

Fresh Kills Park, Phase 3A, Task 8.3
CONCEPTUAL BRIDGE REPORT

ADVANCE PROGRESS SUBMISSION
FOR VALUE ENGINEERING

September 7, 2007

Prepared for:

New York City Department of Parks and Recreation

Prepared by:

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EXISTING BRIDGES

Main Creek Bridge

The existing Main Creek Bridge has a roadway width of 50 ft. It was designed for heavy haul trucks and therefore has more than adequate capacity for use as a roadway bridge. The existing configuration is shown in Dwg. MC-B-23.01.

The proposed modifications for the two-lane option are shown in Dwg. MC-B-23.02. The existing bridge would accommodate a 34-foot roadway with two lanes of traffic, a median and shoulders. A 10-foot wide bicycle path could also be accommodated on one side, separated from traffic by a standard concrete barrier, as well as a 5-foot wide raised pedestrian sidewalk would be provided.

The existing parapets would be replaced with a standard concrete barrier on one side and a pedestrian railing on the other. The existing asphalt surface and granular subbase course would be removed and replaced.

The proposed modifications for the four-lane option are shown in Dwg. MC-B-23.03. In this option the entire 50-foot width would be used to provide four 11-foot wide lanes with shoulders and no median. Again, the existing parapets, asphalt surface and granular subbase course would be removed and replaced.

A new, separated parallel structure would provide 15 ft. of width for bicycles and pedestrians, at a slightly higher elevation.

Richmond Creek Bridge

The existing Richmond Creek Bridge has a roadway width of 50 ft. It was designed for heavy haul trucks and therefore has more than adequate capacity for use as a roadway bridge. The existing configuration is shown in Dwg. RC-B-23.01. The structural configuration is entirely different from that of the Main Creek Bridge.

The proposed modifications for the two-lane option are shown in drawing RC-B-23.02. A 34-foot roadway would be provided which accommodates two lanes of traffic with a median and shoulders. A 10-foot wide bicycle path would be provided on one side separated from traffic by a standard concrete barrier, and a 5-foot wide raised pedestrian sidewalk would be provided as well.

The existing parapets would be replaced with a standard concrete barrier on one side and a pedestrian railing on the other. The existing asphalt wearing course would be removed and replaced.

The proposed modifications for the four-lane option are shown in Dwg. RC-B-23.03. In this option the entire 50-foot width would be used to provide four 11-foot wide lanes with shoulders and no median. Again, the existing asphalt wearing course would be removed and replaced.

A new, separated parallel structure would provide 15 ft. of width for bicycles and pedestrians, at a slightly higher elevation.

West Shore Expressway Underpass Roadways

Drawings WS-B-30.01 and WS-B-30.02 present schematic views of the proposed two-lane and four-lane expansion options for the existing 36-foot wide roadway beneath the existing West Shore Expressway twin

bridges on shores. A 40 ft. wide roadway is proposed for the two-lane alternative and a 60 ft. roadway is proposed for the 4-lane alternative. Each would expand the roadway towards the water. The existing concrete barriers and concrete crib retaining walls at the toe of the bridge abutment slopes would be removed and replaced in their current locations.

NEW BRIDGES

Perimeter Road Crossing at Yukon Avenue

The new proposed roadway would have to cross over the existing perimeter road in the vicinity of Yukon Avenue. It is anticipated that this road would rise on embankment on each side of the perimeter road and cross over on a single span structure. This structure must not impose new loads on the existing cutoff wall and leachate collection trench located on the interior side of the existing perimeter road (towards the east mound). Any foundation elements that pierce the east mound cap membrane must be accessible to inspect the membrane seal around the foundation elements.

Dwg. YC-B-23.04 presents Option YC-1. In this option, the perimeter road would remain in its existing location. The crossover structure would have a standard full height abutment on the exterior side of the perimeter roadway (east side) and would have a V-shaped pier arrangement on the interior side of the roadway (west side) with foundation elements piercing the membrane cap, and a short cantilever reaching to a Mechanically Stabilized Earth (MSE) abutment. A standard abutment cannot be used on the interior side since it would require foundation elements piercing the membrane cap which would not be accessible for inspection. The proposed MSE abutment would not require foundation elements piercing the cap, and the proposed pier foundation would be accessible for inspection and would minimize the loading on the MSE abutment.

Dwg. YC-B-23.05 presents Option YC-2. In this option the perimeter roadway would be relocated a short distance towards the exterior (east) side, away from the east mound. The crossover structure would be exactly the same as in Option YC-1, but the east pier foundation would pierce the membrane cap as close as feasible to the leachate collection trench (10 ft.), remaining as far away as possible from the cap of the east mound.

Dwg. YC-B-23.06 presents Option YC-3. In this option the perimeter road would be relocated further to the exterior (east) side, far enough that both abutments would be outside the cutoff wall and would not pierce the membrane cap. Standard height abutments would be used on both ends of the crossover structure.

Dwg. YC-B-50.01 presents typical deck cross sections and typical east pier elevations for both two-lane and four-lane options for the crossover structure.

Perimeter Road Crossing at Forest Hill Road

The new proposed roadway would have to cross over the existing perimeter road in the vicinity of Forest Hill Road. It is anticipated that the new roadway would be carried on a viaduct structure on the exterior (east) side of the perimeter road, through a wetland area for roughly 800 ft. It would be carried on embankment on the interior (west) side of the perimeter road. This structure must not impose new loads on the existing cutoff wall and leachate collection trench located on the interior side of the existing perimeter road. Any foundation elements that pierce the cap membrane must be accessible to inspect the membrane seal around the foundation elements.

Three options are presented in Drawings FC-B-23.04 through FC-B-23.06, which are similar to the options presented for the Perimeter Road Crossing at Yukon Avenue.

Drawing FC-B-50.01 presents typical deck sections and pier elevations for the crossing in both two-lane and four-lane configurations.

Forest Hill Road Pedestrian Bridge

A pedestrian bridge will be required over Richmond Ave. at Forest Hill Road. Drawing FP-B-23.01 presents a cable-stayed alternative with a 215-foot long main span. This alternative would provide 14 ft. of width for pedestrians and bicycles. The approach structure at each end is a spiral ramp with a maximum grade of 5% to accommodate wheelchair and handicapped access.

Drawing FP-B-23.02 presents a basket-handle tied arch alternative with the same 215-foot long main span. This alternative would also provide a 14 ft. wide pathway and would have similar spiral ramps at each end.

Muldoon Avenue Pedestrian Bridge

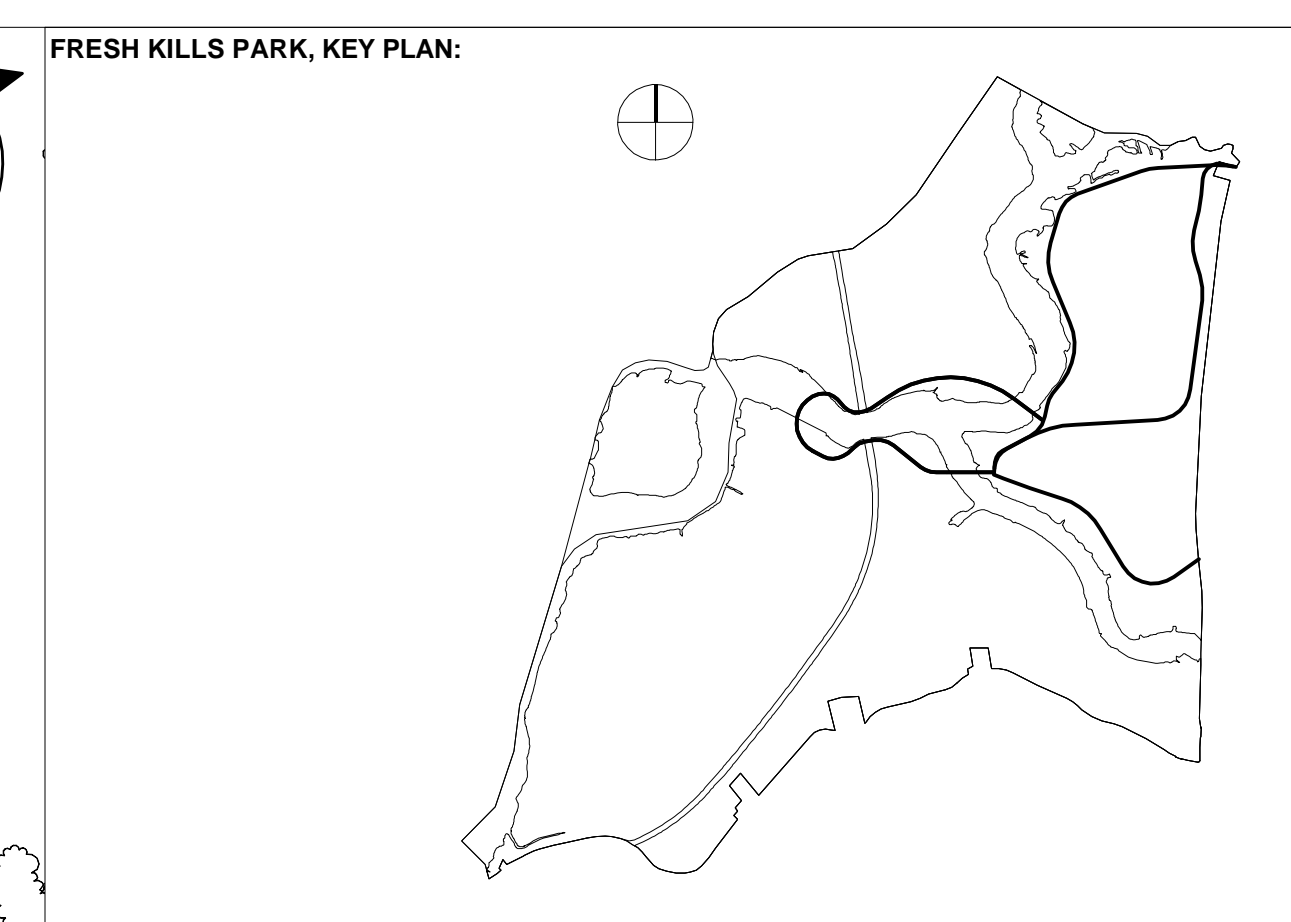
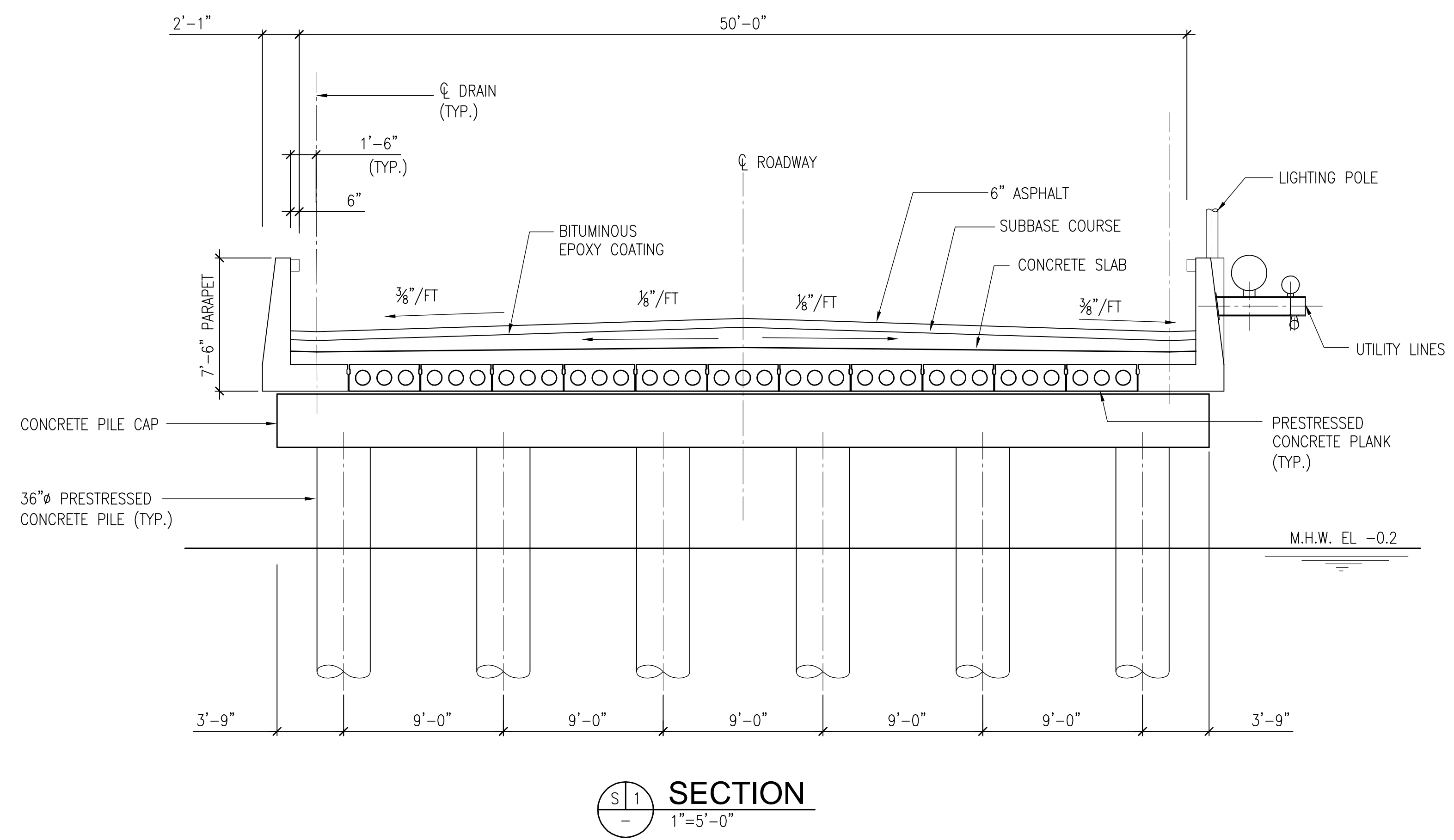
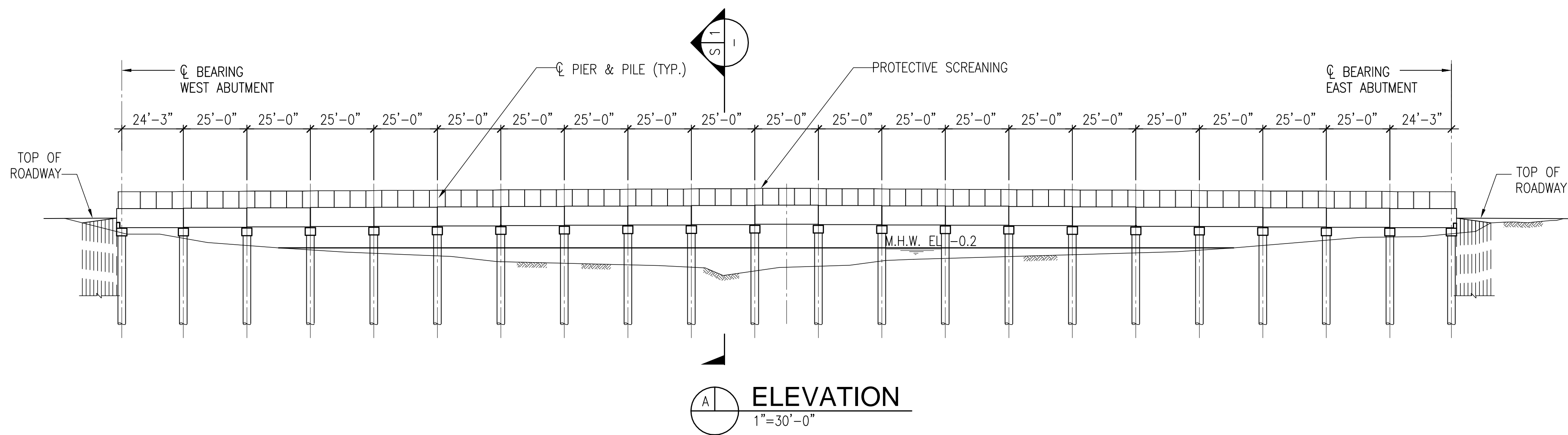
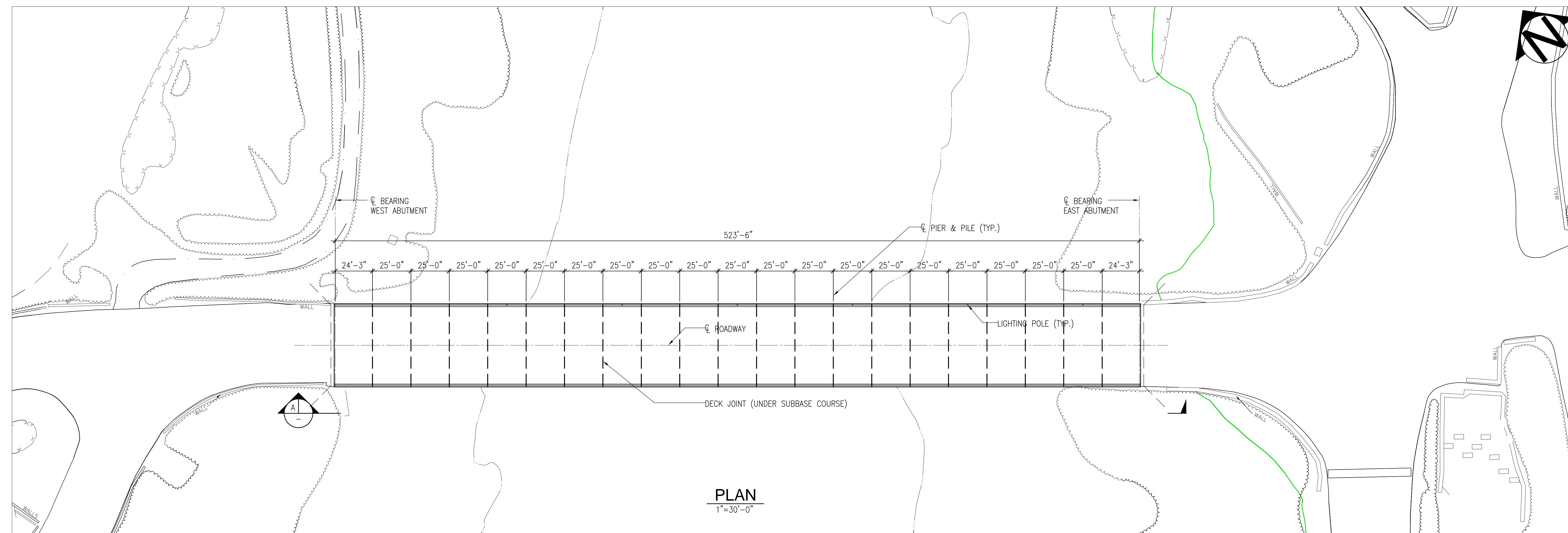
Within the park, there is a need for a pedestrian bridge crossing Route 440. Drawing MP-B-23.01 presents a cable stayed alternative which is similar to that proposed over Forest Hill Road, but with a main span of 300 ft. It would provide 14 ft. of width and would have similar spiral ramp approaches with maximum grades of 5%.

Drawing MP-B-23.02 presents a basket-handle tied arch alternative, also with a 300 ft. long main span, 14-foot wide pathway and similar spiral ramps at each end.

Signature Roadway Bridge over Fresh Kills

The Fresh Kills Park draft master plan proposed to carry the loop drive over Fresh Kills Creek on a signature bridge. Drawing SB-B-23.01 presents a three-tower cable stayed alternative with four suspended spans and four conventional approach spans on the curved alignment. This alternative can be used with both a 40-foot wide two-lane configuration and a 60 ft. wide four-lane configuration.

Drawing SB-B-23.02 presents a triangular shaped steel tube truss bridge. This alternative can be used with both two-lane and four-lane alternatives, as shown.



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PROJECT TITLE:
FRESH KILLS PARK

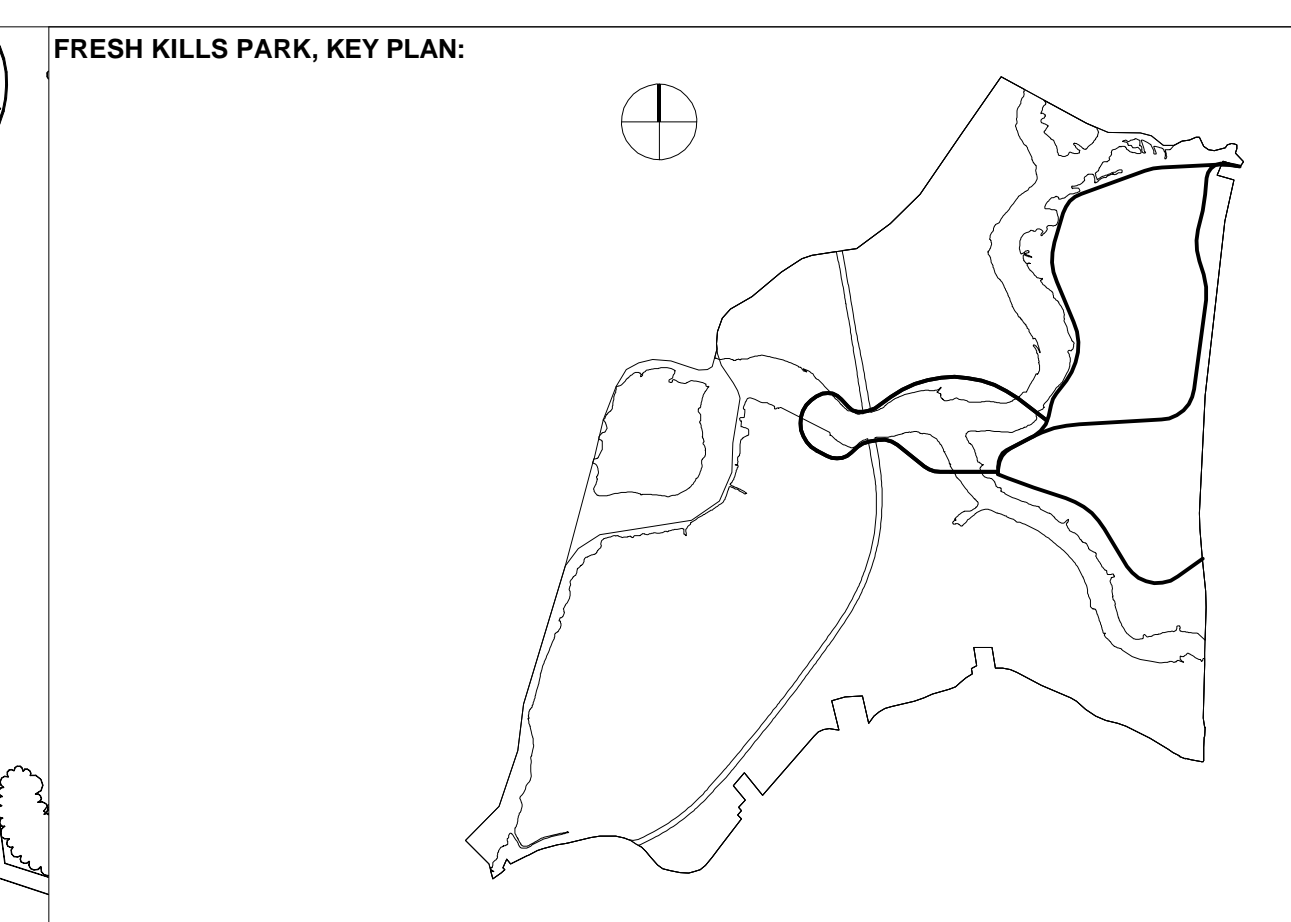
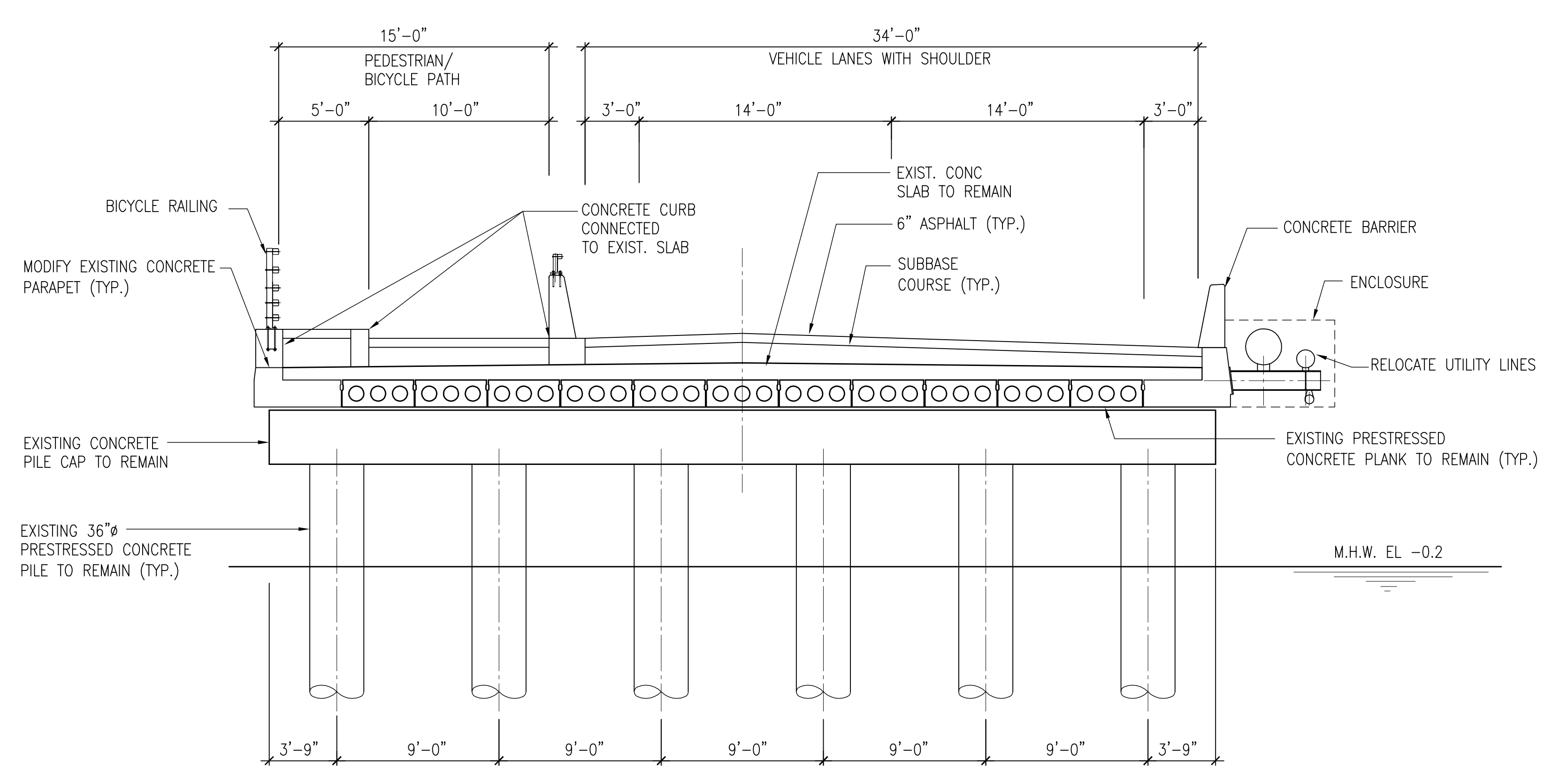
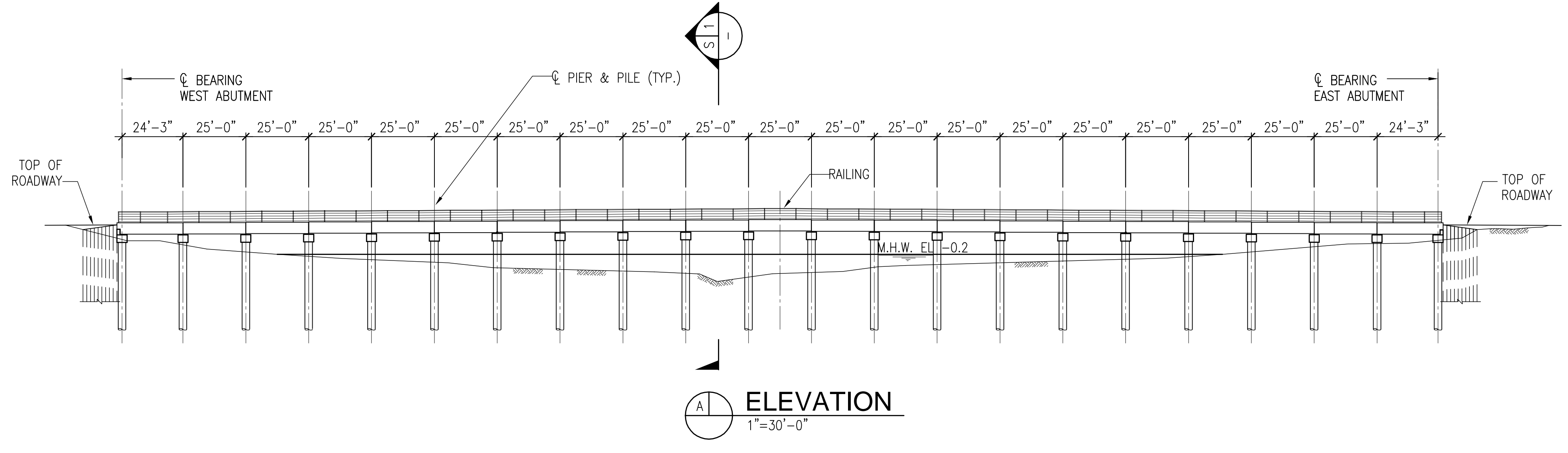
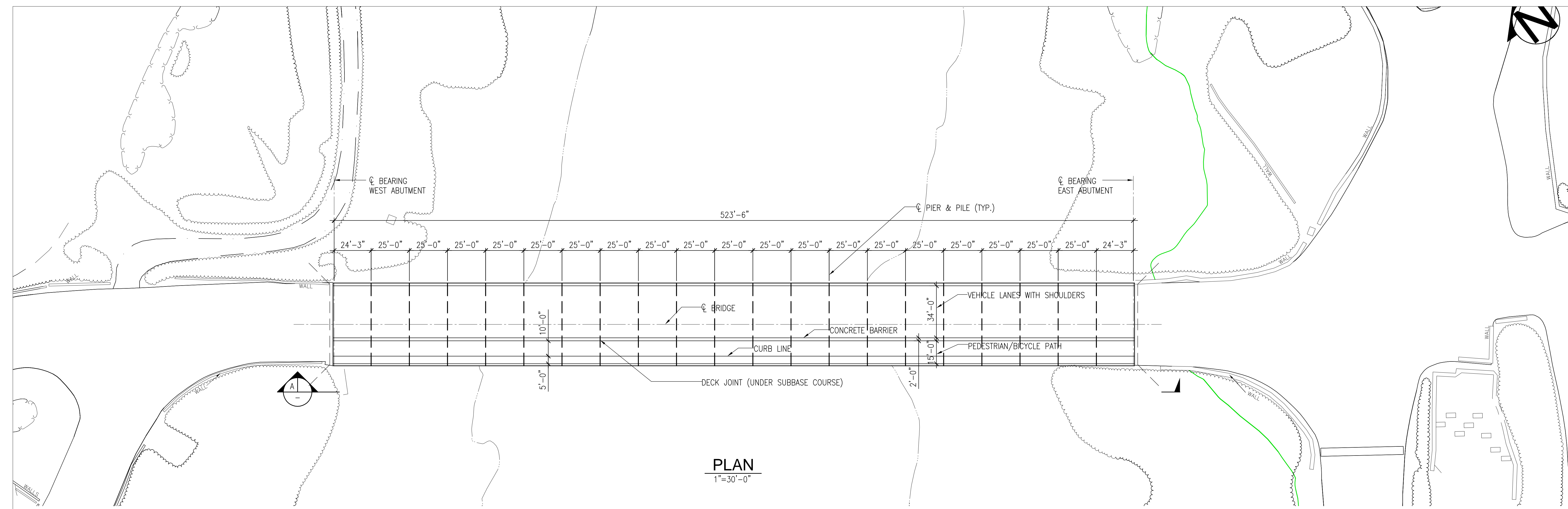
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REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD

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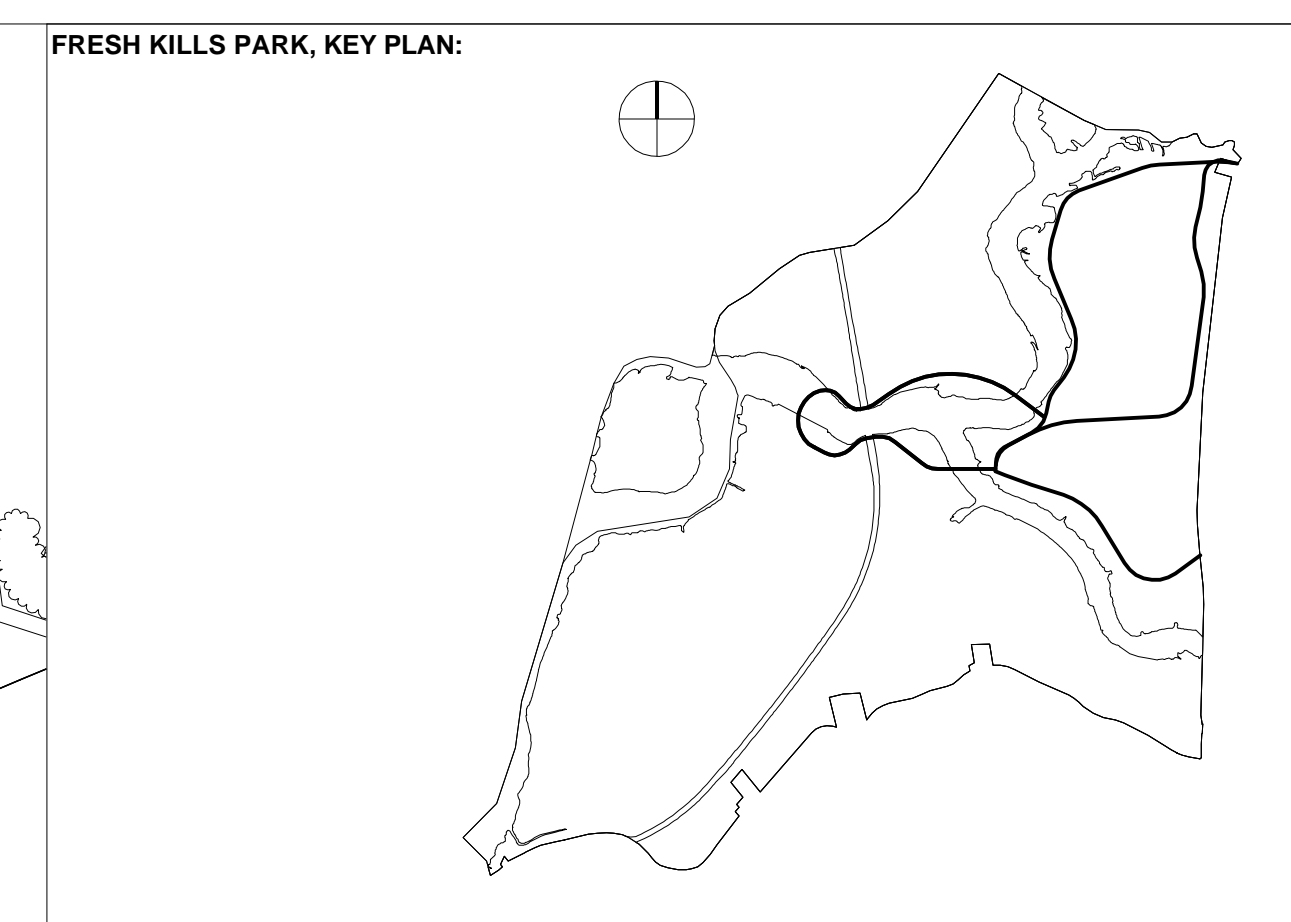
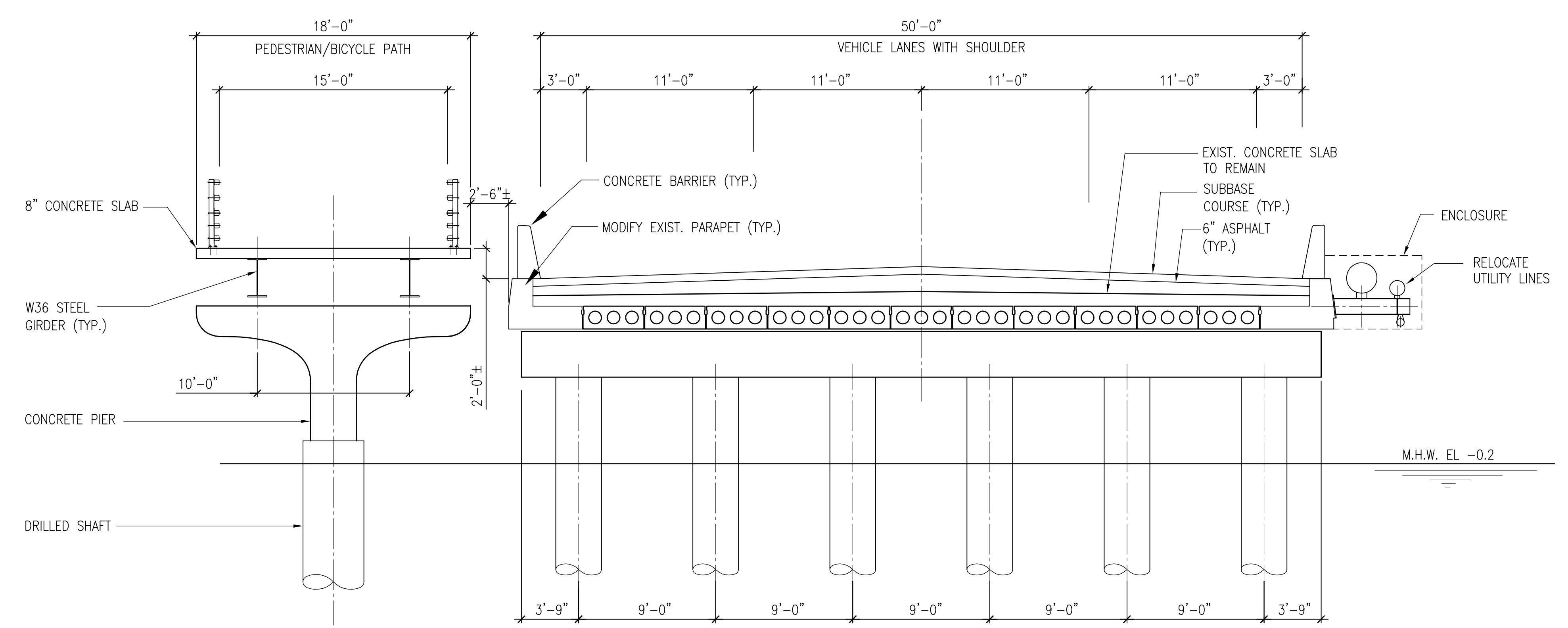
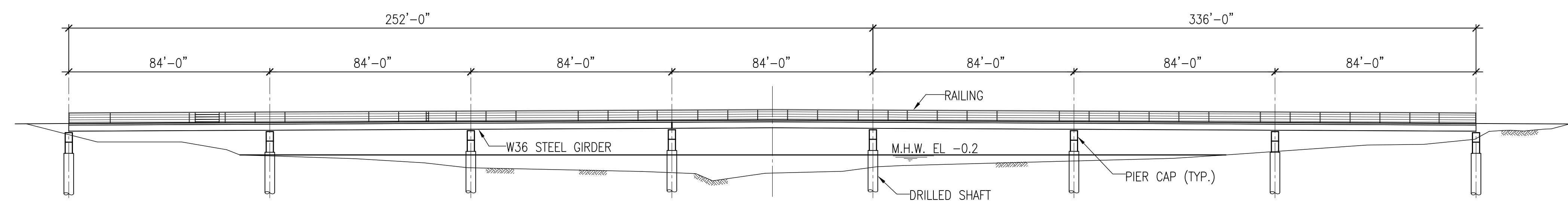
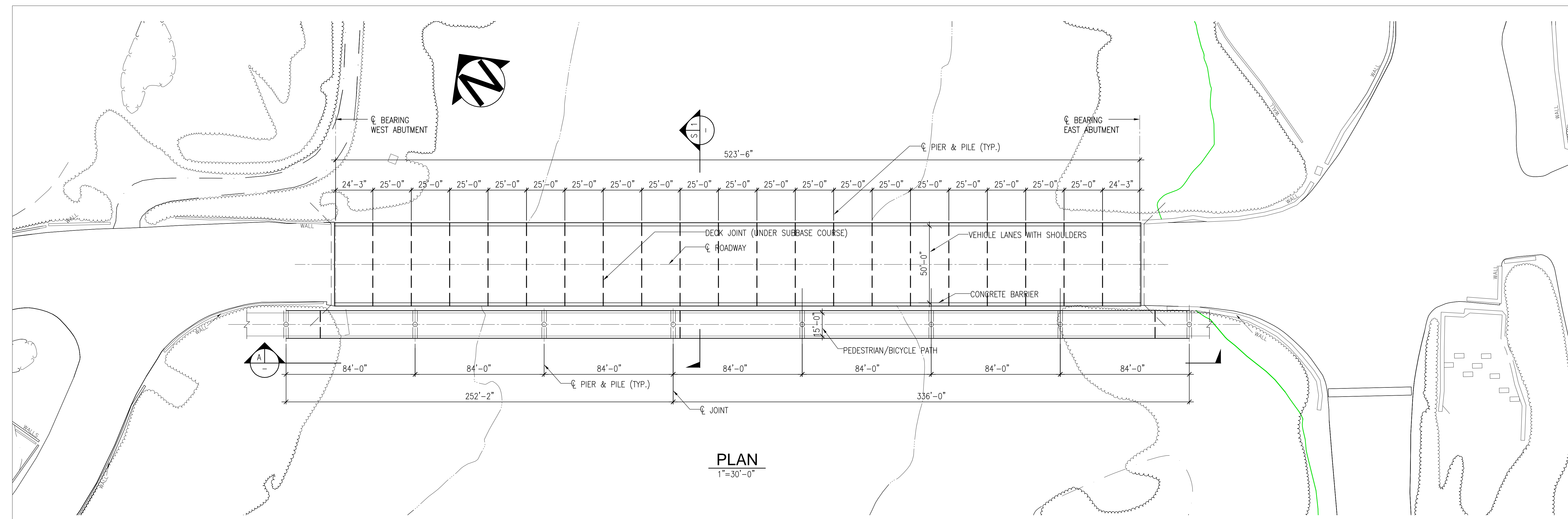
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Flushing Meadows-Corona Park
Flushing, New York

