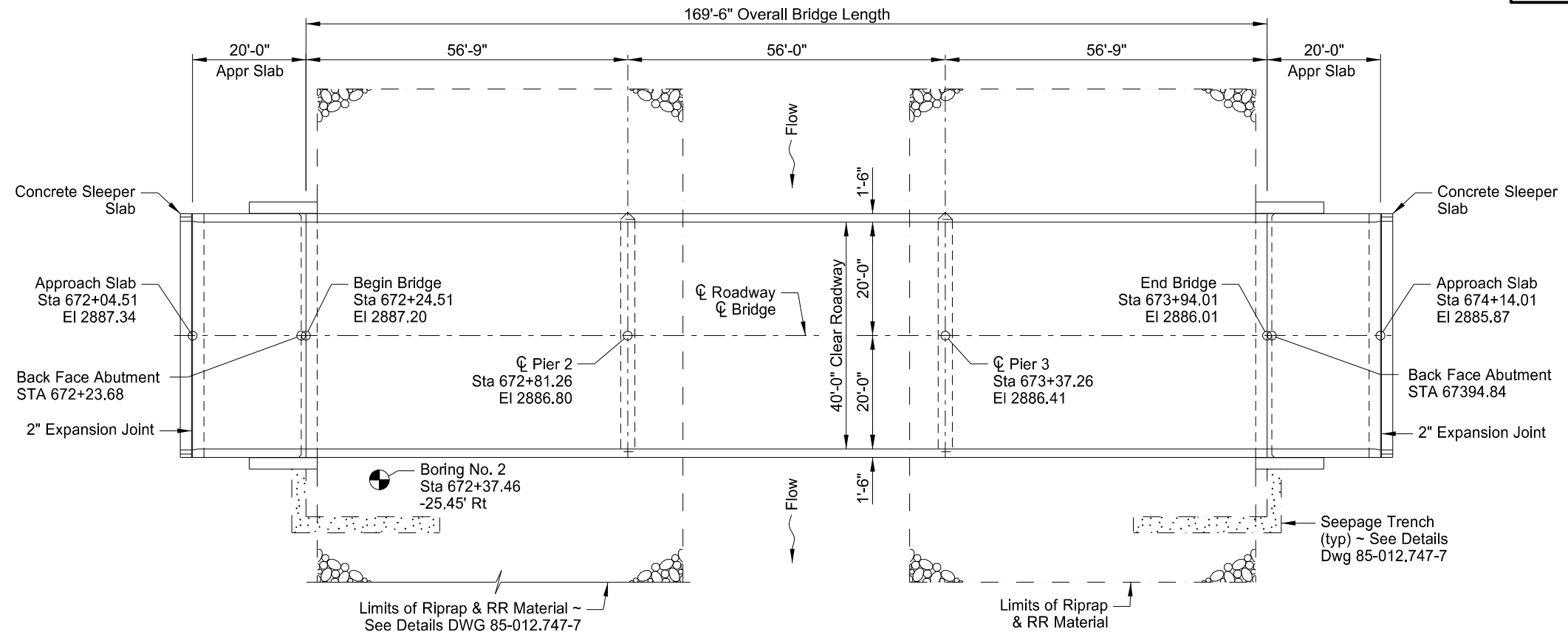


Boring No. 1  
Sta 673+66.24  
-75.05' Lt

23 U.S.C. § 407 Documents  
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-5-085(086)012	170	1



**HYDRAULIC DATA:**

Drainage Area	52.9	sq mi
Design Frequency	50	yr
Design Discharge	2,366.3	cfs
Design Stage (upstream)	2,879.79	ft
Stream Gradient	0.000902	ft/ft
Waterway Provided Below Design Stage	1,149.56	sq ft
Waterway Provided Below Clearance Elevation	1,734.68	sq ft
Average Velocity of Flow in Natural Channel	3.11	fps
Depth of Flow	10.28	ft
Velocity of Flow Under Bridge	2.06	fps
100-Year Frequency Discharge	2,923.3	cfs
100-Year Frequency Stage	2,880.37	ft
Overtopping Stage	2,886.01	ft
Overtopping Discharge	11,750	cfs

