

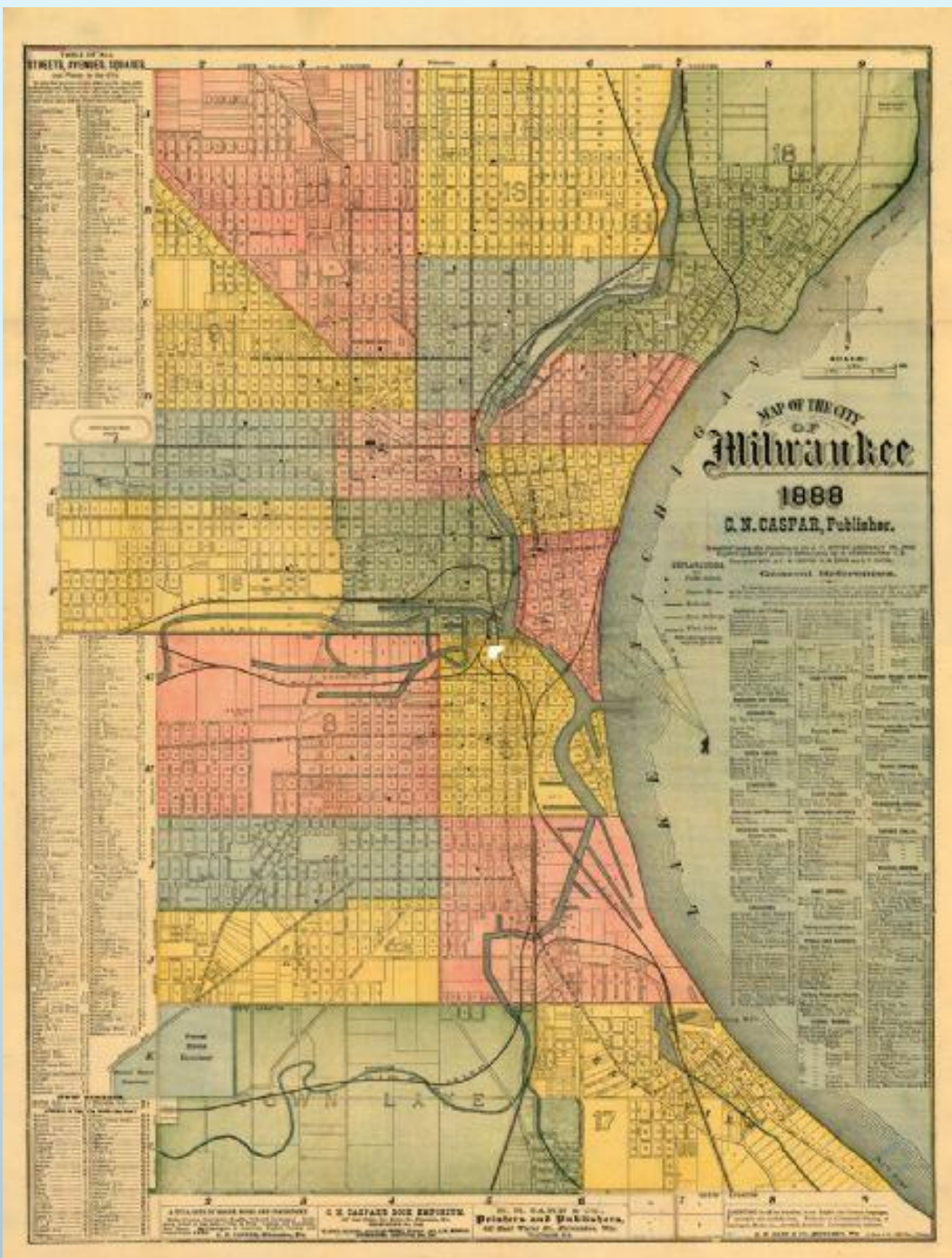
Kinnickinnic River Pulaski Park

April 21, 2021

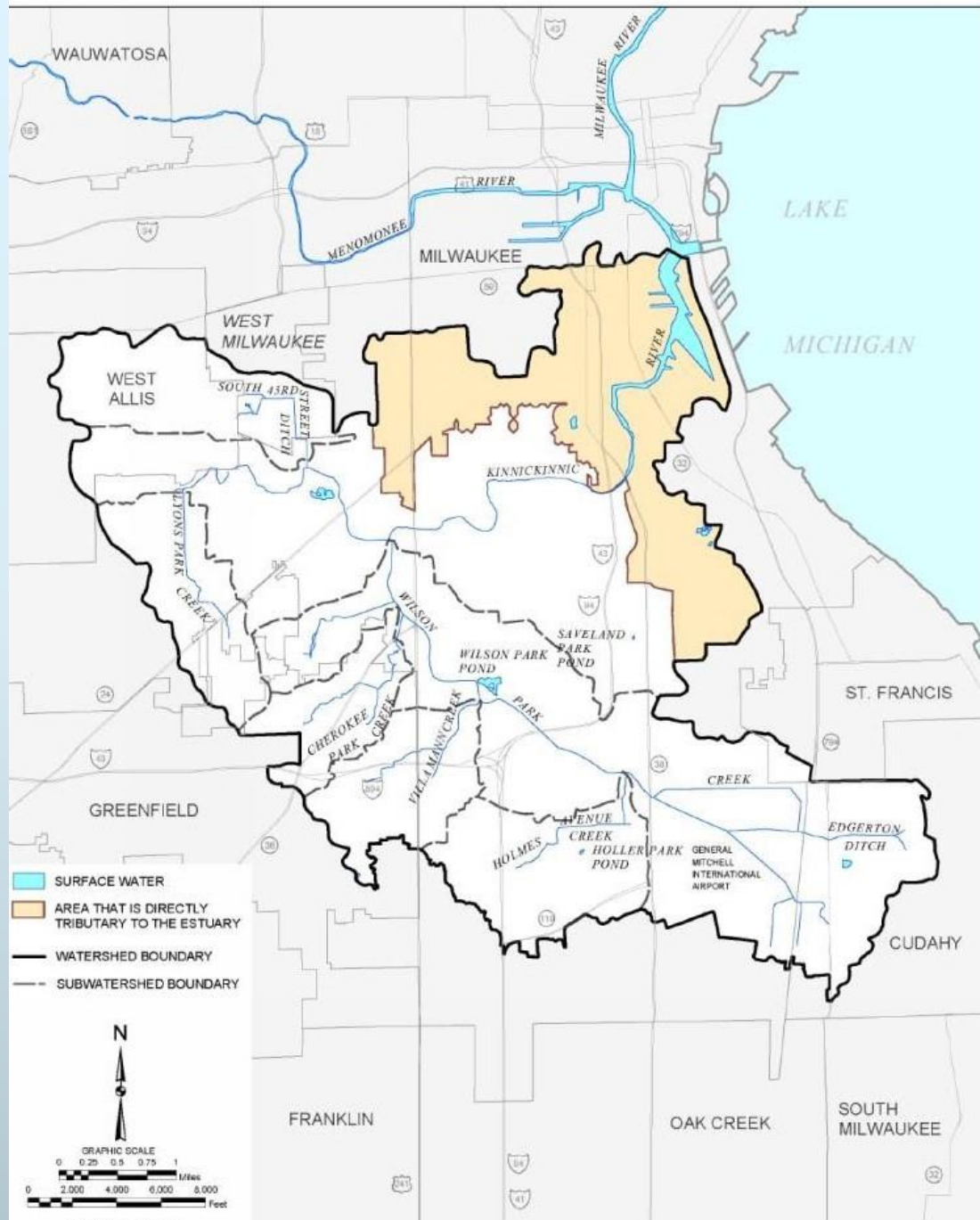
Waukesha County Storm Water Workshop

John T. McCarthy P.E. LEED AP

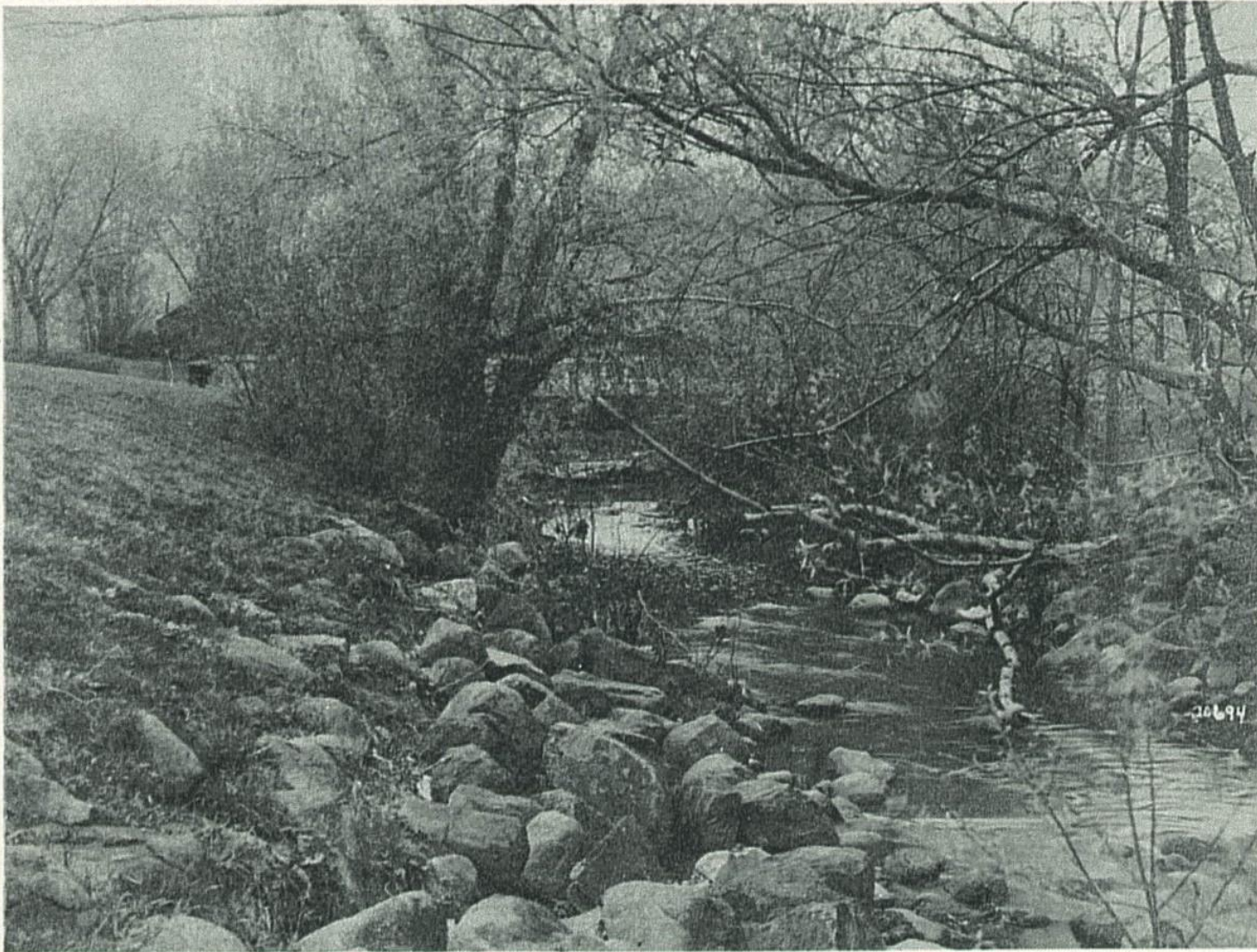




Milwaukee 1888



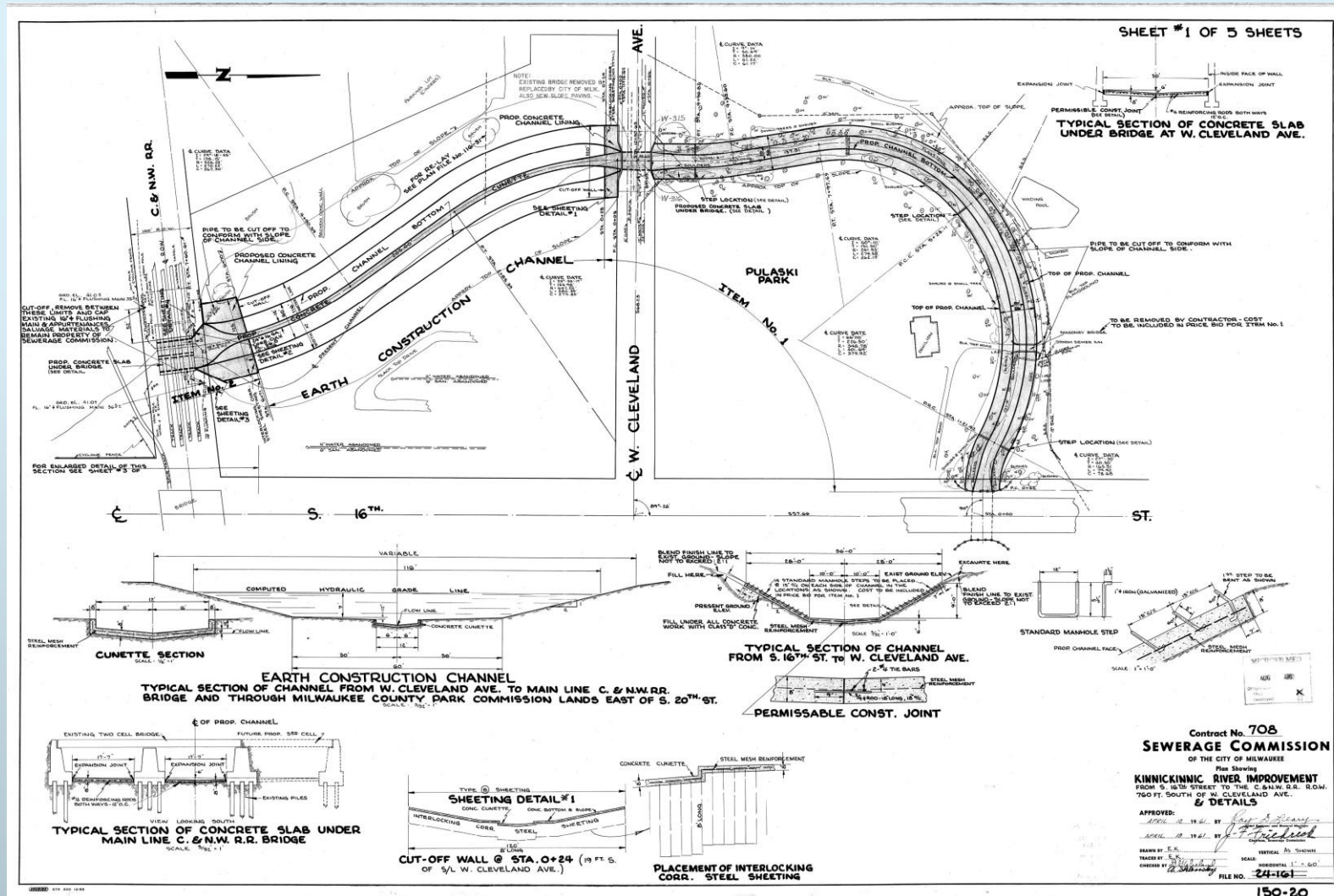
Kinnickinnic River Watershed



Kinnickinnic River, 1960

April 25, 1960 – View of existing conditions along Kinnickinnic River prior to clean up. Cont. No. 705. West of 16th Street bridge.

Kinnickinnic River – Channelized in the 1960's



Kinnickinnic River – Channelized in the 1960's



Kinnickinnic River – Channelized in the 1960's



Kinnickinnic River – Problems with Flooding



Kinnickinnic River – 100-Year Floodplain

