

# Walk Bridge Project

Norwalk Shellfish Commission

Permit Pre-application Coordination

March 7, 2019



[www.walkbridgect.com](http://www.walkbridgect.com)





# 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. Wetland Mitigation
10. Next Steps
11. Questions & Comments









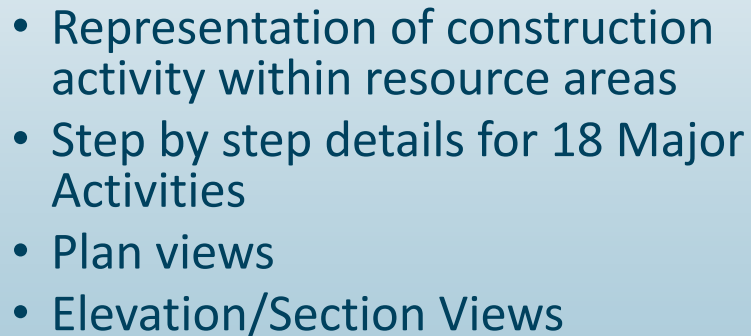
# Project Update

- 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





- Existing & Proposed Conditions
- Temporary Conditions
- Tidal Wetland Mitigation





# Construction Activity Overview



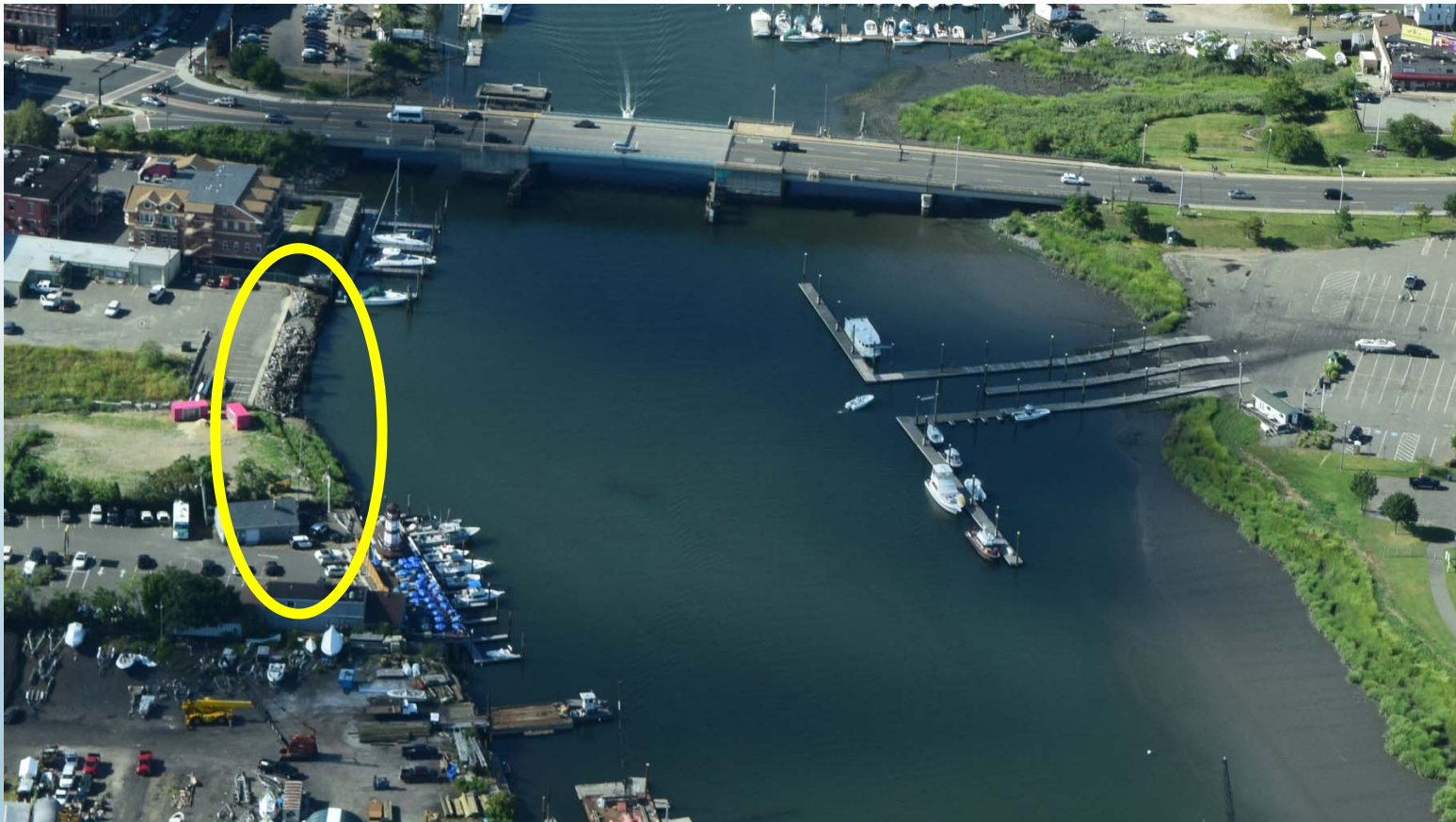
NUMBER	CONSTRUCTION ACTIVITY
1	IMAX REMOVAL
2	<b>DUCT BANK INSTALLATION</b>
3	VESSEL DOCK RELOCATION
4	<b>MARINE STAGING YARD</b>
5	NORTHWEST TRESTLE
6	SOUTHWEST TRESTLE
7	NORTHEAST TRESTLE
8	SOUTHEAST TRESTLE
9	PIER 2
10	PIER 3
11	SUBMARINE CABLE INSTALLATION
12	SUBMARINE CABLE REMOVAL
13	SWING SPAN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

[www.walkbridgect.com](http://www.walkbridgect.com)





# Marine Staging Yard Area



[www.walkbridgect.com](http://www.walkbridgect.com)





# Marine Staging Yard Area



[www.walkbridgect.com](http://www.walkbridgect.com)





# Marine Staging Yard Area



[www.walkbridgect.com](http://www.walkbridgect.com)





# Marine Staging Yard Area

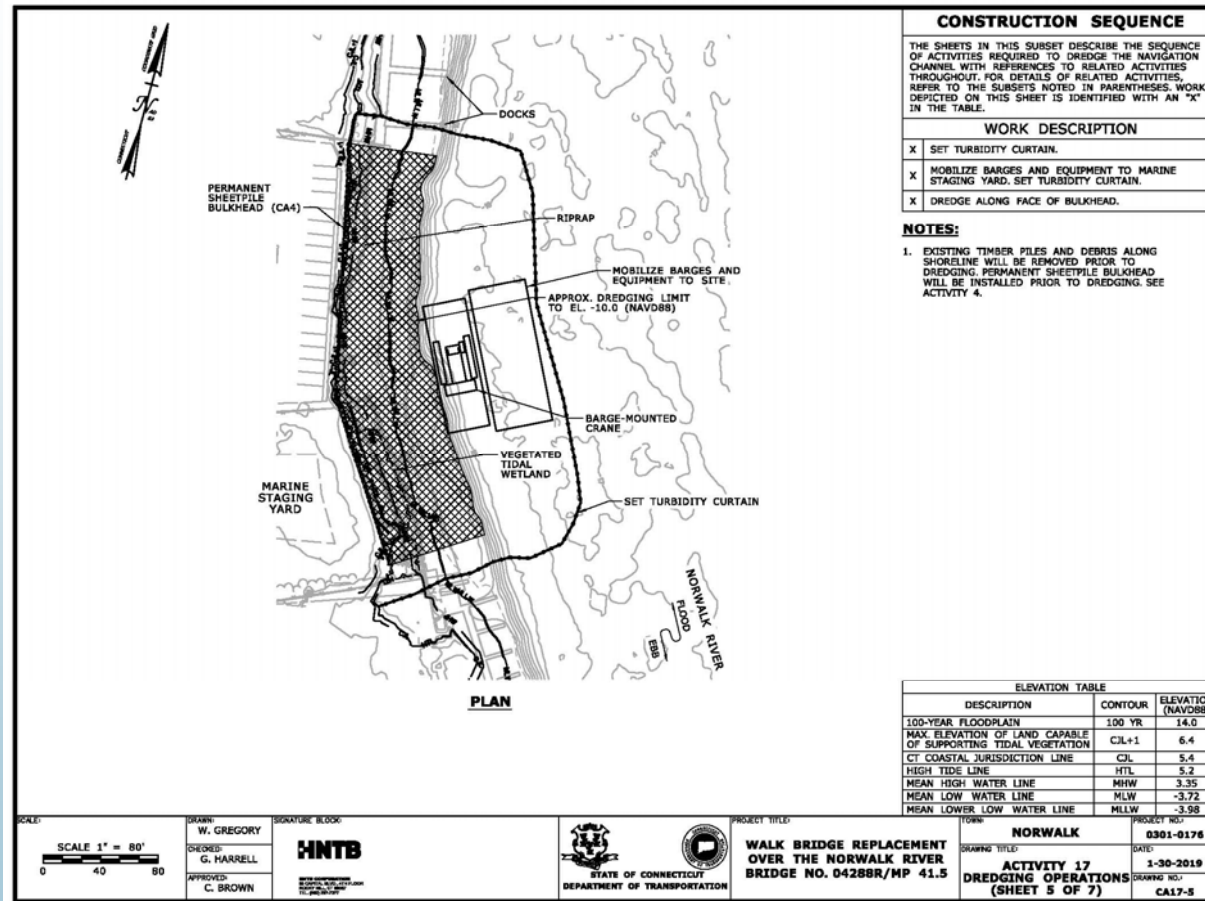


- Bulkhead
- Work Platform
- Access Ramp
- 90' x 180' Barge
- 240' Lift Span
- Material Barge



