







Quick Reference: Soil Borings Clearly Show Nearly All of Parcel 92 is Artificially Filled, except for a small portion near Maple Street. (Accretion is not a credible or valid explanation).

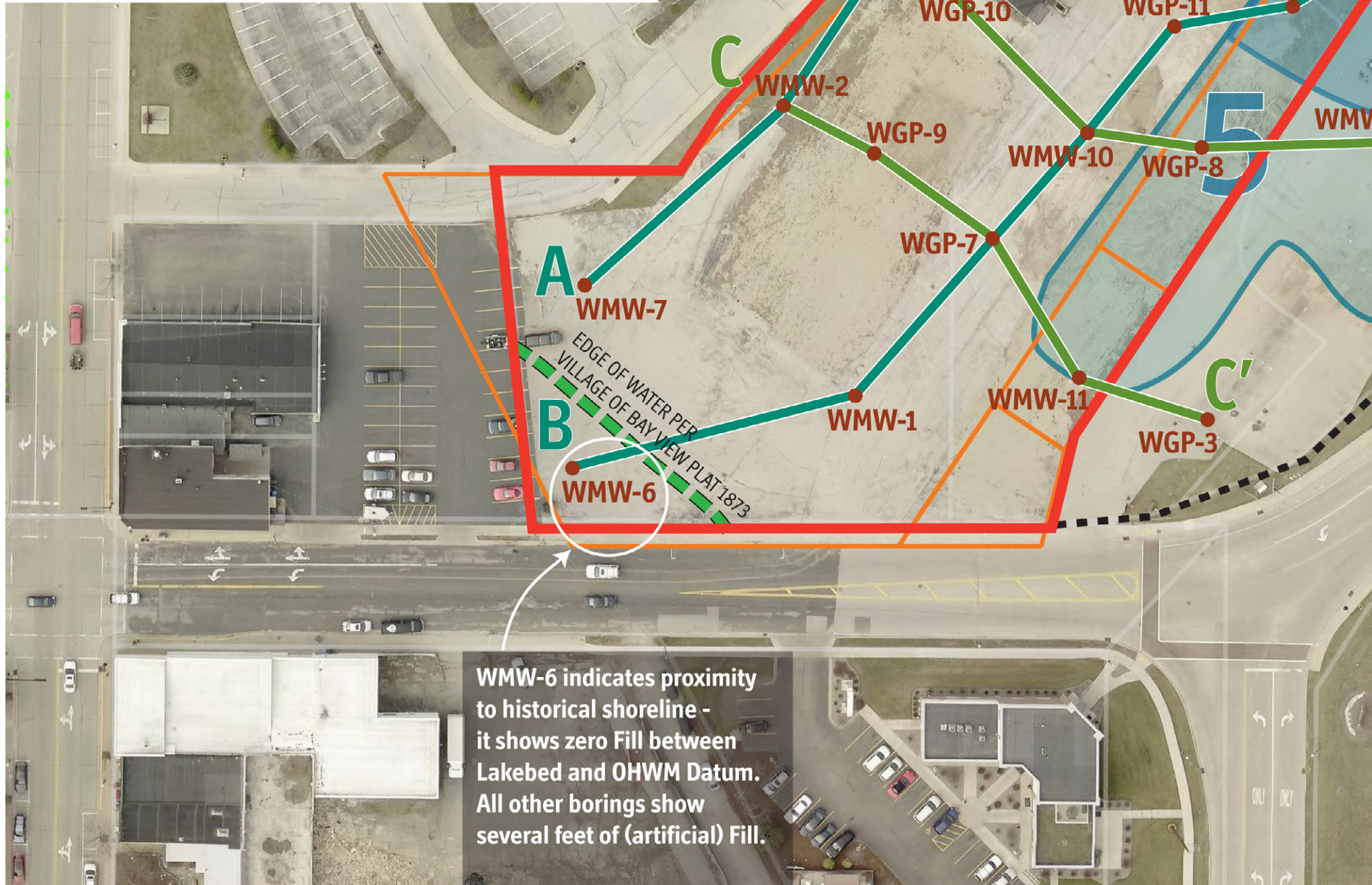
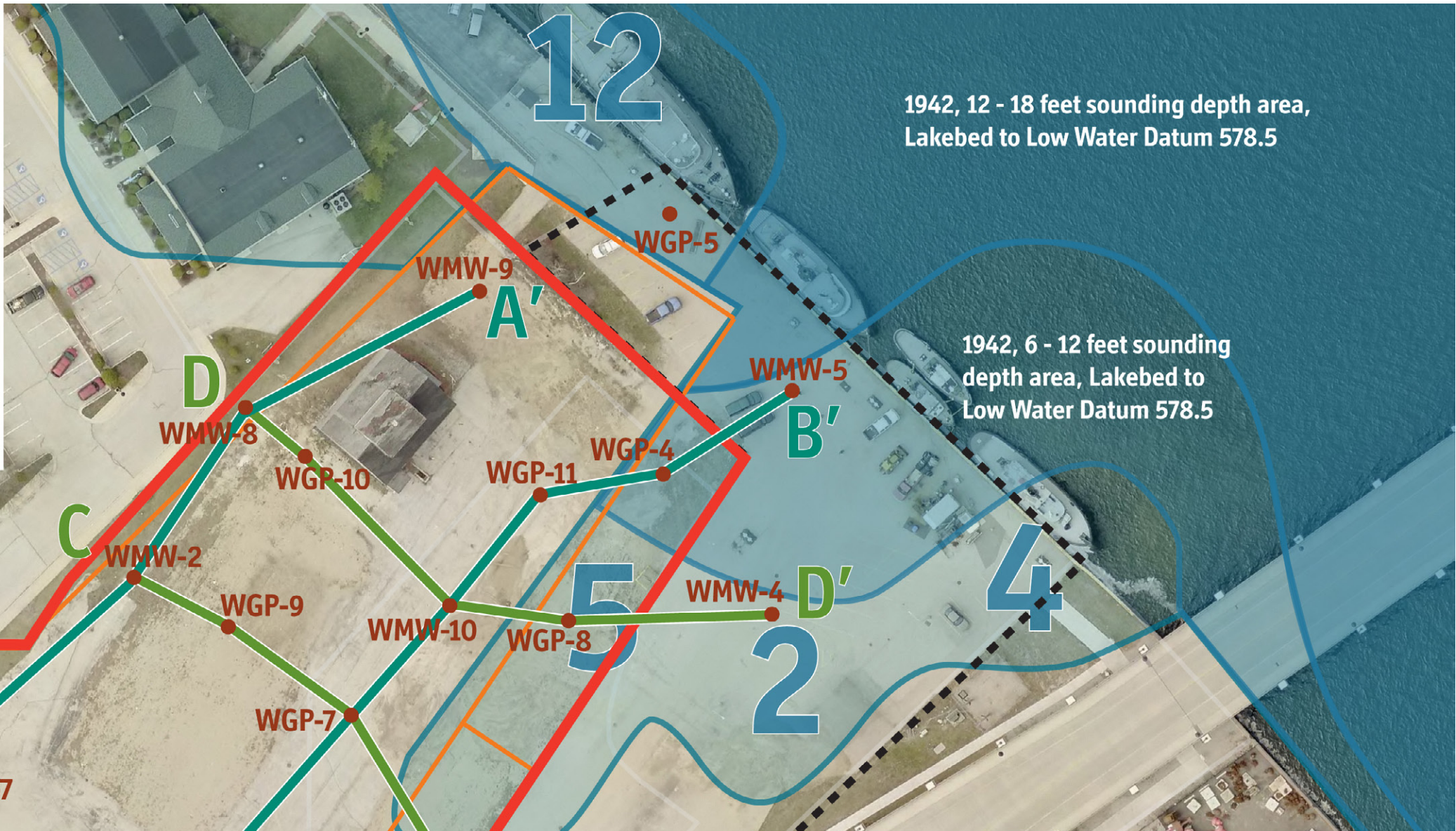
The attached map and cross-section diagrams are an integration of two data sets: the Ayres Phase II Soil Borings information and the 1942 U.S. Army Corp of Engineers Lake Survey soundings and contours. The Ayres report shows the locations of soil boring points, and assessments of each soil profile. Three of these boring points have proximity to three ACE sounding points: i) the ACE sounding point labeled “5” is near boring WGP-8; ii) the ACE sounding point labeled “2” is near WMW-4; and iii) the ACE sounding labeled “12” is near WGP-5.

