

I-69 & I-465 Interchange

Large sanitary sewer and twin sludge lines relocations AKA, the exciting part buried under the new freeway.

PRESENTED BY:
Jeff Glover, PE
Senior Project Manager



WHAT IS THE I-69 FINISH LINE?

- Last segment of I-69 from Martinsville to I-465 in Indianapolis and adding an additional travel lane on I-465 from I-65 to I-70 on the southwest side of Indianapolis.
- 26+ miles of new highway.
- 8 miles of new lanes for a wider I-465.
- New local access roads.
- Dozens of bridges will be built, rehabilitated, or replaced.
- Open to traffic by the end of 2024.



THE EXCITING PART UTILITY RELOCATION - SWDI & TRSL

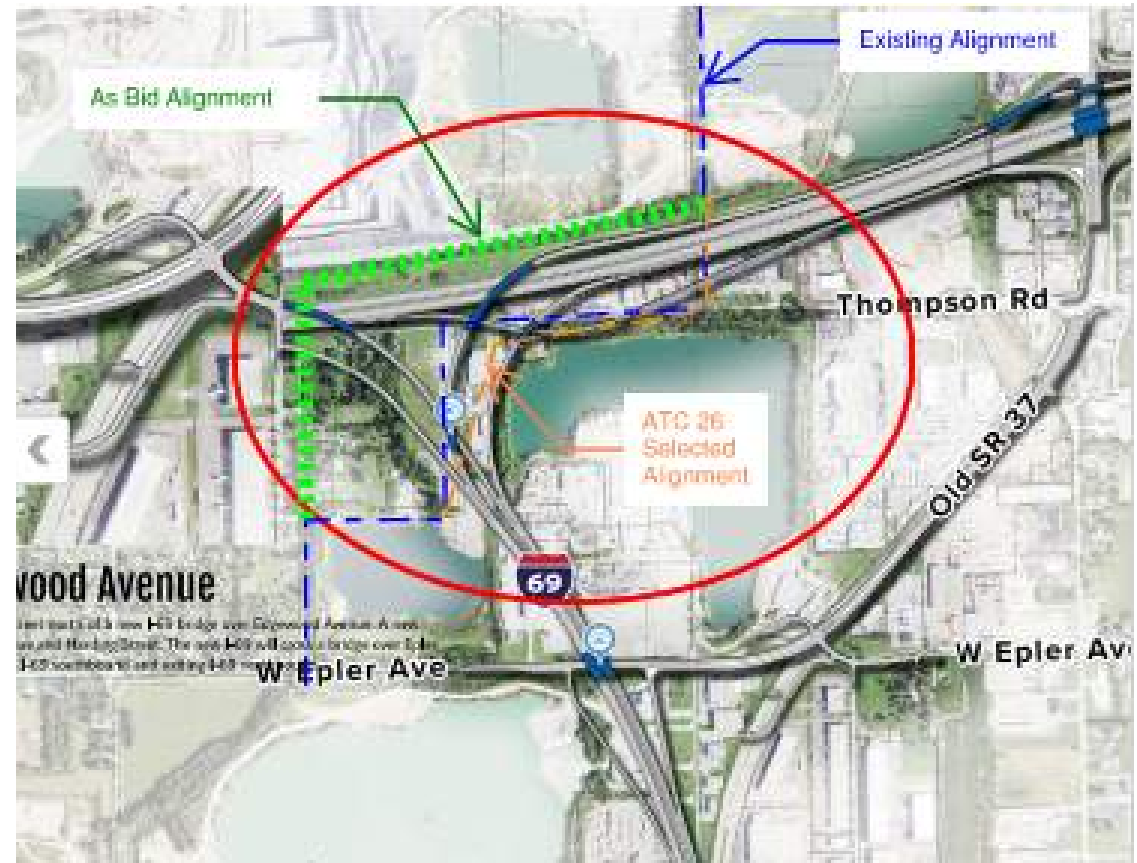
- I-69 & I-465 Interchange required relocation of two utilities connecting Indianapolis's two large WWTPs
 - A single 84/90 inch gravity line called the Southwest Diversion Interceptor and
 - 16 inch twin force mains referred to as the Twin Residuals Sludge Lines



