

# Walk Bridge Project

Norwalk Harbor Management  
Commission

Permit Pre-application Coordination

March 27, 2019



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# Meeting Agenda

1. Introductions & Meeting Purpose
2. Project Overview and Update
3. Overview of Permit Plates and Construction Activities
4. Marine Staging Yard
5. MNR duct bank
6. Protective Measures
7. Water Quality Monitoring Program
8. Sediment Dewatering Program
9. Marine Safety – Vessel Relocation
10. Next Steps
11. Questions & Comments













# Project Update

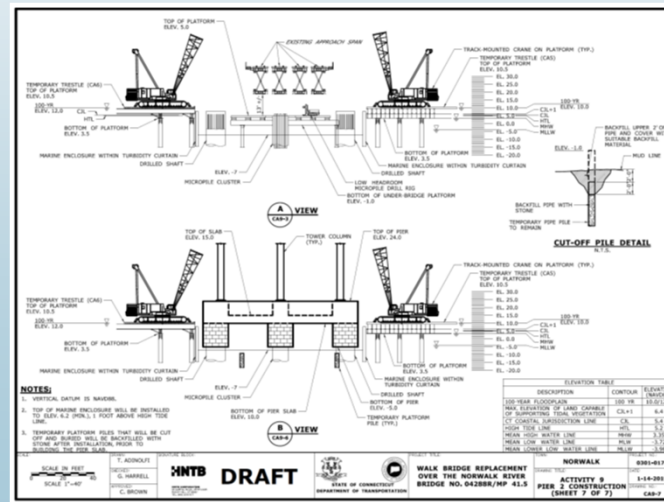
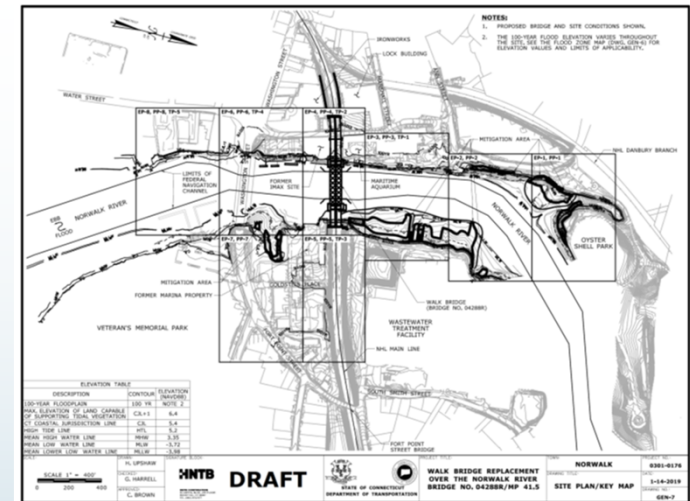
- Advancing project design
- Advancing preparation of permit applications including plates, impact quantities, narratives and mitigation
- Ongoing coordination with U.S. Army Corps of Engineers, U.S. Coast Guard, and CT DEEP
- Ongoing coordination with Norwalk Shellfish Commission and Harbor Management Commission
- Ongoing coordination with City





# Permit Plates

- Overview Plates
  - Existing & Proposed Conditions
  - Temporary Conditions
  - Tidal Wetland Mitigation
- Construction Activity Plates
  - Representation of construction activity within resource areas
  - Step by step details for 18 Major Activities
  - Plan views
  - Elevation/Section Views



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# Construction Activity Overview



NUMBER	CONSTRUCTION ACTIVITY
1	IMAX REMOVAL
2	<b>DUCT BANK INSTALLATION</b>
3	VESSEL DOCK RELOCATION
4	<b>MARINE STAGING YARD</b>
5	NORTHWEST TRESTLE
6	SOUTHWEST TRESTLE
7	NORTHEAST TRESTLE
8	SOUTHEAST TRESTLE
9	PIER 2
10	PIER 3
11	SUBMARINE CABLE INSTALLATION
12	SUBMARINE CABLE REMOVAL
13	SWING SPAN REMOVAL
14	EXISTING PIER REMOVAL
15	FENDER INSTALLATION
16	WETLAND MITIGATION
17	DREDGING
18	LIFT SPAN INSTALLATION

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# Marine Staging Yard Area



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# Marine Staging Yard Area

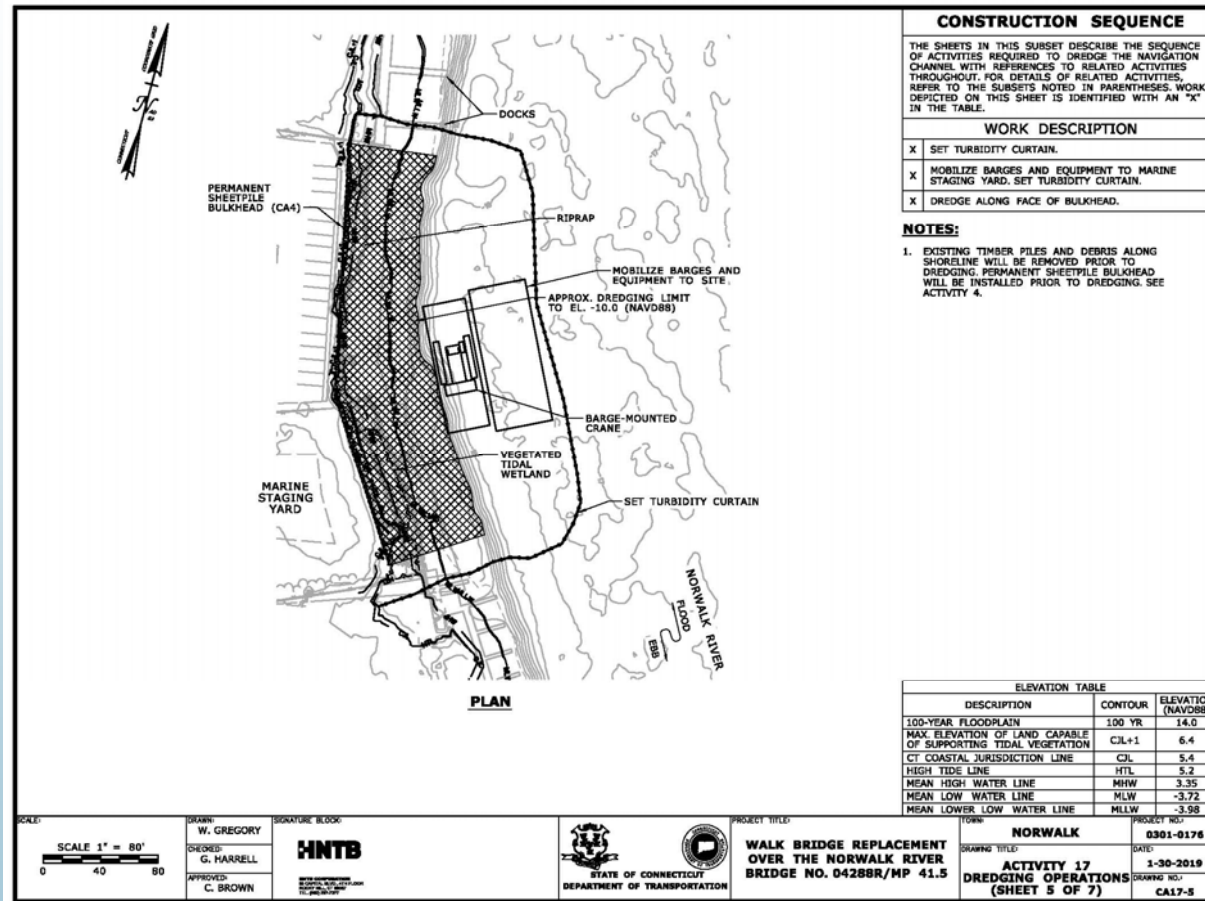


- Bulkhead
- Work Platform
- Access Ramp
- 90' x 180' Barge
- 240' Lift Span
- Material Barge



