

# Site Design - Flood Impact Analysis (DRAFT)

for  
CANISIUS HIGH SCHOOL ATHLETIC FIELDS  
at  
Robert J. Stransky Memorial Complex  
2885 Clinton Street  
West Seneca, New York 14224



**Date:**  
April 2021

**Prepared for:**  
Canisius High School  
1180 Delaware Avenue  
Buffalo, New York 14209

**Prepared by:**  
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## **A. PROJECT SUMMARY**

The project site is approximately 26.5 acres and has already been developed by the Owner, Canisius High School, as an outdoor athletics complex. The site currently features a synthetic running track around an artificial turf football field, parking lot, buildings for concessions, locker rooms, and storage and a large set of bleachers. In the present phase of the project the owner is seeking to add two baseball fields (one entirely artificial turf and a second that has an artificial infield with a natural grass outfield), practice field, relocating discus and shotput, and grading for possible future tennis courts. These elements are to be situated between the existing amenities and the Buffalo Creek which borders the Southwest edge of the property. In order to accommodate these elements, it is necessary to adjust grades within the flood plain. This analysis aims to determine the impact of the proposed development on the ability of the site to receive flood water from Buffalo Creek.

## **B. SOURCES OF DATA**

### Site Survey:

TITLE "SURVEY OF PART OF LOTS-39, 40 & 41, EBENEZER LANDS, TWP.-10, R.-7, TOWN OF WEST SENECA, ERIE COUNTY, STATE OF NEW YORK.

PREPARED BY McINTOSH & McINTOSH, P.C. CONSULTING ENGINEERS, LAND SURVEYORS, PLANNERS

DATED MAY 4, 2020.

### Flood Data:

FEMA National Flood Insurance Program

Flood Insurance Rate Map (FIRM) for Erie County, New York, PANEL 0332H

Map Number 36029C0332H

Effective June 7, 2019

NOTE: The flood line shown on the "Existing Floodplain Boundary" drawing is sourced from FEMA data and is shown for reference. Note that this line does not align to the boundary of the lightest blue where it would be expected. This is likely due to the fact that the topography FEMA is using is sourced from Lidar and is less accurate than elevation data shot by the surveyor on site.

### Water Table Data:

Geotechnical testing of the site has not yet been completed. For the purpose of this preliminary flood analysis, it is assumed that water table elevation is at 591. The survey shows standing water in the detention basin around 591 contour and this conforms to what the landscape architect has observed on site and in various aerial photographs.

### C. METHOD

Using Autodesk Civil 3D 2021, a Study Area boundary was defined that fully circumscribes the Base Flood area within the site property boundary as shown in the attached FEMA Flood Insurance Rate Map (FIRM) [See Attachment B]. This study area was further expanded to incorporate the anticipated new Base Flood Area created by the proposed topography.

Within this Study Area, three different TIN (Triangulated Irregular Network) Surfaces were generated. These included:

1. Surface 1 - A topographical surface representing the finished grades of the existing condition. Note the existing basin is represented as being full during a 100 year flood event and not accounted for in existing flood storage area.
2. Surface 2 - A topographical surface representing the finished grades of the proposed condition.
3. Surface 3 - A flood water elevation surface Base Flood Elevation Lines from the FIRM.

Next, two graphics were generated using Autodesk Civil 3D “Volumes Dashboard”.

The first [See Attachment D] represents the volume of space between TIN Surfaces 1 and 3 above and quantifies the volume of flood water taken into the site in its existing condition.

The second [See Attachment F] represents the space between TIN Surfaces 2 and 3 above and quantifies the volume of flood water able to be taken into the sight under the proposed conditions.

