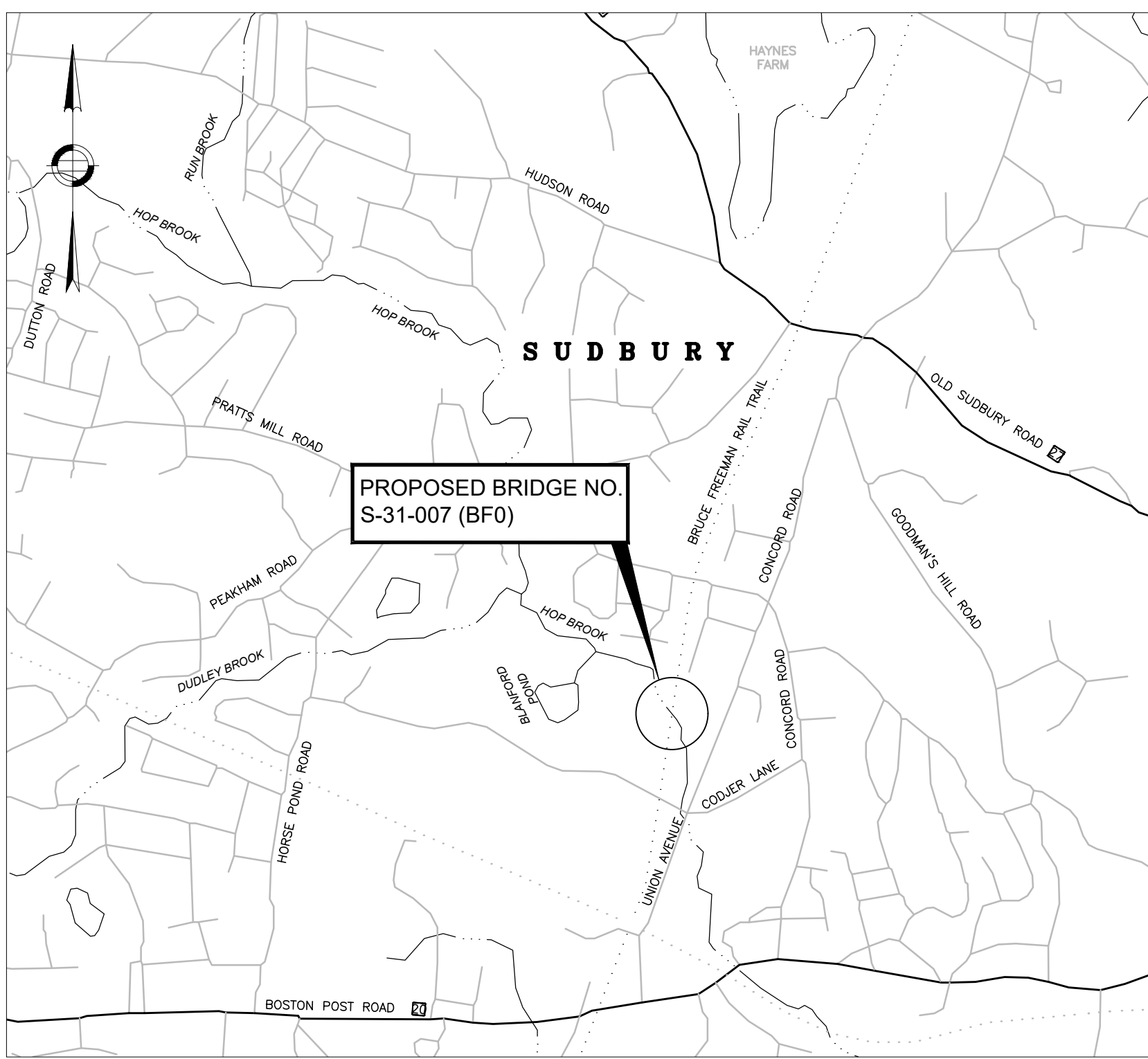