PROJECT TITLE:
FRESH KILLS PARK

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2 LANE OPTION

DESIGNED BY: DSN	DRAWN BY: DRN	CHECKED BY: CHK
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD
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PROJECT TITLE:
FRESH KILLS PARK

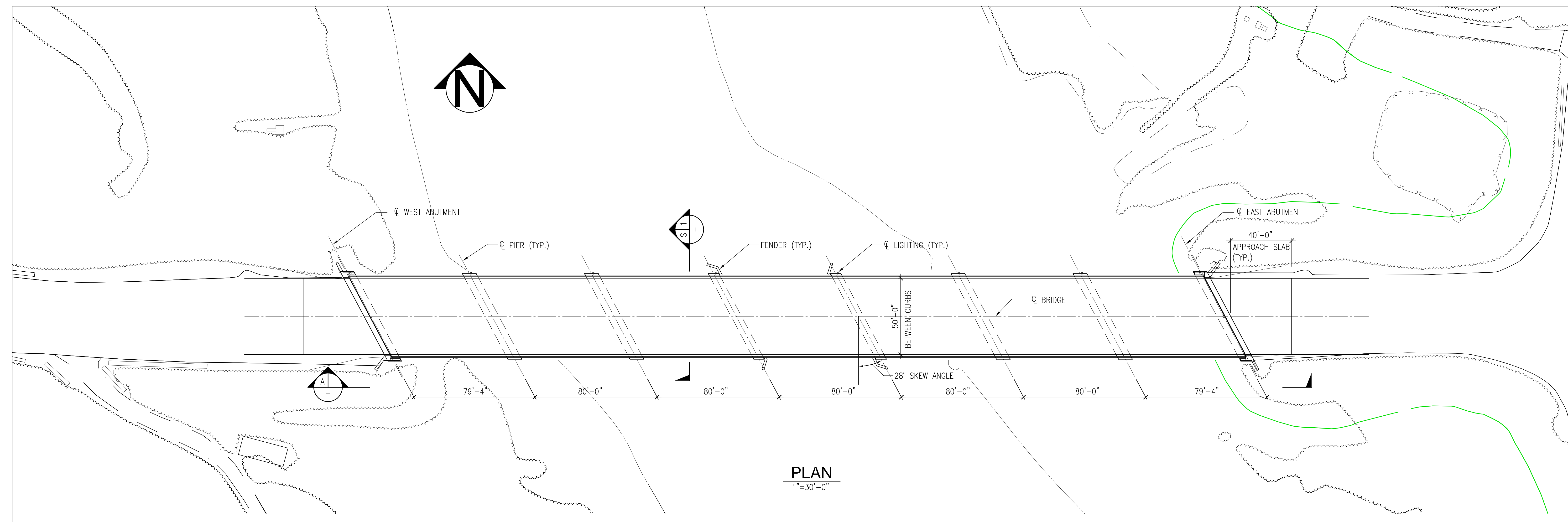
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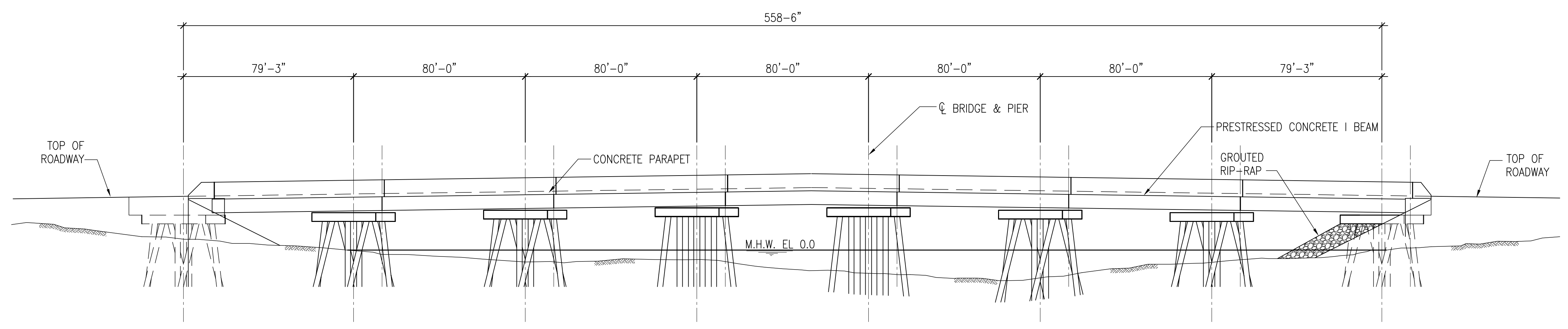
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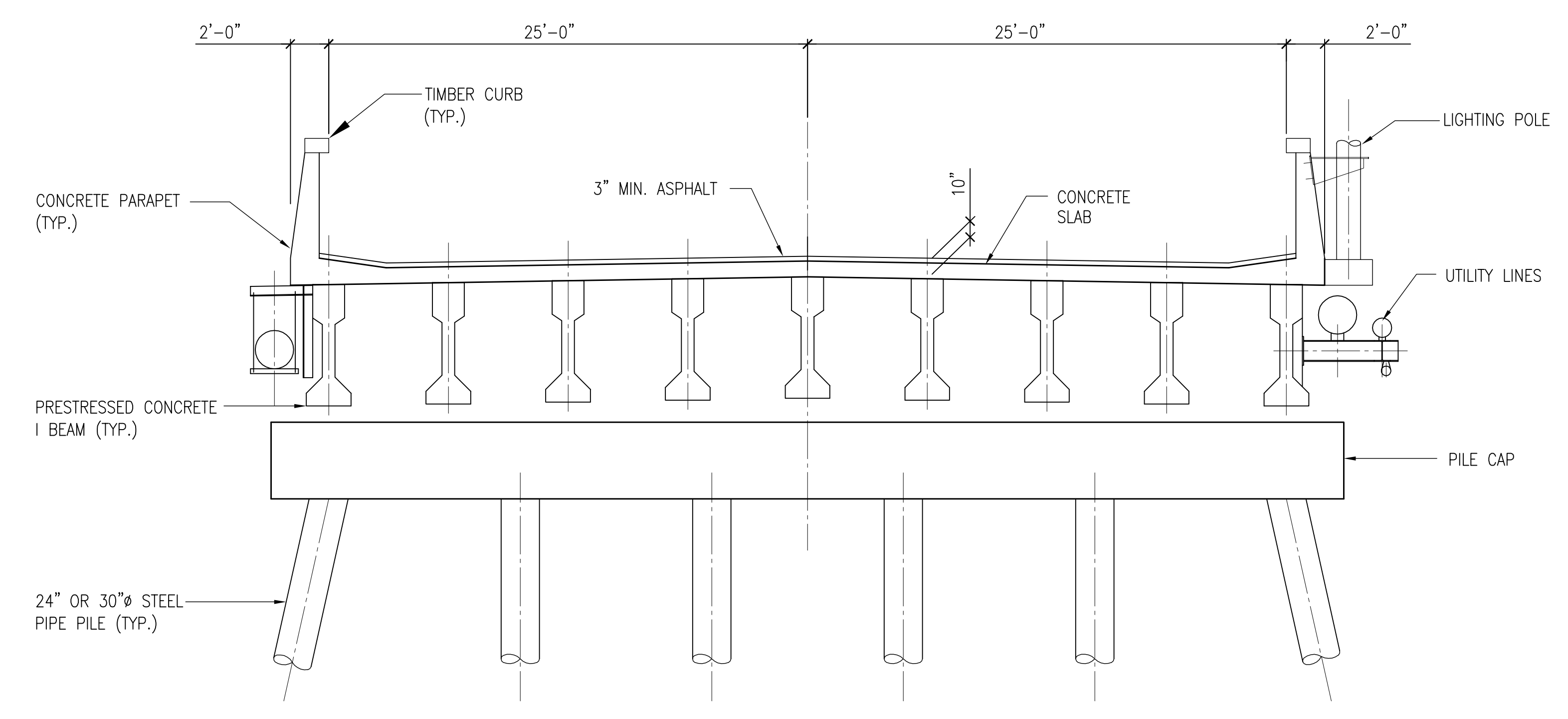
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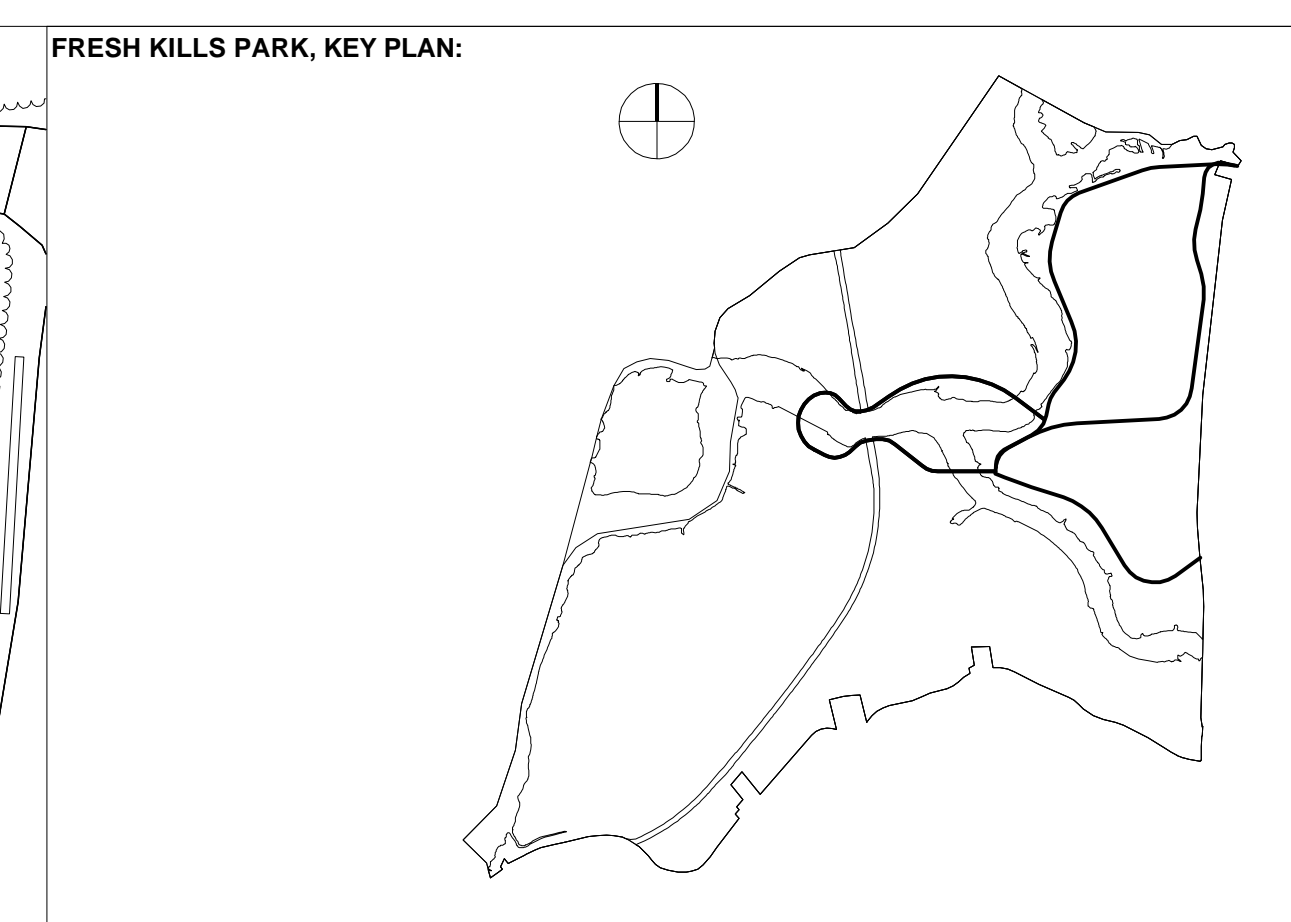
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ELEVATION
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SECTION
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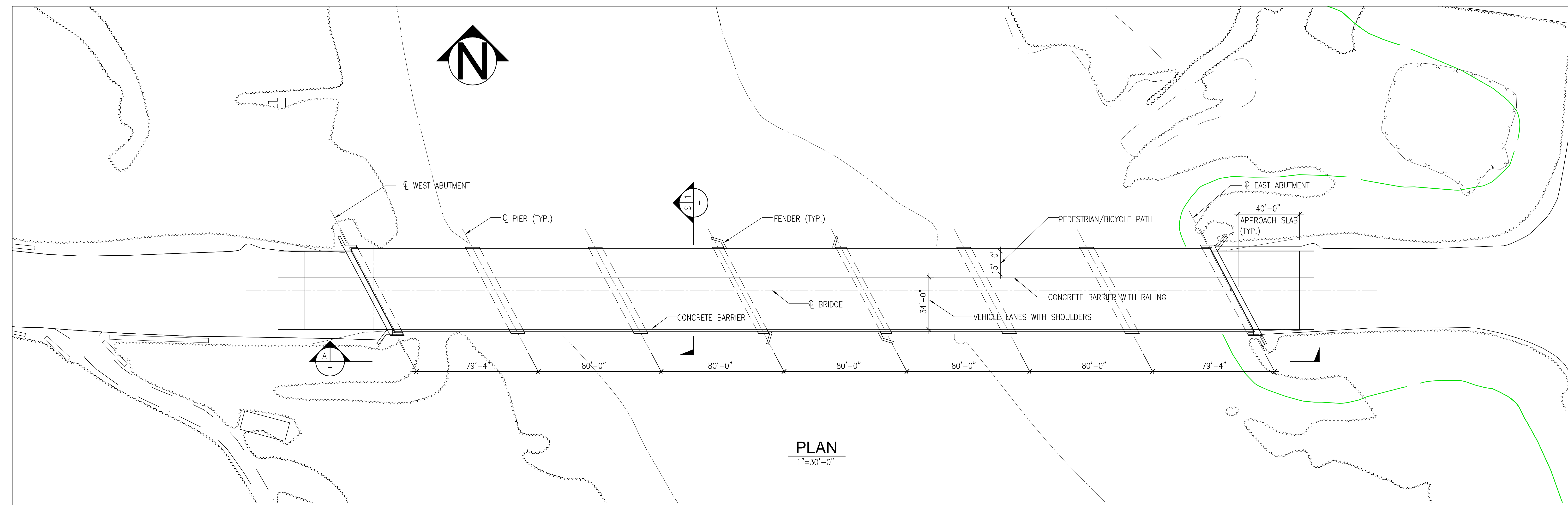
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FRESH KILLS PARK

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RICHMOND CREEK BRIDGE
EXISTING CONDITIONS

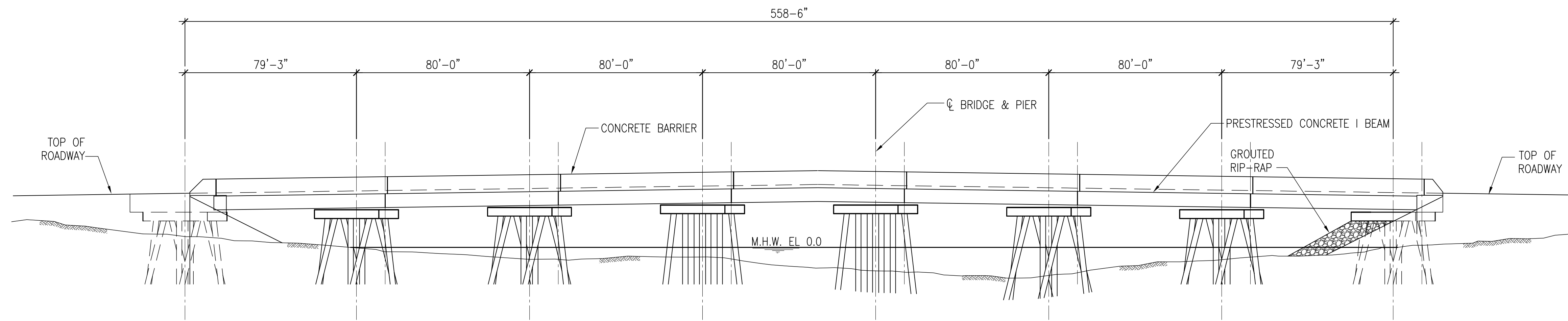
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APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD
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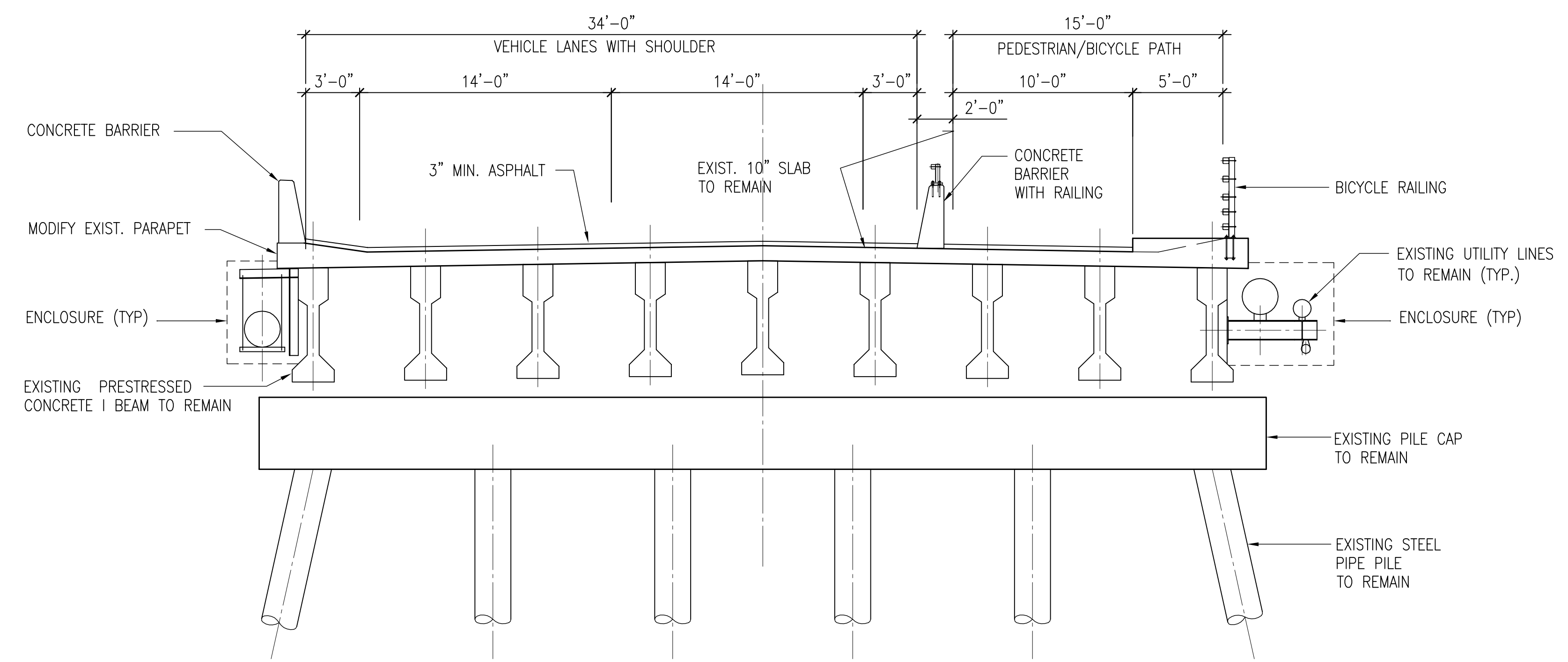
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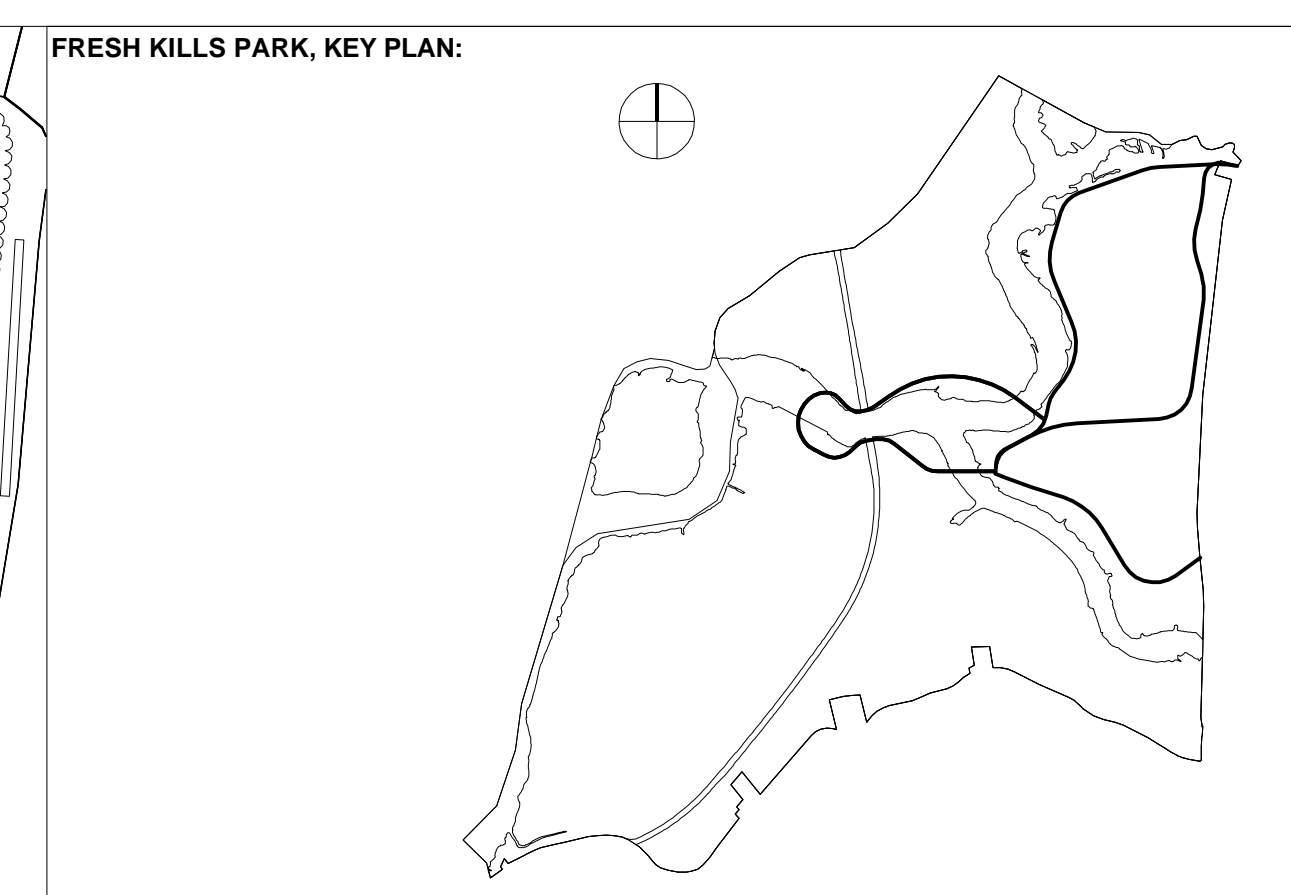
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PROJECT TITLE:
FRESH KILLS PARK

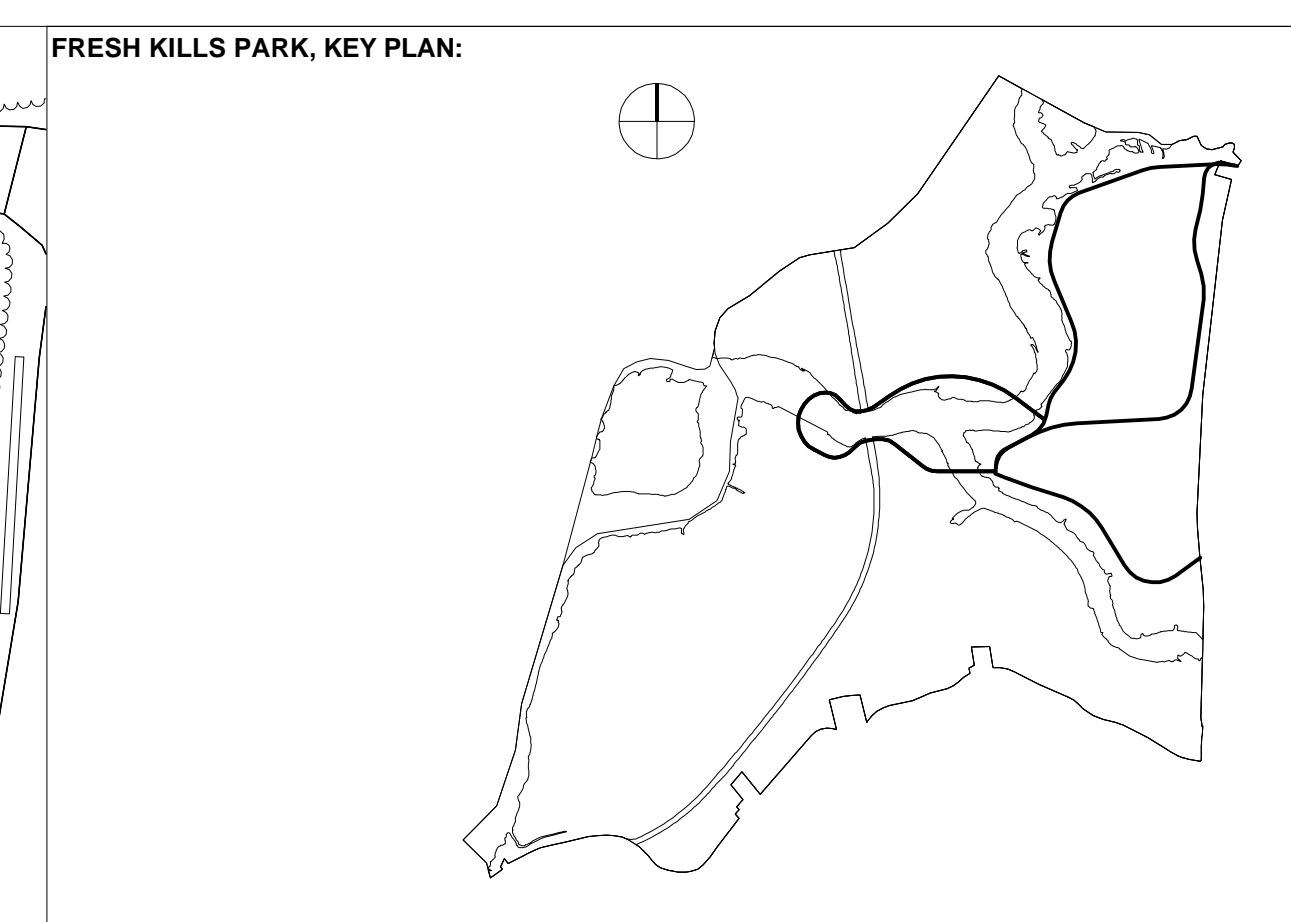
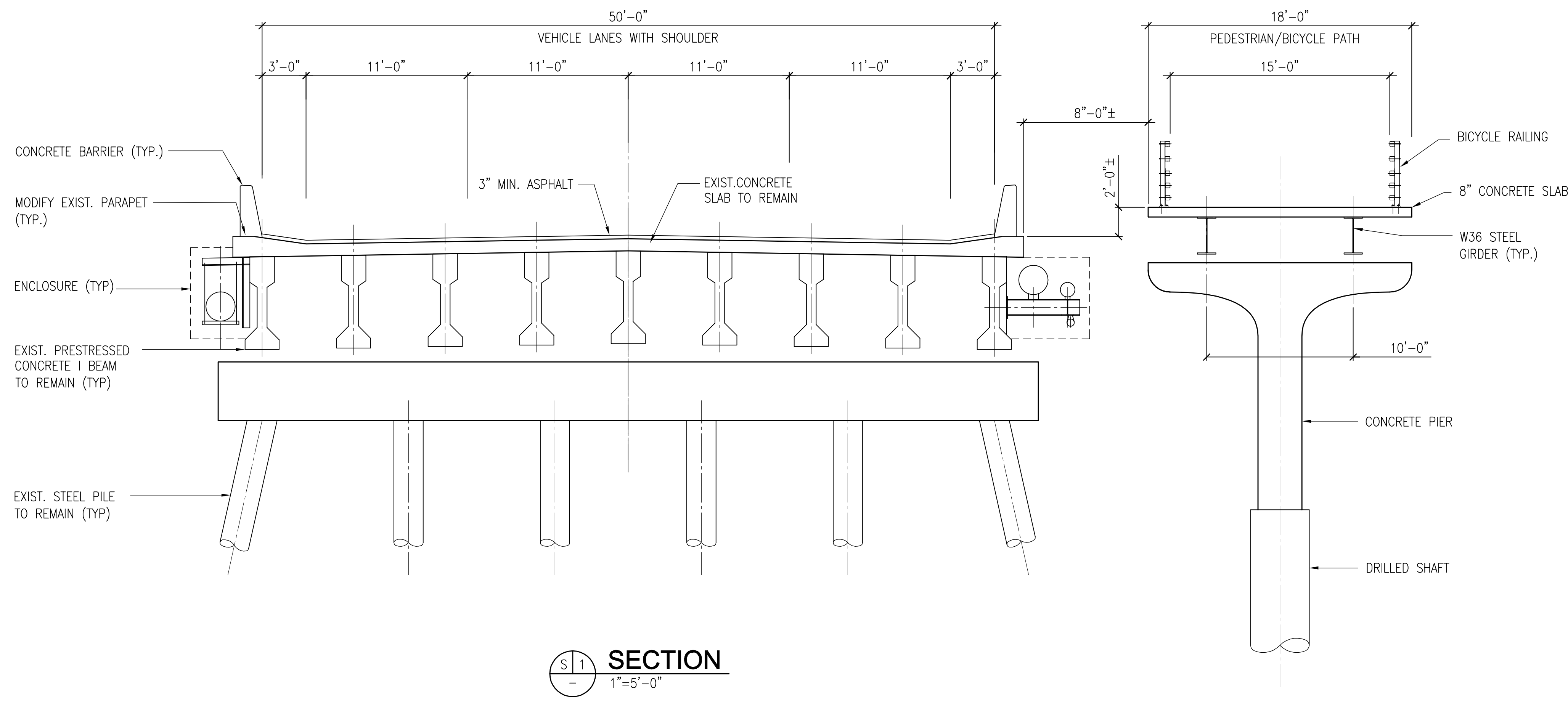
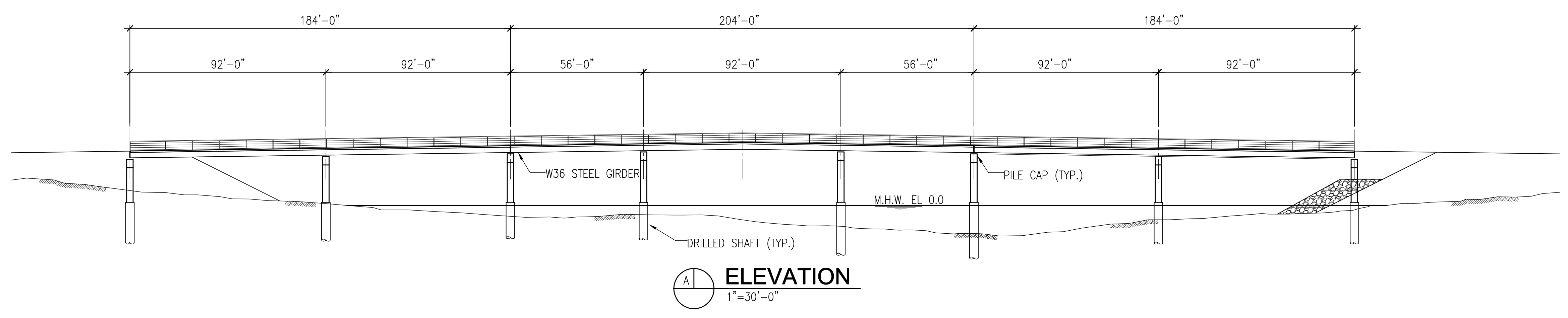
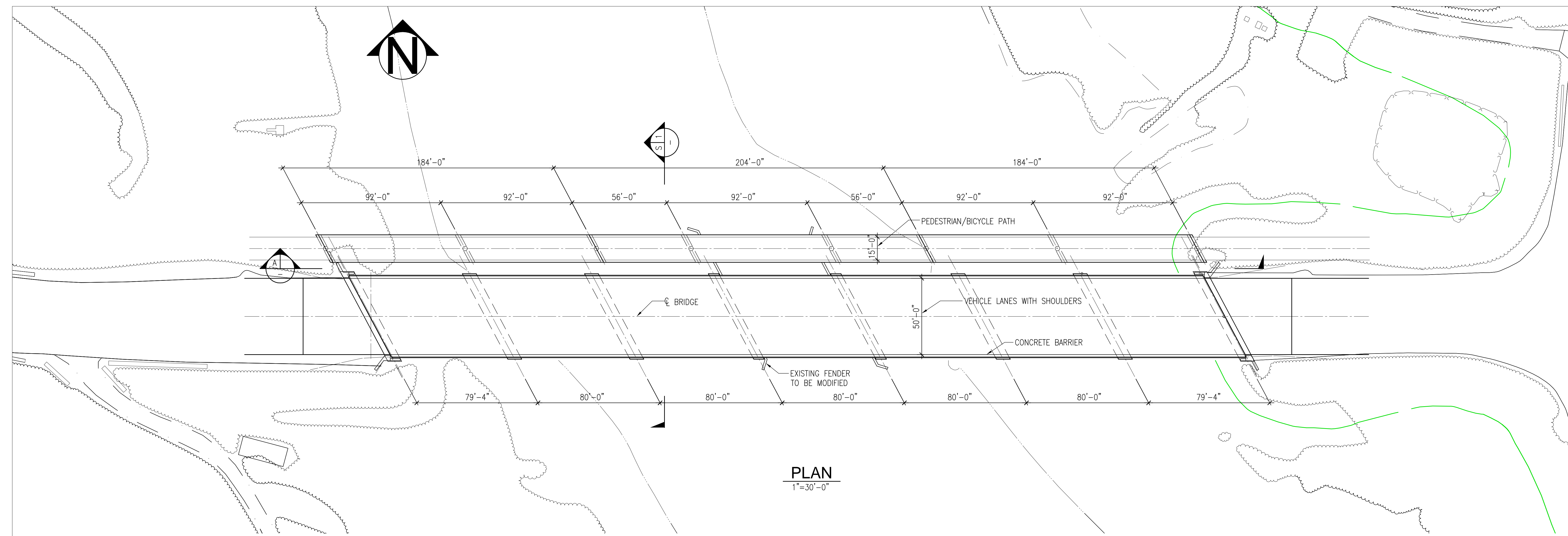
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2 LANE OPTION**

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REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD

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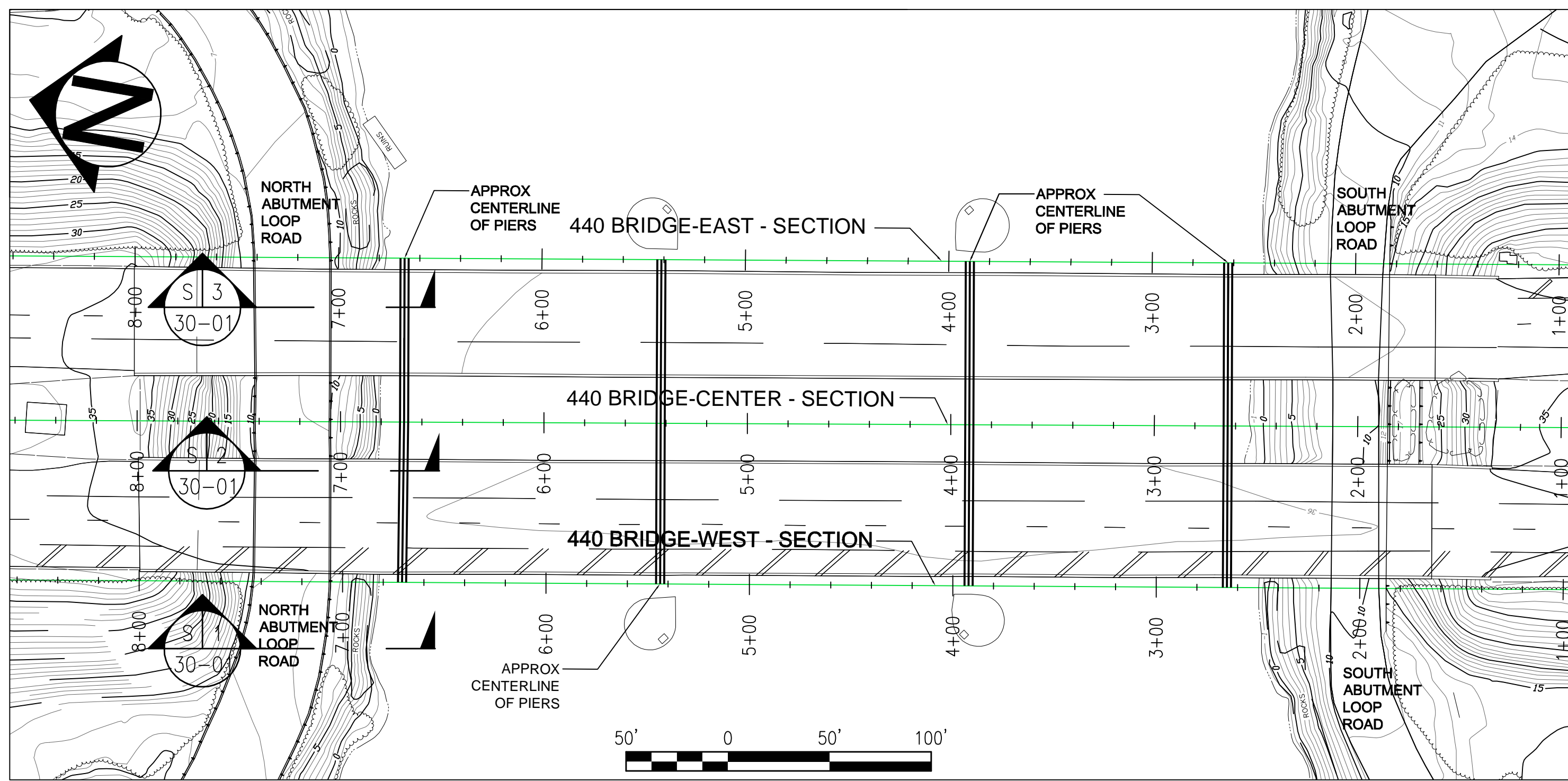
PROJECT TITLE:
FRESH KILLS PARK

DRAWING TITLE:
RICHMOND CREEK BRIDGE
4 LANE OPTION

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APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD
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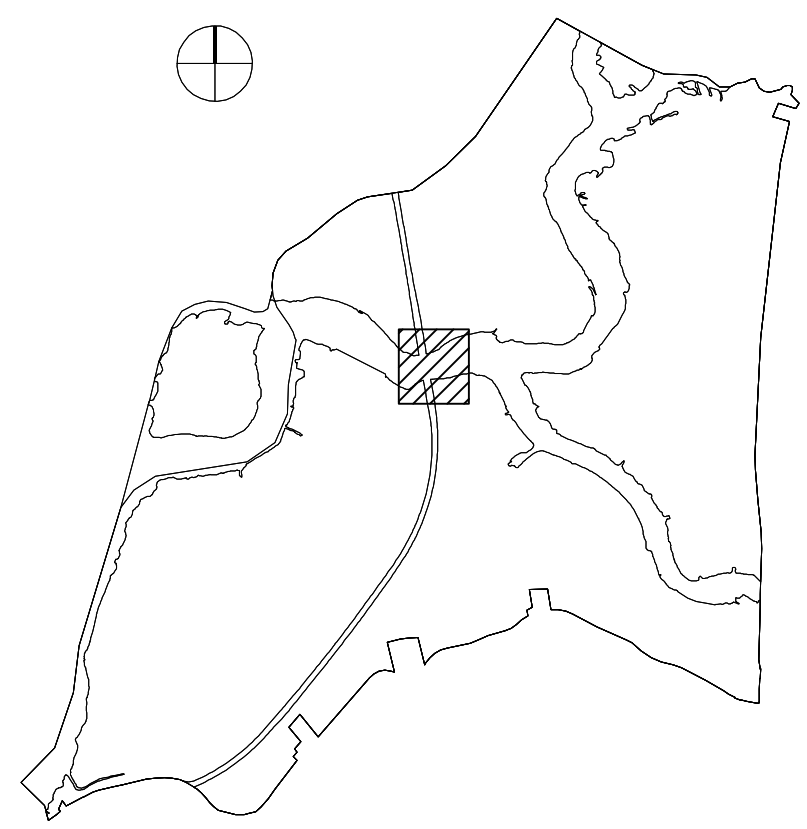
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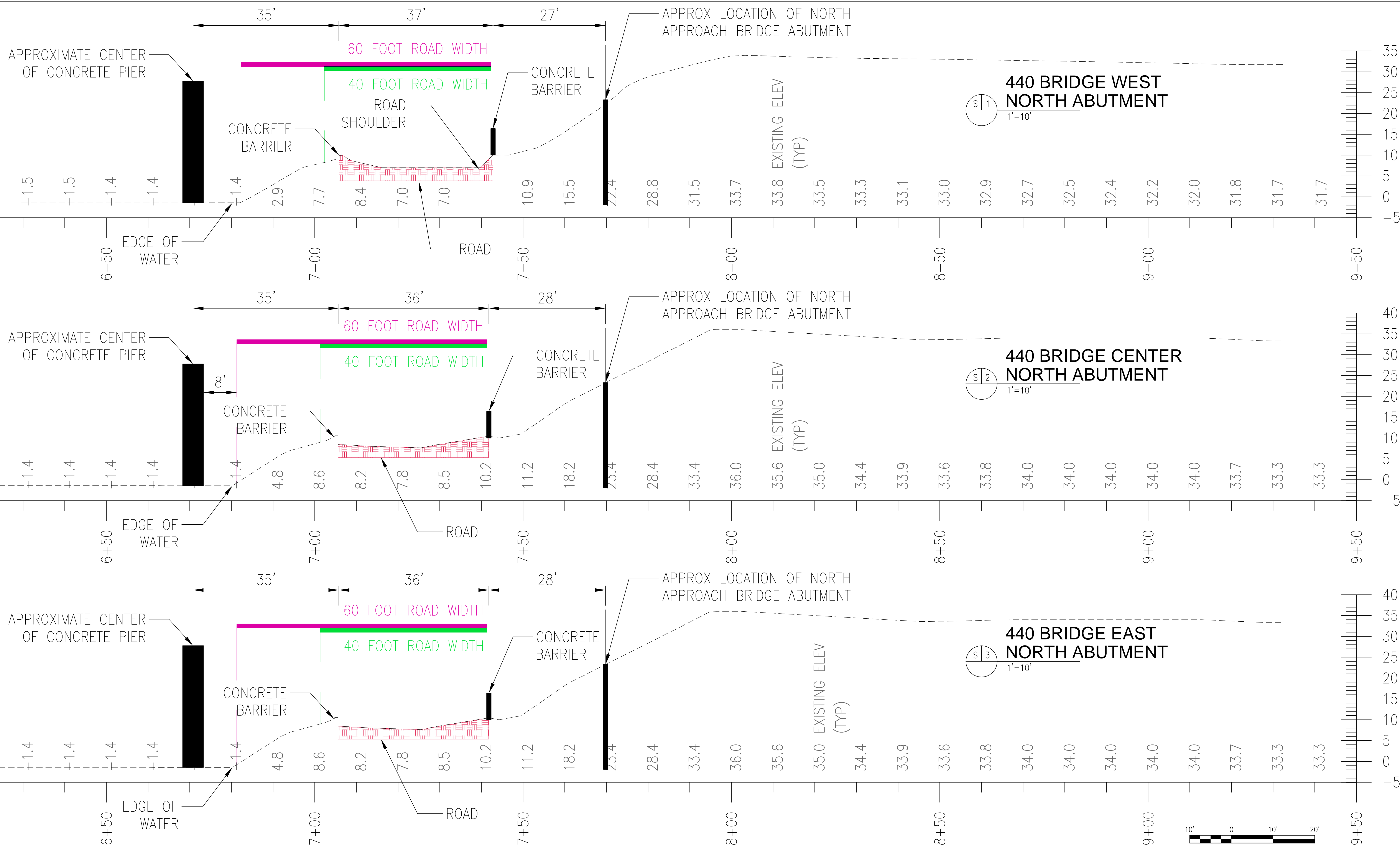
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FRESH KILLS PARK, KEY PLAN:



NOTES:



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SUB-CONSULTANT:



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Parks & Recreation
Olmsted Center
Flushing Meadows-Corona Park
Flushing, New York

PROJECT TITLE:

FRESH KILLS PARK

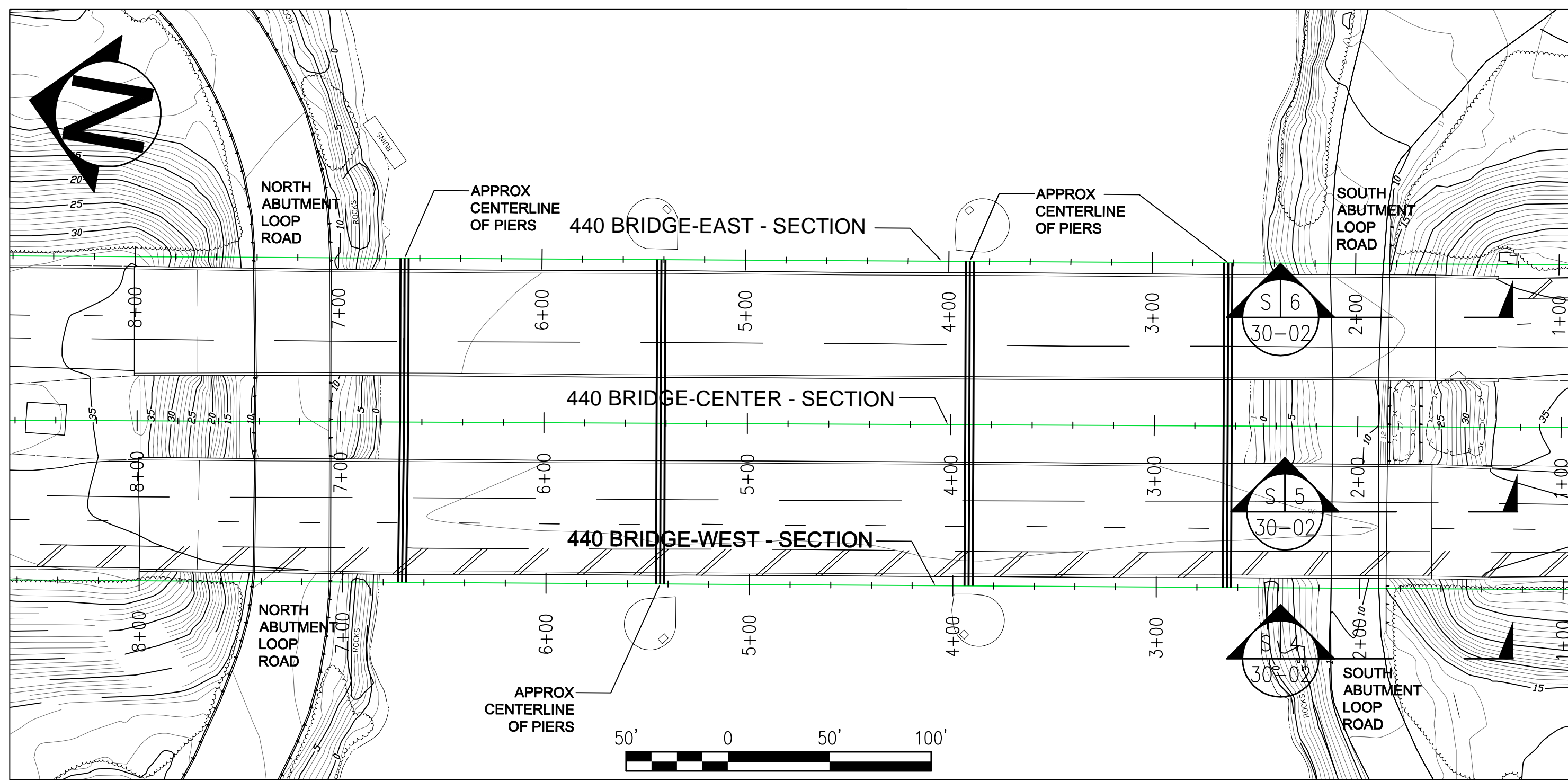
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WEST SHORE EXPRESSWAY
BRIDGE LOOP ROADS
PROPOSED EXPANSION

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REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD

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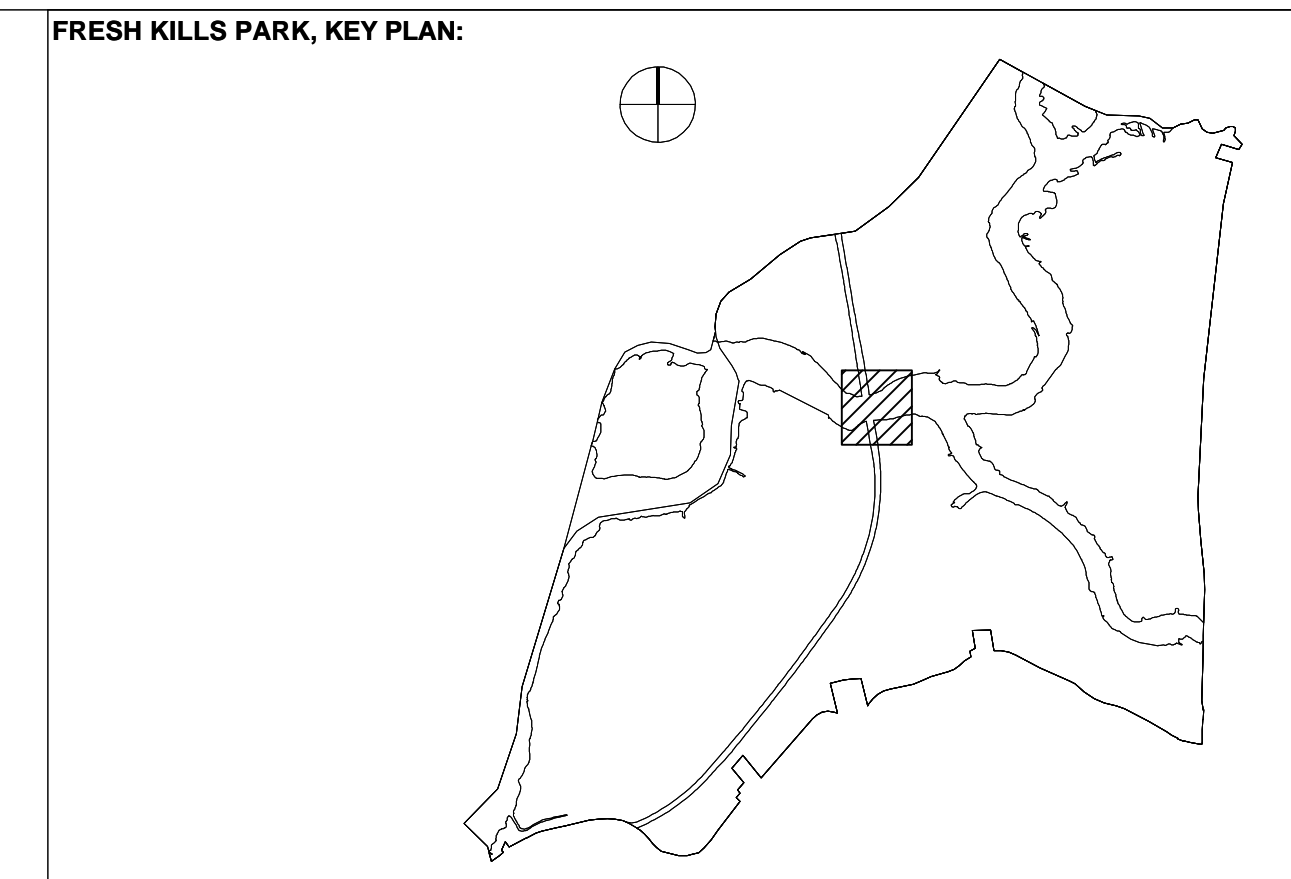
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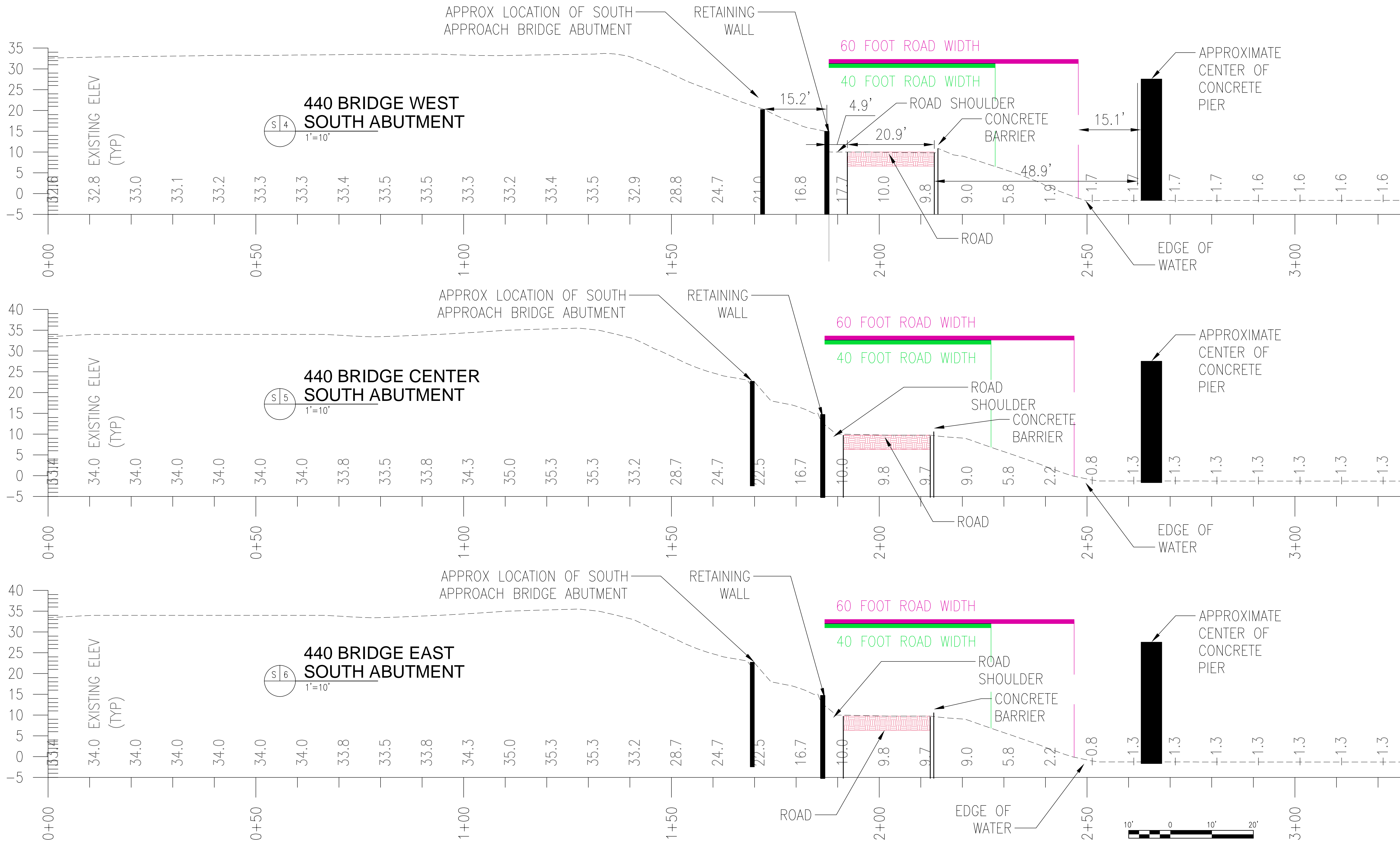
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SOUTH SIDE LOOKING EAST



NOTES:

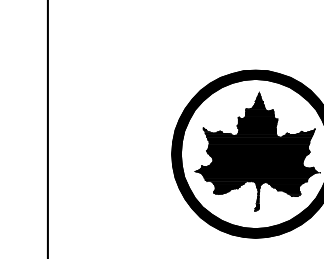


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**City of New York
 Parks & Recreation**
 Olmsted Center
 Flushing Meadows-Corona Park
 Flushing, New York

PROJECT TITLE:

FRESH KILLS PARK

DRAWING TITLE:

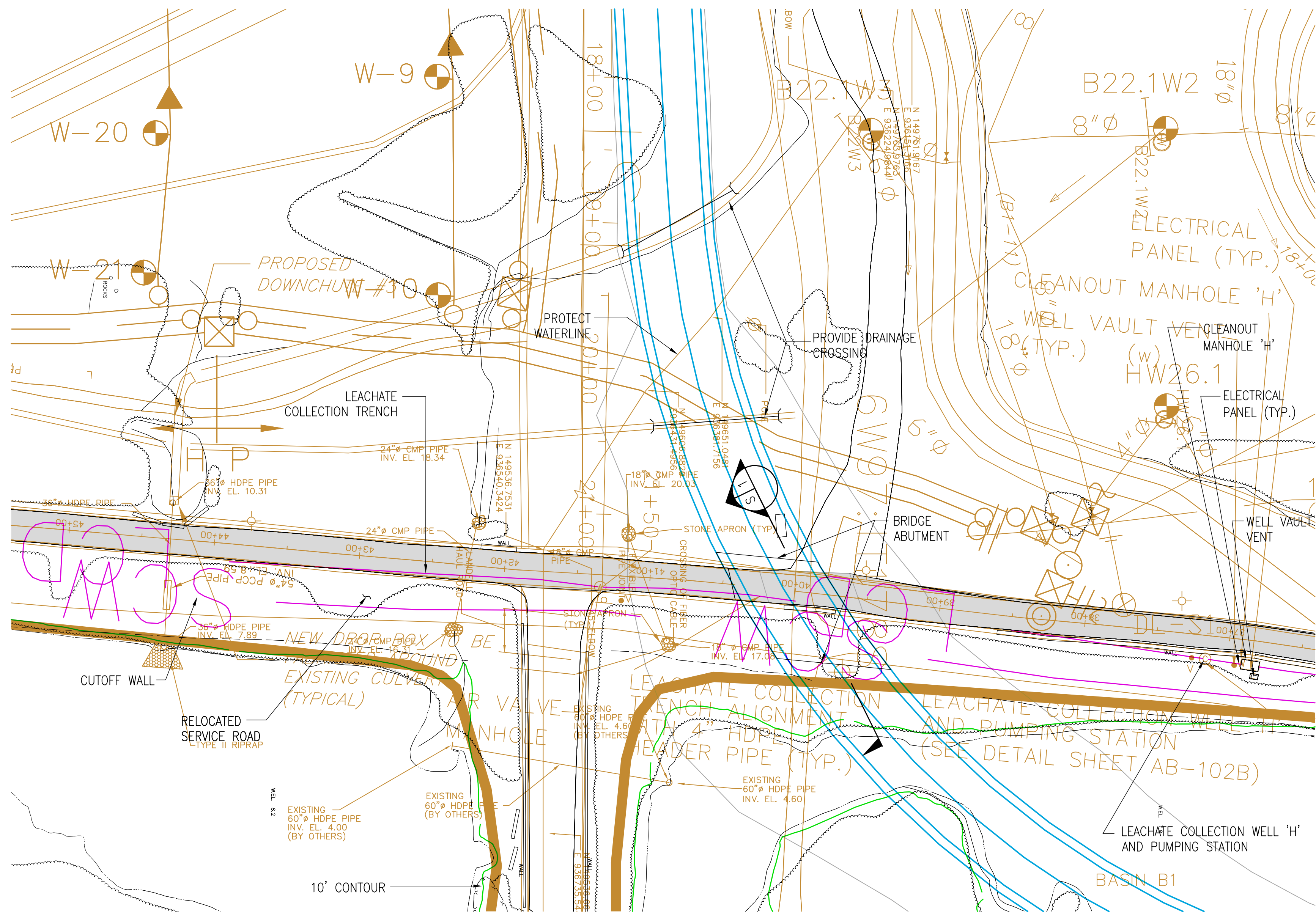
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 BRIDGE LOOP ROADS
 PROPOSED EXPANSION

DESIGNED BY: DSN	DRAWN BY: DRN	CHECKED BY: CHK
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD

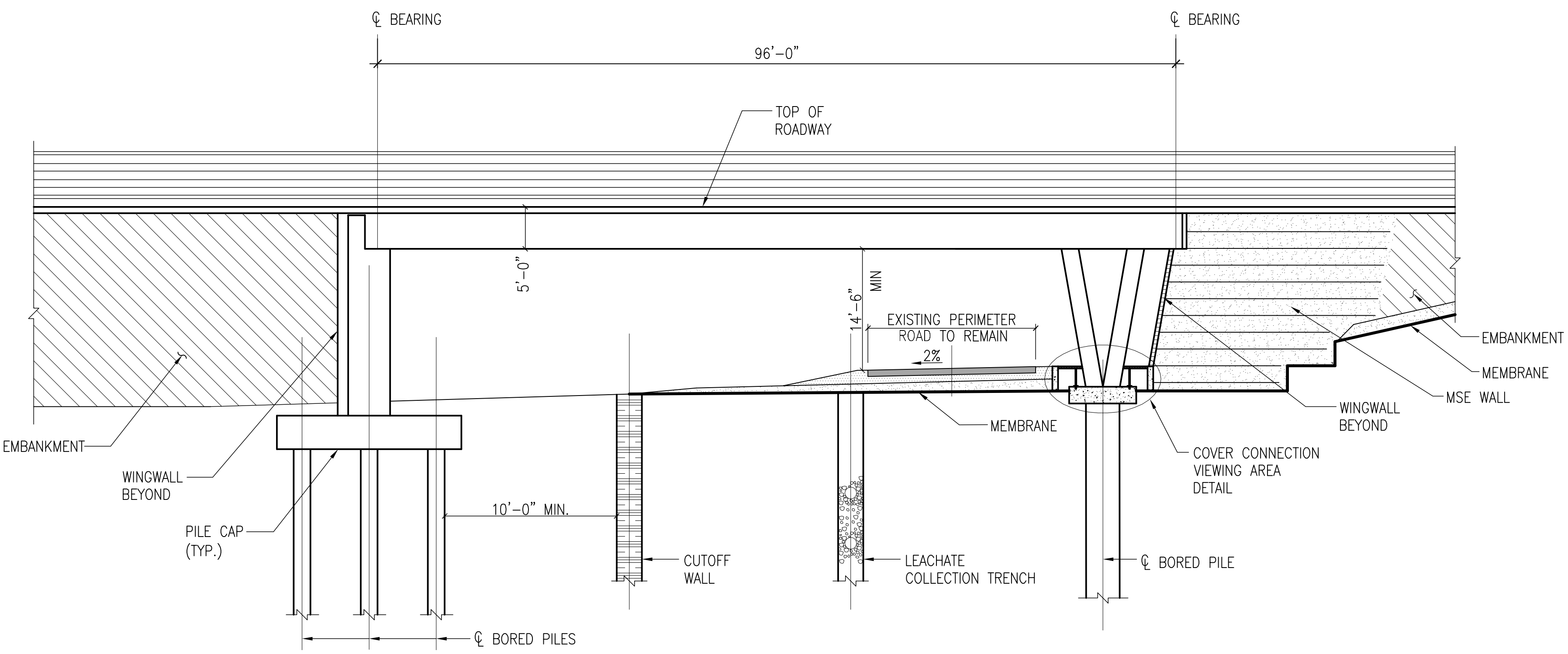
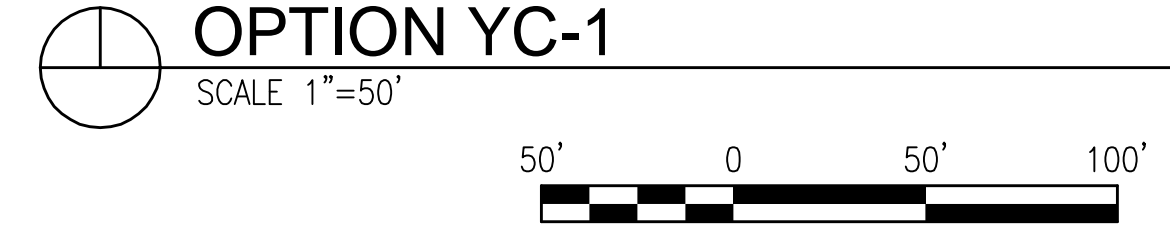
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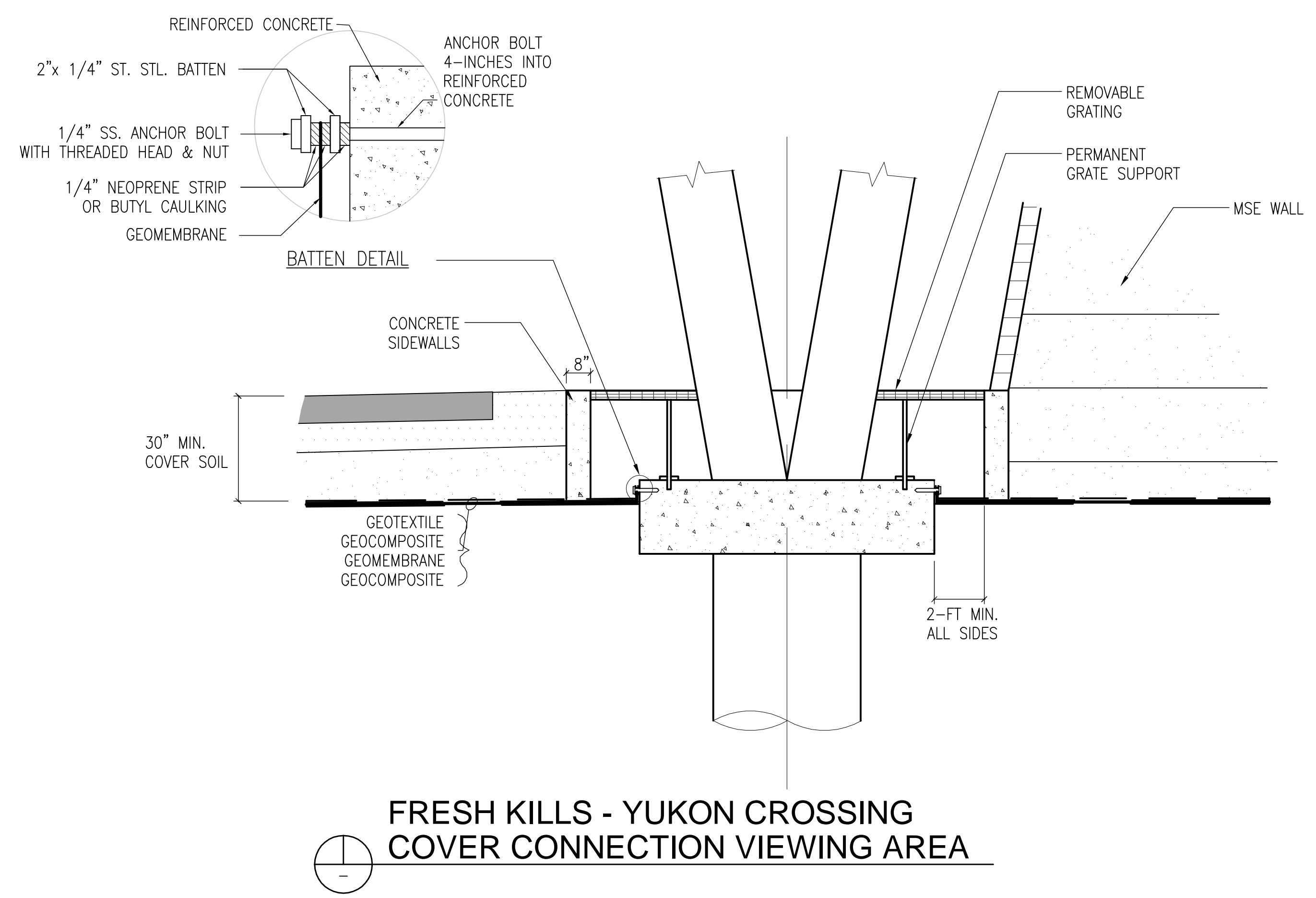
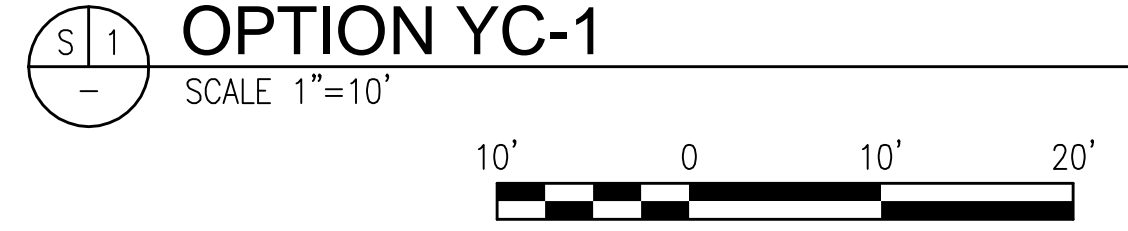
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 DRN: John Natoli
 CHK: Angelyn Chandler
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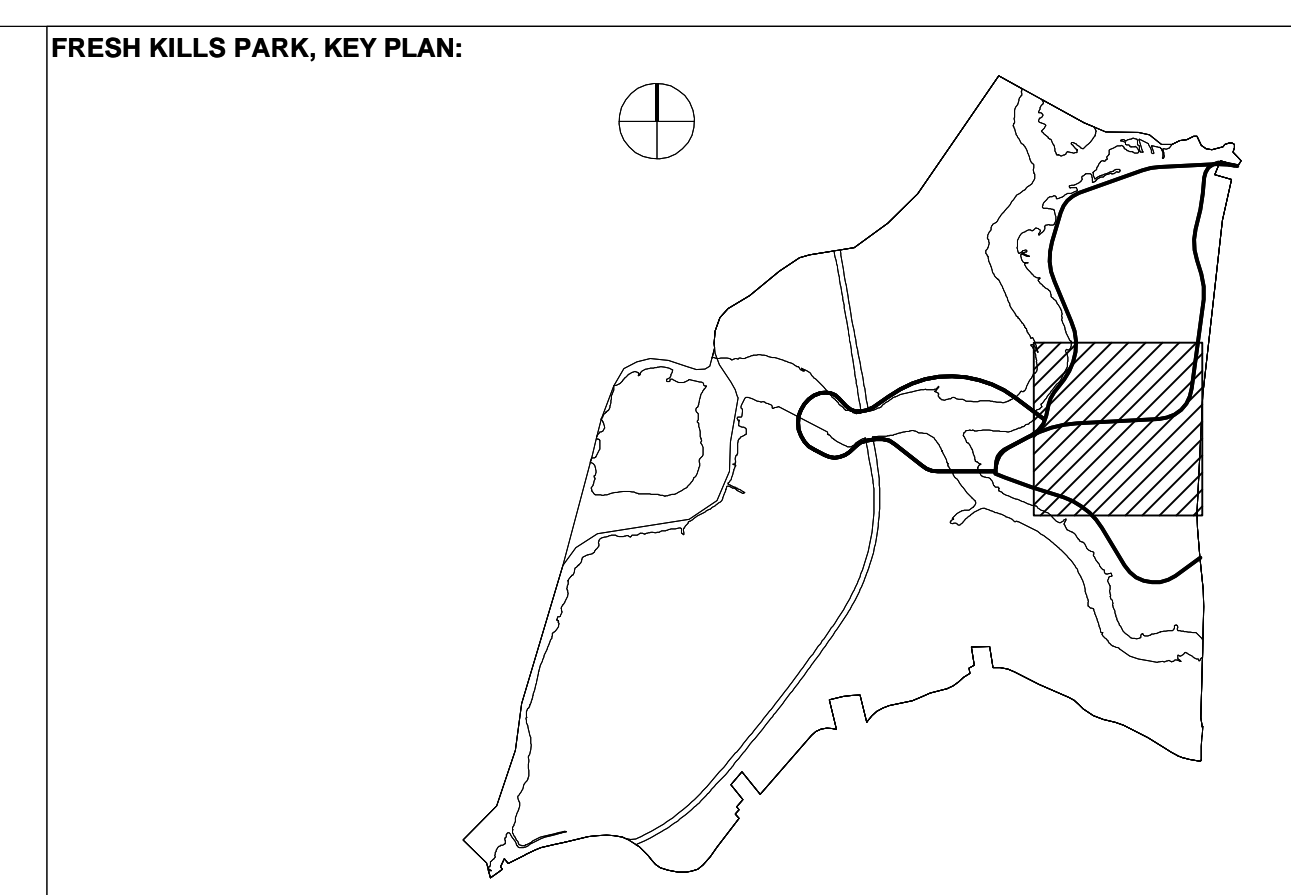
FRESH KILLS - YUKON CROSSING PLAN
OPTION YC-1



FRESH KILLS - YUKON CROSSING
OPTION YC-1



FRESH KILLS - YUKON CROSSING
COVER CONNECTION VIEWING AREA



NOTES:

FIGURE YC-1.1

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PROJECT TITLE:
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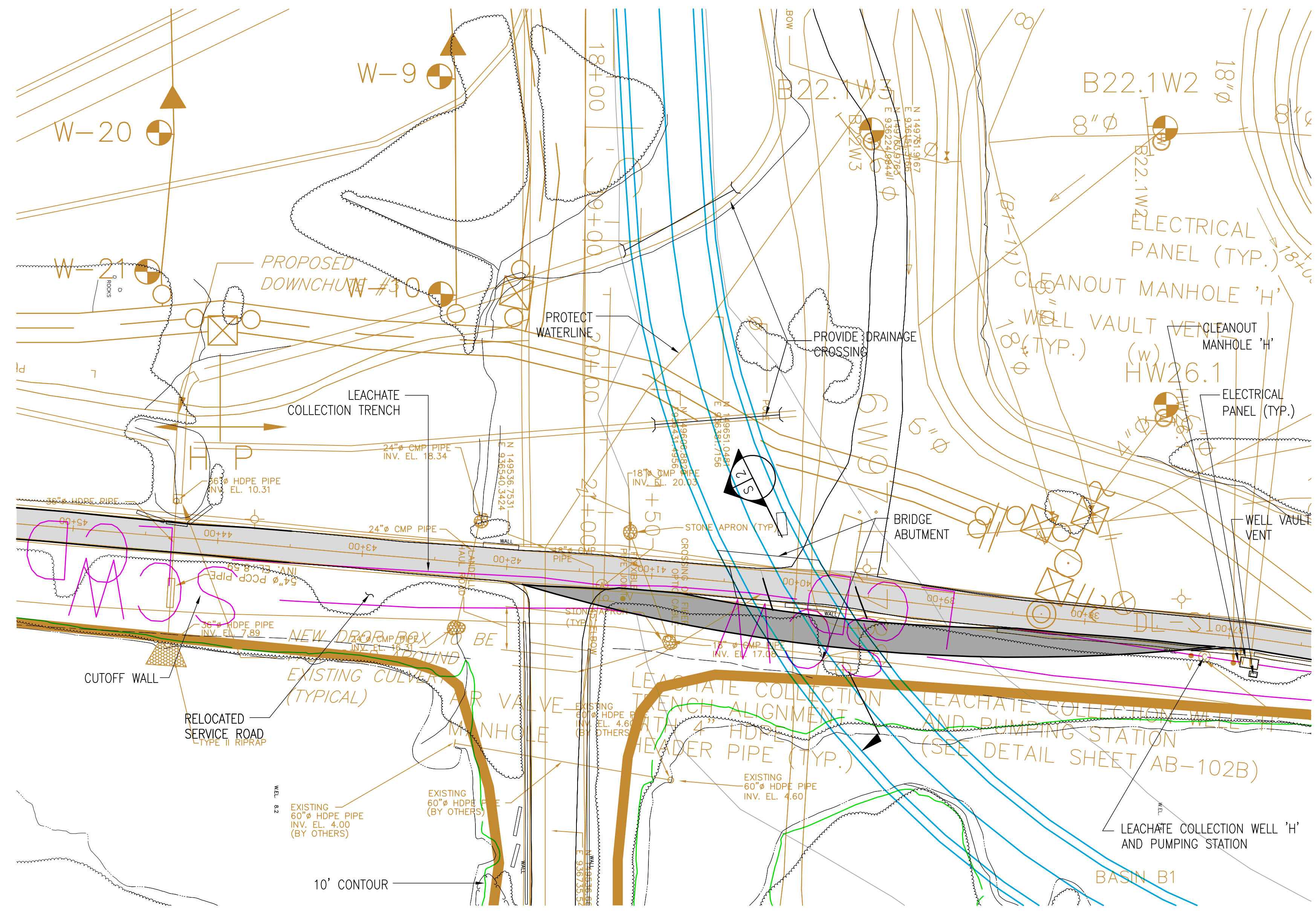
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YUKON CROSSING
BRIDGE ABUT. ON LANDFILL
OPTION YC-1.1