These volumes are shown in Table 1 below:

<b>Table 1 – Existing and Proposed Site Net Floodplain Volume Capacity</b>	
Existing Condition	16,260 CY (439,020 CF)
Proposed Condition	21,657 CY (584,739 CF)

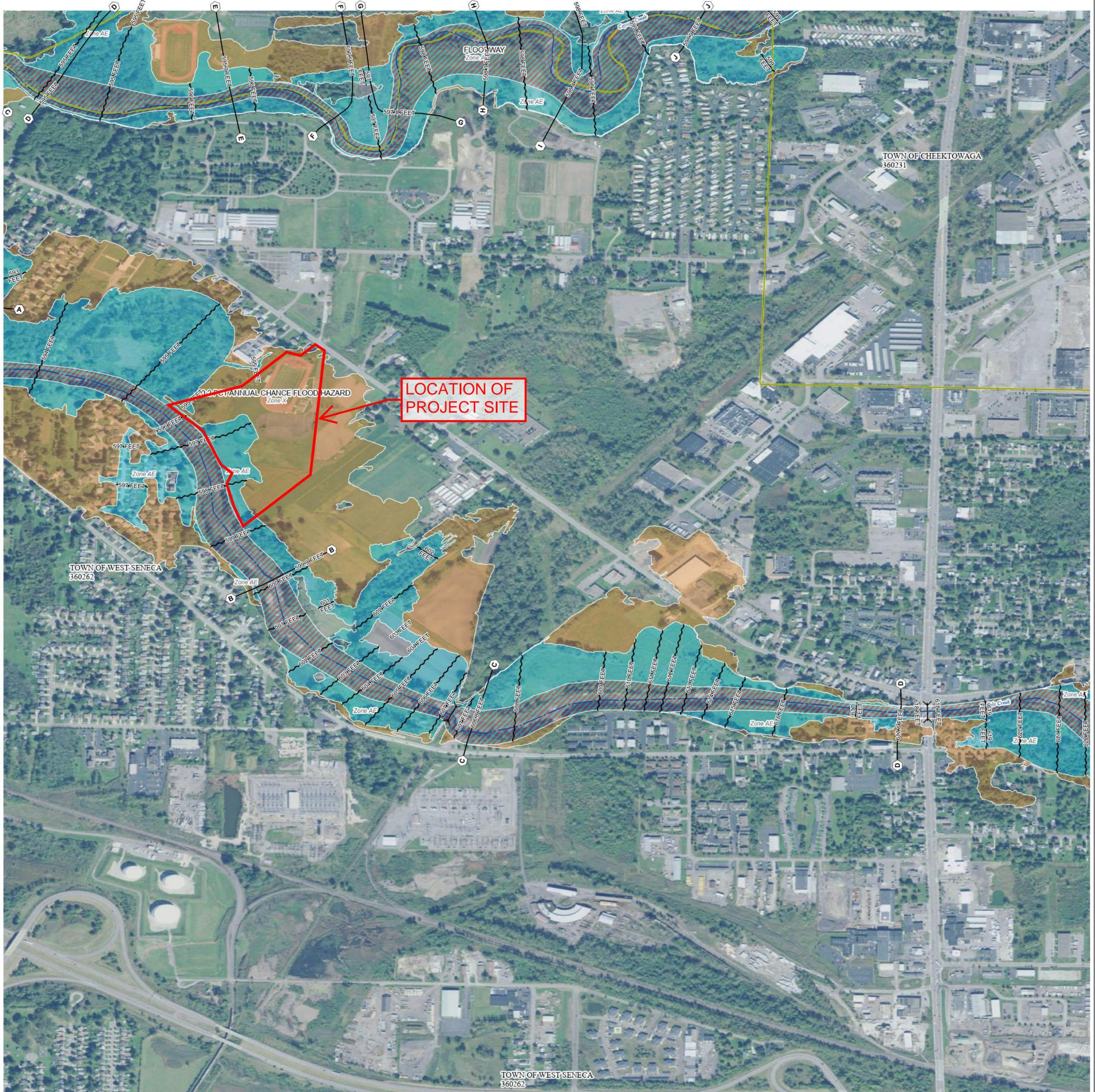
**CONCLUSION:** The proposed condition offers a net increase in the available flood water storage volume of 5,397 CY or 145,719 CF (+33%).