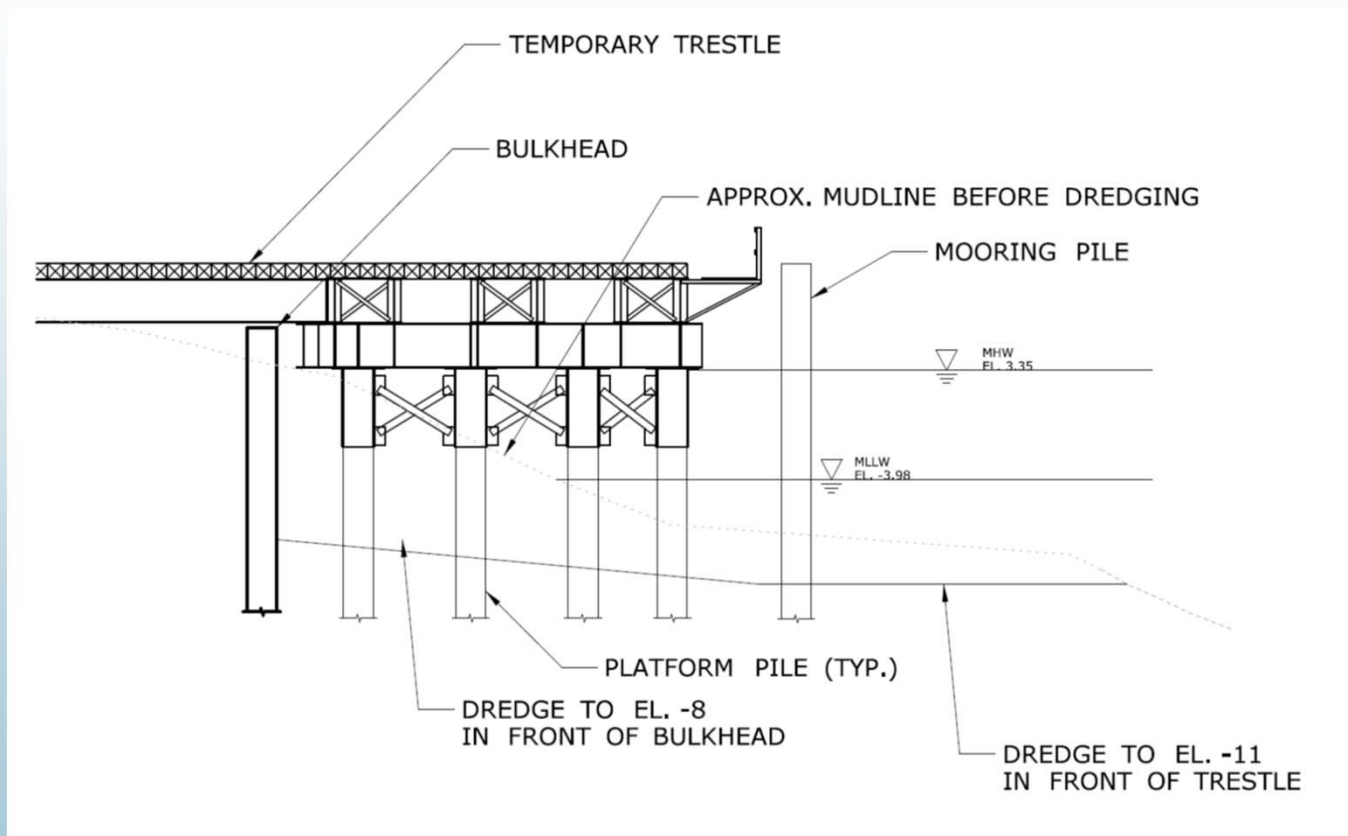


# Dredging – Marine Staging Yard Area

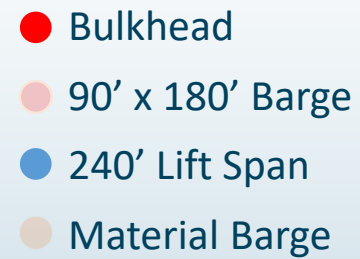




# Marine Staging Yard Area

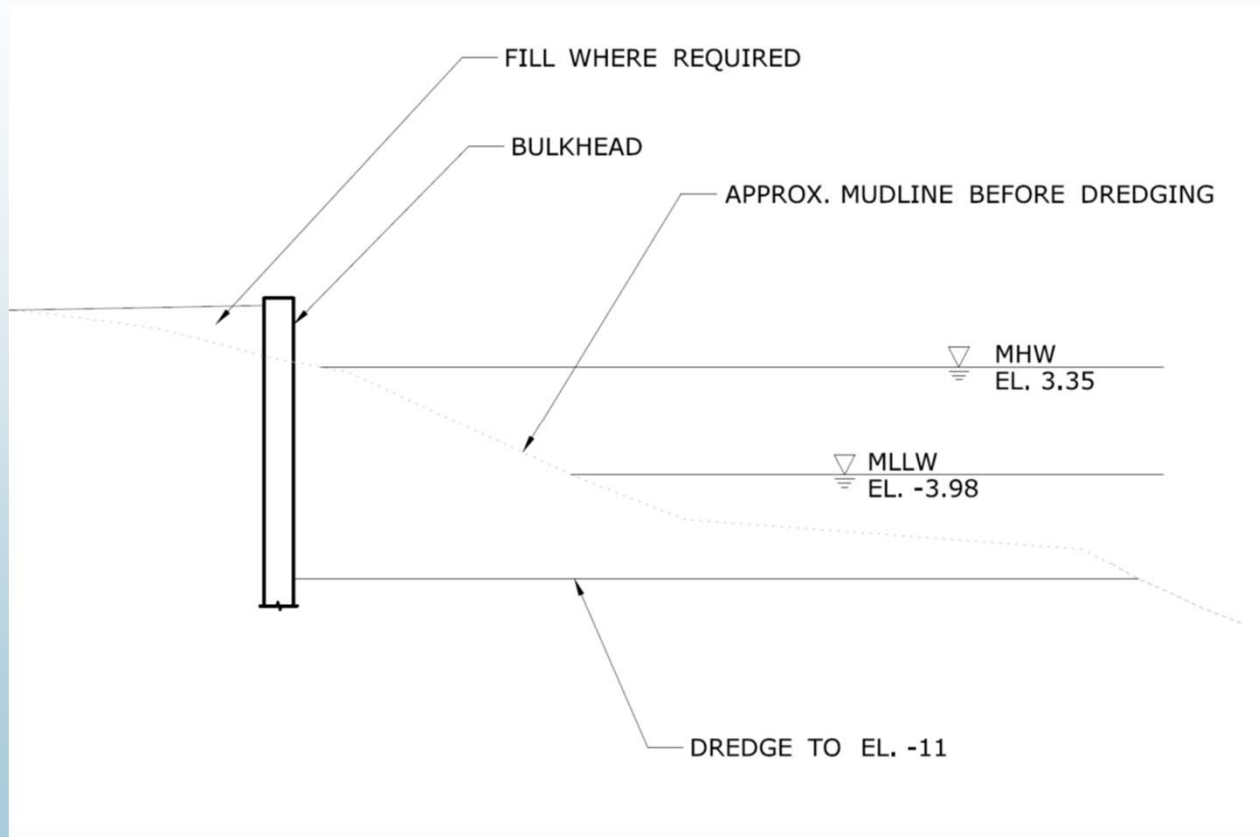








# Marine Staging Yard Area - - Modified





# MNR Duct bank



[www.walkbridgect.com](http://www.walkbridgect.com)