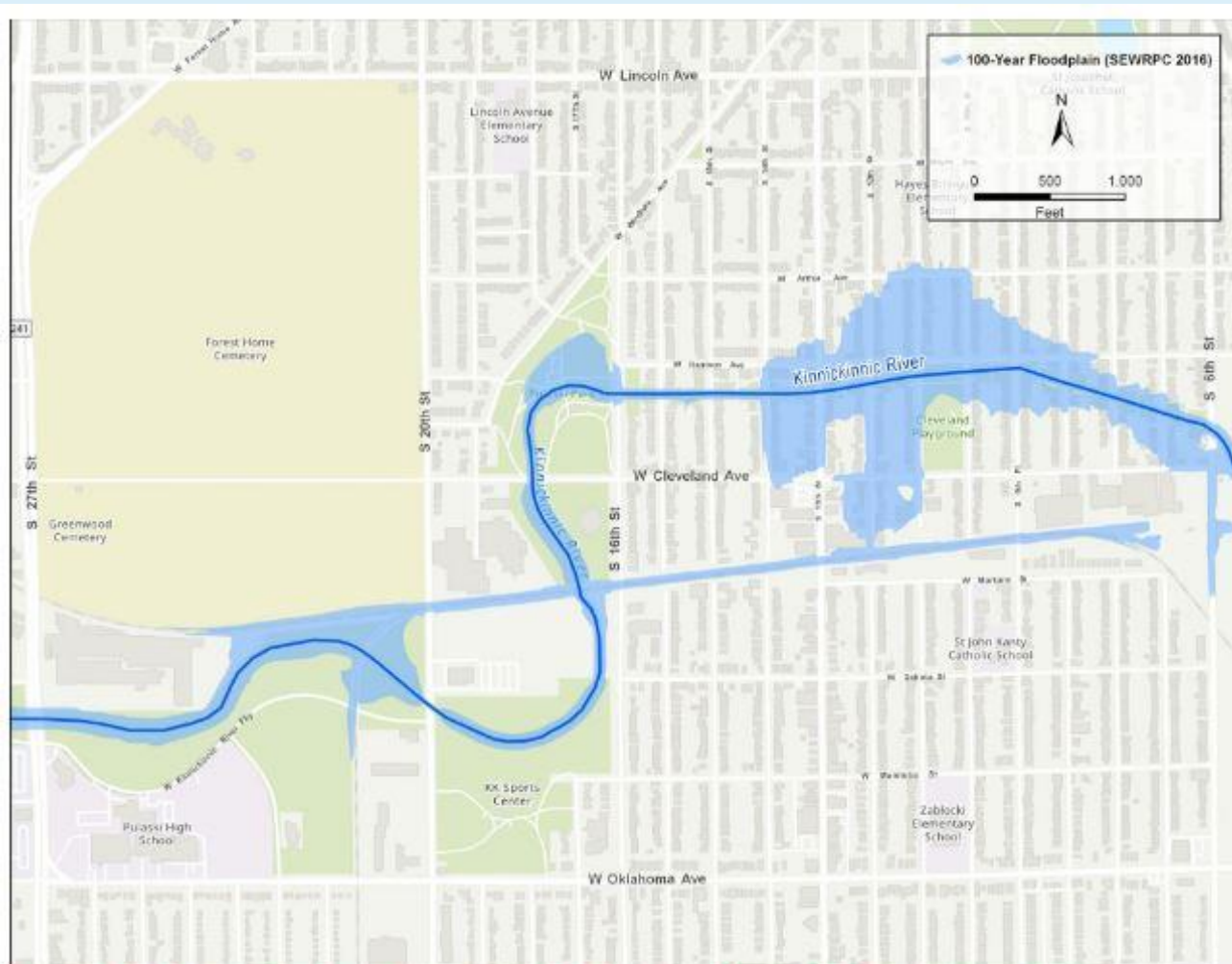


Figure 1-3. 100-Year Floodplain Between South 6th Street and South 27th Street (SEWRPC, 2016)

Kinnickinnic River – High Flow Velocity



MMSD Action Plan

- Determine flood flows and extent of floodplain
- Purchase at-risk properties within floodplain and demolish
 - This required relocating residents and breaking up neighborhoods
- Adopt a new approach to floodplain management
 - Decrease flow velocities
 - Increase flood water storage areas
 - Create a more natural stream environment

The GRAEF-CDM Smith team was selected by MMSD in 2014 to develop solutions

- Overall Project Scope:
 - Preliminary design for Kinnickinnic River – Reach 2
 - Construction Documents for Pulaski Park Segment

