

Charlotte 26105.00 Bridge Replacement Project

De Minimis Summary

PUBLIC COMMENT DRAFT

Section 4(f) De Minimis Impact Determination

Section 4(f) of the Department for Transportation Act of 1966 and its revisions protects four types of properties: publicly owned park and recreation areas that are open to the general public, publicly owned wildlife and waterfowl refuges, and public or privately owned historic sites. De minimis impacts are defined as those that, after taking into account any measures to minimize harm, do not adversely affect the activities, features or attributes that qualify a significant public park, recreation area, wildlife and/or waterfowl refuge, or historic sites for protection under Section 4(f) of the DOT of 1966, as amended.

Purpose and Need

The purpose of this project is to address the condition of Round Pond Bridge (#3787). The need for this project is due to the overall poor structural integrity of Round Pond Bridge.

Round Pond Bridge in Charlotte carries Charlotte Road (a corridor priority 4 road posted at 35 and 45 mph) over Round Pond Outlet. The existing bridge is a 30' clear span concrete T-Beam bridge with a concrete deck, curbs, and bridge rails built in 1941. The bridge has a curb-to-curb width of 22'. The substructure consists of mass concrete abutments founded on piles.

The superstructure is in poor condition overall. There are fine shear cracks found in the ends of the concrete T-beams. There is also heavy longitudinal cracking and staining in the T-beams. The downstream exterior fascia girder has extensive minor to moderate cracking, delamination, and active efflorescent staining. The bottom of the deck has minor to moderate cracking and efflorescent staining. There are multiple areas of pop-outs and delamination, most notably the easterly bay. There are several areas of previous deck patching. The concrete wearing surface has scattered cracking and delamination.

The substructure is also in poor condition overall. The abutments have extensive horizontal cracking and delamination. The bridge seats have extensive cracking with heavy efflorescence. The scaling section loss at the waterline is 4-6" deep by 12" high in the abutments and wings.

The proposed action would construct a 56' girder bridge with 3 precast and prestressed concrete NEXT 28F beams topped with a composite concrete deck, wearing surface, and curbs on the existing alignment. The superstructure would consist of corrosion resistant reinforcement. The substructure would consist of integral abutments founded on H-piles. The bridge width from curb to curb would increase to 28', with 11' travel lanes and 3' shoulders, in order to meet current engineering standards for corridor priority 4 roads with speeds greater than 40 mph. The proposed span length of 56' was determined based on the environmental requirement that the new structure shall

not be smaller than the existing and the new slopes shall not encroach the stream more than the existing abutments.

Traffic would be maintained on a temporary detour bridge located on the downstream side of the existing bridge.

The entire project area is shown in Appendix A.

Description of Section 4(f) Properties & Impacts

Historic Sites

There are no historic sites within the project area.

Public Parks

There are no public parks within the project area.

Recreation Areas

There are no recreation areas within the project area.

Wildlife and Waterfowl Refuges

Pennamaquan Wildlife Management Area (Maine State Department of Inland Fisheries and Wildlife)

The Pennamaquan Wildlife Management Area (WMA) is a designated nature preserve in Charlotte, Maine, that is open to the public for recreational use. The parcel was acquired by the Maine State Department of Inland Fisheries and Wildlife (DIFW) in 1957. The WMA is a triangular-shaped, approximately 8-acre wetland site that is situated between Round Pond and Pennamaquan Lake. The western side of the property abuts Charlotte Road and extends eastward to Pennamaquan Lake, with the Round Pond Outlet connecting the two water bodies. There is no designated parking area or informational kiosk. Recreational use is relatively intermittent, with kayakers occasionally accessing the water at the existing bridge abutments.

In order to complete the bridge replacement project, the MaineDOT would require approximately 1,243 SF for a slope easement on the southeastern side of the proposed bridge.

Additionally, the MaineDOT would require approximately 0.16 acres of temporary construction rights for the construction of a temporary road and bridge.

The property limits and impacts are shown in Appendix B.

Avoidance, Minimization, and Mitigation Efforts

The Maine DOT sought ways to avoid adverse impacts to the WMA through the consideration of various traffic maintenance options.

Two detour options with road closure were considered but dismissed early on, as both options would add approximately ten-plus additional miles for users. Both options include posted roads and roads that are currently considered unbuilt, thus requiring

additional repairs in order to carry increased traffic, which includes heavy commercial trucks that make regular trips to gravel pits and quarries along the proposed detour routes.

