

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 currently 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 the 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 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 support a platform that will, in turn, support the HVAC unit. The top of the platform will be a minimum of two-feet above the BFE (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 Residential 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 to 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 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 be 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

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Norman, OK 73189

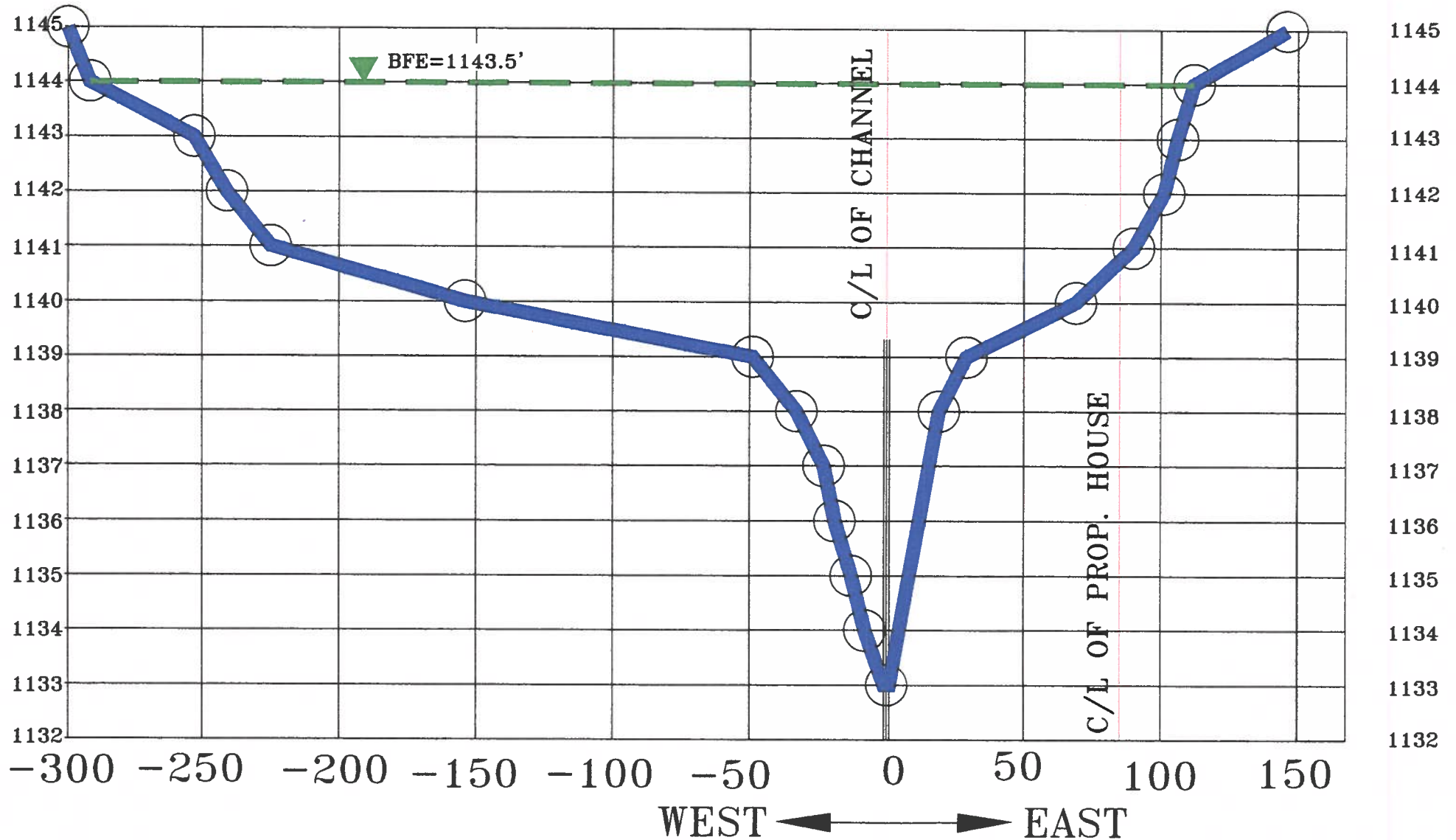
Phone: 405-823-8240
PE-11438
License Expires: May 31, 2024

Signature:

