CITY OF NORMAN, OK
FLOODPLAIN PERMIT COMMITTEE MEETING

Development Center, Room B, 225 N. Webster Ave., Norman, OK 73069
Tuesday, January 20, 2026 at 3:30 PM

AGENDA

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 call 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 January 5, 2026 meeting.

ACTION ITEMS

2. **Floodplain Permit Application No. 734 -** This permit application is for several outdoor improvement projects at a residence in the Ten-Mile Flat Creek floodplain. This permit application was postponed from the December 15, 2025 meeting.

3. **Floodplain Permit No. 736** - This permit application is for extension of a natural gas service line in the Little River Floodplain near the intersection of N. Flood Avenue and W. Franklin Road.

MISCELLANEOUS COMMENTS

ADJOURNMENT

CITY OF NORMAN, OK
FLOODPLAIN PERMIT COMMITTEE MEETING

Development Center, Conference Room B, 225 N. Webster Avenue, Norman, OK 73069
Monday, January 5th, 2026 at 3:30 PM

MINUTES

The Floodplain Permit Committee of the City of Norman, Cleveland County, State of Oklahoma, met in Regular Session in Conference Room B at the Development Center, on the 5th day of January, 2025, at 3:30 p.m., and notice of the agenda of the meeting was posted at the Norman Municipal Building at 201 West Gray, Development Center at 225 N. Webster and on the City website at least 24 hours prior to the beginning of the meeting.

ROLL CALL

The meeting was called to order by Mr. Miles at 3:30 p.m. Roll was taken. Committee members in attendance included Bill Scanlon, Resident Member; Sherri Stansel, Resident Member; Tim Miles, City Engineer; Ken Danner, Subdivision Development Manager; Jane Hudson, Director of Planning; and Lora Hoggatt, Planning Services Manager. Committee members absent included Scott Sturtz, Floodplain Administrator. Also in attendance were Jason Murphy, Stormwater Manager; and Roxsie Stephens, staff member. Citizens in attendance included Muhammad Khan, Engineer with SMC Consulting Engineers, P.C.

MINUTES

1. Approval of minutes from December 15th, 2025, meeting
    a. Mr. Scanlon motioned to approve. Ms. Hudson seconded the motion. Minutes were approved with a vote of 6-0.

ACTION ITEMS

2. Floodplain Permit No. 733

Mr. Miles stated that the floodplain permit application is for property improvements at 1201 and 1231 Telluride Drive, including the installation of detention pond outlet structures in the Bishop Creek floodplain.

Mr. Miles stated the applicant is Durango at Vallecito, LLC and the engineer is SMC Consulting Engineers, P.C..

Mr. Murphy provided the staff report detailing the request with respect to the floodplain permit requirements and potential impacts.

Mr. Murphy stated staff recommends permit app #733 be approved with the following condition:

1. As-builts be provided to indicate that work was completed in accordance with submitted plans.

Mr. Miles asked the committee if they had any questions. There were not any questions from the committee.

Mr. Miles asked for any comments from the public. There were not any questions from the public.

Mr. Scanlon motioned to approve the application. Mr. Danner seconded the motion.

The permit was approved with a vote of 6-0.

MISCELLANEOUS COMMENTS

Mr. Miles asked if there were any miscellaneous comments. Mr. Murphy stated that currently there is one application that will be ready for the next meeting.

ADJOURNMENT

Ms. Stansel motioned to adjourn. Mr. Scanlon seconded the motion. Mr. Miles adjourned the meeting at 3:38 p.m.

Passed and approved this _____ day of _____, 2026

_____

City of Norman Floodplain Administrator, Scott Sturtz

PERMIT NO. 734 DATE: 1/20/2026

STAFF REPORT

ITEM: Floodplain Permit Application for Improvements at 428 Laws Drive

APPLICANT: J. Mark Daniels, 428 Laws Drive
ENGINEER: J. Mark Daniels, P.E.

BACKGROUND

Update: Postponed from the December 15, 2025 Floodplain Permit Committee Meeting so that additional information could be determined with respect to existing drainage easements on the property that also conflicts with the installed improvements.

The applicant requests a floodplain permit for several improvements constructed in the backyard of 428 Laws Drive, adjacent to Muddy Boggy Creek in the Ten Mile Flats area. Improvements include a garden wall, retaining wall, circular patio slab, hot tub, and pergola columns. The site lies partially within the 0.1% Special Flood Hazard Area (SFHA). The floodplain elevation is approximately 1121.7 ft.

Improvements were constructed in phases (2020–2024). Significant erosion was documented during flooding events in spring 2025, prompting a City inspection and the requirement for a floodplain permit.

STAFF ANALYSIS

Site located in Ten-Mile Flat Creek (Muddy Boggy Creek) Floodplain.

Flood Zone: The site is within Zone AE. Interpolation of FEMA data identifies a BFE of approximately 1121.7 ft.

APPLICABLE ORDINANCE SECTIONS (36-533)

(e)(2)(a) – Floodplain modification and fill restrictions
(e)(2)(e) – Compensatory storage requirements
(f)(3)(8) – No-rise condition requirements
(e)(7) – Floodway restrictions (not applicable here)

DETAILED ORDINANCE ANALYSIS

(e)(2)(a) – Floodplain Fill Restrictions

Applicant provided detailed cut/fill calculations. Approximate volumes:
• Fill: ~420 CF
• Cut: ~303 CF
Net effect: approximately –117 CF (additional storage).

(e)(2)(e) – Compensatory Storage

Engineer's stamped certification confirms compensatory excavation behind the garden wall. Excavation depth of 11.25 inches provides ~117 CF of compensatory storage, and excavation to 16 inches yields ~237 CF, exceeding the required offset.

(f)(3)(8) – No-Rise Requirement

Engineer provided a No-Rise Certification showing that neither Phase 1 nor Phase 2 improvements increase the Base Flood Elevation (BFE). All excavated materials will be removed from the floodplain.

(e)(7) – Floodway Restrictions

The project is not located in a mapped regulatory floodway. No restrictions apply.

OTHER CONSIDERATIONS

Creek bank repair is not part of this permit and will require a separate floodplain permit, coordination with HOA, adjacent owners, and engineering design.

RECOMMENDATION

Update: Staff recommends the following:

A) Further postponement, to be placed on the next regular Floodplain Permit Committee agenda following City Council's approval on the Applicant's request for encroachment of the subject drainage easement only where an encroachment consent application and all necessary information are submitted to the City of Norman by Applicant within 30 days of today;

B) But that the permit automatically be deemed **denied** where complete, timely submittal for encroachment consent is **not** accomplished by Applicant within this thirty-day period or City Council denies the Applicant's request for encroachment.

ACTION TAKEN:

City of Norman

Floodplain Permit Application

Floodplain Permit No. 734

Building Permit No. _____

Date 12-15-2025

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: Mark Daniels ADDRESS: 428 Laws Drive Norman OK 73072

TELEPHONE: +14054069546 SIGNATURE: _____

BUILDER: Same ADDRESS: _____

TELEPHONE: _____ SIGNATURE: _____

ENGINEER: Mark Daniels ADDRESS: 428 Laws Drive Norman OK 73072

TELEPHONE: +14054069546 SIGNATURE: _____

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.

Address of improvements is 428 Laws Drive in Cambridge Addition in NW Norman located NW of Main and 48th Avenue NW.

See Attachment 1 and 2.

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 $_____ 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.

See Attachment 3 for a complete description.

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:

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:
Not Applicable

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:
See Attachment 4, Plan View with dimensions; Attachment 5, Plan and Sectional View; Attachment 6, Cross Section with calculations; Excel spreadsheet with detailed calculations; Attachment 8, FEMA Flood Hazard Map with project location.

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

☐ Not Applicable:
Not Applicable

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

☐ Not Applicable:
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:
Not Applicable

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.: 02603, 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 1121.7 Ft. NGVD (MSL) ☐ Unavailable

See Section 4 for additional instructions.

SIGNED: _____ **DATE:** 12/10/2025

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.)

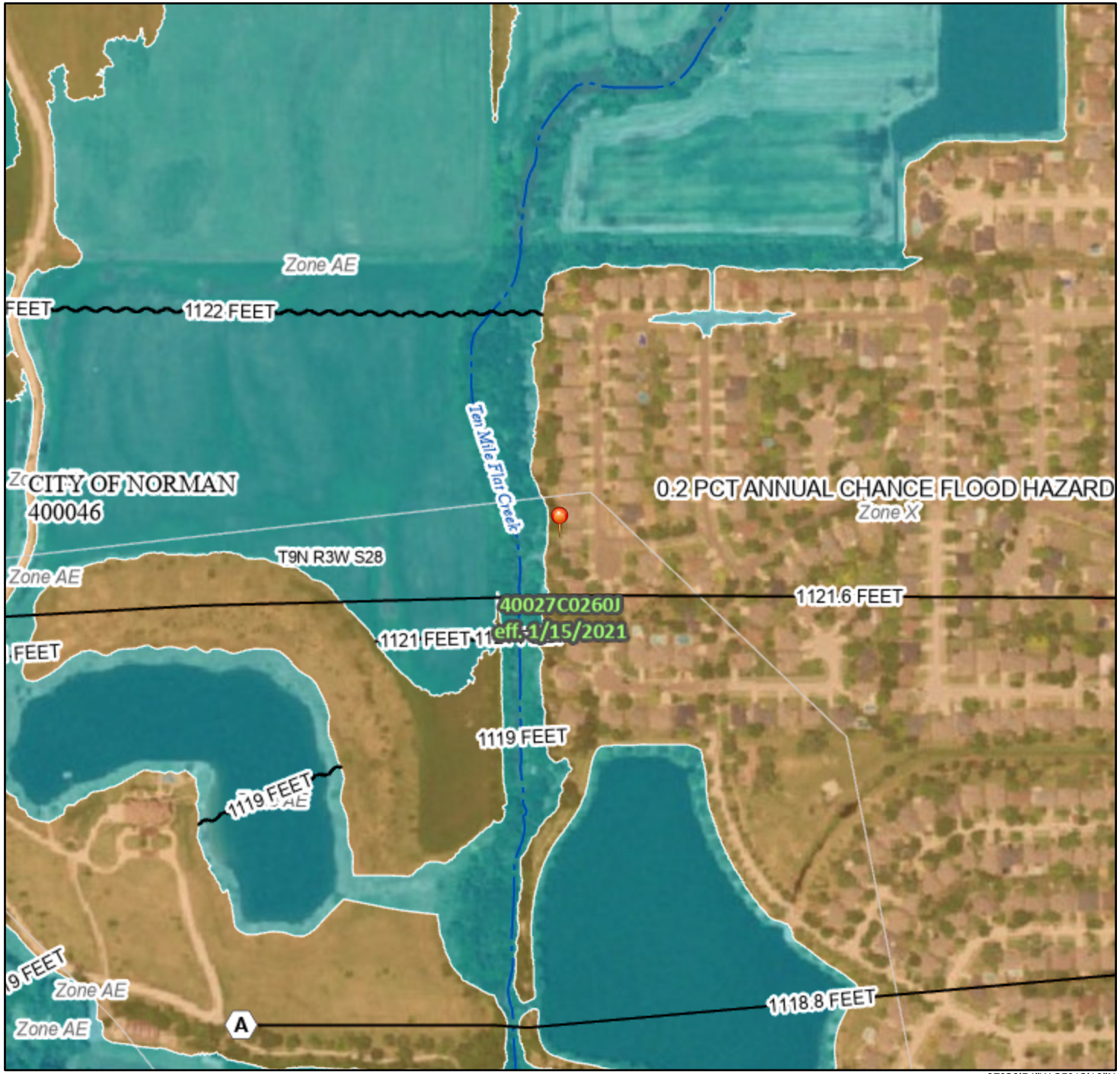
1. FEMA Elevation Certificate
   and/or
2. FEMA Floodproofing Certificate

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.