Kinnickinnic River Reaches and Segments

- Reach 2 – S. 6th Street to S. 27th Street
- Divided into three segments:
 - S. 6th Street to S. 16th Street
 - S. 16 Street to Union Pacific Railroad Bridge - Pulaski Park
 - Union Pacific Railroad Bridge to S. 27th Street

Kinnickinnic River -Reach 2 Segments





This Presentation Focuses
on the Design and
Construction of the Pulaski
Park Segment of Reach 2

Project Owner -- MMSD

- **Patrick Elliott** – Project Manager
- **Dan Talarczyk** – Project Resident Engineer

- **Pulaski Park** -- Owned and operated by Milwaukee County Parks

Project Design Team

- **GRAEF** – Prime consultant and lead designer
- **CDM Smith** – Major supporting designer
- **Inter-Fluve** – Geomorphology and streambed design
- **The Resolution Studio** – Site restoration and plantings
- **Storm Water Solutions** – Regenerative storm water conveyance system

Existing Conditions



Looking upstream on 16th street #43



Existing Conditions



Upstream face of Cleveland #39



Major Project Components

- Remove concrete channel
- Create a naturalized stream environment
- Integrate the river with the park while providing improvements to the park
 - New playground and basketball court
 - Convert tennis court to a futsal court
 - Provide improvements at park pavilion and at Pulaski Pool complex
 - Reconfigure pedestrian and multi-use paths
 - Remove invasive species and provide new vegetation and trees
- Replace pedestrian bridge
- Widen opening under Cleveland Avenue bridge

Special Design Considerations

- Flow velocities and scour
- Stabilization of vegetation
- Removal of contaminated materials
- Providing for wildlife habitat and fish passage
- Flow management during construction
- Park access during construction

Construction Team

- **C. W. Purpero Inc.** – General Contractor
- **Platt Construction Inc.** -- Concrete work and pedestrian bridge
- **Terra Engineering and Construction Inc.** – Cleveland Ave bridge work
- **Cardno** – Site restoration
- **ProElectric** – Site electrical and lighting

