



Build it and They Will Come

Flood Reduction and Pedestrian Access to the Huron River

Allen Creek Railroad Berm Opening Project

Presenters

- Jerry Hancock
 - Stormwater and Floodplain Programs Coordinator, City of Ann Arbor
- Jeremy Hedden
 - Project Manager, Bergmann (LEAD DESIGN FIRM)
- Greg Kacvinsky
 - Stormwater Practice Leader, OHM Advisors (SUBCONSULTANT)



BERGMANN
ARCHITECTS ENGINEERS PLANNERS



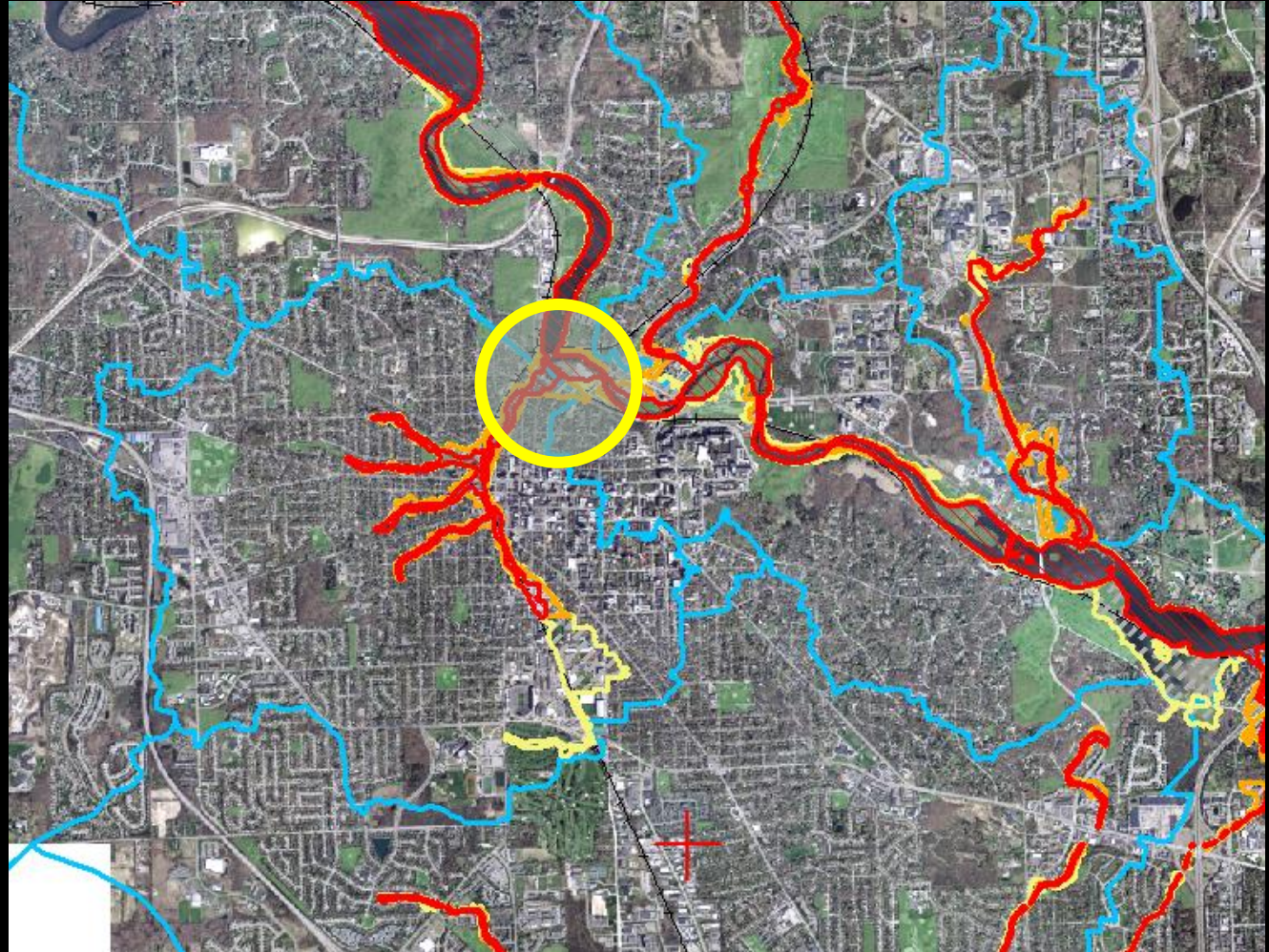
How Did We Get Here?

- Flood-prone area on north edge of downtown Ann Arbor
- Dozens of businesses and homes impacted; high flood insurance premiums