The Maine DOT also considered staged construction. Staged construction was dismissed due to the inadequate width of the existing bridge and the safety risks associated with the structural concerns of the existing bridge. With the arrangement of the beams, the existing bridge would need to be cut along the middle of a beam which could lead to structural concerns. Additionally, staged construction could potentially require structural supports and specially designed barrier.

The Maine DOT considered an on-site temporary detour bridge on the upstream side of the existing bridge, but this would require a significant amount of fill for construction and cause significant environmental impacts due to the presence of the pond at the location. Therefore, this traffic maintenance option was also dismissed and the temporary bridge on the downstream alignment was chosen as the most prudent and feasible option.

Overall, the Maine DOT has minimized permanent impacts to the greatest extent possible in order to avoid adverse effects to the WMA. The footprint of the proposed bridge will be similar to the existing and the addition of riprap at the corner of the bridge on the WMA property was kept to a minimum, thus minimizing new impacts outside of the previously constructed limits. Construction would be limited to one season and the area that would be affected by the temporary bridge would be returned to a condition as good as or better than the current condition.

While recreational use at the WMA is infrequent, the Maine DOT still investigated points of access to Pennamaquan Lake that the public could utilize in order to reach the WMA during construction:

- Moosehorn Stream Lot on Station Road, Charlotte
 - This small lot is owned by DIFW and provides public water access to Pennamaquan Lake. It is less than one mile from the project location and the WMA.
- Public Boat Launch on Little Falls Road, Pembroke
 - This public boat launch is owned by DIFW and is located adjacent to the larger Pennamaquan WMA parcel in Pembroke. It is approximately six miles from the project location and the WMA.

See Appendix C for location maps of alternate access points. Coordination with DIFW on points of access to the WMA is ongoing.

Official with Jurisdiction Concurrence

The DIFW is the Official with Jurisdiction under Section 4(f), as they are the public entity that owns the property in fee. The MaineDOT coordinated with the DIFW during the preliminary stages of the project in order to provide more information on the project scope. Plans were also provided for review.

The MaineDOT will be seeking approval from the DIFW once the public process is complete.

Public Involvement

The public process is ongoing.

Summary

Based on the scope of the proposed project and the above information, the following assessment has been made with respect to the proposed project:

The proposed bridge replacement project in Charlotte, Maine, would require a permanent easement at the Pennamaquan Wildlife Management Area, a nature preserve area. The project would not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f). Therefore, the use of the Section 4(f) property will result in a de minimis impact.

Appendix A

ENTIRE PROJECT AREA - CHARLOTTE 26105.00



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.065 Miles
1 inch = 0.07 miles