CONSTRUCTION CONTRACT METHOD

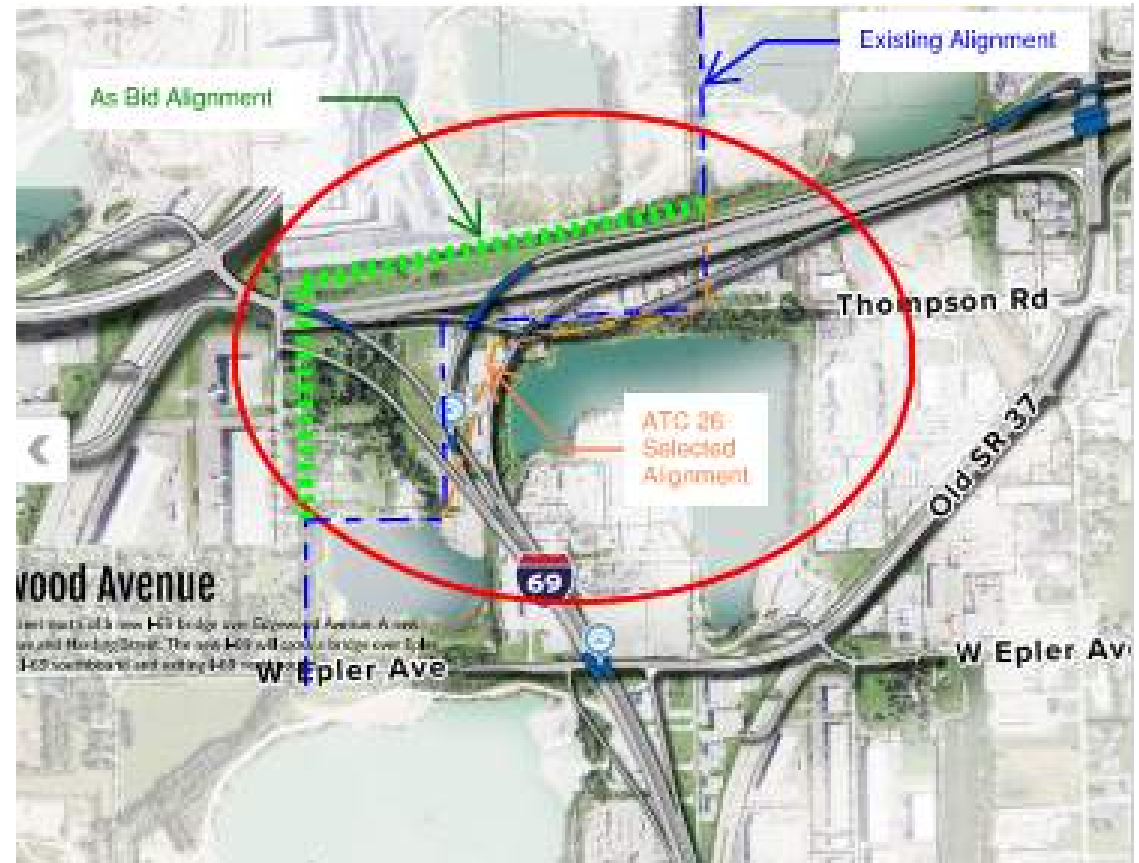
- **Design Build Project for overall Construction**

- Alternative Technical Concept (ATC 26) presented at bid to lower cost.
 - Base design included 570 feet of 11-foot diameter steel ribs and lagging cased tunnel beneath I-465 and 4,500 ft of total alignment replacement
 - Alternative concept considered routing utilities between ramps and bridges to avoid expensive tunnel construction with only 2,800 ft of alignment replacement.
 - Anticipated cost savings of \$9 million.