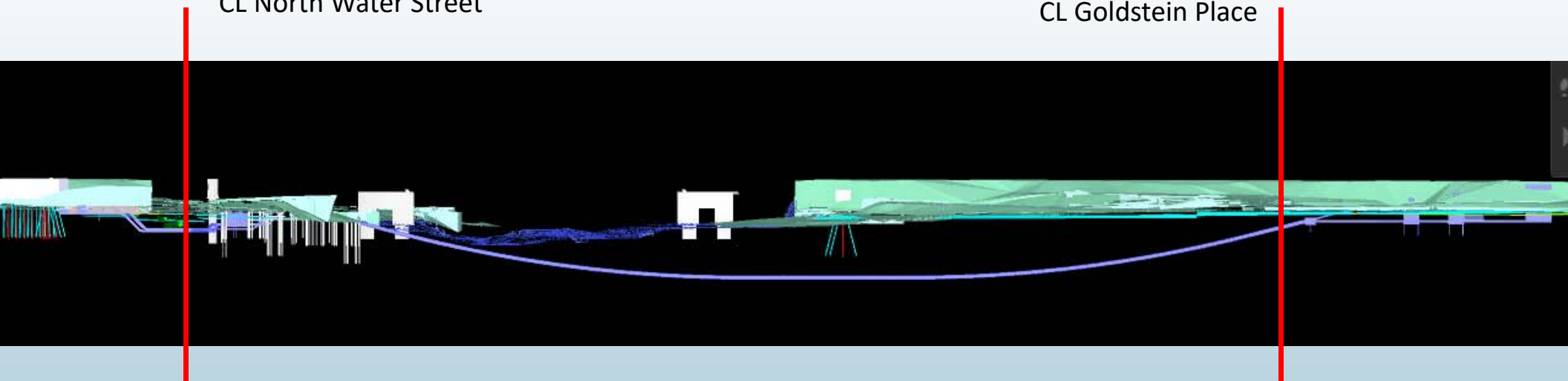




# MNR Duct bank - - HDD

CL North Water Street

CL Goldstein Place

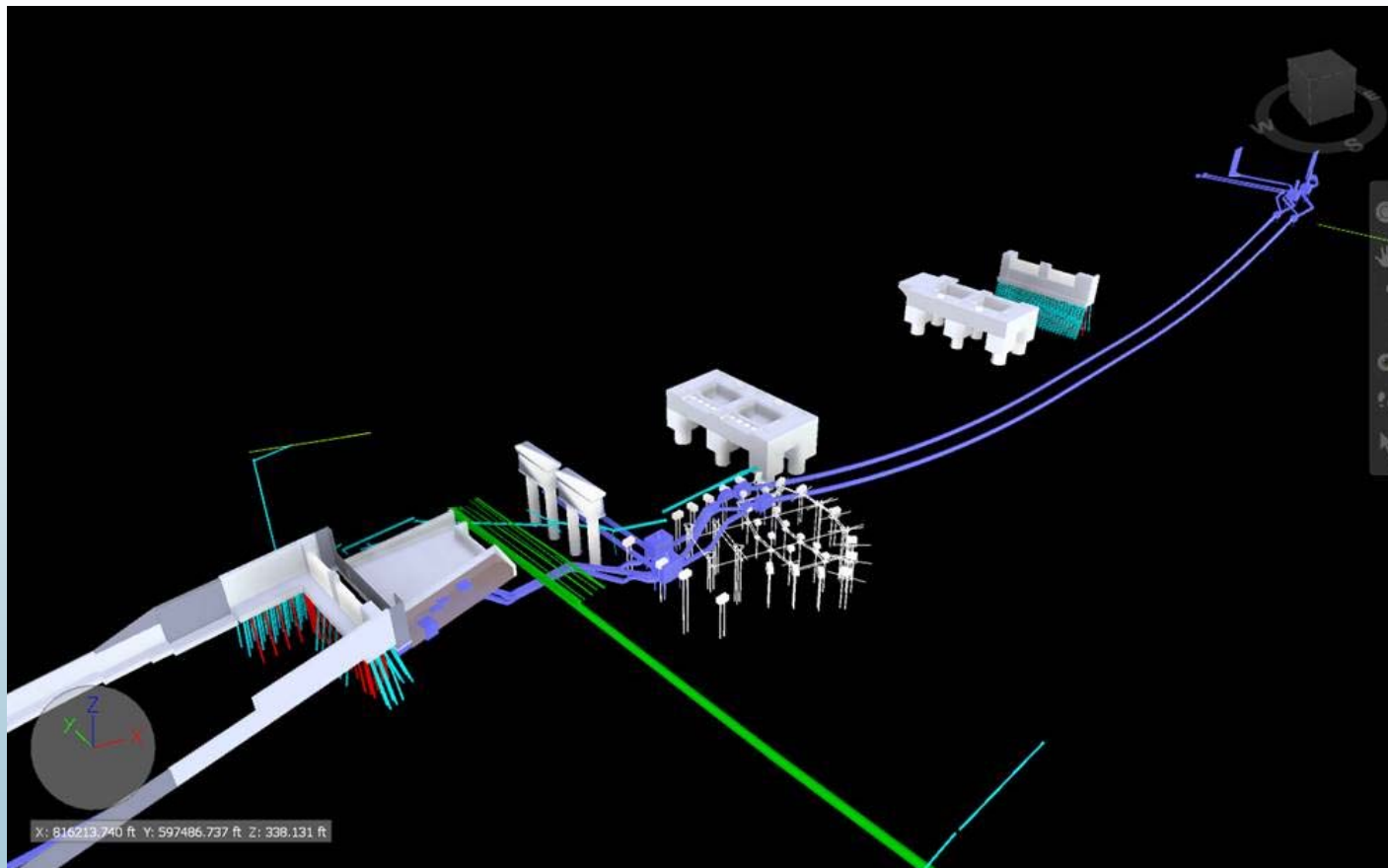


[www.walkbridgect.com](http://www.walkbridgect.com)





# MNR Duct bank - - HDD

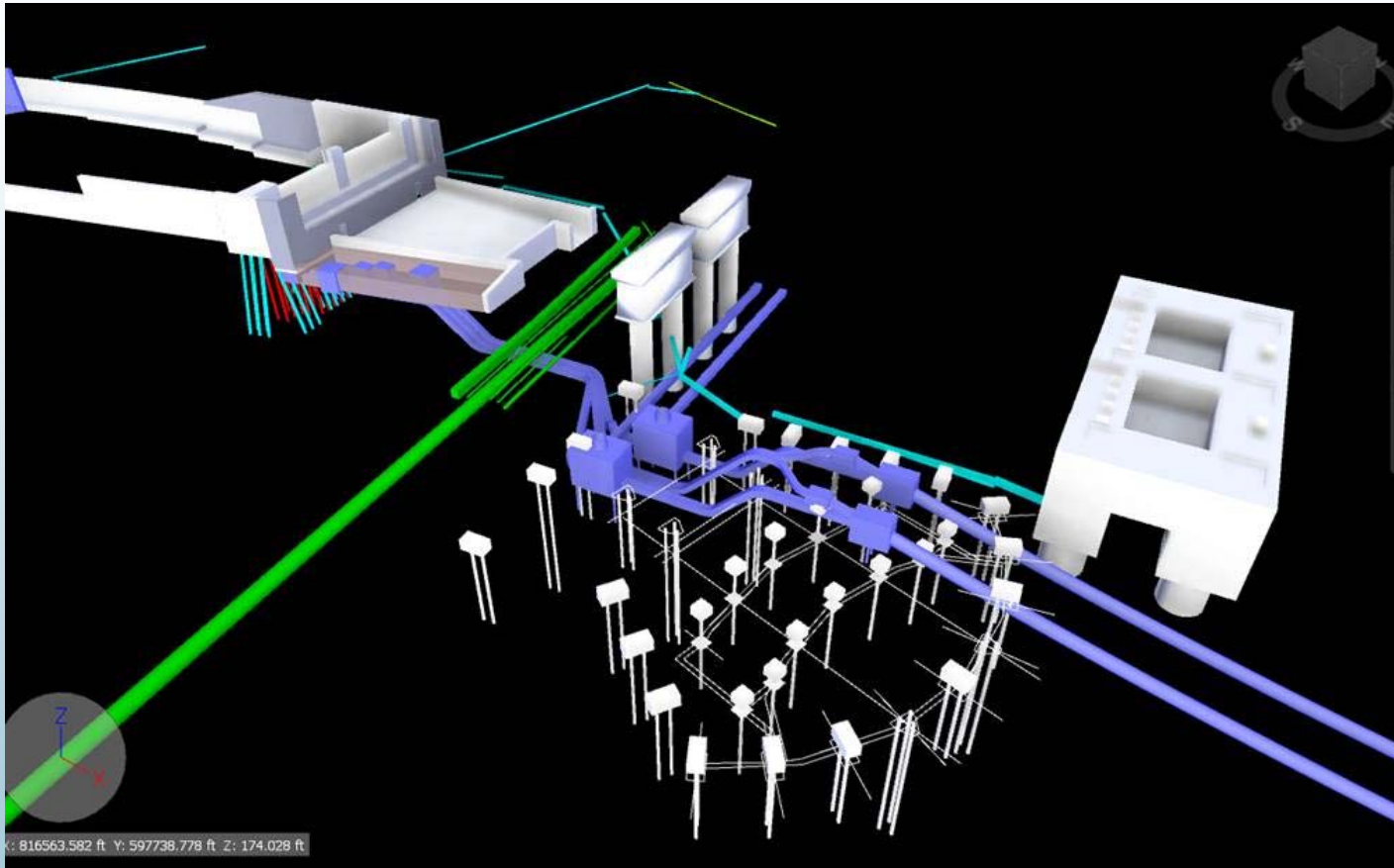


[www.walkbridgect.com](http://www.walkbridgect.com)





# MNR Duct bank - - HDD

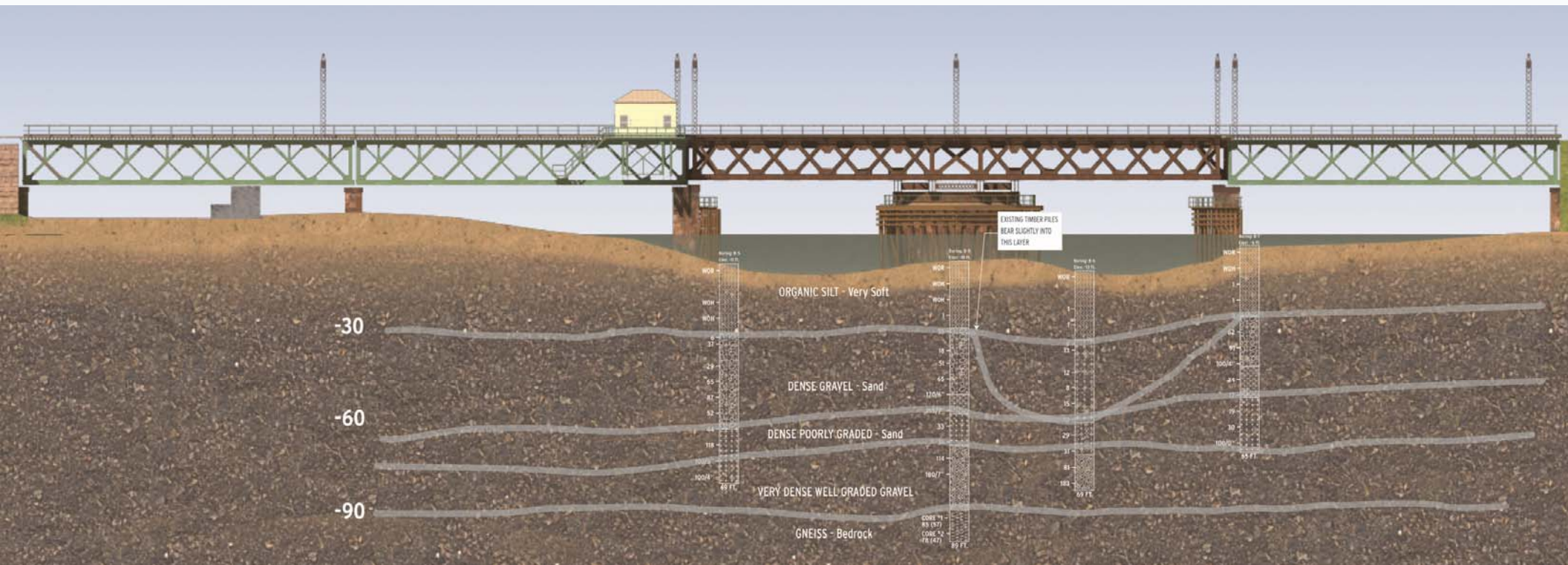


[www.walkbridgect.com](http://www.walkbridgect.com)