Date: 3/28/2024
Time: 9:14:05 AM

Appendix B

ALTERNATE WATER ACCESS

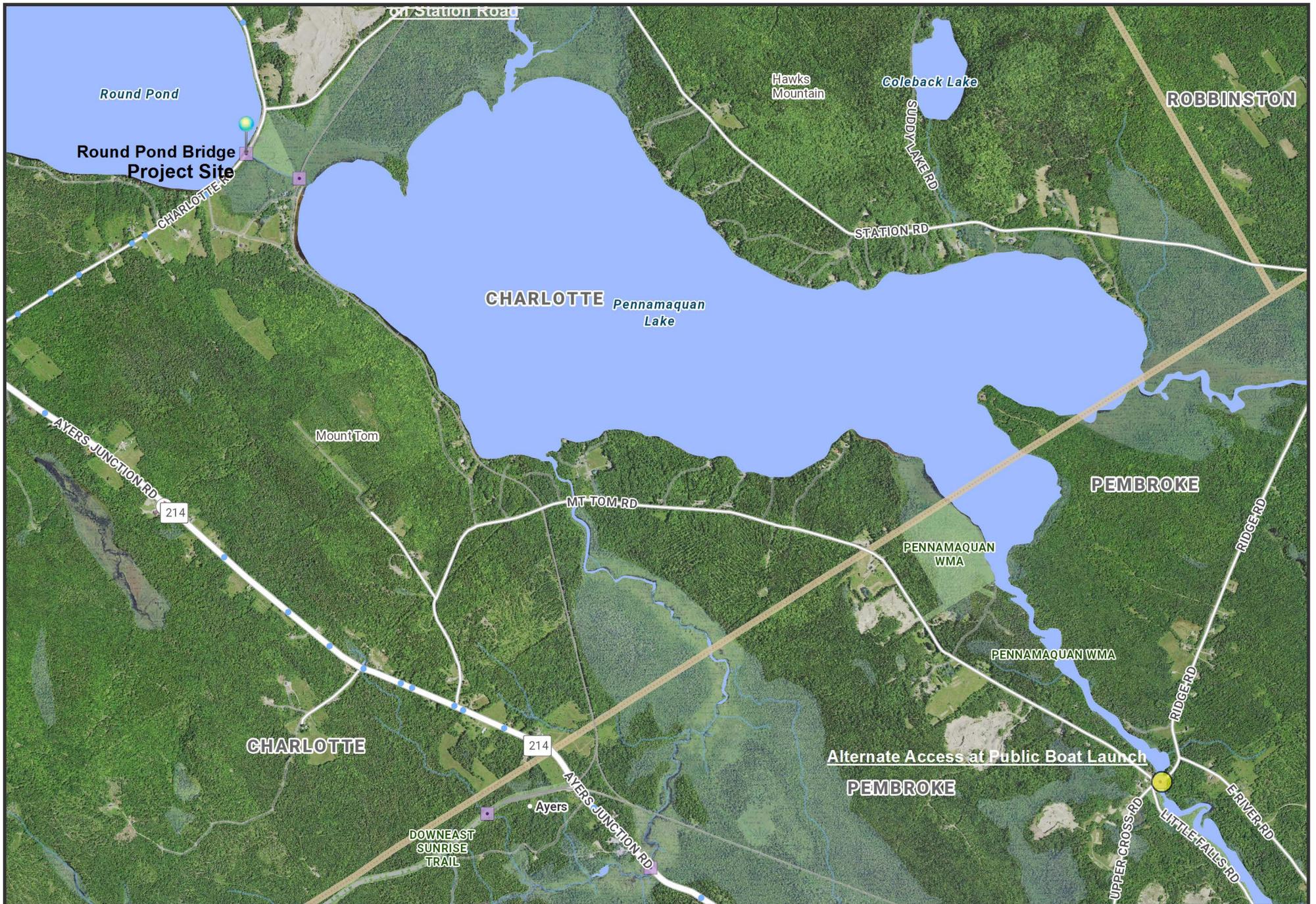


The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

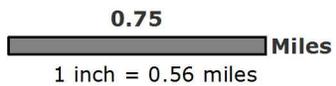