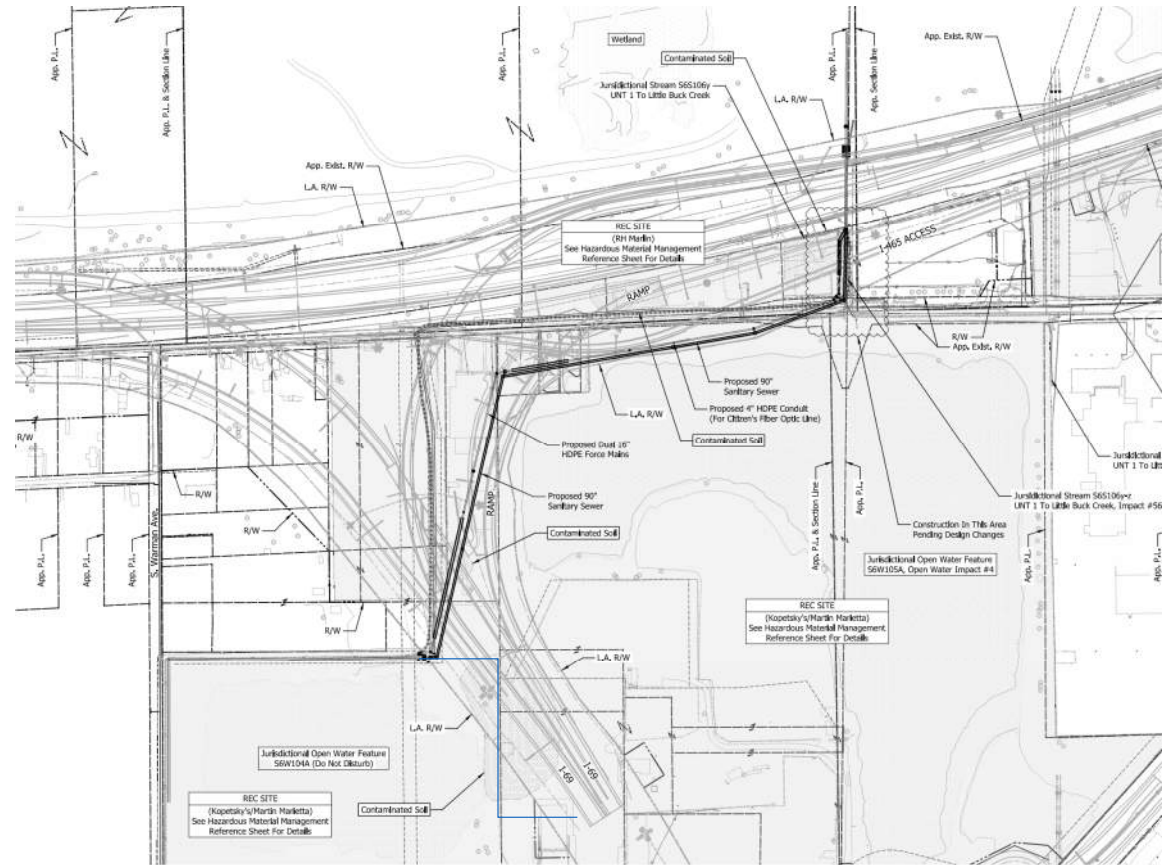
APPROVED ATC 26

- Engineer was a part of the Walsh-Milestone Joint Venture Design Build team.
- Coordinated with INDOT and Citizens Energy Group for approval of the alternative alignment and construction materials.
- Engineer provided design and construction phase engineering services as required to protect and/or move utilities as needed.



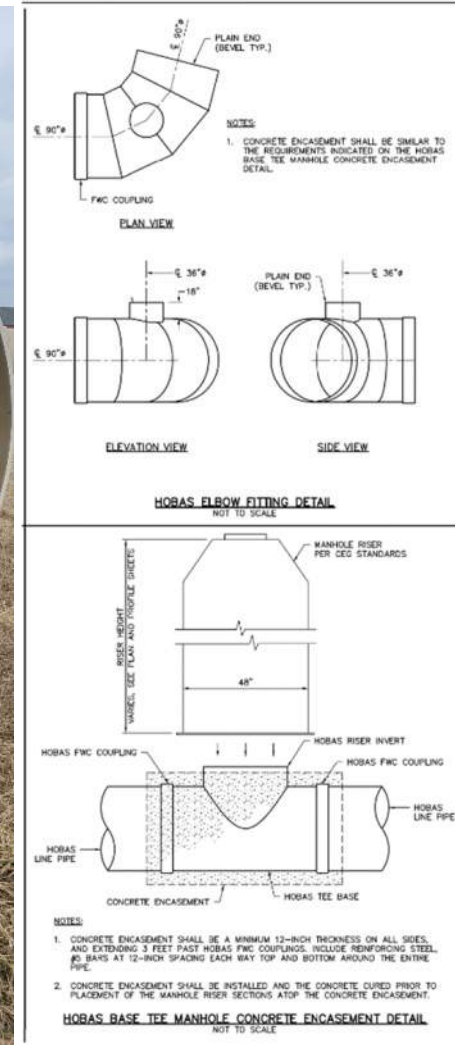
DESIGN COMPONENTS

- 2,800 feet of both:
 - A 90-inch diameter HOBAS sanitary sewer.
 - Twin 16-inch diameter HDPE sludge lines.
- Manhole Structures
- Connection Structures to existing 90-inch sewers
- Valve Vaults on Sludge Lines
- Air Release Valves on Sludge Lines



MATERIALS UTILIZED

- Construction of the project included the following:
 - 90-inch diameter HOBAS sanitary sewer.



