



Tighe&Bond



WEIR CREEK TIDAL RESTORATION

Tighe & Bond

Eric Ohanian, PE

SURVEY



GEOTECHNICAL BORINGS



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Tighe&Bond
Engineers | Environmental Specialists

Boring No. **B-1**
Page **1** of **1**
File No. **A-5102-001**
Checked by: **D. Gnatke**

Project: **Weir Creek Tidal Restoration**
Location: **Lower County Road, Dennis, MA**
Client: **Assoc. to Preserve Cape Cod (APCC)**

Drilling Co. **Desmond Well Drilling, Inc.**
Foreman: **S. Morgan**
T&B Rep.: **A. Grams**
Date Start: **11/06/23** End: **11/06/23**
Location: **See Exploration Location Plan**
GS. Elev. **4.1' ± (NAVD88)**

Casing Sampler
Type **HSA Split Spoon**
I.D./O.D. **4-1/2"/7-5/8" 1-3/8"/2"**
Hammer Wt. **140#**
Hammer Fall **30"**
Rig Make/Model **CME45 (autohammer)**

Date	Time	Depth	Casing	Sta. Time
Refer to Note 1				

Groundwater Readings	Depth	Casing	Sta. Time

Depth (ft.)	Casing Per Ft.	Sample No. Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Well Construction
5		S-1 / 15	0-2	4-4	-	Loose, brown/gray, fine to medium SAND, little Silt, trace Gravel, dry	0.7' ASPHALT	No Well Installed
				5-10			EXISTING FILL	
		S-2 / 21	2-4	4-7	-	Medium dense, brown/gray, fine to medium SAND, little Silt, trace Gravel, dry		
				7-4				
		S-3 / 21	4-6	1-1	-	6" SAA, over 8" very soft, black, Fibrous PEAT, moist, over very loose, grey, fine to coarse SAND, trace Silt, trace Gravel, moist	4.5' PEAT	
10		S-4 / 16	6-8	1-4	-	Loose, brown, fine to medium SAND, trace Silt, trace Organics, wet	SAND	
				4-6				
		S-5 / 11	8-10	1-3	-	Loose, light brown, fine to medium SAND, trace Silt, wet		
15		S-6 / 12	10-12	1-3	-	Loose, light brown, fine to coarse SAND, trace Silt, trace Gravel, wet	No Well Installed	
				4-5				
20		S-7 / 13	13-15	1-2	-	Loose, light brown, fine to coarse SAND, trace Silt, wet	SAND	
				4-4				
		S-8 / 16	18-20	3-3	-	Loose, red/brown, fine to coarse SAND, little Silt, wet		
25		S-9 / 18	23-25	1-1	-	Loose, light brown, fine to coarse SAND, trace Gravel, trace Silt, wet	SAND	
				3-4				
30		S-10 / 10	28-30	1-1	-	Loose, grey, fine to coarse SAND, trace Silt, wet	SAND	

Notes:
1) Groundwater estimated at 6' based on sample wetness.
2) Drillers introduce water into augers below 6' to avoid blow-in.
3) End of boring at 30'. Borehole backfilled with cuttings and sand upon completion. Pavement repaired with cold patch asphalt.

Proportions Used	Density/Consistency
TRACE (TR.) 0 - <10%	VERY LOOSE 0-4 VERY SOFT <2
LITTLE (LI.) 10 - <20%	LOOSE 4-10 SOFT 2-4
SOME (SO.) 20 - <35%	MEDIUM DENSE 10-30 MEDIUM 4-8
AND 35 - <50%	DENSE 30-50 STIFF 8-15
	VERY DENSE >50 VERY STIFF 15-30
	HARD >30

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Boring No. **B-2**
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Foreman: **S. Morgan**
T&B Rep.: **A. Grams**
Date Start: **11/06/23** End: **11/06/23**
Location: **See Exploration Location Plan**
GS. Elev. **4.0' ± (NAVD88)**

Casing Sampler
Type **HSA Split Spoon**
I.D./O.D. **4-1/2"/7-5/8" 1-3/8"/2"**
Hammer Wt. **140#**
Hammer Fall **30"**
Rig Make/Model **CME45 (autohammer)**