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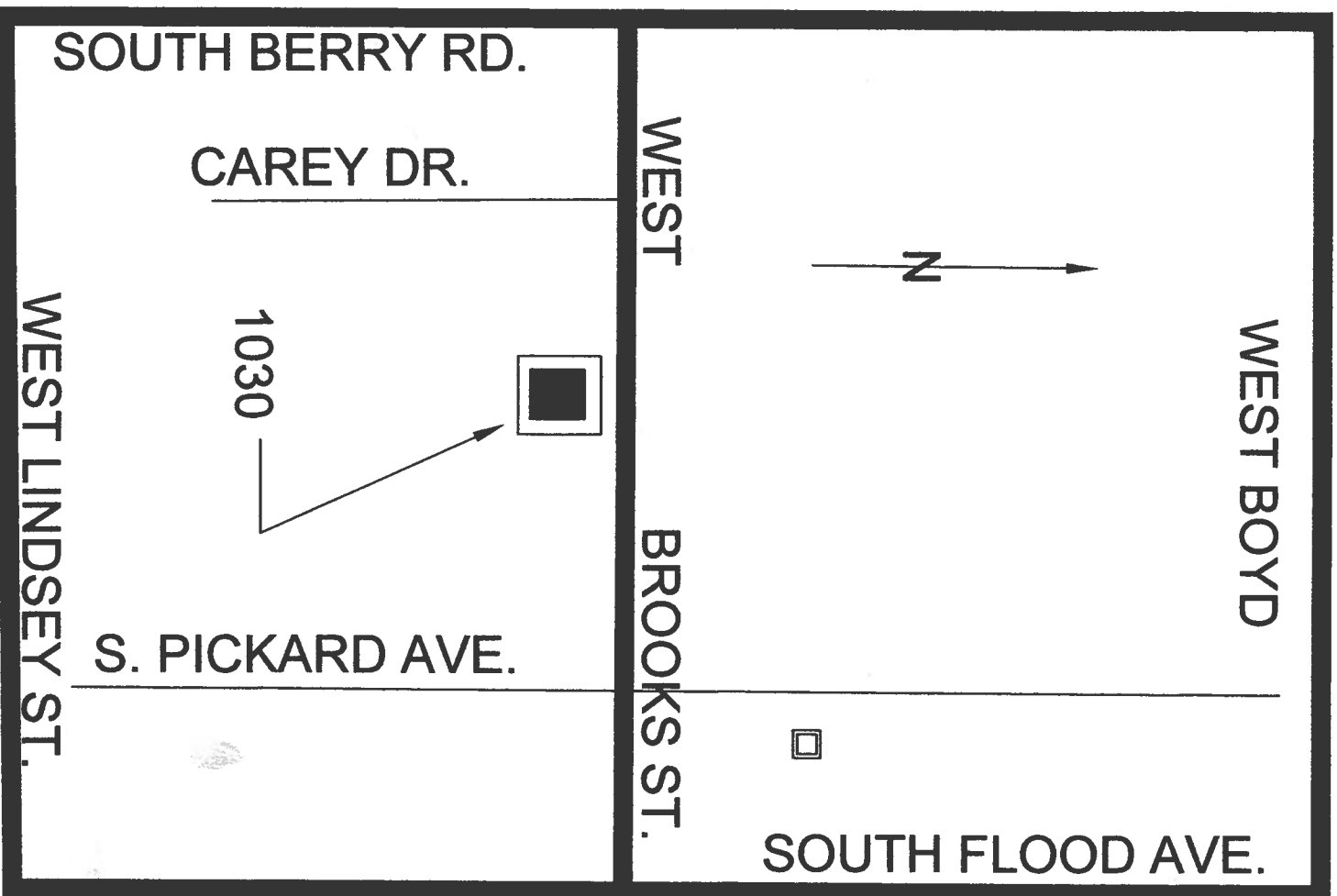
Earl Gary Keen

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.