National Flood Hazard Layer FIRMette

FEMA

97°31'31"W 35°13'39"N



97°30'54"W 35°13'10"N

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

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

Item 2.

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

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
- 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

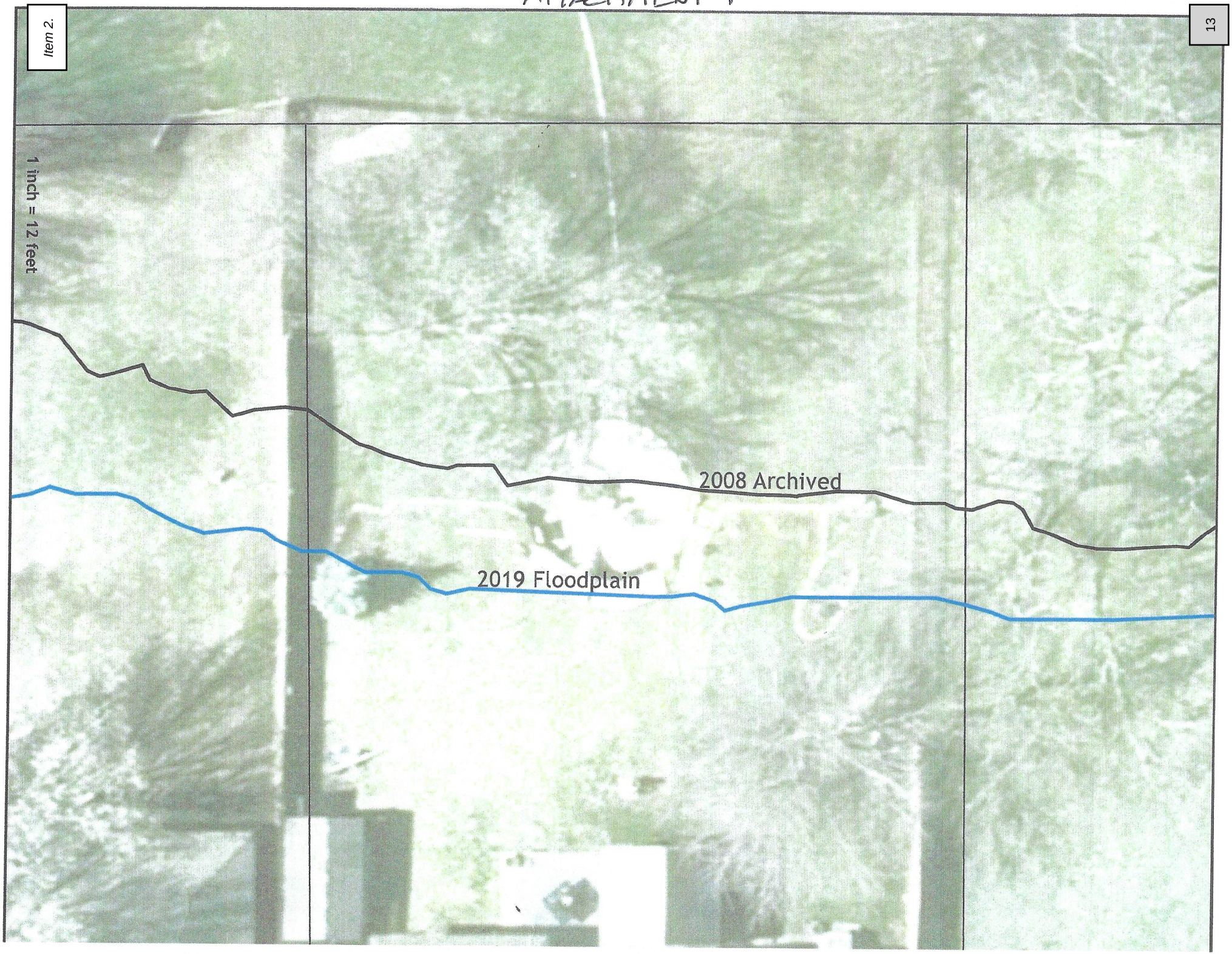
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

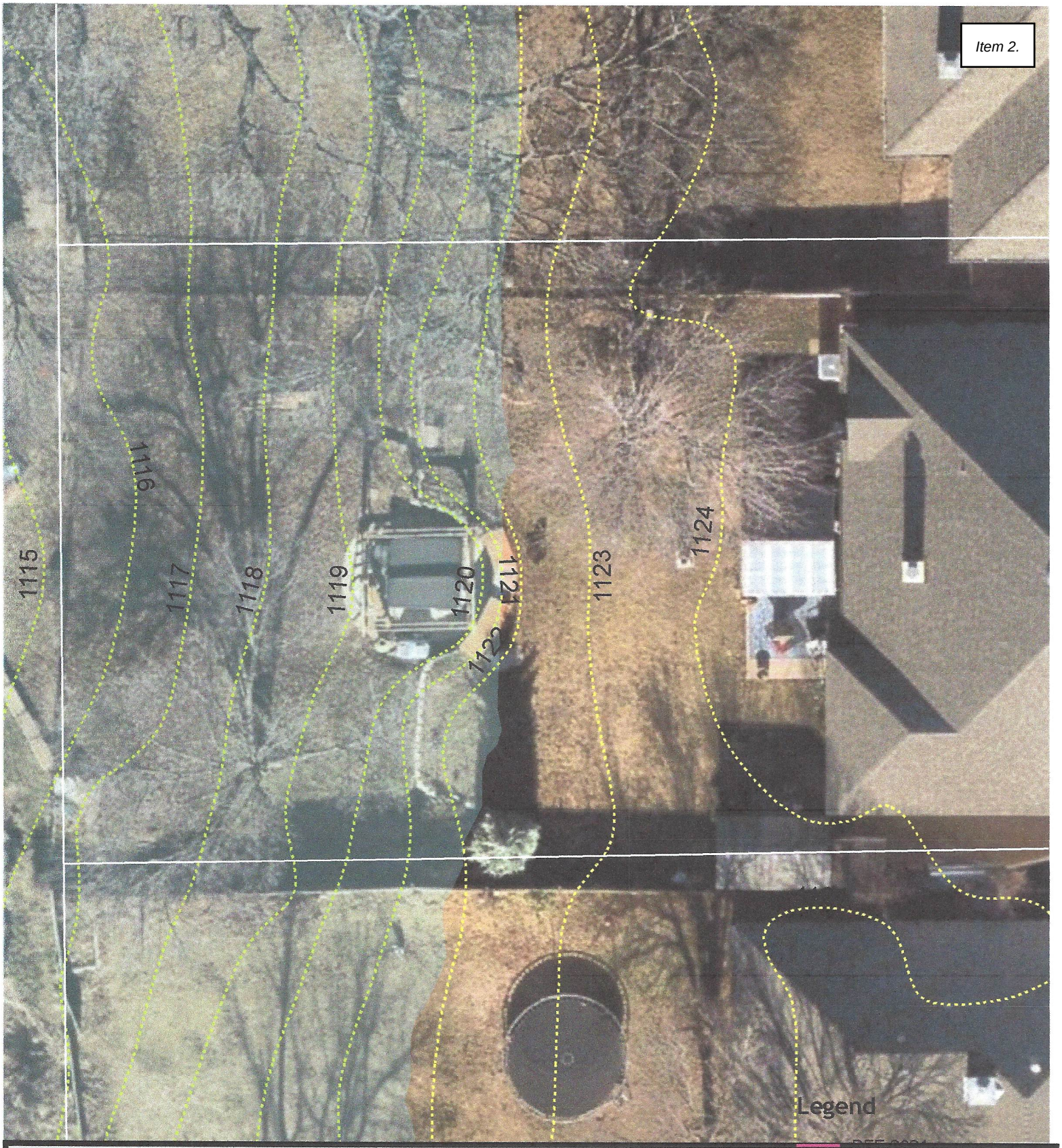
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/9/2025 at 9:06 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 ide FIRM panel number, and FIRM effective date. Map im unmapped and unmodernized areas cannot be used regulatory purposes.

ATTACHMENT 1





428 Laws

ATTACHMENT 2

Attachment 3
Flood Plain Application
428 Laws Drive

Introduction:

This floodplain application requests a permit for improvements in the backyard at 428 Laws Drive which is adjacent to Muddy Boggy Creek in the area known as Ten Mile Flats. The creek in this area was, until recently, contained in a 100-foot-wide drainage easement owned by the Cambridge Homeowners Association (HOA).

Rainfall occurring in late April and early May of 2025 caused flooding along the full extent of Muddy Boggy Creek. The rainfall totaling about 13.6 inches caused upstream storm water detention facilities to fill and then overflow into the creek with no retainage causing severe pavement damage and washout of both Rock Creek Road and Robinson Street (see photo below) west of 48th Avenue NW.

In the area of 428 Laws Drive, the flooding caused significant erosion of the existing banks of Muddy Boggy Creek. Continued erosion over several weeks undermined the eastern bank causing it to collapse into the creek with the earthen materials being transported downstream or moved to the west within the HOA drainage easement. The creek flow moved eastward out of the easement and onto private property of the homes at 428 Laws Drive and 424 Laws Drive.

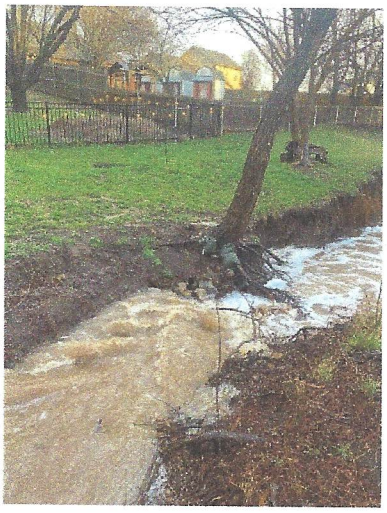


Photo 1 taken 03/21/22 shows backyard fencing 25 to 30 feet east of creek

Photo 2 taken 04/28/25 shows several sections of the back fence at 424 Laws has fallen into the creek

The eroded area for 428 Laws is a triangular shaped area about 20 feet long by 15 feet wide (150 SF) by 8 to 10 feet deep or about 1350 CF. The eroded area for 424 Laws is a triangular shaped area about 50 feet long by 15 feet wide (750 SF) by 8 to 10 feet deep or about 3400 CF. The eroded area adjacent to these properties and within the HOA easement is about 70 feet long by 20 feet wide (1400 SF) by an average of about 6 feet in depth or about 8400 CF.

The flood damage was reported to the City of Norman and during their inspection of erosion along the creek they identified construction within the floodplain which resulted in the Notice of Violation (NOV) for 428 Laws Drive. The improvements which are the subject of this floodplain permit were not impacted in any way by the flooding along Muddy Boggy Creek in Spring 2025. In fact, the improvements are at lease 3.5 feet above the high-water elevation during the subject flooding.