0.25 Miles
1 inch = 0.28 miles

Date: 3/28/2024
Time: 9:38:41 AM

ALTERNATE WATER ACCESS

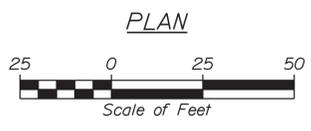
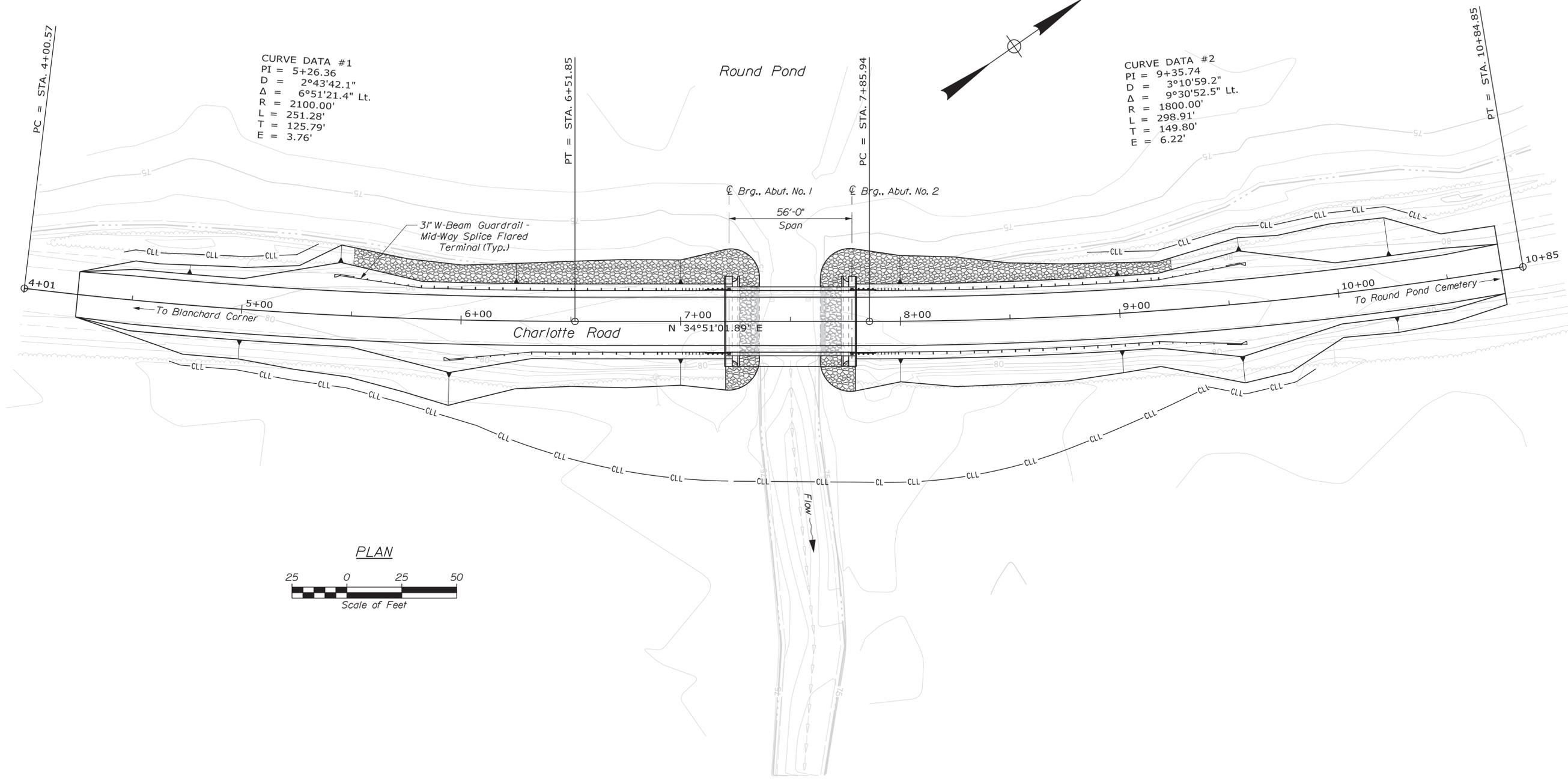