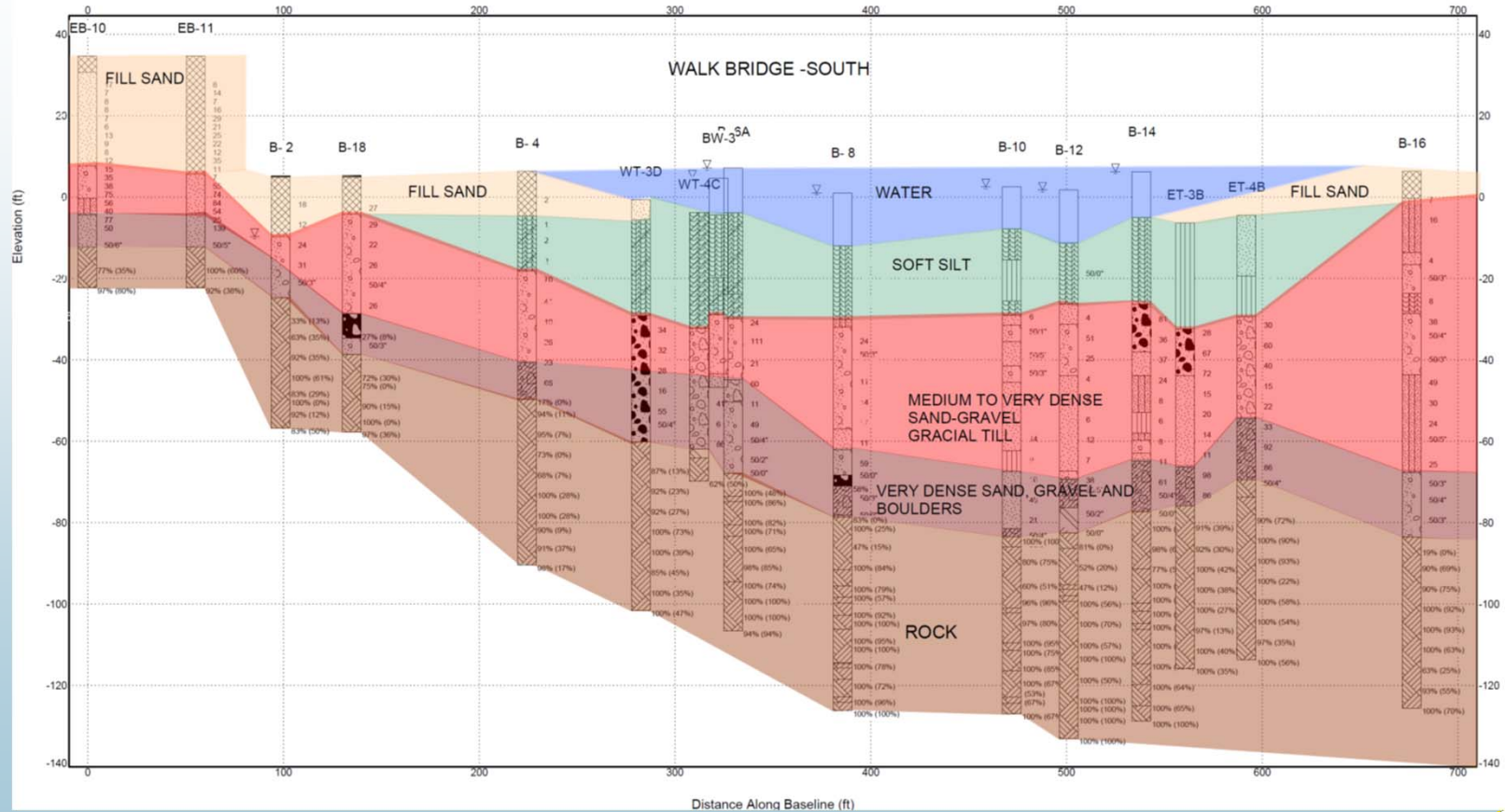


# MNR Duct bank - - soil profile



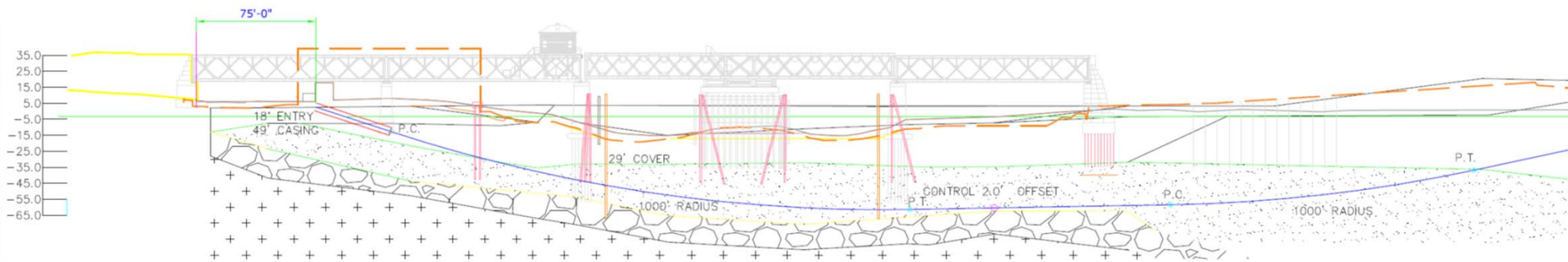


# MNR Duct bank - - soil profile





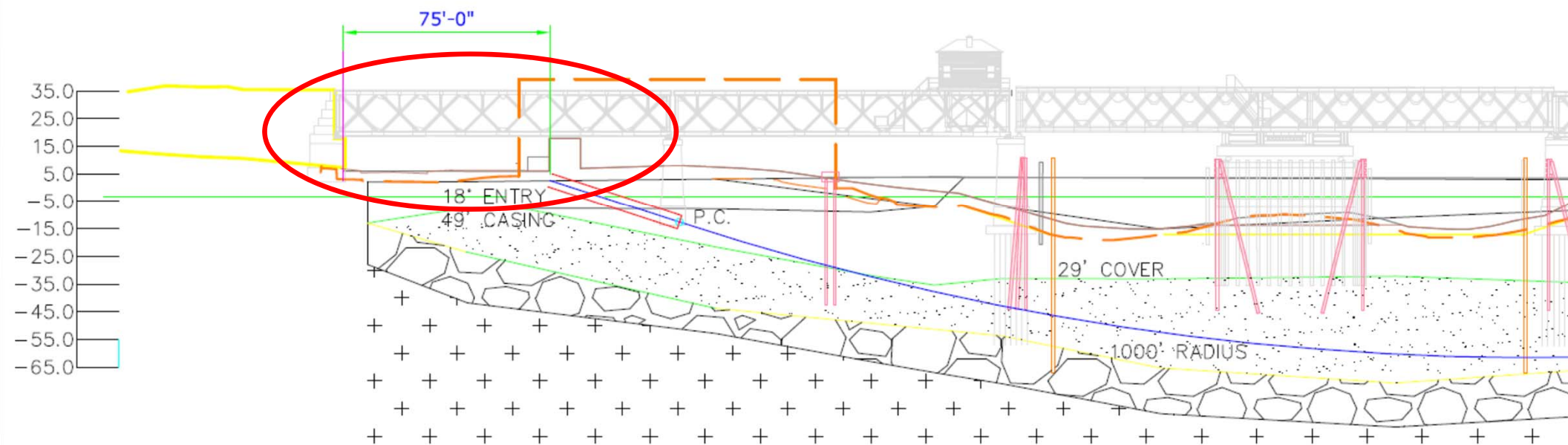
# HDD Layout #1



**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.**

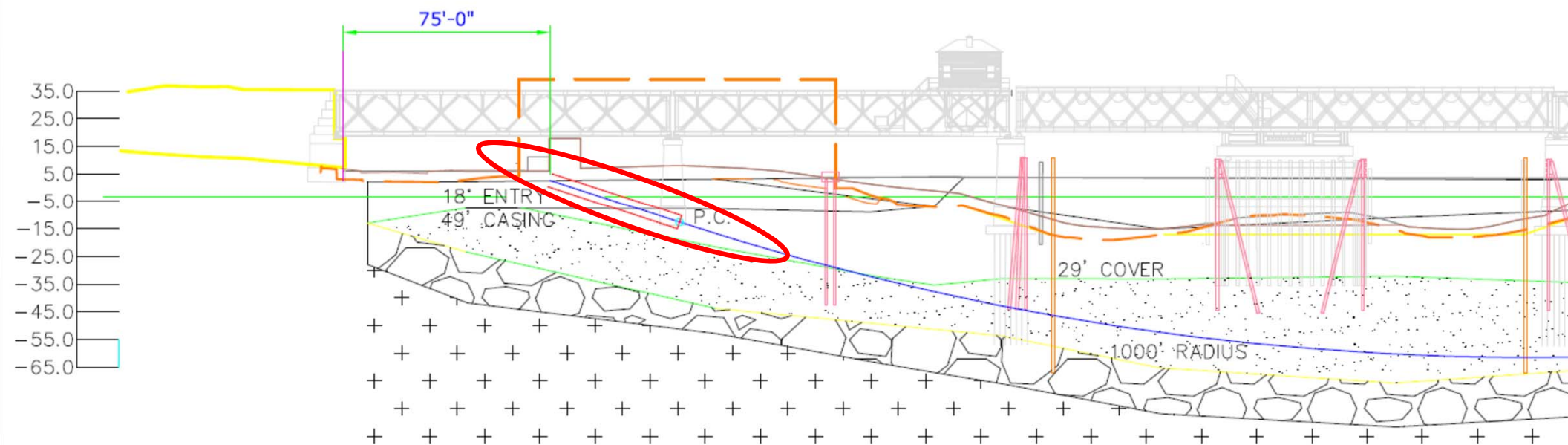


# HDD Layout #1 - - west detail



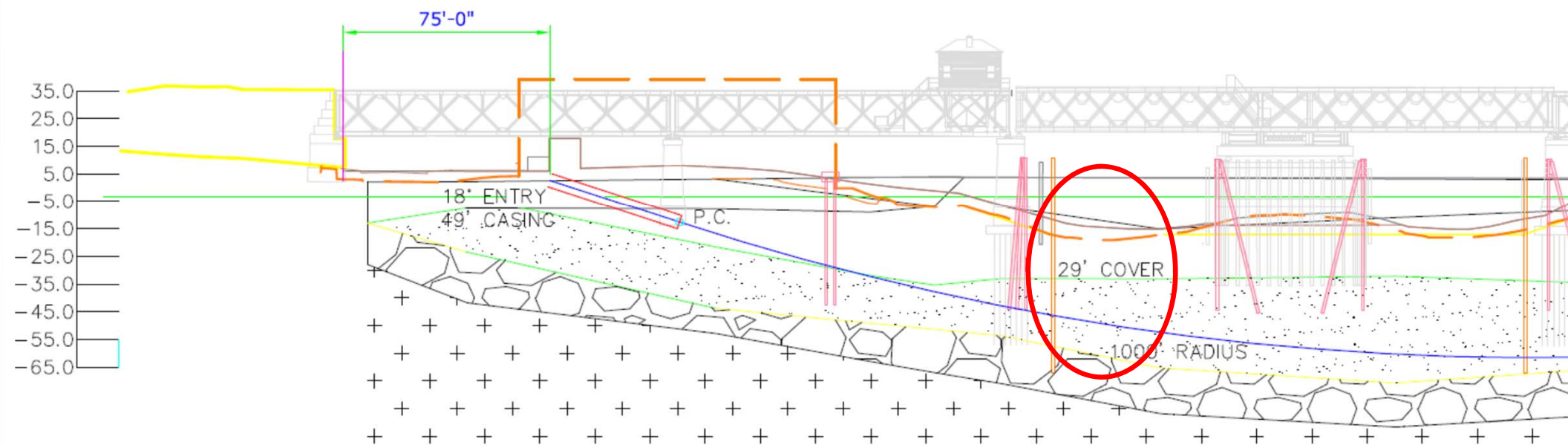