Floodplain Permit for 428 Laws Drive

The HOA drainage easement abuts the western property line of 428 Laws for 65 feet. As shown in Attachment 1, the current 100-year floodplain as delineated and approved by FEMA in 2019 is shown in blue while the previous floodplain limit is shown in black. As shown, the garden wall is located outside the previous floodplain limit shown in black; however, the improvements are partially within currently approved 100-year floodplain.

The floodplain elevation at 428 Laws Drive is approximately 1121.7 as interpolated from the FEMA flood map shown as Attachment 8. The current 100-year floodplain area extends 45 to 50 feet east onto the property or about 35 feet west of the house.

The improvements are listed below:

- Garden Wall: A garden wall constructed of precast concrete blocks approximately 12" long by 4" tall with an average width of 6". Generally, 5 layers of block (20-inch height) were placed in a row with the bottom layer buried below ground for stability; thus, the height of block above grade is 16 inches. As shown in Attachment 4, the total length of wall is approximately 41 feet with a circular concrete patio laying between two lengths of wall. There is a 3-foot wide area where 3 steps are constructed to reach the lower level of the yard. At each end, the wall height is reduced to between eight and 12 inches; fill volume is 25.7 cubic feet (CF).
- Patio Slab: A 17-foot diameter circular concrete slab with a thickness of about 4 inches was constructed between the two sections of garden wall. The fill volume for the patio slab is 75.7 CF; however, this volume is below the pre-construction grade and is not fill in the floodplain.
- Retaining Wall: A semi-circular retaining wall of 1-inch wide wooden boards between columns of concrete wall blocks is constructed on the east half of the patio slab. There are nine precast concrete block columns with an average height of 32" (2.67 feet) around the perimeter of the retaining wall. Based on the elevations of the floodplain (1121.7 MSL) and the patio slab (1119.0 MSL), the 100-year flood water depth is 2.67 feet. Based on these dimensions, the retaining wall block columns consume 13.7 CF of the flood storage during a 100-year flood.
- Hot Tub: A 92-inch square by 42-inch tall hot tub is in place. Based on the estimated 100-year flood water depth of 2.67 feet, the hot tub consumes 158.7 CF of flood storage during a 100-year flood.
- Pergola Columns: Four 6" by 6" wooden columns support the roof of a 12-foot by 10-foot pergola. With a 100-year flood water depth above the patio slab of 2.67 feet, the four columns consume 2.7 CF of flood storage during a 100-year flood.

Removal of Soils from the Floodplain:

The excavation for the patio slab provides additional flood storage as it extends below the grade existing prior to construction. Based of contours shown on Attachment 2, the downward slope of the yard

toward the creek in the area of the improvements is approximately 6.5 horizontal to 1 foot vertical. Using the area of the circular slab and the elevation of the ground adjacent to and east of the retaining wall, the excavated volume of soil removed from the floodplain is 302.6 CF. The volume is obtained by using the area of the full circle, the excavation depth at the retaining wall (2.67 feet) and dividing by two due to the varying depth of excavation across the circle (between zero and 2.67 feet as shown on Attachment 6).

Fill Behind Garden Wall: The material excavated prior to construction of the patio slab was placed behind the garden wall to reduce the slope in the upper yard and reduce runoff velocity and soil erosion during rainfall. As shown on Attachment 6 and based on a pre-existing slope of about 6.5 to 1 toward the creek in this area, the fill behind the garden wall (if continuous) consumed about 218.7 CF. Some excavated materials were placed out of the floodplain in other areas of the yard.

Summary of Cut/Fill:

The following summarizes the cut and fill volumes discussed above:

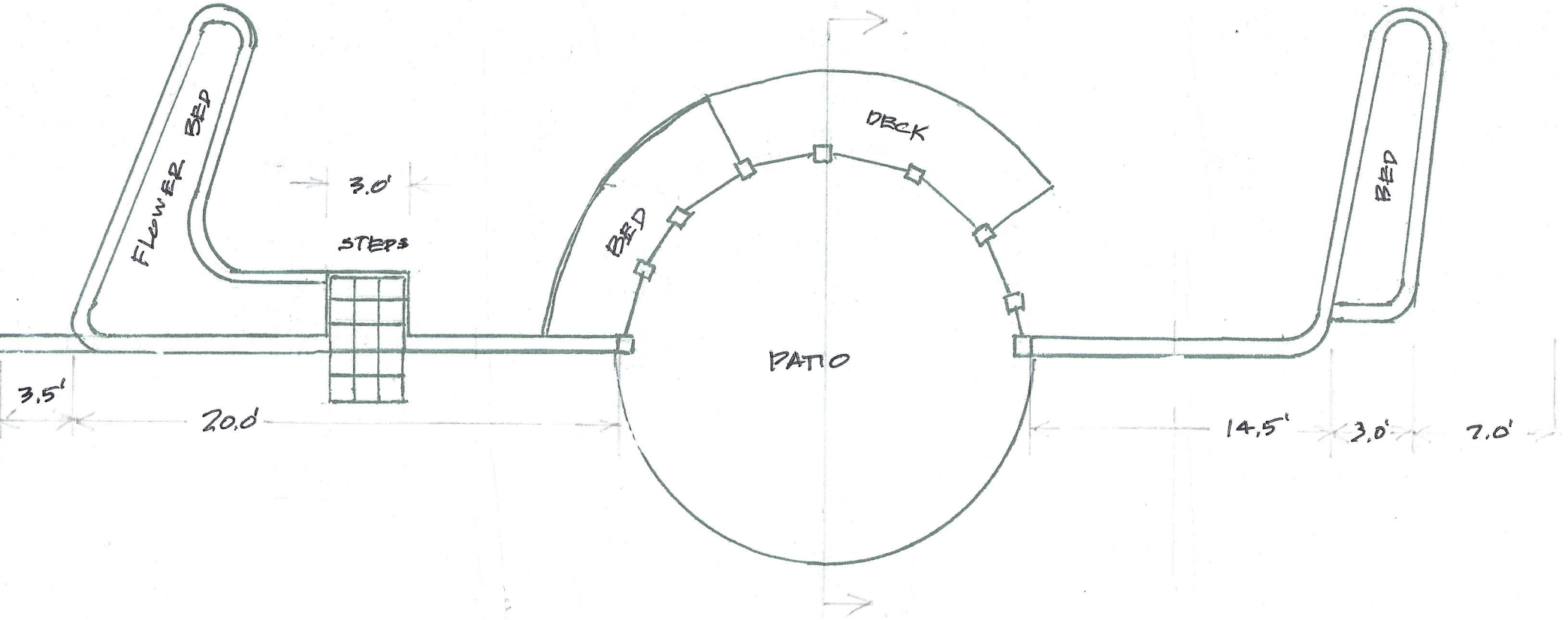
Garden Wall	fill	+25.7 CF
Retaining Wall	fill	+13.7 CF
Hot Tub	fill	+158.7 CF
Pergola Columns	fill	+2.7 CF
Patio Excavation	**cut**	-302.7 CF
Fill Behind Wall	fill	+218.7 CF
Total Fill		+116.8 CF

The net effect of the improvements is a fill of approximately 117 CF. To compensate for this fill and ensure the 100-year flood elevation does not increase, additional flood pool storage must be created.

Excavate Additional Garden Wall Depth: Homeowner commits to removing at least the required compensatory volume. Detailed calculations are shown on Attachment 7, Excel Spreadsheet. Homeowner will excavate below the existing garden wall and extend the excavation west to create a level area below the wall. Based on a pre-existing slope of about 6.5 to 1 toward the creek in this area, a cut of 11.25 inches at the wall will provide 117 CF of additional storage and extend the excavation westward 6.1 feet. However, homeowner may choose to excavate up to 16 inches below the garden wall (which is approximately equal to the patio elevation of 1119.0) and extend the excavation westward 8.7 feet. This will create 237 CF of compensatory flood storage and is 120 CF more than required to ensure there is no rise in the base flood elevation. All excavated material will be removed from the 100-year floodplain.

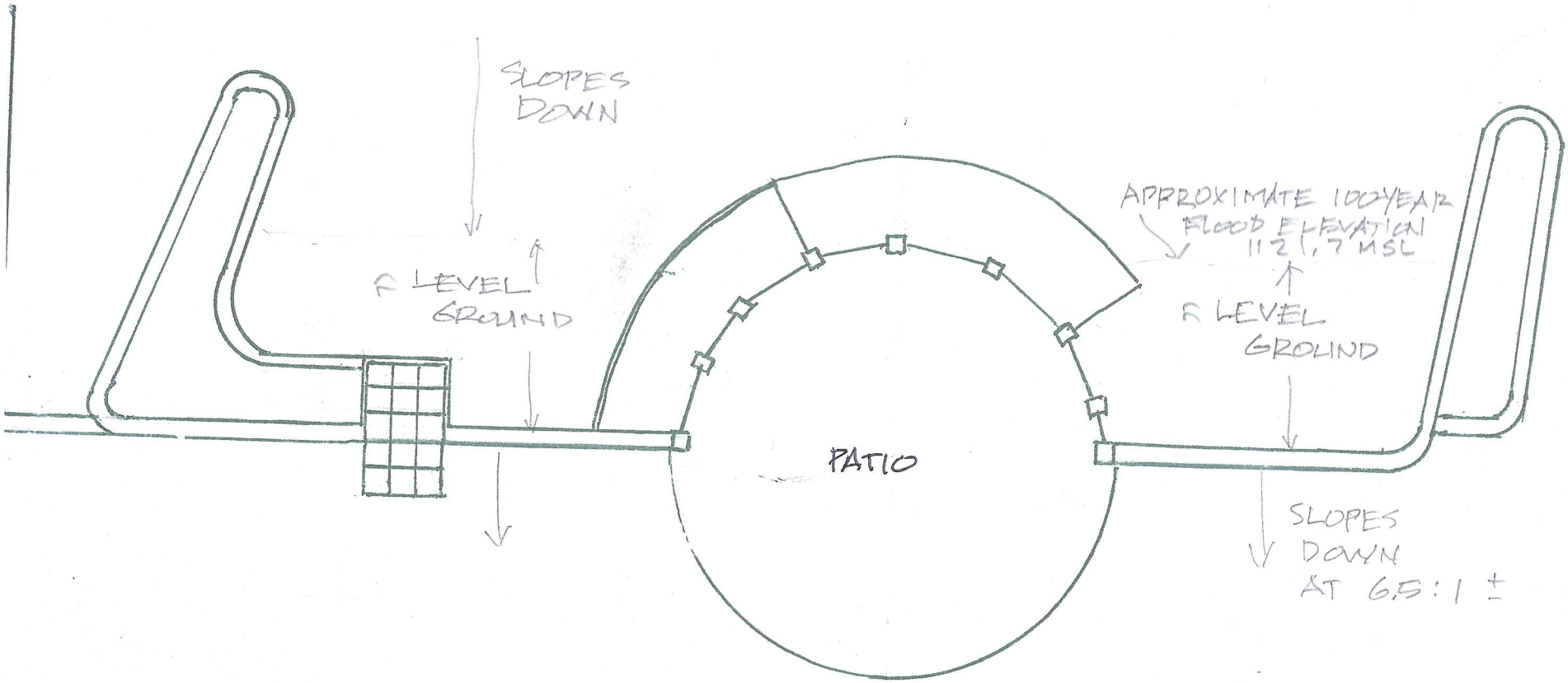
Muddy Boggy Creek Erosion: The homeowner at 428 Laws would like to begin repairs to the eroded area on his property. This floodplain permit would seem to be the appropriate vehicle for accomplishing those repairs. However, proper repairs to 428 Laws Drive will require placement of fill materials on adjacent properties and cooperation between the City of Norman, the HOA and the two property owners.