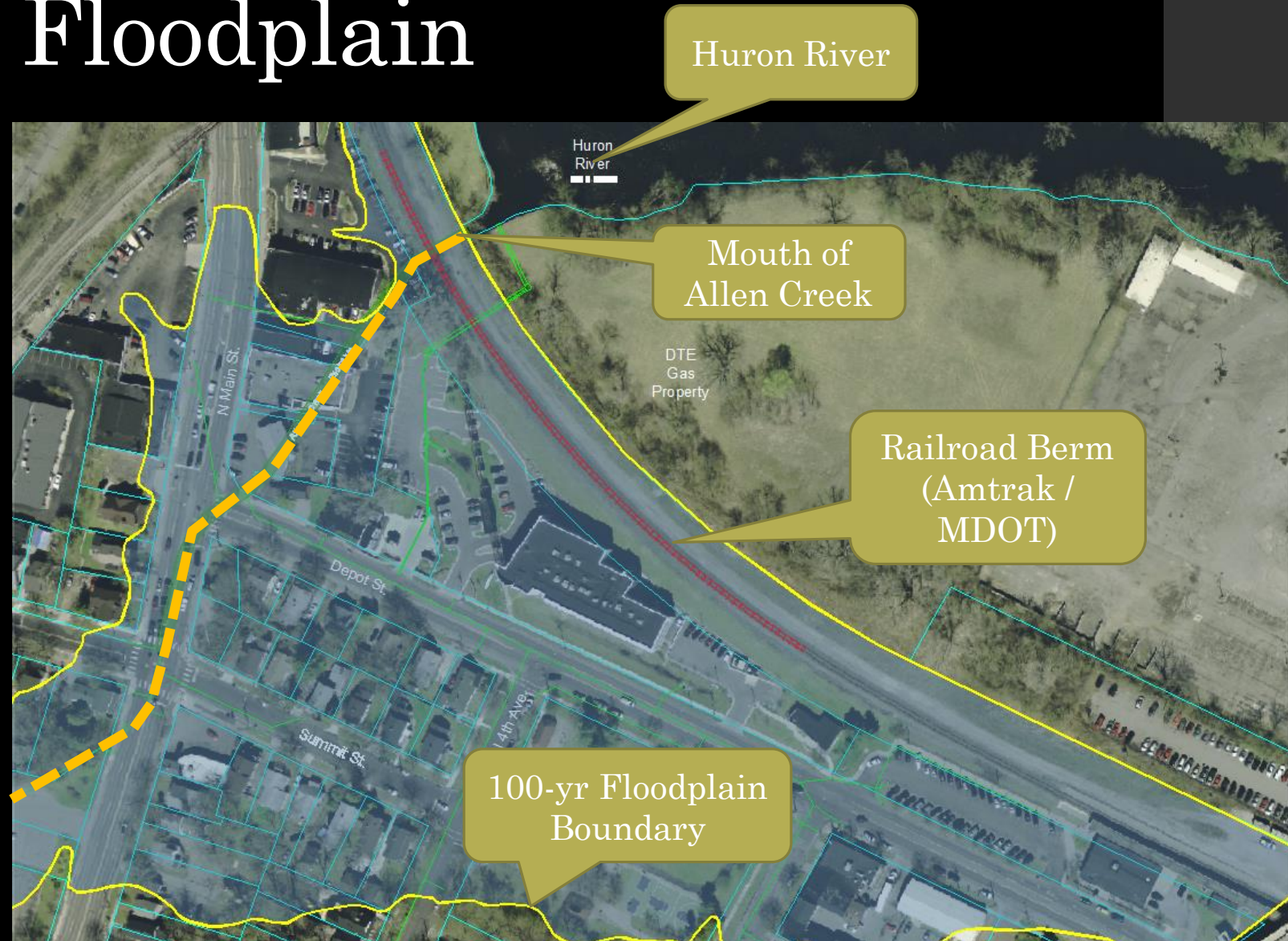
Allen Creek Floodplain

- Mouth of Allen Creek (at Huron River)
- 95-yr old enclosed channel
- 5.5 square mile watershed
- Allen Creek Capacity:
 - 2-year storm
 - Larger storms flood surrounding area