Date	Time	Depth	Casing	Sta. Time
Refer to Note 1				

Groundwater Readings	Depth	Casing	Sta. Time

Depth (ft.)	Casing Per Ft.	Sample No. Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Well Construction
5		S-1 / 6	0-2	2-1	-	Loose, brown, fine to medium SAND, little Silt, trace Gravel, moist	0.7' ASPHALT	No Well Installed
				4-4			EXISTING FILL	
		S-2 / 23	2-4	1-1	-	17" Very loose, brown, fine to coarse SAND, little Silt, moist, over Soft, black/brown, Fibrous PEAT, moist		
				2-2				
		S-3 / 12	4-6	2-1	-	6" Soft, black, Fibrous PEAT, little fine to coarse Sand, trace Silt, wet, over very loose, grey, fine to coarse SAND, trace Organics, wet	4.4' PEAT	
10		S-4 / 14	6-8	1-1	-	Loose, brown, fine to medium SAND, trace Silt, wet	SAND	
				3-4				
		S-5 / 13	8-10	1-3	-	Loose, light brown, fine to coarse SAND, trace Silt, wet		
15		S-6 / 13	10-12	1-2	-	Loose, light brown, fine to coarse SAND, trace Gravel, trace Silt, wet	No Well Installed	
				4-5				
20							No Well Installed	
25							No Well Installed	
30							No Well Installed	

Notes:
1) Groundwater estimated at 4' based on sample wetness.
2) Drillers introduce water into augers below 4' to avoid blow-in.
3) Borehole backfilled with cuttings and sand upon completion. Pavement repaired with cold patch asphalt.

Proportions Used	Density/Consistency
TRACE (TR.) 0 - <10%	VERY LOOSE 0-4 VERY SOFT <2
LITTLE (LI.) 10 - <20%	LOOSE 4-10 SOFT 2-4
SOME (SO.) 20 - <35%	MEDIUM DENSE 10-30 MEDIUM 4-8
AND 35 - <50%	DENSE 30-50 STIFF 8-15
	VERY DENSE >50 VERY STIFF 15-30
	HARD >30

WETLAND DELINEATION

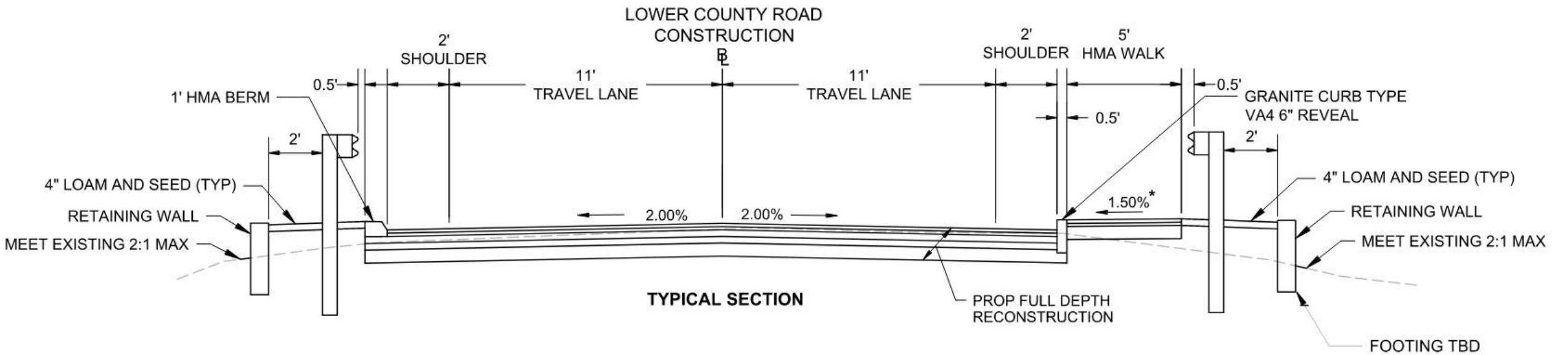
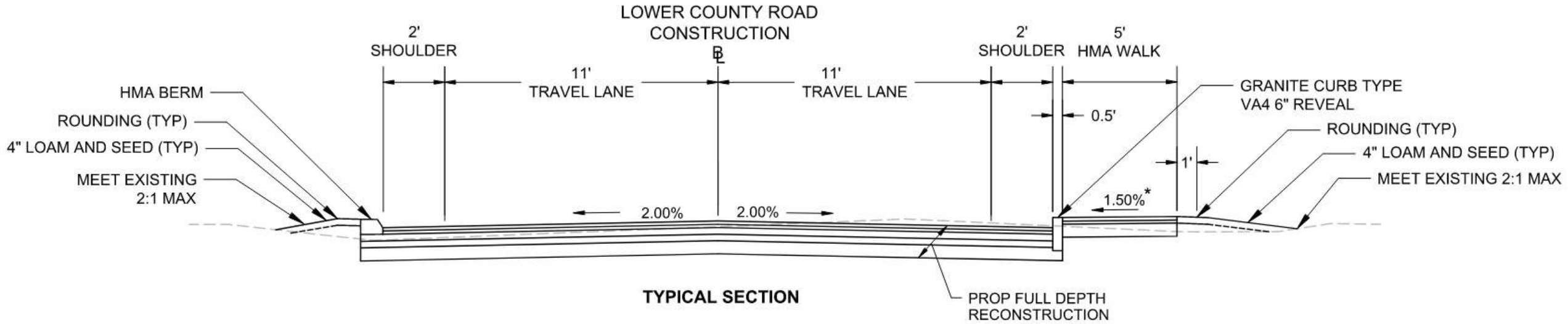