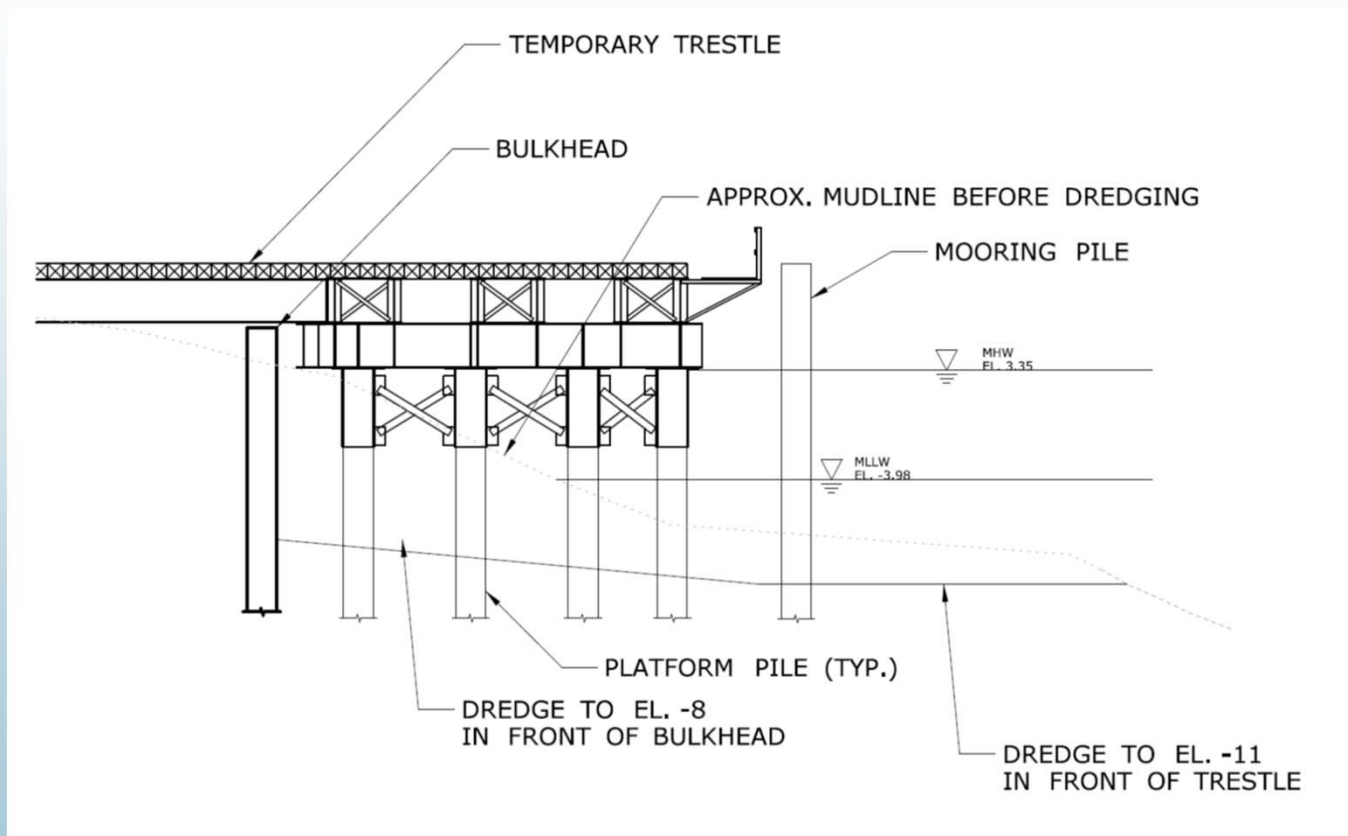


# Dredging – Marine Staging Yard Area





# Marine Staging Yard Area





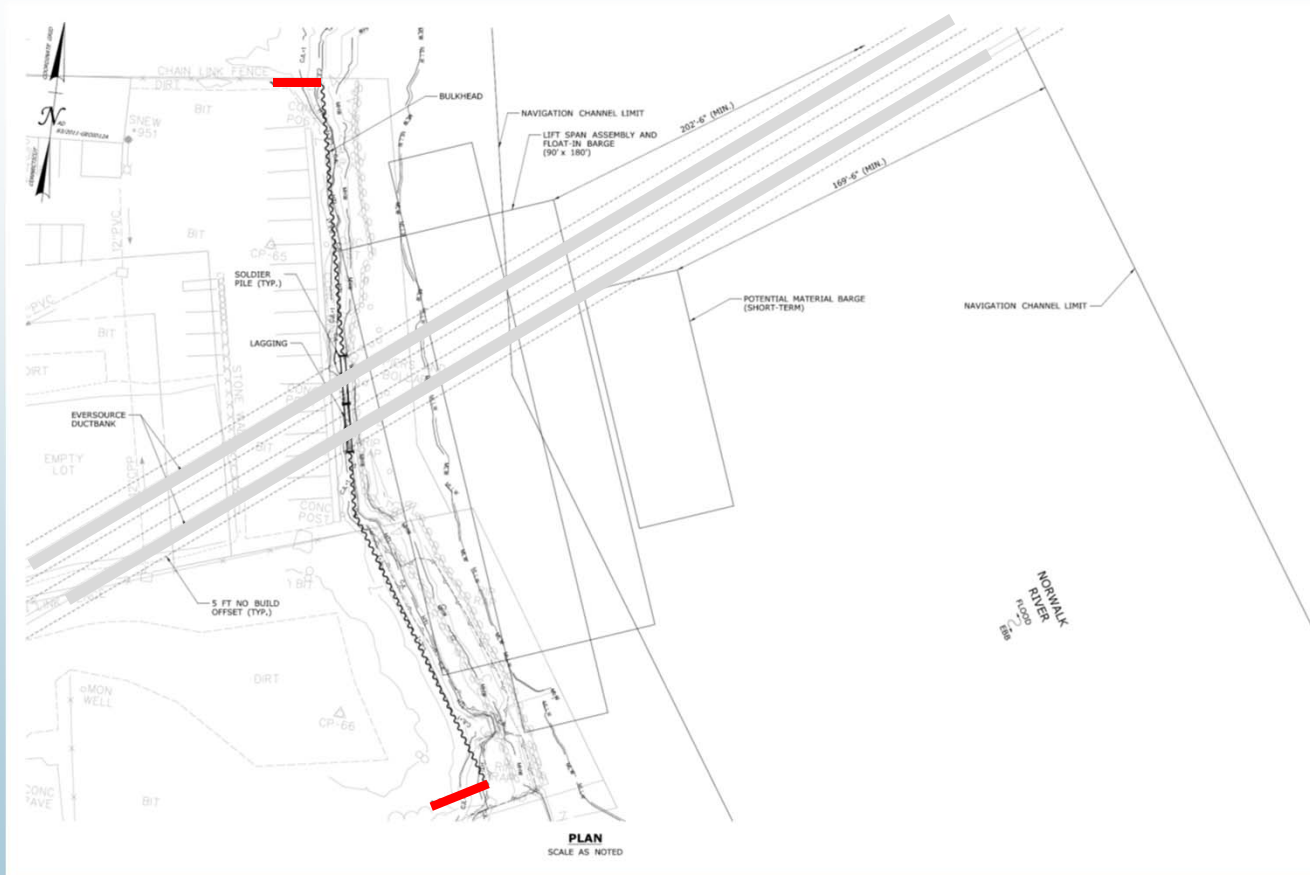
# Marine Staging Yard Area - - Modified



- Bulkhead
- 90' x 180' Barge
- 240' Lift Span
- Material Barge



# Marine Staging Yard Area - - Modified

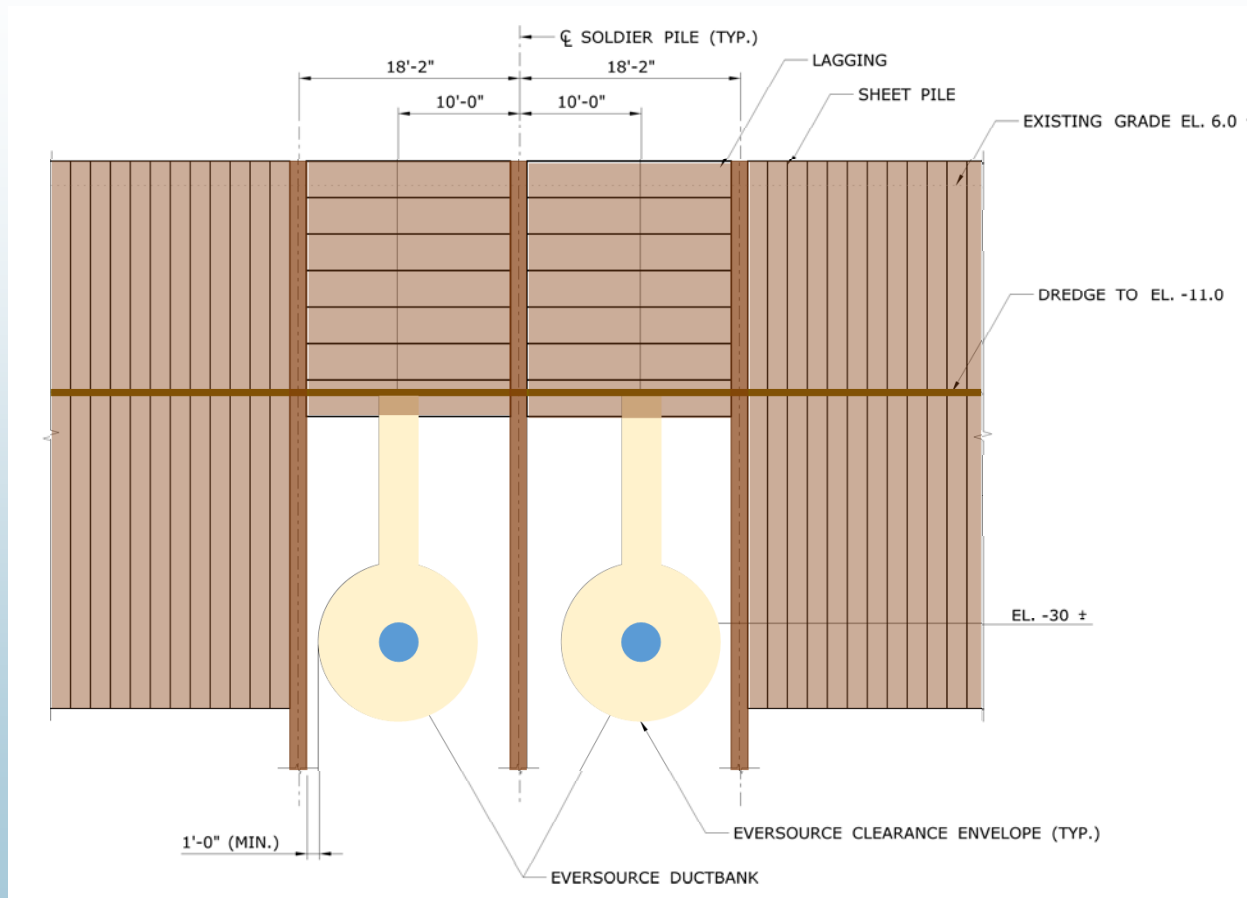