# HDD Layout #1 - - west detail



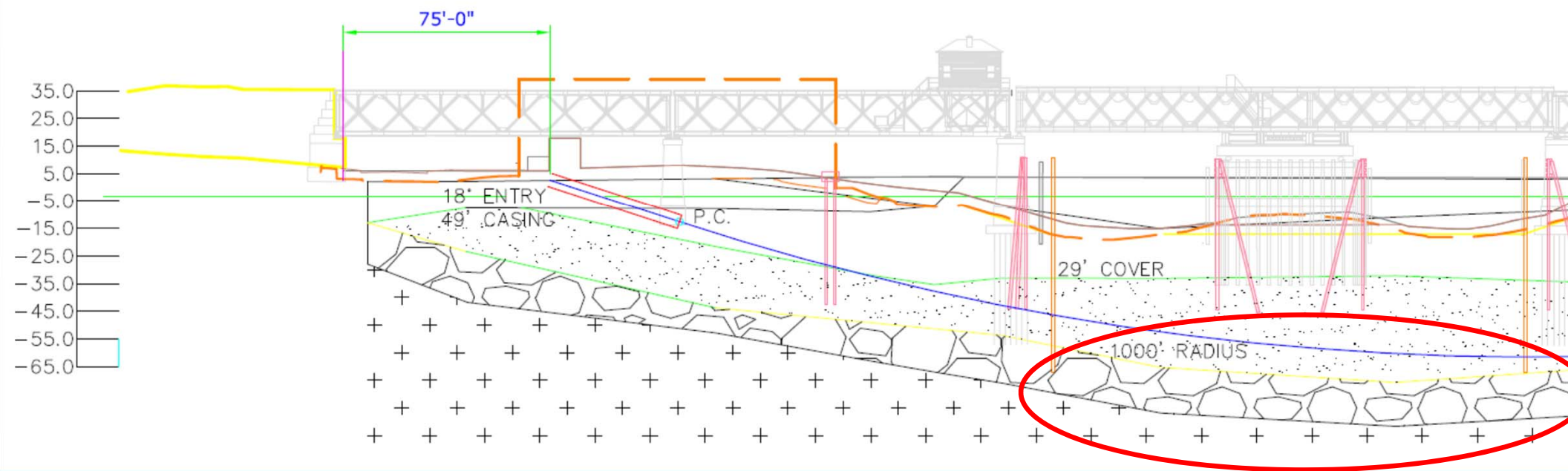


# HDD Layout #1 - - west detail





# HDD Layout #1 - - west detail

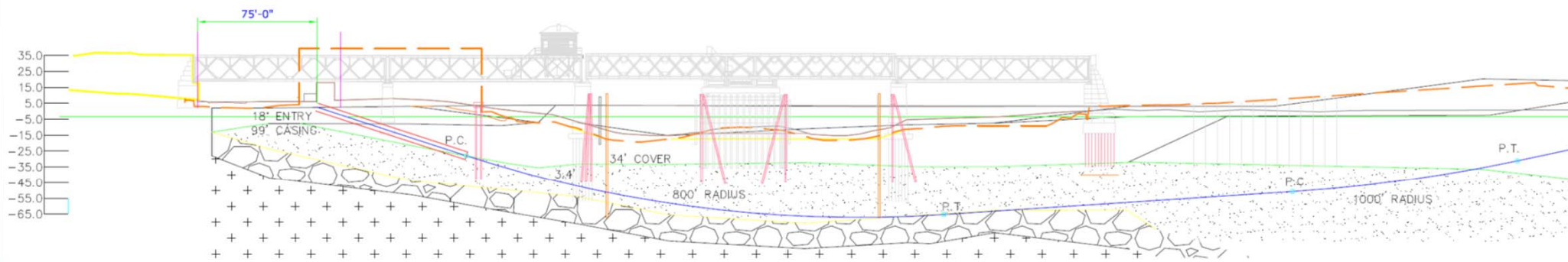








# HDD Layout #3



**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	●

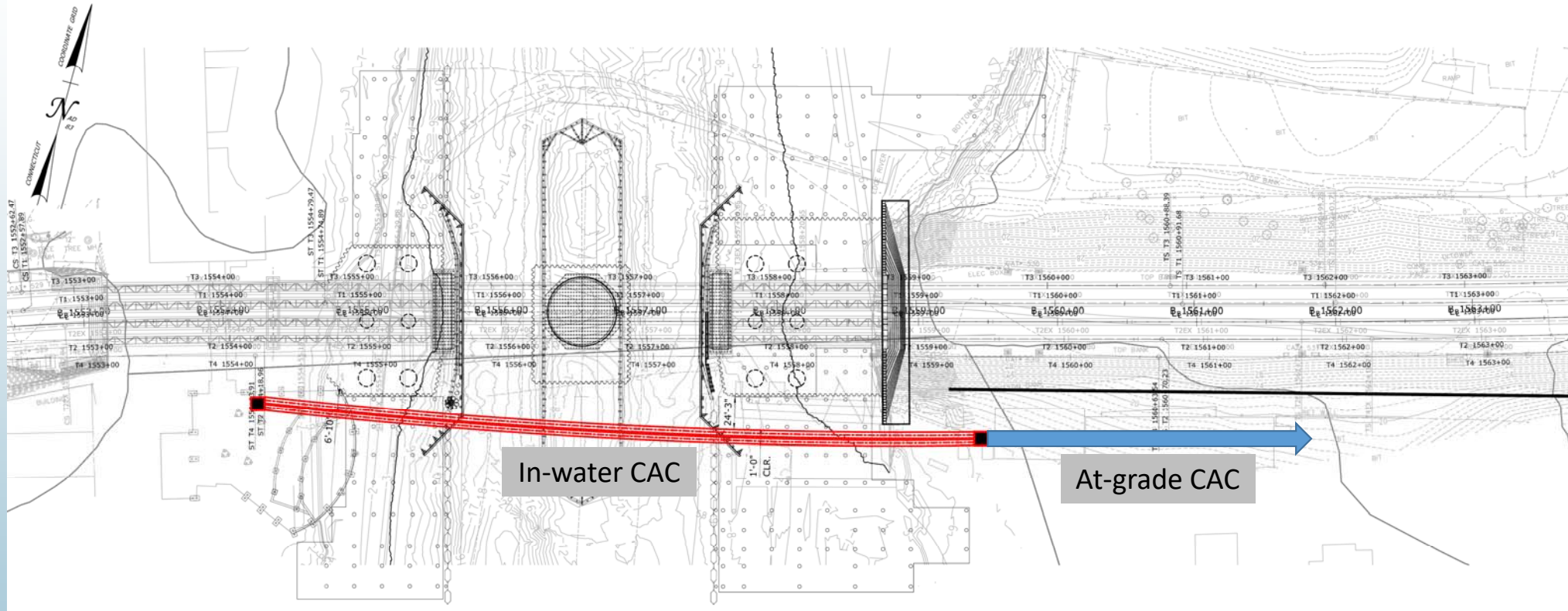
- Positive
- Neutral
- Negative

[www.walkbridgect.com](http://www.walkbridgect.com)