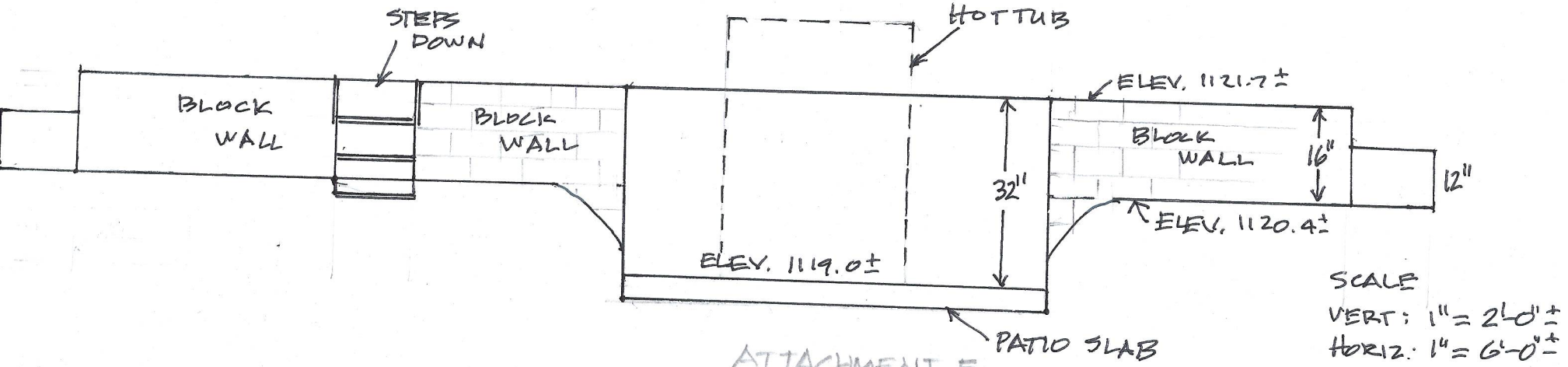
The property owner at 428 Laws would like to proceed with placement of fill within the HOA easement and on his private property not to exceed 1350 CF for 428 Laws Drive. Initial fill will be inert materials such as broken concrete, brick or rock placed to sufficient depth to create a solid base for additional fill materials to be placed above it. Eroded materials moved to the west by floodwaters within the creek and blocking the southerly flow of the creek would be utilized as fill to the greatest extent possible.



PLAN VIEW
428 LAWS DRIVE
ATTACHMENT 4

SCALE
1" = 6' ±

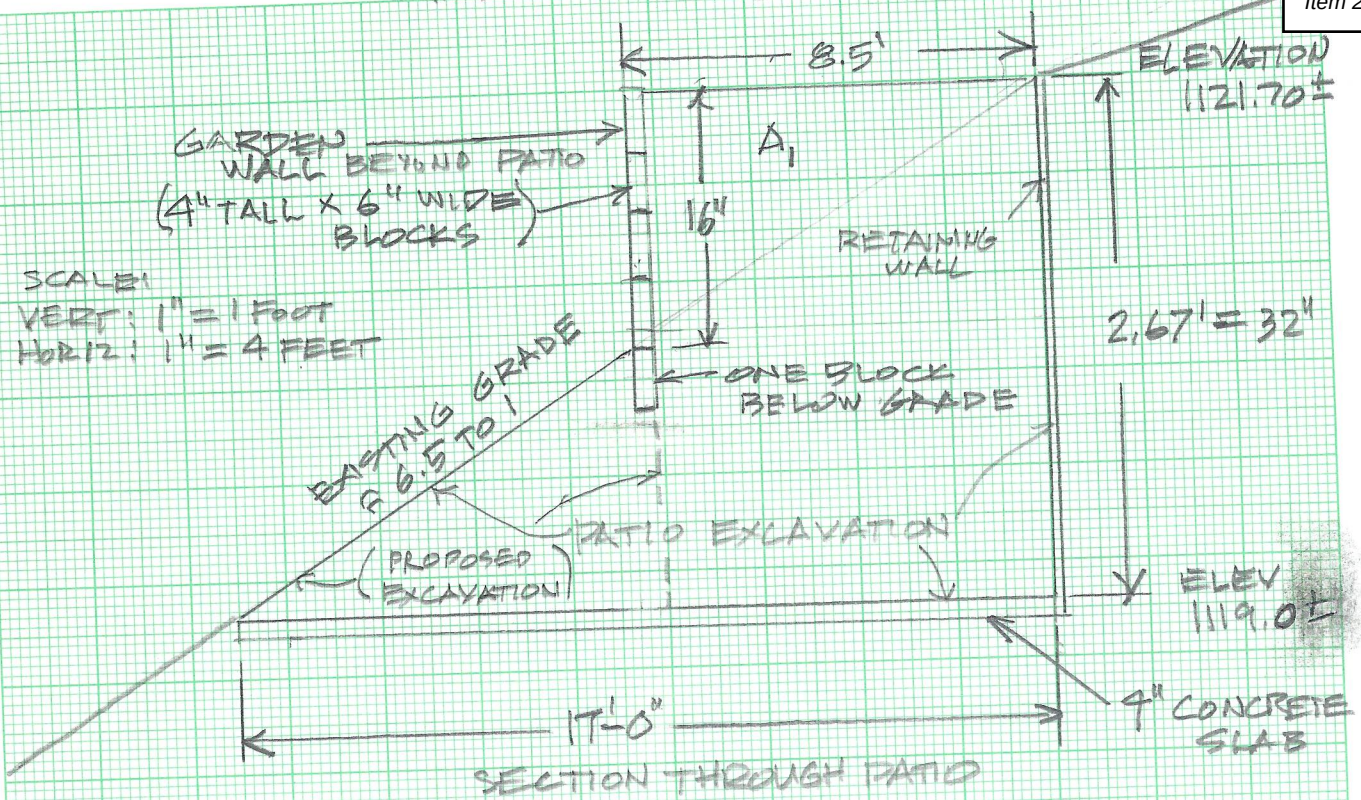




SCALE
VERT: 1" = 2'-0" ±
HORIZ: 1" = 6'-0" ±

ATTACHMENT 5
CROSS-SECTIONAL VIEW

ATTACHMENT 6



SECTION THROUGH PATIO

FILL ADDED BEHIND WALL FROM EXCAVATION

VOLUME = A_1 x WALL ~~LENGTH~~ / 2
= 8.0' x 1.33' x 41' / 2
= 218.7 CF

FILL BY CONSTRUCTING GARDEN WALL

VOLUME = WALL HEIGHT x LENGTH x WIDTH
= ~~16.0~~ 1.33' x 41 FEET x 6"
= ~~13.7~~ x 41 x 0.5 = ~~342 CF~~ 25.7 CF

~~FILL BY~~ PATIO CONSTRUCTION

VOL = $(17)^2 \times \pi / 4 \times 0.333$ = 75.7 CF

PATIO EXCAVATION REMOVED FROM FLOOD PLAIN

VOLUME = PATIO AREA x DEPTH ABOVE SLAB / 2

$$= \frac{(17)^2 \pi}{4} \times 2.667 / 2$$

= 302.6 CF

FILL BY HOT-TUB (92" SQUARE)

VOLUME = 7.67 x 7.67 x 2.67 = 156.7 CF

FILL BY RETAINING WALL COLUMNS (9)

VOLUME = 0.65 x 0.65 x 2.67 x 9 = 10.0 CF

FILL BY PERGOLA COLUMNS (4)

VOLUME = 0.5 x 0.5 x 2.67 x 4 = 2.67 CF

Flood Plain Construction at 428 Laws Drive, Norman — **Attachment 7**

	Flood plain line is at east edge of patio less 32" to top of patio		
Flood plain Elevation	1121.7	MSL	(interpolated between elevations 1121.6 and 1122.0 on FEMA Map
Top of Patio Elevation	1119.0	MSL	Average of 4 elevations around edge of patio
Water Depth at 100-year flood	2.7	feet	

The patio slab is below the grade existing before construction and did not consume water storage volume in the floodplain. It is presented to account for its construction.

	diameter (feet)	area SF	thickness (inches)	thickness (feet)	volume (CF)	
Patio Slab (below existing grade)	17.0	226.98	4	0.333	**75.66**	

Floodplain Cut Volume:

	diameter (feet)	area SF	thickness (inches)	thickness (feet)	volume (CF)	
1 **Excavation above the patio slab**						
depth at west edge	17.0	226.98	32	2.67	605.28	CF
depth at east edge	17.0	226.98	0	0.00	0.00	CF
Use average depth for circular shaped area	17.0	226.98	16	1.33	**302.64**	**CF**
Volume Removed From Flood Plain =	**302.64**	**CF**				

Floodplain Fill Volumes:

	block width (inches)	wall height (inches)	wall length (feet)		block width (feet)	(1) wall height (feet)	wall length (feet)	wall volume (CF)
1 **Garden Wall Construction**								
main wall	6	16	34.50		0.5	1.33	34.50	23.00
north end	6	8	3.50		0.5	0.67	3.50	1.17
steps	6	12	3.00		0.5	1.00	3.00	1.50
no wall (2)	0	0	24.00		0.0	0.00	24.00	0.00
			65.00					**25.67**

(1) One 4" tall block block installed below preconstruction grade is not included as fill.

(2) Garden wall was not installed in area of patio slab (17 feet) and at southern side of yard (7 feet).

	width (inches)	length (inches)		height (feet)	width (feet)	length (feet)	number (each)	volume (CF)
2 **Retaining Wall Block Columns**	7.75	7.75		2.70	0.65	0.65	9	**10.14**
3 **Wooden Board Retaining Wall (3)**	0.75			2.70	0.063	20.89	1	**3.53**

(3) Length of wooden retaining wall is 1/2 the circumference less the length of 9 block columns.

	FP elevation (MSL)	lower elevation (MSL)	fill height (feet)	wall length (feet)	fill length (feet)	fill volume (CF)	
4 **Fill behind Garden Wall**							
Behind wall (west edge)	1121.70	1120.33	1.33	41.00	8.00	437.33	CF
at FP Line (east edge)	1121.70	1121.70	0.00	41.00	8.00	0.00	CF
Use average for triangular shaped area						**218.67**	**CF**
Phase 1 Volume placed in Flood Plain =			**257.99**	**CF**			
Phase 1 Additional Flood Water Volume Needed =			**-44.65**	**CF**			

Phase 2 Volume placed in Flood Plain

	width (inches)	length (inches)		flood water height (feet)	width (feet)	length (feet)	number (each)	volume (CF)
5 **Hot Tub**	92	92		2.70	7.67	7.67	1	**158.70**
6 **Pergola Coumns (4)**	6	6		2.70	0.50	0.50	4	**2.70**
Phase 2 Volume placed in Flood Plain =			**161.40**	**CF**				
Additional Flood Water Volume Needed			**116.75**	**CF**				

Provide Compensatory Storage in Floodplain:

(1) Homeowner will extend garden wall downward a maximum of 16 inches to the approximate level of the patio slab. The new garden wall construction will be below existing grade and would not consume water storage volume in the floodplain.

(2) Additional excavation assumes 6.5 to 1 slope continues toward creek and the west edge of the existing patio slab. Cut volume triangular area extends full length of existing garden wall (41 feet).

