



November 19, 2018

City of Lawrence  
6 East 6<sup>th</sup> Street  
PO Box 708  
Lawrence, Kansas 66044

Re: **South Hills No. 3, Second Re-Plat  
SW Corner – 23<sup>rd</sup> and Naismith  
Final Stormwater Management Study  
PEI #180905**

As part of the preliminary development plan application for the South Hills No. 3, Second Re-Plat, the existing and proposed impervious areas, as well as the site in relation to the FEMA regulated floodplain, were analyzed to determine if stormwater detention is required.

#### **Existing Site**

The existing 4.44 acre site consists of a paved parking lot and multiple commercial buildings. The site surface drains easterly directly off of the property. The existing site consists of 2.27 acres of impervious area (see Exhibit A1).

#### **Proposed Site**

The proposed site consists of a paved parking lot and mixed use development. The site will maintain the existing drainage patterns. The proposed site will be captured via a new private underground enclosed stormwater system which will discharge to the existing R/W at the southeast corner of the site. The proposed site consists of 3.11 acres of impervious area (see Exhibit A2). This represents an increase in impervious area of 0.84 acres (37%).

#### **FEMA Floodplain**

The proposed site discharges directly into the FEMA floodplain. See the attached FEMA FIRMette map which shows the location of the site in relation to the FEMA floodplain. Per the Lawrence, Kansas Stormwater Management Criteria, dated February 1996, Section 1.6.E.2.A, any downstream flooding is entirely confined within the limits of the 100-year floodplain. Therefore, no downstream detention is required.



Please feel free to contact me at (913) 393-1155 if you require additional information.