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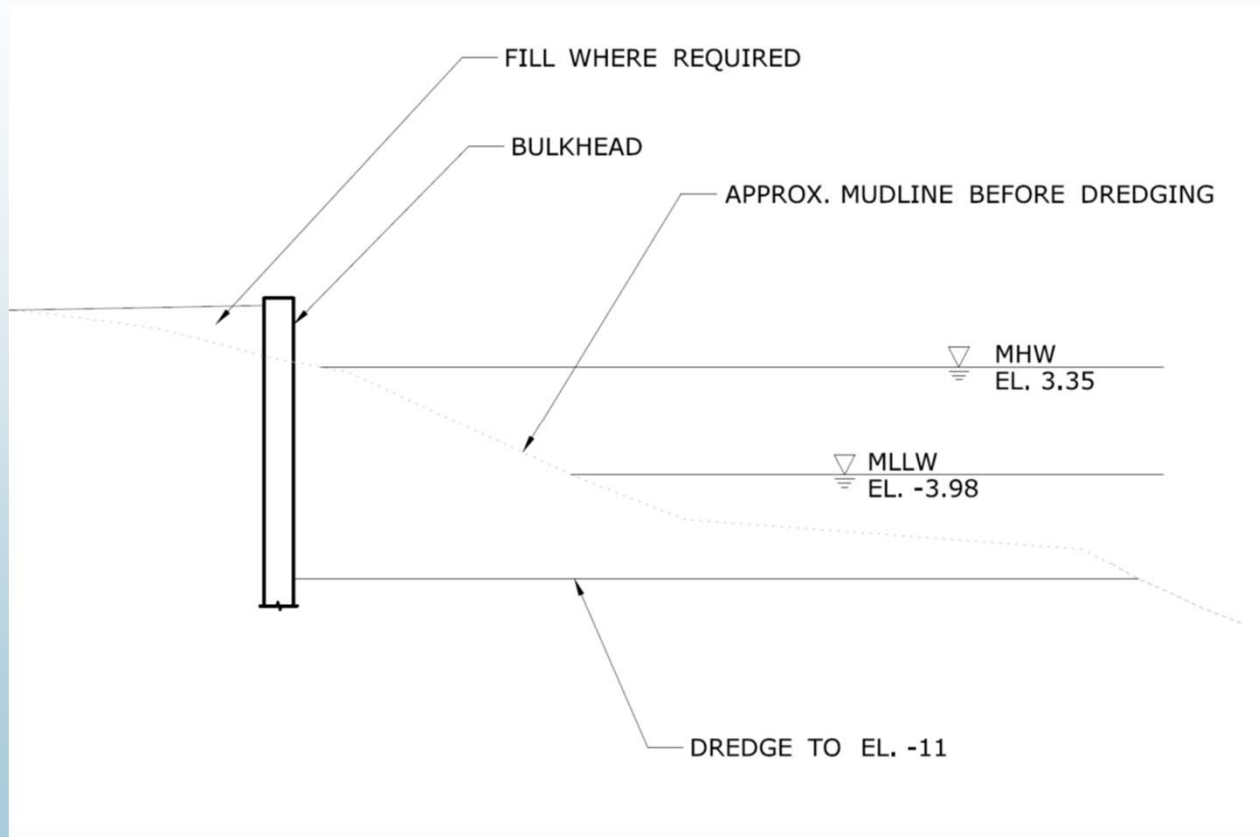


# Marine Staging Yard Area - - Modified





# Marine Staging Yard Area - - Modified





# MNR Duct bank



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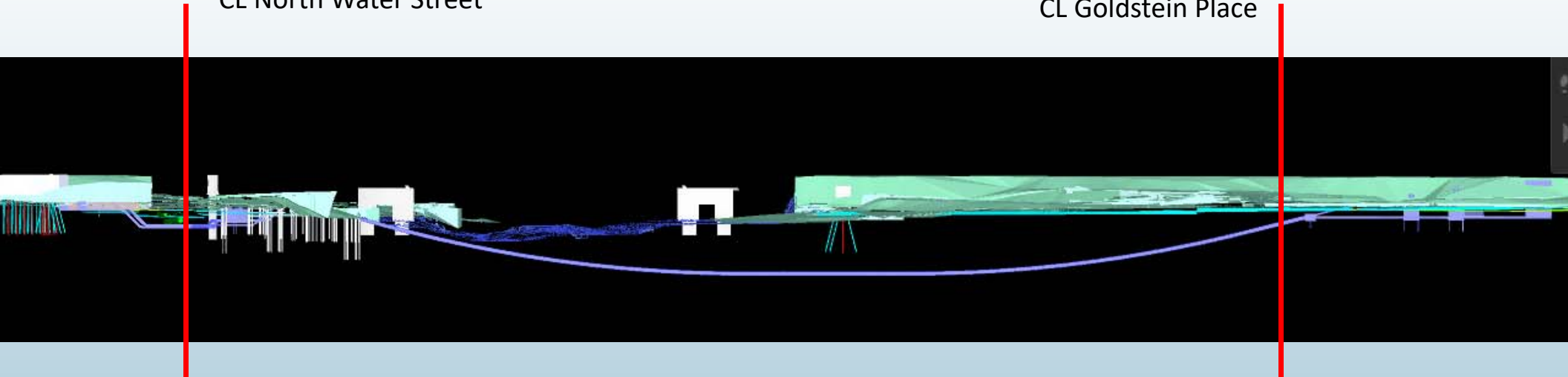