(3) Total height (above final grade) of additional blocks (or 6" thick poured in place concrete wall) would be at most 32 inches.

Excavate below garden wall	approx slope 6.5 to 1	block height (inches)	cut depth (feet)	cut distance (feet)	average cut depth (feet)	wall length (feet)	fill volume (CF)	
	6.5	11.25	0.94	6.09	0.469	41	117.11	CF
	6.5	**12.0**	**1.00**	**6.50**	**0.500**	**41**	**133.25**	**CF**
	6.5	16.0	1.33	8.67	0.667	41	236.89	CF

Need to cut about 12 inches at base of existing wall and continue to west at same elevation to provide required compensatory storage; additional storage would be provided if cut 1.33 feet to match level of existing patio slab.

Compensatory Storage Provided of **133.25** **CF** **exceeds required volume of** **116.75** **CF**

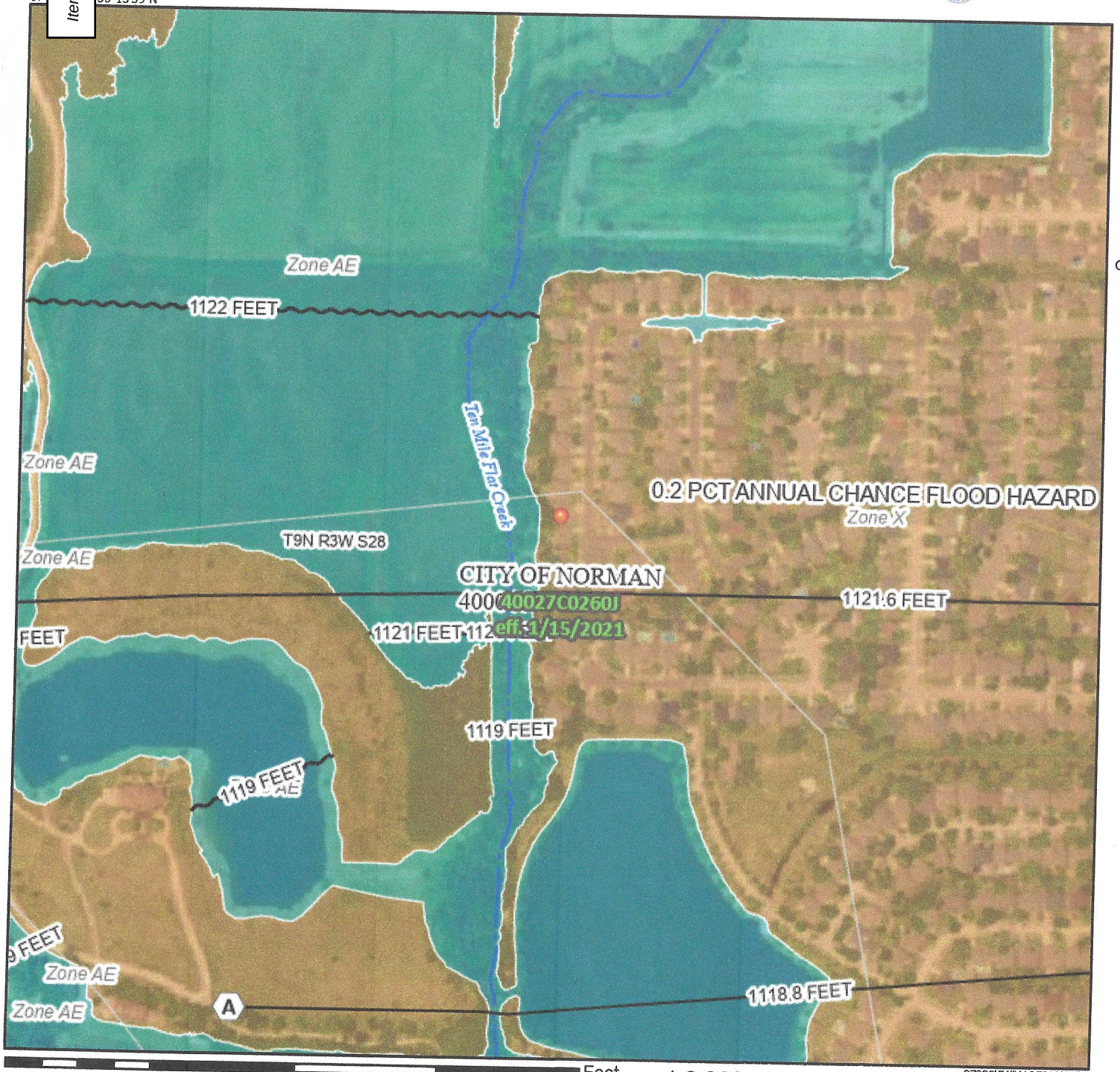
ATTACHMENT 6

tional Flood Hazard Layer FIRMette

Item 2.

97° 35°13'39"N

FEMA



Basemap Imagery Source: USGS National Map 2023

22

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 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 6/3/2025 at 8:26 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.

Mark Daniels, P.E.
428 Laws Drive
Norman, Oklahoma 73072
405-406-9546

FLOODPLAIN ANALYSIS
FOR GARDEN WALL, RETAINING WALL, CONCRETE PATIO, PERGOLA AND HOT TUB
428 LAWS DRIVE

The homeowner of Lot 18, Block 1, Cambridge III Addition (428 Laws Drive) has constructed improvements in the back yard of the existing residential dwelling which is adjacent to Ten Mile Flat Creek. The improvements consist of a garden wall, a retaining wall and a circular concrete patio with a hot tub and pergola situated on the patio. A portion of the area of construction is within the 0.1% Special Flood Hazard Area (SPFHA) as depicted on the National Flood Hazard Layer Firmette dated 06/03/25 (the floodplain) and provided by the City of Norman. The floodplain elevation at the location of the improvements is approximately 1121.7 as interpolated between Section B/B (Elevation 1121.6) and Section C/C (elevation 1122.0) from the FEMA map.

The eastern boundary of current 100-year floodplain limit is depicted on the aerial map provided by the City of Norman and included as Attachment 1; the previous eastern limit of the floodplain is also shown. The improvements were generally constructed in two phases; the garden wall, retaining wall and patio slab were constructed in 2020/2021 while the hot tub and pergola were constructed in 2024.

Phase 1: The volume of the concrete blocks to construct the garden wall, the retaining wall materials, as well as the soils from the patio excavation placed behind the garden wall and within the floodplain were constructed as shown on Attachment 6; calculations are shown in Attachment 7. The soils removed from the floodplain for the patio excavation exceed the volume of the garden wall, the retaining wall and soils placed behind the garden wall within the floodplain. Excess soils (CUT) totaling about 45 cubic feet (CF) were deposited outside the floodplain. The concrete placed for the patio slab was below the pre-construction grade and is therefore excluded from floodplain fill calculations. The Phase 1 improvements had no negative impact on the floodwaters or increase the base flood elevation (BFE).

Phase 2: Installation of a hot tub was permitted through the City of Norman and a pergola was then installed over the hot tub. In this case, the floodplain volume consumed would be calculated from the top of patio slab1119.0 to 100-year floodplain elevation of 1121.7. The floodplain volume consumed (FILL) by the hot tub and the pergola columns is about 161 CF and must be offset if they are to remain in place.The homeowner will provide compensatory storage of at least 116 CF by extending the garden wall downward along the full length of the wall and removing a triangular shaped wedge of soil to the west of the wall from the floodplain. As shown in Attachment 7, the excavation at the garden wall must be at least 11.25 inches in depth to provide the required compensatory storage for the floodwaters. Homeowner may deepen the excavation to about 16 inches to match the elevation of the existing patio. Additional blocks or concrete footings installed will be below the pre-construction grade and are thus not considered fill in the floodplain. All excavated materials will be removed from the 100-year floodplain. As a result, the Phase 2 construction will not have a negative impact on the floodwaters or increase the base flood elevation (BFE).

11-23-25

J. Mark Daniels, P.E. #13833

428 Laws Drive

Legend

- Easement
- BFE 2021
- 1% Chance Floodplain
- Floodway
- Lot Line
- Easement

428 Laws Drive
June 2025

Legend

- Easement
- BFE 2021
- 1% Chance Floodplain
- Floodway
- Lot Line
- Easement

PERMIT NO. 736 DATE: 1/20/2026

STAFF REPORT

ITEM: Floodplain Permit Application for extension of a natural gas line in the floodplain of the Little River near the intersection of N. Flood Avenue and W. Franklin Road.

APPLICANT: Oklahoma Natural Gas – Joseph Underwood
ENGINEER: Johnson and Associates, Inc. – Brian Rowe, CFM

BACKGROUND

The applicant requests approval of a floodplain permit to allow installation of a new 4-inch polyethylene gas main extension along the east side of Flood Avenue and south of W. Franklin Road.

The project includes installation of the gas main using a jack-and-bore method, with all work occurring below grade. No permanent above-ground structures, fill placement, or floodplain grading are proposed. All disturbed areas will be restored to pre-construction conditions following installation.

A portion of the alignment is located within a FEMA Zone A Special Flood Hazard Area associated with an unnamed tributary of the Little River.

STAFF ANALYSIS

The project is located within FEMA FIRM Panel 40027C0190K, effective January 15, 2021, and is mapped within Zone A. No regulatory floodway is identified at the project location. Because the project is located in Zone A, a Base Flood Elevation determination was required. The applicant provided a BFE determination prepared by the U.S. Army Corps of Engineers, identifying a BFE of 1142.3 feet NAVD 88 for the unnamed tributary of the Little River.

Proposed Development Characteristics

- Subsurface gas line installation only
- Trenchless jack-and-bore crossing beneath Flood Avenue and the tributary
- No permanent fill, structures, or channel modifications
- Temporary construction disturbance only, with full restoration

APPLICABLE ORDINANCE SECTIONS (36-533)

(e)(2)(a) – Floodplain modification and fill restrictions
(e)(2)(e) – Compensatory storage requirements

(e)(4)(c) – Special requirements oil and gas
(f)(3)(8) – No-rise condition requirements

DETAILED ORDINANCE ANALYSIS

(e)(2)(a) – Floodplain Fill Restrictions

Only sub-surface trenching will occur within the floodplain.

(e)(2)(e) – Compensatory Storage

No compensatory storage will be required since there will be no fill brought into the floodplain.

(e)(4)(c) – Special Requirements for Oil and Gas

The applicants submitted plans indicated trenching outside of the floodplain and greater than 50 feet from the edge of the channel. In addition, the bore depth will exceed 10 feet depth below the channel bed.

(f)(3)(8) – No-Rise Requirement

Engineer provided a No-Rise Certification.

RECOMMENDATION

Staff recommends approval of floodplain permit application #736.

ACTION TAKEN:

_____

City of Norman

Floodplain Permit Application

Floodplain Permit No. 736

Building Permit No. _____

Date 1/20/2026

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: Oklahoma Natural Gas | Joseph Underwood ADDRESS: 4901 N. Santa Fe Avenue, Oklahoma City, OK 73118

TELEPHONE: 405.2488148 SIGNATURE: _____

BUILDER: _____ ADDRESS: _____

TELEPHONE: _____ SIGNATURE: _____

ENGINEER: Johnson & Associates | Brian Rowe ADDRESS: 1 E. Sheridan Avenue, Suite 200

TELEPHONE: 405.235.8075 SIGNATURE: _____

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.