**D. LIST OF ATTACHMENTS:**

- A. Site Survey
- B. FEMA Flood Insurance Rate Map
- C. Study Area – Existing Condition
- D. Study Area – Existing Floodplain Boundary
- E. Study Area – Proposed Condition
- F. Study Area – Proposed Floodplain Boundary



# ATTACHMENT B - FEMA FLOOD INSURANCE RATE MAP

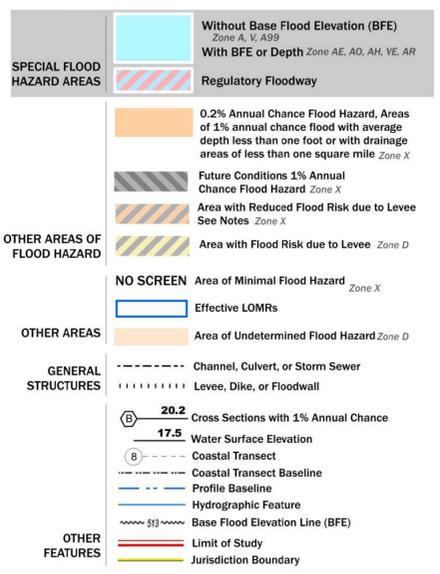


USGS The National Map: Orthoimagery, Data refreshed October, 2020.

78°44'59.58"W 42°50'30.94"N

## FLOOD HAZARD INFORMATION

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



## 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 <https://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.

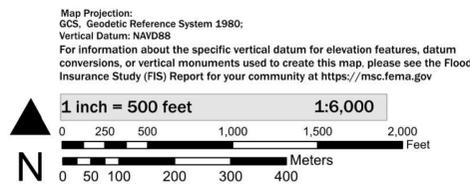
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on 11/11/2020 2:20 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. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at <https://www.fema.gov/media-library/assets/documents/118418>

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. 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.

## SCALE



## NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

ERIE COUNTY, NEW YORK  
ALL JURISDICTIONS  
PANEL 332 OF 807

Panel Contains:

COMMUNITY	NUMBER	PANEL
TOWN OF CHEEKTOWAGA	360231	0332
TOWN OF WEST SENECA	360262	0332



EXISTING CONDITION



NORTH



SCALE IN FEET



landscape architecture

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 Syracuse, New York 13204-1434  
 Telephone 315.476.1022

**CANISIUS HS - ATHLETIC FIELDS**  
**PHASE 3**

ROBERT J. STRANSKY MEMORIAL COMPLEX  
 2885 CLINTON STREET  
 WEST SENECA, NEW YORK 14224

Project Number:	2020
Drawn By:	DS,JE
Checked By:	PO
Scale:	AS SHOWN

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Date: 01/06/2021

Drawing Title:  
EXISTING CONDITIONS

Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	0.0	1.0	Light Blue
2	1.0	2.0	Medium Light Blue
3	2.0	3.0	Medium Blue
4	3.0	4.0	Dark Blue
5	4.0	10.0	Very Dark Blue