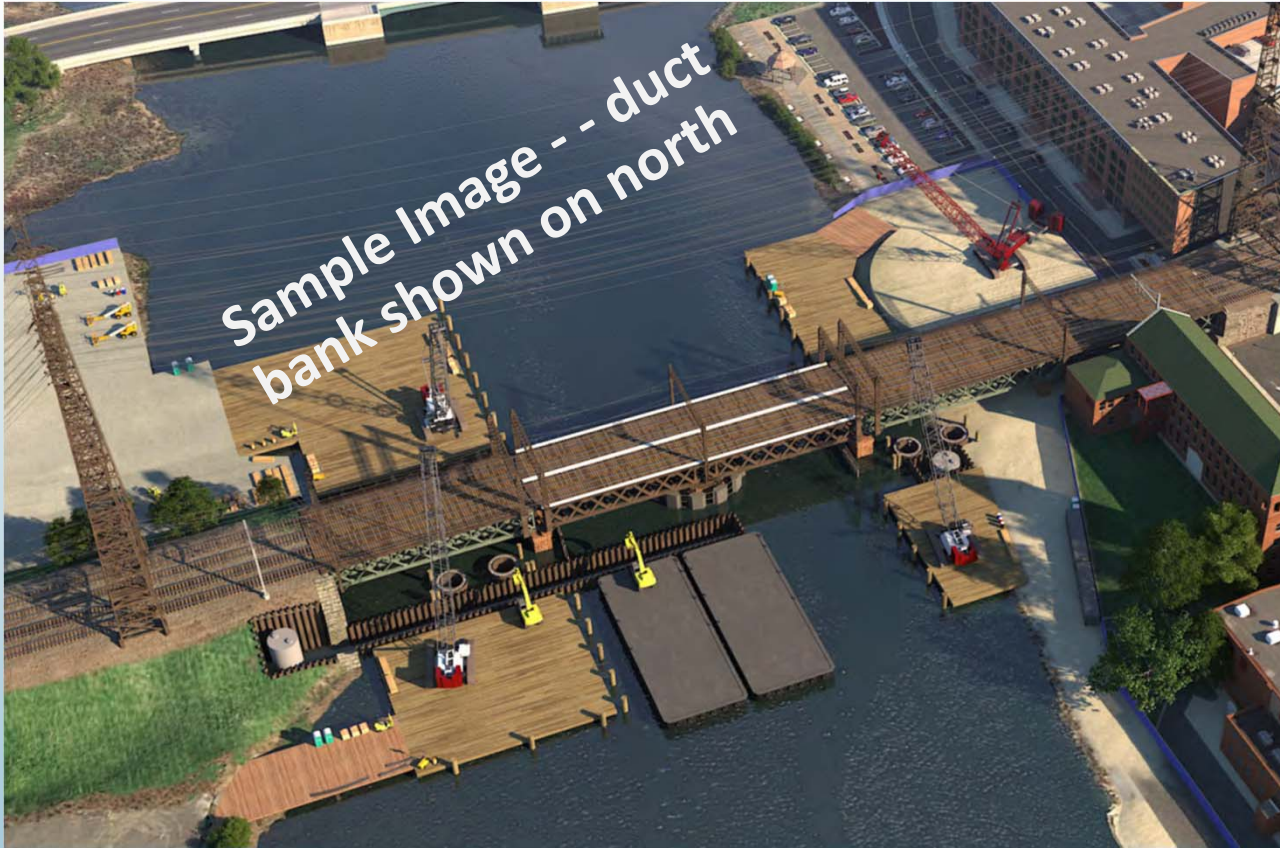


# MNR Duct Bank - - Cut and Cover (CAC)





# MNR Duct Bank - - Cut and Cover



- Sheet piling and Turbidity Curtain
- Segmentation of waterway
- Channel Hydraulics



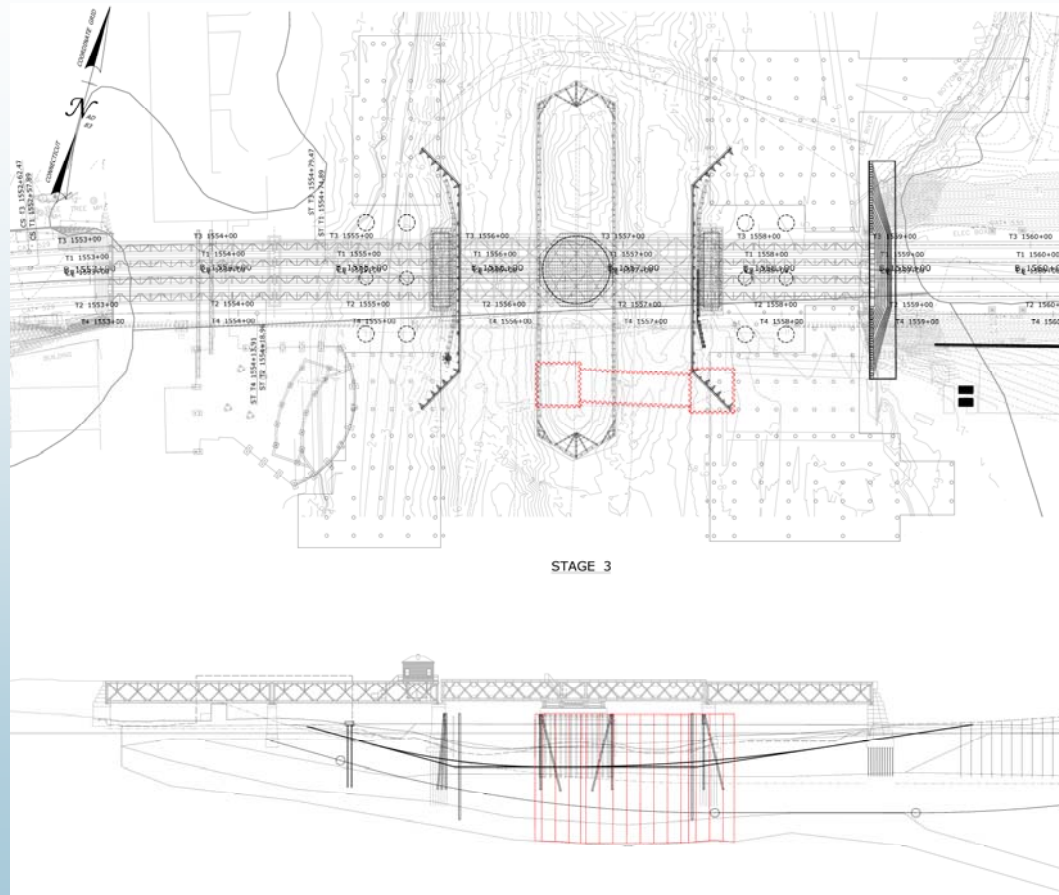


www.walkbridgect.com





# MNR Duct Bank - - Cut and Cover Staging

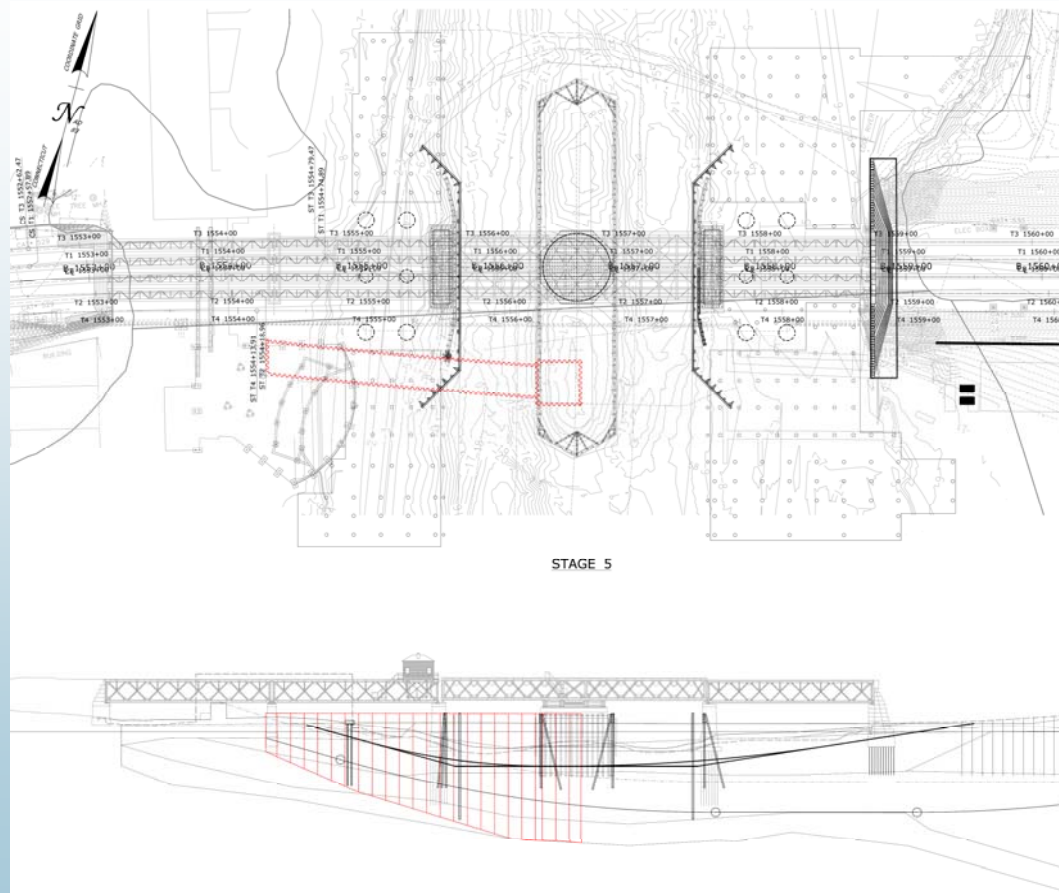


[www.walkbridgect.com](http://www.walkbridgect.com)