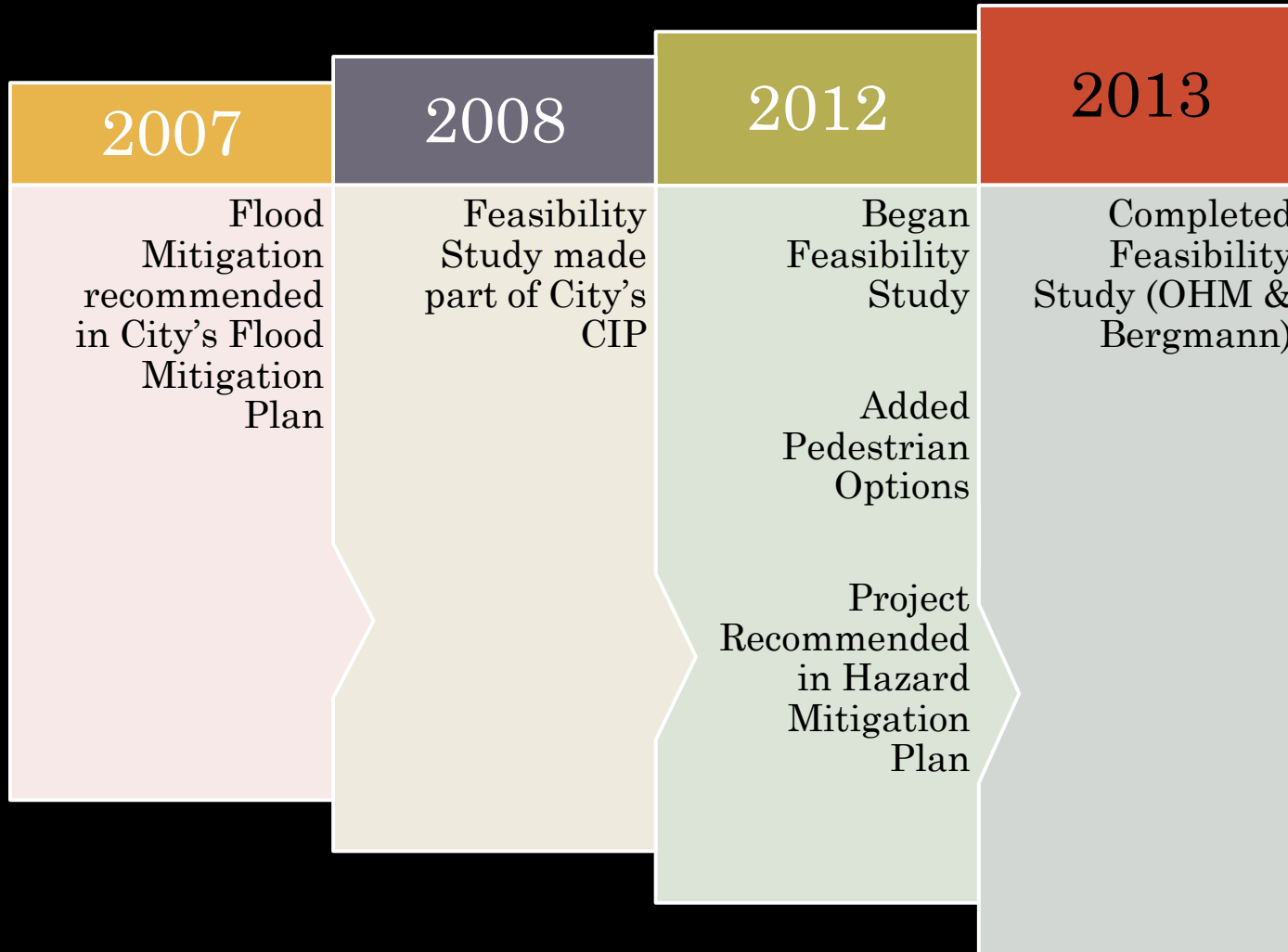


Allen Creek Floodplain

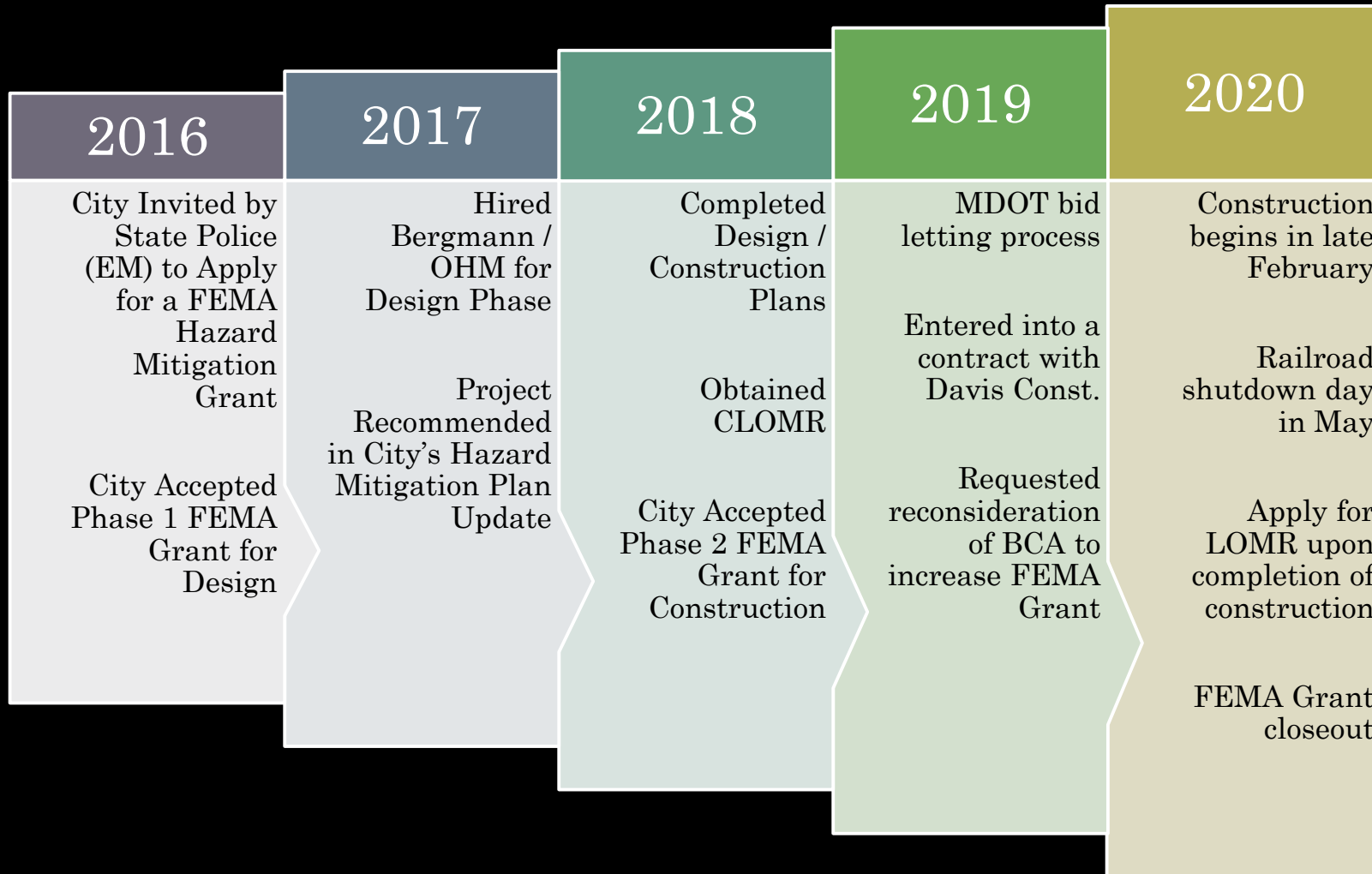
- Floodplain up to 9-10 feet deep north of Depot Street
- Existing railroad berm prevents floodwaters from reaching Huron River



Timeline



Timeline



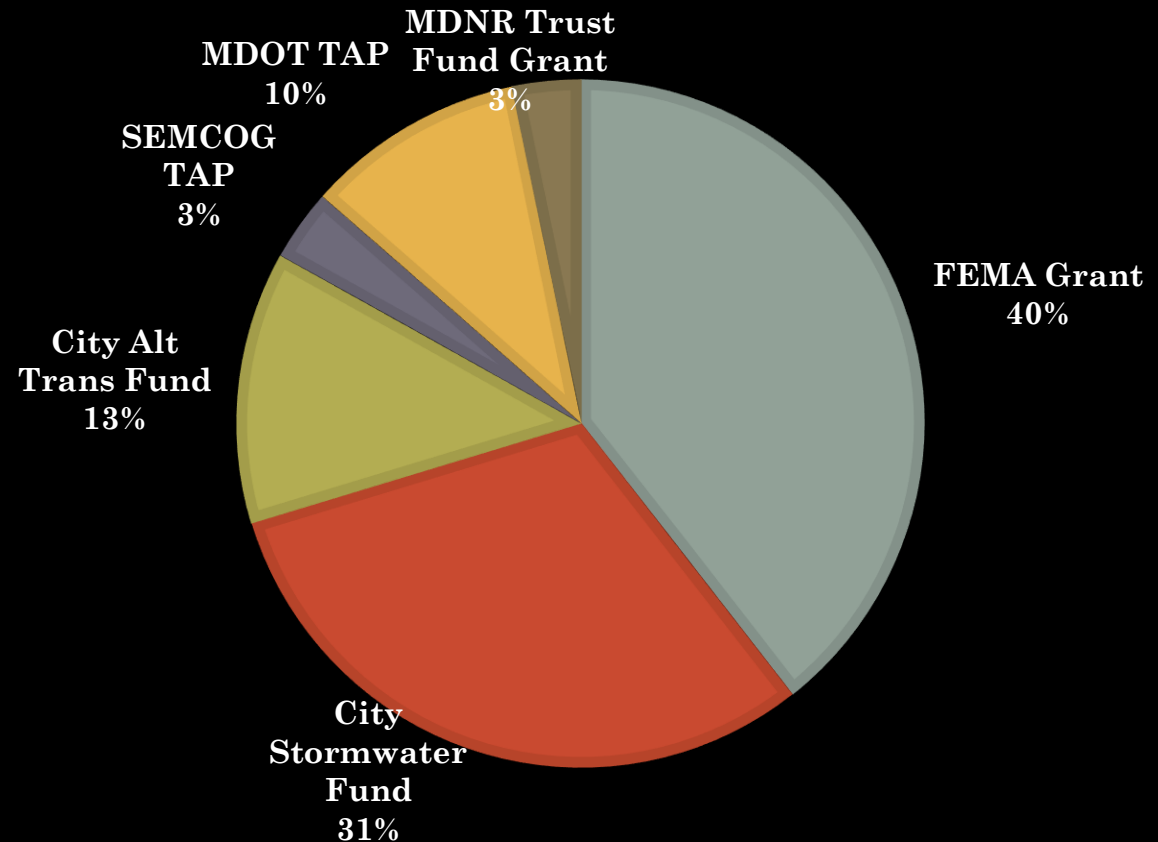
Project Funding

- FEMA Pre-Disaster Mitigation Grant:
 - \$3.7 million
- MDOT TAP
 - \$970,000
- SEMCOG TAP
 - \$315,000
- MDNR Trust Fund Grant
 - \$300,000
- City Funding
 - \$2.9 million (stormwater)
 - \$1.2 million (alt. transportation)