DESIGNED BY: DSN	DRAWN BY: DRN	CHECKED BY: CHK
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD

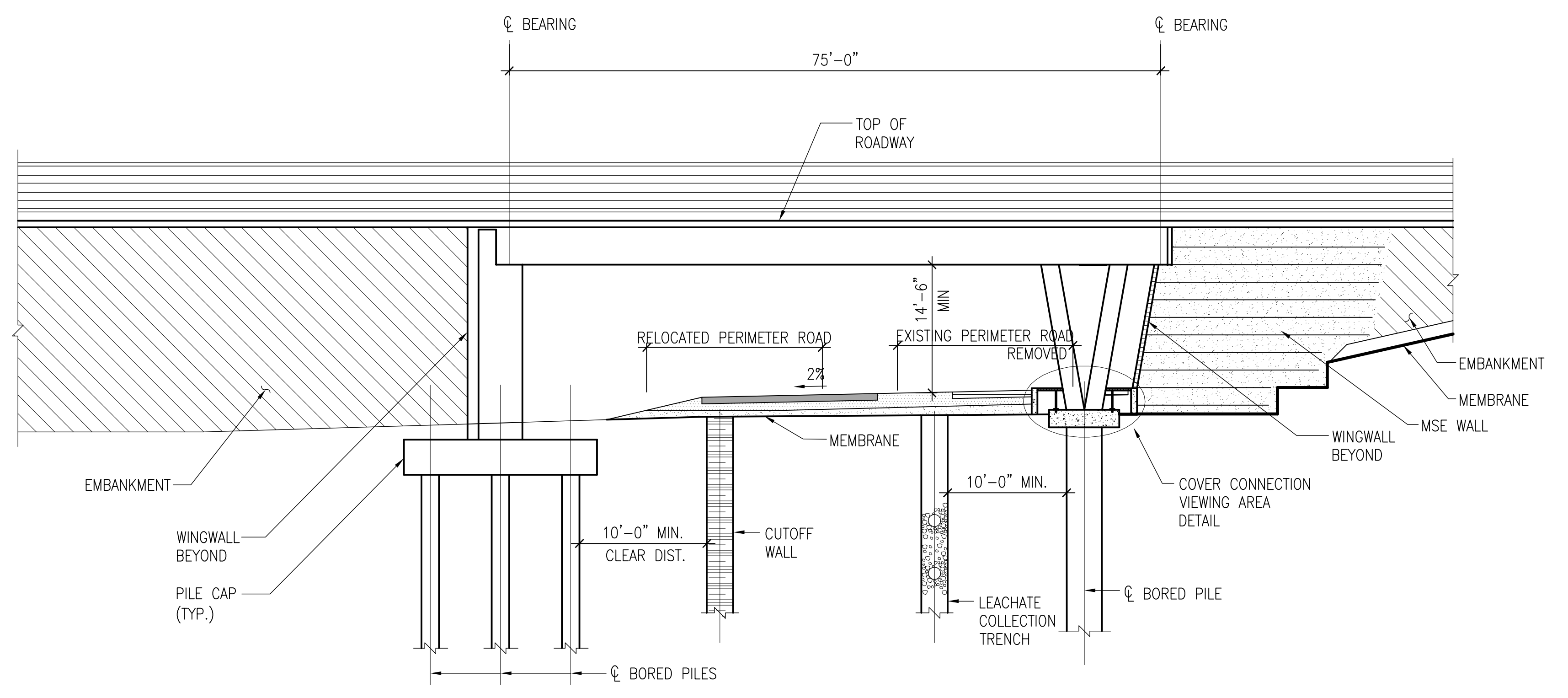
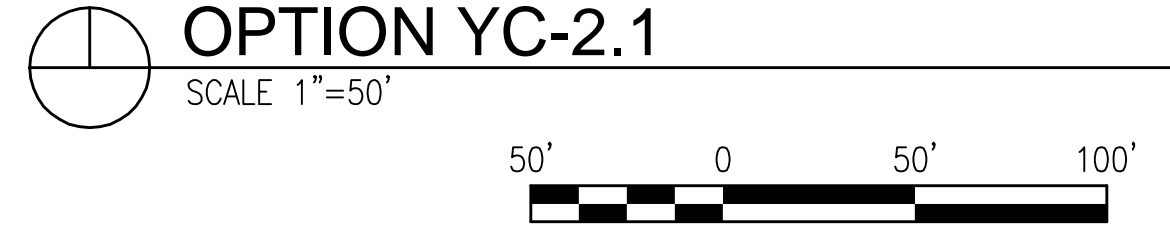
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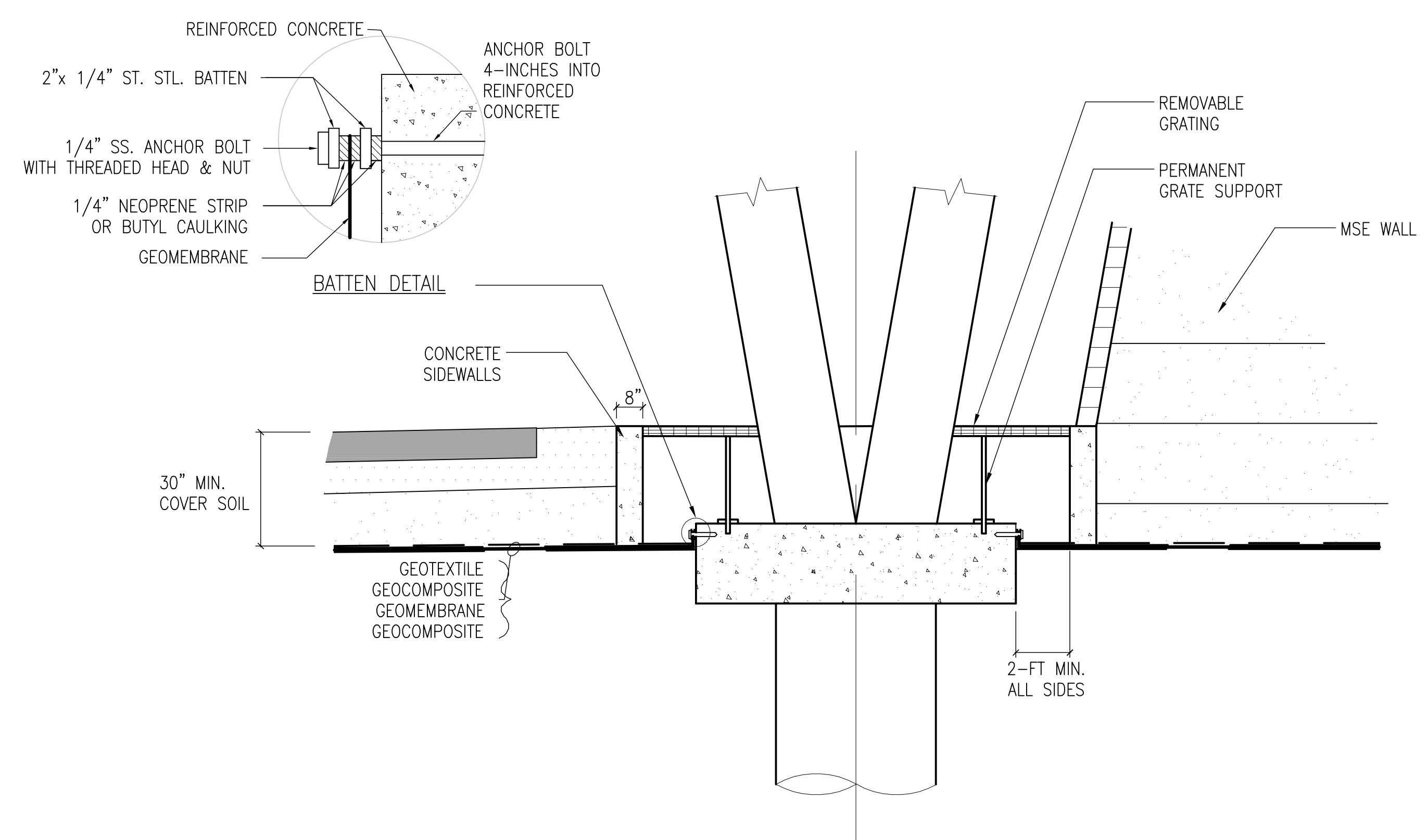
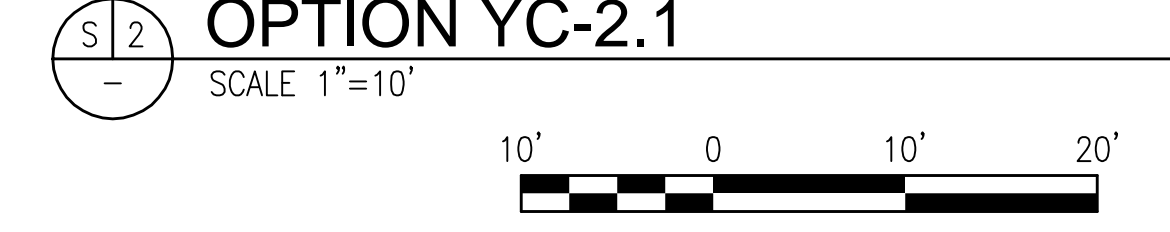
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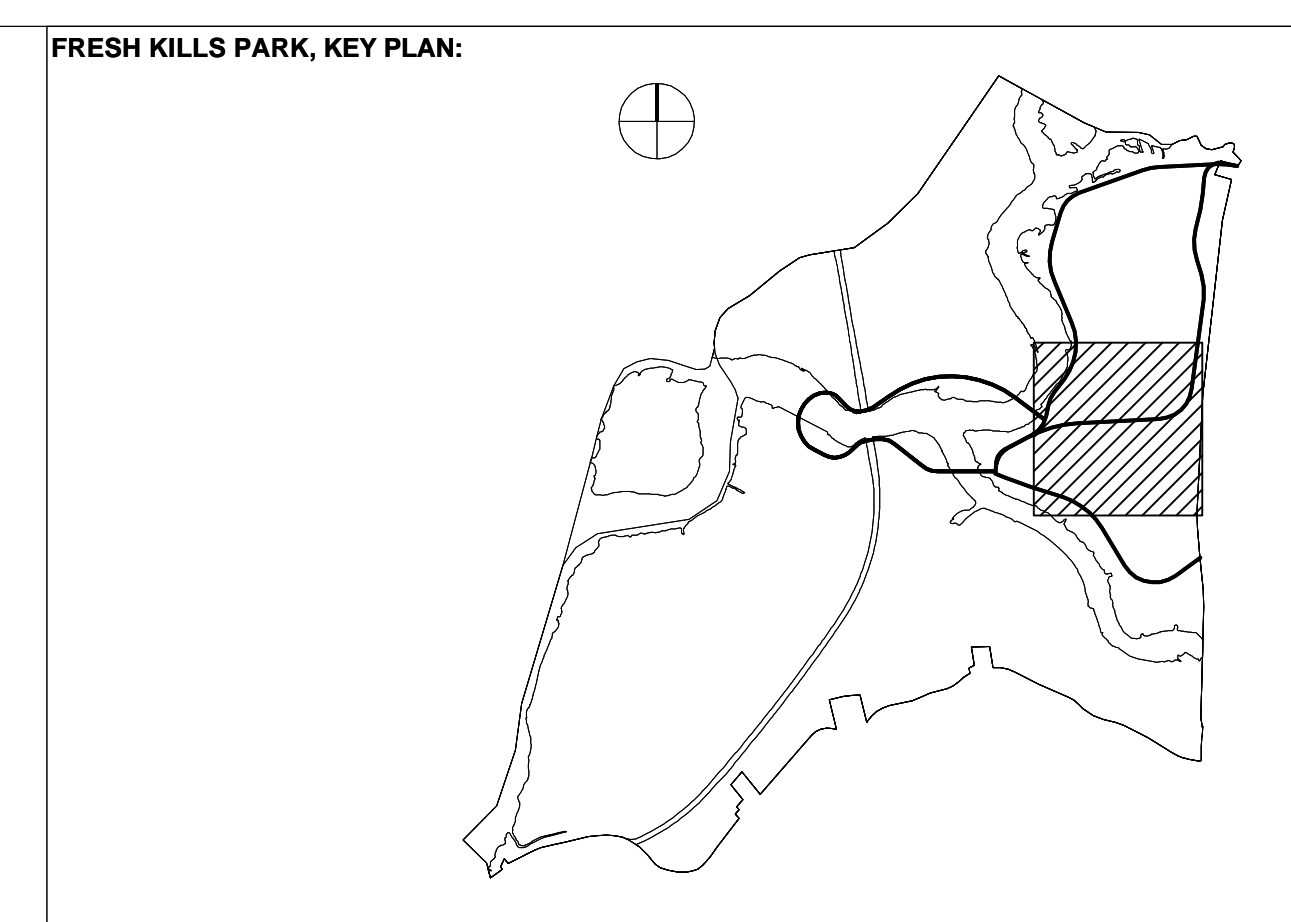
FRESH KILLS - YUKON CROSSING PLAN
OPTION YC-2.1



FRESH KILLS - YUKON CROSSING
OPTION YC-2.1



FRESH KILLS - YUKON CROSSING
COVER CONNECTION VIEWING AREA



NOTES:

FIGURE YC-2.1

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Flushing, New York

PROJECT TITLE:
FRESH KILLS PARK

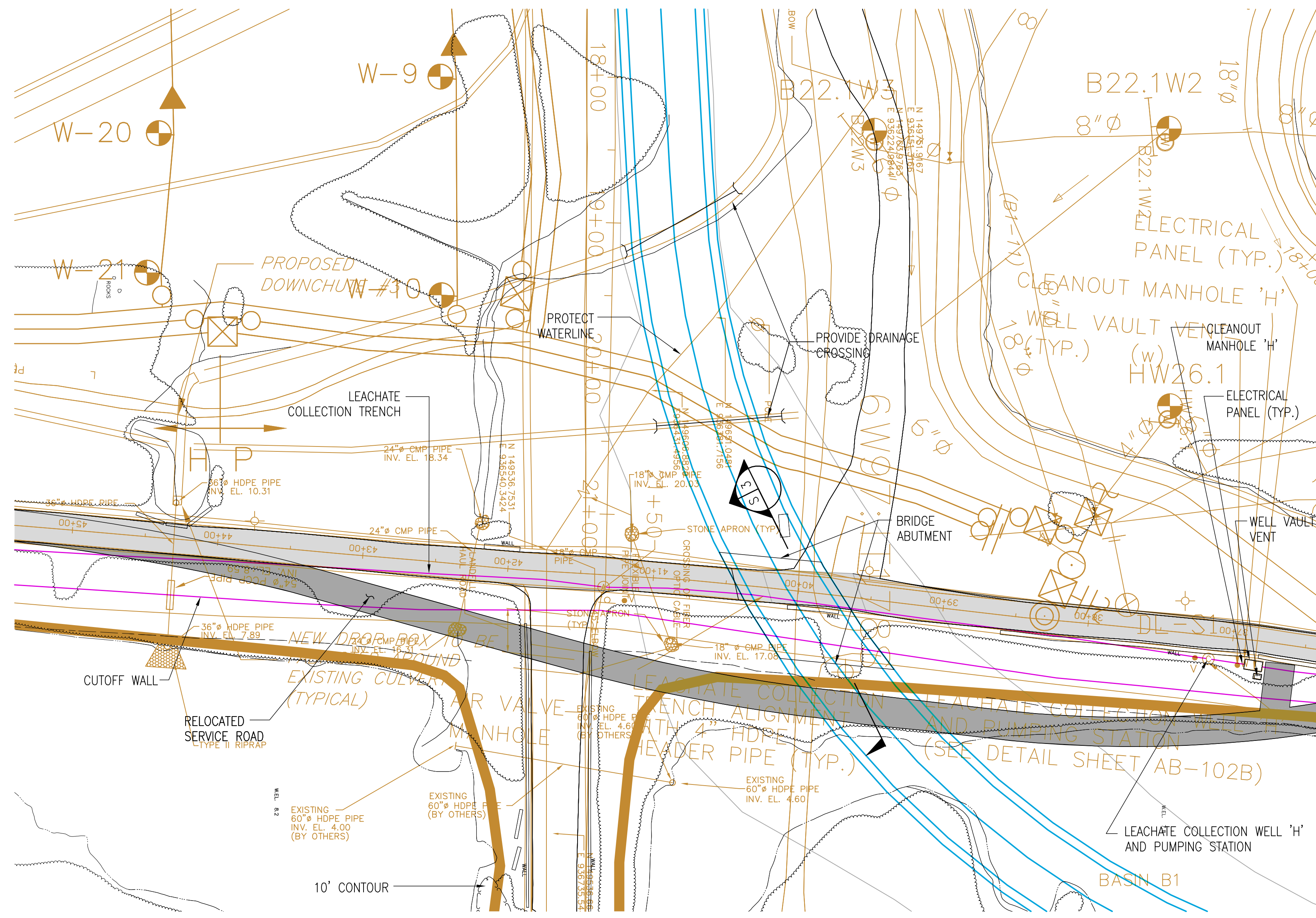
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YUKON CROSSING
BRIDGE ABUT. ON ROAD
OPTION YC-2.1

DESIGNED BY: DSN	DRAWN BY: DRN	CHECKED BY: CHK
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD

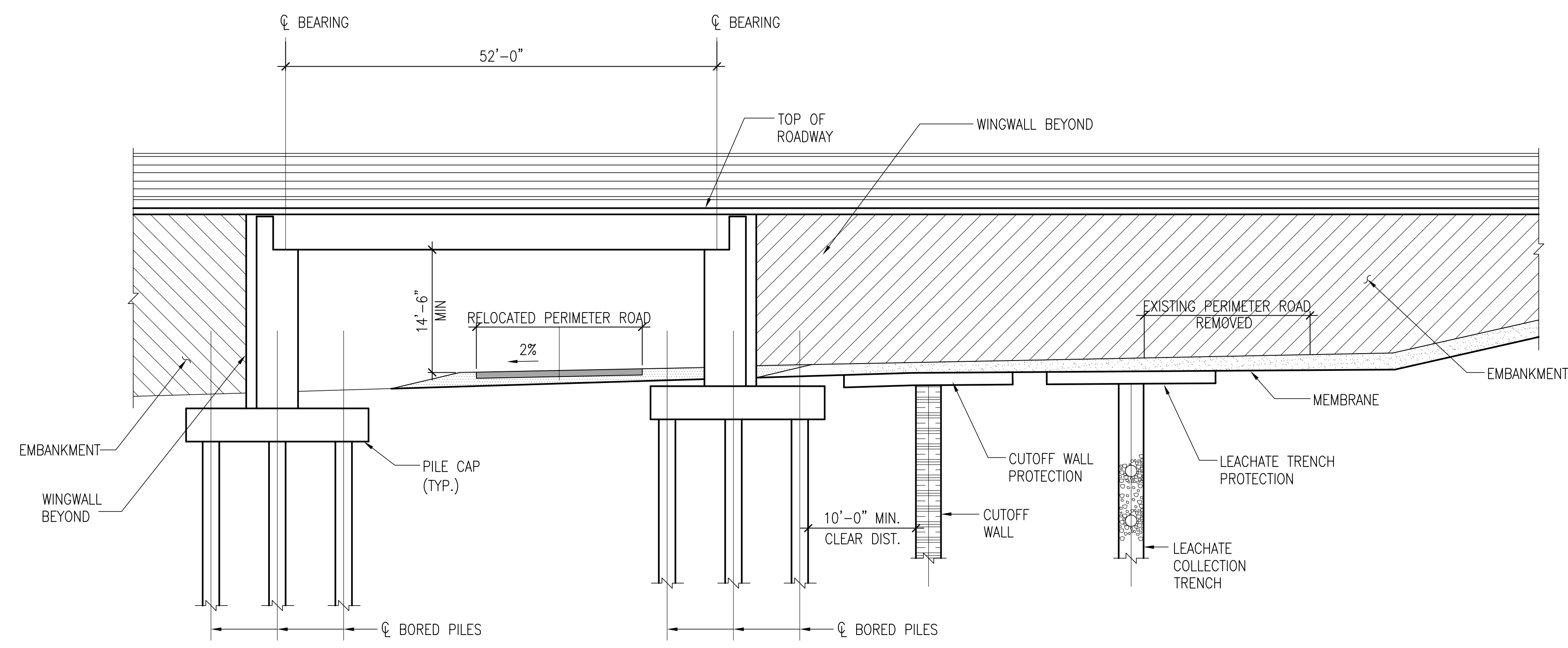
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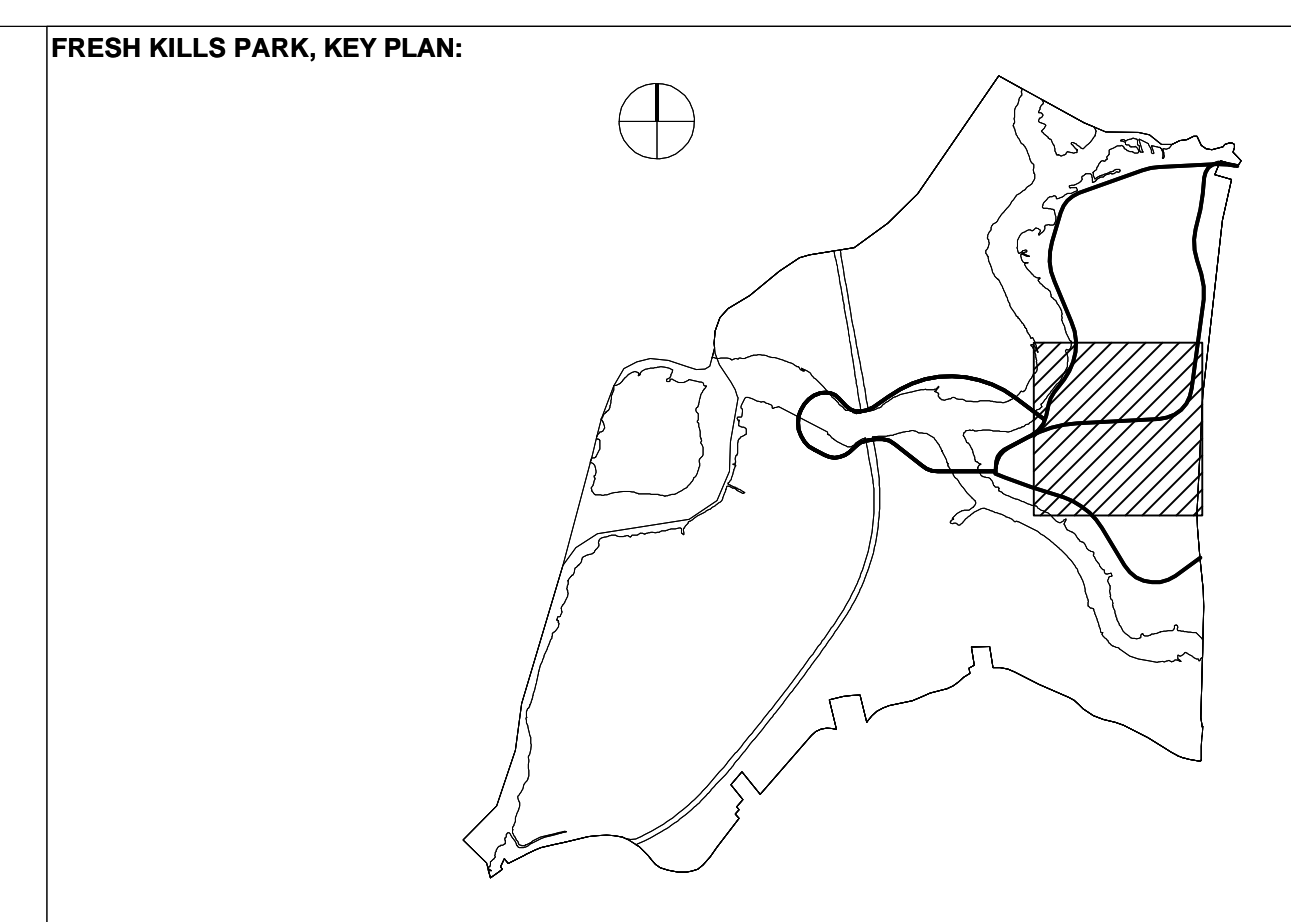
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 MDI TIME: 9/7/2007 4:08 PM
 PLOT BY: Yelena Zabolova
 PLOT TIME: 9/7/2007 5:16 PM



FRESH KILLS - YUKON CROSSING PLAN
OPTION YC-3.1
 SCALE 1"=50'



FRESH KILLS - YUKON CROSSING
OPTION YC-3
 SCALE 1"=10'



NOTES:

FIGURE YC-3.1

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PROJECT TITLE:

FRESH KILLS PARK

DRAWING TITLE:

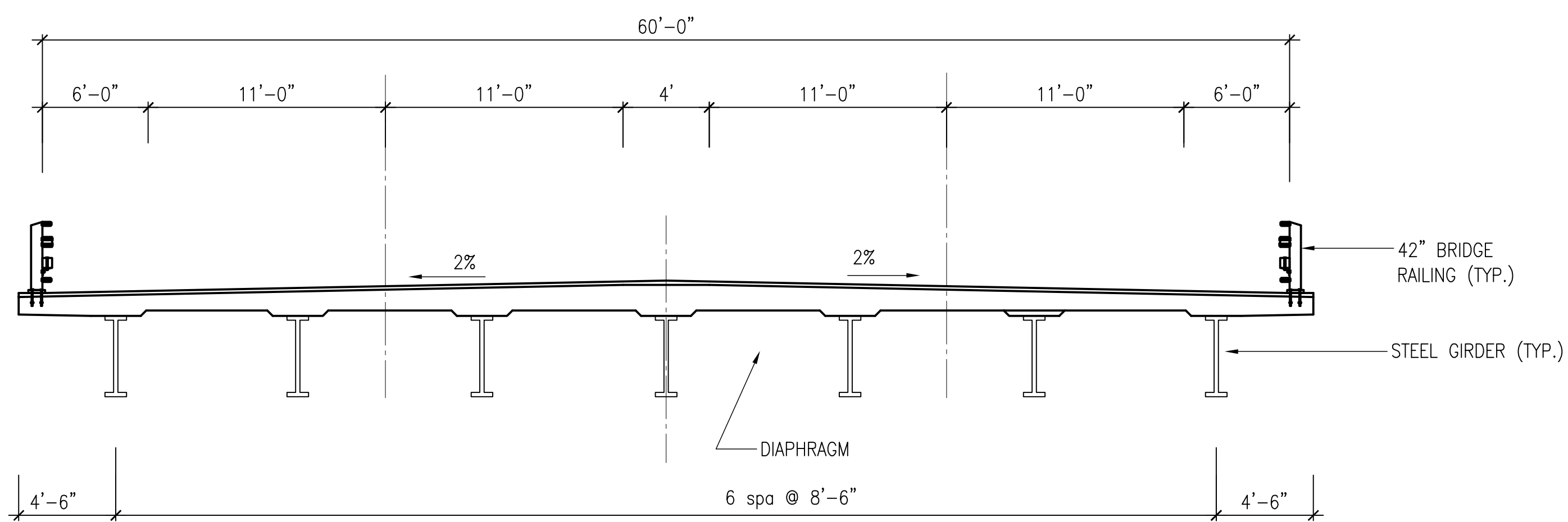
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 BRIDGE OUTSIDE LANDFILL
 OPTION YC-3.1**

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REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD

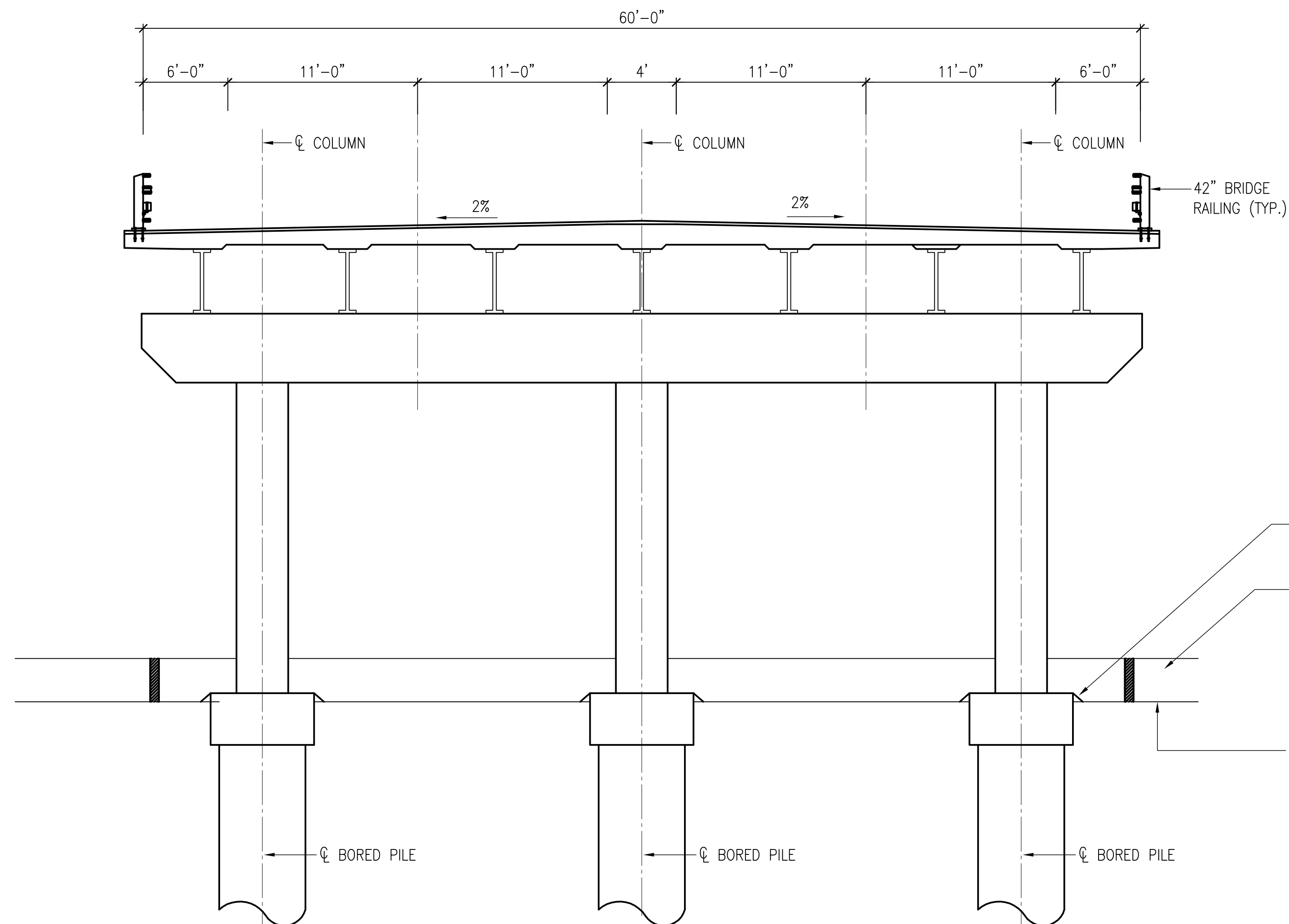
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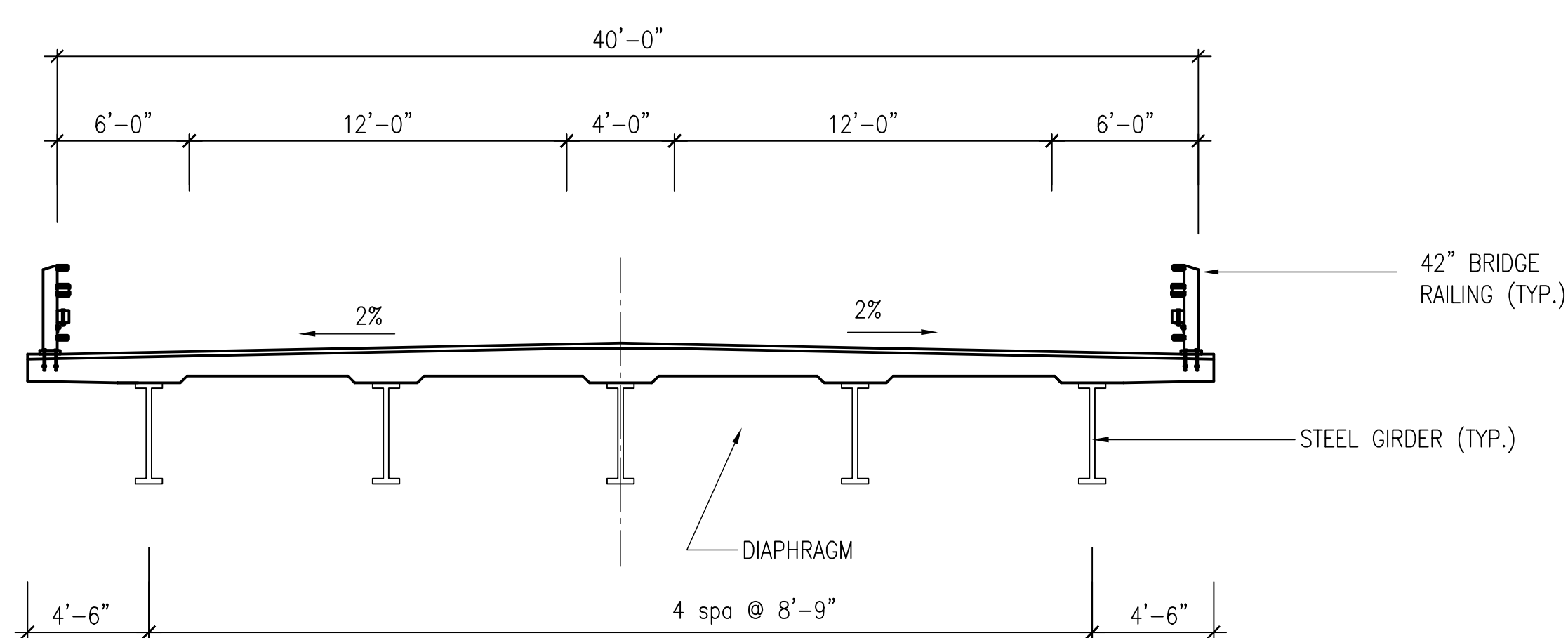
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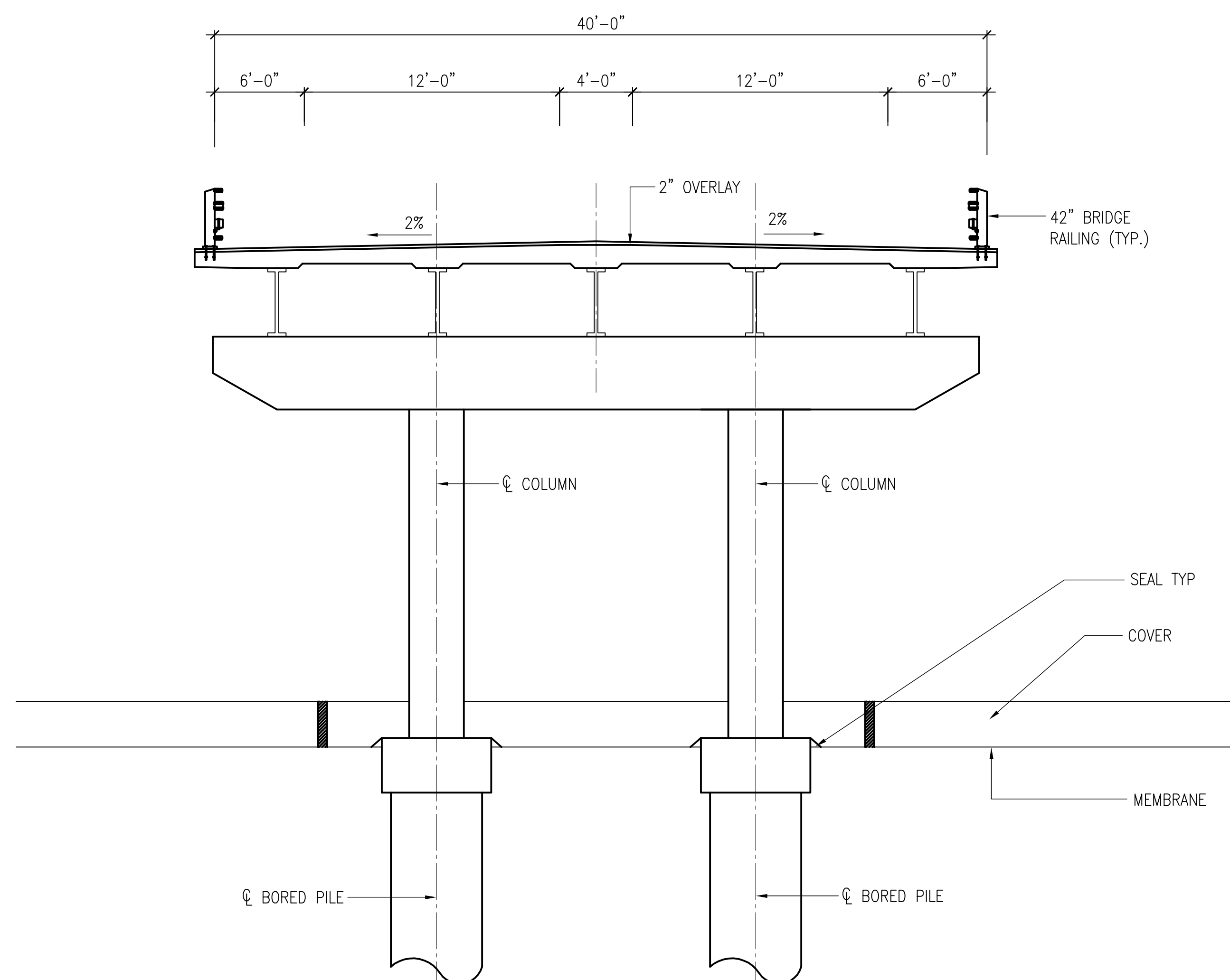
4 LANE OPTION - TYPICAL DECK SECTION



4 LANE OPTION - PIER ELEVATION AT LANDFILL PERIMETER

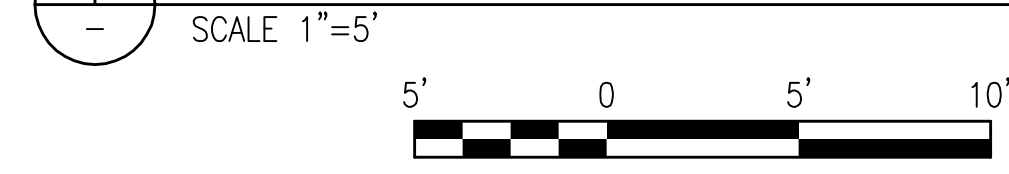


2 LANE OPTION - TYPICAL DECK SECTION



2 LANE OPTION - PIER ELEVATION AT LANDFILL PERIMETER

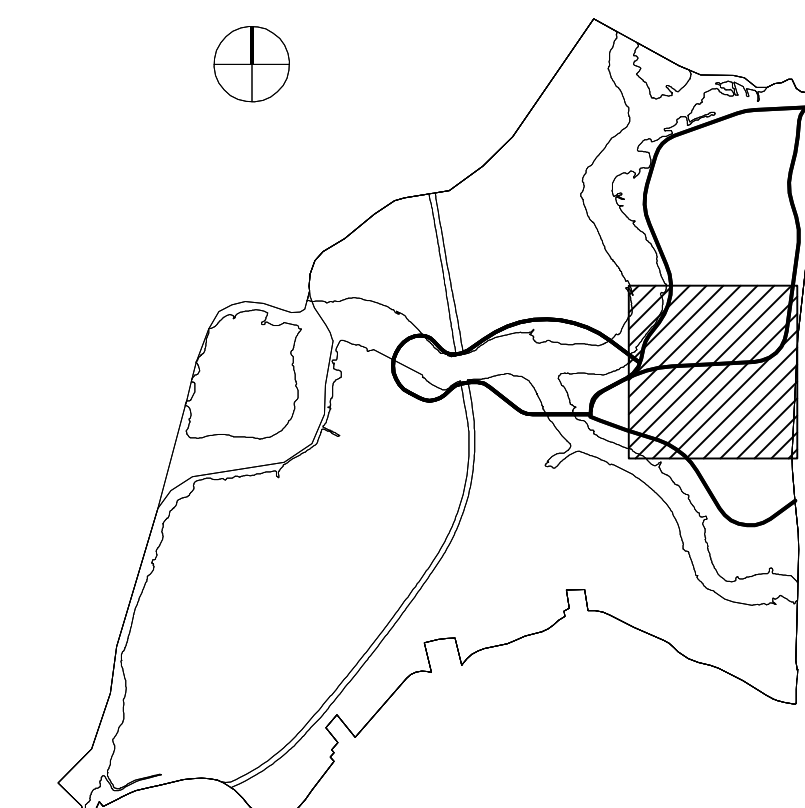
FRESH KILLS - YUKON CROSSING



FRESH KILLS - YUKON CROSSING (FOREST HILL CROSSING SIMILAR)



FRESH KILLS PARK, KEY PLAN:



NOTES:

- 1. NO PEDESTRIAN/BICYCLE ACCESS HAS BEEN PROVIDED IN THESE ALTERNATIVES.