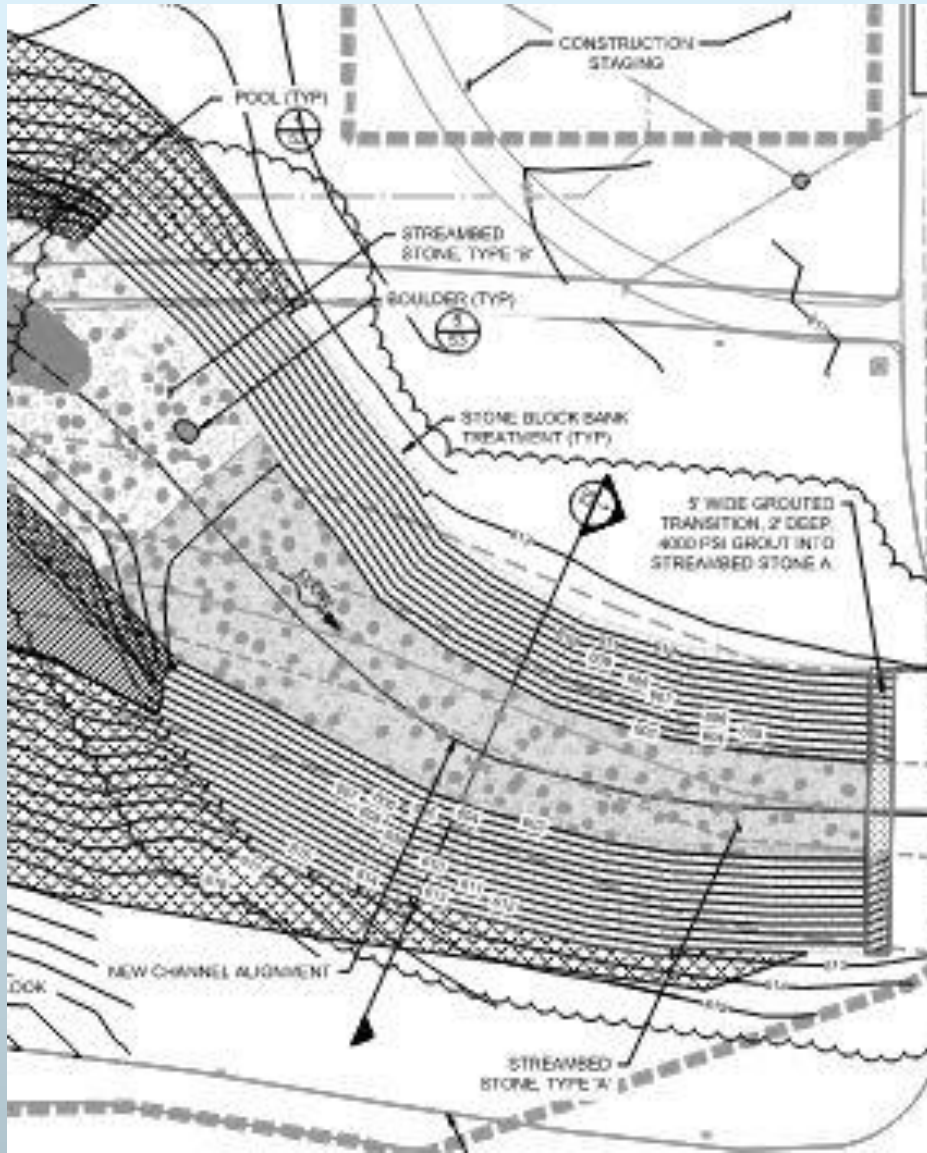
Flow Management during Construction



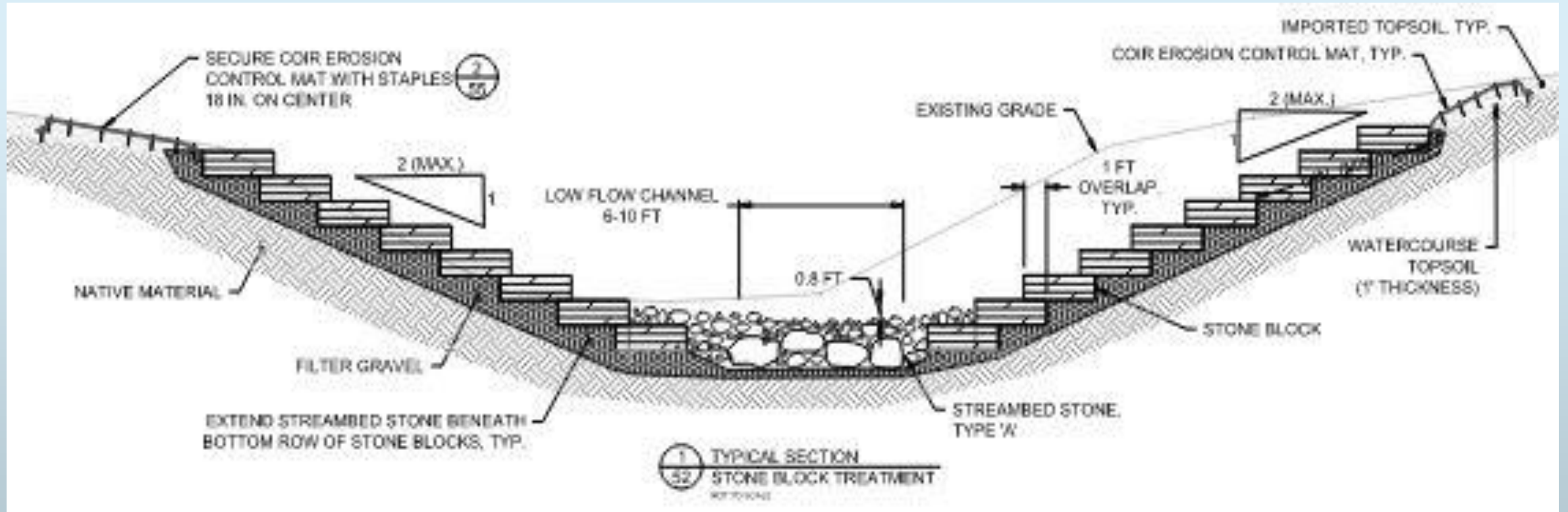
Concrete Channel Removal



Stone Blocks Along Channel



Naturalized Stream Design -- Stone Block Section

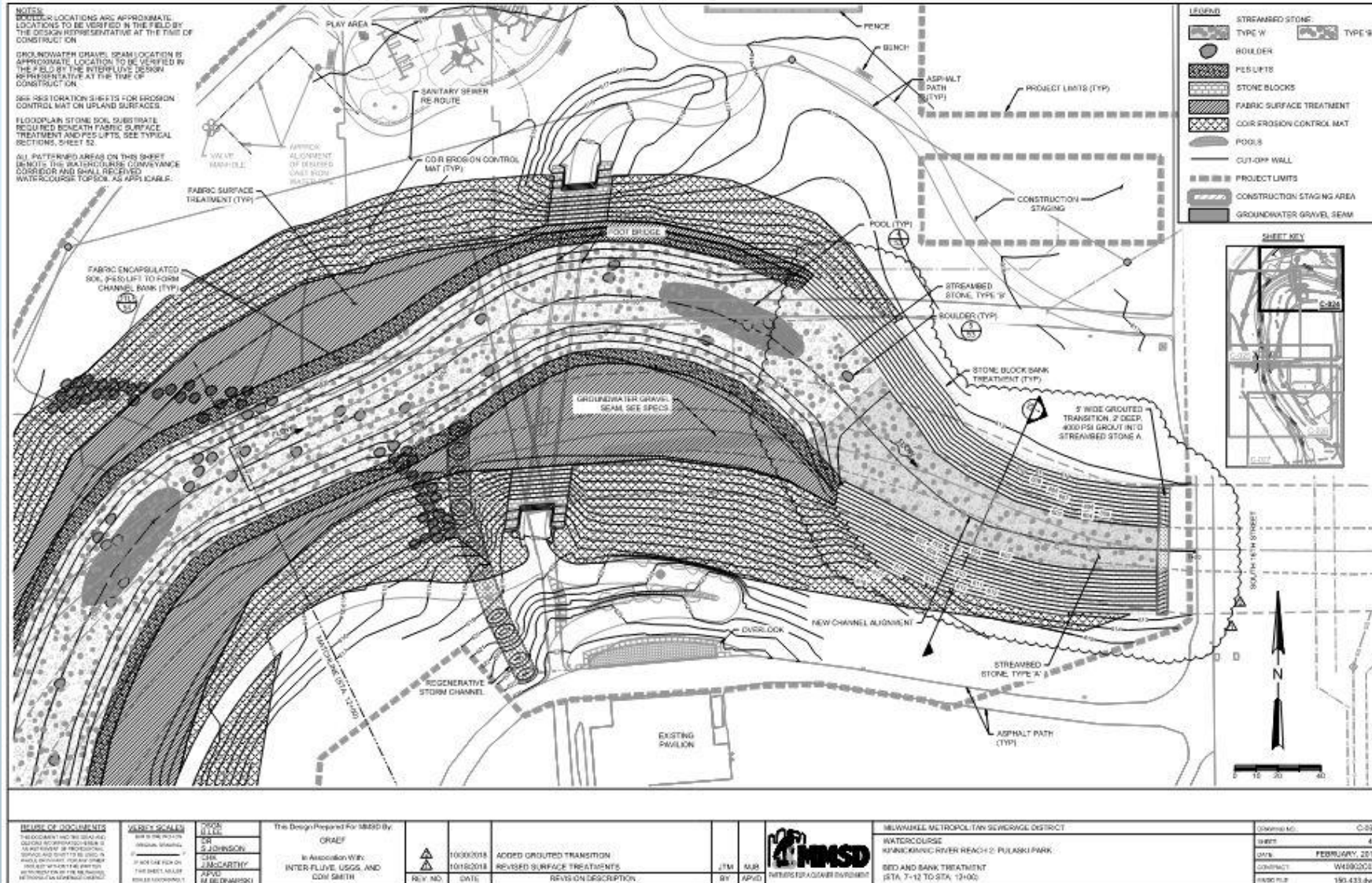


Stone Blocks Along Channel



Naturalized Stream Design

-- Plan View



REVISIONS	DATE	DESCRIPTION	BY	APP'D	REVISION DESCRIPTION	DATE	NO.
	10/06/2018	ADDED GROUTED TRANSITION	JTM	AJR			1
	10/16/2018	REVISED SURFACE TREATMENTS	JTM	AJR			2

PROJECT INFORMATION:
 DESIGN NO: C-200
 SHEET NO: 45
 DATE: FEBRUARY, 2018
 CONTRACT: W46820021
 PROJECT FILE: 190.433.dwg

CLIENT: CLEVELAND METROPOLITAN SEWERAGE DISTRICT
PROJECT: WATERCOURSE REFINANCING RIVER REACH 2: PULASKI PARK
SECTION: BED AND BANK TREATMENT (STA. 7+12 TO STA. 12+00)

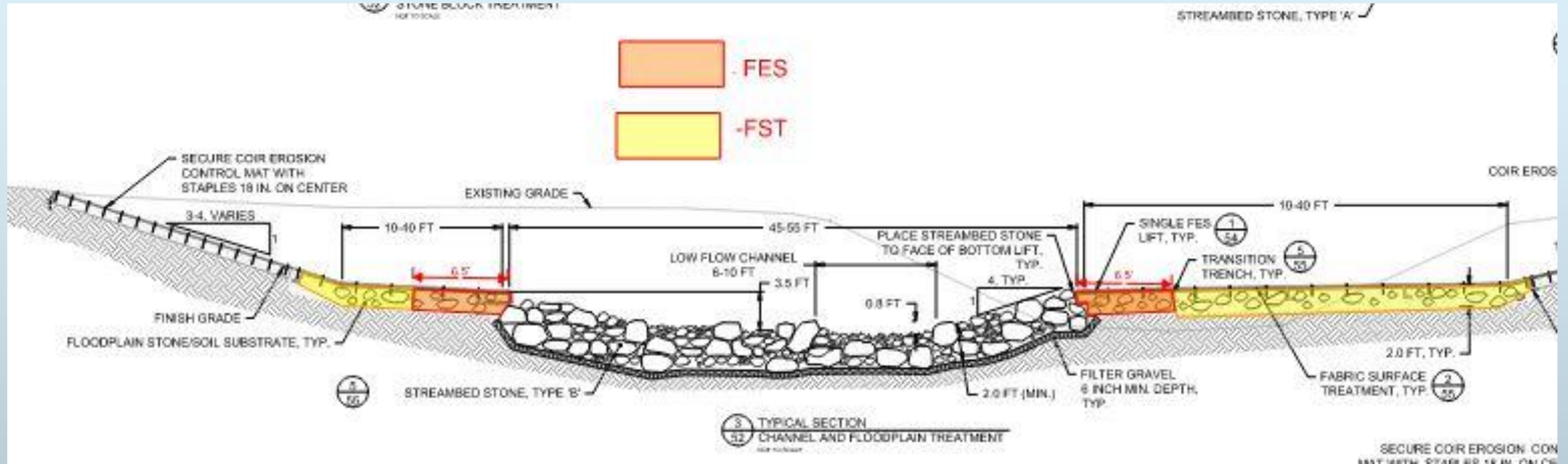
DESIGNER: CRISP
IN ASSOCIATION WITH: INTER-FLUVE USGS, AND CDM SMITH

SCALE: 1" = 10'-0"

DESIGNER: J. JOHNSON
CHECKER: J. JOHNSON
DATE: 1/20/18
PROJECT: PULASKI PARK
SCALE: 1" = 10'-0"