The Ayres data is itself clear and compelling, describing profiles of several feet of Fill -- including elements of wood, cinders, and concrete -- above Lacustrine or Lake Deposits, the Lakebed.

The 1942 ACE map’s data defines the local elevation of the Lakebed, by virtue of the multiple soundings and contours referenced to Low Water Datum elevation. Adding the 1942 ACE Lakebed elevation to the Ayres cross-sections correlates the historical Lakebed profile. The Lakebed began near today’s Maple Street, sloping downward by 10 to 13 feet over the 400-foot length of the Dock of Parcel 92. The 1942 ACE map also confirms deeper water immediately adjacent to the dock of that time which current soil borings show has been filled artificially.

Another Ayres soil boring worth noting is WMW-6 (lower left of the map) which shows no Fill below the OHWM. This is an indication of the location of historical shoreline that is also consistent with the historical shoreline from plat maps of the 1870s and 1880s. This is another correlation of the Ayres boring data with the historical maps provided.

-  Historical Parcel 92, the parcel in question
-  1953 transfer plus 1956, 1964, 1974 additions
-  Subsurface Cross-Sections A-A' and B-B'
-  Subsurface Cross-Sections C-C' and D-D'
-  1942 US Army Corps surveyed shoreline and depths from Lakebed to Low Water Datum
-  WMW-1 Ayres Phase II Soil Borings used in Subsurface Cross-Sections