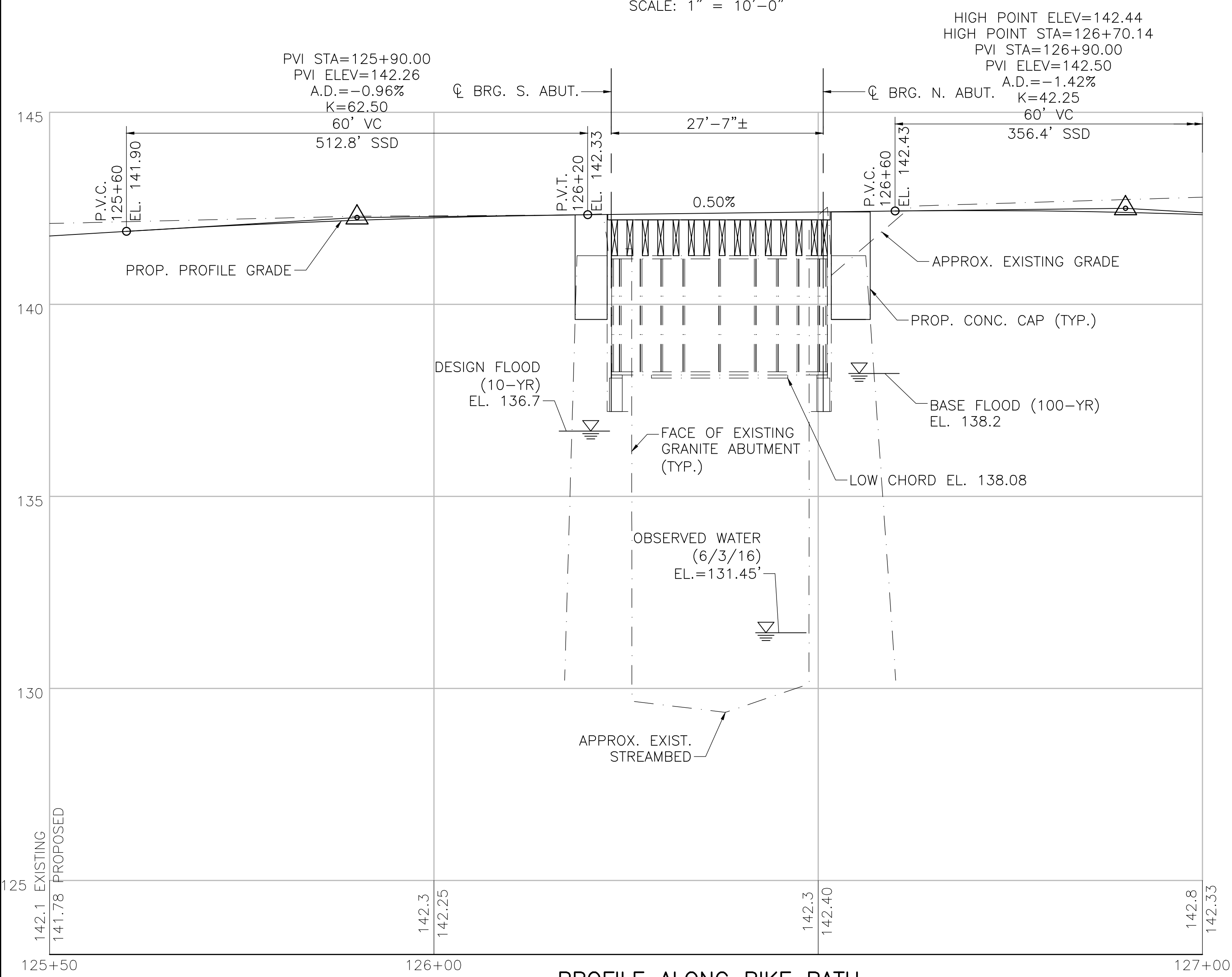
**KEY PLAN**

SCALE: 1" = 10'-0"