Naturalized Stream Design

-- Typical Section



Streambed Stone



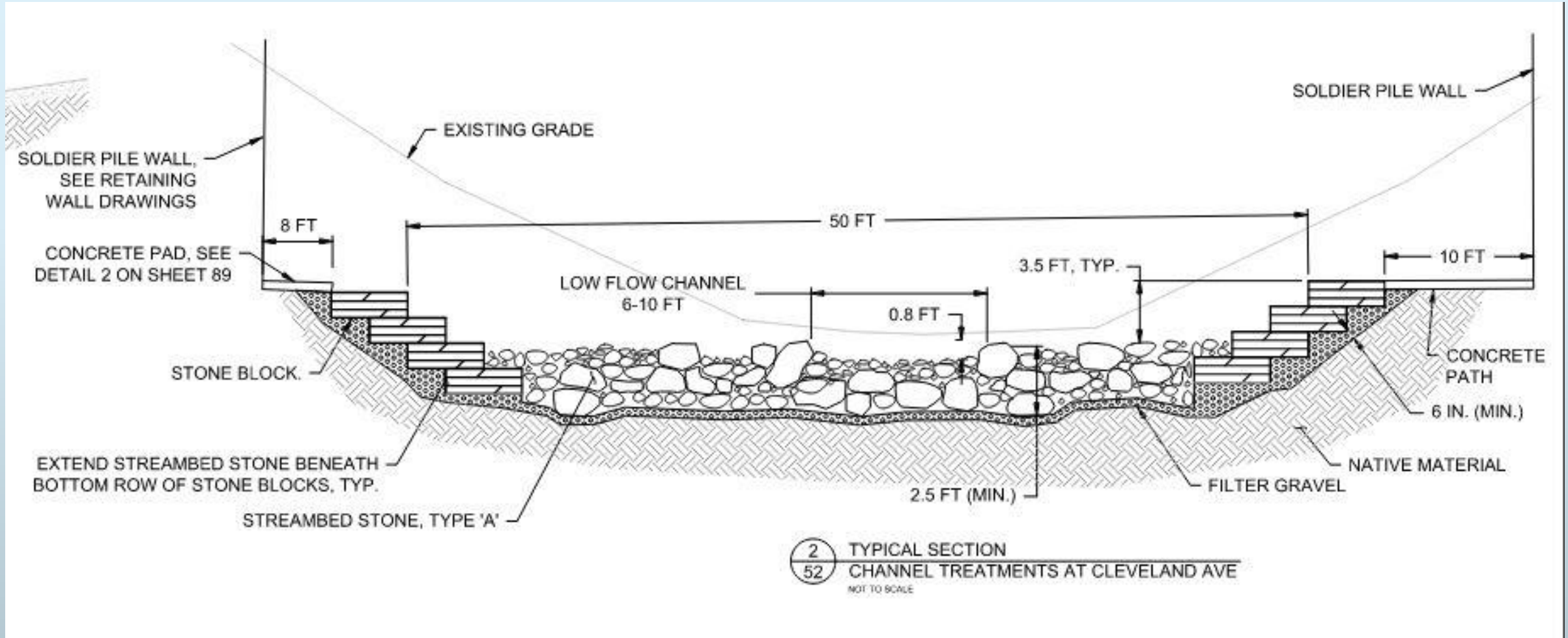
Natural Stone Streambed



Natural Stone Streambed



Naturalized Stream Design -- Cleveland Ave Bridge Section



Naturalized Stream Design -- Cleveland Ave Bridge Section



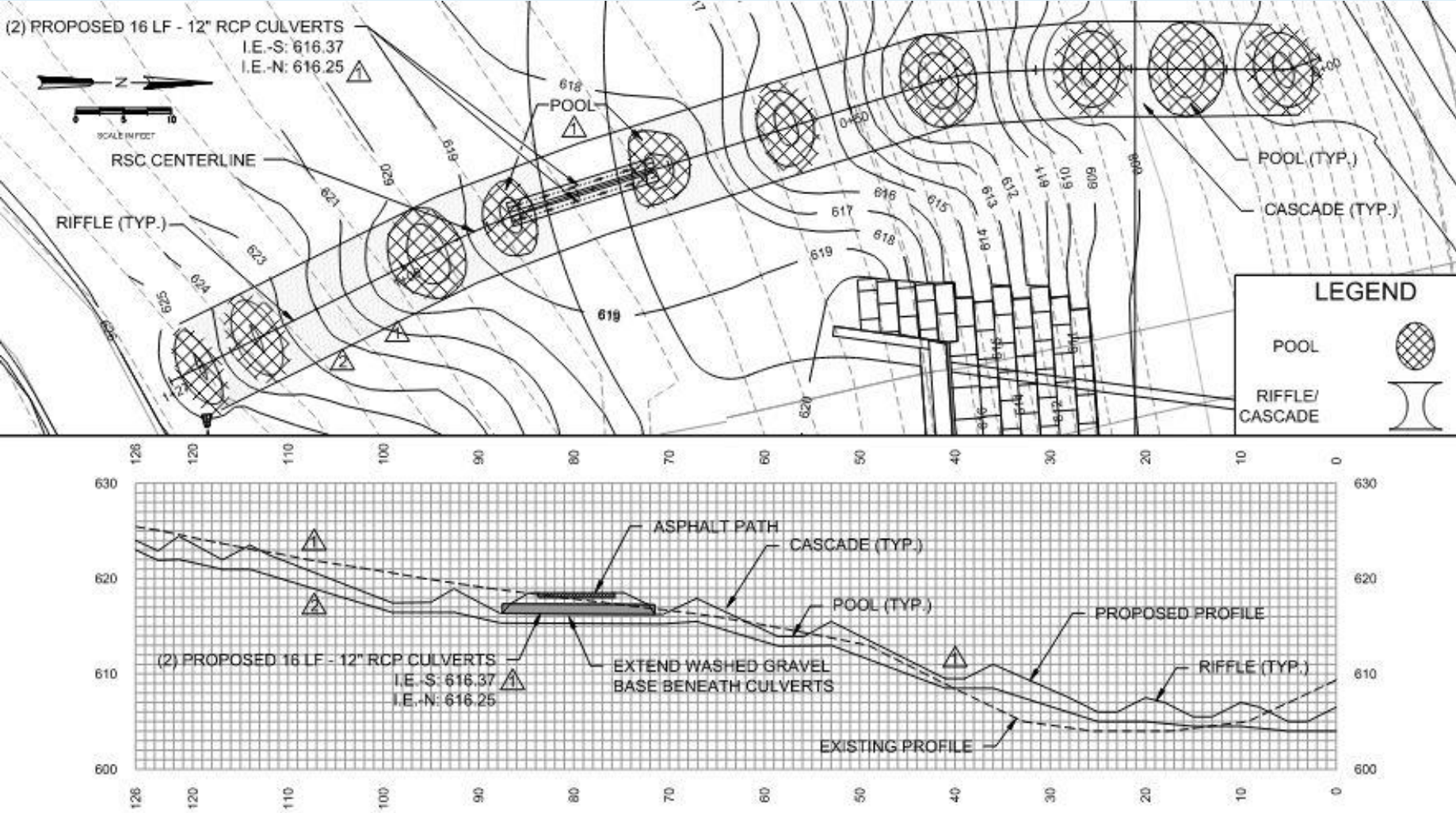
Watercourse Boulders



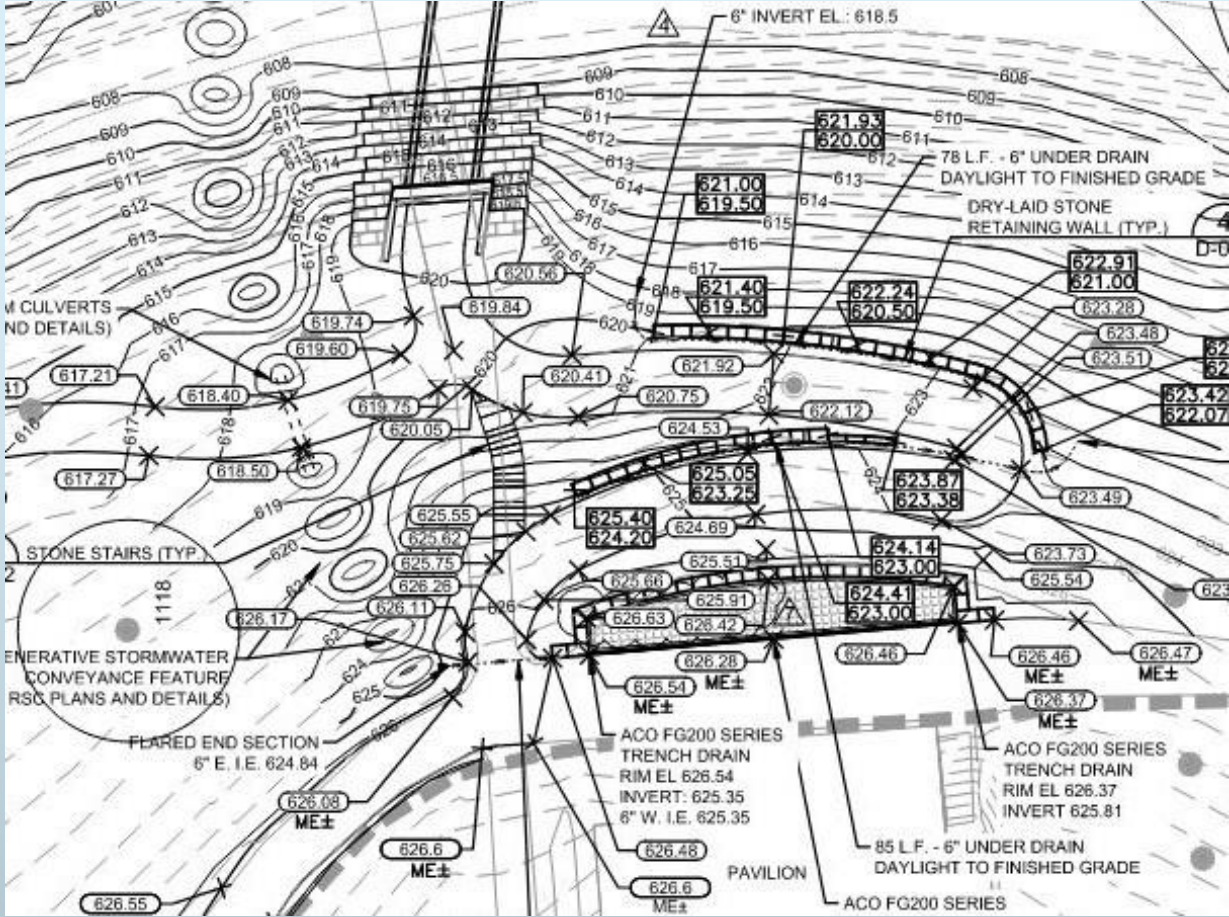
Watercourse Boulders



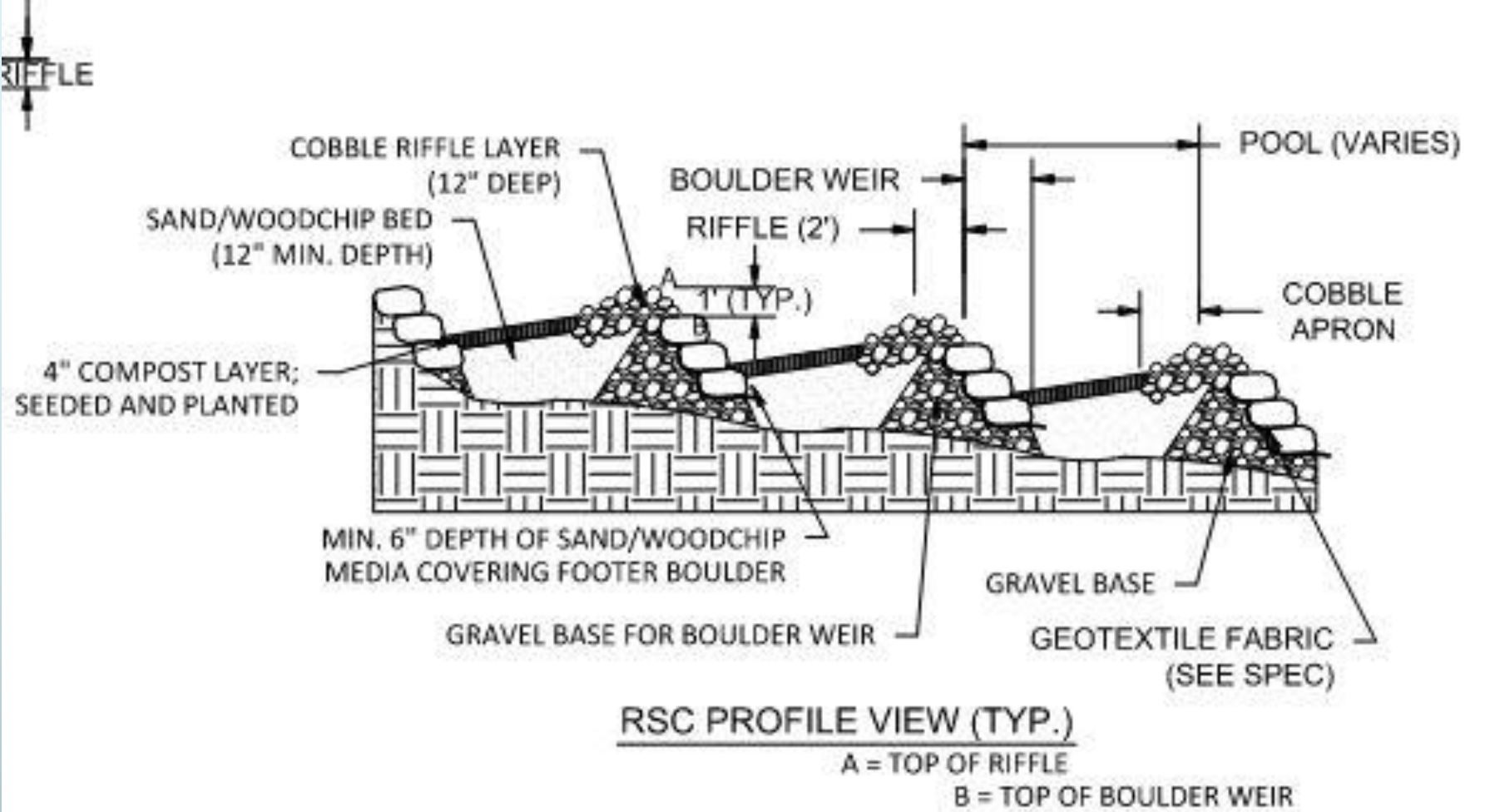
Regenerative Storm Water Conveyance



Regenerative Storm Water Conveyance



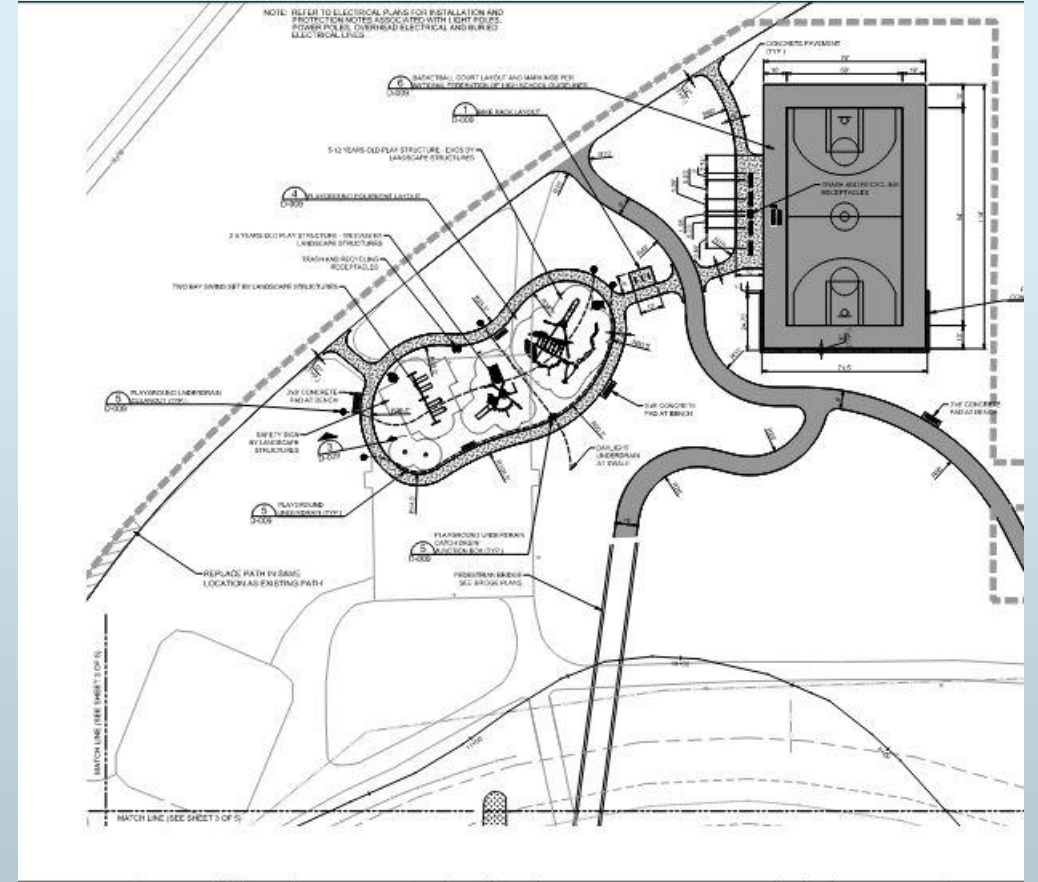