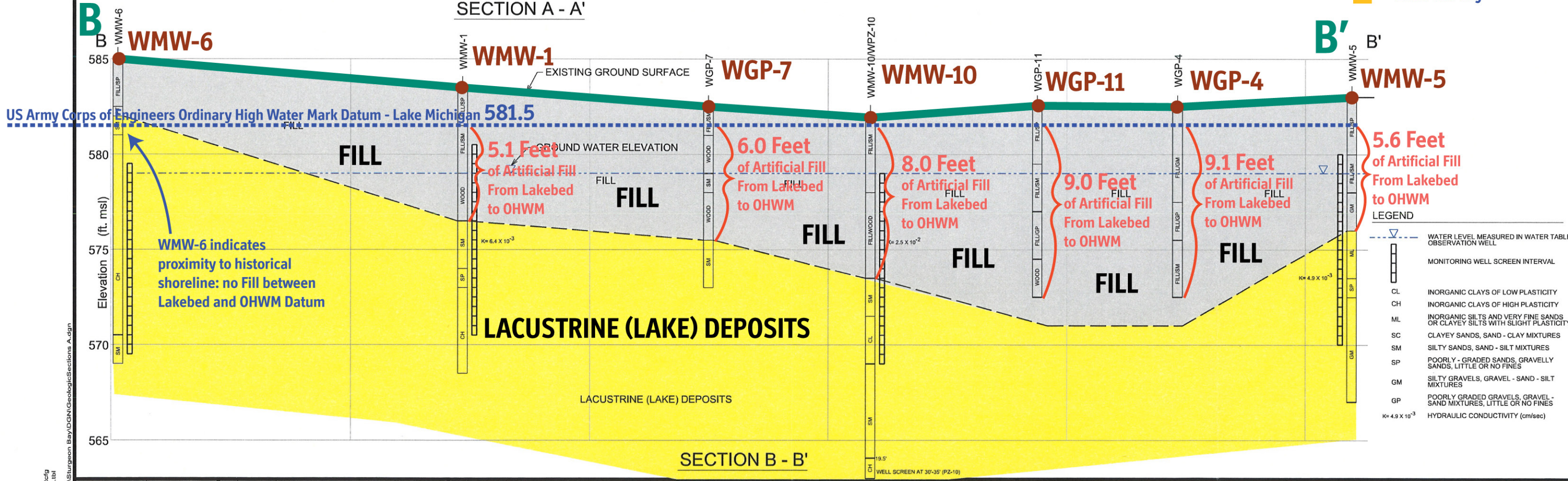
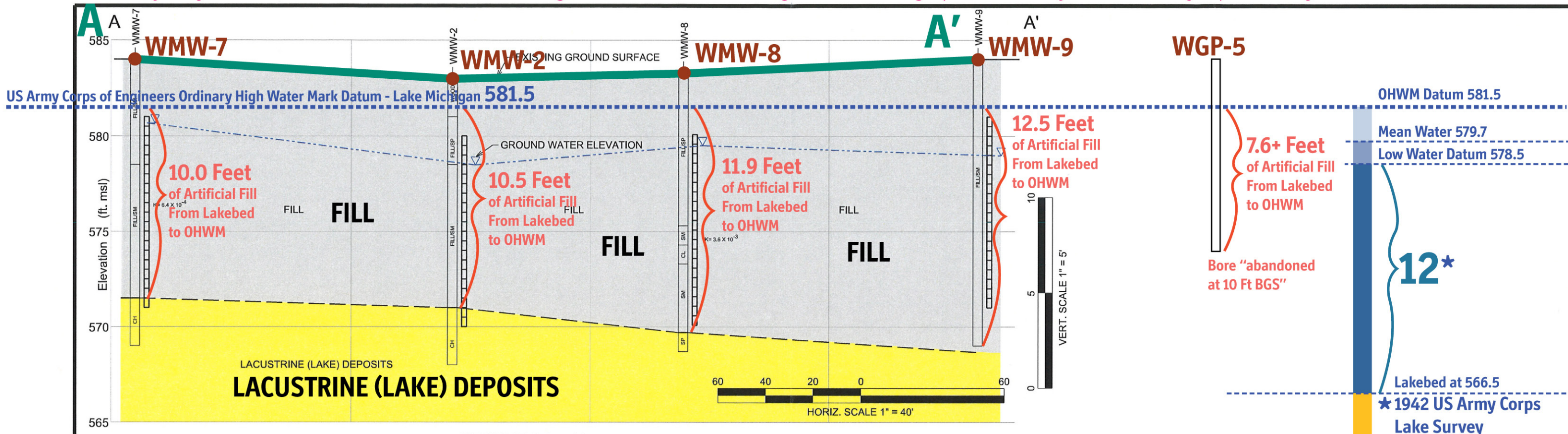
WMW-6 indicates proximity to historical shoreline - it shows zero Fill between Lakebed and OHWM Datum. All other borings show several feet of (artificial) Fill.

This composite map shows Phase II Soil Borings and Subsurface Cross-Section locations. The Cross-Sections (on the next pages) illustrate the **several feet of (artificial) Fill** at these borings between the Lakebed and Lake Michigan OHWM Datum of 581.5, consistently through all transects.