# MNR Duct bank - - HDD

CL North Water Street

CL Goldstein Place

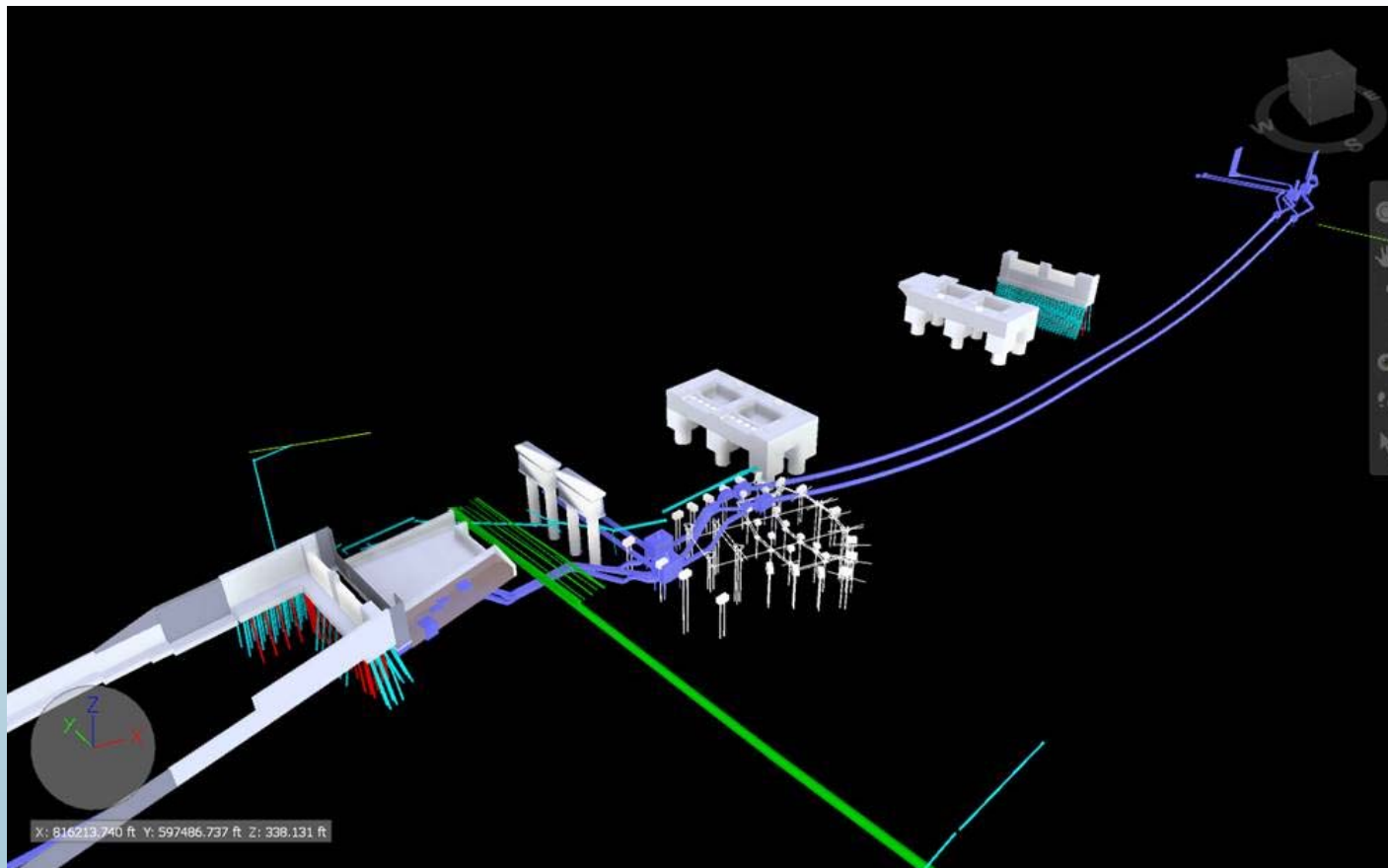


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# MNR Duct bank - - HDD

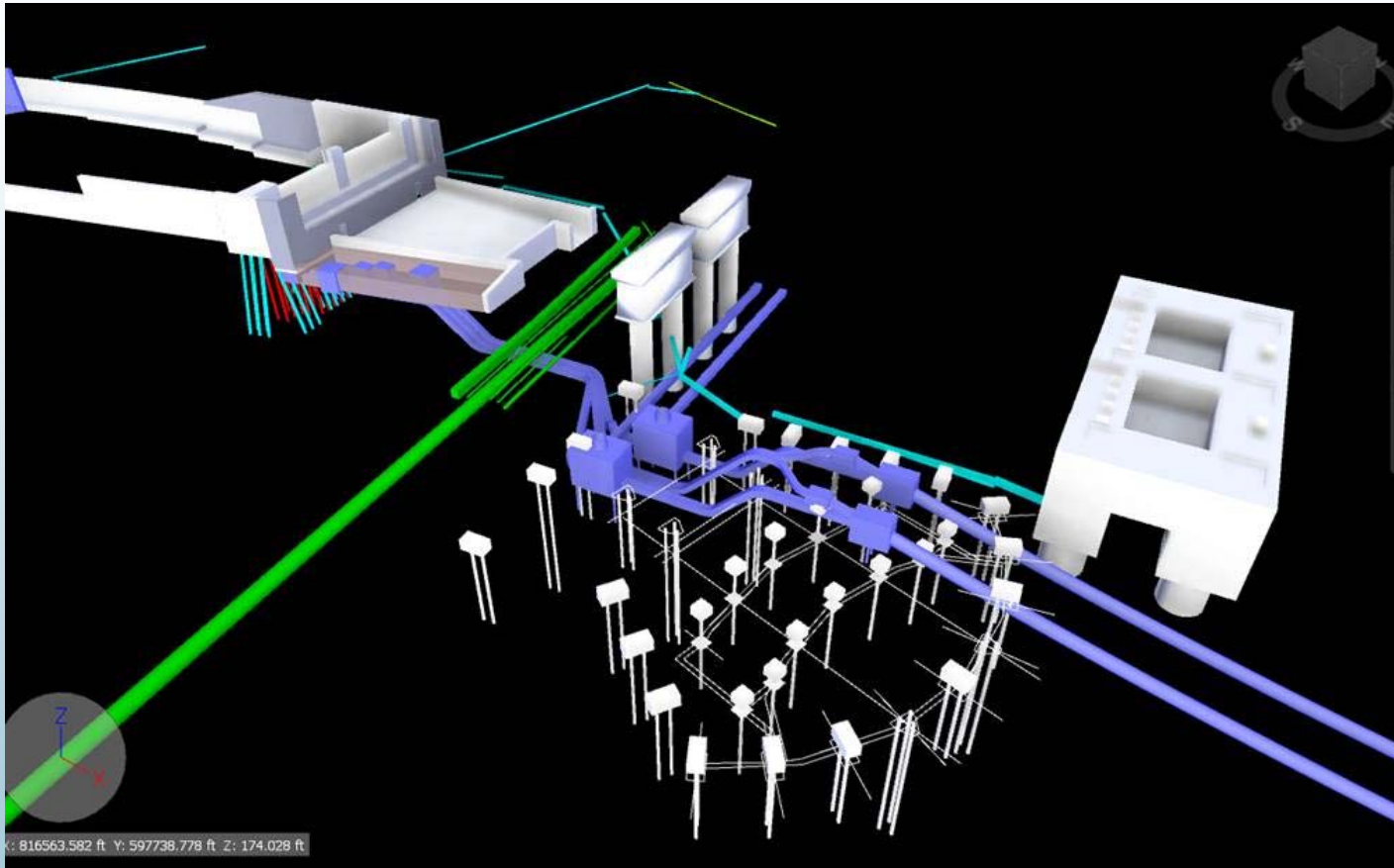


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# MNR Duct bank - - HDD

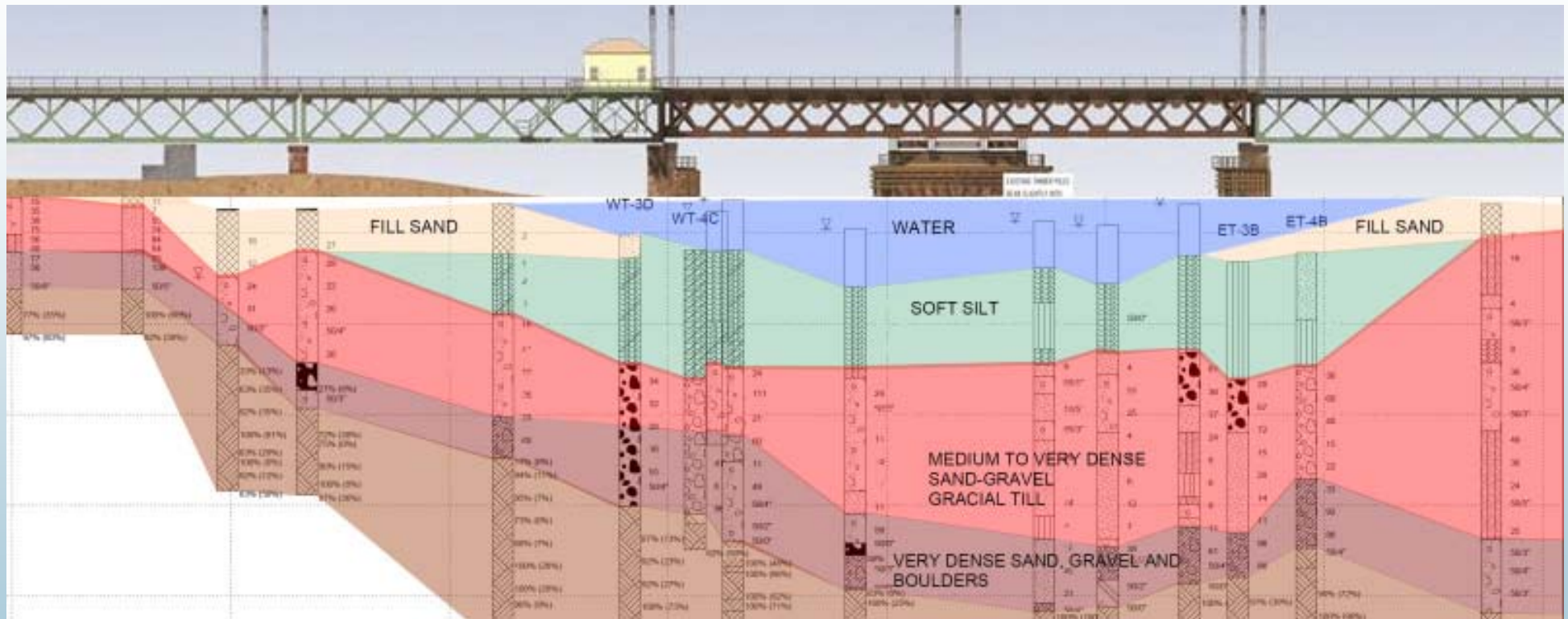