EXISTING FLOODPLAIN BOUNDARY- CANISIUS HIGH SCHOOL

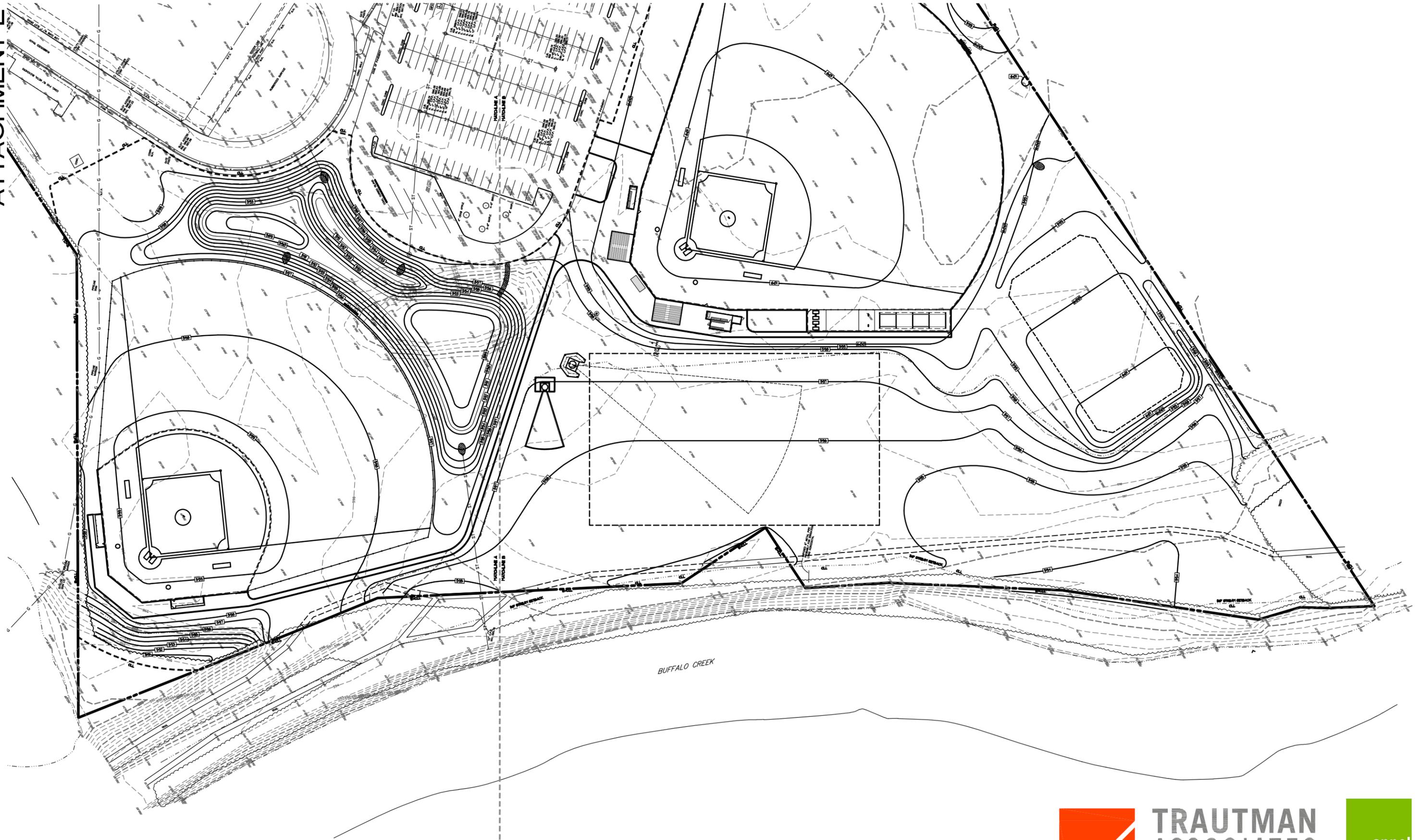




**TRAUTMAN  
ASSOCIATES**  
ARCHITECTS / ENGINEERS



appel  
osborne  
landscape  
architecture

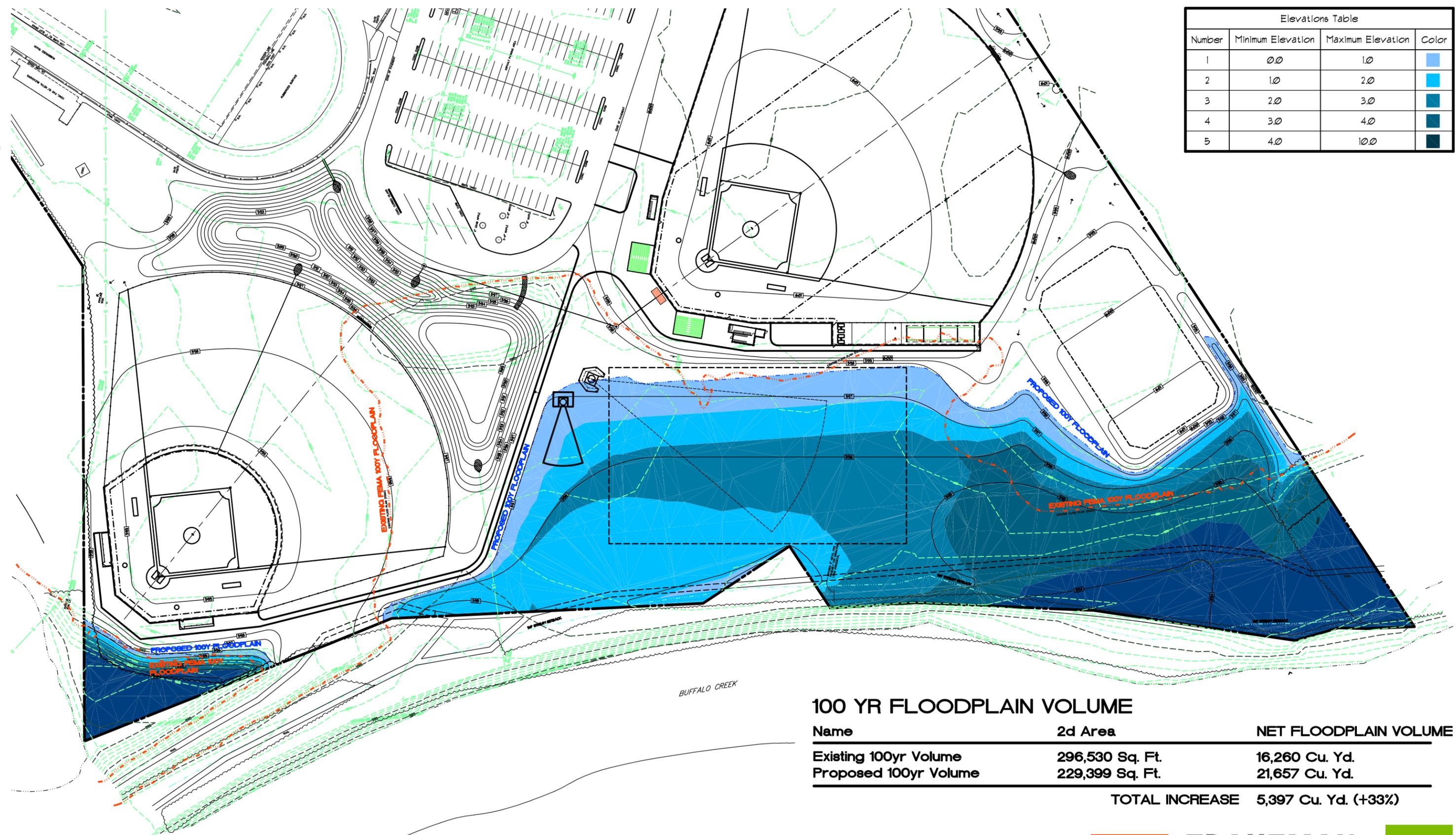


PROPOSED CONDITION



**TRAUTMAN  
ASSOCIATES**  
ARCHITECTS / ENGINEERS





Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	0.0	1.0	Light Blue
2	1.0	2.0	Medium Blue
3	2.0	3.0	Dark Blue
4	3.0	4.0	Very Dark Blue
5	4.0	10.0	Black

### 100 YR FLOODPLAIN VOLUME

Name	2d Area	NET FLOODPLAIN VOLUME
Existing 100yr Volume	296,530 Sq. Ft.	16,260 Cu. Yd.
Proposed 100yr Volume	229,399 Sq. Ft.	21,657 Cu. Yd.

TOTAL INCREASE 5,397 Cu. Yd. (+33%)

PROPOSED FLOODPLAIN BOUNDARY- CANISIUS HIGH SCHOOL



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