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Flushing, New York

PROJECT TITLE:

FRESH KILLS PARK

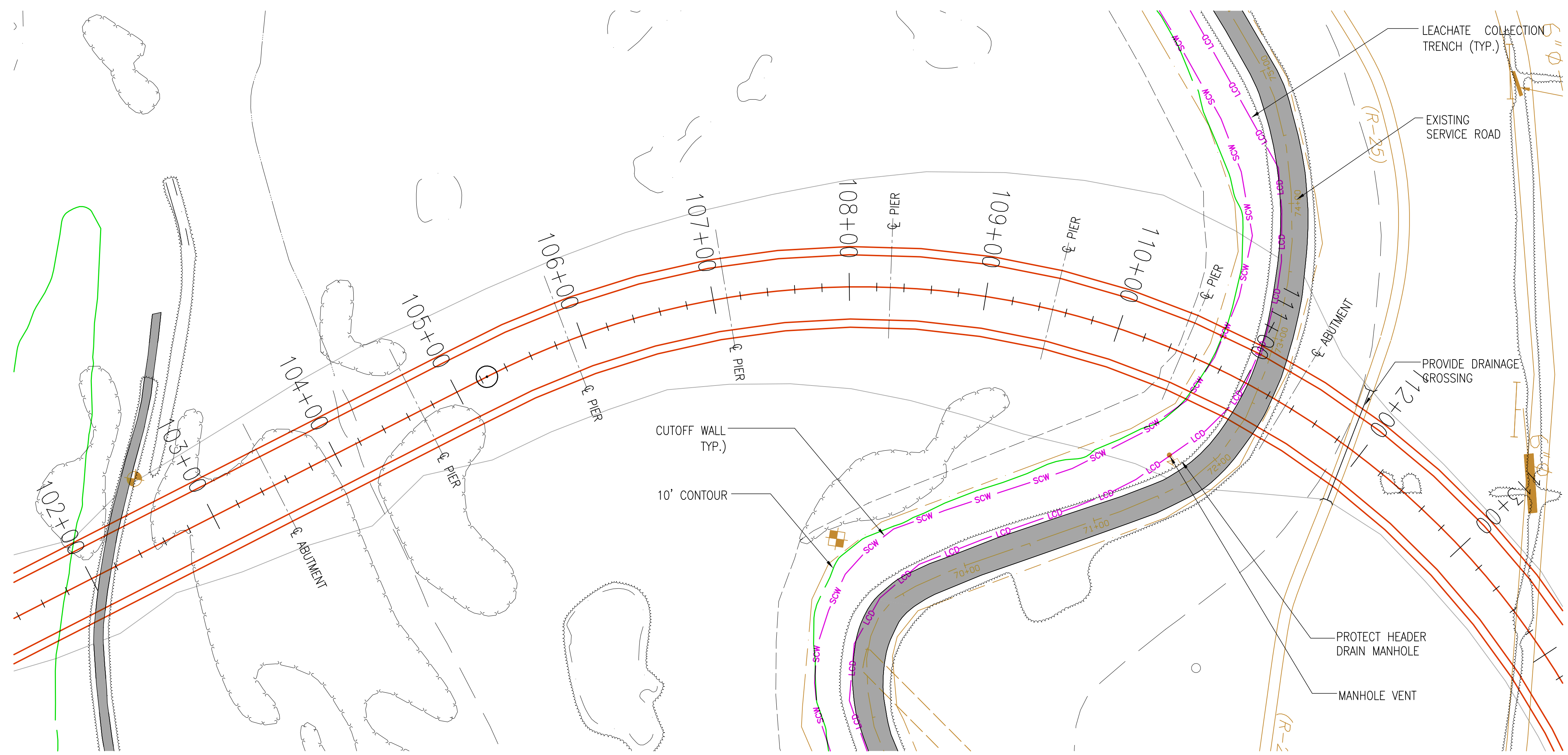
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YUKON CROSSING
TYPICAL DECK SECTION
AND PIER ELEVATION

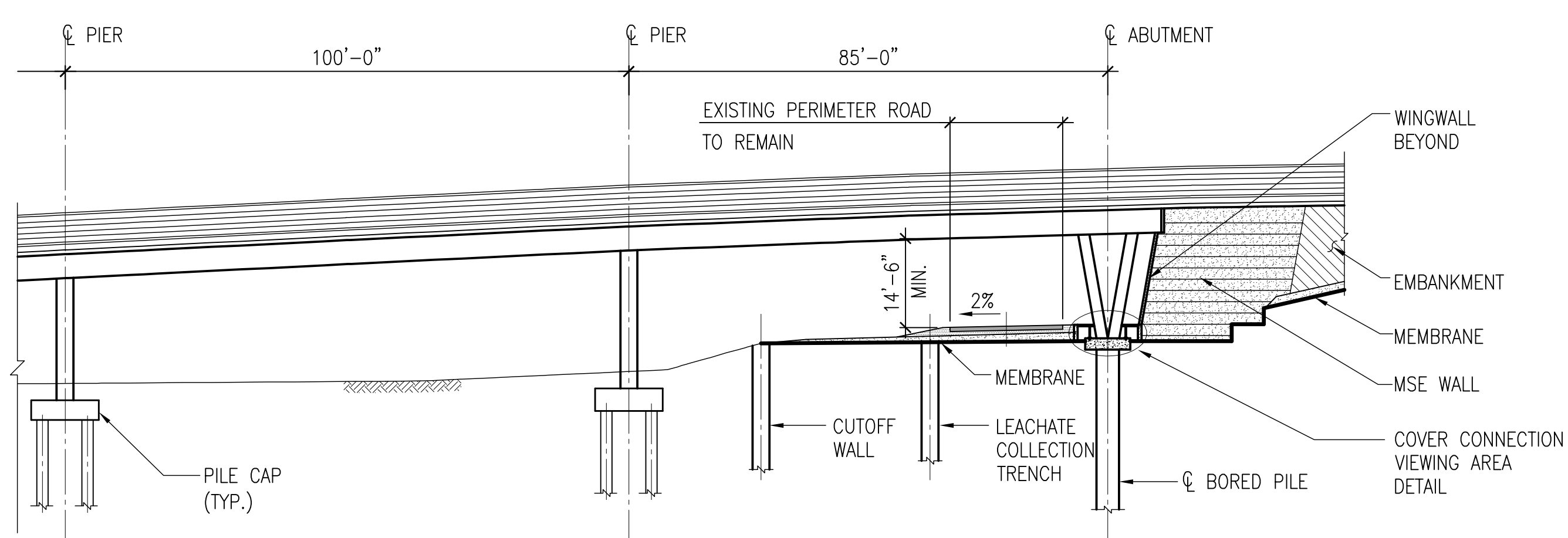
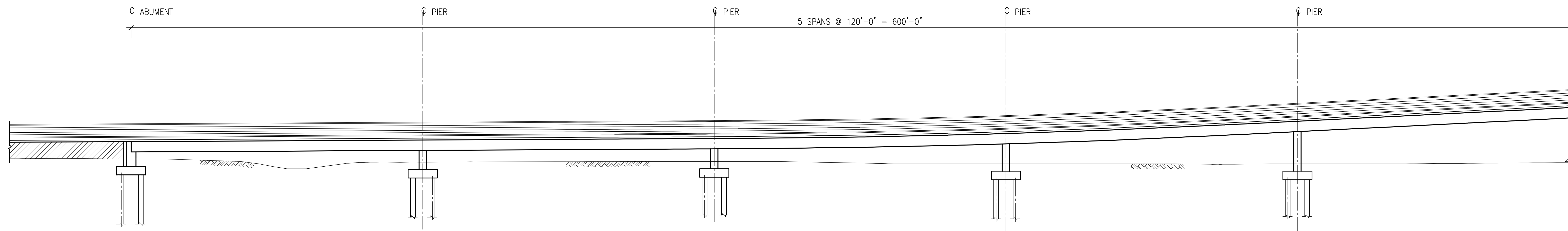
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REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD
DATE: 09.07.07	SCALE: 1"=50'	DRAWING NO.: YC-B-50.01
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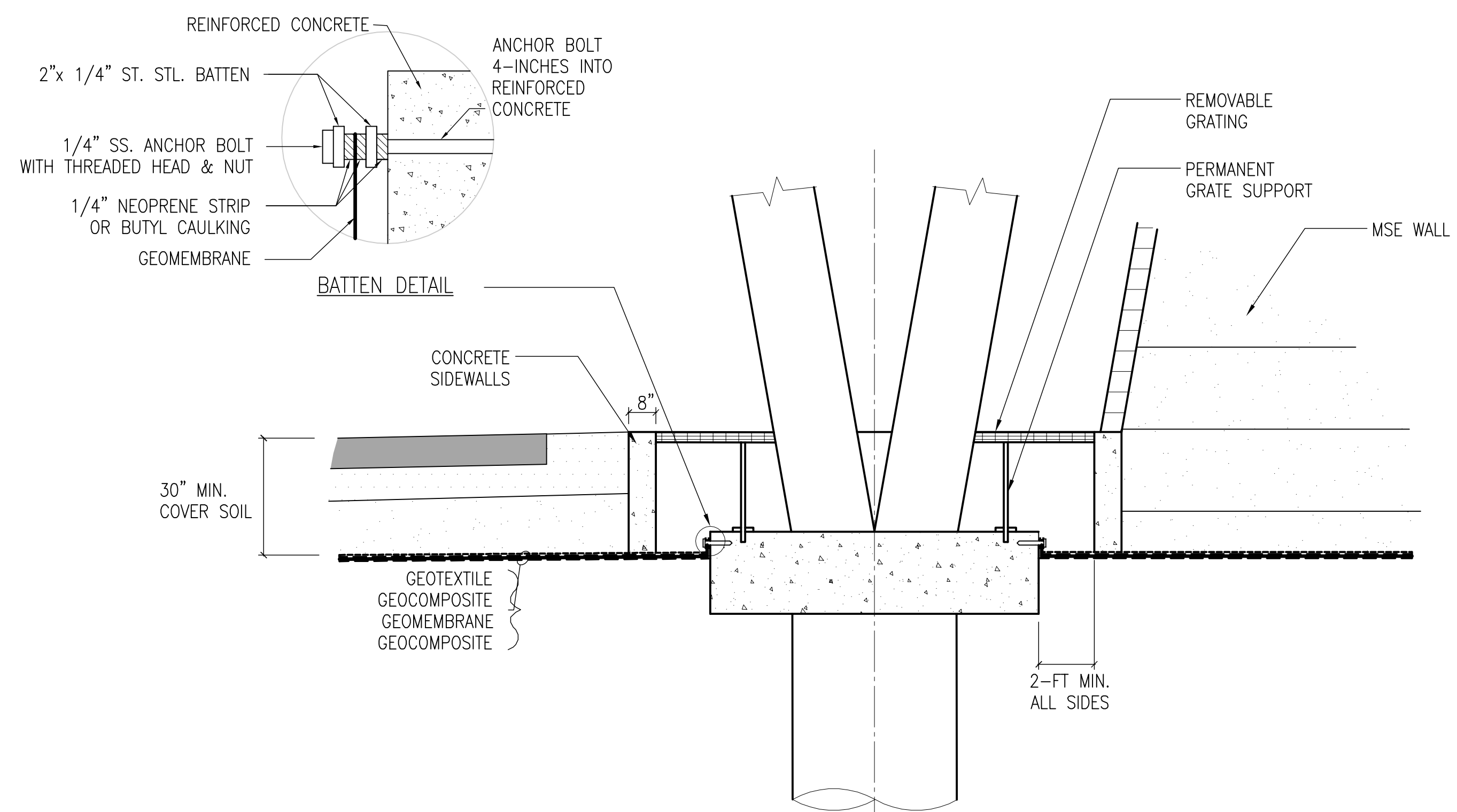
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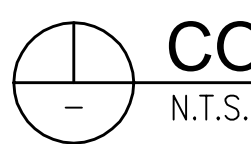
FRESH KILLS - FOREST HILL CROSSING PLAN
OPTION Y-1



FRESH KILLS - FOREST HILL CROSSING
COVER CONNECTION VIEWING AREA

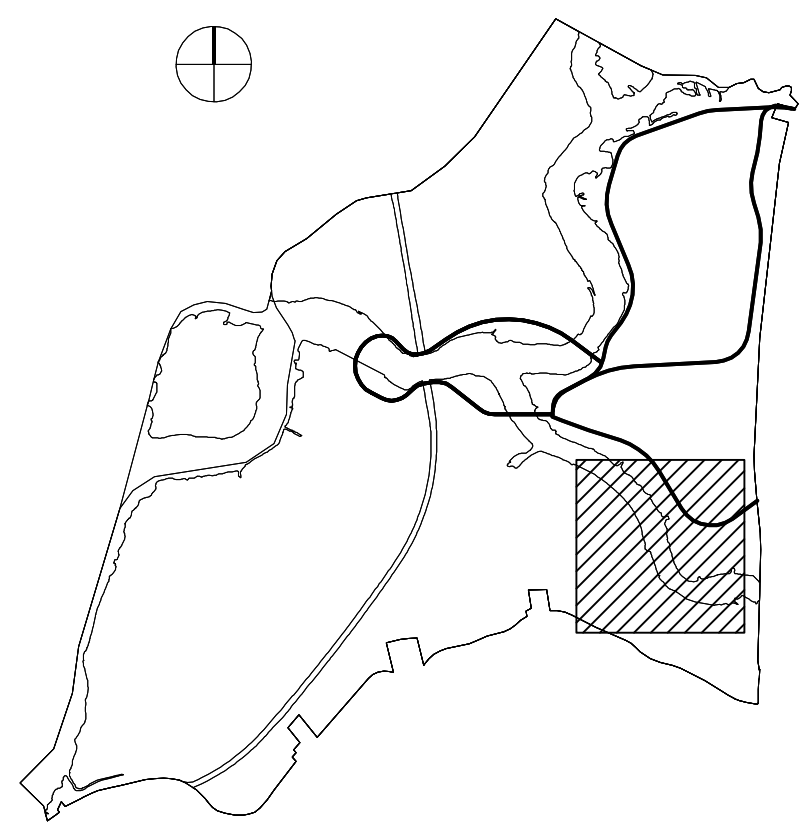


FRESH KILLS - FOREST HILL CROSSING
COVER CONNECTION VIEWING AREA



N.T.S.

FRESH KILLS PARK, KEY PLAN:



NOTES:

FIGURE FC-1

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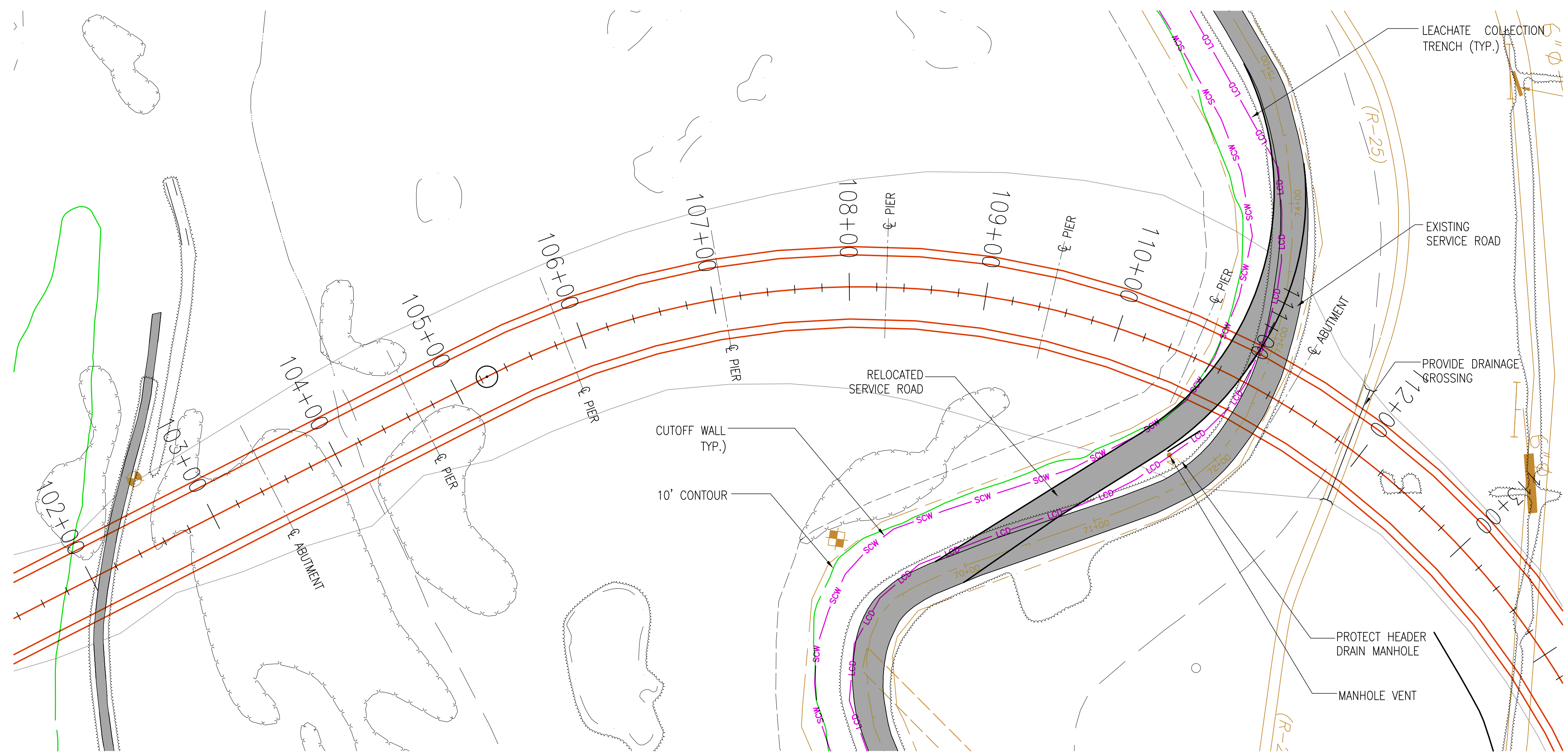
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FRESH KILLS PARK
**FOREST HILL CROSSING
BRIDGE ABUT. ON MOUND
OPTION Y-1**

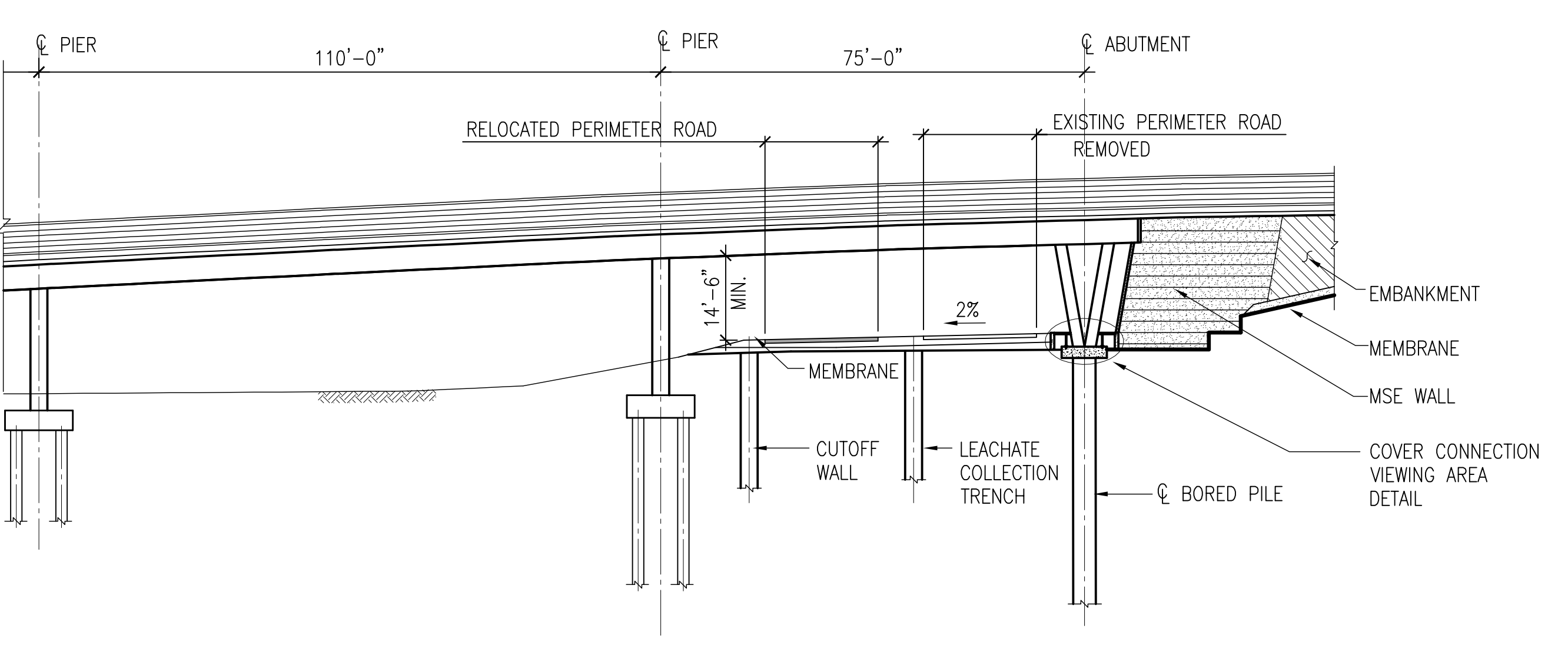
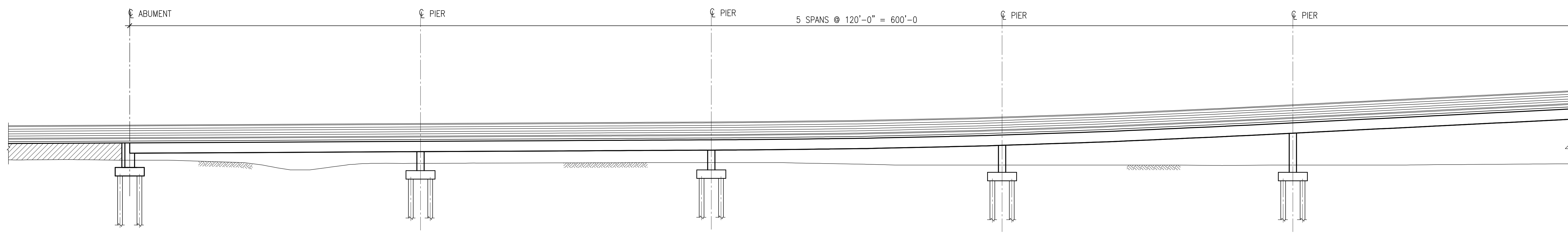
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REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD

DATE: 09.07.07	SCALE: 1"=50'	DRAWING NO.: FC-B-23.01	SHEET NO. / SHEETS 1/XXX
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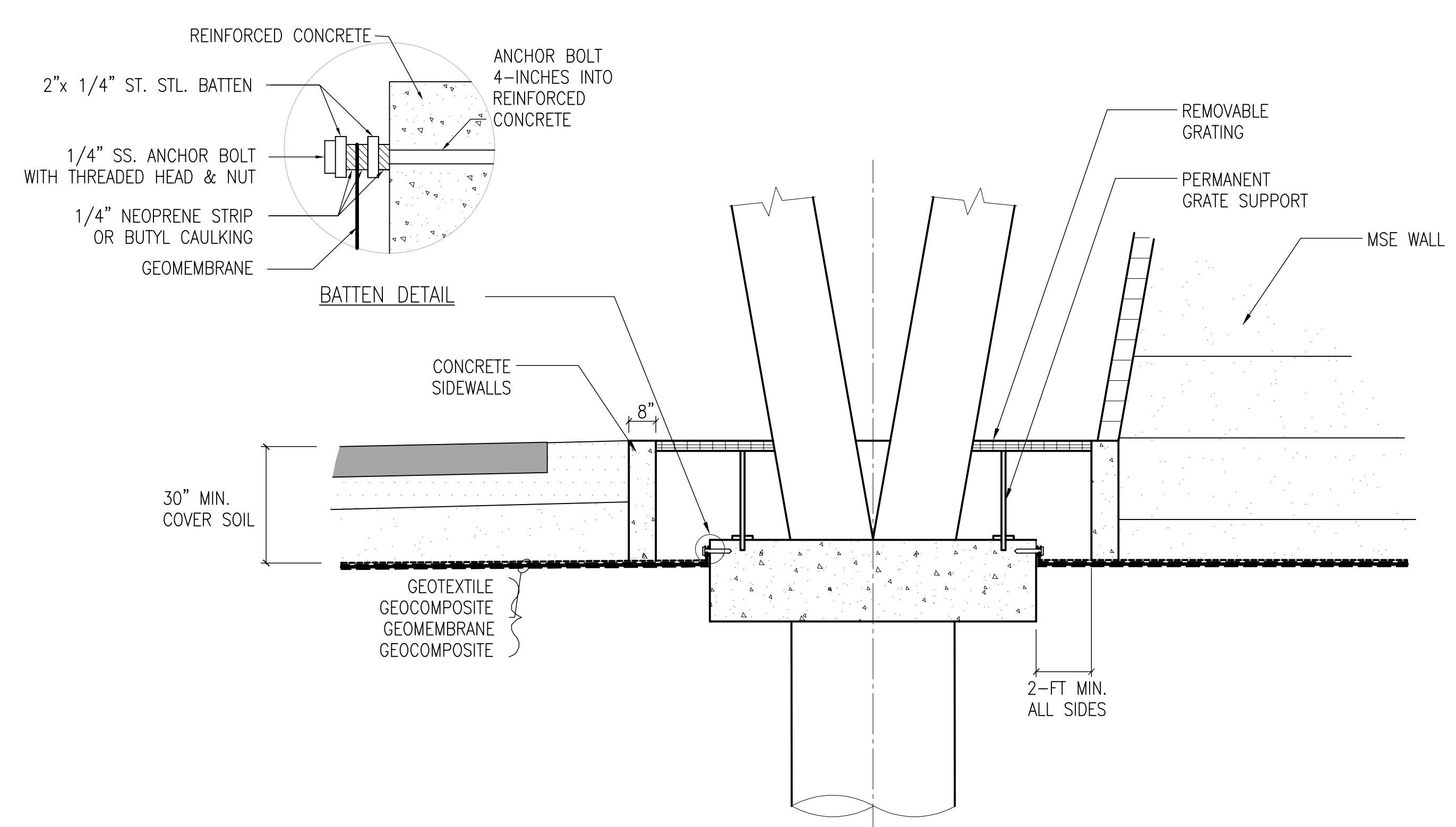
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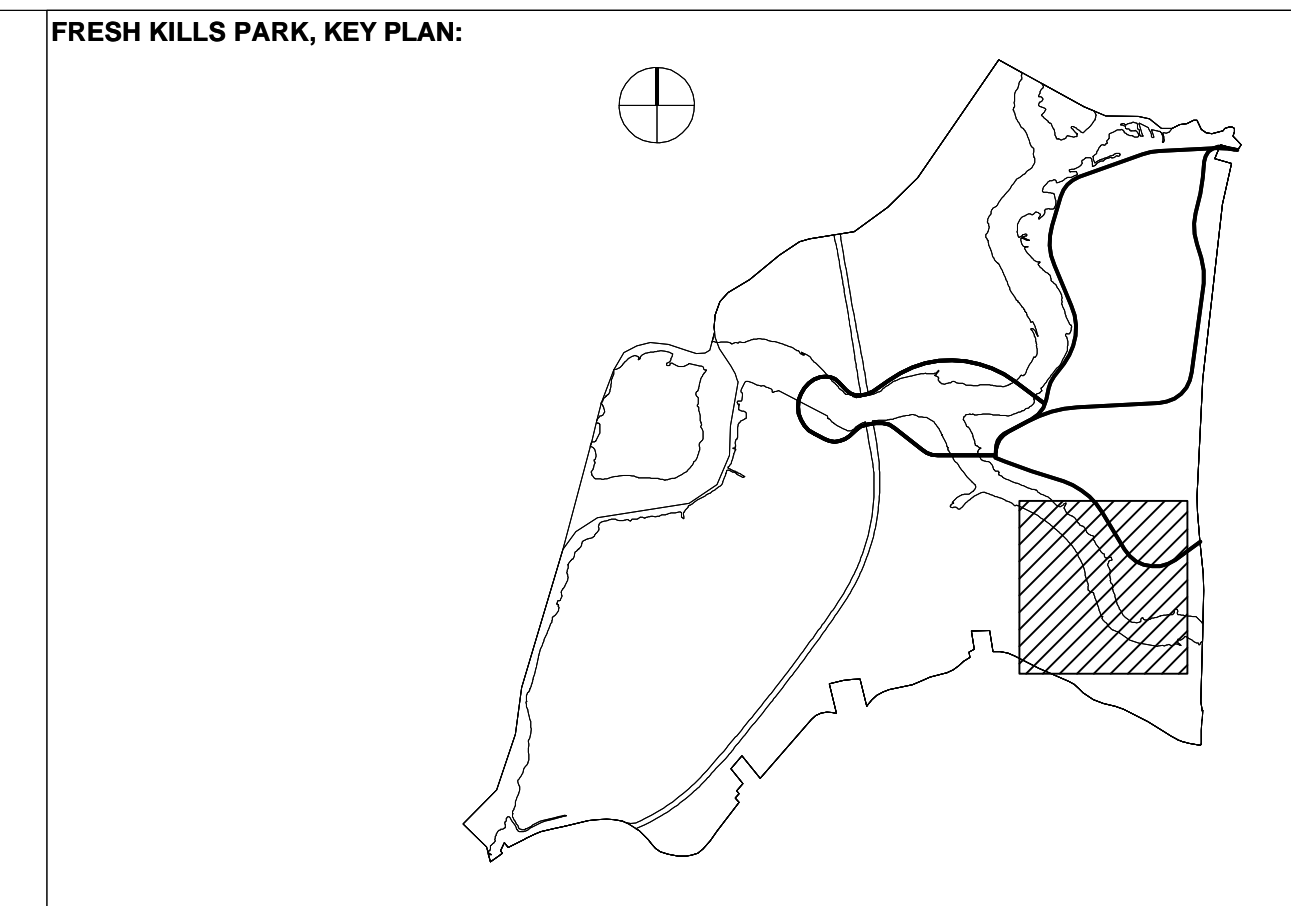
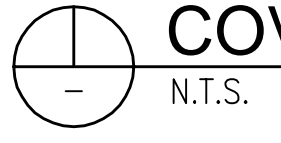
FRESH KILLS - FOREST HILL CROSSING PLAN
OPTION Y-2



FRESH KILLS - FOREST HILL CROSSING
COVER CONNECTION VIEWING AREA



FRESH KILLS - FOREST HILL CROSSING
COVER CONNECTION VIEWING AREA



NOTES:

FIGURE FC-2

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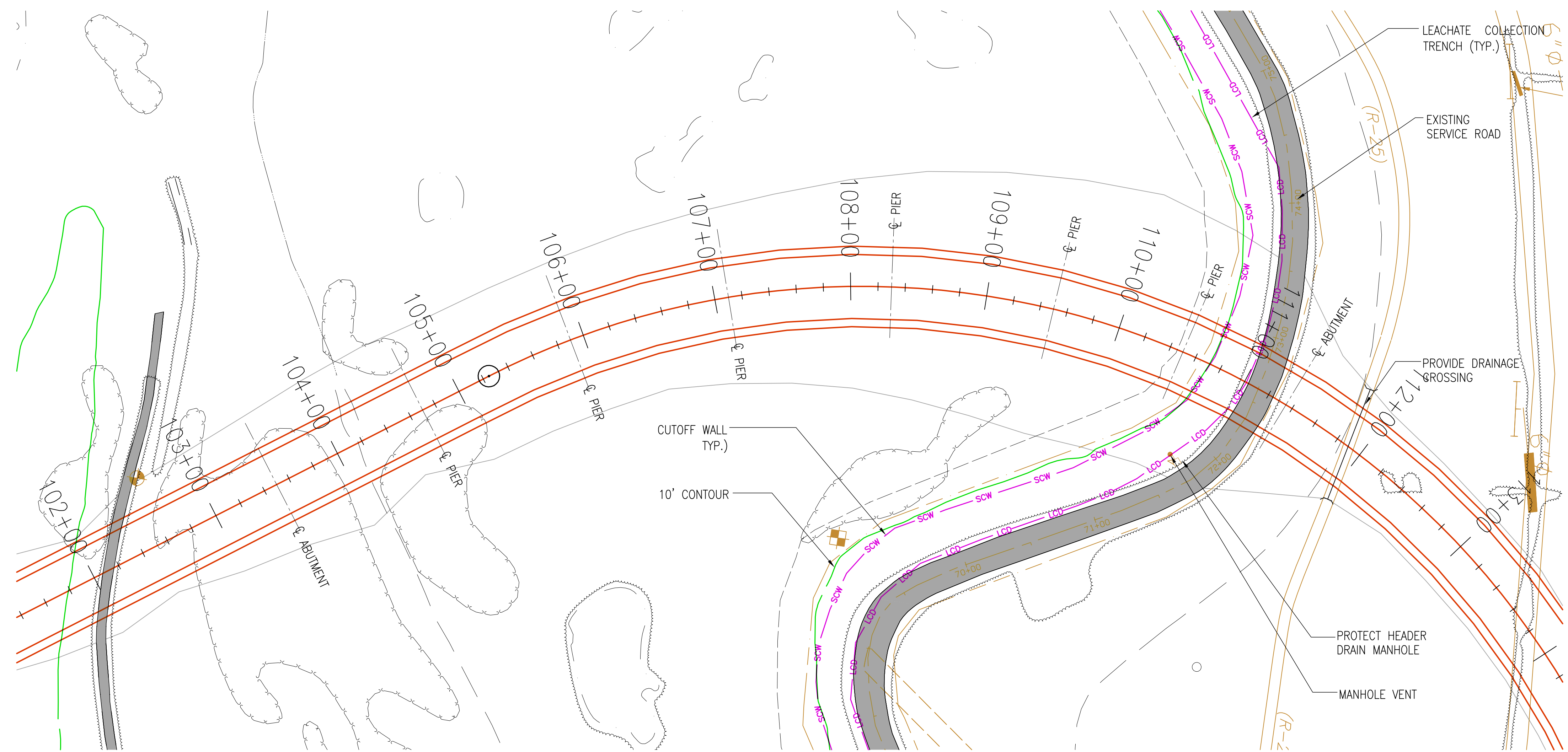
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FRESH KILLS PARK

DRAWING TITLE:
FOREST HILL CROSSING
BRIDGE ABUT. ON MOUND
OPTION Y-2

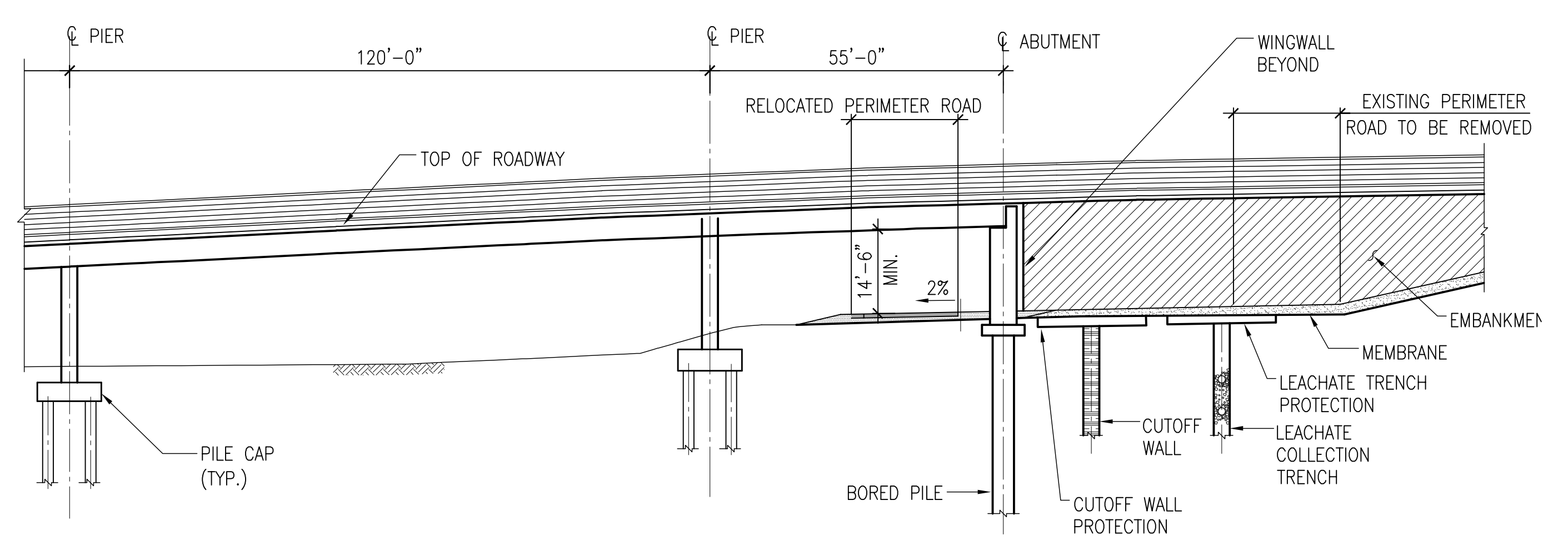
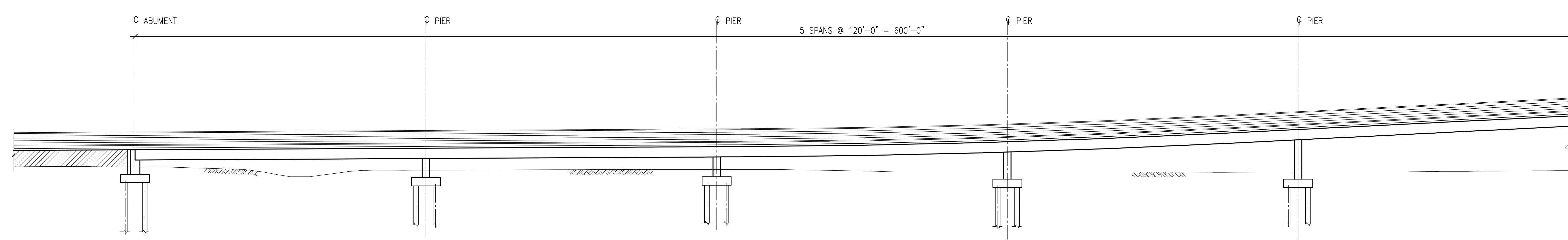
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REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD

DATE: 09.07.07	SCALE: 1"=50'	DRAWING NO.: FC-B-23.02	SHEET NO. / SHEETS 1/XXX
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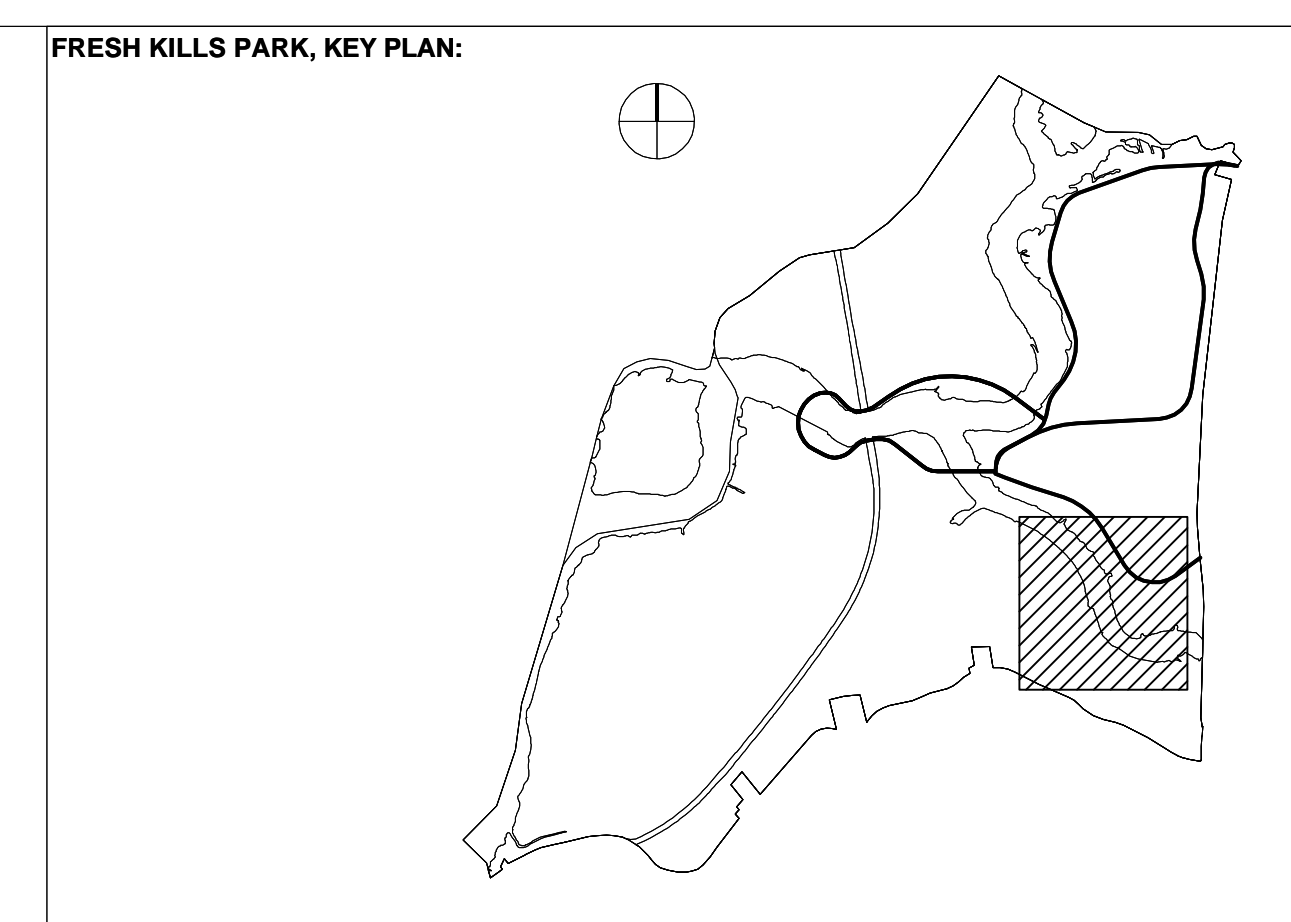
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 PLOT TIME: 9/7/2007 4:31 PM
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FRESH KILLS - FOREST HILL CROSSING PLAN
OPTION Y-3



FRESH KILLS - FOREST HILL CROSSING
OPTION Y-3



NOTES:

FIGURE FC-3

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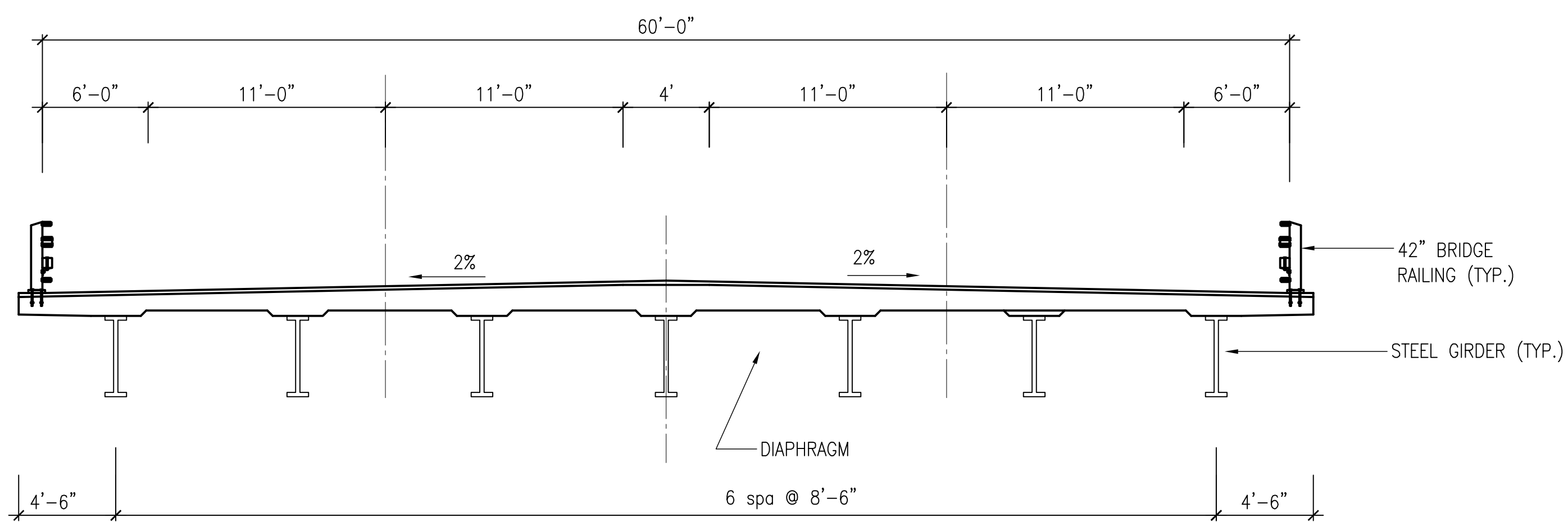
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FRESH KILLS PARK

DRAWING TITLE:
**FOREST HILL CROSSING
BRIDGE ABUT. ON MOUND
OPTION Y-3**

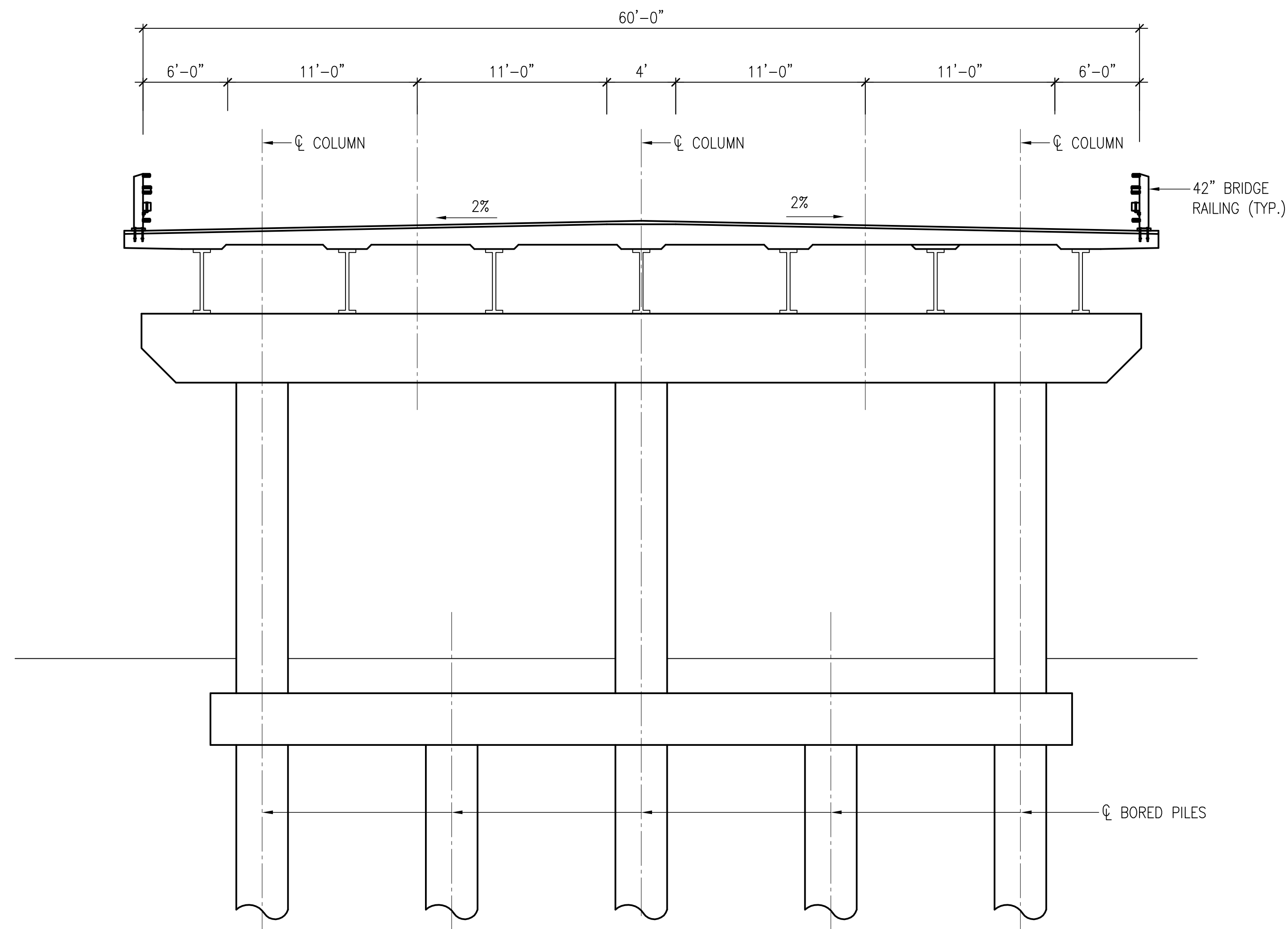
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REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD

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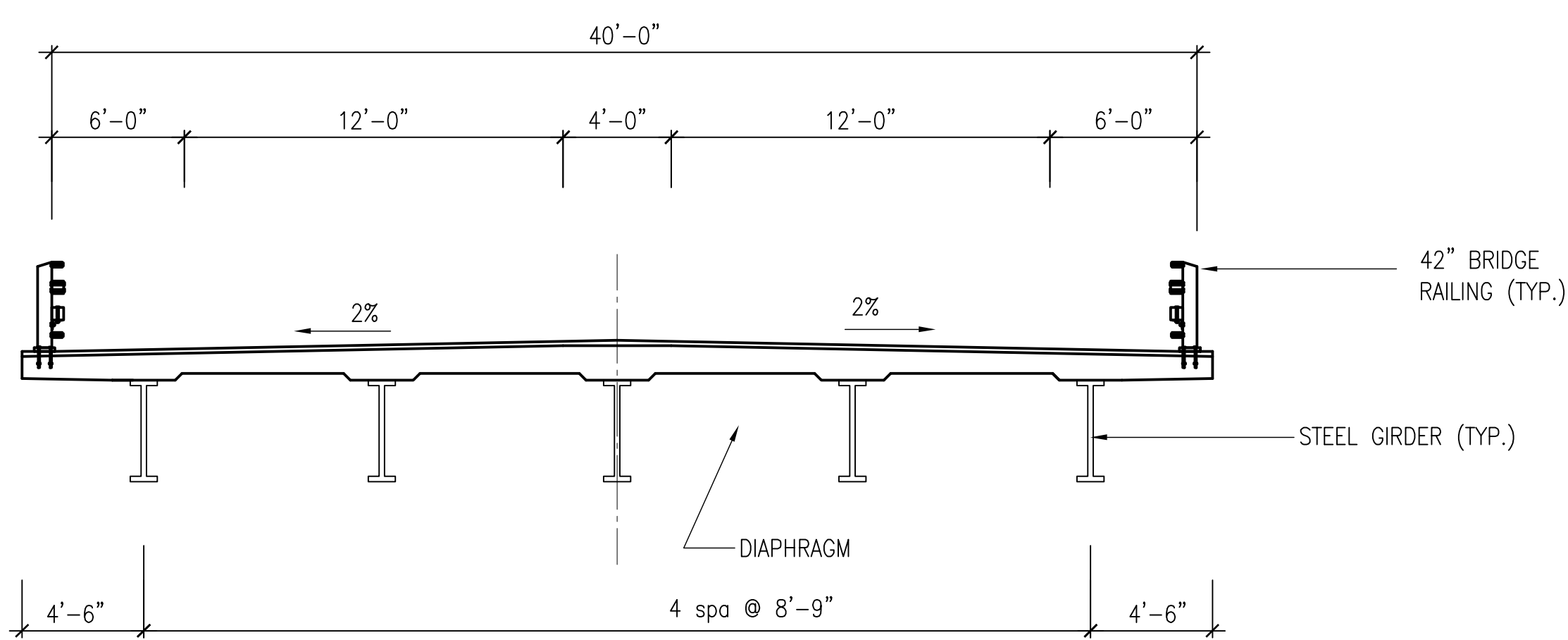
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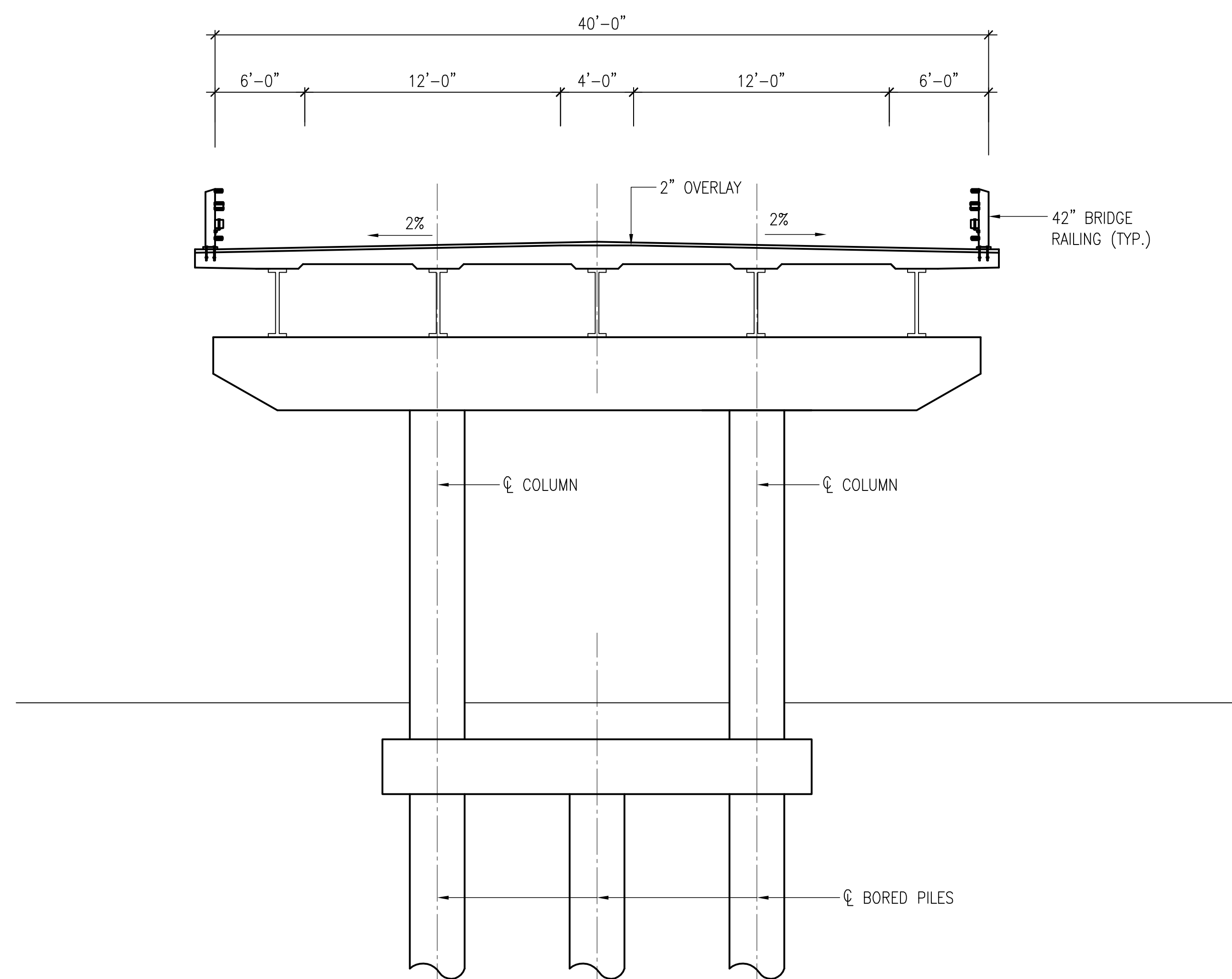
4 LANE OPTION - TYPICAL DECK SECTION



4 LANE OPTION - PIER ELEVATION



2 LANE OPTION - TYPICAL DECK SECTION



2 LANE OPTION - PIER ELEVATION

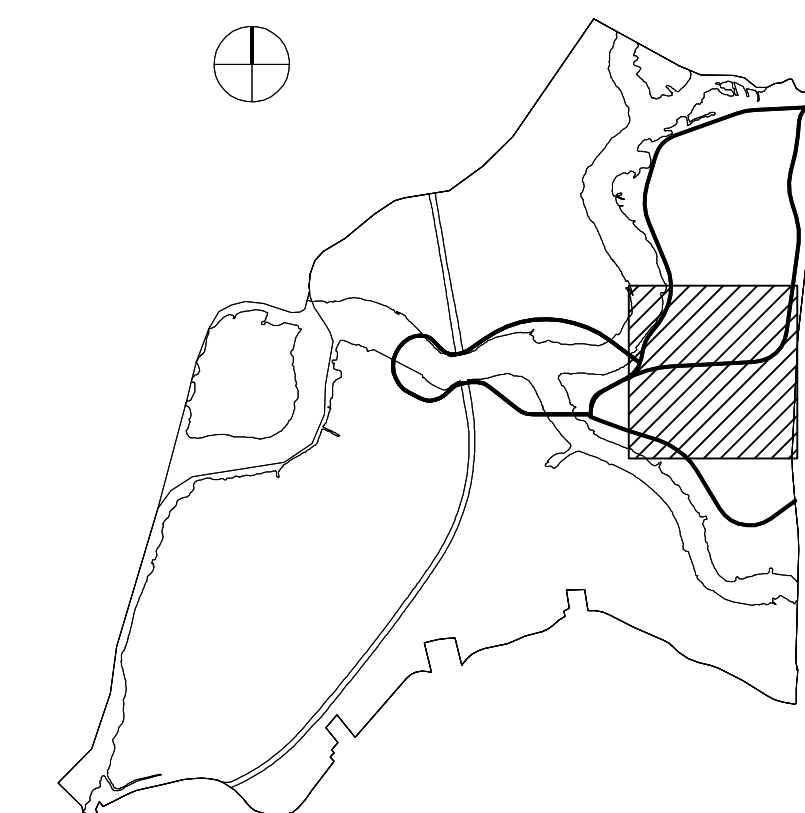
5 1
- FRESH KILLS - YUKON CROSSING



5 1
- FRESH KILLS - FOREST HILL CROSSING



FRESH KILLS PARK, KEY PLAN:



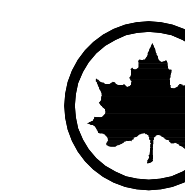
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1. NO PEDESTRIAN/BICYCLE ACCESS HAS BEEN PROVIDED IN THESE ALTERNATIVES.

LEAD CONSULTANT:



SUB-CONSULTANT:



City of New York
Parks & Recreation
Olmsted Center
Flushing Meadows-Corona Park
Flushing, New York

PROJECT TITLE:

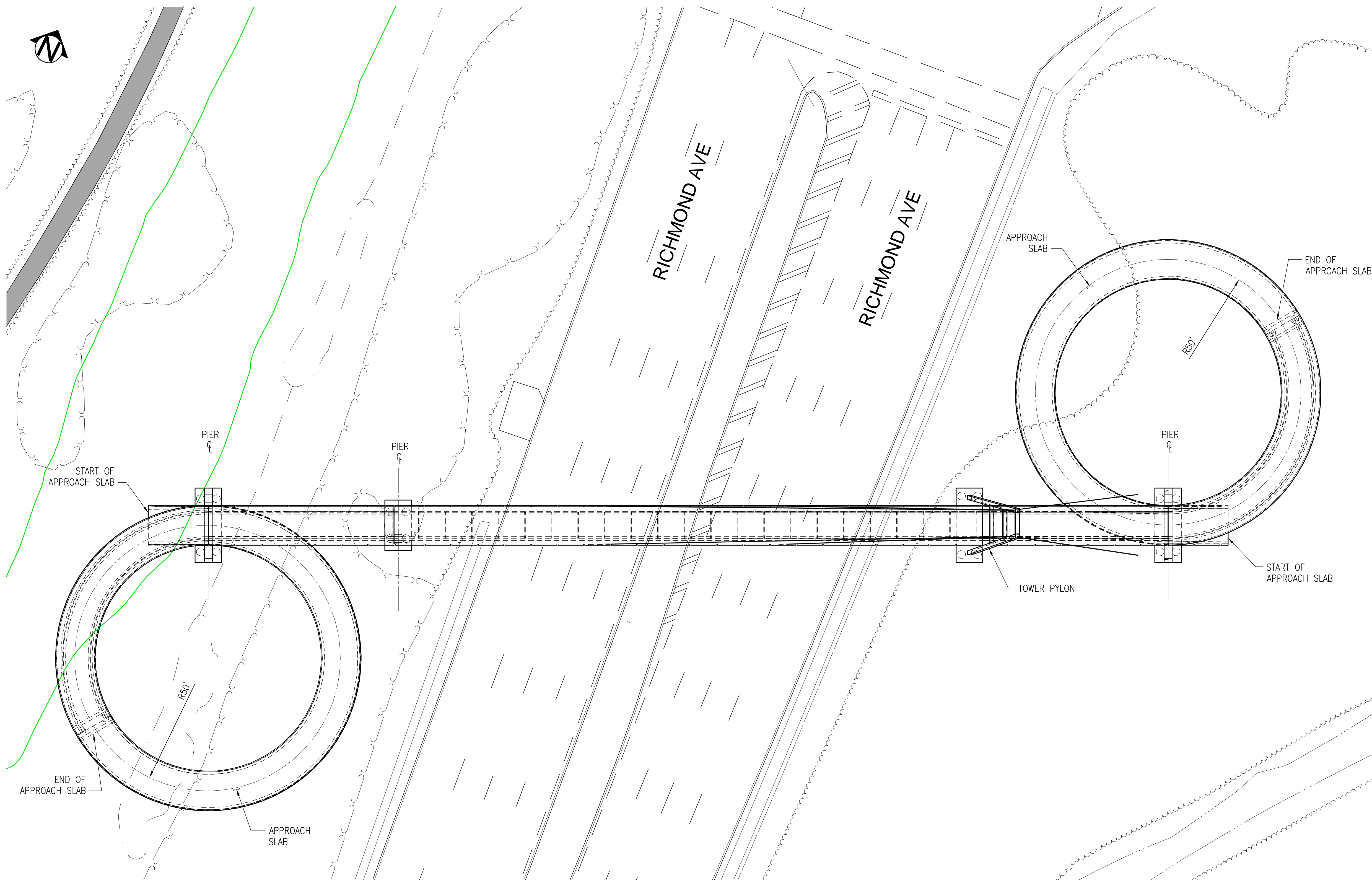
FRESH KILLS PARK

DRAWING TITLE:

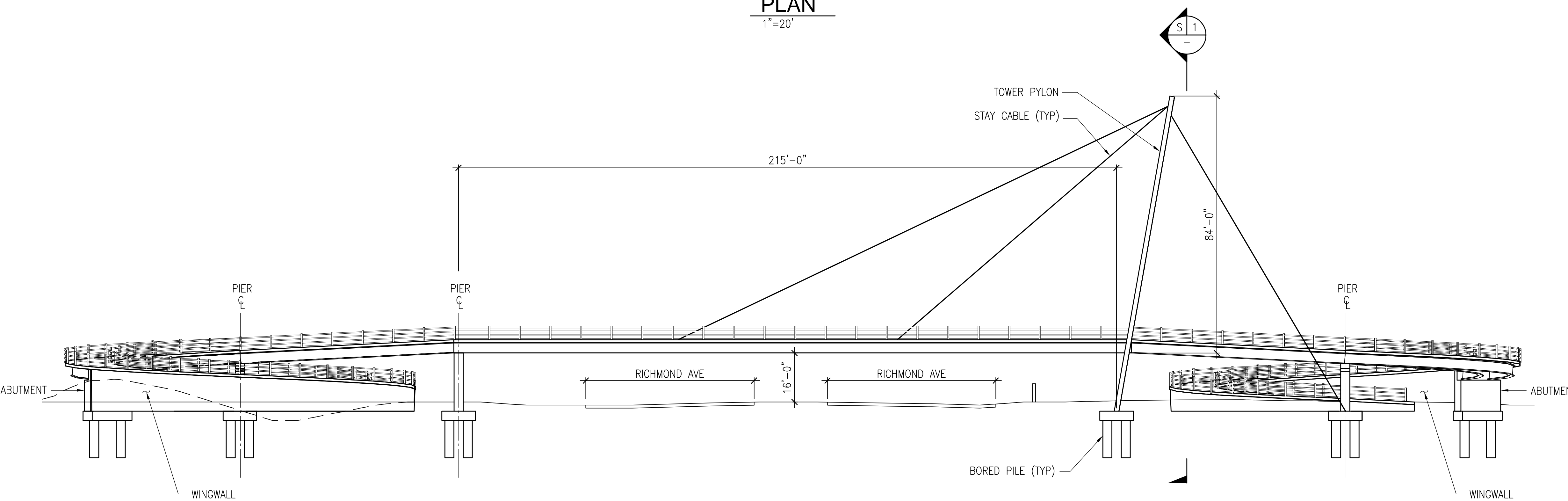
FOREST HILL CROSSING
TYPICAL DECK SECTION
AND PIER ELEVATION

DESIGNED BY: DSN	DRAWN BY: DRN	CHECKED BY: CHK
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: TBD	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.: TBD
DATE: 09.07.07	SCALE: 1"=50'	DRAWING NO.: FC-B-50.01
		SHEET NO. / SHEETS 1/XXX

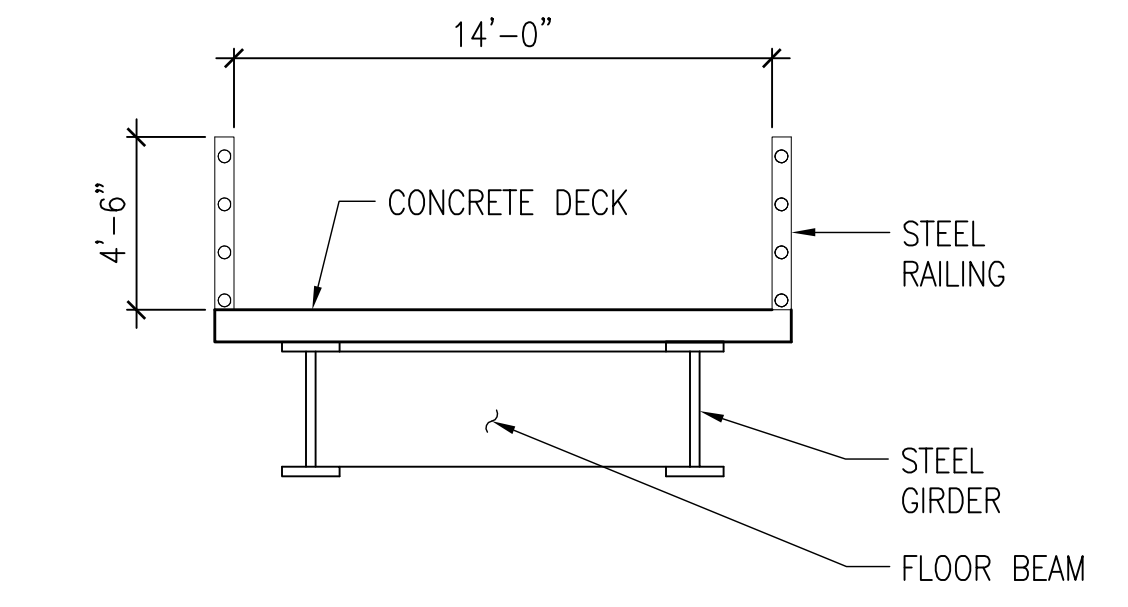
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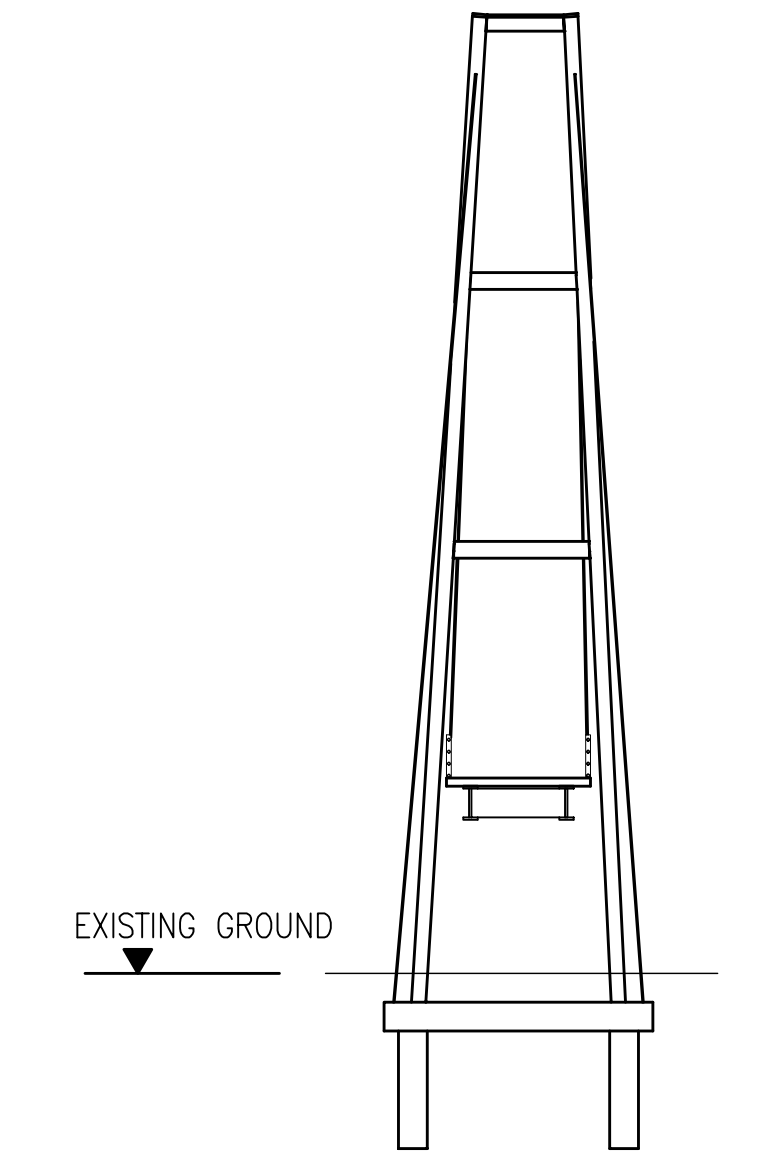
PLAN
1"=20'



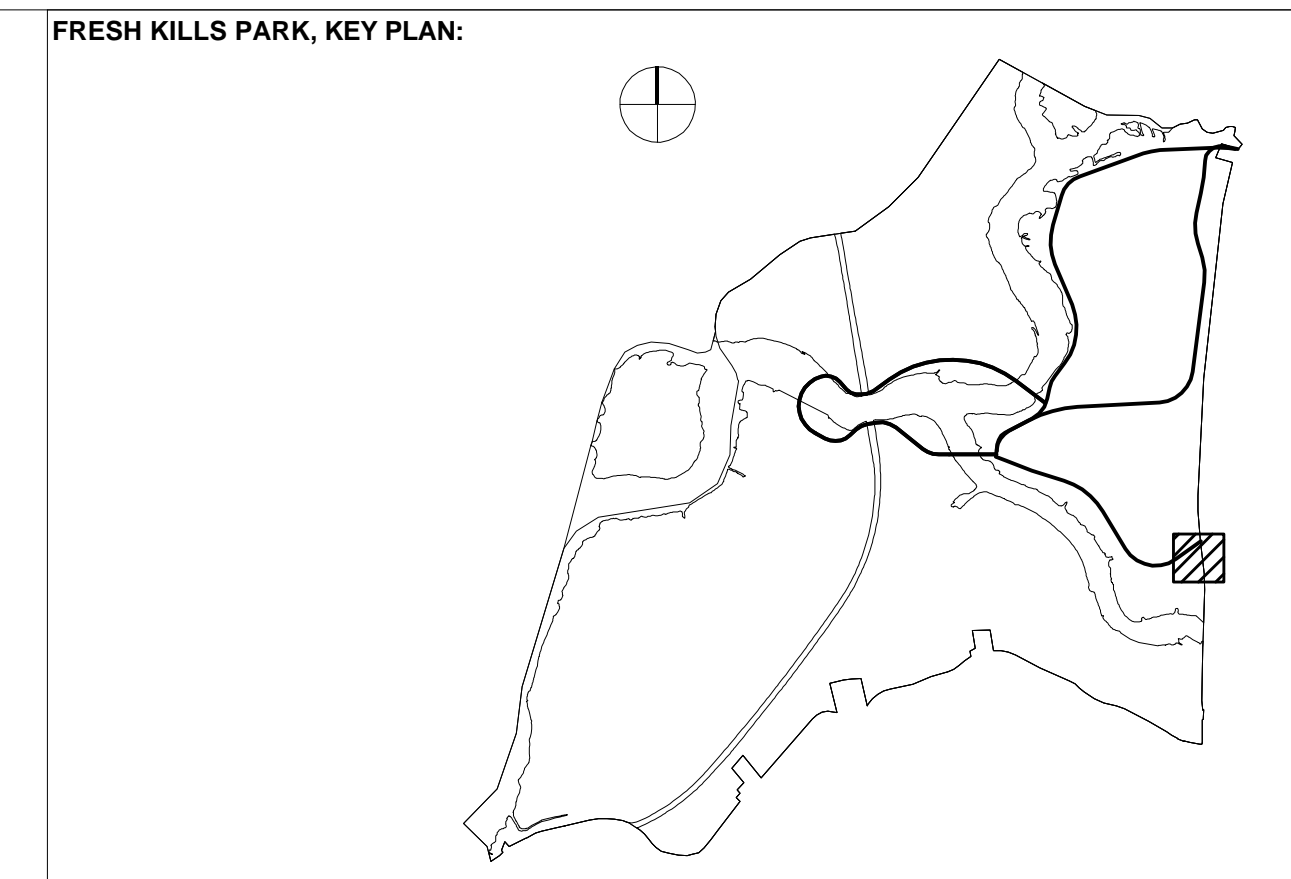
ELEVATION
1"=20'



TYPICAL BRIDGE DECK SECTION
1"=5'



SECTION
1"=20'




FRESH KILLS PARK, KEY PLAN:

NOTES:

LEAD CONSULTANT:
fo
Field Operations
475 Tenth Ave., 10FI, New York, NY 10018 215-433-1450

SUB-CONSULTANT:
ARUP
One Arup & Partners Consulting Engineers PC
155 Avenue of the Americas
New York, NY 10013
Tel (212) 229-2889 Fax (212) 229-1056
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 **City of New York Parks & Recreation**
Olmsted Center
Flushing Meadows-Corona Park
Flushing, New York