# MNR Duct Bank - - Cut and Cover Staging

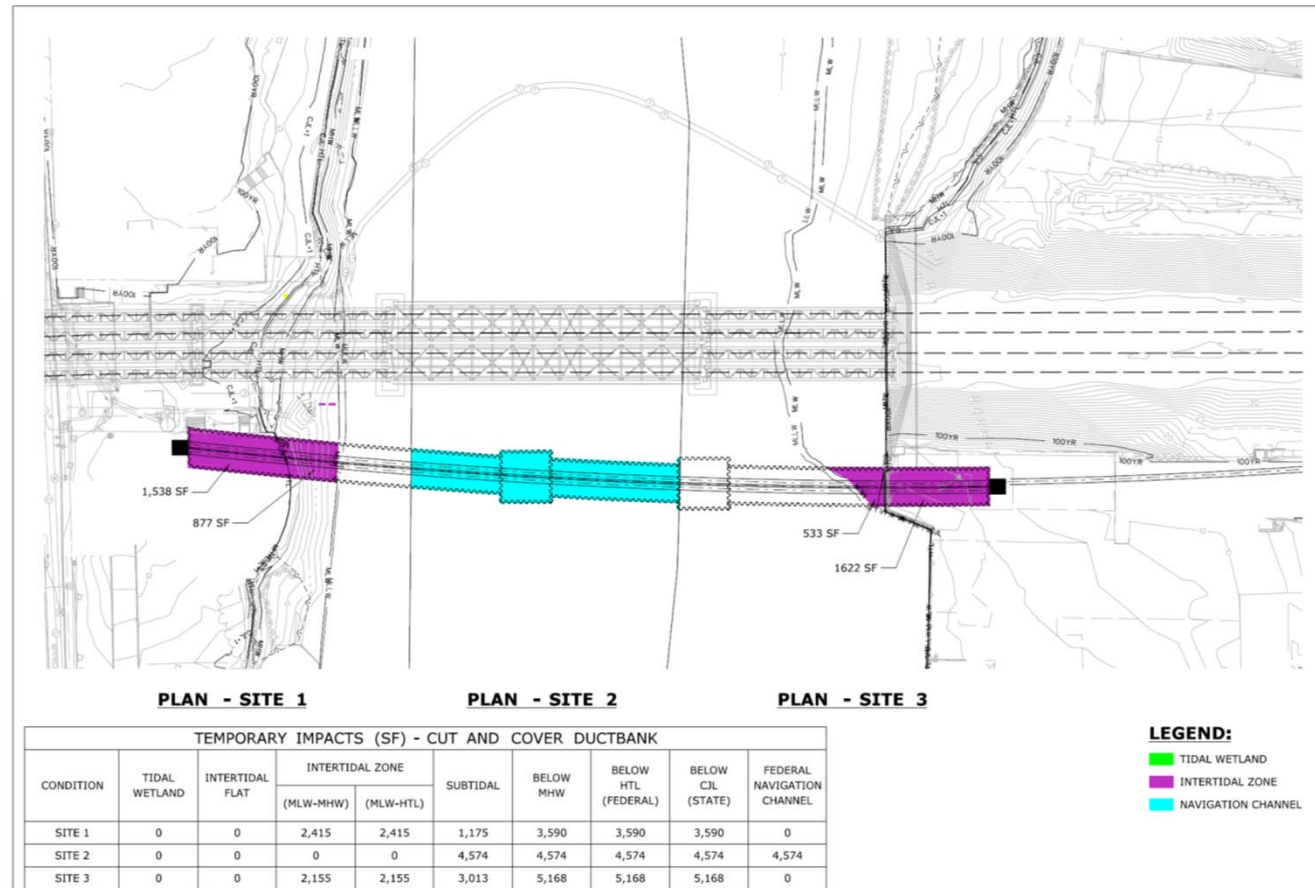


[www.walkbridgect.com](http://www.walkbridgect.com)





# MNR Duct Bank - - Impacts



[www.walkbridgect.com](http://www.walkbridgect.com)





# 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

[www.walkbridgect.com](http://www.walkbridgect.com)





# 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

- DOT will develop a program
  - Pre-Construction Baseline monitoring
    - ~ 3 locations in vicinity of Walk Bridge
    - Monitoring Parameters (Turbidity, Dissolved Oxygen, Conductivity, pH)
    - Camera monitoring
  - 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
    - Reporting
    - Who is performing the monitoring
    - Equipment specification & maintenance





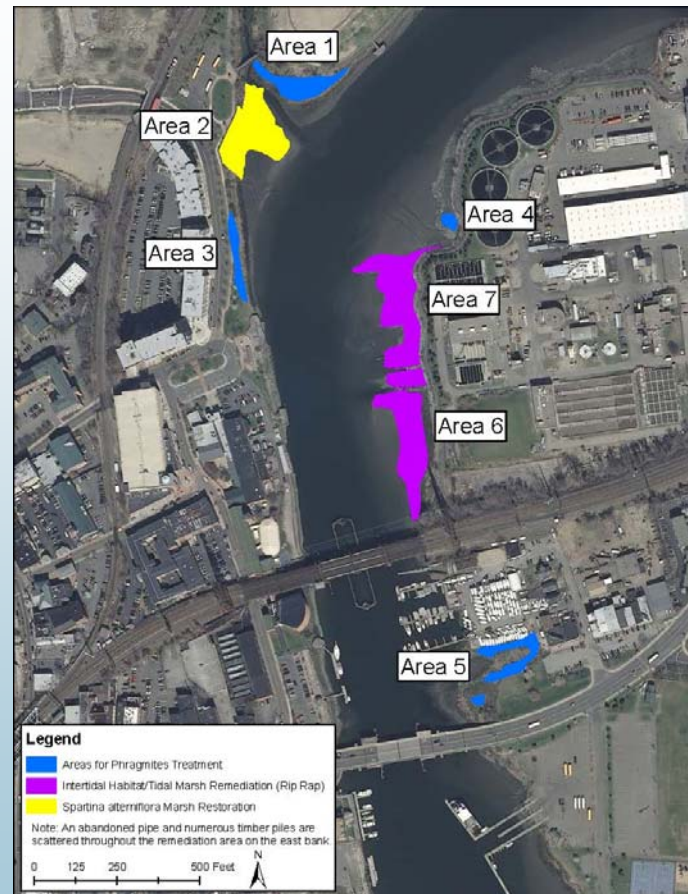
# Sediment Dewatering Program

- CTDEEP General Permit for the Discharge of Groundwater Remediation Wastewater
  - Applies to all similar discharges in the State
  - Screening – Initial Sampling
  - DOT Performance Specification -> Treatment system must meet effluent limitations
  - Effluent Limitations
  - Monitoring Frequency
    - < 5,000 gallons per day – Quarterly
    - > 5,000 gallons per day - Monthly





# Wetland Mitigation Locations

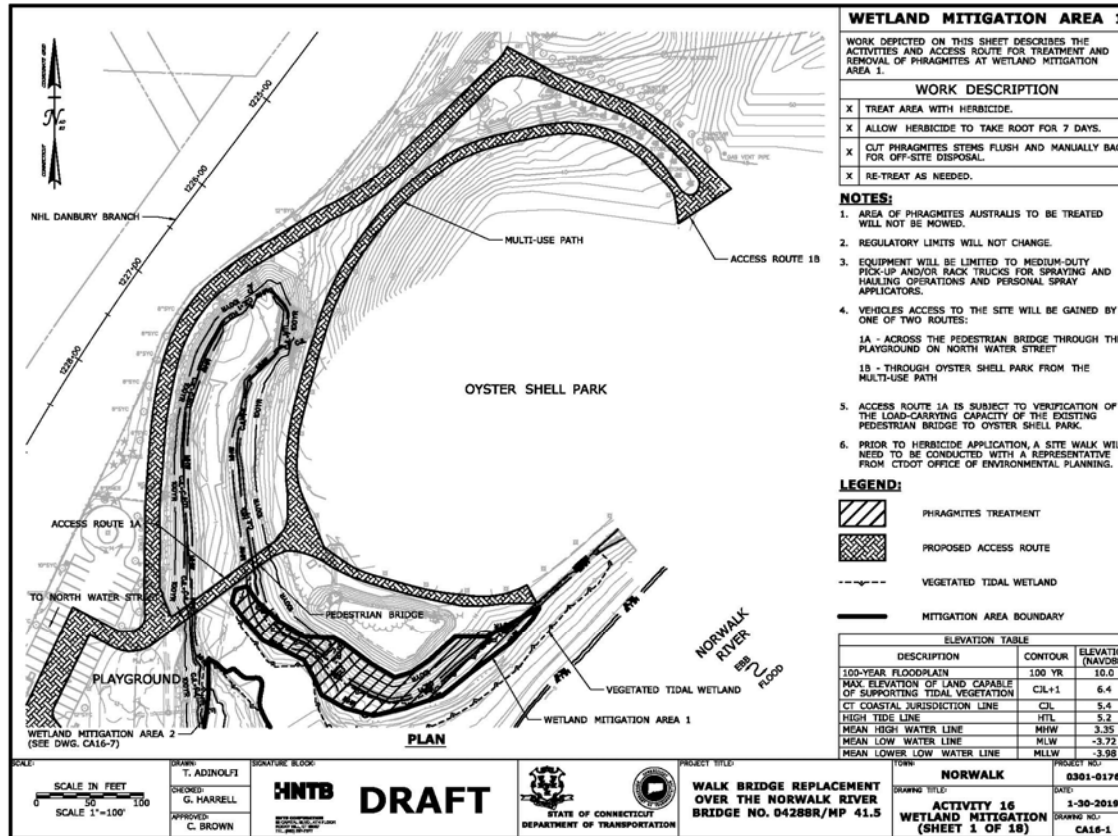


- Phragmites Treatment
- Intertidal Habitat/Tidal Marsh Remediation
- Spartina alterniflora Marsh Restoration