The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

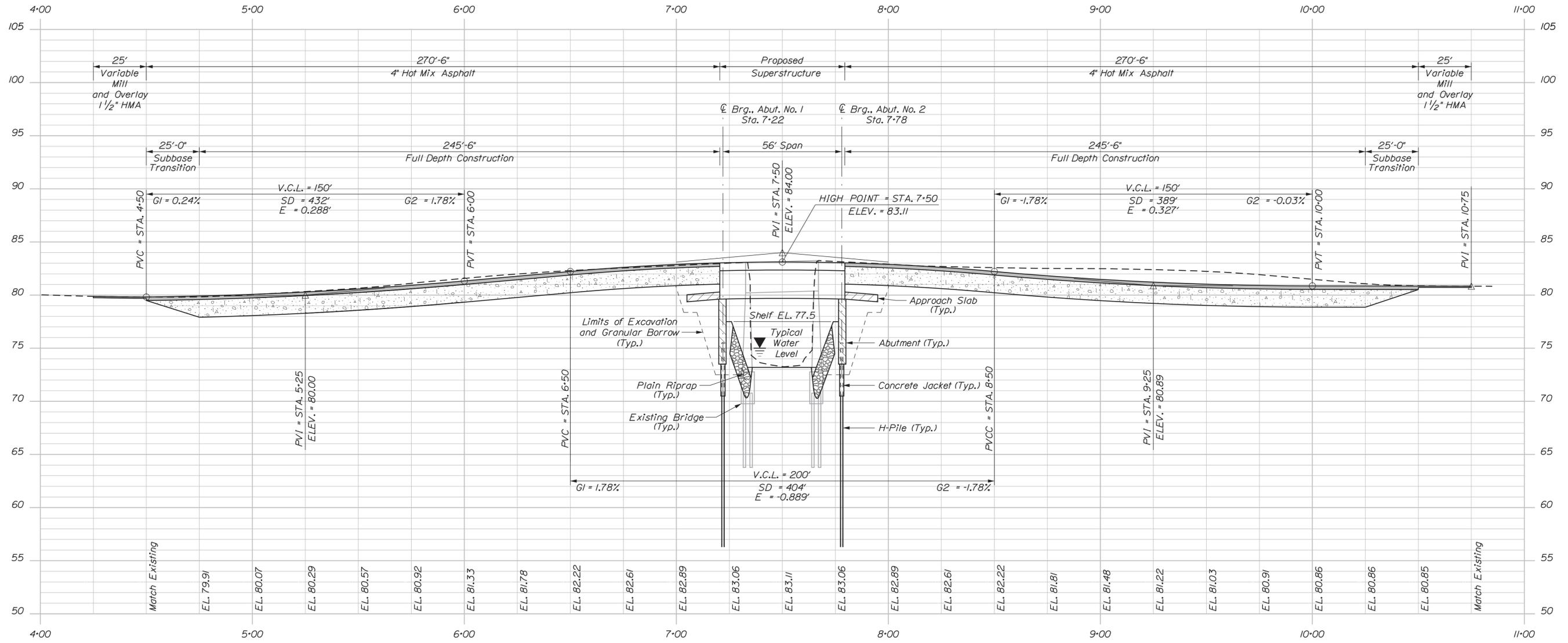


Date: 3/28/2024
Time: 9:44:27 AM

Appendix C

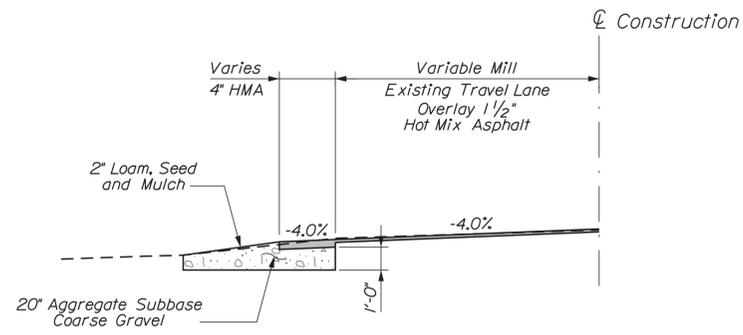


STATE OF MAINE DEPARTMENT OF TRANSPORTATION 2610500		SIGNATURE		P.E. NUMBER	
BRIDGE NO. 3787		DATE		DATE	
WIN 026105.00		SIGNATURE		P.E. NUMBER	
BRIDGE PLANS		DATE		DATE	
ROUND POND BRIDGE ROUND POND OUTLET CHARLOTTE WASHINGTON COUNTY		M. PARLIN		T. WHITE	
GENERAL PLAN		D. SHAW		APR 2023	
SHEET NUMBER		DESIGNED		DESIGNED	
2		CHECKED		CHECKED	
OF 5		DESIGNED		DESIGNED	
		REVISIONS 1		REVISIONS 1	
		REVISIONS 2		REVISIONS 2	
		REVISIONS 3		REVISIONS 3	
		REVISIONS 4		REVISIONS 4	
		FIELD CHANGES		FIELD CHANGES	