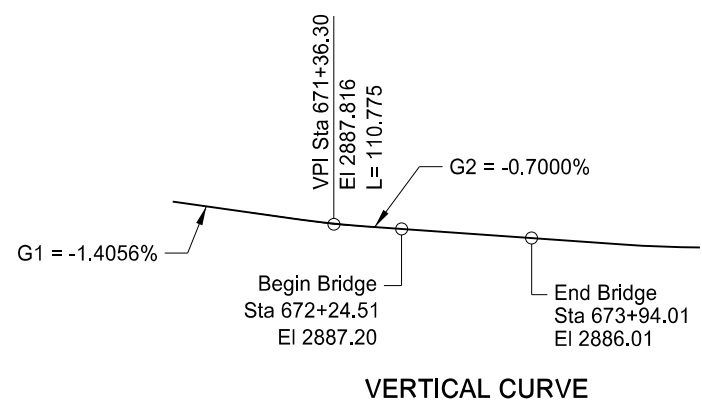
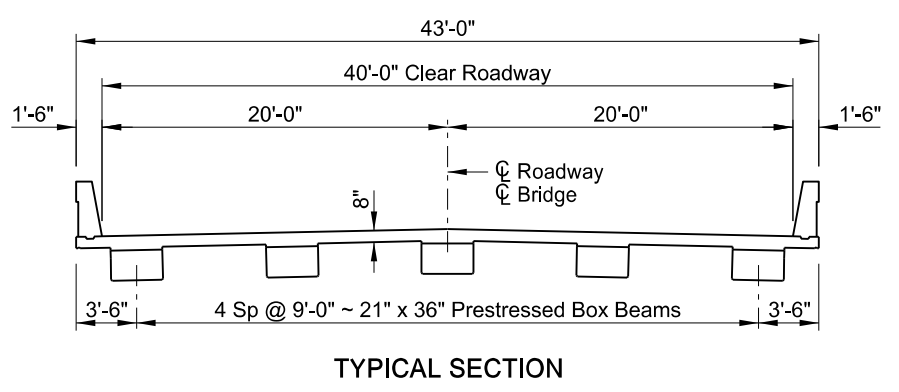
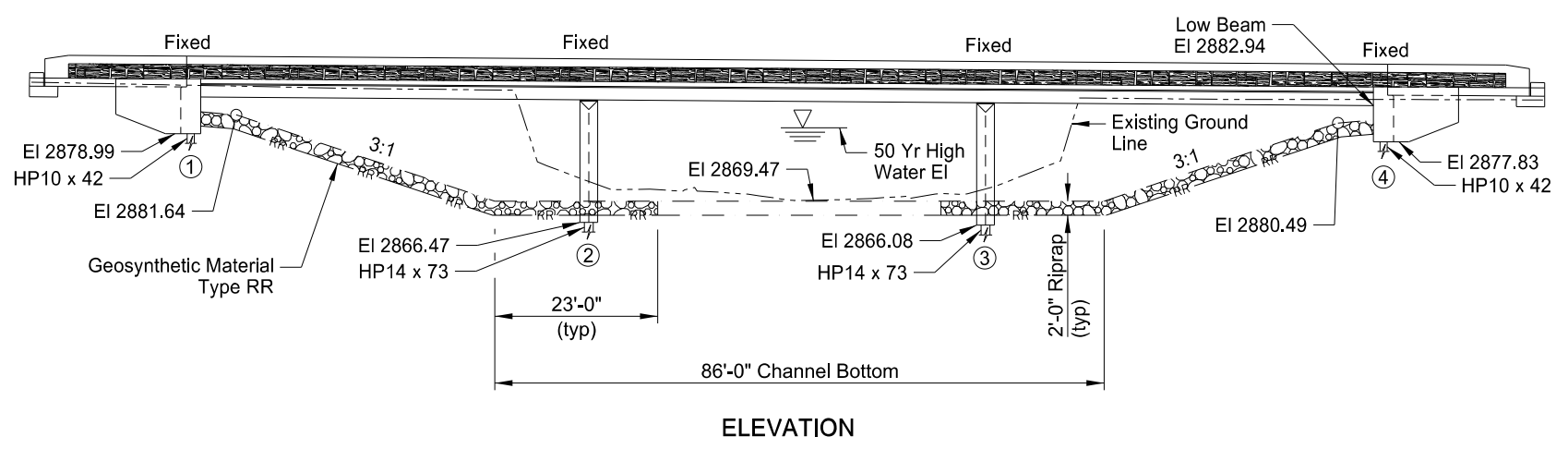
**DESIGN STRENGTHS:**

f'c = 4,000 psi ~ Bridge Substructure Concrete  
 f'c = 4,000 psi ~ Bridge Deck Concrete  
 f'c = 4,000 psi ~ Bridge Barrier Concrete  
 f'c = 7,000 psi ~ Prestressed Beam Concrete  
 fy = 60,000 psi ~ Reinforcing Steel

Load & Resistance Factor Design

**SURVEY CONTROL POINTS**

POINT	NORTHING	EASTING	ELEVATION
RTK 51772	180,817.250	1,230,787.235	2879.801
RTK 51773	180,863.897	1,230,606.643	2875.867



This drawing is preliminary and not for construction or implementation purposes.

**SPECIAL PROVISIONS**

SSP 2	MIGRATORY BIRD TREATY ACT
49(25)	PILE DYNAMIC ANALYZER (PDA)
SP 56(25)	ARCHITECTURAL FORM LINER

**STANDARD DRAWINGS**

D-622-1, D-714-18, D-754-83, D-900-1
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F.W.S. 15 PSF  
 HL-93 DESIGN LOADING

SPRING CREEK  
 4 SOUTH OF JCT US 12

**BRIDGE LAYOUT**

ND DEPARTMENT OF TRANSPORTATION  
 BRIDGE DIVISION

DRAWING NO.	85-012.747-1
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