**LOCUS PLAN**

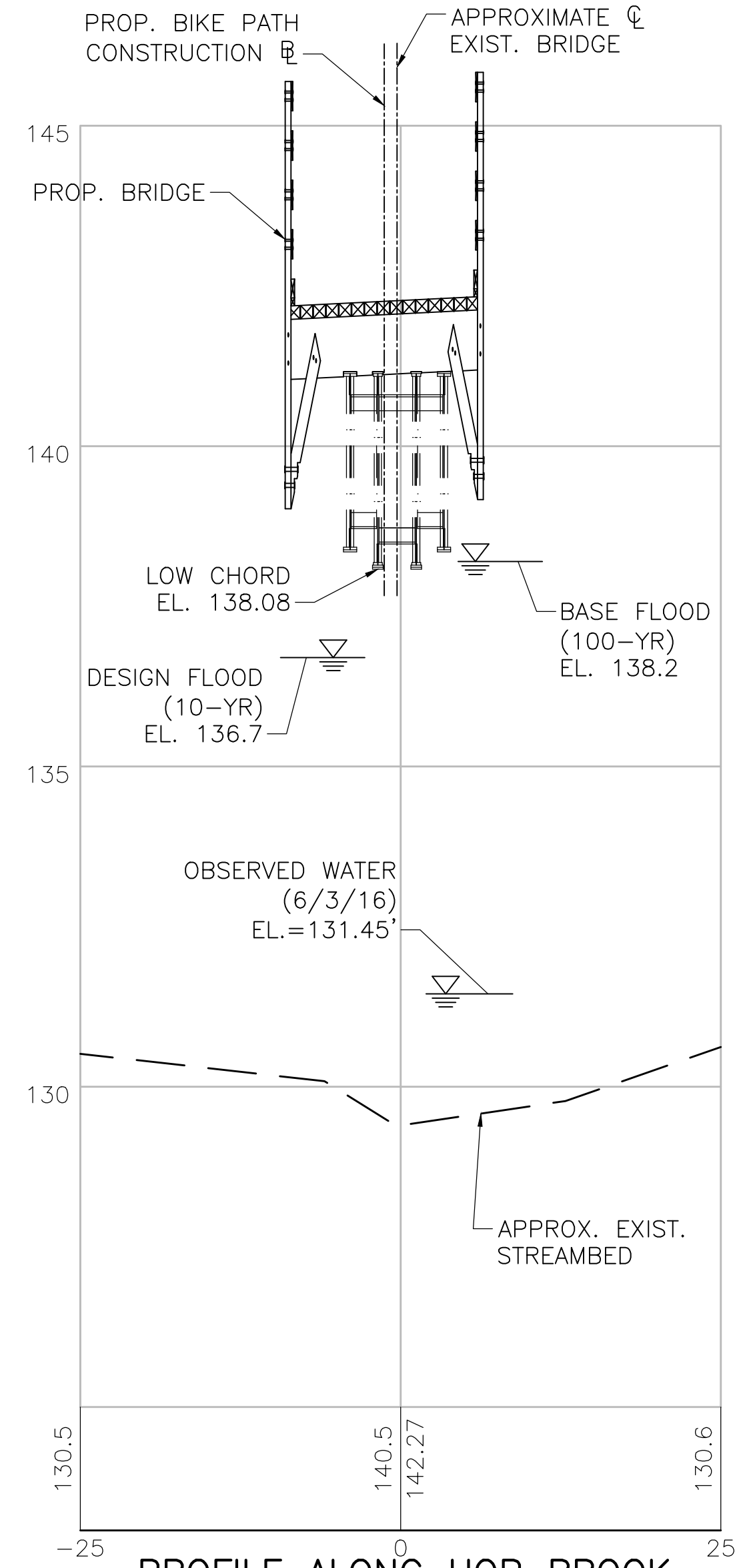
SCALE: APPROX. 1" = 1200'



**PROFILE ALONG BIKE PATH**

HORIZONTAL SCALE: 1" = 10'-0"

VERTICAL SCALE: 1" = 2'-0"



**PROFILE ALONG HOP BROOK**

HORIZONTAL SCALE: 1" = 10'-0"

VERTICAL SCALE: 1" = 2'-0"

GENERAL NOTES		
PROJECT FILE NO.:	608164	
PROJECT DESCRIPTION:	PROPOSED BRIDGE	
BRIDGE DESIGN LOADING:	H10	
SURVEY:	SURVEY INFO	
ELEVATION REFERENCE:	NAVD OF 1988	
TRAFFIC DATA		
DESIGN YEAR	ROADWAY OVER	ROADWAY UNDER
AVERAGE DAILY TRAFFIC - PRESENT	N/A	
AVERAGE DAILY TRAFFIC - DESIGN YEAR	N/A	
DESIGN HOURLY VOLUME	N/A	
DIRECTIONAL DISTRIBUTION	N/A	
TRUCK PERCENTAGE - AVERAGE DAY	N/A	
TRUCK PERCENTAGE - PEAK HOUR	N/A	
DESIGN SPEED	18 MPH	
DIRECTIONAL DESIGN HOURLY VOLUME	N/A	

**DESIGN**

IN ACCORDANCE WITH THE 2017 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE 2009 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES WITH INTERIM SPECIFICATIONS THROUGH 2015 FOR H10 VEHICULAR OR 90 PSF PEDESTRIAN LOADINGS..