Estimated Project Costs

\$9.4 million

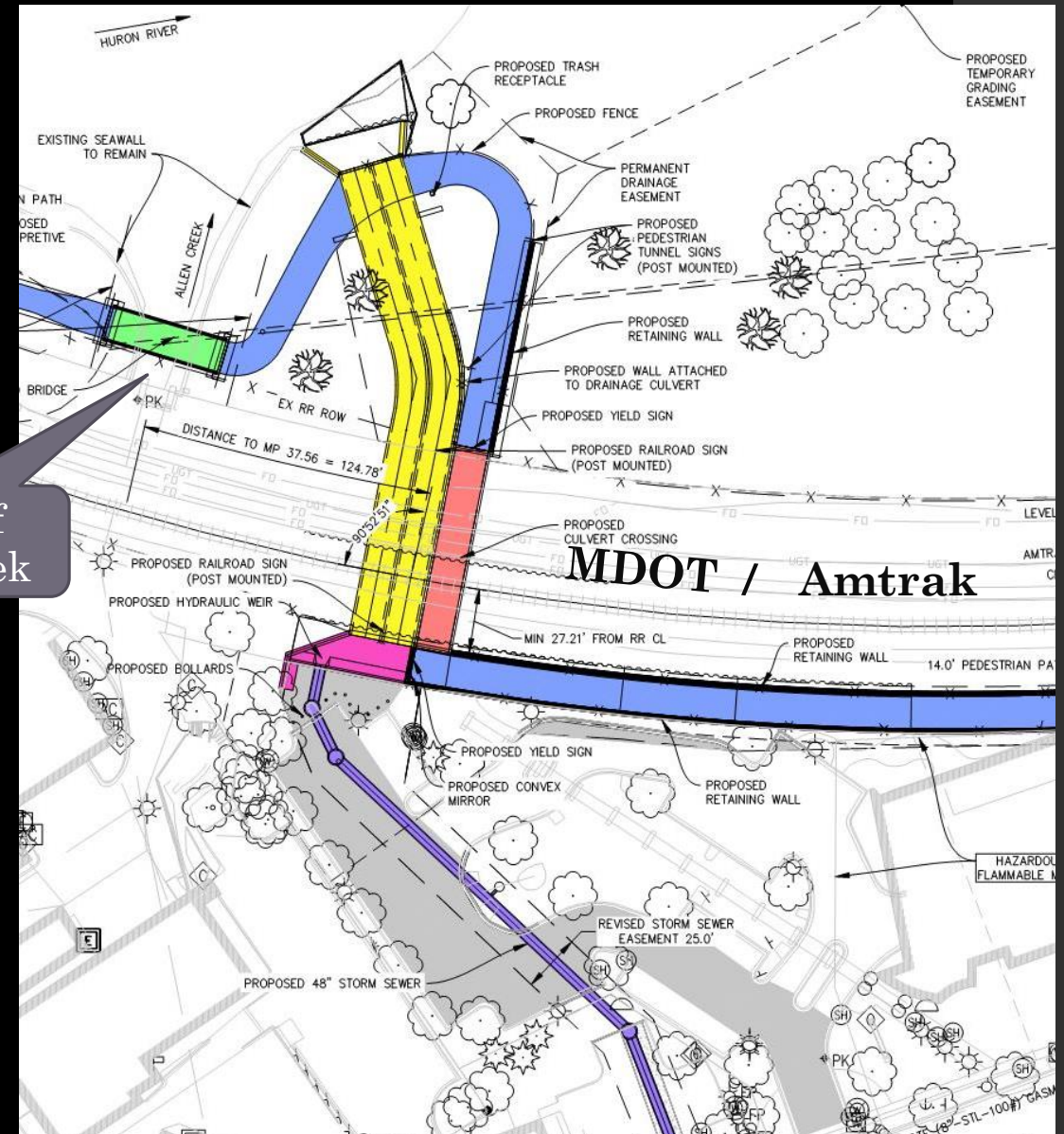
Only 44% local (City) funding



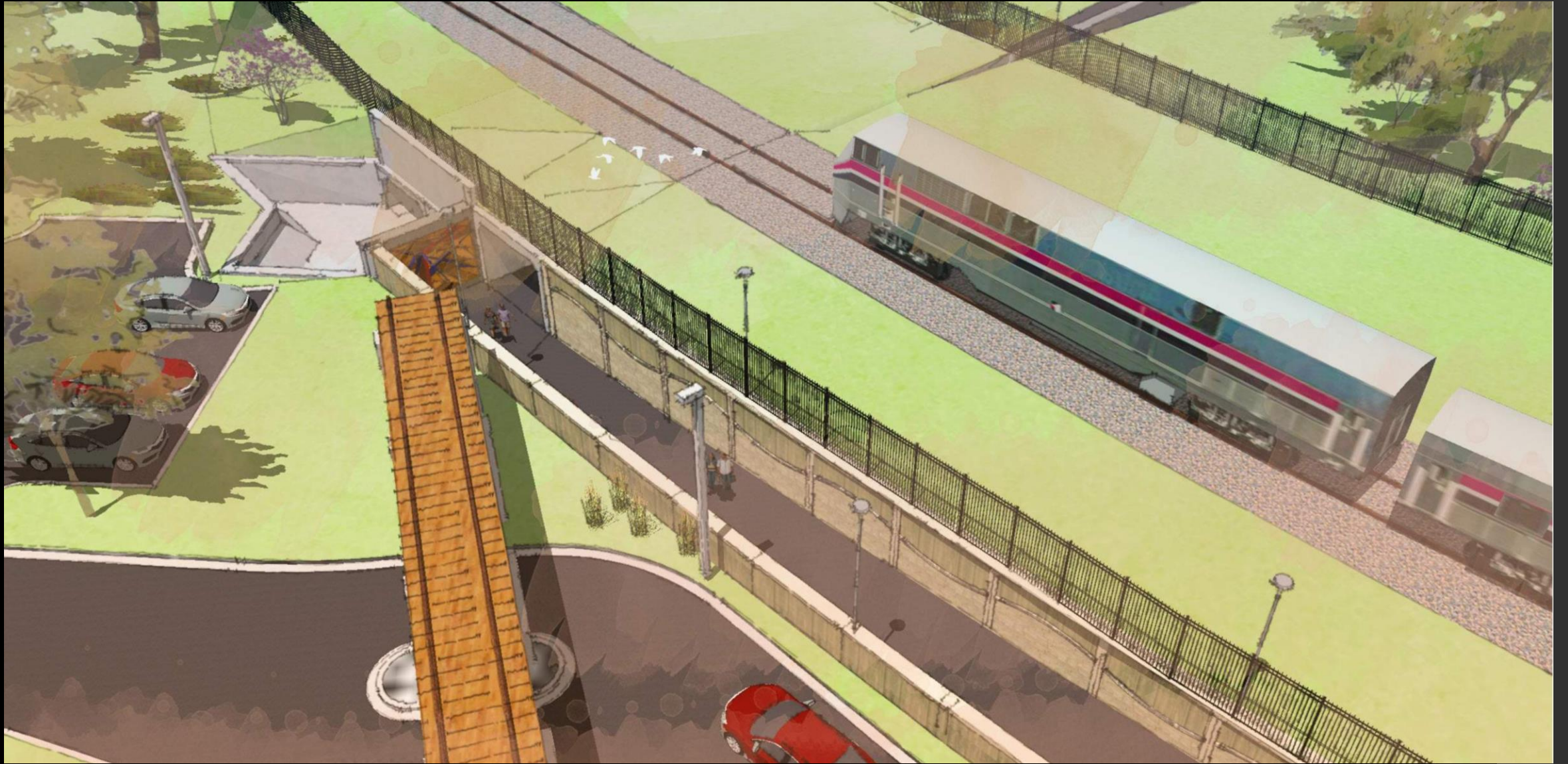
Project Overview

- Flood conveyance culvert through railroad berm
- Pedestrian tunnel to north side of railroad connecting to B2B Trail
- Reduction in 100-yr floodplain depth by over 6 feet

Mouth of Allen Creek









Huron River

DTE Gas Property

779.5

N Main St.