N. Flood Avenue and W. Franklin Road

Exact Coordinates: Latitude 35.273712, Longitude -97.480797

DESCRIPTION OF WORK (Check all applicable boxes):

A. STRUCTURAL DEVELOPMENT

N/A, NO ABOVEGROUND STRUCTURES PROPOSED

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 $_____ 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: GAS LINE EXTENSION

☐ 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.

Jack and Bore operation for 4" PE gas main to extend service and capacity.

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:
Bore plan provided - Ground Survey Data utilized.

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:
Application for gas extension bore only

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:
Bore plan provided - Ground Survey Data utilized.

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

☐ Not Applicable:
Bore profile provided - Ground Survey Data utilized.

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

☑ Not Applicable:
No proposed structures

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:
No proposed watercourse alterations

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.: 40027C0190K, Dated: January 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 1142.3 Ft. NGVD (MSL) ☐ Unavailable

See Section 4 for additional instructions.

SIGNED: _____ **DATE:** 1/12/2020

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:

_____

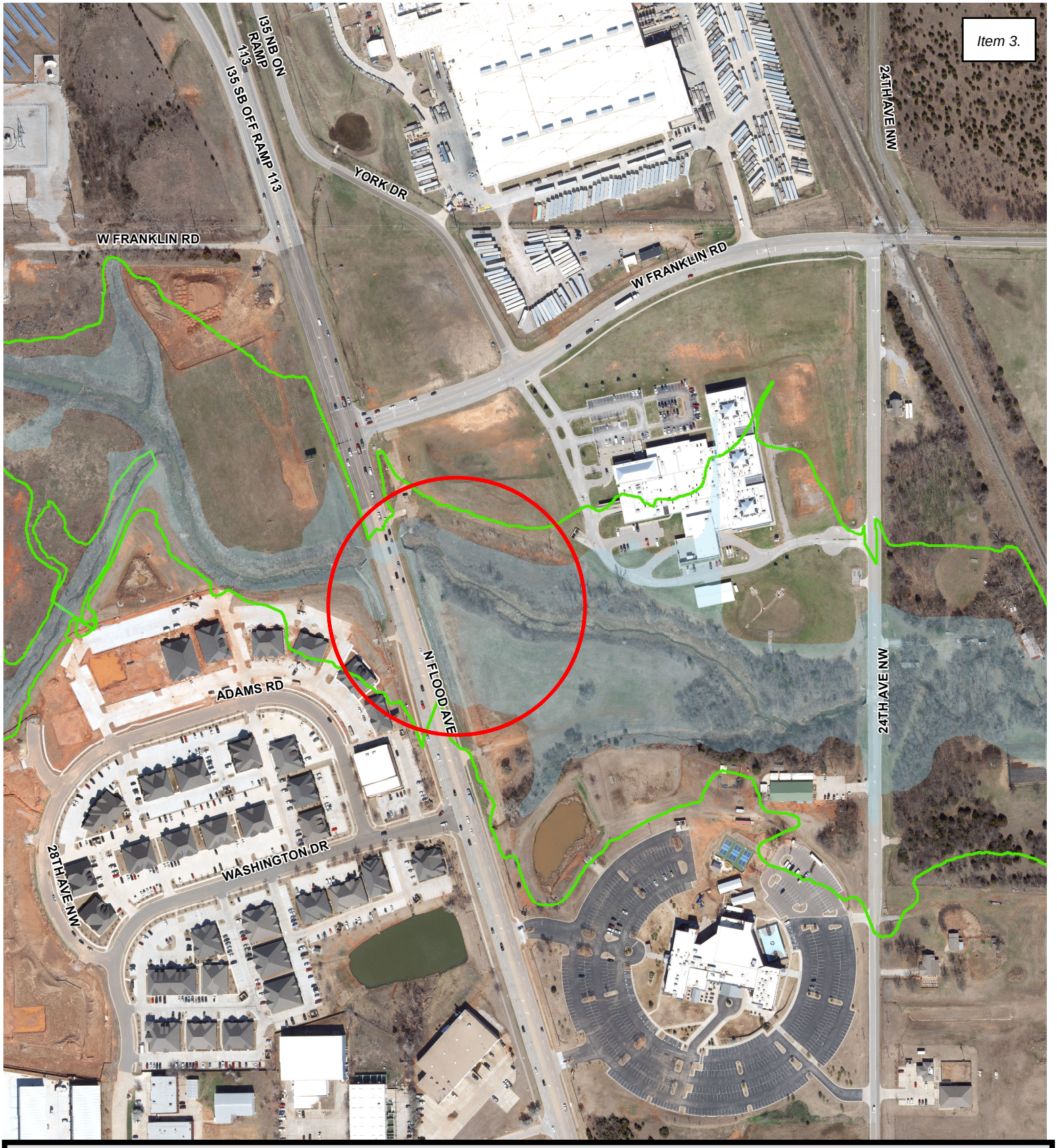
_____

_____

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

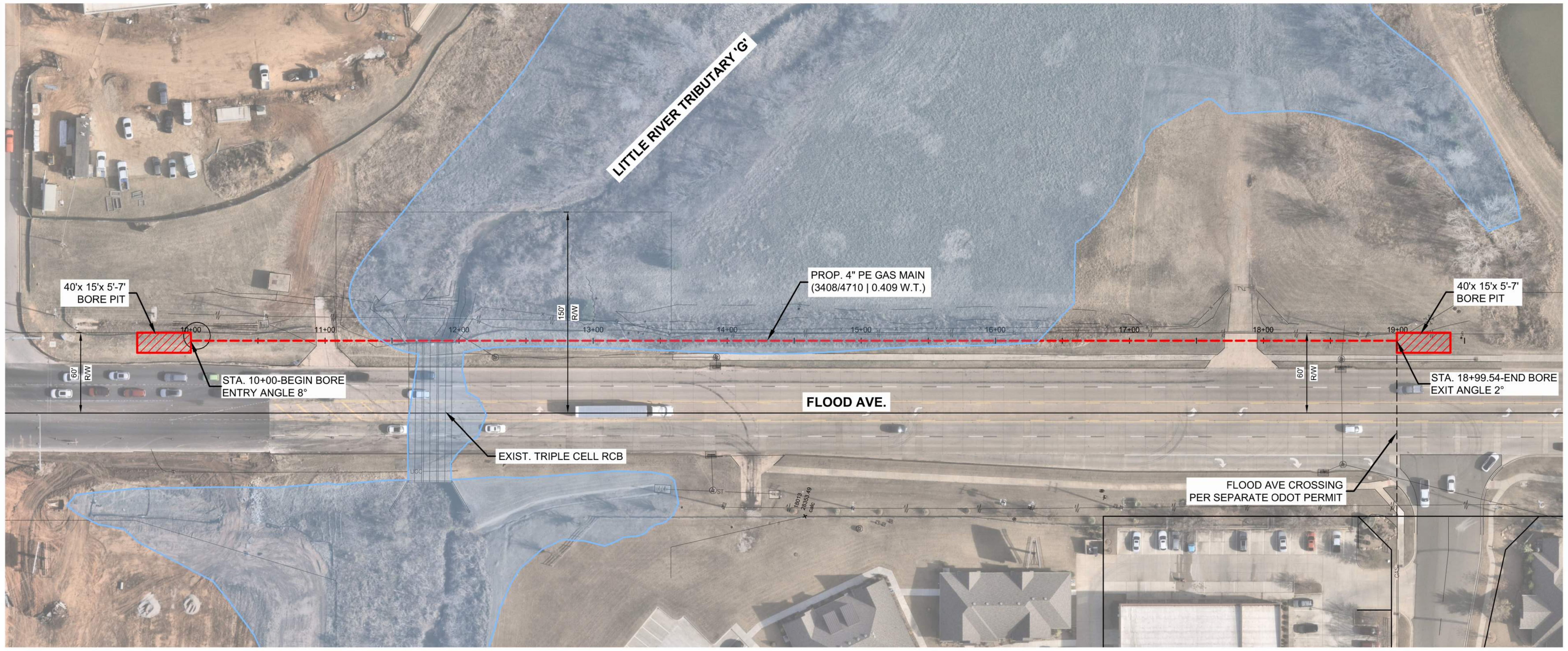
NOTE: The completed certificate will be reviewed by staff for completeness and accuracy. If any deficiencies are found it will be returned to the applicant for revision. A Certificate of Occupancy for the structure will not be issued until an Elevation and /or Floodproofing Certificate has been accepted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

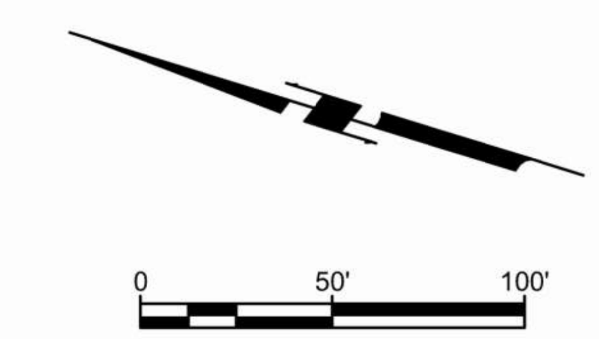


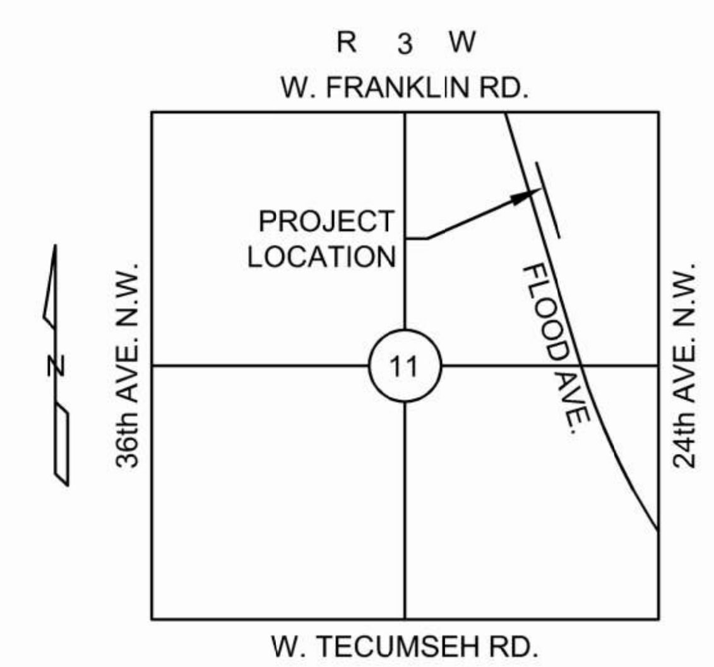
ONG Gas Line
N. Flood Avenue and
W. Franklin Road