Regenerative Storm Water Conveyance



Regenerative Storm Water Conveyance



Playground and Courts for Pulaski Park



Playground and Basketball Court



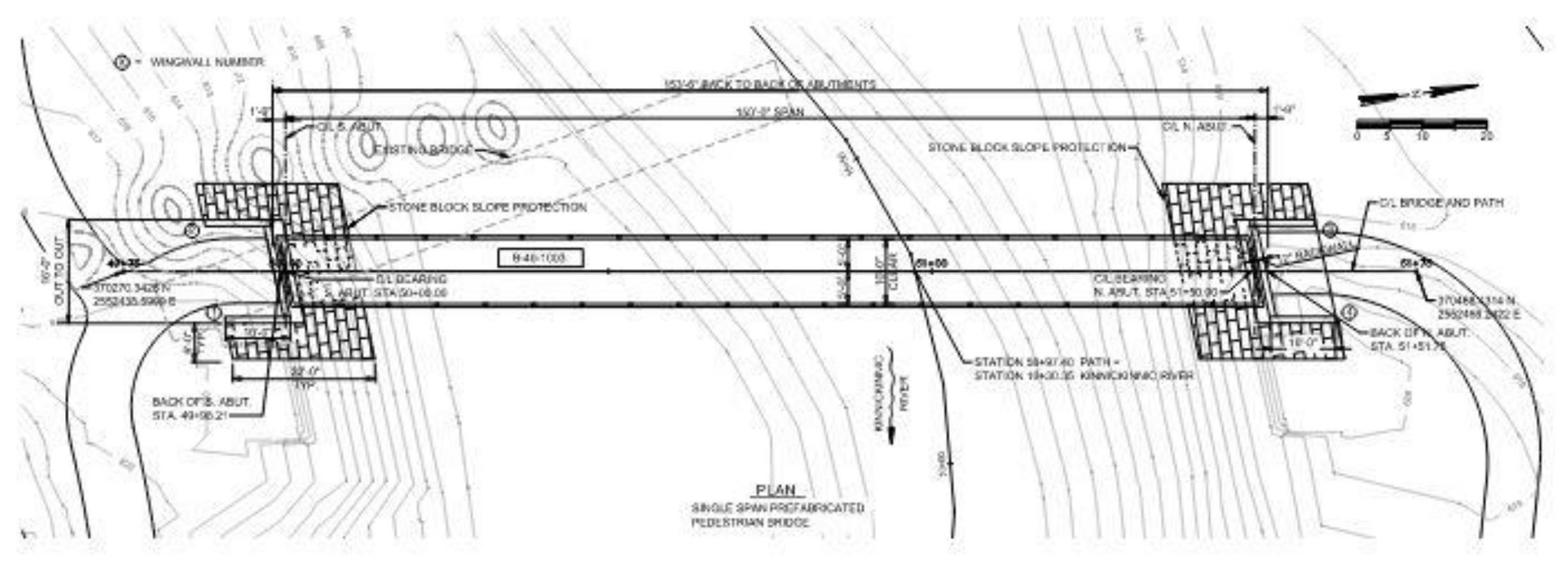
Futsal Court



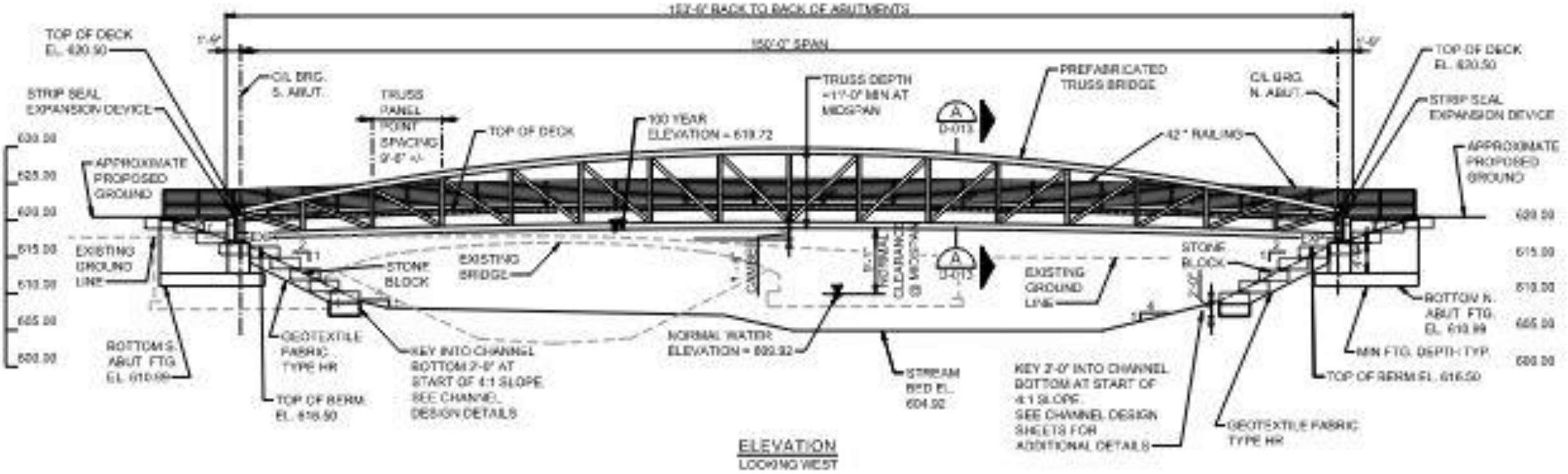
Pedestrian Bridge Replacement



Pedestrian Bridge Replacement - Plan View



Pedestrian Bridge Replacement - Elevation



Pedestrian Bridge Replacement



Pedestrian Bridge Replacement - Concrete Deck



Pedestrian Bridge Replacement

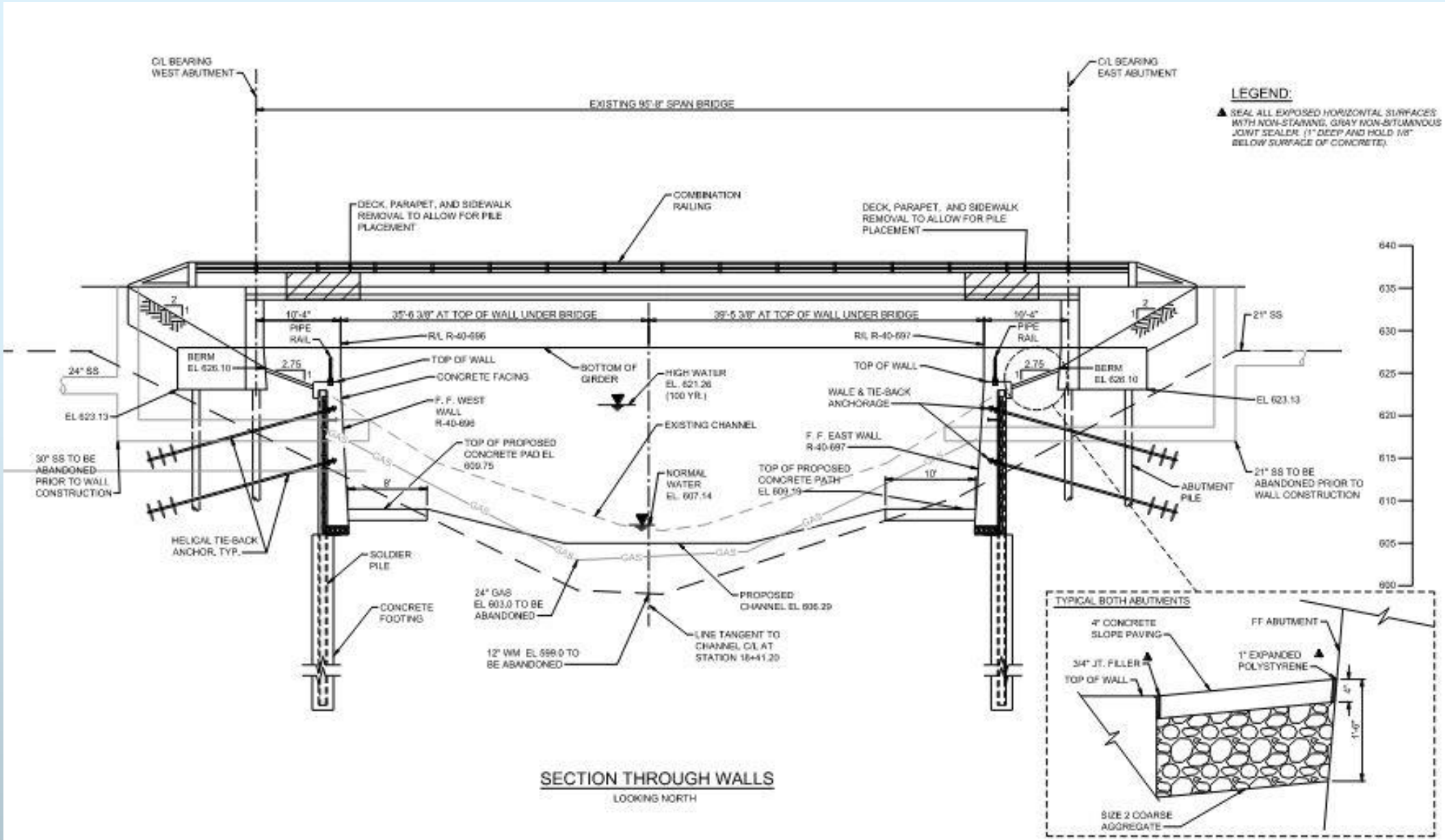


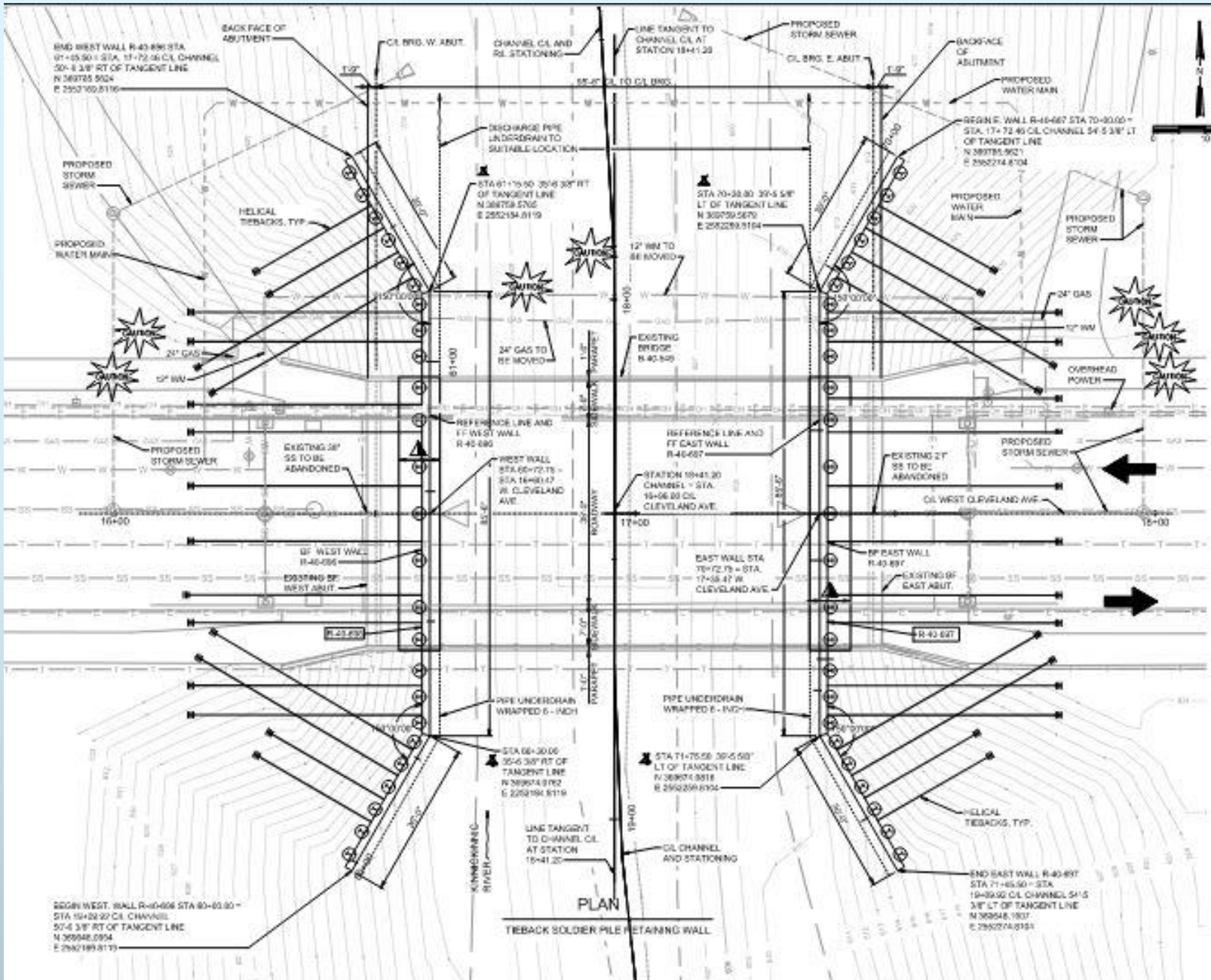
Cleveland Avenue Bridge - Before