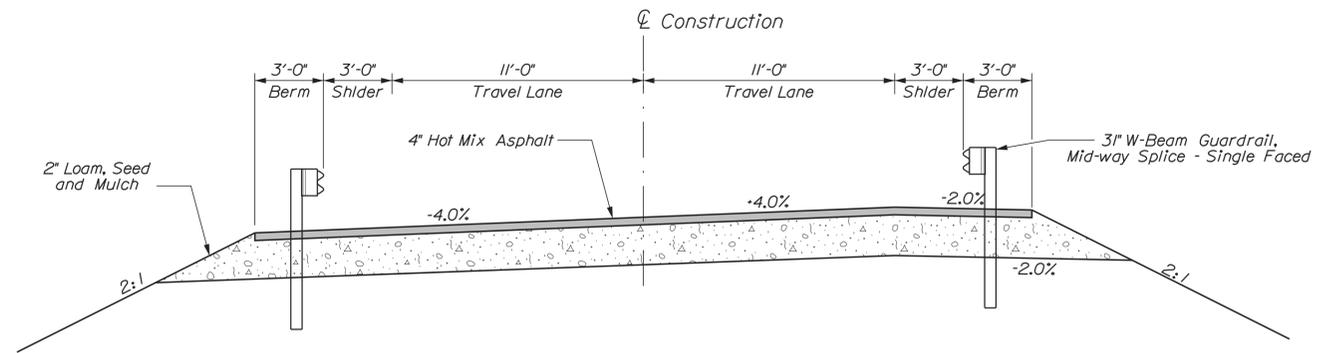


PROFILE - CHARLOTTE ROUND POND

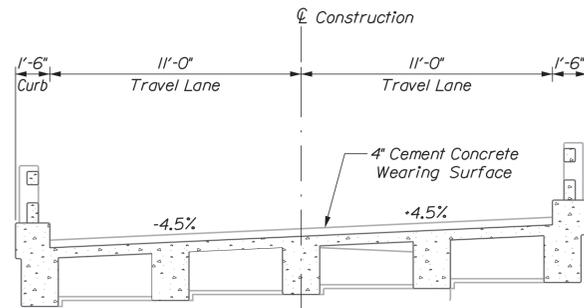
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2610500	
BRIDGE NO. 3787		WIN		026105.00	
BRIDGE PLANS					
ROUND POND BRIDGE		ROUND POND OUTLET		WASHINGTON COUNTY	
CHARLOTTE		PROFILE			
SHEET NUMBER		3		OF 5	
DATE		SIGNATURE		P.E. NUMBER	
BY		DATE		DATE	
M. PARLIN		OCT 2023			
B. BARTLETT		D. SHAW			
N. PIKAY		T. WHITE			
DESIGN DETAILED		DESIGN DETAILED			
REVISIONS 1		REVISIONS 2			
REVISIONS 3		REVISIONS 4			
FIELD CHANGES					



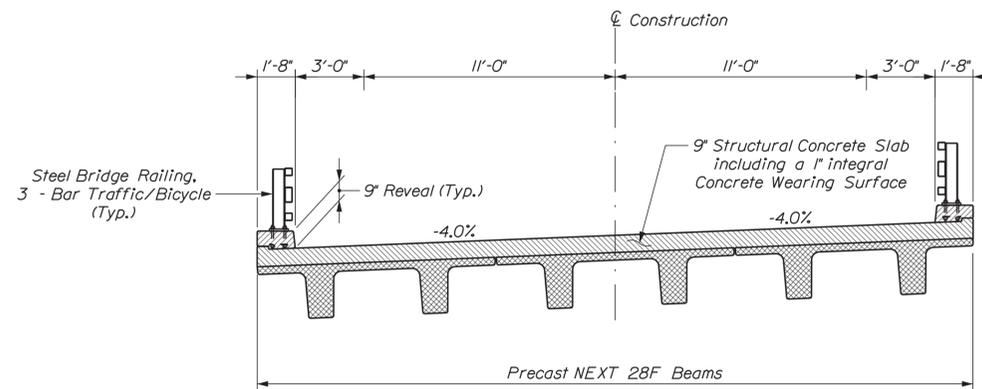
TYPICAL MILL AND OVERLAY SECTION



TYPICAL APPROACH SECTION



EXISTING BRIDGE SECTION



PROPOSED TYPICAL BRIDGE SECTION

SIGNATURE

P.E. NUMBER

DATE

PROJ. MANAGER	M. PARLIN	BY	DATE
DESIGN DETAILED	B. BARTLETT	D. SHAW	OCT 2023
CHECKED/REVIEWED	N. PIKAY	T. WHITE	APR 2023
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