Legend

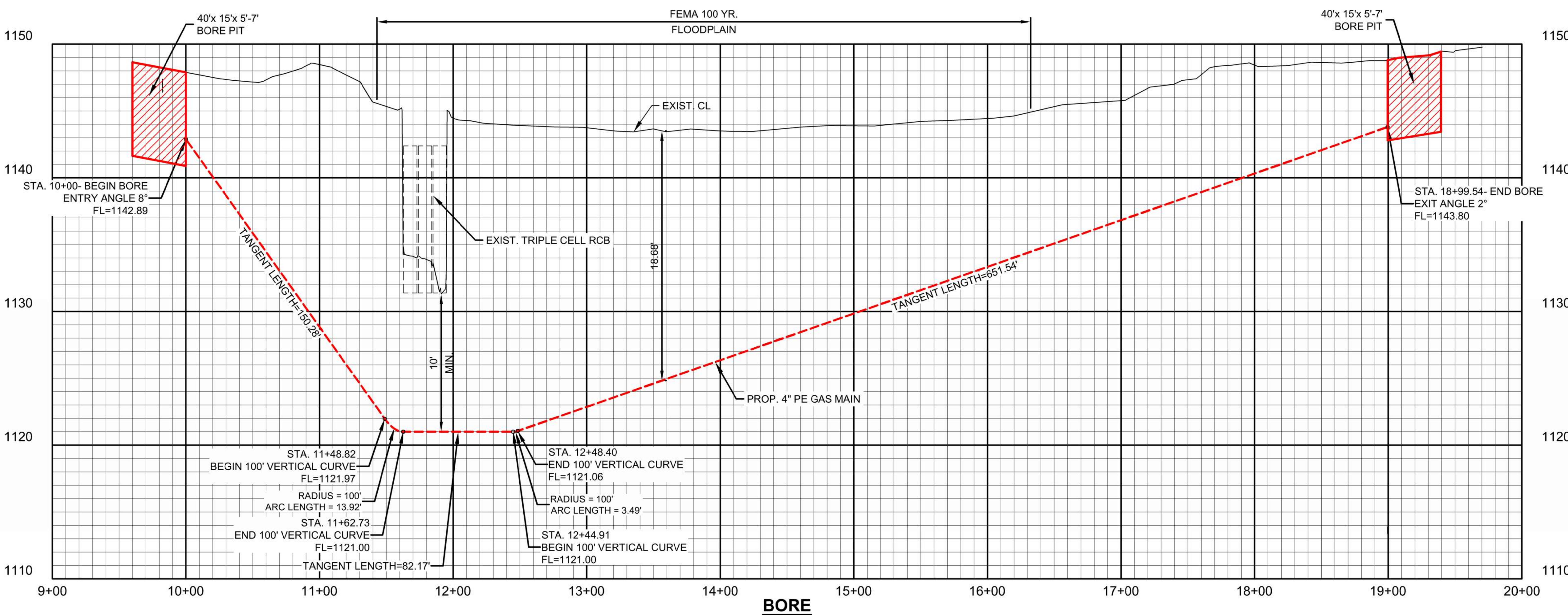
- 1% Chance Floodplain
- Floodway
- Water Quality Protection Zones
- Stream Planning Corri







LOCATION MAP
SCALE: 1"=2000'



LEGEND

(blue fill)	FEMA ZONE 'A' FLOODPLAIN
(red dashed line)	PROP. 4" PE GAS MAIN

NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING FIELD CONDITIONS AND THE LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THESE PLANS OR NOT, BEFORE COMMENCING WORK.
2. WHILE REASONABLE EFFORTS HAVE BEEN MADE TO DEPICT EXISTING UTILITIES AND CONDITIONS BASED ON AVAILABLE RECORDS AND FIELD INVESTIGATIONS, THE PREPARER OF THESE PLANS MAKES NO GUARANTEES, WARRANTIES, OR REPRESENTATIONS AS TO THE COMPLETENESS, ACCURACY, OR EXACT LOCATION OF SUCH ITEMS.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES OR CONFLICTS IN THE FIELD AND SHALL NOT PROCEED WITH AFFECTED WORK UNTIL FURTHER DIRECTION IS PROVIDED.

REVISIONS

NO.	DESCRIPTION	DATE

Johnson & Associates
1 E. Sheridan Ave., Suite 200
Oklahoma City, OK 73104
(405) 235-8075 FAX (405) 235-8078 www.jaokc.com
Certificate of Authorization #1484 Exp. Date: 06-30-2027
• ENGINEERS • SURVEYORS • PLANNERS •

OKLAHOMA NATURAL GAS CO.

NORMAN, CLEVELAND COUNTY, OKLAHOMA

BORE PROFILE

Proj. No.:	
Date:	01-08-26
Scale: (Horiz.)	1"=50'
(Vert.)	1"= 5'
Checked By:	
Approved By:	

SHEET NUMBER

EX

OKLAHOMA NATURAL GAS CO.

JOHNSON & ASSOCIATES

1 EAST SHERIDAN, SUITE 200
OKLAHOMA CITY, OK 73104
(405) 235-8075

January 8, 2026

City of Norman – Stormwater Management Division
225 N. Webster
Norman, OK 73069

Attention: Mr. Jason Murphy, CFM

RE: Oklahoma Natural Gas – Gas Main Extension
No-Rise Certification

Dear Mr. Murphy:

Johnson & Associates, on behalf of Oklahoma Natural Gas Company, is submitting the following 'No-Rise' certification for a gas main extension in the area east of Flood Avenue crossing under FEMA Zone A encumbered Little River Tributary G. The entire project is located within the City of Norman, Cleveland County, Oklahoma, Sec. 11, T9N, R3W, of the I.M.

The project will extend a new 4" PE gas main pipe along the east side of Flood Avenue, approximately 200 feet south of Franklin Road and 0.25 miles east of Interstate 35 via a jack and bore operation. All ground disturbance proposed in this application, including ground elevations and landscaping cover, will be restored to pre-project conditions. The proposed alignment is defined and shown in the attached bore profile improvement plan.

A portion of the alignment crosses under the effective Little River Tributary G Zone A floodplain. The BFE identified on the application is provided by USACE and confirmed via the FEMA Estimated BFE website report. The methods and alignment of the proposed construction will have zero impact on the flow conveyance and will result in "no rise" to the flood elevations in the creek being crossed. Furthermore, no above-ground structures requiring protection from the 100-year flood event are proposed.

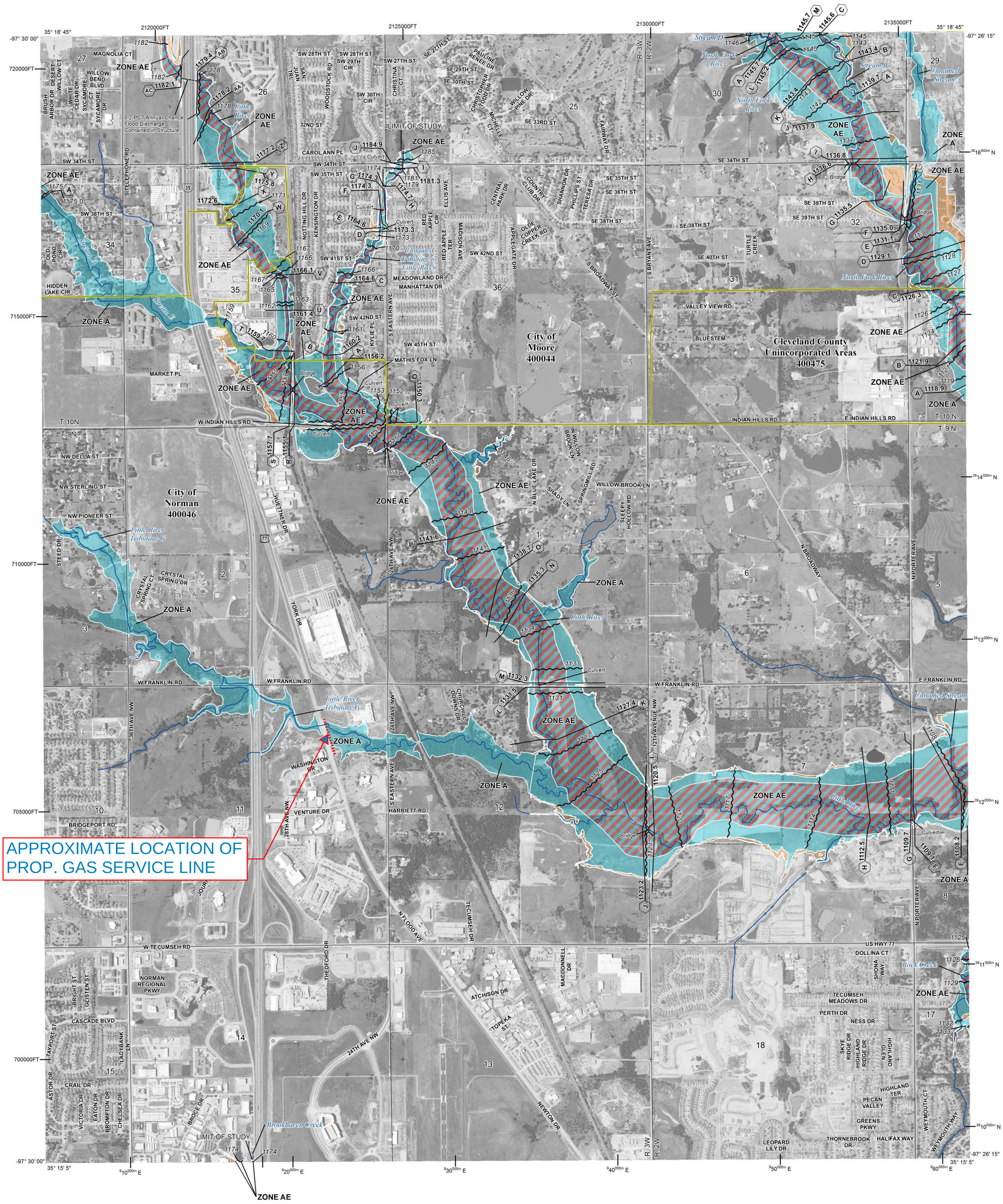
Based on the above, please issue the floodplain activity permit required for the development.

Respectfully submitted,

Tyler Muzny, P.E.
JOHNSON & ASSOCIATES

TM/ms
Attachment(s): Permit Application, FEMA excerpts and Bore Profile Exhibit
cc: Brian Rowe, CFM
Project # 12547/PER

S:\~ 9000 ONG\12547 Franklin Business Park\PER\Floodplain Development Permit\12547-No Rise Certification.docx



FLOOD HAZARD INFORMATION

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

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

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*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

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

OTHER FEATURES

- E 18.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 — Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on the FIRM was provided by U.S. Census Tiger Files (2016) and by U.S. Department of Agriculture Imagery (2018).

SCALE

N

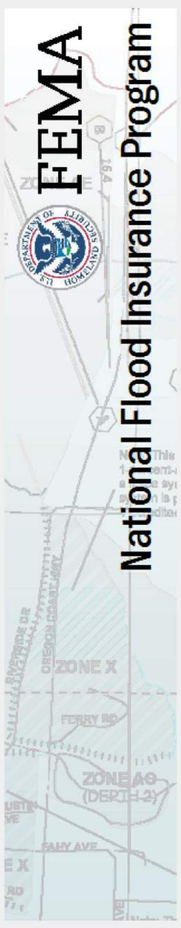
Map Projection:
State Plane Oklahoma South FIPS 3502 Feet; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 1,000 feet — 1:12,000

0 — 1,000 — 2,000 — 4,000 feet

0 — 255 — 510 — 1,020 meters

PANEL LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

CLEVELAND COUNTY, OKLAHOMA
and Incorporated Areas

PANEL **190** OF **475**

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLEVELAND COUNTY, UNINCORPORATED AREAS	400475	0190	K
MOORE, CITY OF	400044	0190	K
NORMAN, CITY OF	400046	0190	K

VERSION NUMBER
2.4.3.5

MAP NUMBER
40027C0190K

MAP REVISED
January 15, 2021

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, TULSA DISTRICT
2488 EAST 81ST STREET
TULSA, OKLAHOMA 74137-4290

Engineering and Construction Division
Hydraulics and Hydrology Branch (12th Floor)
Floodplain Management Services (12-32)

11 December 2025

Johnson & Associates
Att: Mrs. Diana Phan, P.E.
1 E Sheridan Ave., Suite 200
Oklahoma City, OK 73104

RE: 35.273594^{O} N, -97.480726^{O} W – Gas Line
NE ¼, NE ¼, Sec. 11 T9N R3W Indian Meridian
Cleveland County, Oklahoma

Dear Mrs. Phan,

This is in response to your request to develop a Base Flood Elevation (BFE) for property located in the Northeast Quarter of the Northeast Quarter of Section 11 Township-9-North Range-3-West of the Indian Meridian, in Cleveland County, Oklahoma.

