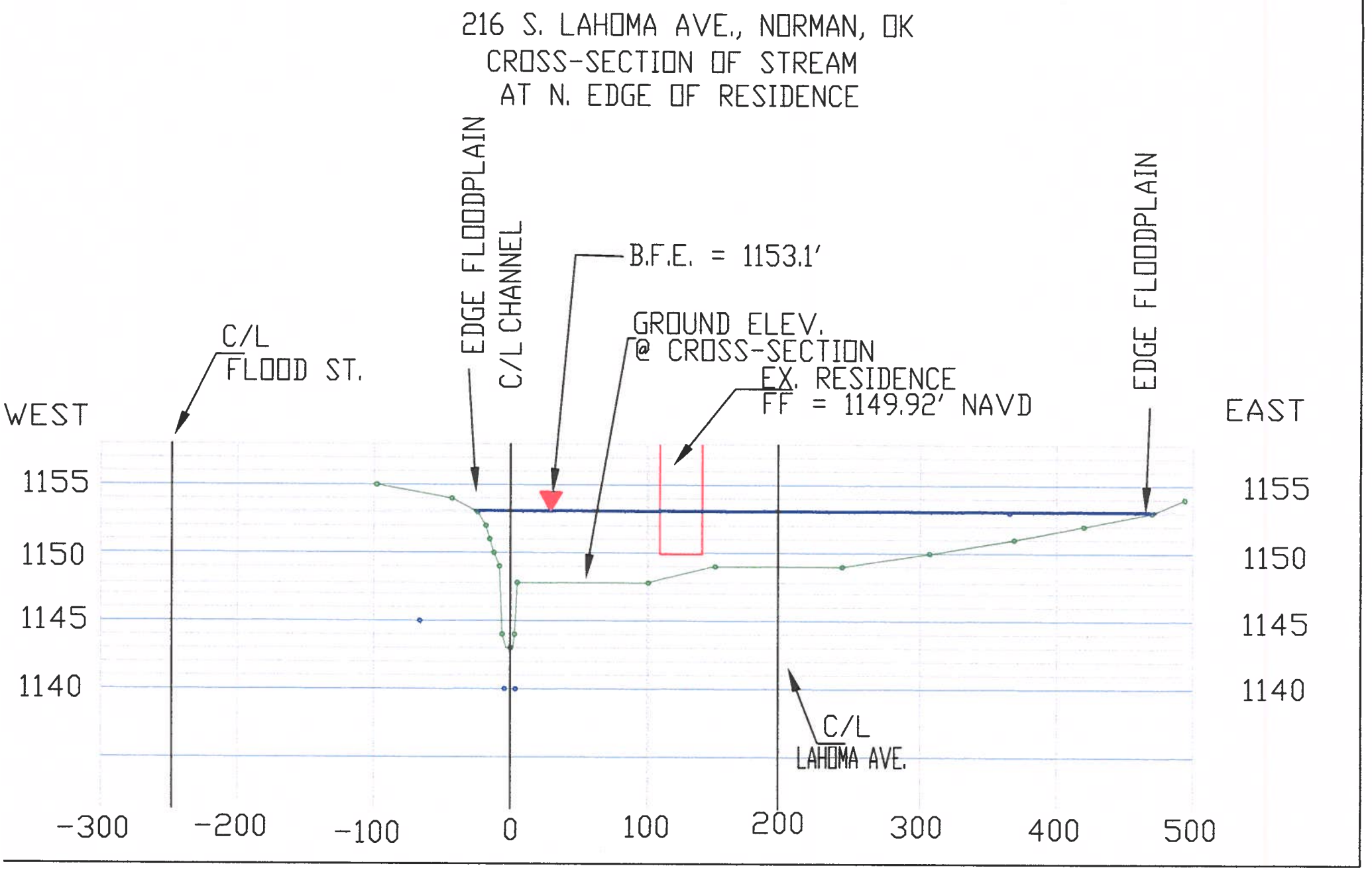
N

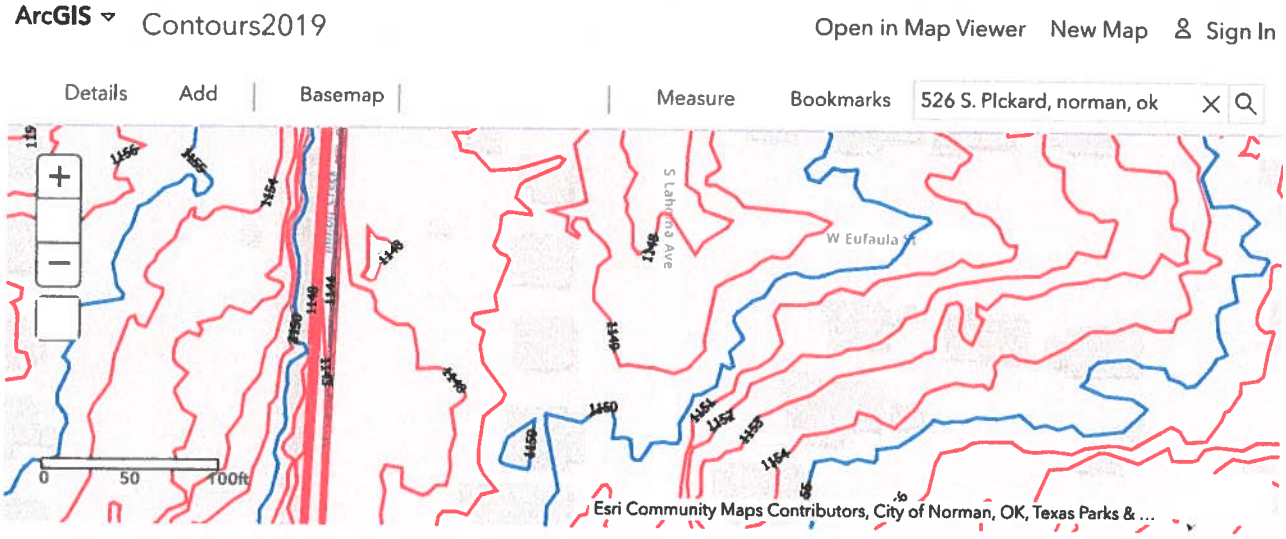
The pin displayed on the map is an approximate point selected by the user and does not represen an authoritative property location.

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

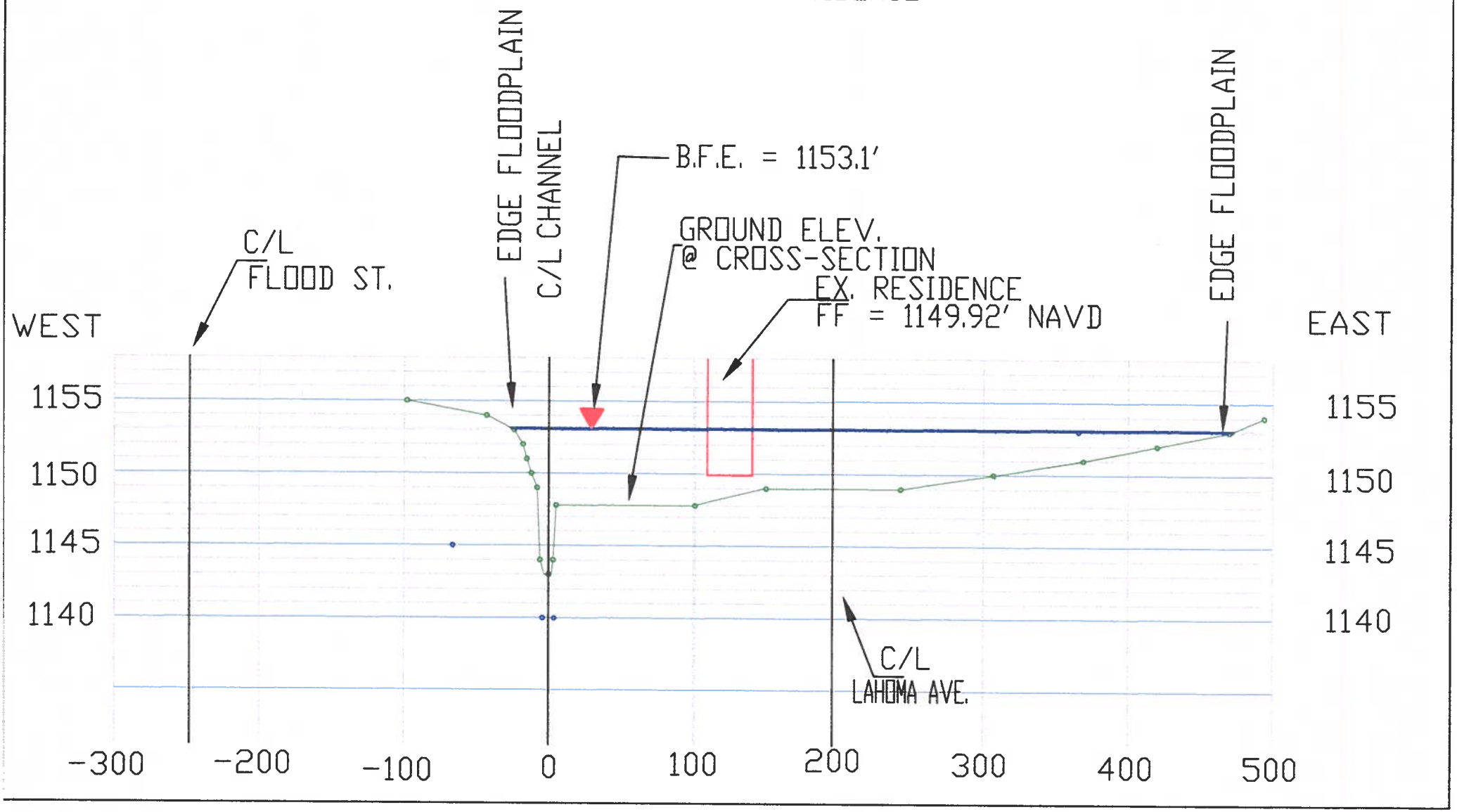
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/24/2023 at 4:39 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by 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, FIRM panel number, and FIRM 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
EDGE FLOODPLAIN
C/L CHANNEL
B.F.E. = 1153.1'
GROUND ELEV.
@ CROSS-SECTION
EX. RESIDENCE
FF = 1149.92' NAVD
EDGE FLOODPLAIN
C/L
FLOOD ST.
WEST
EAST
1155
1150
1145
1140
C/L
LAHOMA AVE.
-300
-200
-100
0
100
200
300
400
500