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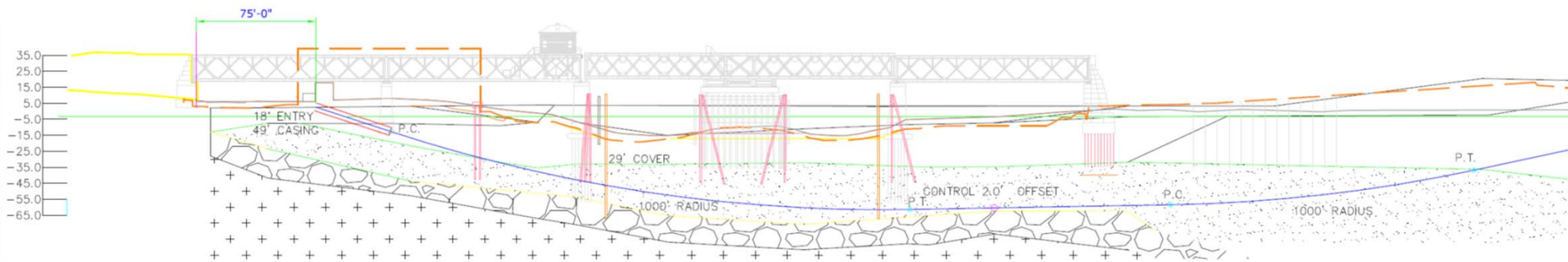


# MNR Duct bank - - soil profile





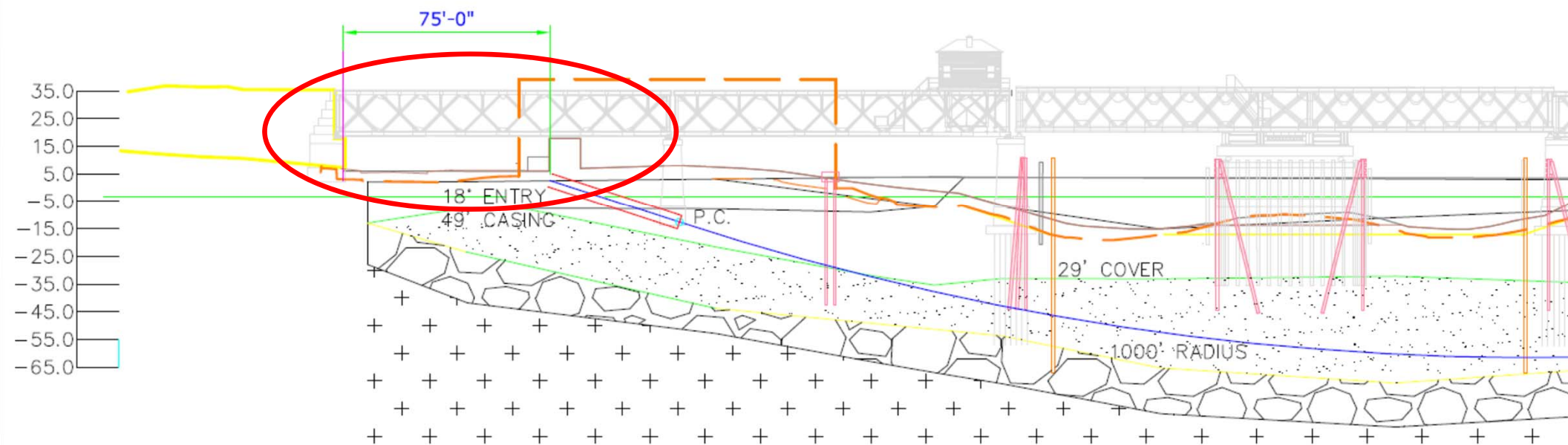
# HDD Layout #1



**OPTION 1: Entry offset 75' from approx west curbline, R=1000', 29' cover, 2' above cobble zone, no clearance below west piles. Control Points - Entry point and 2' offset from cobble zone. Likely best option w/R=1000' and given entry point.**