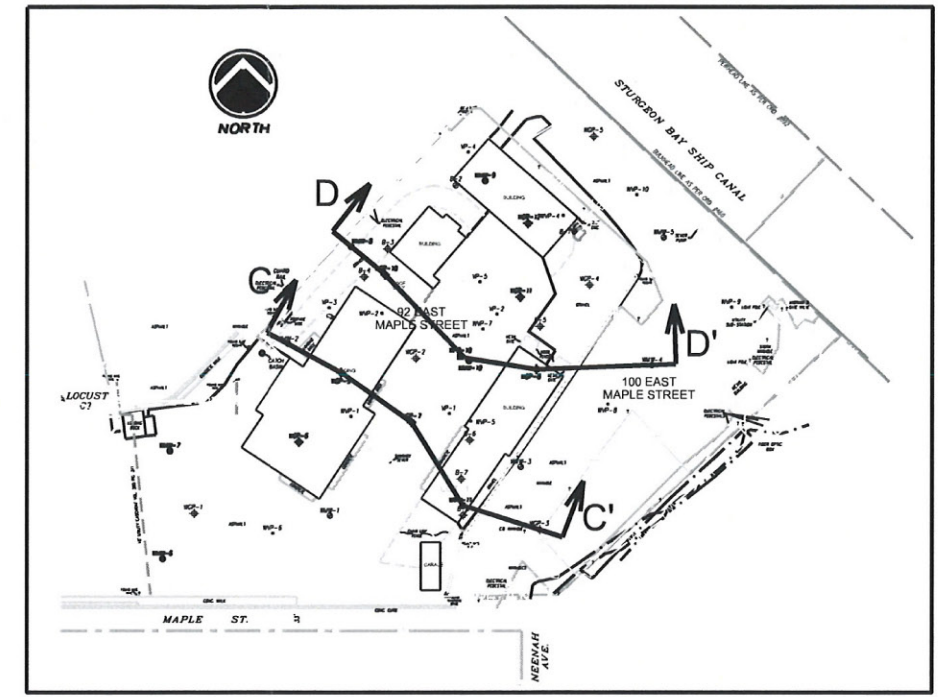
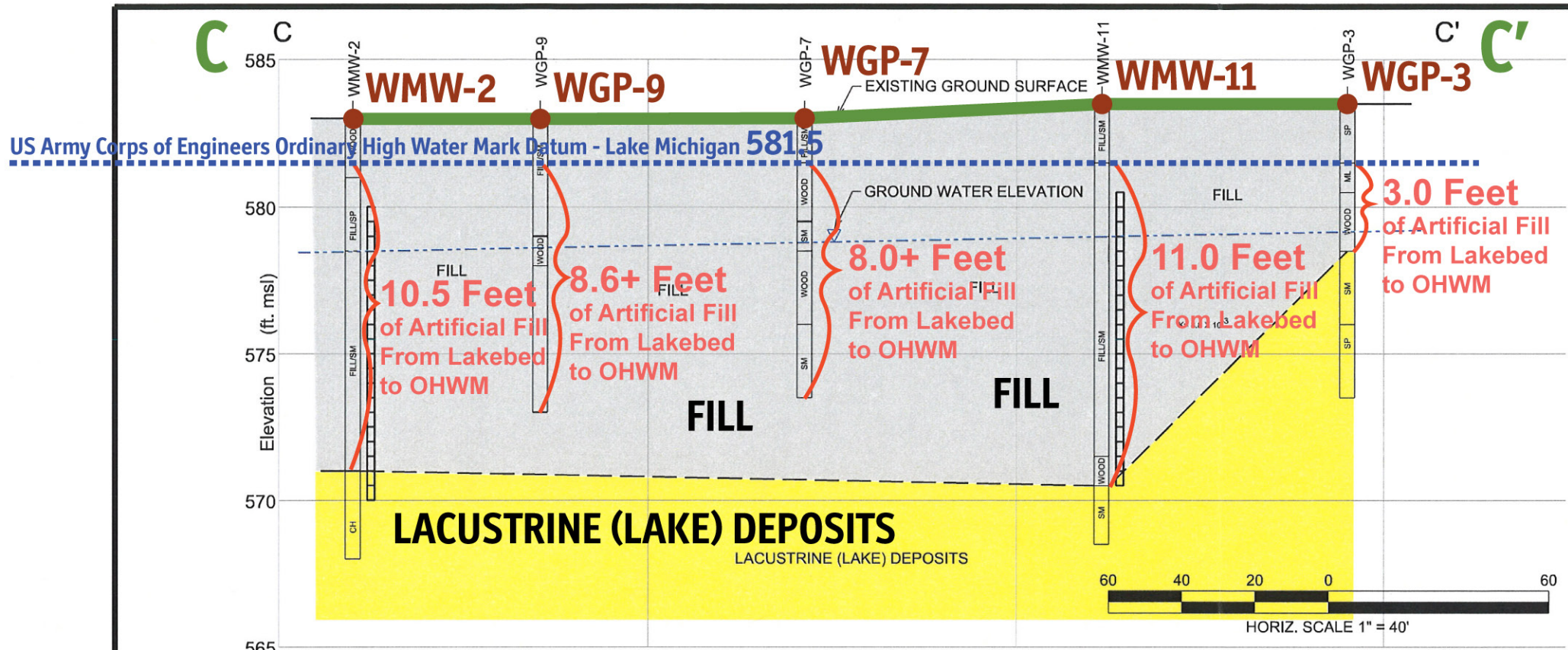
In blue shading and numbers, the 1942 U.S. Army Corps of Engineers Lake Survey depths from Lakebed to Low Water Datum of 578.5 are shown. These depths are added (on the next pages) to Cross-Sections A-A' and D-D'. They are consistent with borings.