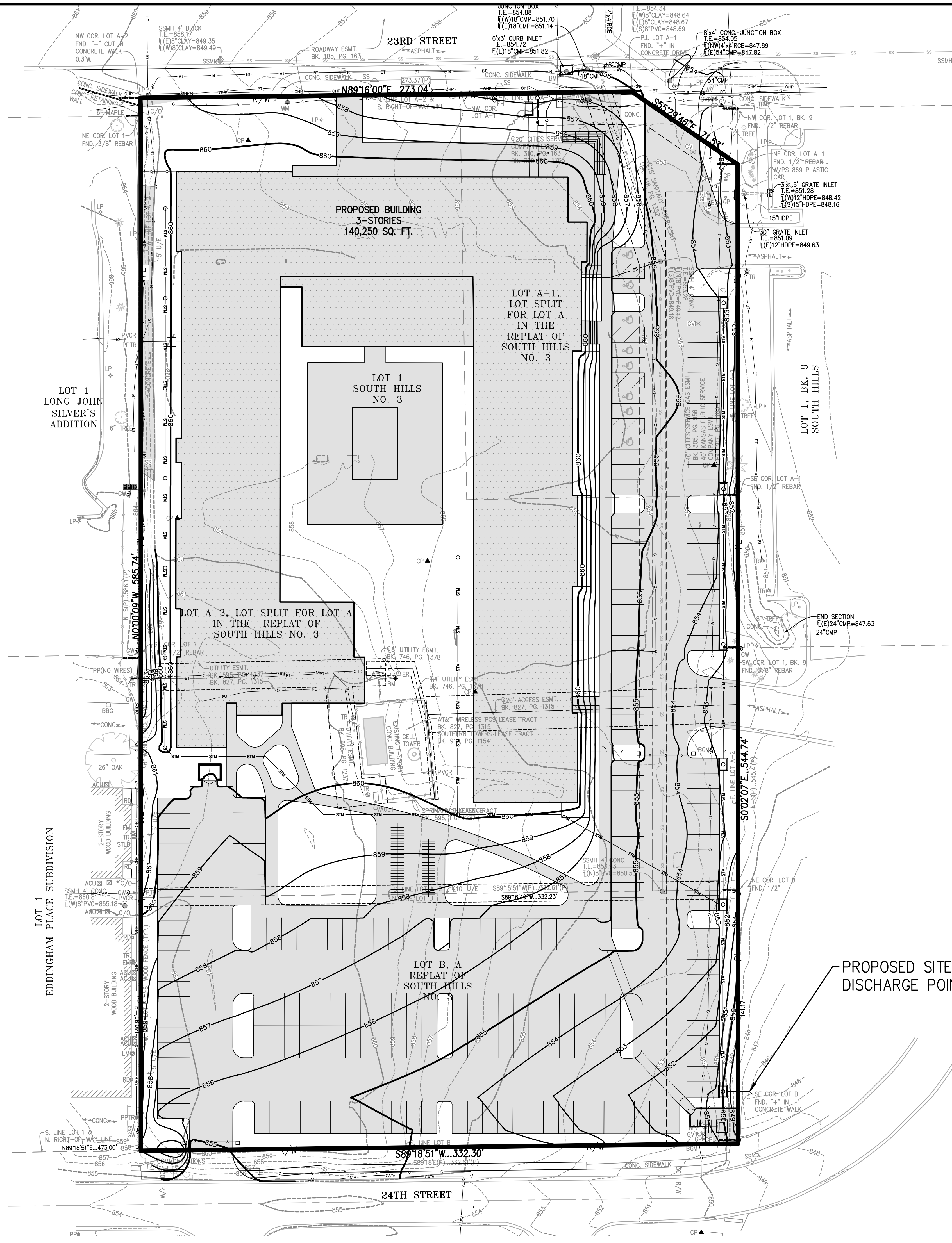
Sincerely,

Phelps Engineering, Inc.

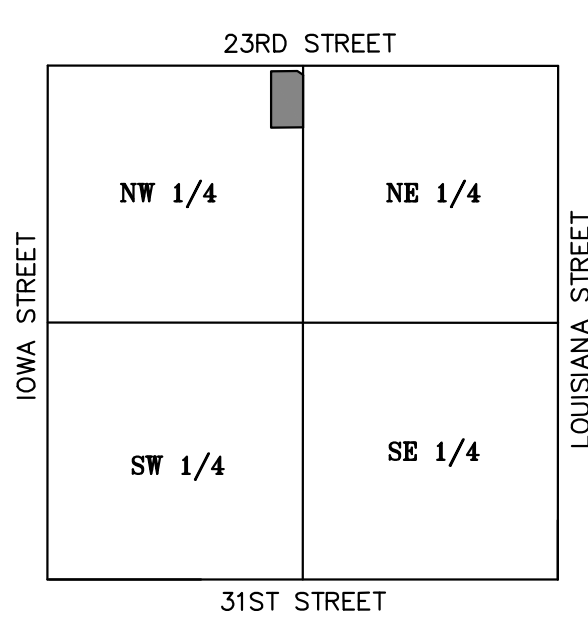
Daniel A. Finn, P.E.



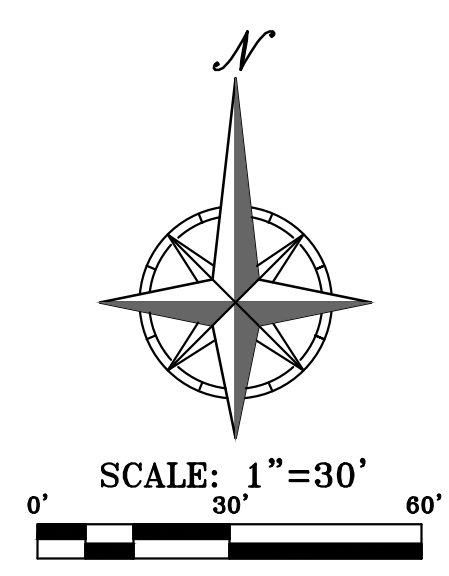
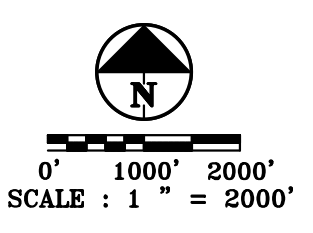




PROPOSED PERVIOUS AREA= 1.33 ACRES  
 PROPOSED IMPERVIOUS AREA= 3.11 ACRES  
 TOTAL AREA= 4.44 ACRES



LOCATION MAP  
SECTION 12-13-19



Know what's below.  
Call before you dig.

UTILITY NOTES:  
VISUAL INDICATIONS OF UTILITIES ARE AS SHOWN.  
UNDERGROUND LOCATIONS SHOWN, AS FURNISHED BY THEIR LESSORS, ARE APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD AT THE TIME OF CONSTRUCTION. FOR ACTUAL FIELD LOCATIONS OF UNDERGROUND UTILITIES CALL 811.

**PHELPS ENGINEERING, INC.**  
 1270 N. Winchester  
 Olathe, Kansas 66041  
 (913) 393-1155  
 Fax (913) 393-1166  
 www.phelpsenr.com

PLANNING  
ENGINEERING  
IMPLEMENTATION

**PROPOSED CONDITIONS**  
 MIXED USE DEVELOPMENT  
 SOUTH HILLS NO. 3, SECOND RE-PLAT  
 LAWRENCE, DOUGLAS COUNTY, KANSAS

PROJECT NO.	DATE	BY	APP.
180905			
15-18-BRANK CIL			
CREATED DWF APPROVED.DOC			
KANSAS			
CERTIFICATE OF AUTHORIZATION			
ENGINEER			
MISSOURI ENGINEERING			
2007000203			