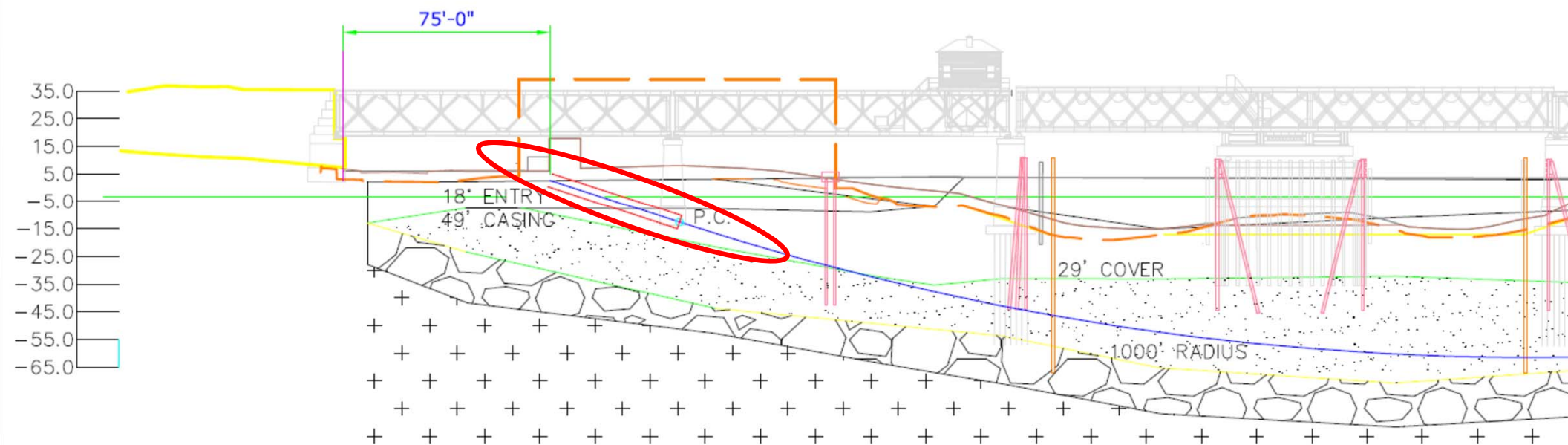


# HDD Layout #1 - - west detail



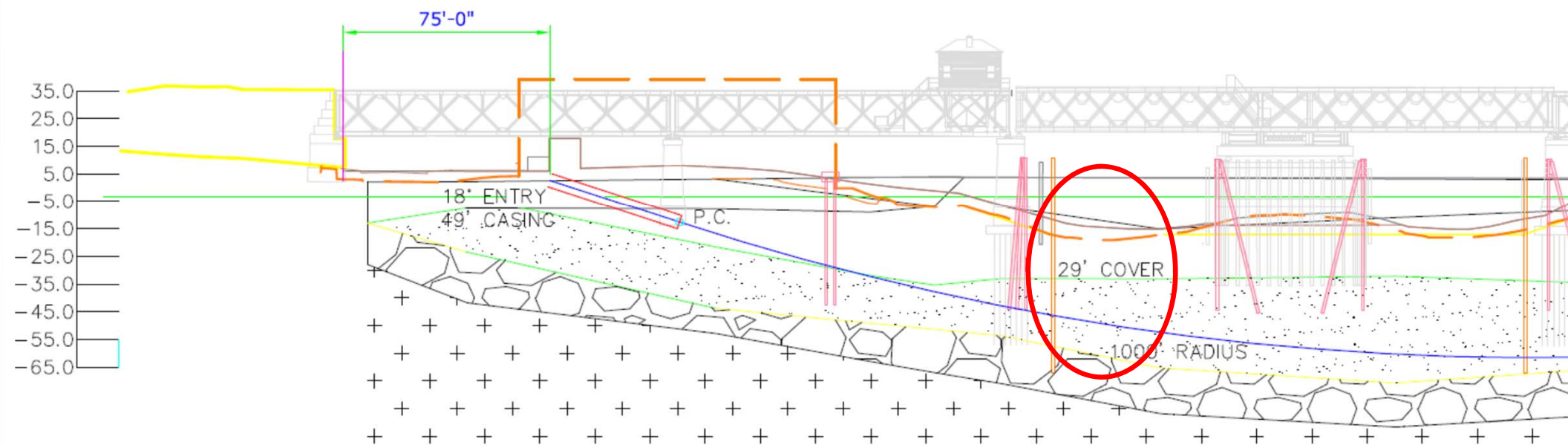


# HDD Layout #1 - - west detail



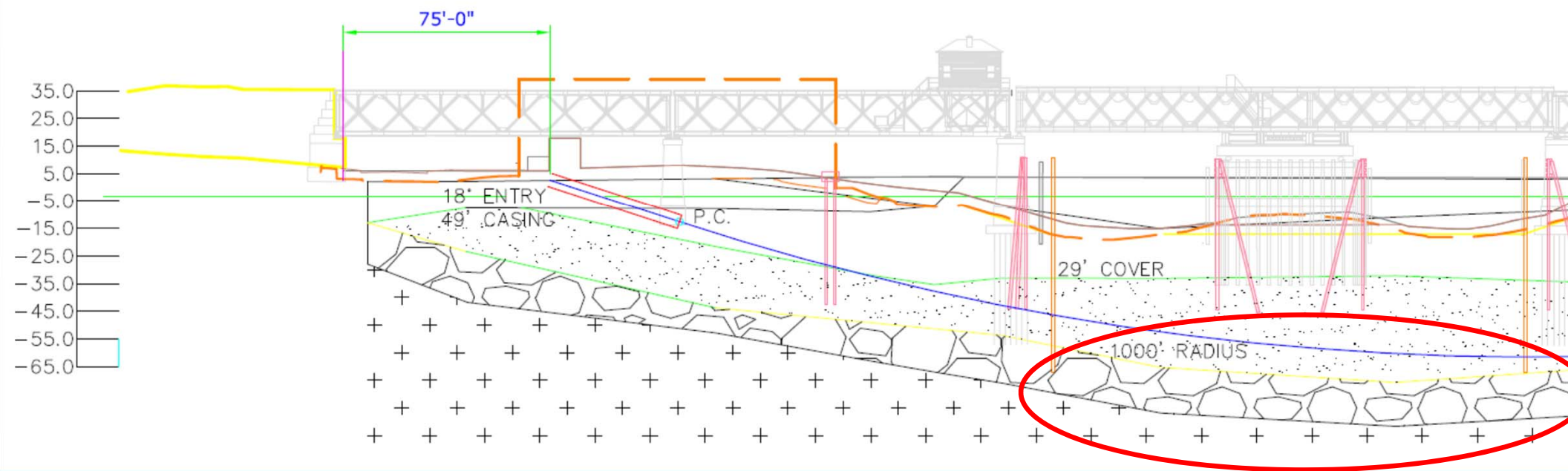


# HDD Layout #1 - - west detail



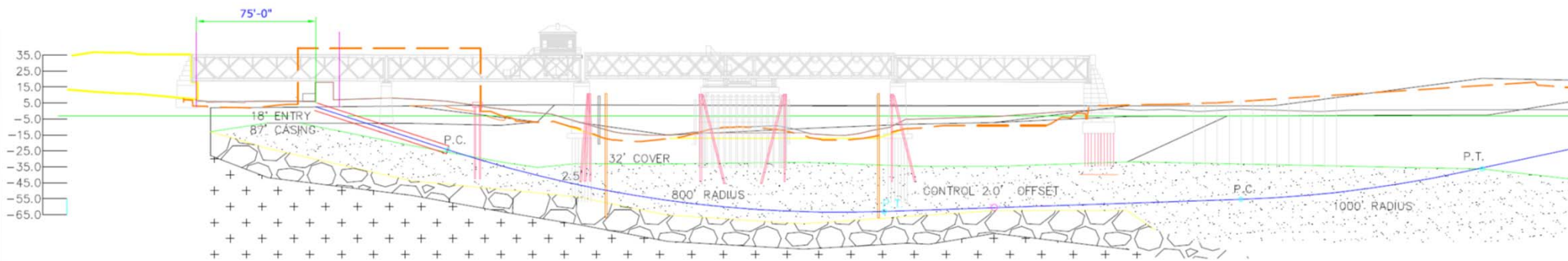


# HDD Layout #1 - - west detail





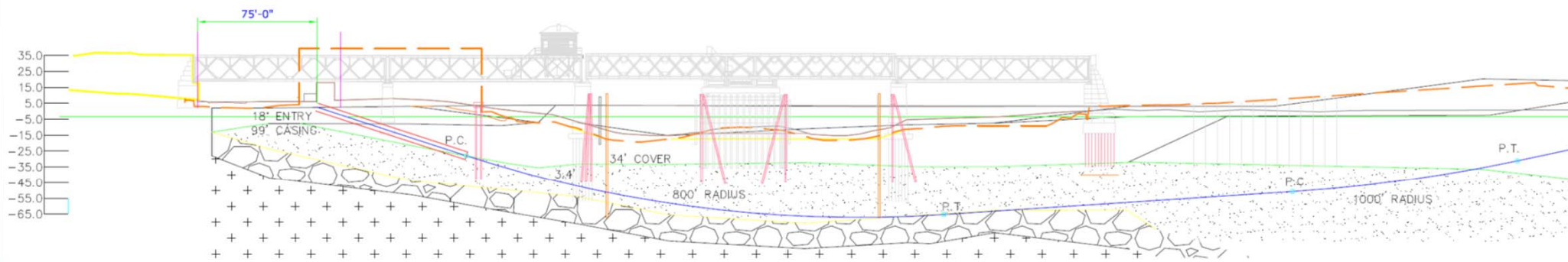
## HDD Layout #2



**OPTION 2: Same as Option 1 but  $R=800'$ , 32' cover, 2' above cobble zone, 2' clearance below west piles. Casing is 87' and extends partially into dense till.**



# HDD Layout #3



**OPTION 3: Same as Option 2 but maximizes length of casing, depth of cover, and offset beneath west piles. Path has greater exposure to cobbles and boulders.**



# MNR Duct bank - - HDD

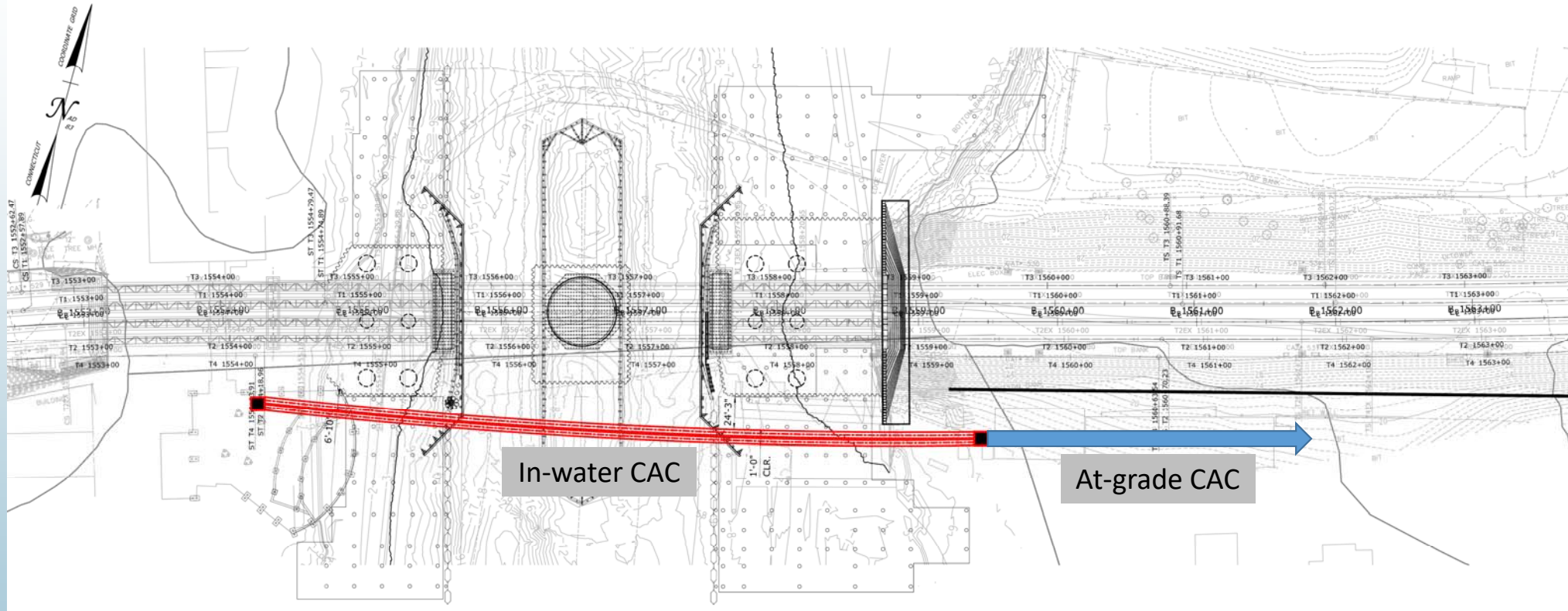
Criteria		Horizontal Directional Drilling
<b>Constructability</b>		
	Staging Area	●
	Equipment	●
	Risk	●
<b>Schedule</b>		
	Duration	●
	Risk	●
<b>Environmental</b>		
	In-channel disturbance	●
	Hydraulic impacts	●
	<b>Risk</b>	●
<b>Local Impacts</b>		
	N. Water Street Access	●
	Navigation Channel	●
	Noise	●
	Risk	●
<b>Cost</b>		
	Total	●
	Risk	●