MATERIALS UTILIZED

- Construction of the project included the following:
 - Twin 16-inch HDPE sludge lines
 - Isolation Valves
 - Air Release Valves

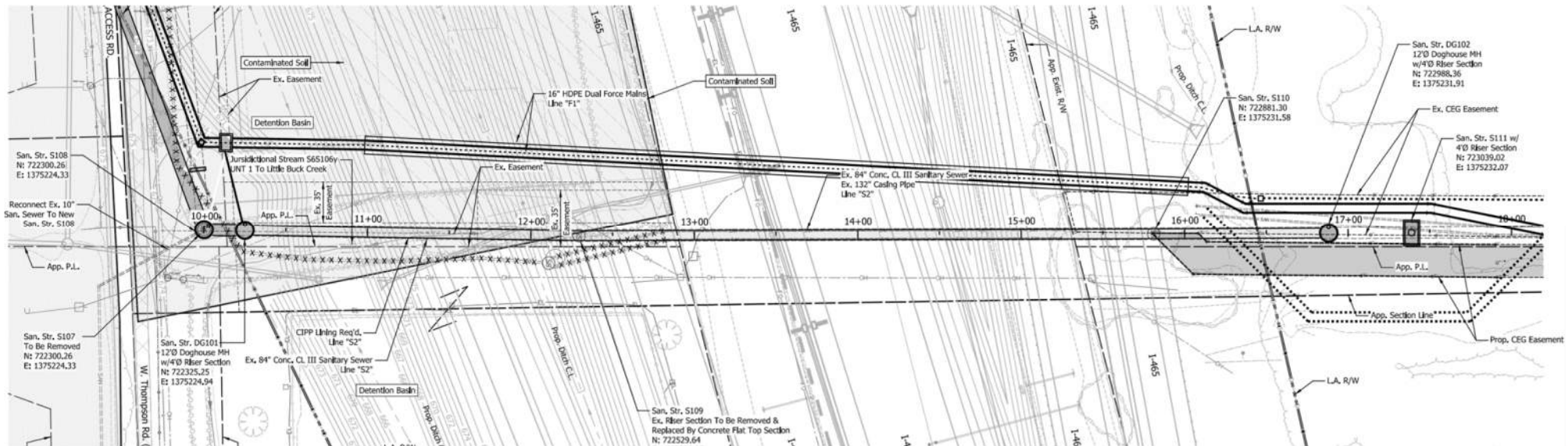


CONSTRUCTION – OPEN CUT FOR SEWER INSTALLATION



ADDITIONAL DESIGN COMPONENTS

- CIPP Lining of existing 84 inch beneath I-465.
- Jack and Bore for twin sludge lines beneath I-465.

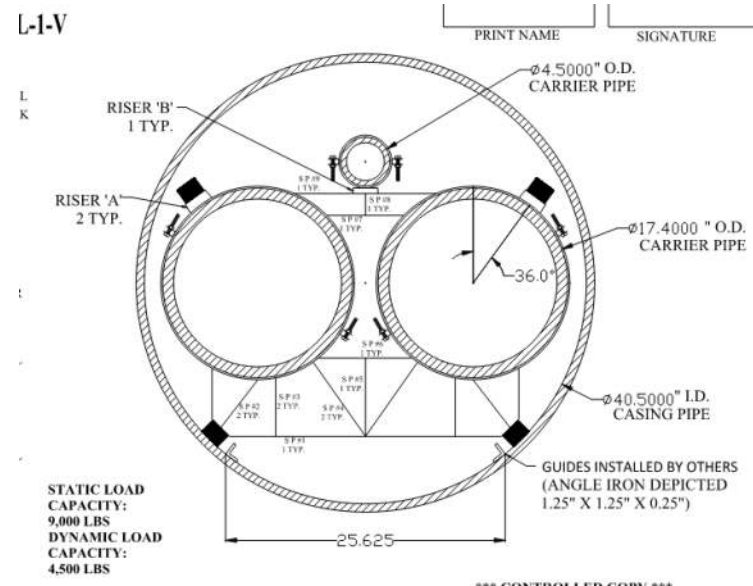


CONSTRUCTION – CURED IN PLACE PIPE LINING BENEATH I-465



JACK AND BORE CONSTRUCTION

- 42-inch x ½ inch steel casing pipe.
- Dual 16-inch HDPE Force Mains with a 4-inch conduit for future Fiber Optic.