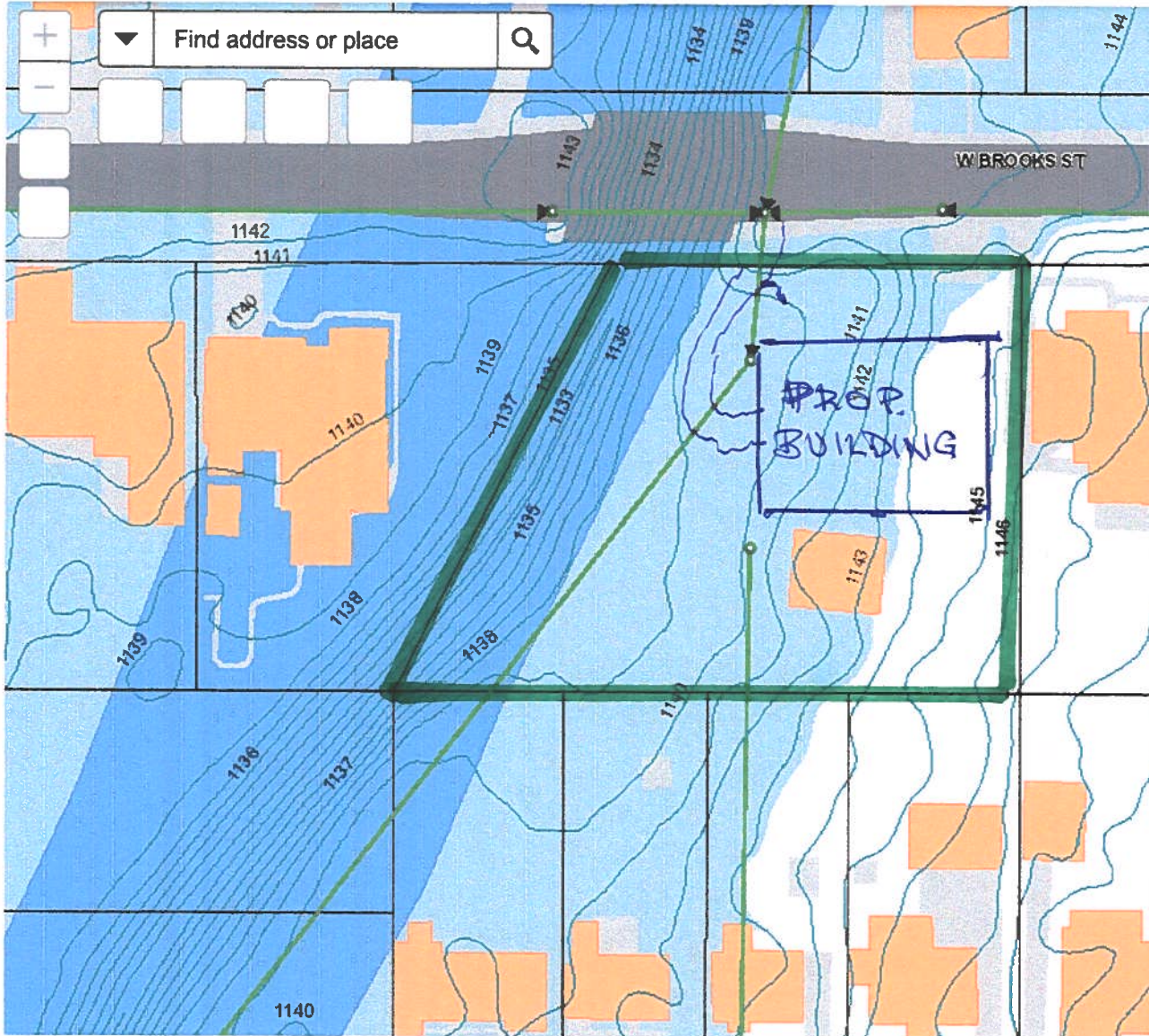




Interactive Map

City of Norman, Oklahoma

1030 W. BROOKS ST.



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



Cleveland County Oklahoma Assessor's Office

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

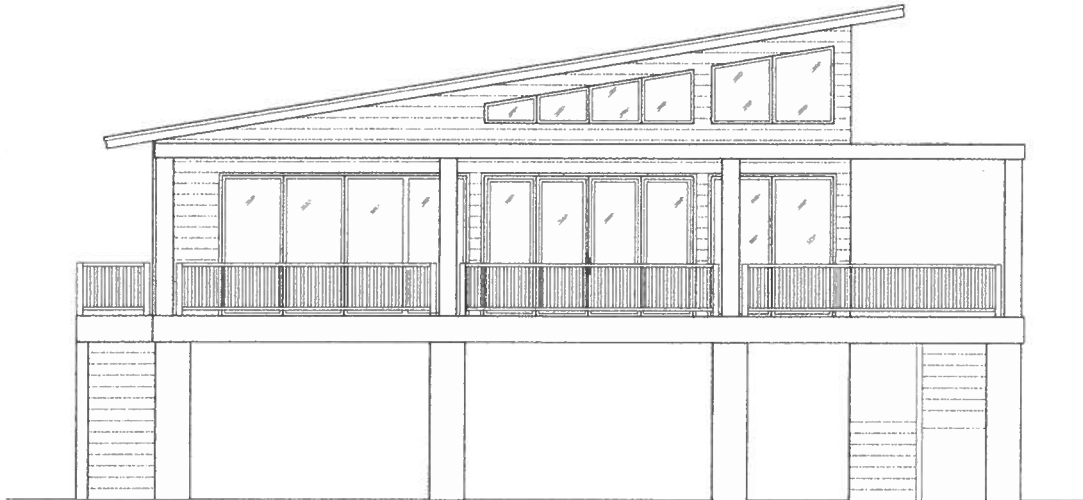
LAND