Sources: Phase II, Ayres, August 2013; NR716 Investigation, Ayres, June 2015; also consistent with Phase II, STS, 2005.

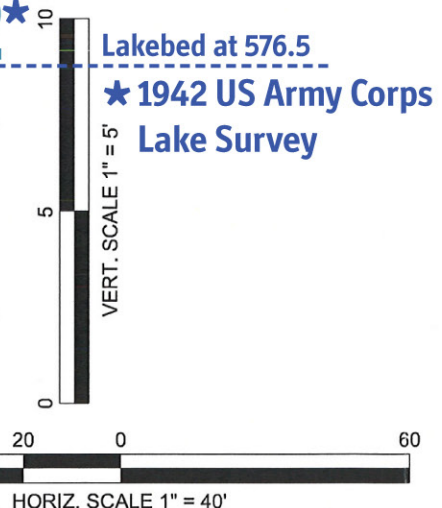
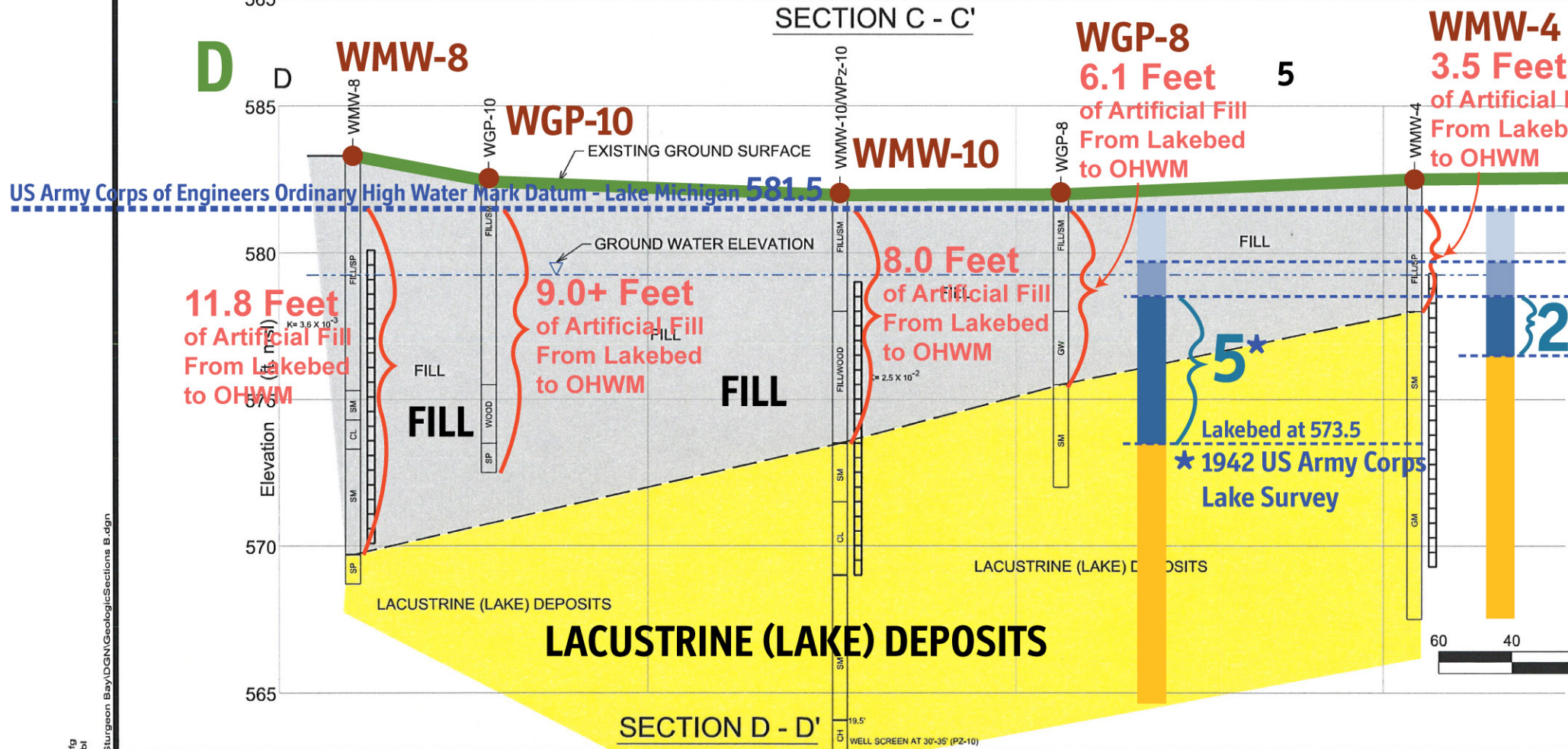
Cross-Sections from Ayres 2013 Phase II have not been altered. Added are larger annotations in colored lettering and lines. Sounding depths and Lakebed from 1942 U.S. Army Corps Lake Survey have been added to A-A'.



Cross-Sections from Ayres 2013 Phase II have not been altered. Added are larger annotations in colored lettering and lines. Sounding depths and Lakebed from 1942 U.S. Army Corps Lake Survey have been added to D-D'.



SECTION LOCATION MAP
NTS



- LEGEND**
- WATER LEVEL MEASURED IN WATER TABLE OBSERVATION WELL
 - MONITORING WELL SCREEN INTERVAL
 - CL INORGANIC CLAYS OF LOW PLASTICITY
 - CH INORGANIC CLAYS OF HIGH PLASTICITY
 - ML INORGANIC SILTS AND VERY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
 - SC CLAYEY SANDS, SAND - CLAY MIXTURES
 - SM SILTY SANDS, SAND - SILT MIXTURES
 - SP POORLY - GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
 - GM SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
 - GP POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
 - $K = 4.9 \times 10^{-3}$ HYDRAULIC CONDUCTIVITY (cm/sec)

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DES BY	J. STEINER	BOOK NO.	
DR BY	T. SHUPERT	JOB NO.	19-0422.00
CHK BY	J. STEINER	DATE	JULY 2013
		NO.	DATE
		REVISION	NO. DATE
			REVISION

WEST WATERFRONT REDEVELOPMENT PROJECT
CITY OF STURGEON BAY
STURGEON BAY, WISCONSIN



GEOLOGICAL CROSS SECTIONS C - C' AND D - D'

DRAWING NO
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