- NOTES:**
- APPROVAL DOES NOT INCLUDE STRUCTURAL ANALYSIS.
  - DIMENSIONS OF STRUCTURAL MEMBERS ARE APPROXIMATE, AND WILL BE FINALIZED DURING THE FINAL DESIGN PHASE.
  - SEE GEOTECHNICAL REPORT, DATED APRIL 2020.
  - SEISMIC DESIGN CRITERIA:  
DESIGN RETURN PERIOD: 1000-YEAR  
DESIGN SPECTRA:  
A<sub>s</sub> = 0.11  
S<sub>ps</sub> = 0.23  
S<sub>d1</sub> = 0.09  
SITE CLASS = D  
SEISMIC DESIGN CATEGORY (SDC) = A
  - SEE HYDRAULIC REPORT, DATED APRIL 2020.
  - NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

**HYDRAULIC DESIGN DATA**

DRAINAGE AREA:	14.7 SQUARE MILES
DESIGN FLOOD DISCHARGE:	452 CUBIC FEET PER SECOND
DESIGN FLOOD FREQUENCY:	10 YEARS
DESIGN FLOOD VELOCITY:	2.66 FEET PER SECOND
DESIGN FLOOD ELEVATION:	136.7 FEET, NAVD

**BASE (100-YEAR) FLOOD DATA**

BASE FLOOD DISCHARGE:	887 CUBIC FEET PER SECOND
BASE FLOOD ELEVATION:	138.2 FEET, NAVD

**DESIGN AND CHECK SCOUR AREA**

DESIGN SCOUR FLOOD EVENT RETURN FREQUENCY:	25 YEARS
CHECK SCOUR FLOOD EVENT RETURN FREQUENCY:	50 YEARS

**FLOOD OF RECORD**

DISCHARGE:	UNKNOWN
FREQUENCY (IF KNOWN):	UNKNOWN
MAXIMUM ELEVATION:	UNKNOWN
DATE:	UNKNOWN
HISTORY OF ICE FLOES:	UNKNOWN
EVIDENCE OF SCOUR AND EROSION:	NO

**JACOBS**  
120 ST. JAMES AVENUE, 5TH FLOOR  
BOSTON MA, 02116

**massDOT**  
Massachusetts Department of Transportation  
Highway Division

SKETCH PLANS OF PROPOSED BRIDGE REHABILITATION  
**SUDBURY**  
PROPOSED BIKEPATH OVER HOP BROOK

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION

APPROVED BY	DATE
STRUCTURAL ELEMENTS: <i>John J. Bechard</i>	6/25/2020
TITLE: State Bridge Engineer	
HIGHWAY ELEMENTS: <i>John J. Bechard</i>	Jun 26, 2020
TITLE: Deputy Chief Engineer	

XXXXXX\_BR1(S31007).DWG Plotted on 2-Jun-2020 10:40 AM

**BORING NOTES:**

1. LOCATION OF BORINGS SHOWN ON THE PLANS THUS: BB-#
2. BORINGS ARE TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER LEVELS SHOWN ON THE BORING LOGS WERE OBSERVED AT THE TIME OF TAKING BORINGS AND DO NOT NECESSARILY SHOW THE TRUE GROUND WATER LEVEL.
4. FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1 3/8" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
5. ALL BORINGS WERE MADE IN SEPTEMBER 2019.
6. BORINGS WERE MADE BY NEW ENGLAND BORING CONTRACTOR, INC., P.O. BOX 165, DERRY, NH 03038.
7. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
8. BORING SAMPLES ARE STORED AT A STORAGE FACILITY LOCATED ON ROUTE 114 (219 WINTHROP AVE.) IN LAWRENCE, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES BY CONTACTING THE MASSDOT GEOTECHNICAL SECTION AT 10 PARK PLAZA, BOSTON, MA.