CONCEPTUAL DESIGN

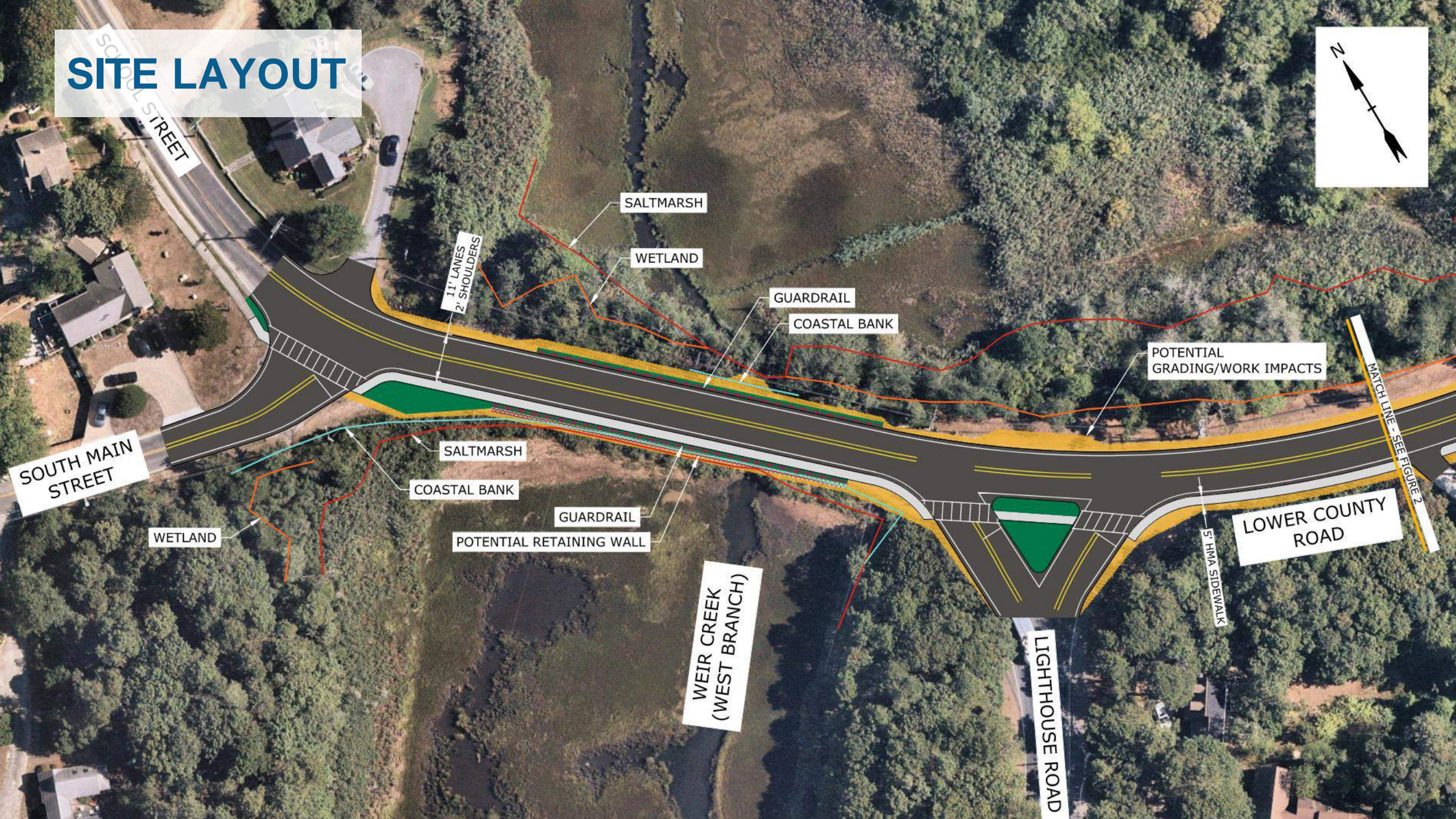
- **Replacement of 2 culverts**
 - Upsizing to 8-ft box culverts
- **Raised roadway elevation**
- **Improved guardrail protection**
- **Maintain sidewalks**
- **Increase roadway shoulder width**



CROSS SECTIONS



SITE LAYOUT



SITE LAYOUT