ROUND POND BRIDGE
ROUND POND OUTLET
WASHINGTON COUNTY

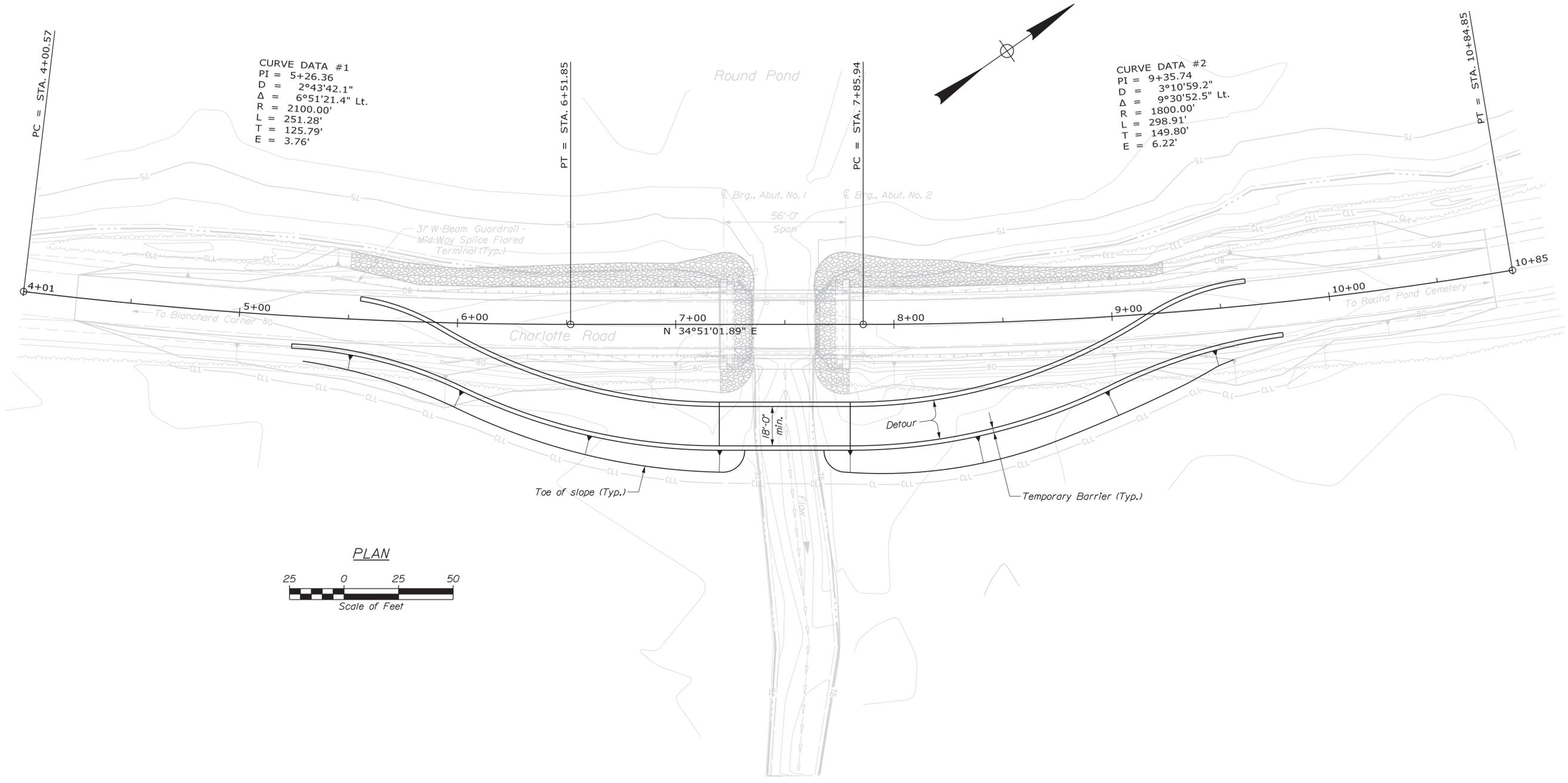
CHARLOTTE

TYPICAL SECTIONS

SHEET NUMBER

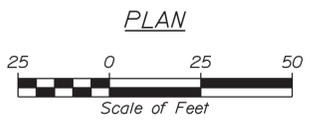
4

OF 5



CURVE DATA #1
 PI = 5+26.36
 D = 2°43'42.1"
 Δ = 6°51'21.4" Lt.
 R = 2100.00'
 L = 251.28'
 T = 125.79'
 E = 3.76'

CURVE DATA #2
 PI = 9+35.74
 D = 3°10'59.2"
 Δ = 9°30'52.5" Lt.
 R = 1800.00'
 L = 298.91'
 T = 149.80'
 E = 6.22'



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2610500	
BRIDGE NO. 3787		WIN 026105.00	
BRIDGE PLANS			
		SIGNATURE	P.E. NUMBER
		DATE	DATE
PROJ. MANAGER	M. PARLIN	BY	DATE
DESIGN-DETAILED	B. BARTLETT	D. SHAW	OCT 2023
CHECKED-REVIEWED	N. PIKAY	T. WHITE	APR 2023
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
ROUND POND BRIDGE ROUND POND OUTLET WASHINGTON COUNTY		ON-SITE DETOUR PLAN	
SHEET NUMBER			
5			
OF 5			