The current Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) 40027C0190K (community-panel 400046) effective January 15, 2021, indicates the property is in Zone A (the 100-year floodplain of an Unnamed Tributary of the Little River).

We have determined that the Base Flood Elevation for this property to be **1,142.3** feet NAVD 88 (North American Vertical Datum). This base flood elevation was determined using acceptable guidelines by the Oklahoma Department of Transportation, outlined in FEMA 265, but should not be considered a detailed hydraulic analysis. To officially remove structures from flood insurance requirements, a Letter of Map Change (LOMC) can be obtained from FEMA if the lowest floor elevation is above the BFE either by mail or online. Any development on this property must be constructed too local floodplain regulations.

Please retain this letter and a copy of the payment confirmation from Pay.gov - United States Army Corps of Engineers Finance Center for your records. The payment is valid for the life of property. If another BFE is needed or if you have any questions, please call Floodplain Management Services at 918-669-4360 or email Travis.s.wilsey@usace.army.mil.

Sincerely,

Travis Wilsey

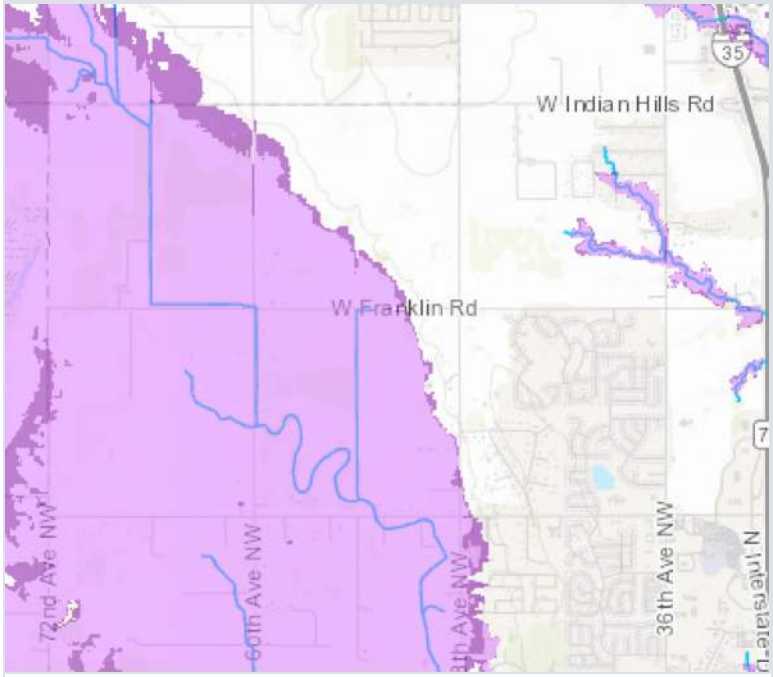
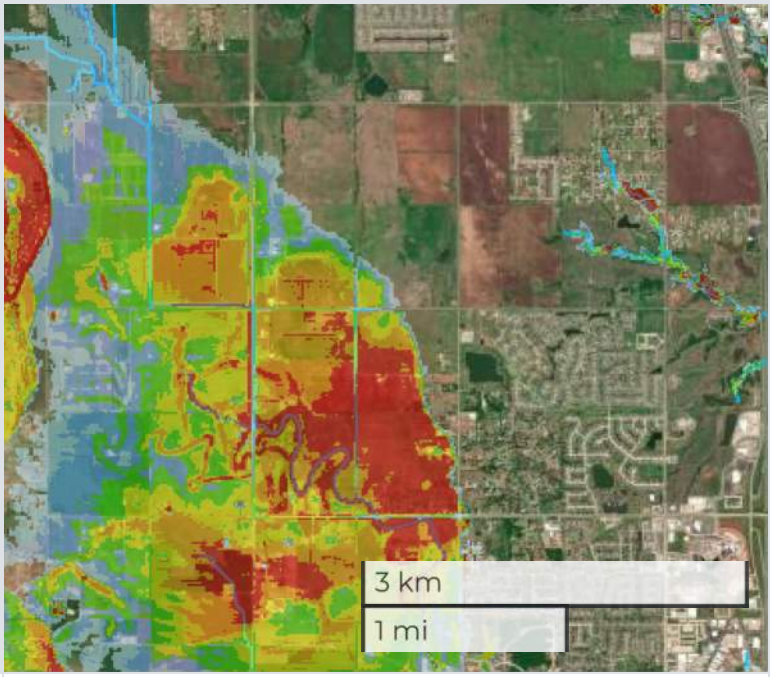
TRAVIS WILSEY E.I., C.F.M.
USACE SWT Floodplain Management Services

Estimated Base Flood Elevation (estBFE)

Flood Risk Information Report

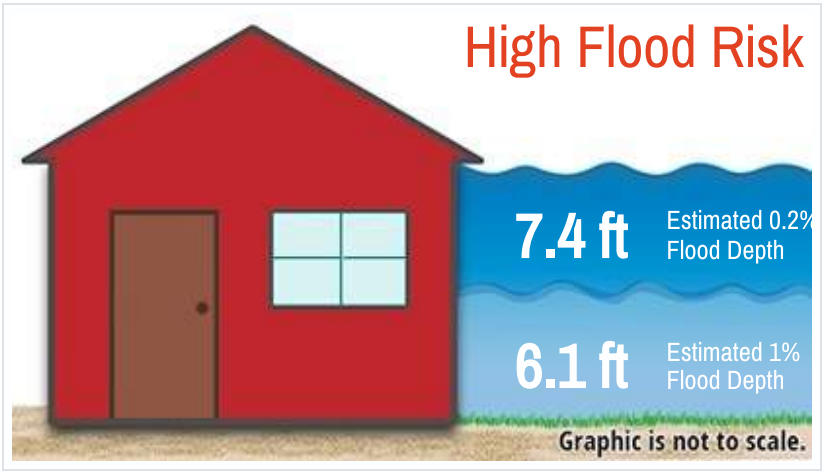
Latitude 35.2743, Longitude -97.4810 (Cleveland County, OK)

FEMA is providing a look at flood data availability and relative Base Level Engineering analysis through the Estimated Base Flood Elevation Viewer (Estimated BFE Viewer). Base Level Engineering uses high resolution ground elevation data, flood flow calculations, and fundamental engineering modeling techniques to define flood extents for streams. The viewer is an effective tool for property owners, community officials, and land developers to identify flood risk, estimated flood elevations, and flood depths for watersheds where Base Level Engineering has been prepared.

Estimated Flood Extent	Estimated 1% Flood Depth
	
High risk (1% flood zone) Low to moderate risk (0.2% flood zone) Areas of coastal influence Levees Streams	≤ 1 foot > 1 – 2 feet > 2 – 3 feet > 3 – 4 feet > 4 – 5 feet > 5 feet Areas of coastal influence Levees Streams

Flood Event	Estimated Flood Depth*	Estimated Base Flood Elevation*
1 Percent (100 Year)	6.1 feet above land surface	1142.3 feet NAVD 1988
0.2 Percent (500 Year)	7.4 feet above land surface	1143.6 feet NAVD 1988

* The information included in this report is based on the location marker shown in the map. Results are not considered an official determination.



Knowing Your Risk

Information made available from the Estimated BFE Viewer provides hazard and risk awareness. Please consult your local Floodplain Administrator to better understand the estimated base flood elevation and how to take action.

Base Level Engineering data availability and analysis information is important because it can be used to:

- Inform floodplain management decisions and ordinance administration;
- Identify significant floodplain changes;
- Serve as base modeling for map revisions; and
- Support the Zone A BFE information for a Letter of Map Amendment (LOMA) request.

Using This Data

Consult the local floodplain manager and building department in your community before making any building or land modifications. Local officials may use this information to regulate development near flooding sources to create more flood-resilient communities. Local building and permitting requirements vary by community and are based on local decisions and ordinances.

Everyone is at risk. The chances of experiencing a flood can vary due to unevaluated conditions, such as the unstudied effects of community growth and development or intense storms uncharacteristic to historical trends. Maintaining or obtaining a flood insurance policy is essential to ensure a property owner is covered if a flood occurs. Visit http://FloodSmart.gov for more information on the costs of flooding and to locate an insurance agent in your area.

Base Level Engineering and the Estimated BFE Viewer tool help identify the BFE in effective Zone As. If a property owner believes that a structure is above or outside of the base flood extent in an effective Zone A, a LOMA request may be submitted and the flood risk report from the Estimated BFE Viewer should be included. To complete an application, use the online web-based tool or download the paper forms (https://www.fema.gov/letter-map-changes). Items needed to apply include the following:

- Copy of a **plat map** that identifies the property and includes the locality's recording information

  – OR –

  Copy of the **property** deed with both locality's recording information and the property's written legal description **and** a **parcel or tax map** identifying the location.
- **Elevation information** indicating the lowest adjacent grade to the building certified by a licensed land surveyor or registered professional engineer, except for buildings **clearly** shown outside the SFHA. If built recently, building permit files may contain this information. Note the professional may use the estimated BFE (estBFE) results for the BFE value on the elevation form or certificate.
- The **Estimated BFE flood risk information report** relative to the property indicating the estimated flood level and model.
- **A letter of acceptance and support from your local floodplain administrator** for the Estimated BFE information included in your report.

Please note other types of development may require additional documentation and possibly an application fee. A LOMA may result in removal of the SFHA designation and the Federal requirement for flood insurance. However, maintaining a flood policy may still be required by the lender. Flood insurance coverage to repair damage caused by flooding is available for areas outside the SFHA.

Taking Action

Floods can happen anywhere at any time, which is why it is important to be prepared and to take steps before a flood event to protect your property from costly damage. Mitigation measures to consider include the following:

- **Elevating.** Elevating the lowest floor of new or existing buildings above the BFE reduces risk and may lower flood insurance premiums.
- **Interior Modification.** Raising the equipment servicing the building or infilling basements susceptible to flooding.
- **Dry Floodproofing.** Sealing your structure to prevent floodwaters from entering. Residential property insurance is not reduced if dry floodproofing is used. Only commercial properties receive reduced flood insurance when dry floodproofing is used.
- **Wet Floodproofing and Flood Vents.** Making portion of a building more resistant to flood damage or, in some cases, allowing water to enter during a flood to prevent damages by equalizing pressure on walls and foundations.

Deciding on the right method to mitigate future damage and loss requires an assessment of various factors: the hazards to your home, permit requirements, the technical limitations of the methods, and cost.

Discuss the potential mitigation options with your local floodplain administrator and building department to determine the next appropriate steps.