Depot St.

Summit St.

N 4th Ave.



Huron
River

DTE
Gas
Property

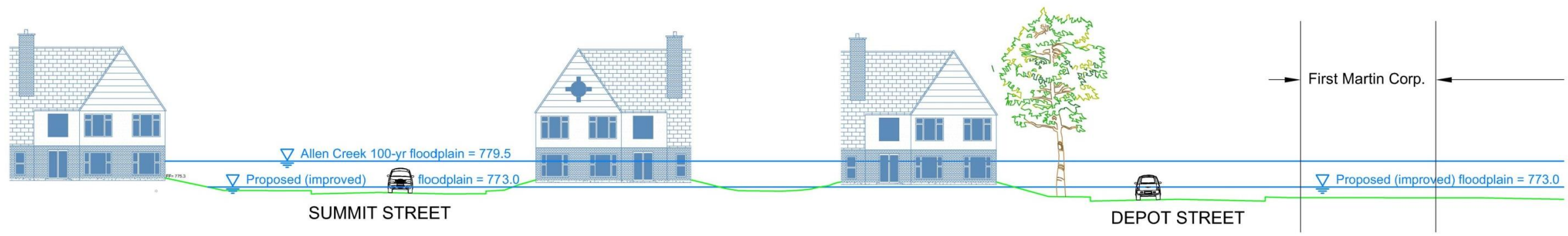
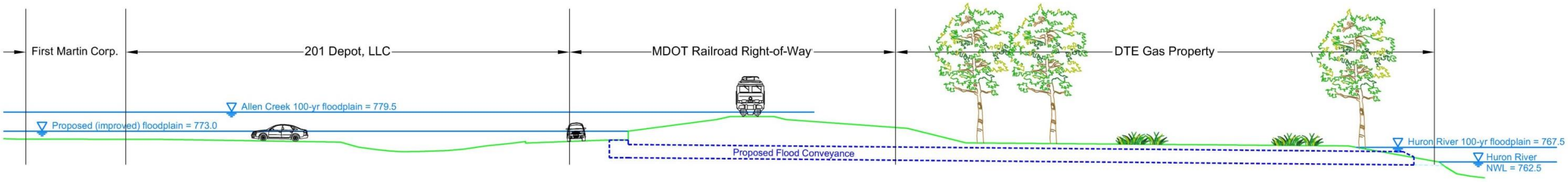
N Main St.

Depot St.

Summit St.

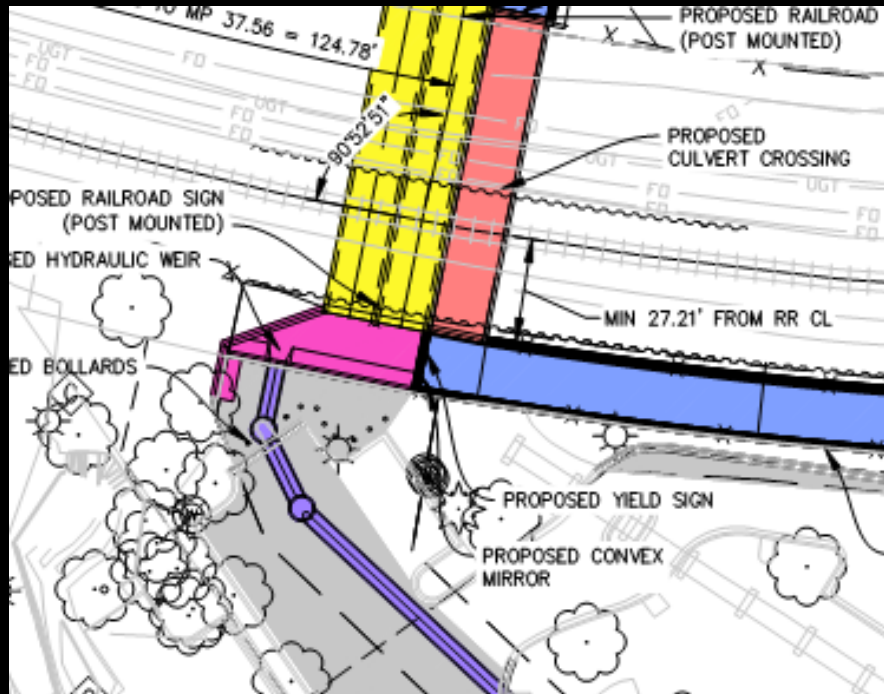
N 4th Ave.

773.0



Trading one Risk for Another

- Weir design is critical
- Safety features
- Protection of pedestrian tunnel



Pedestrian Access / High River Level

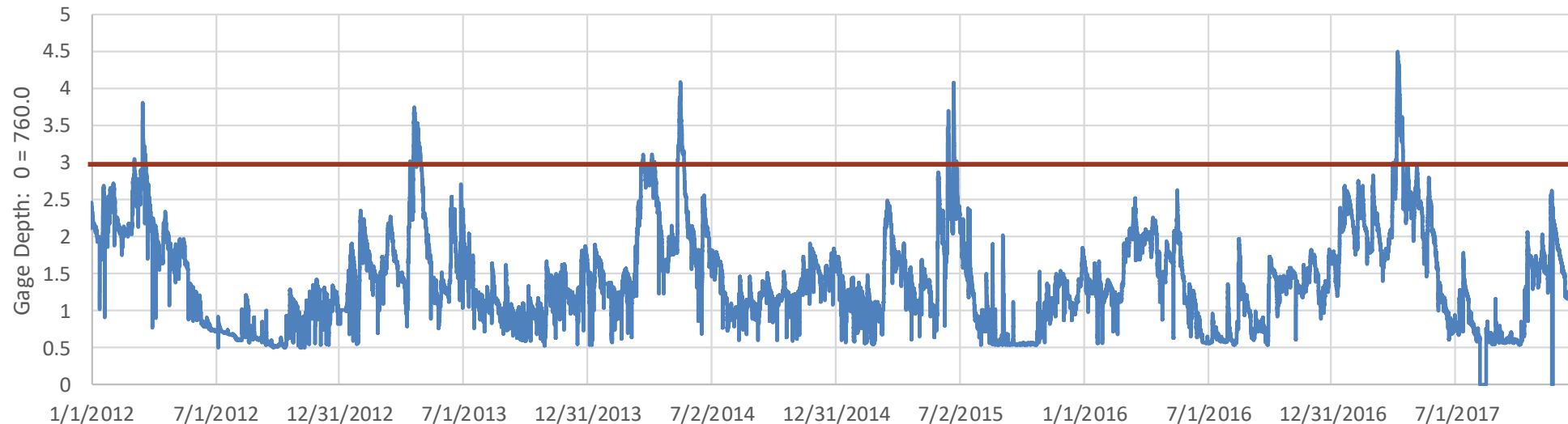
- Huron River levels fluctuate
- How does this impact the pedestrian tunnel?