- Positive
- Neutral
- Negative



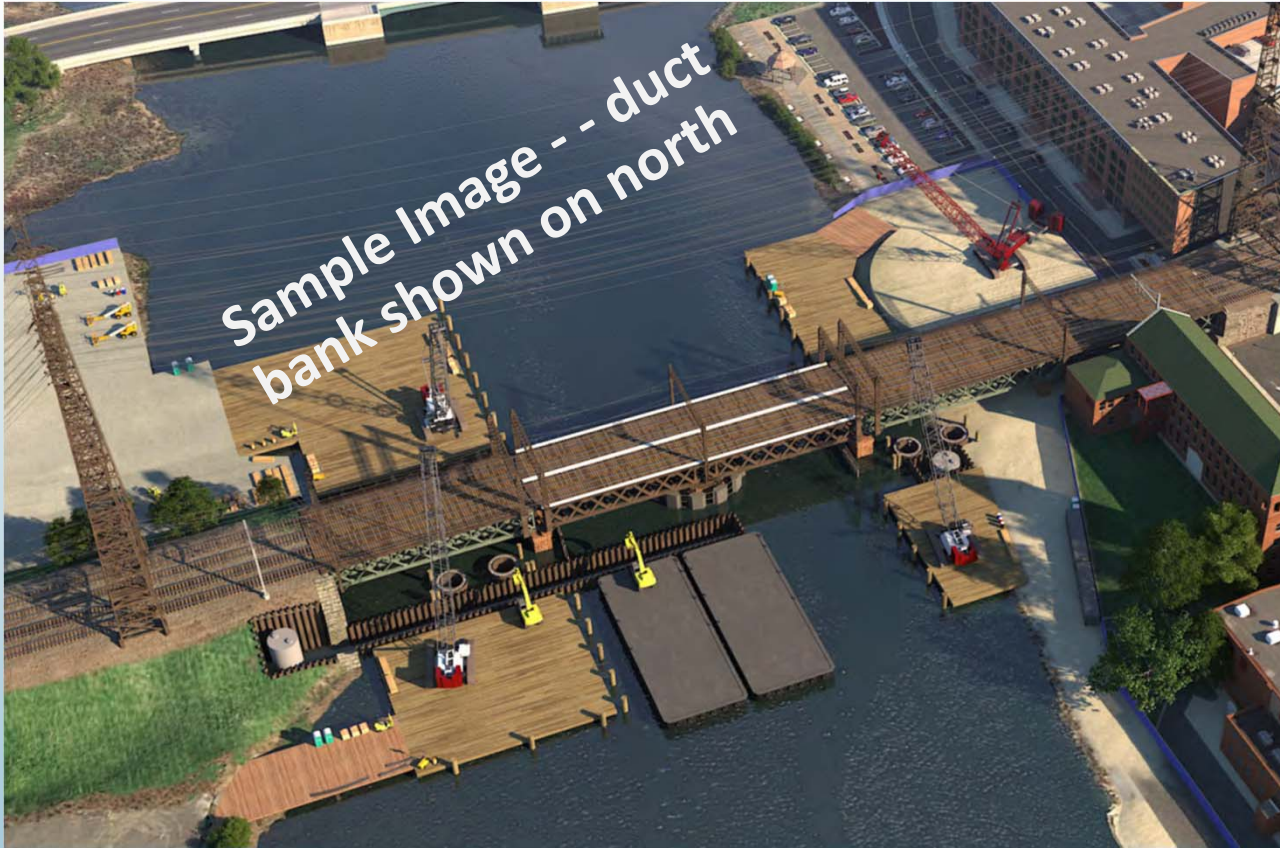


# MNR Duct Bank - - Cut and Cover (CAC)





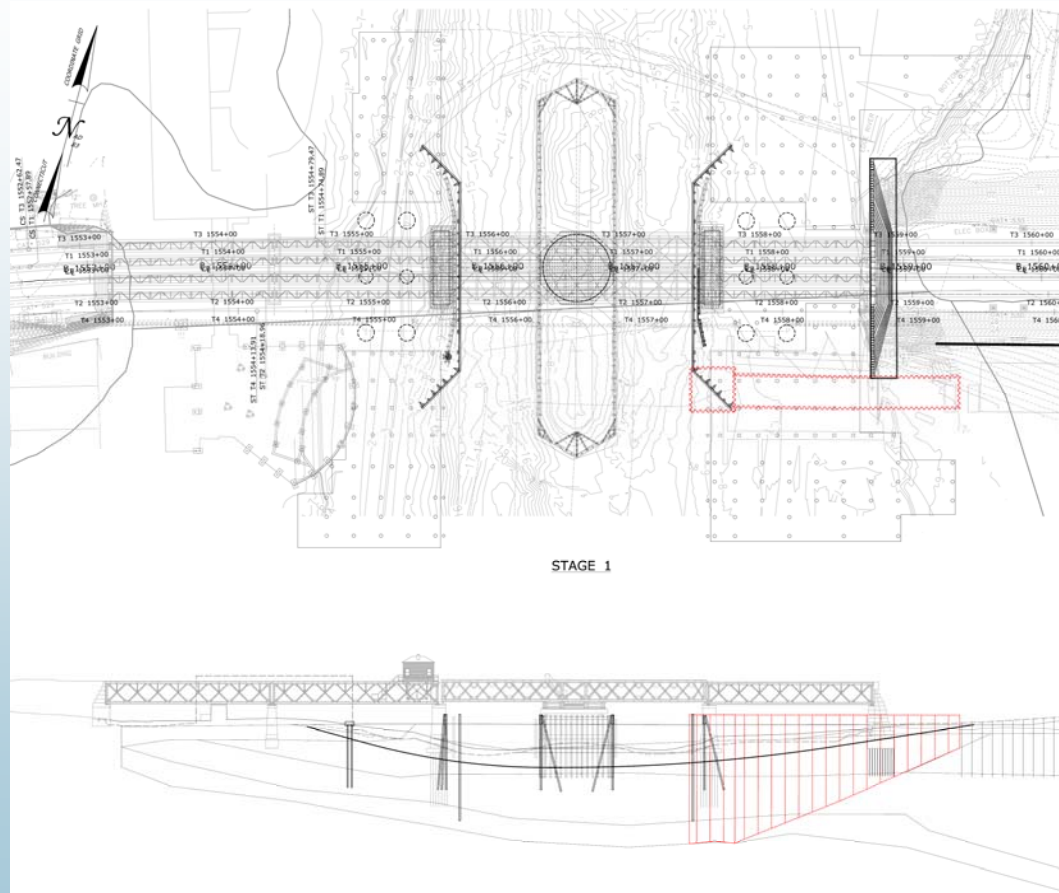
# MNR Duct Bank - - Cut and Cover



- Sheeting and Turbidity Curtain
- Segmentation of waterway
- Channel Hydraulics

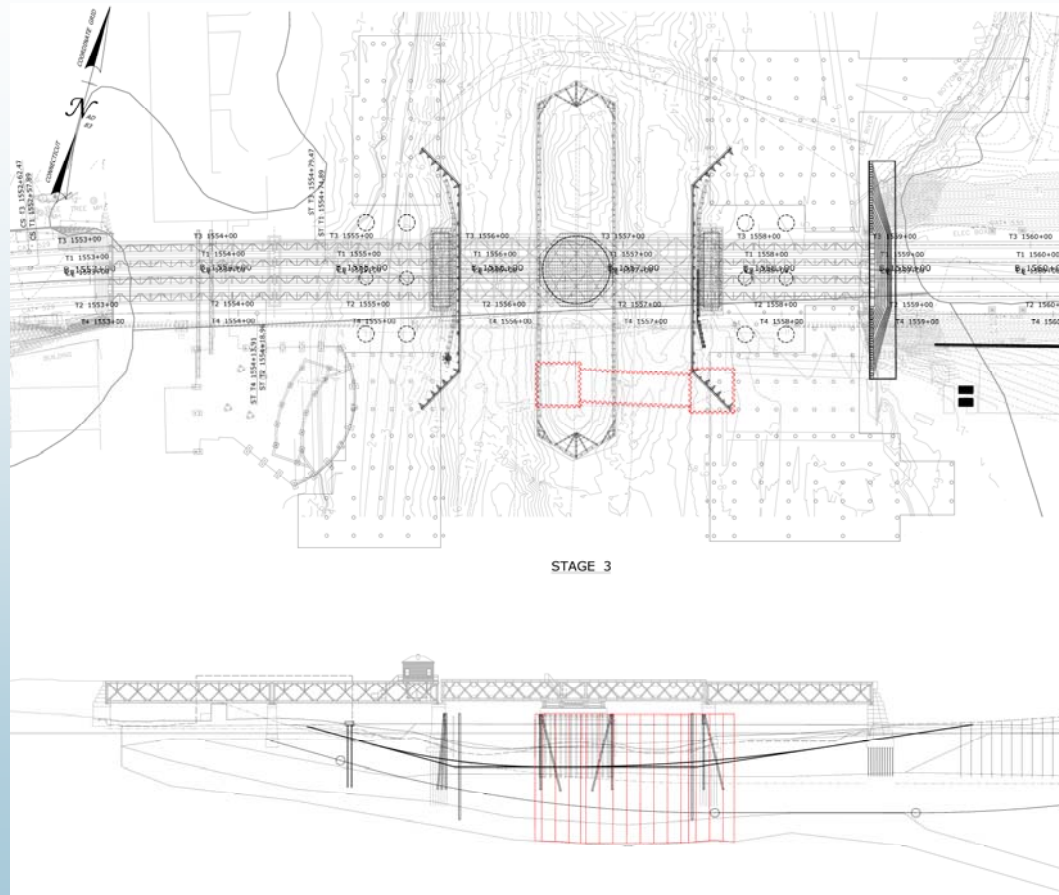


# MNR Duct Bank - - Cut and Cover Staging





# MNR Duct Bank - - Cut and Cover Staging



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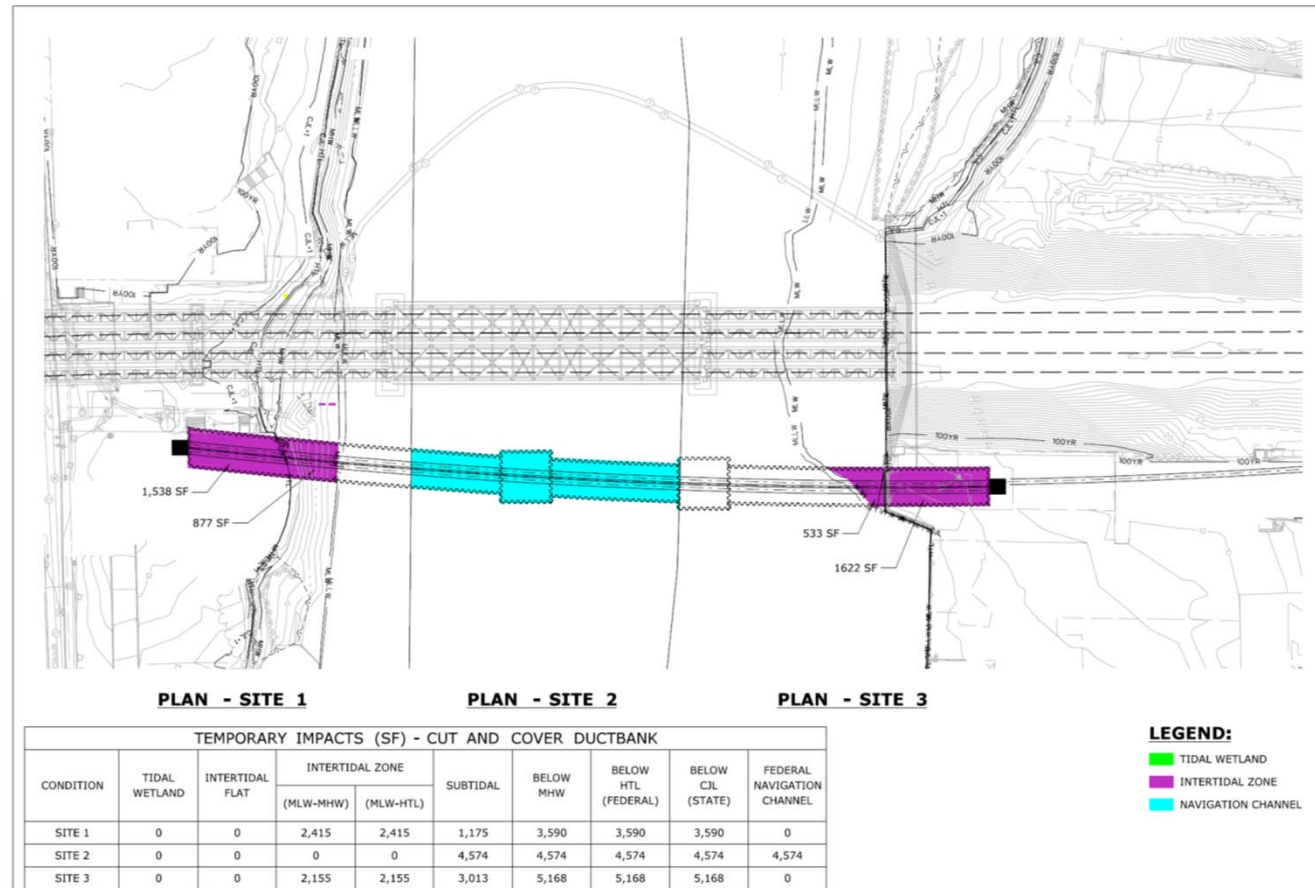


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# MNR Duct Bank - - Impacts



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# MNR Duct bank Comparison

Criteria		Horizontal Directional Drilling	Cut and Cover
<b>Constructability</b>			
	Staging Area	●	●
	Equipment	●	●
	Risk	●	●
<b>Schedule</b>			
	Duration	●	●
	Risk	●	●
<b>Environmental</b>			
	In-channel disturbance	●	●
	Hydraulic impacts	●	●
	<b>Risk</b>	●	●
<b>Local Impacts</b>			
	N. Water Street Access	●	●
	Navigation Channel	●	●
	Noise	●	●
	Risk	●	●
<b>Cost</b>			
	Total	●	●
	Risk	●	●