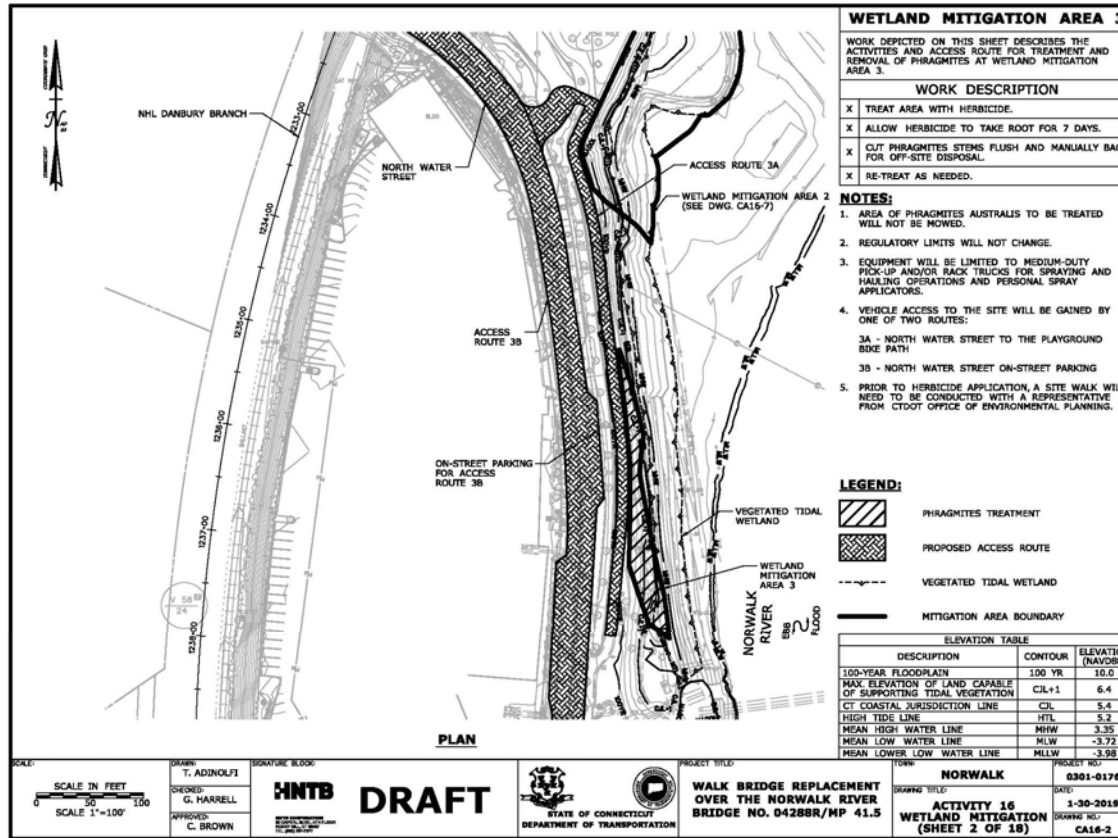


# Wetland Mitigation – Area 1



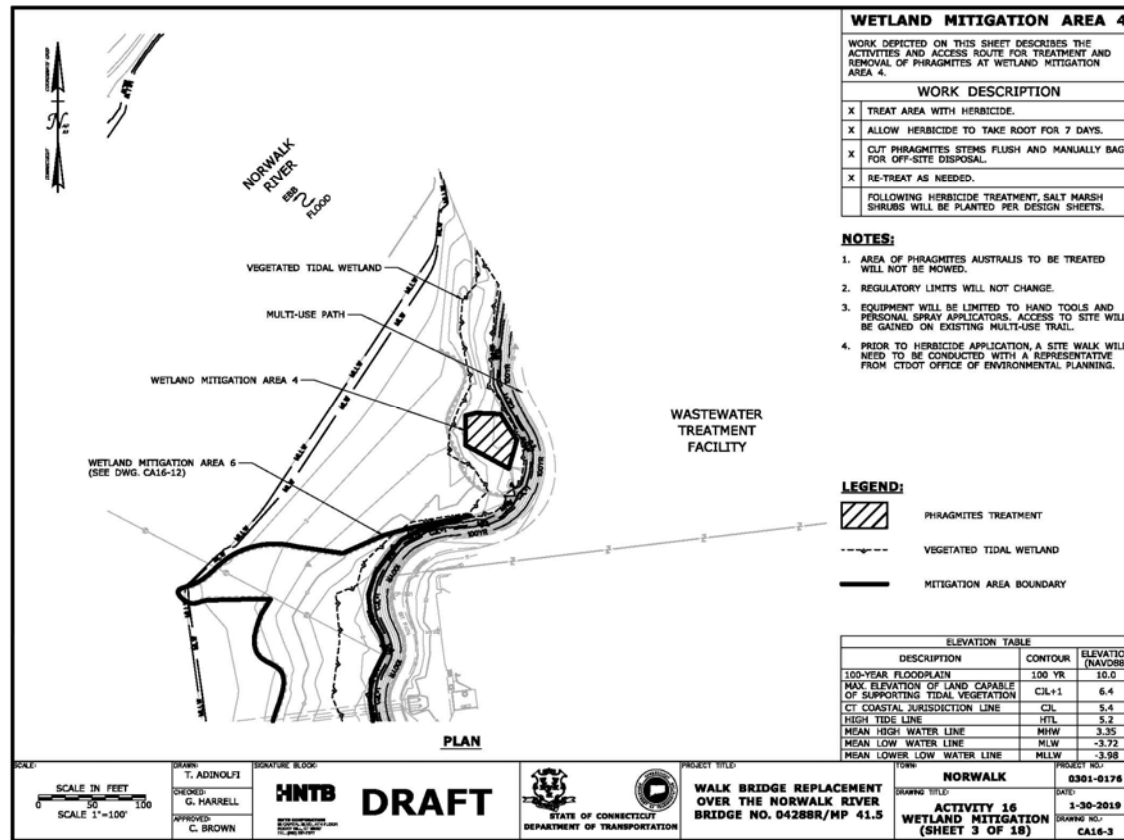


# Wetland Mitigation – Area 3





# Wetland Mitigation – Area 4

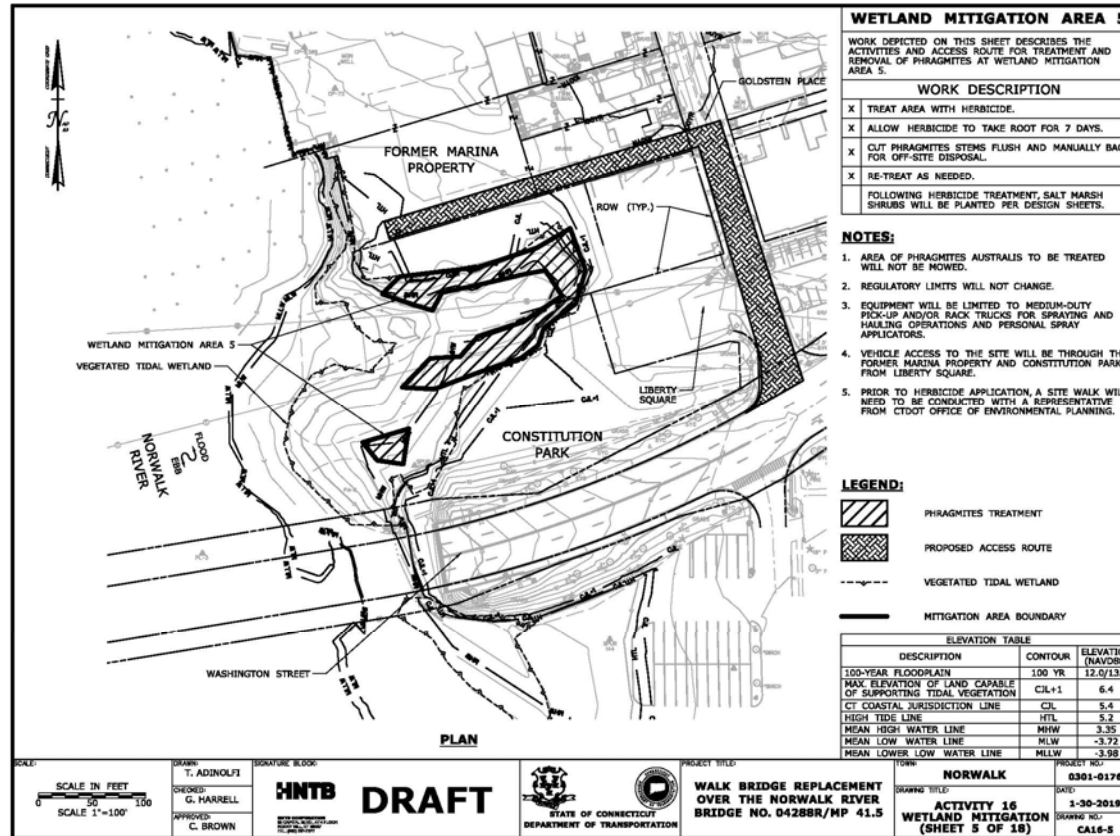


[www.walkbridgect.com](http://www.walkbridgect.com)





# Wetland Mitigation – Area 5





# Wetland Mitigation Protective Measures

- Turbidity curtains around sites requiring grading or excavation
- Turbidity Monitoring
- Work only above tide cycle
- All temporary construction access restored to pre-construction conditions





# Representative Restoration/Creation



[www.walkbridgect.com](http://www.walkbridgect.com)





# Representative Restoration/Creation



[www.walkbridgect.com](http://www.walkbridgect.com)





# Representative Restoration/Creation



[www.walkbridgect.com](http://www.walkbridgect.com)





# Representative Restoration/Creation



[www.walkbridgect.com](http://www.walkbridgect.com)





# Representative Restoration/Creation



[www.walkbridgect.com](http://www.walkbridgect.com)





# Representative Restoration/Creation



[www.walkbridgect.com](http://www.walkbridgect.com)





# Representative Restoration/Creation



[www.walkbridgect.com](http://www.walkbridgect.com)





# Representative Restoration/Creation



[www.walkbridgect.com](http://www.walkbridgect.com)





## 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



[www.walkbridgect.com](http://www.walkbridgect.com)