ArcGIS
Contours2019
Open in Map Viewer
New Map
Sign In
Details
Add
Basemap
Measure
Bookmarks
526 S. Pickard, norman, ok
S Lahoma Ave
W Eufaula St
0
50
100ft
Esri Community Maps Contributors, City of Norman, OK, Texas Parks & ...

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



ELEVATION IN FEET (NAVD)

1125 1130 1135 1140 1145 1150 1155 1160 1165 1170

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH CANADIAN RIVER

12000 12500 13000 13500 14000 14500 15000 15500 16000 16500 17000 17500 18000 18500

W BROCKS ST

CRUCE LN

W BOYD ST

S PICKARD AVE

MCNAMEE ST

S FLOOD AVE

E SYMMES ST

216 S. LAHOMA
BFE = 1153.1'

W MAIN ST

E GRAY ST

N LAHOMA AVE

E TONHAWA ST

E DAWS ST

S UNIVERSITY BLVD

PARK AVE

N O P Q R S T U V W X Y Z AA

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

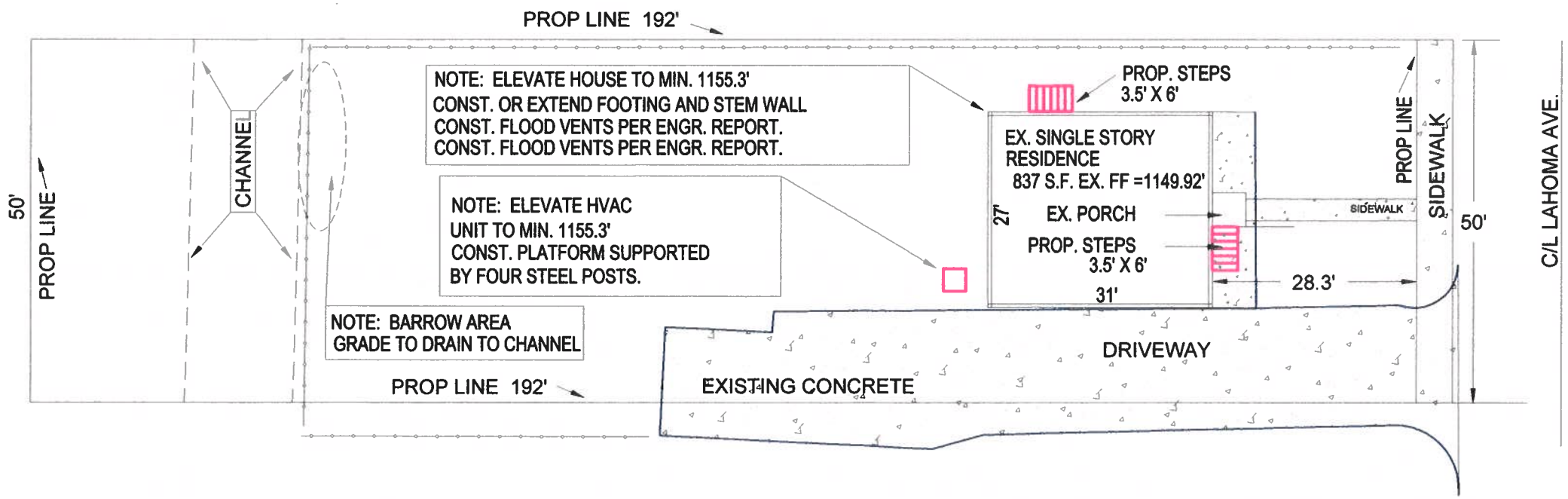
A CROSS SECTION LOCATION

1135 1140 1145 1150 1155 1160 1165 1170

86P	FEDERAL EMERGENCY MANAGEMENT AGENCY CLEVELAND COUNTY, OK AND INCORPORATED AREAS	FLOOD PROFILES IMHOFF CREEK

SITE PLAN

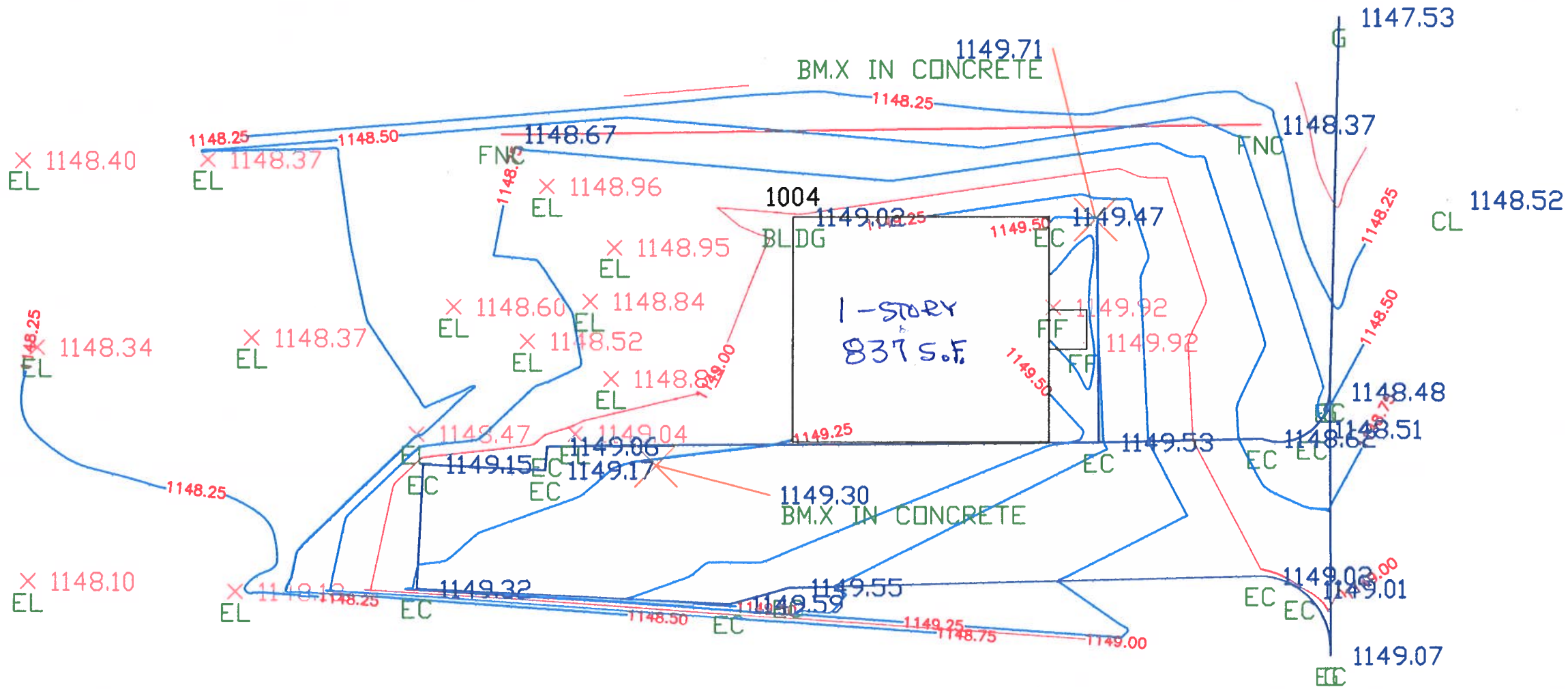
216 SOUTH LAHOMA AVE.
LOT 6, BLOCK 2, EAGLETON ADDITION
NORMAN, OK




216 S LAHOMA AVE.
GOODLE EARTH WITH
2019 GIS CONTOURS & LOCATION OF CROSS-SECTION
Legend
216 S Lahoma Ave
The Earth Café & Deli
Untitled Path
216 S Lahoma Ave
The Earth Café & Deli
Google Earth
N
100 ft

SURVEYED TOPO

216 S. LAHOMA AVE.



01

12