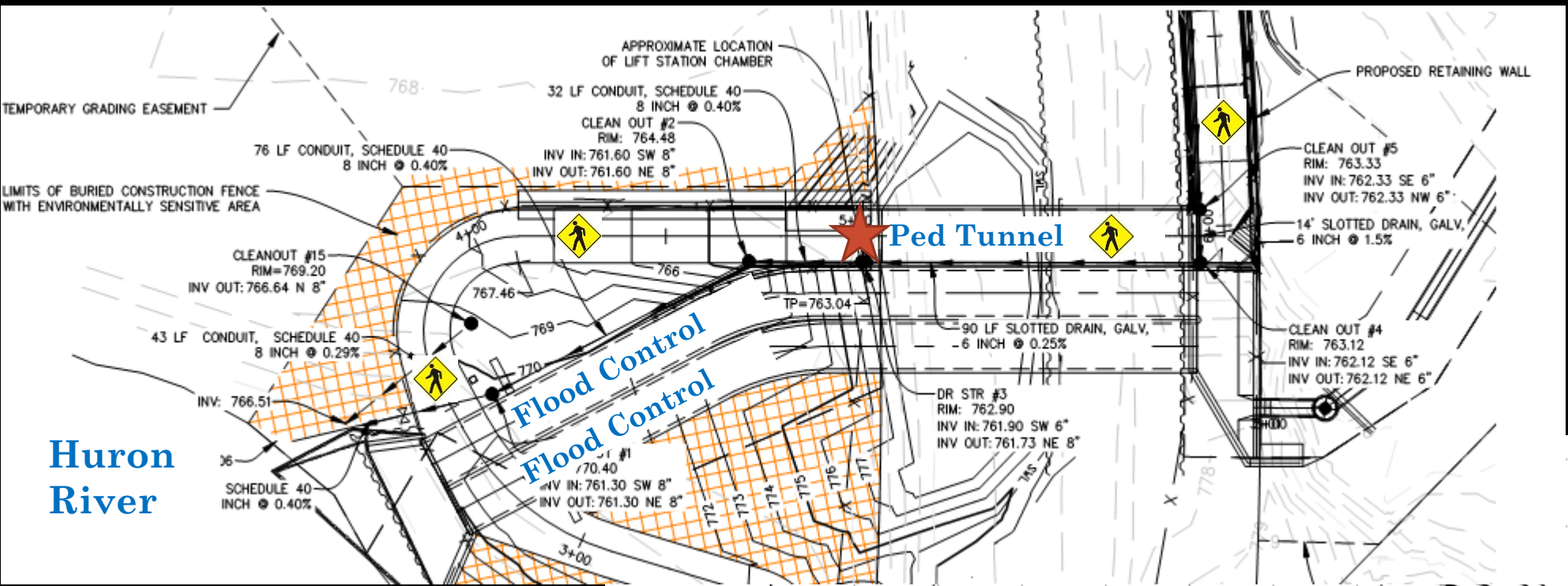


Pedestrian Access / High River Level

- USGS stream gage data from Allen Creek
- Water on sidewalk about 2% of the time (>6-inch depth, 0.8% of the time)
- Can be addressed with a sump structure and portable pump

Approx. Elevation of Huron River d/s of Argo Dam
Rolling 6-hour minimum flow depth at Allen Creek USGS Gage





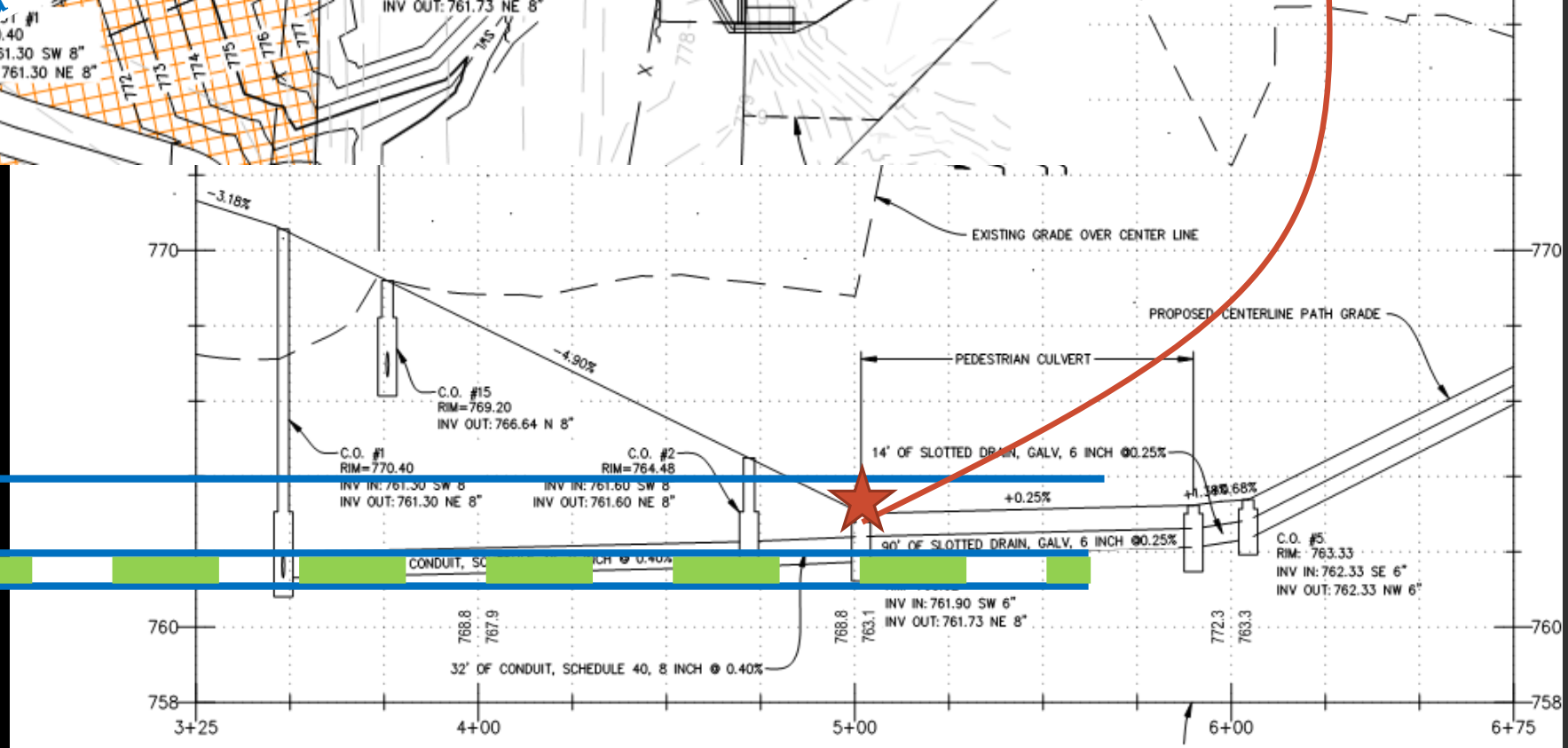
Sump pump (deploy as needed)