JACK AND BORE CONSTRUCTION



CONSTRUCTION

- Bypass to install new utilities:

54 MGD @ 93' TDH

Six (6) CD400M | Primary Pumpsets

- Automatic Start/Stop by Level Transducers
- PrimeGuard Controller w/ FST

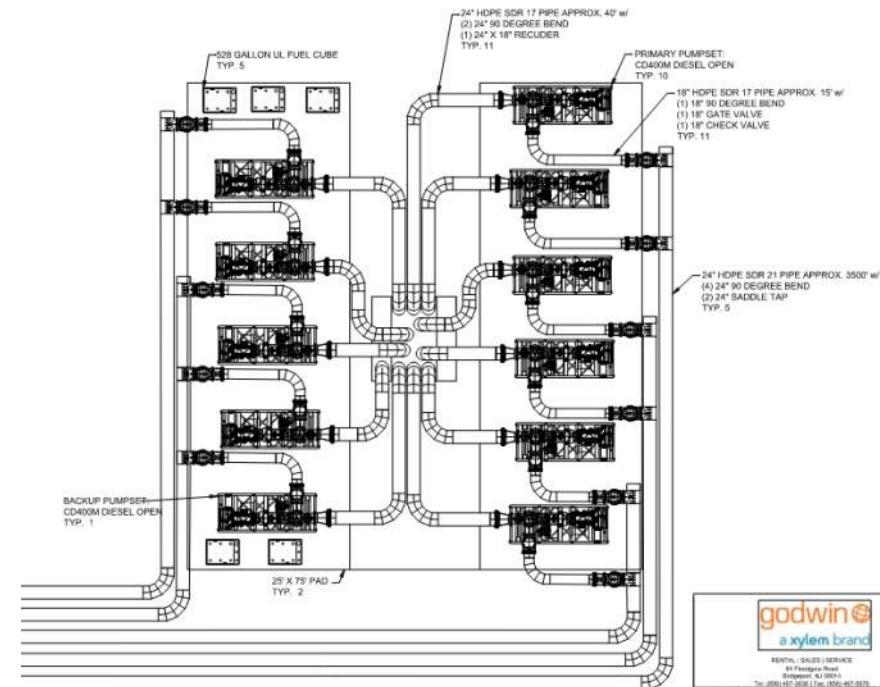
36 MGD @ 100' TDH

Four (4) CD400M | Primary Pumpsets

- Automatic Start/Stop by Level Transducers
- PrimeGuard Controller w/ FST

One (1) CD400M | Backup Pumpset

- Automatic Start/Stop by Level Transducers
- PrimeGuard Controller w/ FST



DESIGNED BY: AND YEA	DESIGNED CHECKED AND YEA	APPROVED BY: N. ERAZO	DATE: 11/11/2014
DESIGNED BY: I-PLANE CONSULTANTS	DESIGNED CHECKED: AS	APPROVED BY: TERRY	DATE: 11/11/2014

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1-69 UTILITY RELOCATE
OVERVIEW
INDIANAPOLIS, IN

CONSTRUCTION

- Bypass to install new utilities:



BYPASS TO INSTALL NEW UTILITIES.



CONSTRUCTION

- Abandonment and fill of pipelines.



Date: 1/18/2023
 Contractor: Walsh Construction
 Project: INDOT 41536



MixOnSite respectfully submits the following mix design for the above referenced project:

LOW DENSITY CELLULAR CONCRETE		
Cast Density (ASTM C495 / C796)	Max 30 PCF	
Strength Specification 28 Day (ASTM C495 / C796)	Min 40 PSI	
Material	Specification & Description	Per Cubic Yard*
Cement (ASTM C150)	Portland Cement Type I/II	400 lbs
Foam (ASTM C796/ASTM 869)	Aerlite Preformed Foam	21.43 cf
Water**	Potable	220 lbs

*Actual amount of material in each cubic yard may vary slightly depending on density of material being placed.

** Actual water/cement ratio may range between 0.5 and 0.7.

CONSTRUCTION

- Abandonment and fill of pipelines.



COLLABORATION



AMERICAN
STRUCTUREPOINT
INC.



THANK YOU!

AMERICAN STRUCTUREPOINT