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

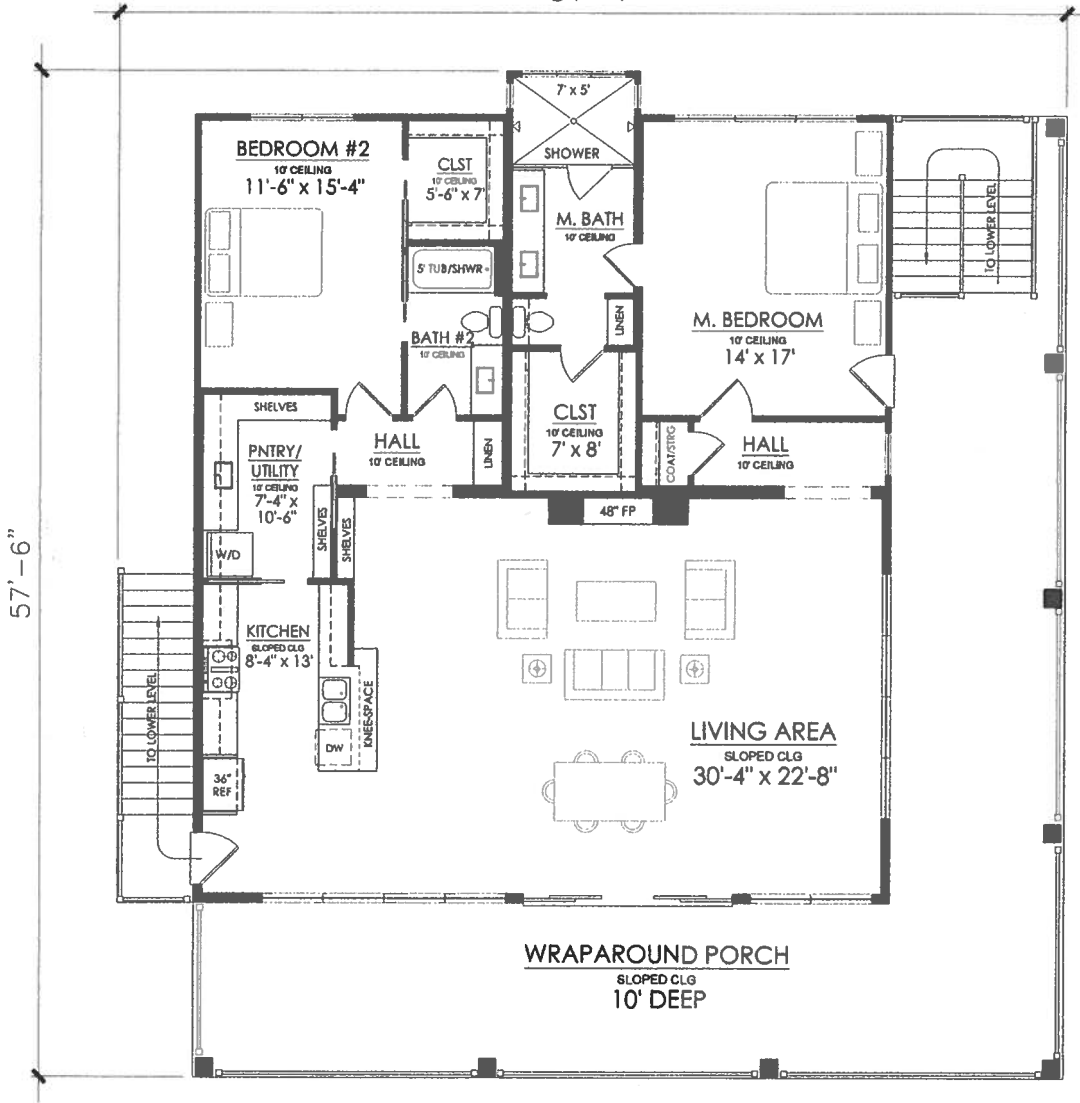
PERSONAL PROPERTY

BUSINESS NAME	VIEW PERSONAL PROPERTY
No items to display	

Data last updated: 05/08/2023



54'-4"



DEAN RESIDENCE

1,819 SQ FT



FINES
HIGHER

NO
PARKING
THIS SIDE
OF STREET



MANHOLE



1030 W. BROOKS SE
EXIST. BUILDING