SHEET  
**A2**

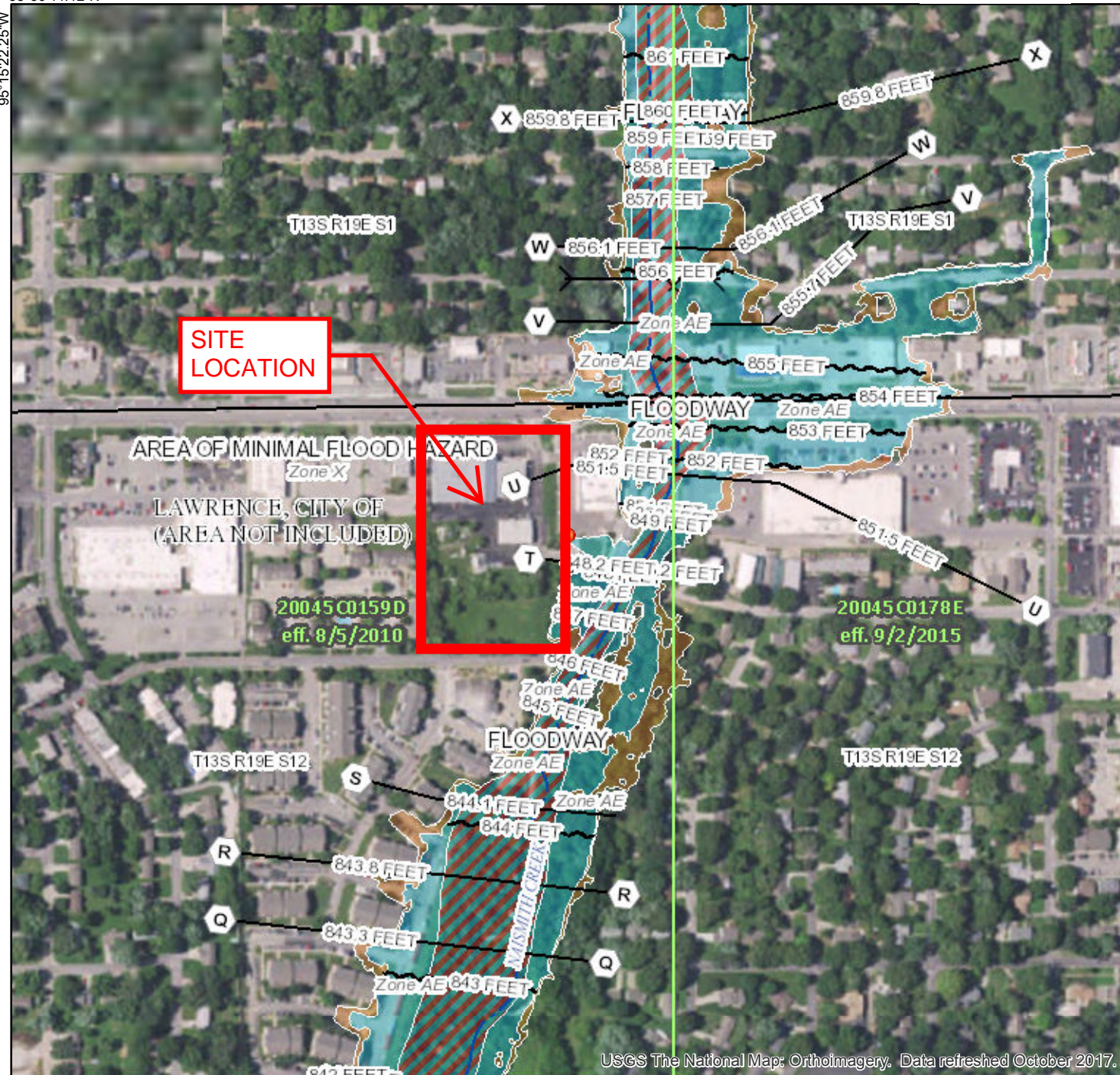


# National Flood Hazard Layer FIRMette



38°56'44.42"N

95°15'22.25"W



**SITE LOCATION**

AREA OF MINIMAL FLOOD HAZARD  
Zone X  
LAWRENCE, CITY OF  
(AREA NOT INCLUDED)

20045 C0159D  
eff. 8/5/2010

20045 C0178E  
eff. 9/2/2015

USGS The National Map: Orthoimagery. Data refreshed October 2017.



38°56'16.44"N

## 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 Water Surface Elevation
			17.5 Coastal Transect
			Base Flood Elevation Line (BFE)
		Limit of Study	
	Jurisdiction Boundary		
	Coastal Transect Baseline		
	Profile Baseline		
	Hydrographic Feature		

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/6/2018 at 11:09:02 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.

95°14'44.79"W