Huron River

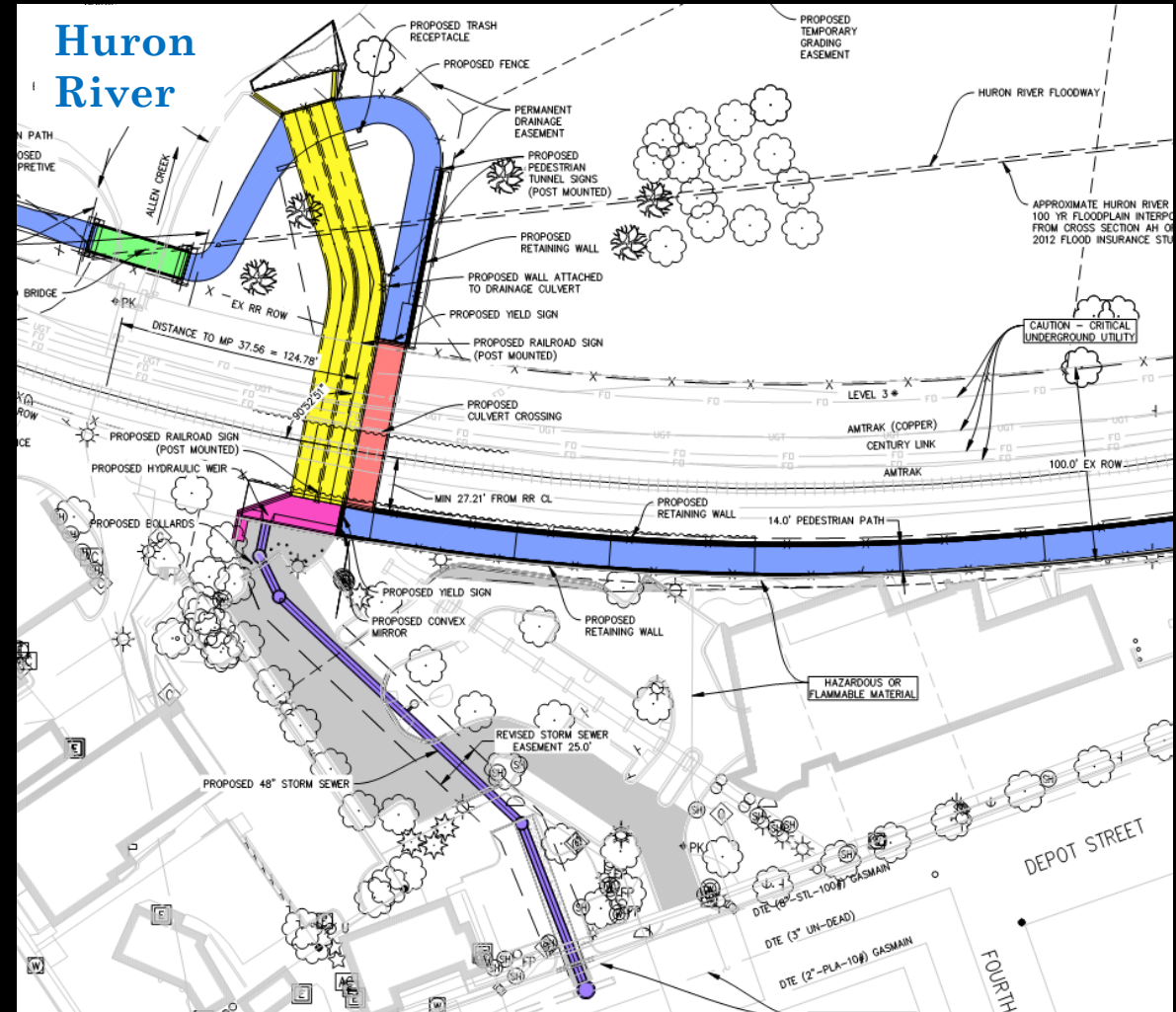
Huron River Level (Seasonal High)

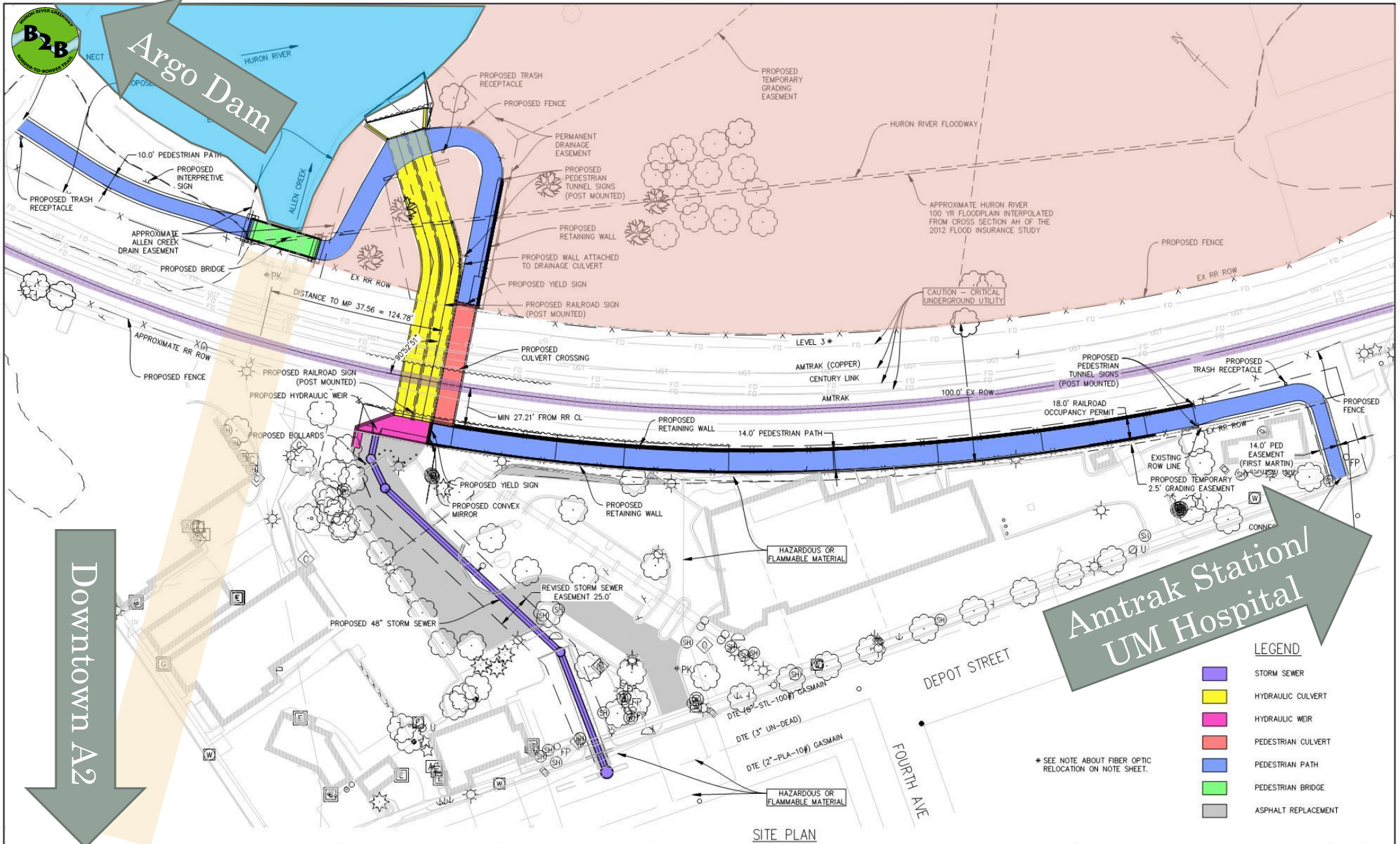
Huron River Level (Normal Range)