- Positive
- Neutral
- Negative

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# MNR Duct Bank Next Steps

- Finalize Alignment
- Finalize Impact Values
- Update Hydraulic Model
- Assess mitigation areas, as needed
- Agency and commission consultation





# Summary of In-water Protective Measures

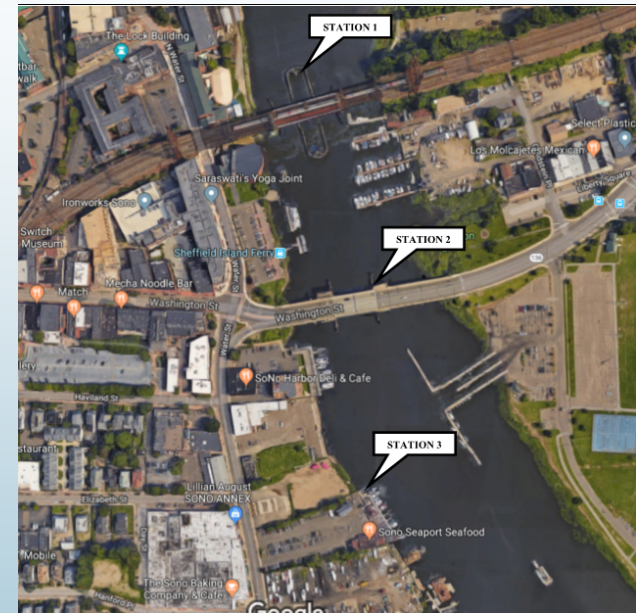
- Turbidity Curtains
- Turbidity Monitoring
- Time of Year Restrictions
  - Dredging will occur between Dec. 1 – Jan. 31
  - No unconfined in-water silt producing activities from Feb. 1 – Sept. 30
- Use of soft starts at the beginning of each shift from Mar. 15 to Oct. 31
- Maintain one navigation channel, except for limited closures
- All temporary construction access restored to pre-construction conditions
- Bubble curtains eliminated due to soil conditions





# Water Quality Monitoring Program

- Pre-Construction Baseline monitoring
  - Monitoring stations will be installed this week
  - Woods Hole Group
  - ~ 3 locations in vicinity of Walk Bridge
  - Monitoring Parameters
    - Turbidity, Dissolved Oxygen, Conductivity, pH
  - Camera monitoring on Stroffolino Bridge
- Construction Monitoring
  - Upstream Locations (North & South of Bridge) to serve as Background
  - In the vicinity of the work activity
  - Action Levels
  - Corrective Actions/Investigation Process
  - Construction Inspector/Environmental Inspector
  - Reporting – 24 hour phone notification to Shellfish Commission
  - Performance specification for monitoring/equipment





# Sediment Dewatering Program

- CTDEEP General Permit for the Discharge of Groundwater Remediation Wastewater
  - Applies to all similar discharges in the State
  - Screening – Initial Sampling on each new discharge
  - Follow-up monitoring is based upon flow-rate, frequency of discharge
  - DOT Performance Specification -> Treatment system must meet effluent limitations
  - Effluent Limitations
  - Dewatered sediments will be transported to WSA for off-site disposal

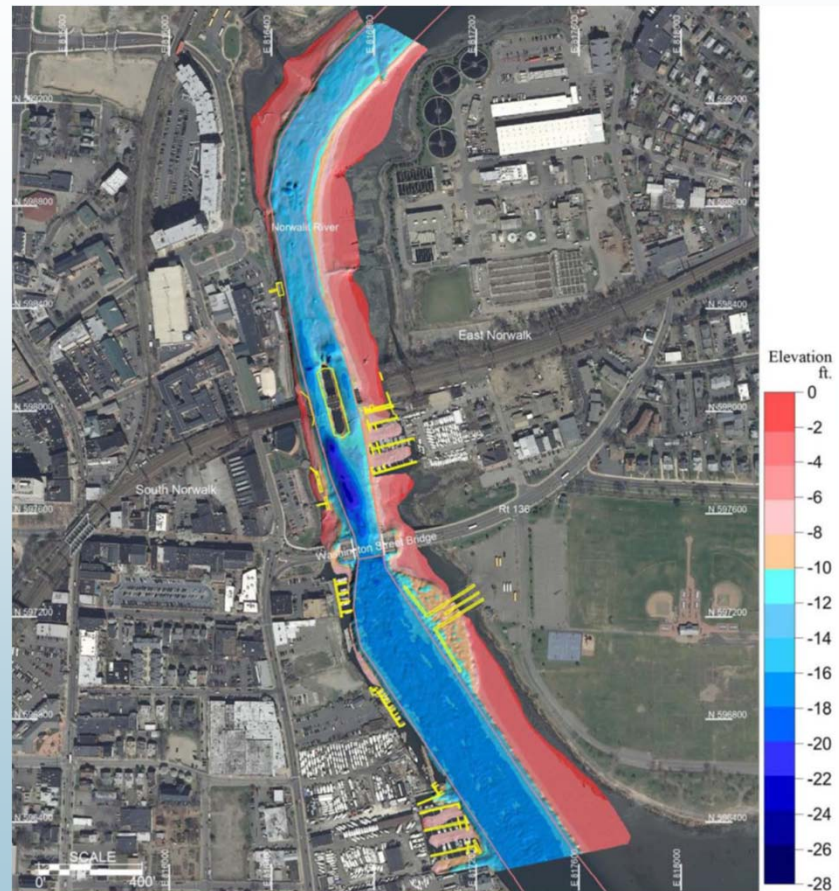




# Vessel Relocation Study

## Evaluation of:

1. Norwalk Harbor
2. Norwalk River
3. Waterway Traffic
4. Vessels
  - Physical Characteristics
  - Special considerations
  - Berth Description
  - Operations
5. Construction Interface
  - Work Platforms
  - Barges
  - Cranes





# Vessel Relocation Study

## Evaluation of Potential Sites

1. Shifting of Vessels at Current Site
2. Relocation on Site with Mooring Perpendicular to Shoreline
3. Relocation on Site with Mooring Angled to Shoreline



## Site Analysis:

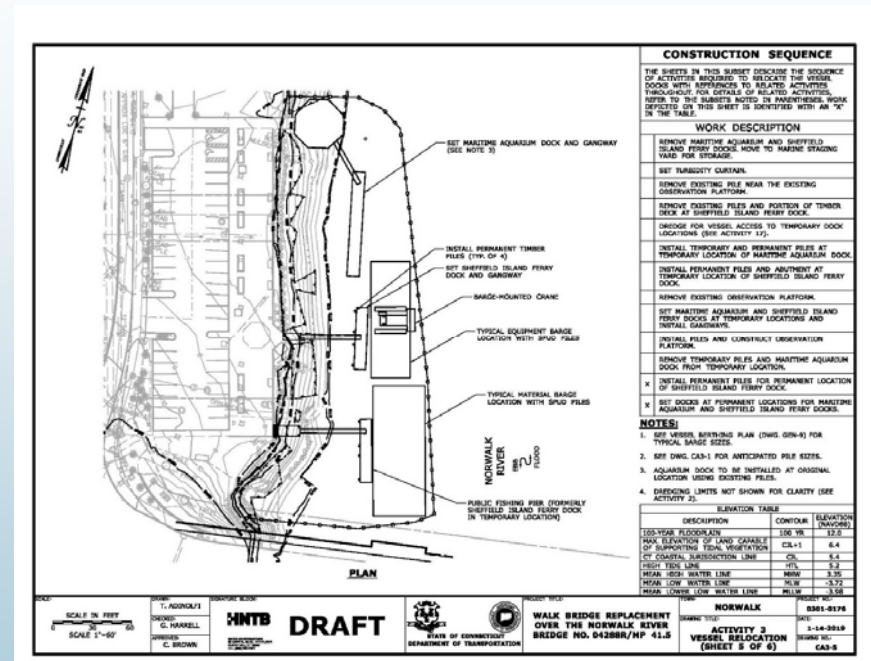
- Public access for vehicles and patrons
- Safety considerations with adjacent construction activities
- Accessibility to docks
- Berth depth, width, and length requirements
- Maneuvering requirements for vessels
- Vessel characteristics related to size and berth requirements
- Vessel handling capability including propulsion/ maneuvering
- Safe mooring configuration
- Vessel and landside support utilities
- Protection from vessel traffic
- Proximity to main channel and current impacts
- Proximity to Stroppolino Bridge pier and westerly approach span
- Shoreline construction
- Underwater depths and shoaling
- Dredging requirements
- Limiting factors including underwater pipeline and utility corridors
- Shoreside access for vessel servicing





# Marine Safety - Vessel Relocation

- Supplemental Risk Assessment
- Marine Use Coordination Plan
  - Identify marine users
  - Identify construction activities that will have impact
- Mitigation Strategies
  - Communication/Coordination Plan
  - 3D/4D Digital Modeling/Visualization
  - Signage
  - Lighting
  - Marine Police for specific activities
  - Time of Day/Time of Year Restrictions





## Next Steps

- Submit Permit Plates in groups to Commission – next group is planned as a complete set in April based on refinements in 4 areas
- Commission Meetings – to discuss construction methodologies, activities, and protective measures and other topics
- Full understanding of construction activities and mitigation measures
- Permit Filing – Spring 2019







# Questions & Comments



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