Upstream face of Cleveland #39

Cleveland Avenue Bridge - Section





Cleveland Avenue Bridge -- Plan View

Cleveland Avenue Bridge – Drilled Piers



Cleveland Avenue Bridge - Drilled Piers



Cleveland Avenue Bridge - Walers



Cleveland Avenue Bridge - Pre-Stressed Tiebacks



Cleveland Avenue Bridge



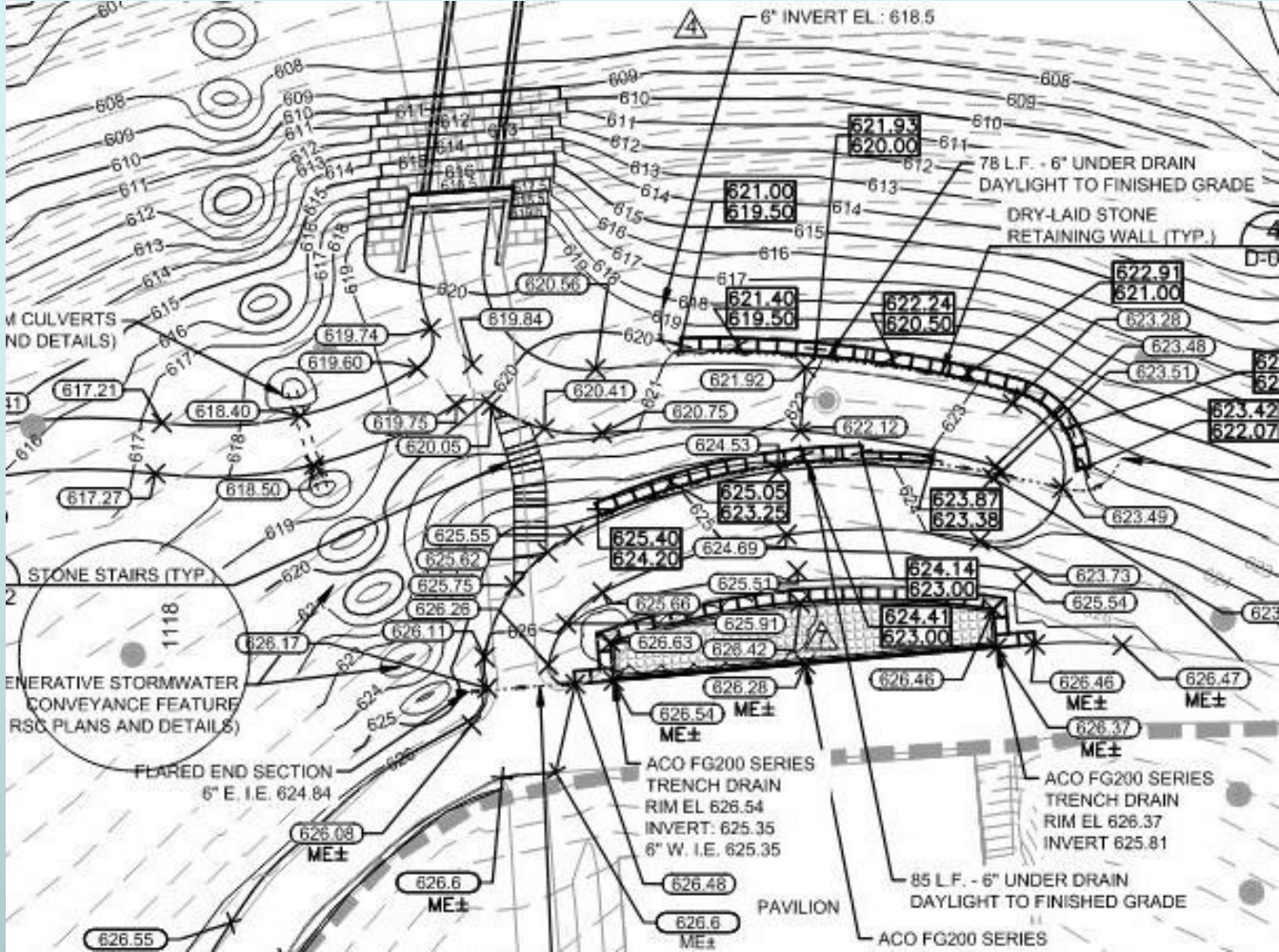
Cast-in Place Stonework



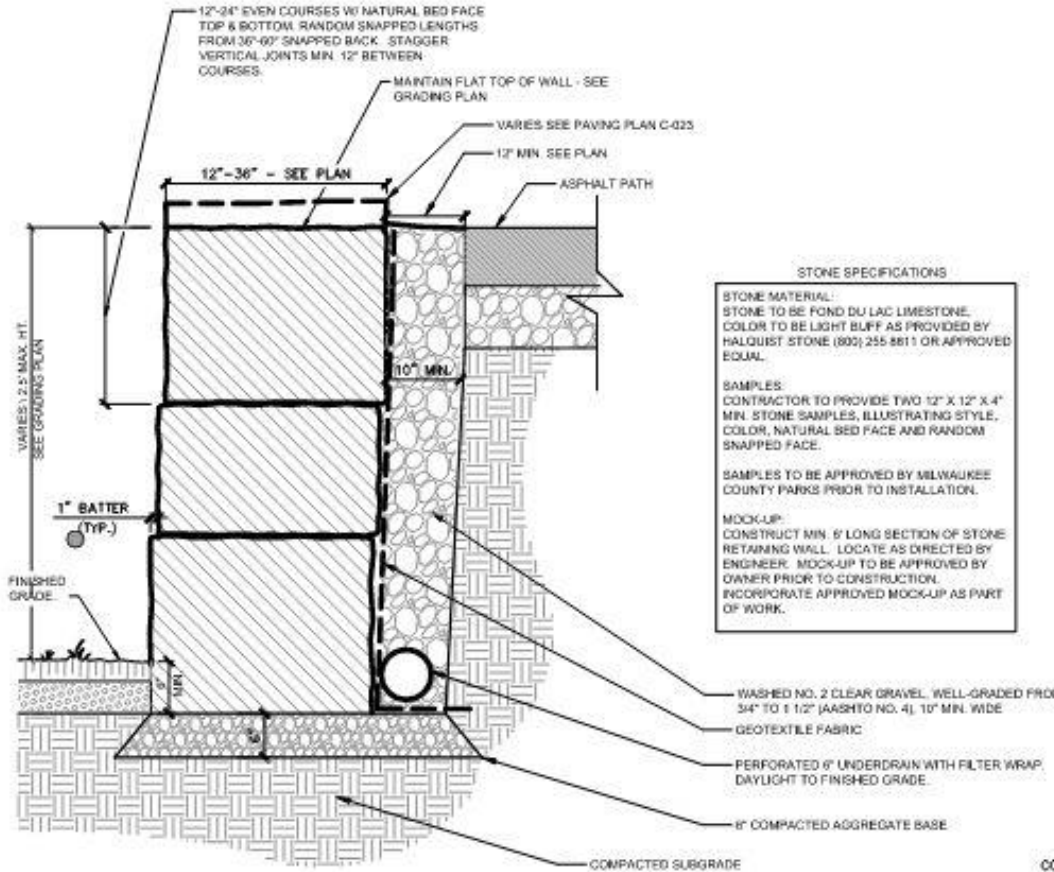
Cleveland Avenue Bridge Widening



New Plaza at the Park Pavilion



Path and Wall at the Pavilion



3 TYPICAL SECTION - DRY LAID STONE RETAINING WALL