Designing for Complex Issues

- Railroad considerations (Amtrak / NS)
- Fiber optic relocation
- Private property concerns
- Pedestrian safety





Argo Dam

Downtown A2

Amtrak Station/
UM Hospital

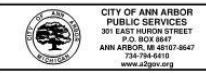
LEGEND

- STORM SEWER
- HYDRAULIC CULVERT
- HYDRAULIC WEIR
- PEDESTRIAN CULVERT
- PEDESTRIAN PATH
- PEDESTRIAN BRIDGE
- ASPHALT REPLACEMENT

* SEE NOTE ABOUT FIBER OPTIC RELOCATION ON NOTE SHEET.

SITE PLAN

PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DRAWN BY: BERGMANN DATE: 01/24/2018
 CHKD BY: BERGMANN CORR BY: DESIGN UNIT: HEDDEN
 FILE: C:\00 SITE PLAN.dwg TSC: BRIGHTON

CS: TA 81000
 JN: 200818A

SITE PLAN		DRAWING	SHEET
		SITE	13
		001	13



Amtrak

- Closure and timing
- Phasing to prepare for closure
- Fencing / safety
- Train station location

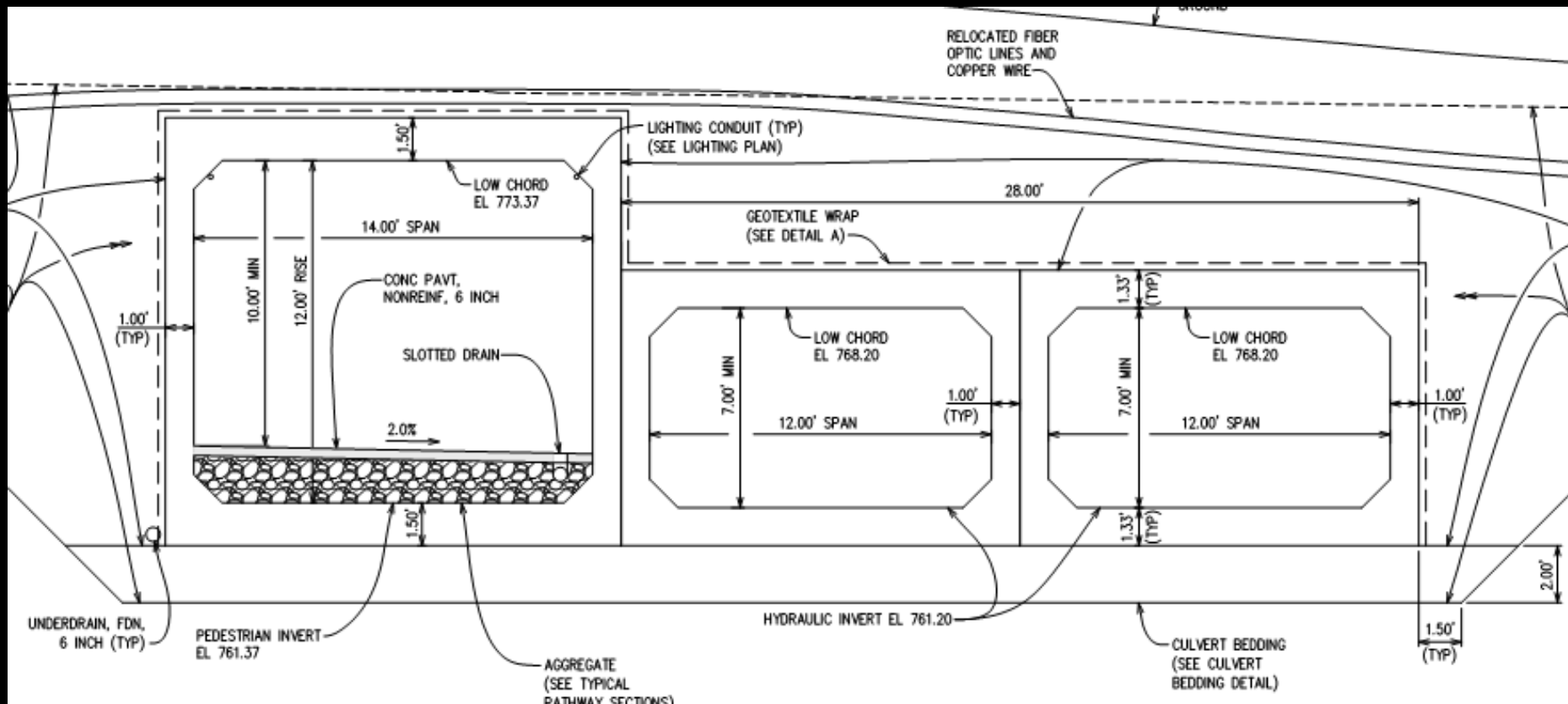
Fiber Optic Relocation

- Three separate fiber lines
- Pre-design coordination
- Relocation of conduits above proposed box culvert sections
- Significant cost component



Pedestrian Access / Flood Control

- Short rail closure requires box culverts to be built at same elevation
- Aggregate and concrete cap in pedestrian culvert keeps ped path elevated





Private Property Concerns

- Proper direction of pedestrian movement
- Fencing and access control
- Parking and construction-phase disruptions
- Preservation of old rail trestle

Questions