PROJECT TITLE:
FRESH KILLS PARK

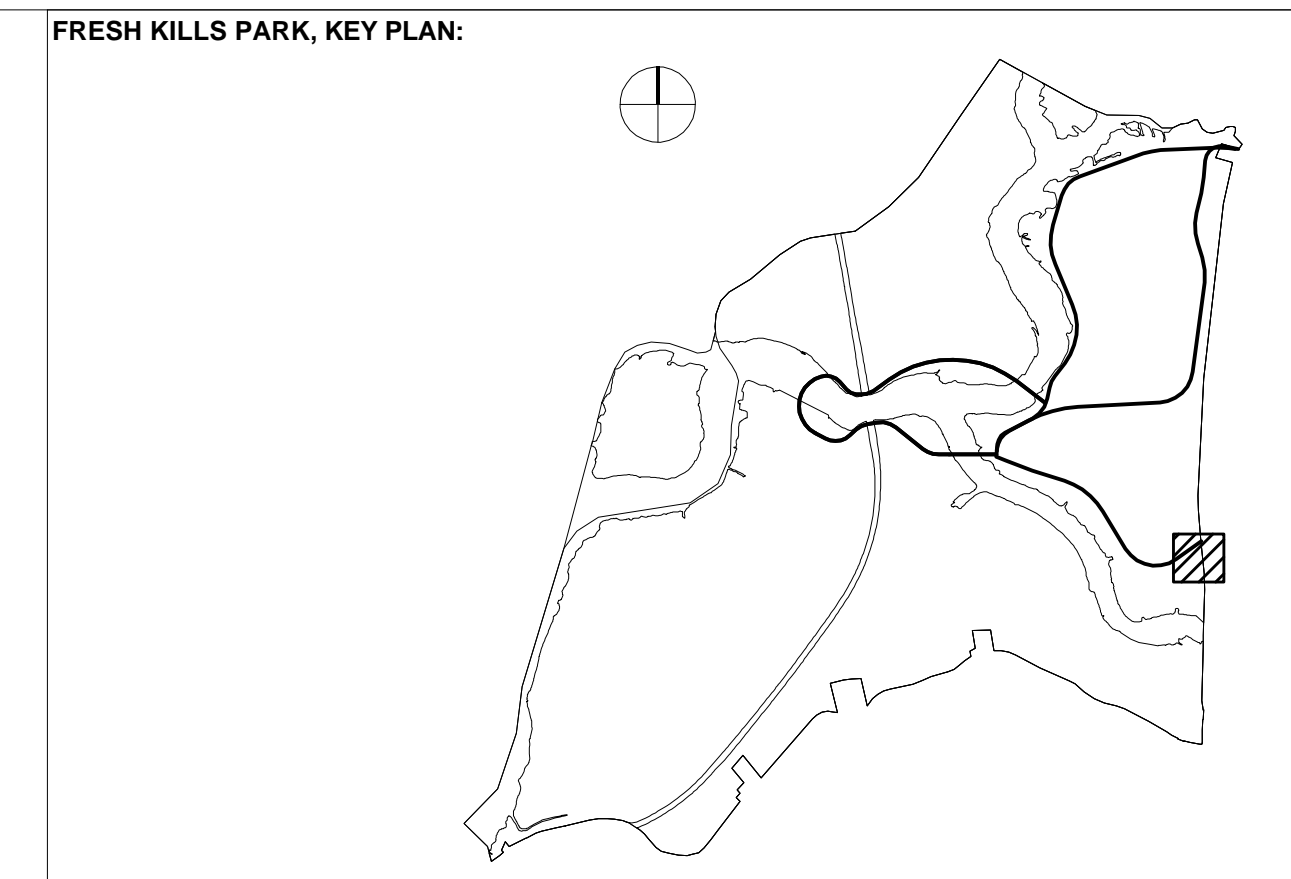
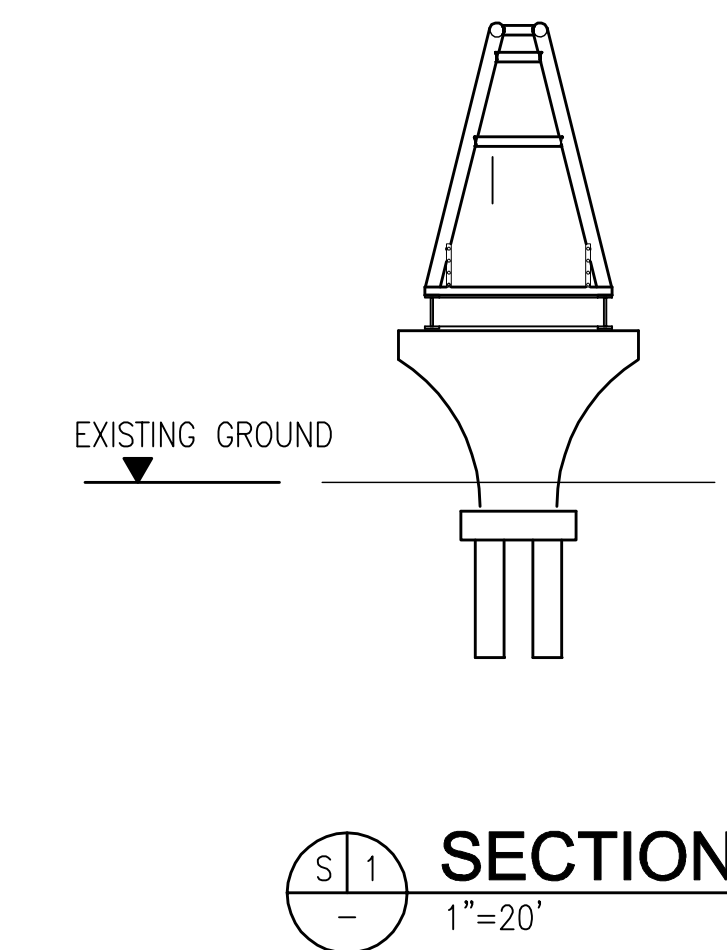
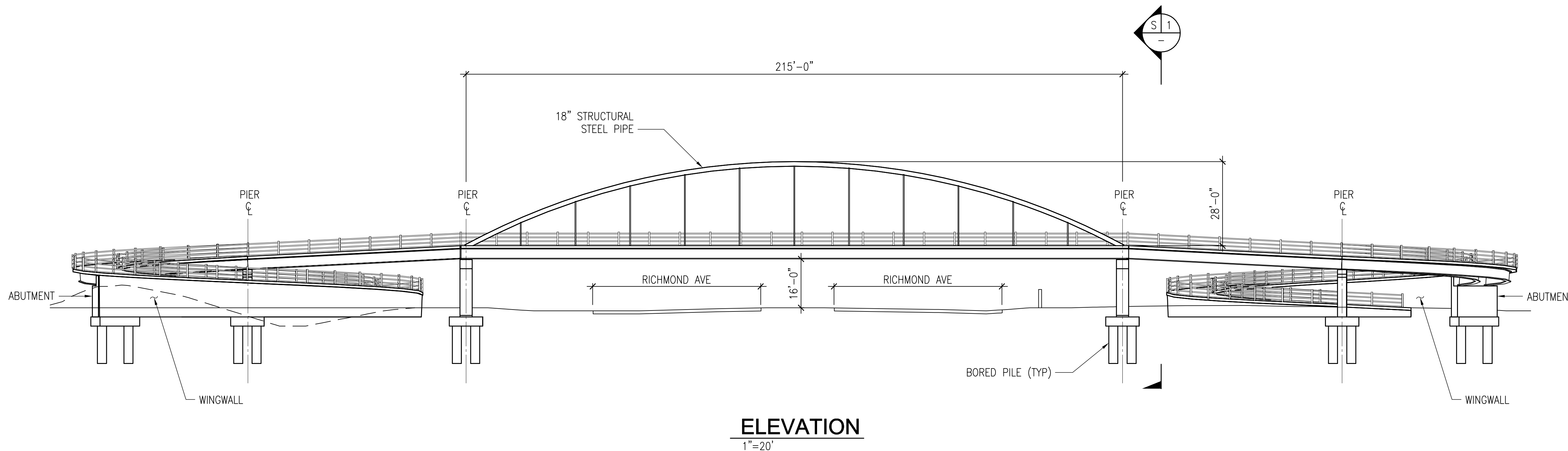
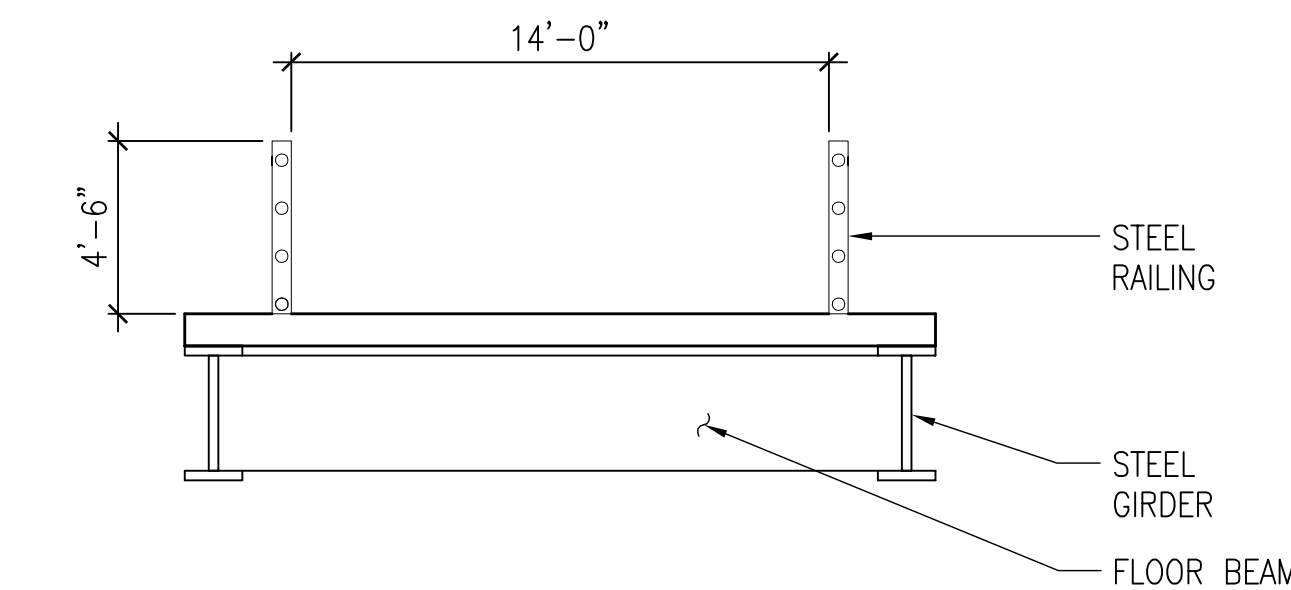
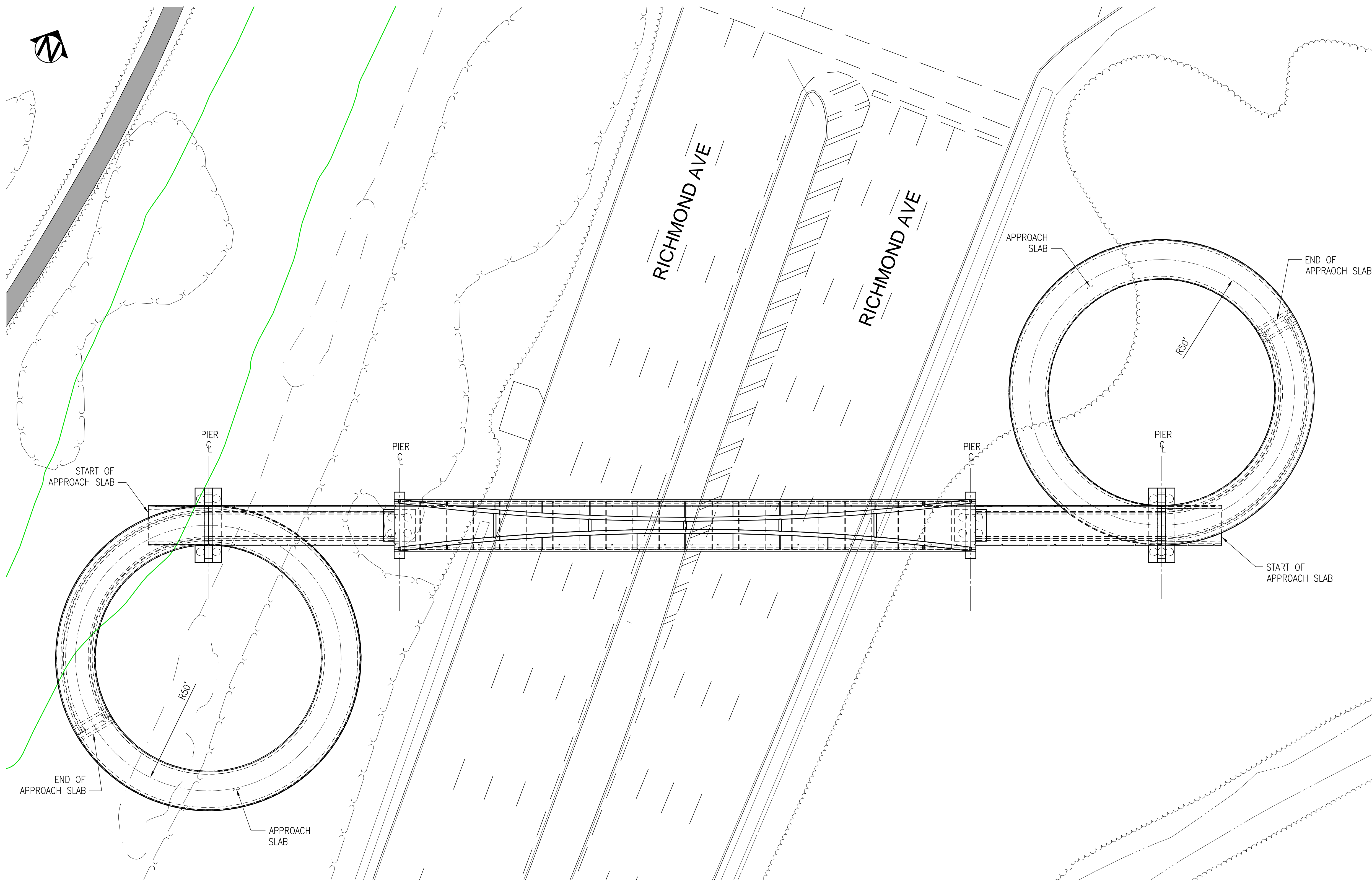
DRAWING TITLE:
**FOREST HILL PED BRIDGE
CABLE STAY OPTION
GENERAL ARRANGMENT**

DESIGNED BY:	DRAWN BY:	CHECKED BY:
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: John Natoli	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.:

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DATE: 09.07.07	SCALE: 1"=20'	DRAWING NO.:	SHEET NO. / SHEETS FP-B-23.01 1/XXX
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 PLOT TIME: 9/7/2007 5:46 PM
 MDI: BY: Yelena Zabolova
 PLOT TIME: 9/7/2007 8:08 PM



NOTES:

LEAD CONSULTANT:
fo
Field Operations
475 Tenth Ave., 10FI, New York, NY 10018 215-433-1450

SUB-CONSULTANT:
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One Arup & Partners Consulting Engineers PC
155 Avenue of the Americas
New York, NY 10013
Tel (212) 229-2669 Fax (212) 229-1056
www.arup.com

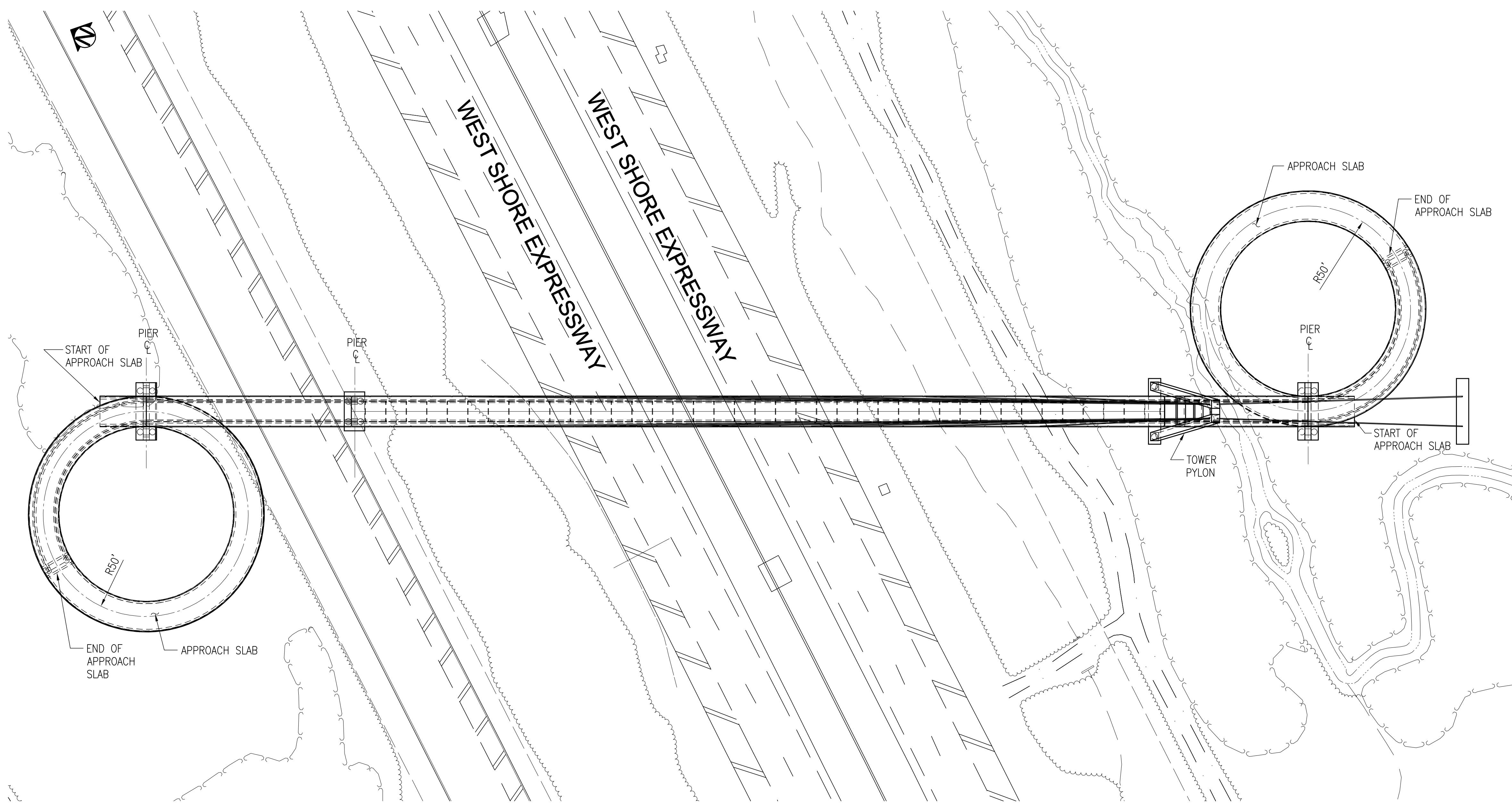
City of New York
Parks & Recreation
Olmsted Center
Flushing Meadows-Corona Park
Flushing, New York

PROJECT TITLE:
FRESH KILLS PARK

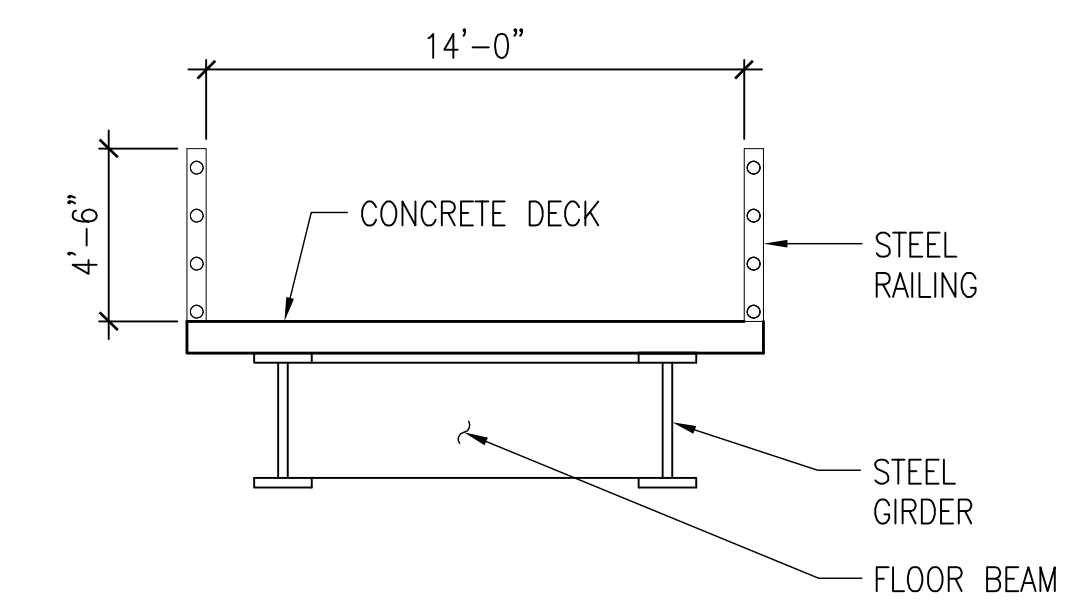
DRAWING TITLE:
FOREST HILL PED BRIDGE
STEEL ARCH OPTION
GENERAL ARRANGEMENT

DESIGNED BY:	DRAWN BY:	CHECKED BY:
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: Angelyn Chandler	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.:
THE ABOVE SIGNATURES DO NOT IN ANY WAY RELEASE THE CONSULTANT FROM ITS RESPONSIBILITIES REGARDING THE ACCURACY AND COMPLETENESS OF THIS DRAWING.		
DATE: 09.07.07	SCALE: 1"=20'	DRAWING NO. / SHEETS: FP-B-23.02 / 1/XXX

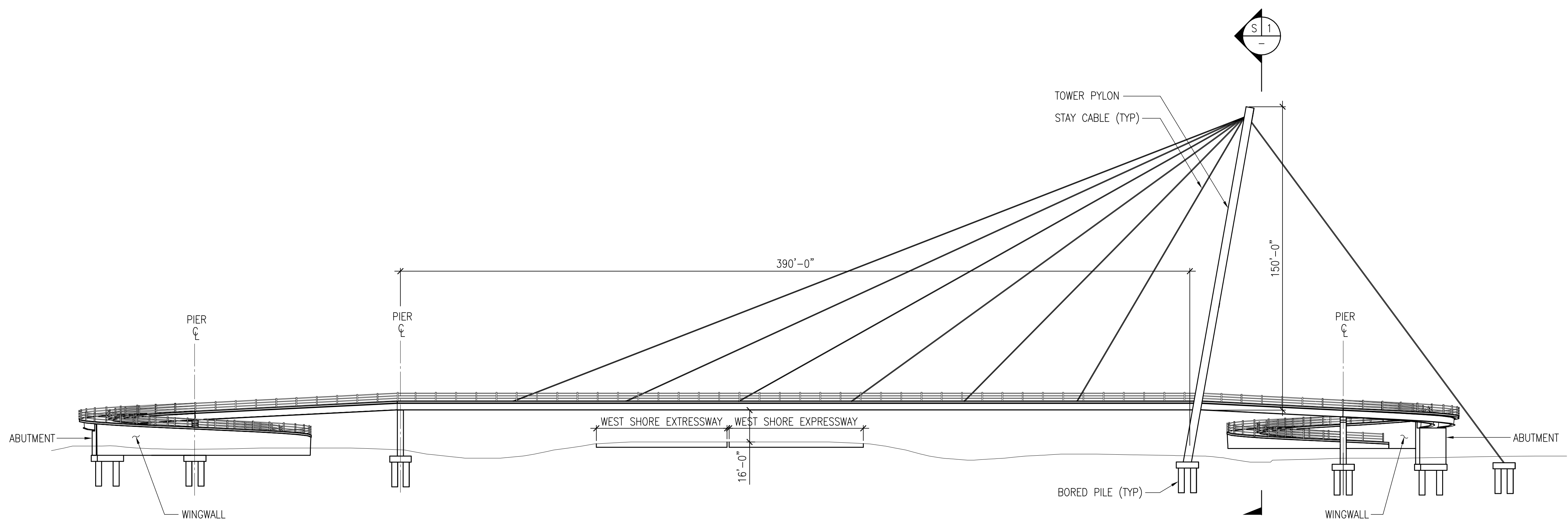
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 PLOT TIME: 9/7/2007 8:08 PM



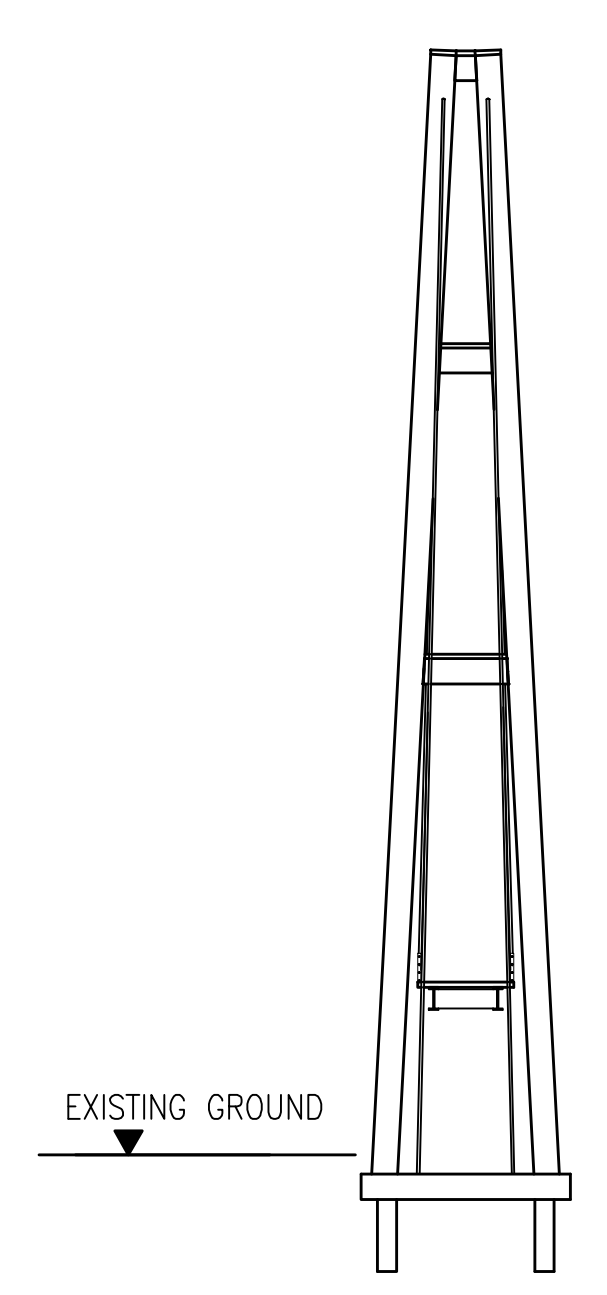
PLAN
1"=30'



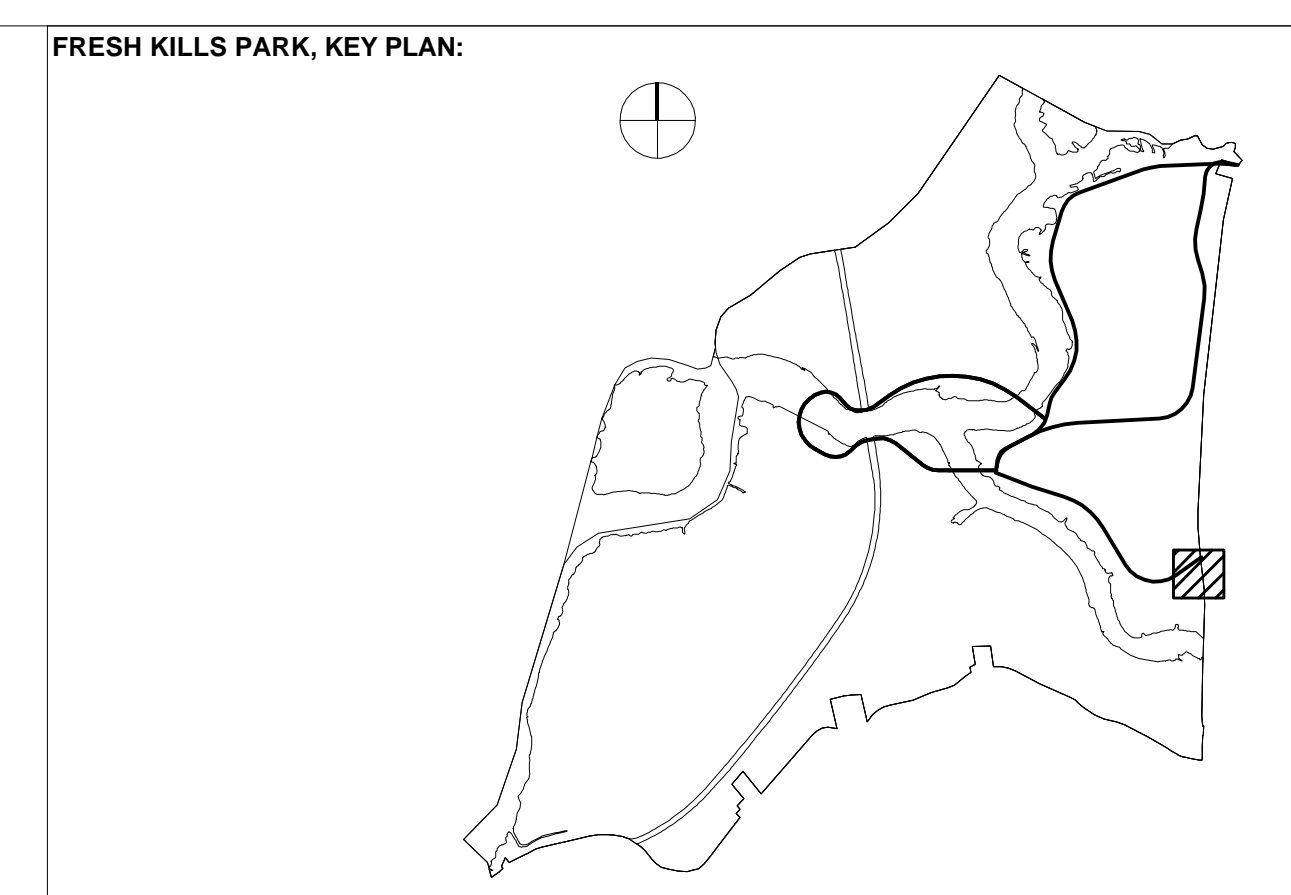
TYPICAL BRIDGE DECK SECTION
1"=5'



ELEVATION
1"=30'



SECTION
1"=30'



NOTES:

LEAD CONSULTANT:

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New York, NY 10013
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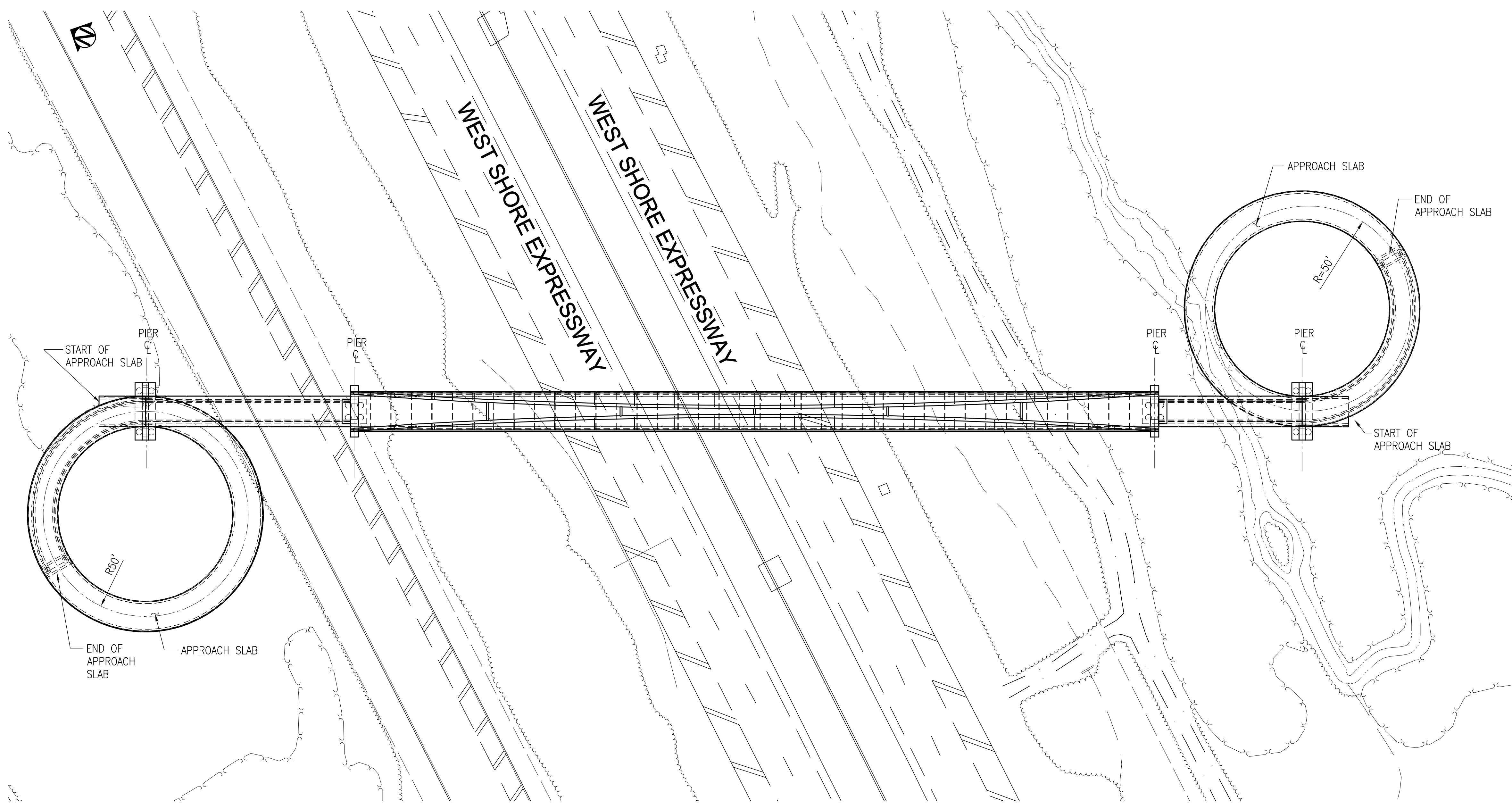
City of New York Parks & Recreation
Olmsted Center
Flushing Meadows-Corona Park
Flushing, New York

PROJECT TITLE:
FRESH KILLS PARK

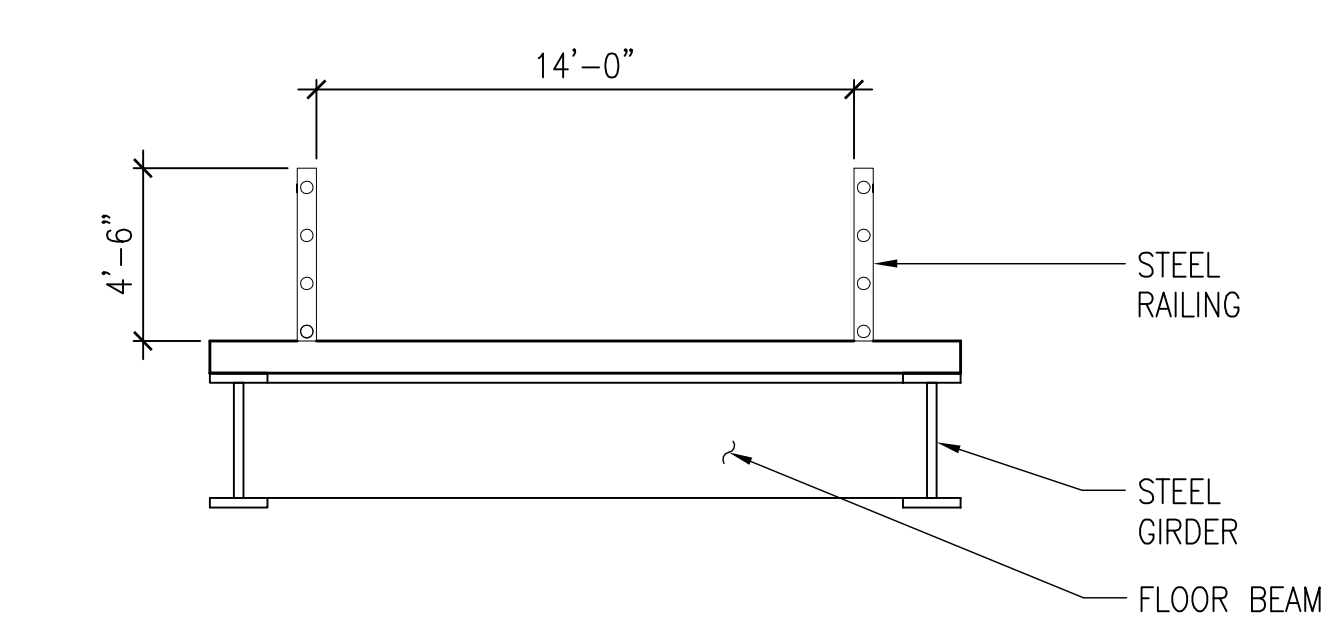
DRAWING TITLE:
MULDOON AVE PED BRIDGE
CABLE STAY OPTION
GENERAL ARRANGEMENT

DESIGNED BY:	DRAWN BY:	CHECKED BY:
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY:	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.:
THE ABOVE SIGNATURES DO NOT IN ANY WAY RELEASE THE CONSULTANT FROM ITS RESPONSIBILITIES REGARDING THE ACCURACY AND COMPLETENESS OF THIS DRAWING.		
DATE: 09.07.07	SCALE: 1"=30'	SHEET NO. / SHEETS MP-B-23.01 / 1/XXX

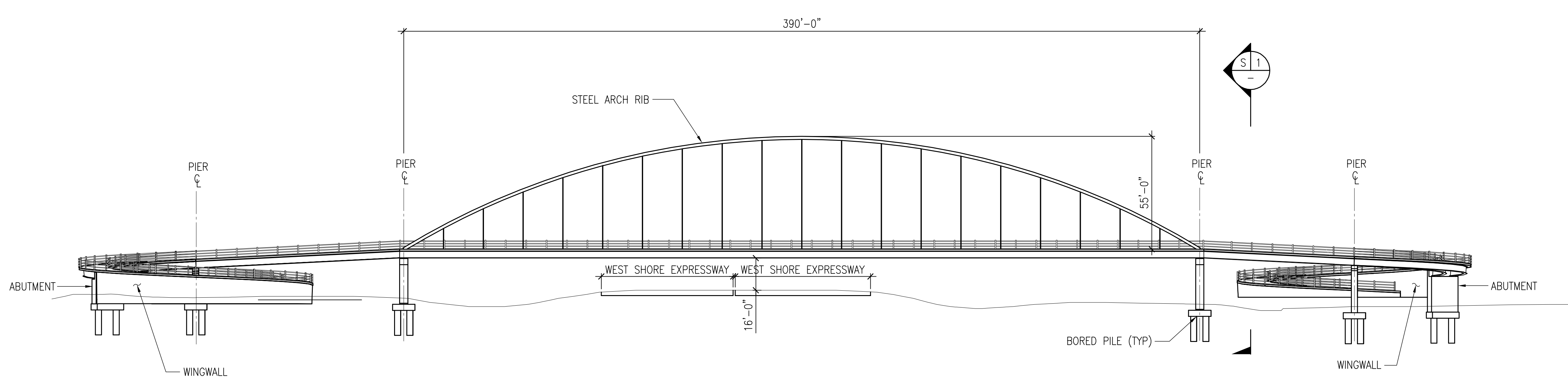
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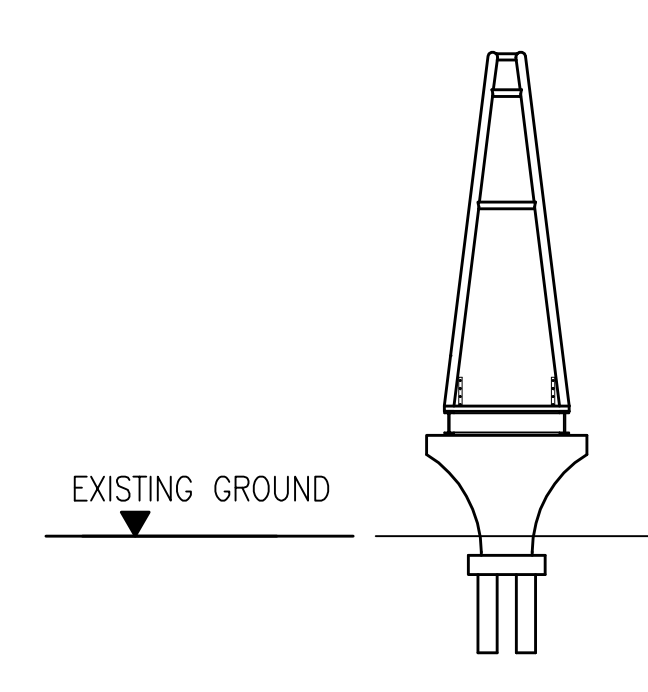
PLAN
1"=30'