REFER TO LAYOUT AND MATERIALS PLAN FOR LOCATIONS

N.T.S.

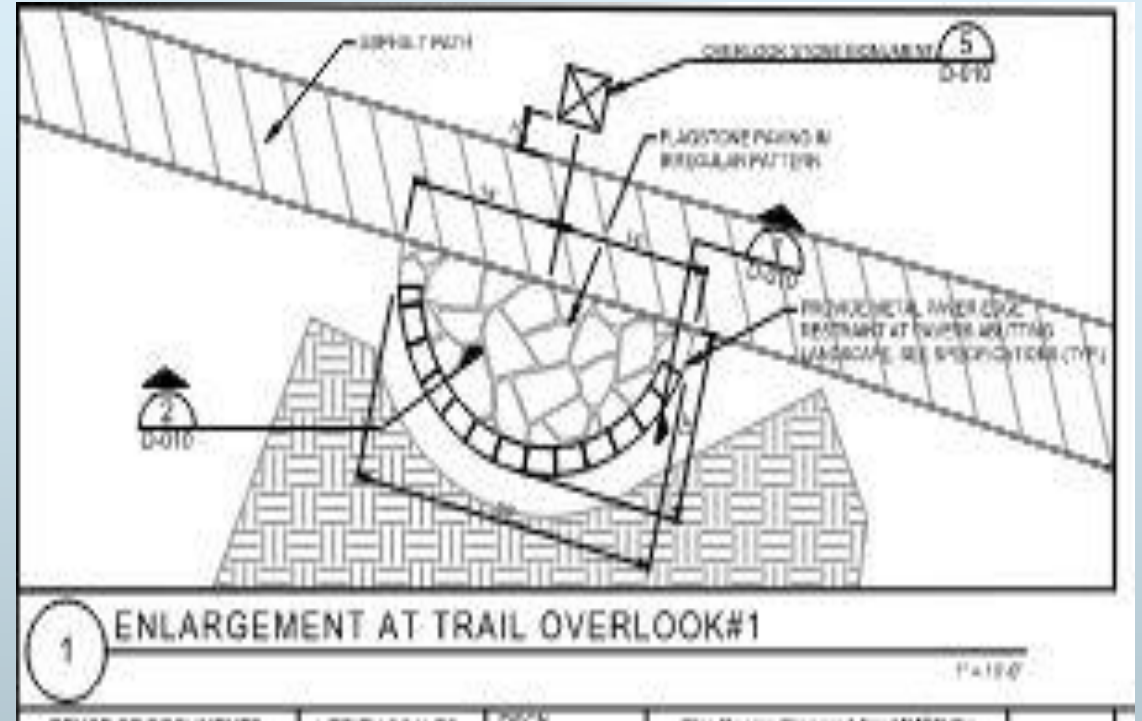
Path and Wall at the Pavilion



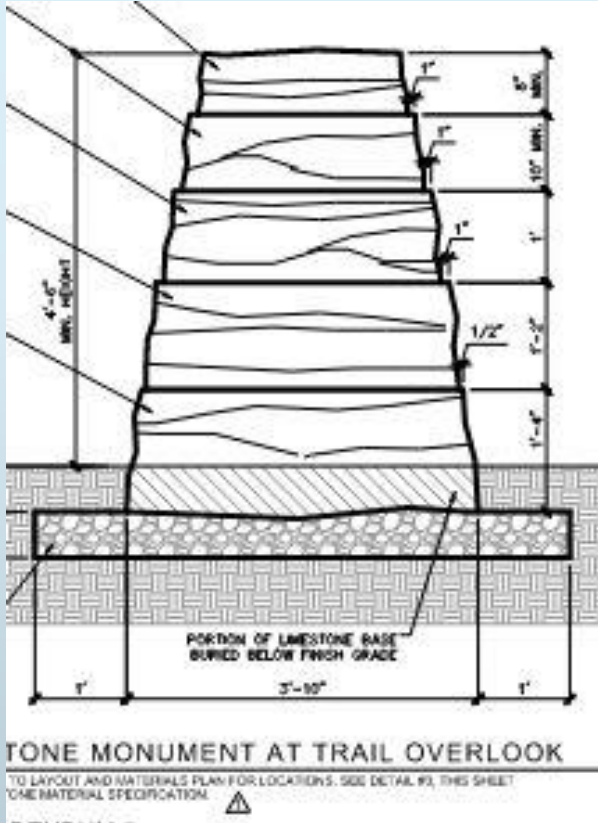
Path and Wall at the Pavilion



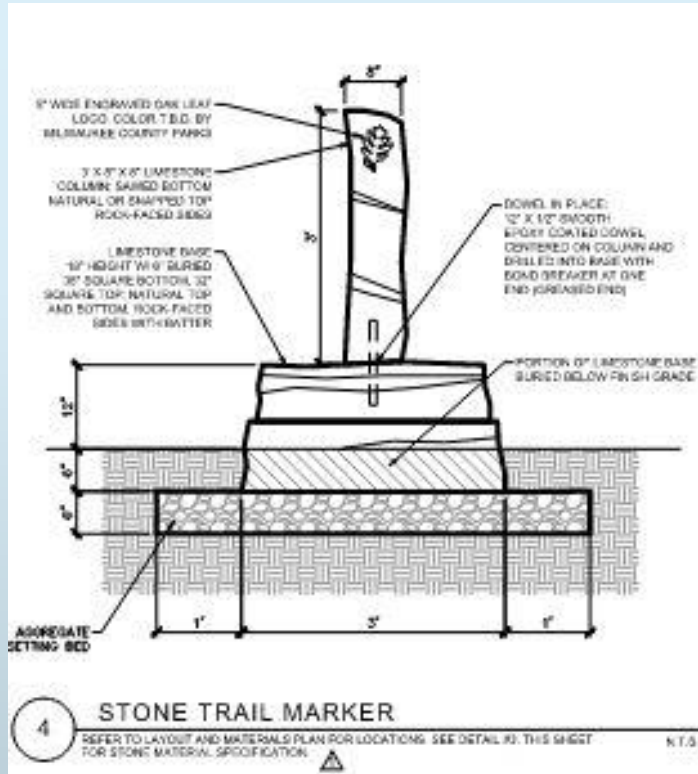
New Path Overlooks



Monuments and Trail Markers



Monuments and Trail Markers



Project Completion

- Substantially complete in August 2020
- Five-year vegetation monitoring and maintenance program



North Section, Looking Northeast

Photo: Resolution
Studio



South Section, Looking North

Photo: Resolution
Studio



QUESTIONS?

Photo: Resolution
Studio