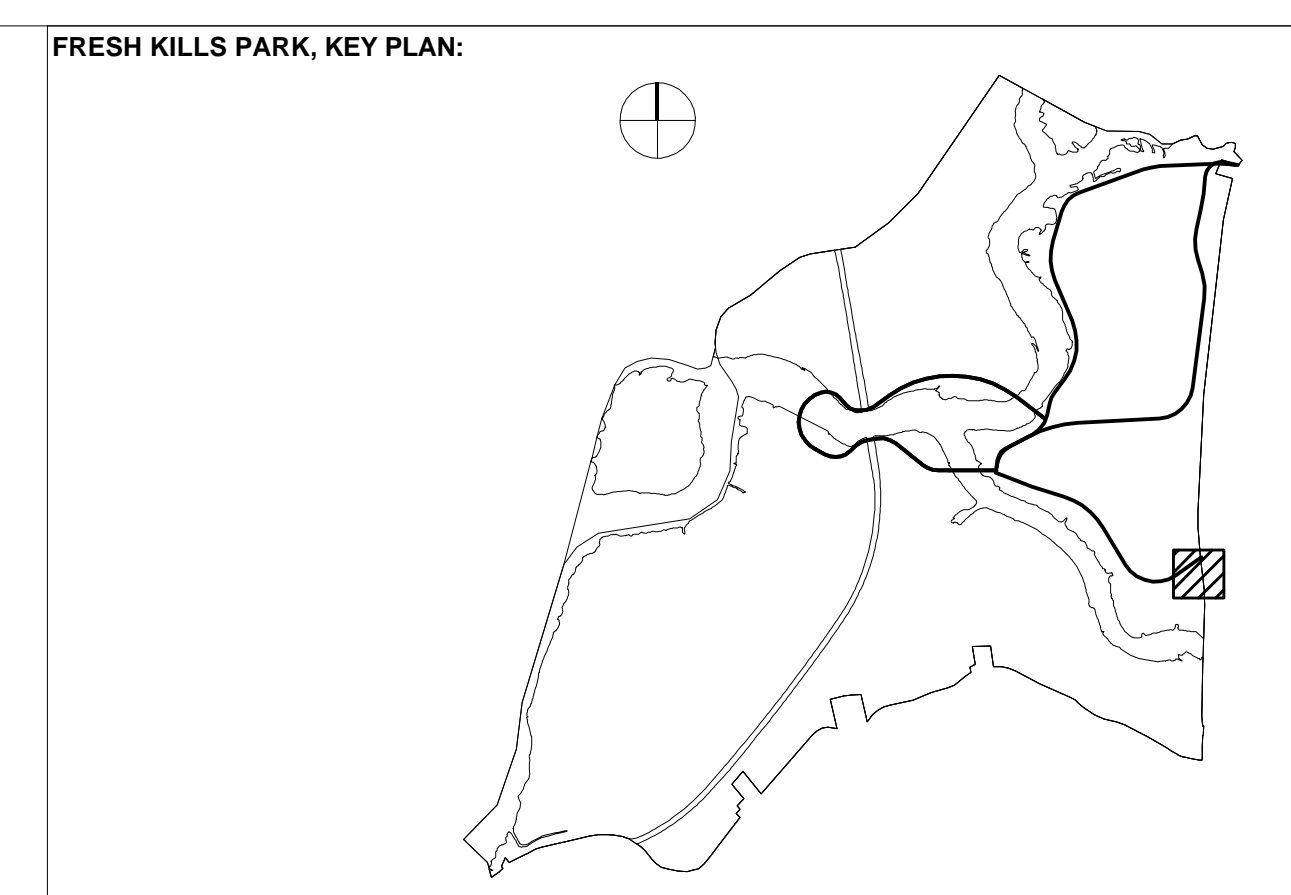
TYPICAL BRIDGE DECK SECTION
1"=5'



ELEVATION
1"=30'



SECTION
1"=30'



NOTES:

LEAD CONSULTANT:

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Field Operations
475 Tenth Ave., 10FI, New York, NY 10018 215-433-1450

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155 Avenue of the Americas
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Olmsted Center
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Flushing, New York

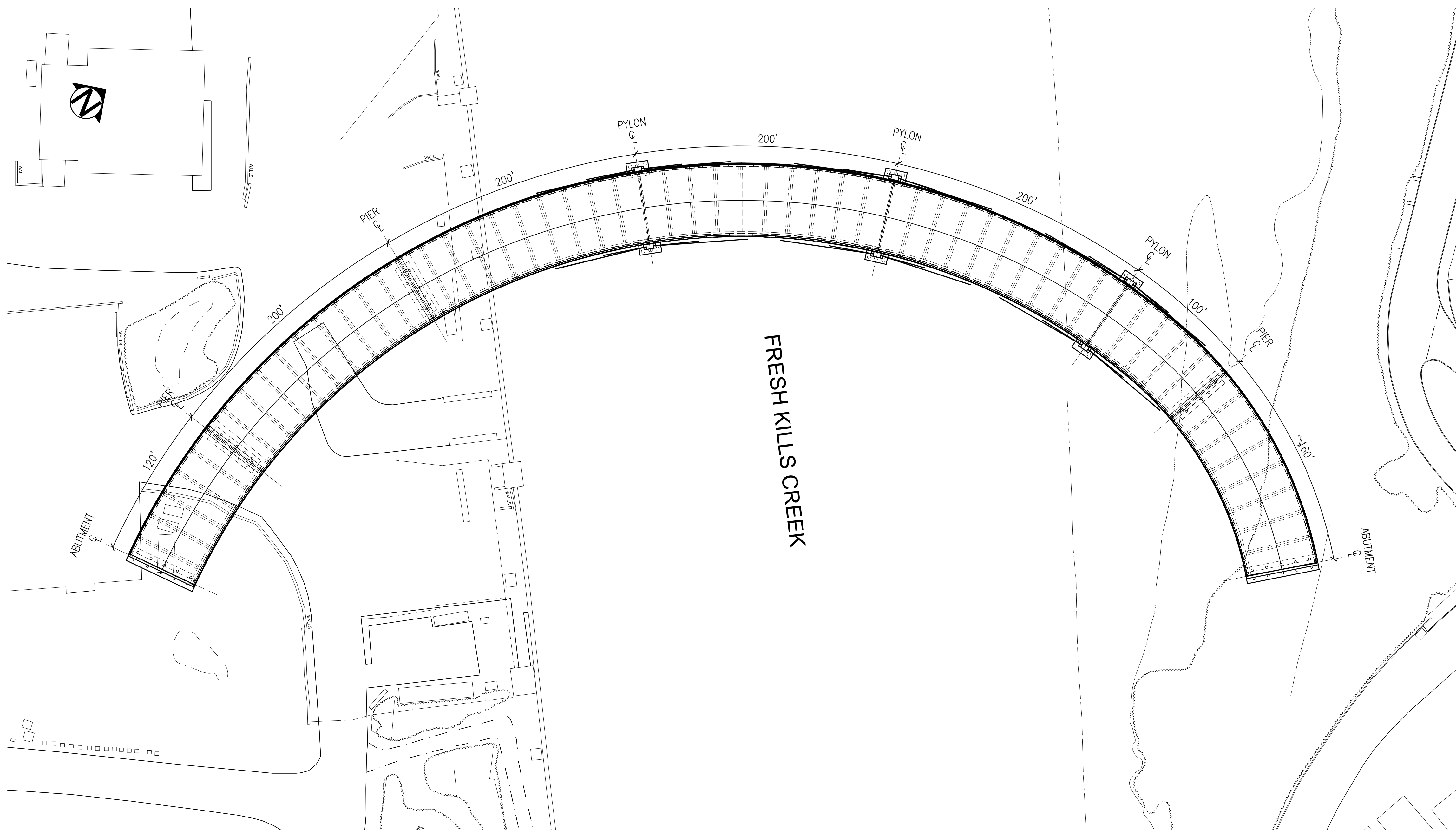
PROJECT TITLE:
FRESH KILLS PARK

DRAWING TITLE:
MULDOON AVE PED BRIDGE
STEEL ARCH OPTION
GENERAL ARRANGEMENT

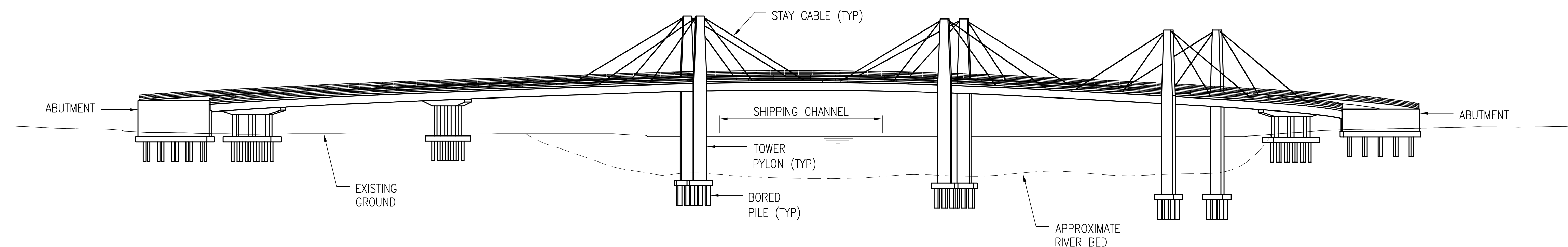
DESIGNED BY:	DRAWN BY:	CHECKED BY:
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY:	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.:

DATE: 09.07.07	SCALE: 1"=30'	DRAWING NO.: MP-B-23.02	SHEET NO. / SHEETS: 1/XXX
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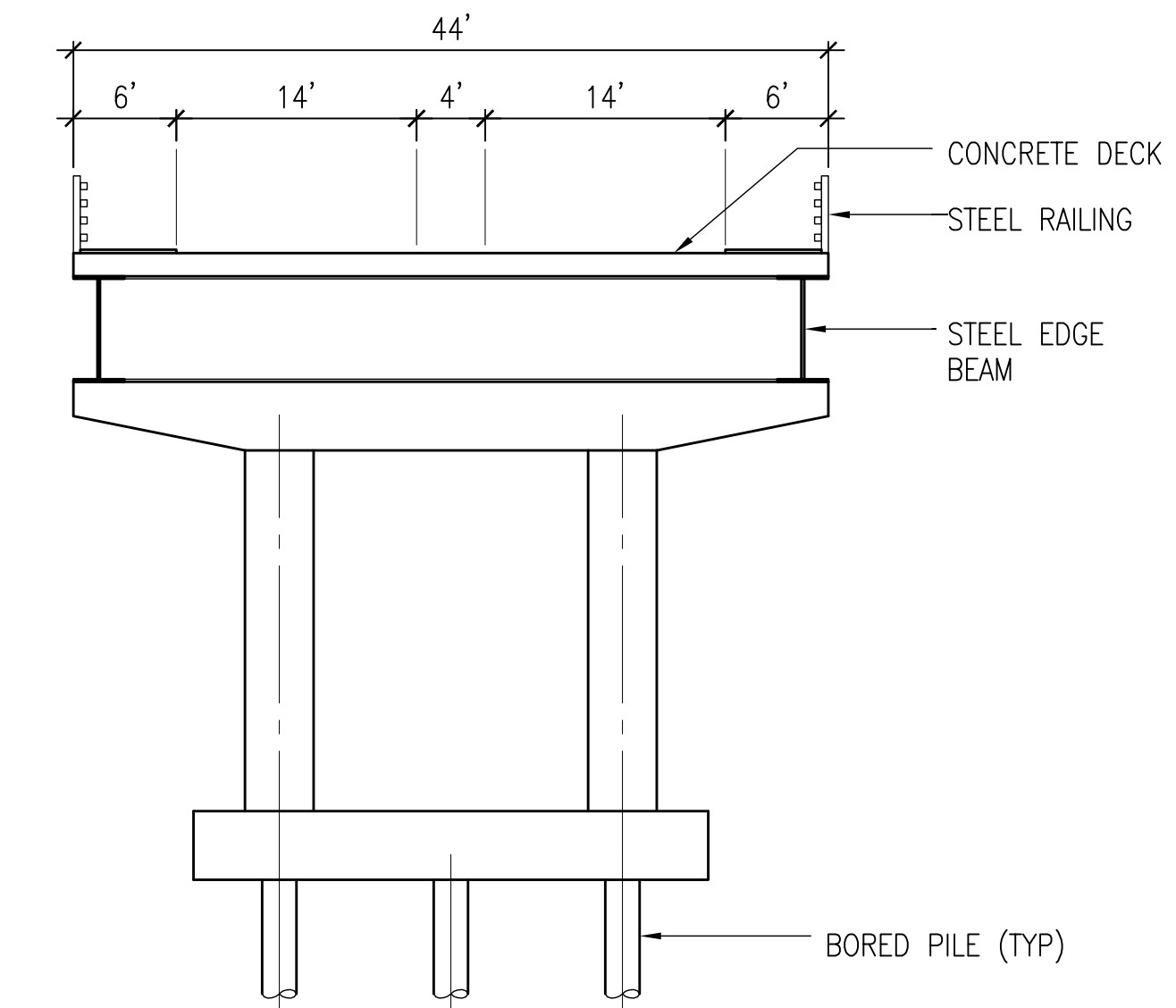
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 MDL TIME: 9/7/2007 5:49 PM
 PLOT BY: Yelena Zabolova
 PLOT TIME: 9/7/2007 8:11 PM



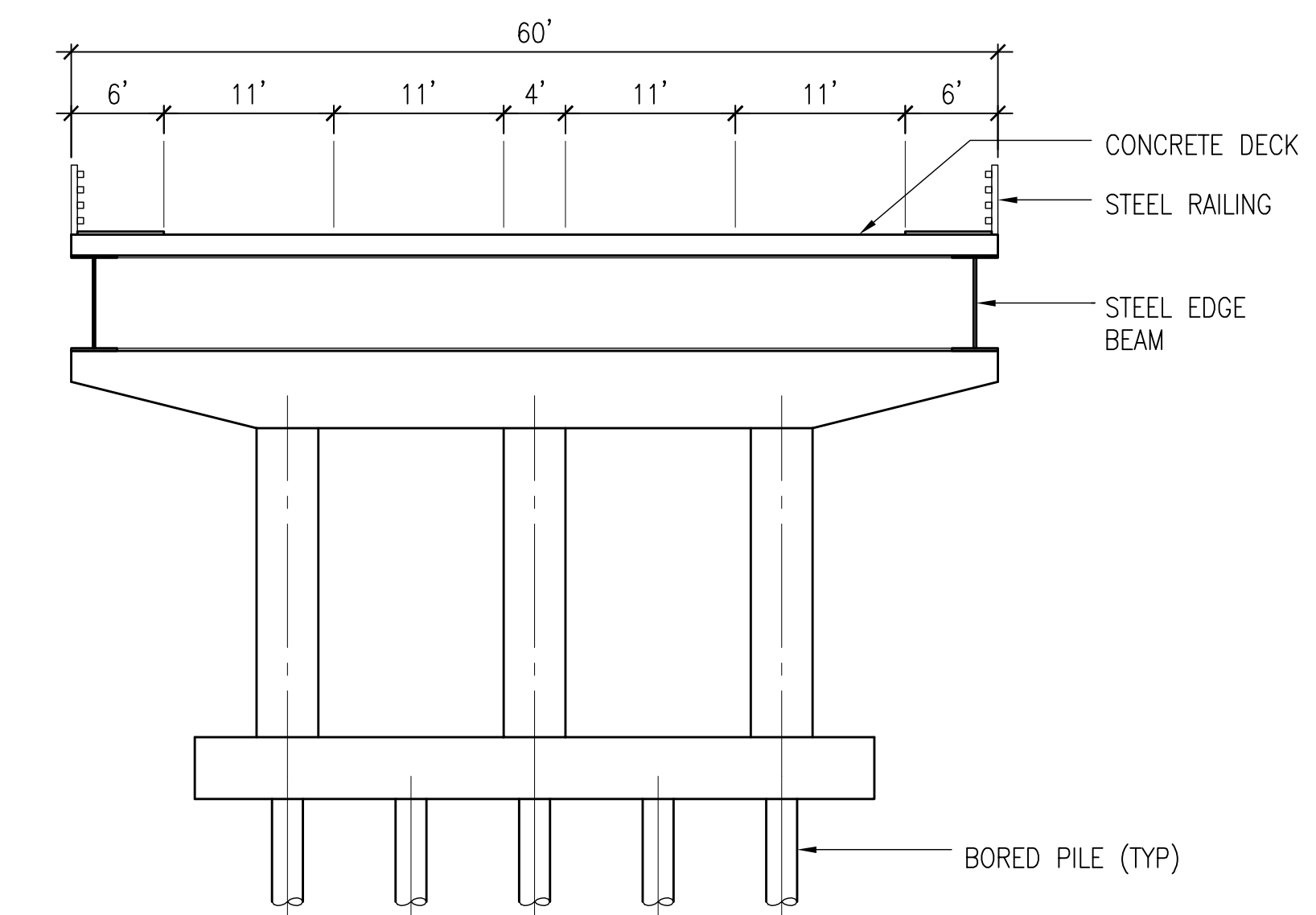
PLAN
1"=50'
(4 LANE OPTION SHOWN)



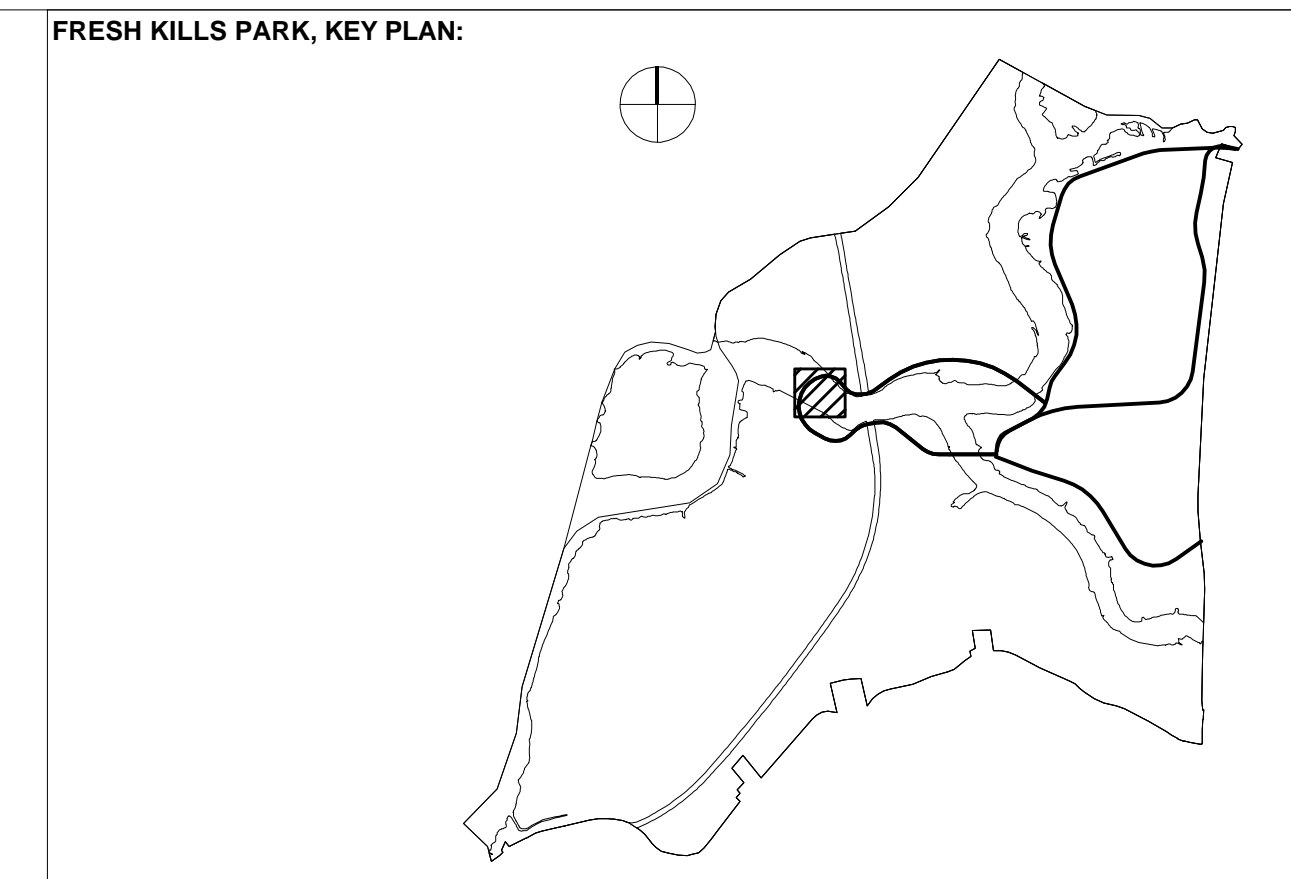
ELEVATION
1"=50'
(4 LANE OPTION SHOWN)



**TYPICAL PIER SECTION
2 LANE OPTION**
1"=10"



**TYPICAL PIER SECTION
4 LANE OPTION**
1"=10"



NOTES:

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Field Operations
475 Tenth Ave., 10FI, New York, NY 10018 215-433-1450

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Ove Arup & Partners Consulting Engineers PC
155 Avenue of the Americas
New York, NY 10013
Tel (212) 229-2889 Fax (212) 229-1056
www.arup.com

**City of New York
Parks & Recreation**
Olmsted Center
Flushing Meadows-Corona Park
Flushing, New York

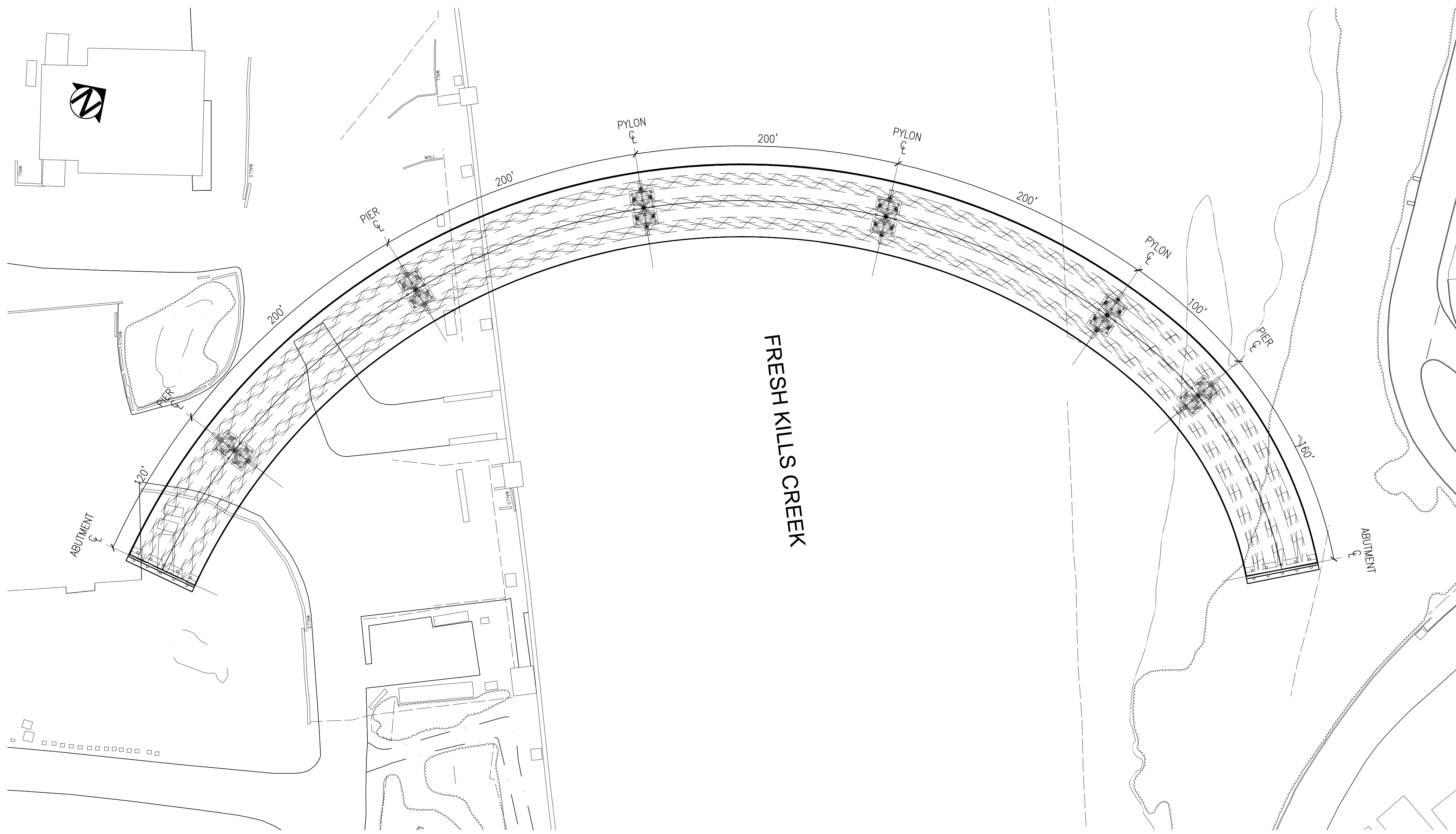
PROJECT TITLE:
FRESH KILLS PARK

DRAWING TITLE:
SIGNATURE BRIDGE
CABLE STAY OPTION
GENERAL ARRANGEMENT

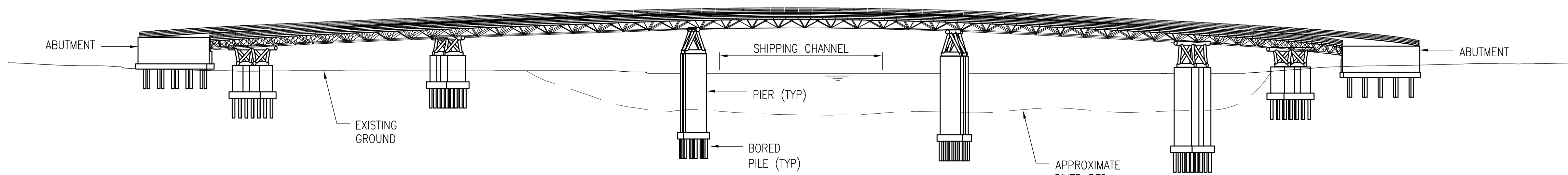
DESIGNED BY:	DRAWN BY:	CHECKED BY:
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY:	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.:
DATE: 09.07.07	SCALE: 1"=50'	DRAWING NO.: SB-B-23.01
		SHEET NO. / SHEETS 1/XXX

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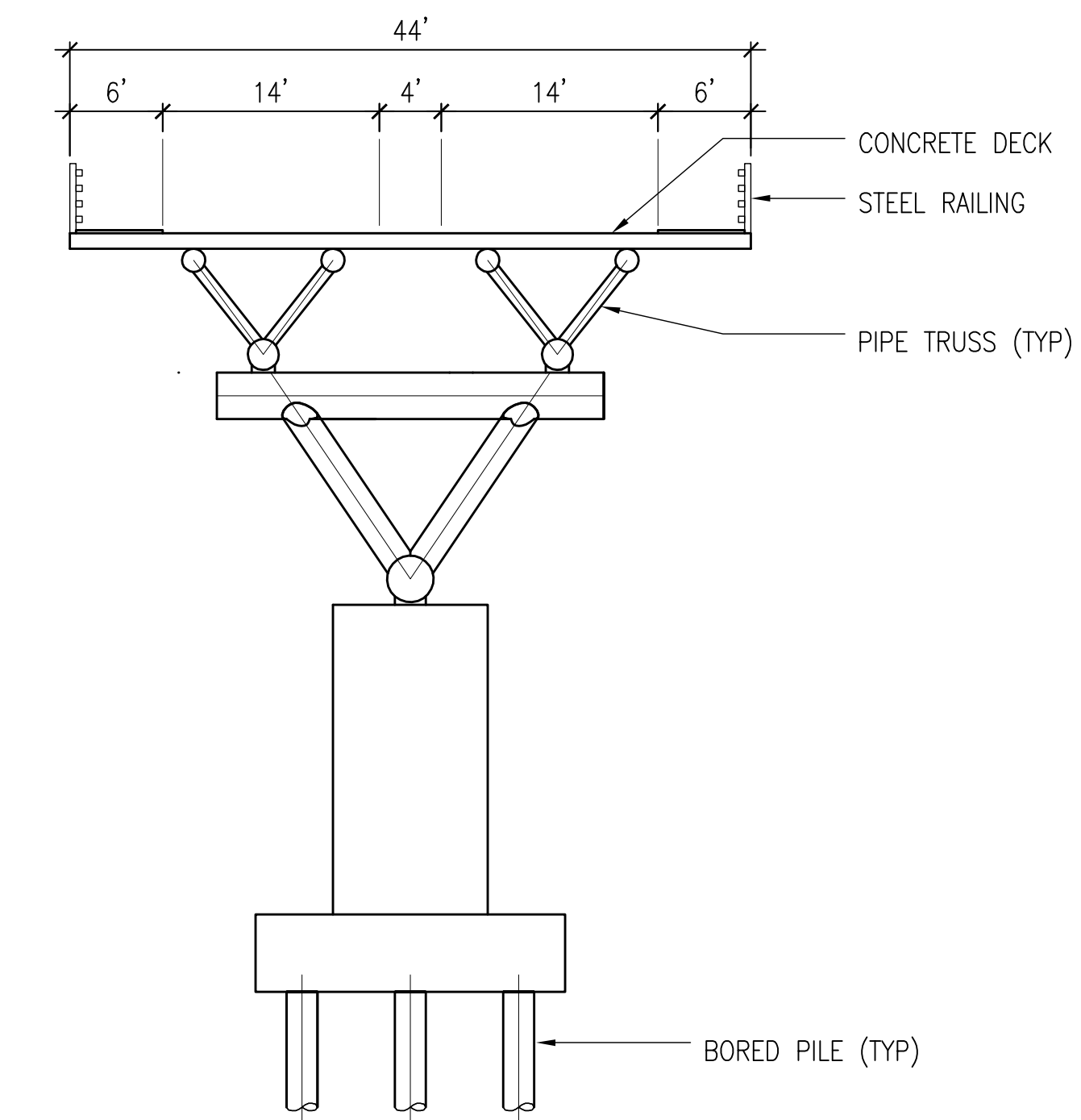
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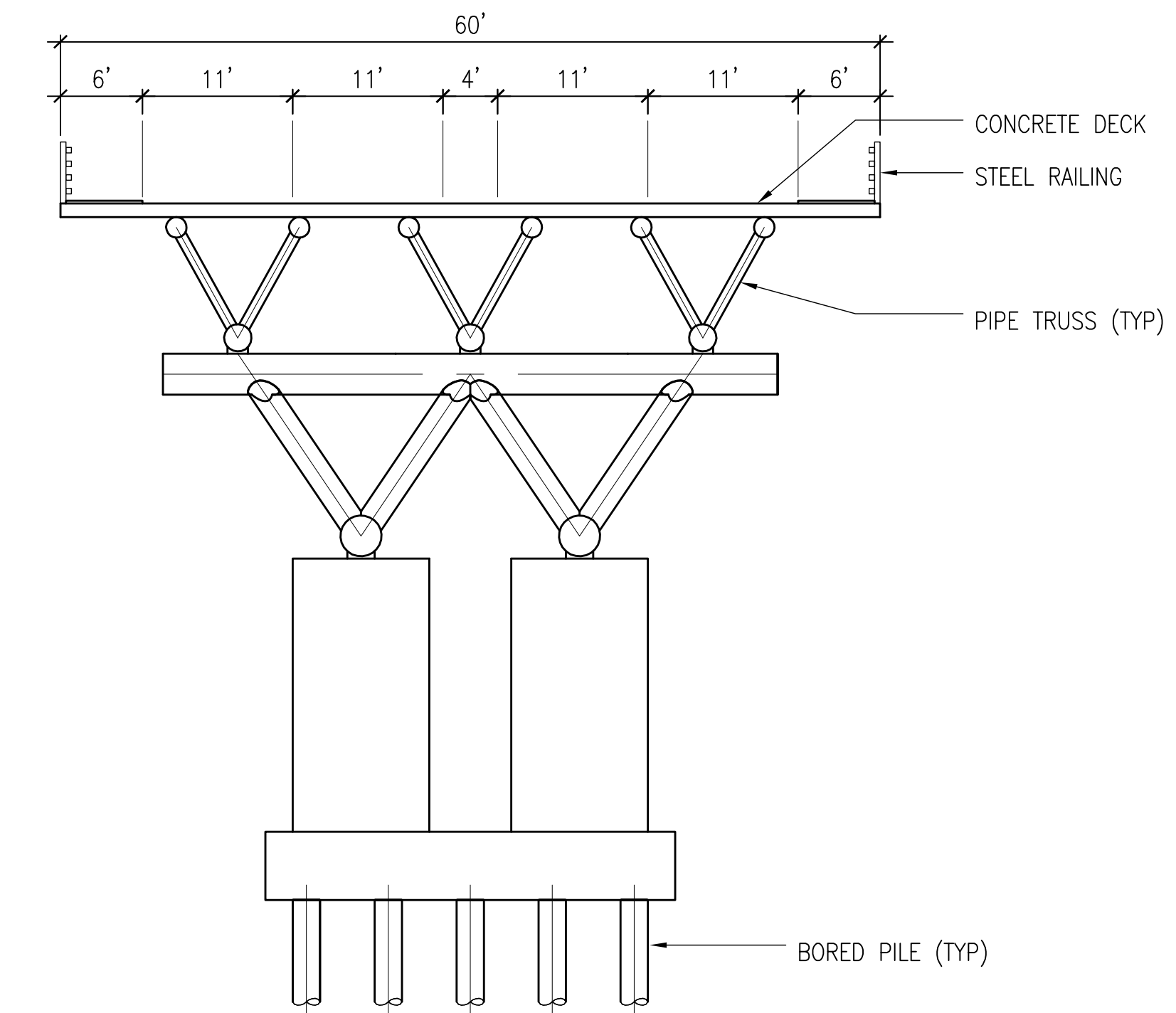
PLAN
1"=50'
(4 LANE OPTION SHOWN)



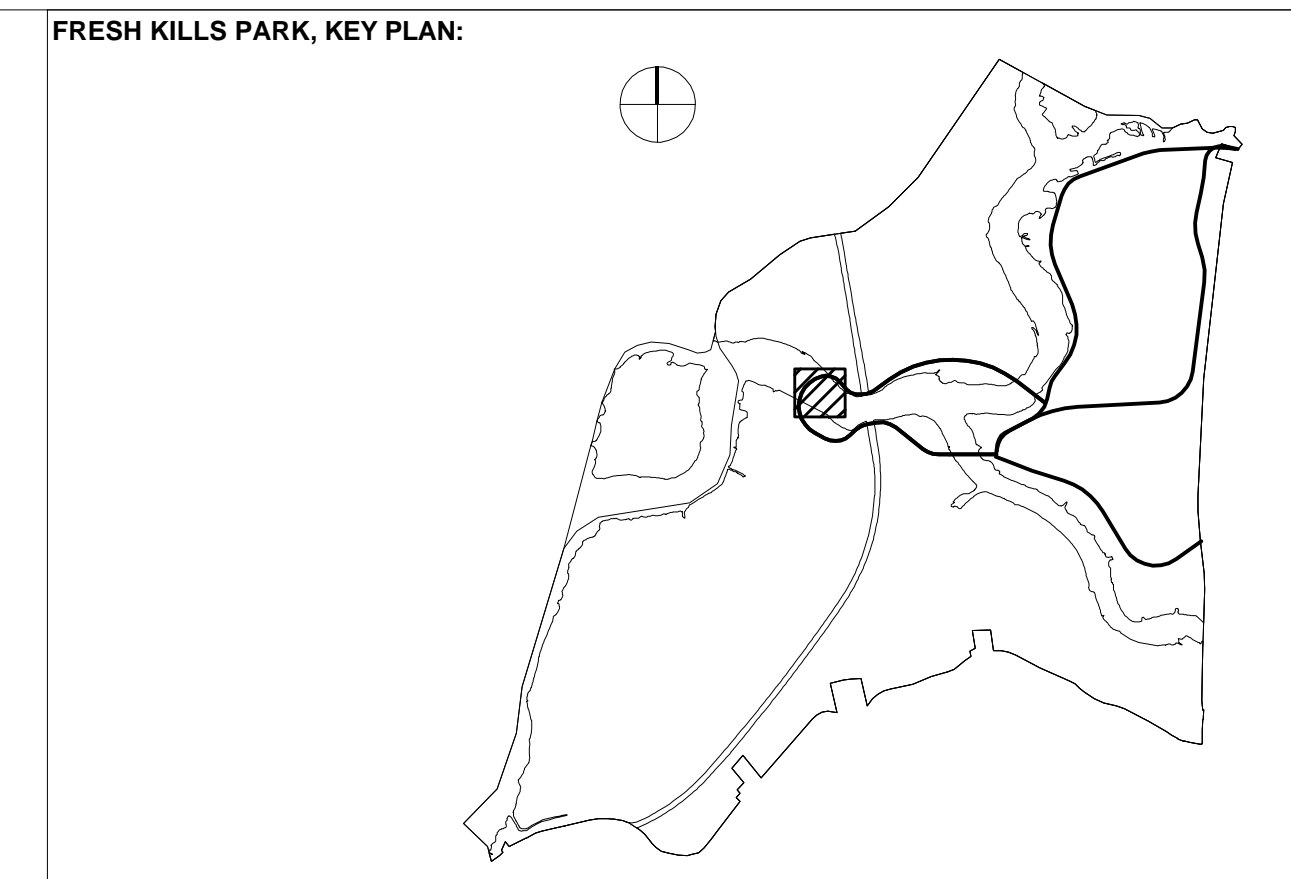
ELEVATION
1"=50'
(4 LANE OPTION SHOWN)



**TYPICAL PIER SECTION
2 LANE OPTION**
1"=10"



**TYPICAL PIER SECTION
4 LANE OPTION**
1"=10"



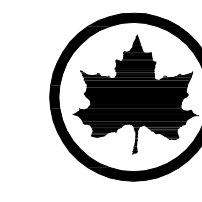
NOTES:

LEAD CONSULTANT:

fo
Field Operations
475 Tenth Ave., 10FI, New York, NY 10018 215-433-1450

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**City of New York
Parks & Recreation**
Olmsted Center
Flushing Meadows-Corona Park
Flushing, New York

PROJECT TITLE:

FRESH KILLS PARK

DRAWING TITLE:

**SIGNATURE BRIDGE
TRUSS OPTION
GENERAL ARRANGEMENT**

DESIGNED BY:	DRAWN BY:	CHECKED BY:
REVIEWED-TEAM LEADER: Mike Browne	FORESTRY: John Natoli	REVIEWED-PROJECT MNGR: Angelyn Chandler
APPROVED-CHIEF OF DESIGN: Charles McKinney	APPROVED-CHIEF ENGINEER: John Natoli	CONTRACT NO.:
DATE: 09.07.07	SCALE: 1"=50'	DRAWING NO. / SHEETS: SB-B-23.02 / 1/XXX

THE ABOVE SIGNATURES DO NOT IN ANY WAY RELEASE THE CONSULTANT FROM ITS RESPONSIBILITIES REGARDING THE ACCURACY AND COMPLETENESS OF THIS DRAWING.

PLOT BY: Yelena Zabolova
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 MDG: TIME: 9/7/2007 5:07 PM
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