**LOG OF TEST BORING**

<b>JACOBS</b>		PROJECT	Bruce Freeman Rail Trail			BORING NO.	BB-103A	
		LOCATION	Sudbury, MA					
		OWNER	MASSDOT			SHEET 1 OF 1		
		JOB NUMBER	E2X81800					
INSPECTOR	S. Ramesh	CONTRACTOR	NEBC	DRILLER	S. Cooley	ELEVATION	142.5	
METHOD OF DRILLING		GROUNDWATER READINGS			DRILL RIG	Acker Soil Scout	DATUM	NAVD 88
0.0	Split Spoon Sample	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER	140 lb R&C Safety	GRID	N 2960021
10.0	Terminated	09-03-2019 /			None Encountered		COORD	E 677573
							DATE START	9/3/19
							DATE END	9/3/19

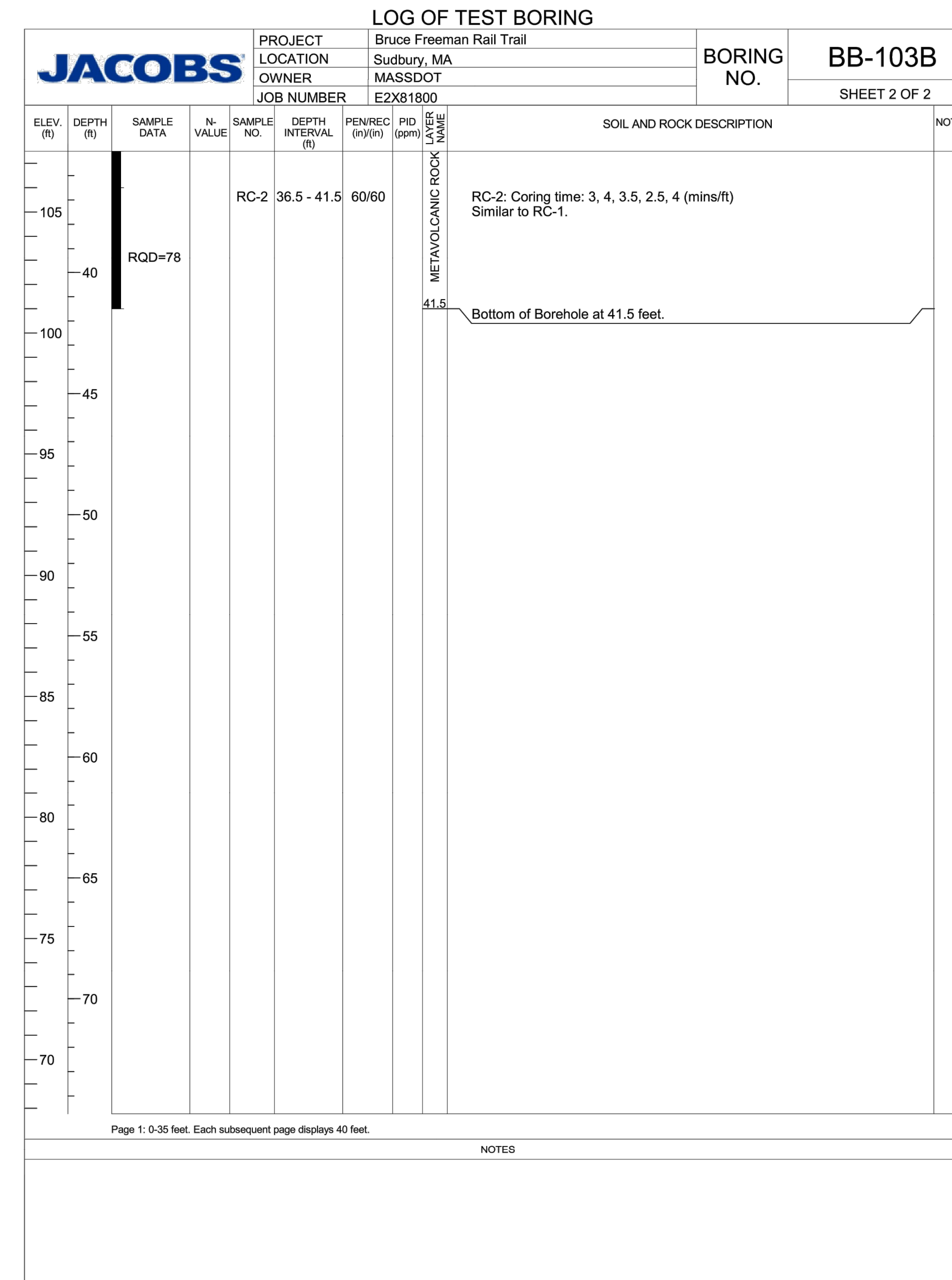
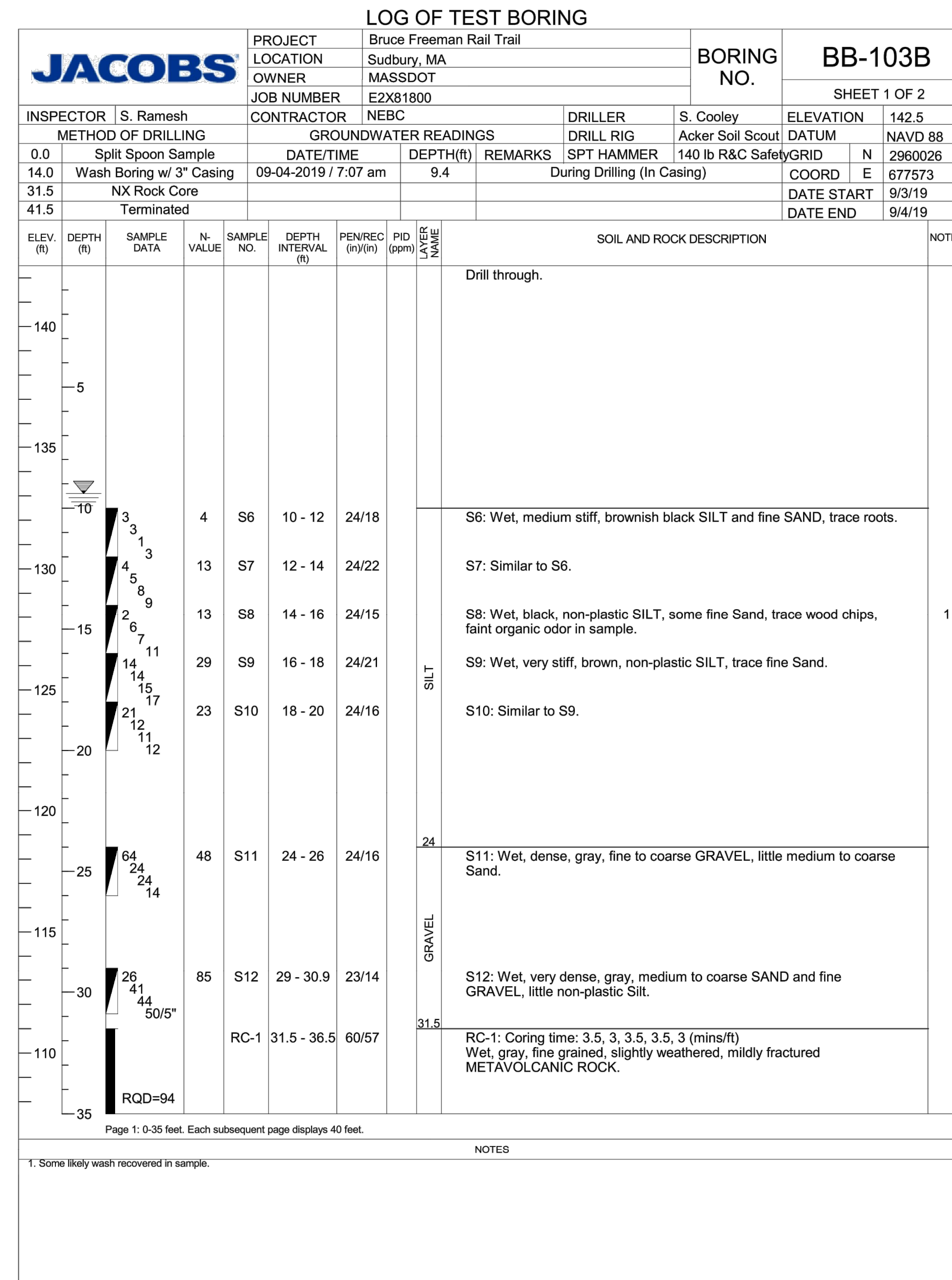
  

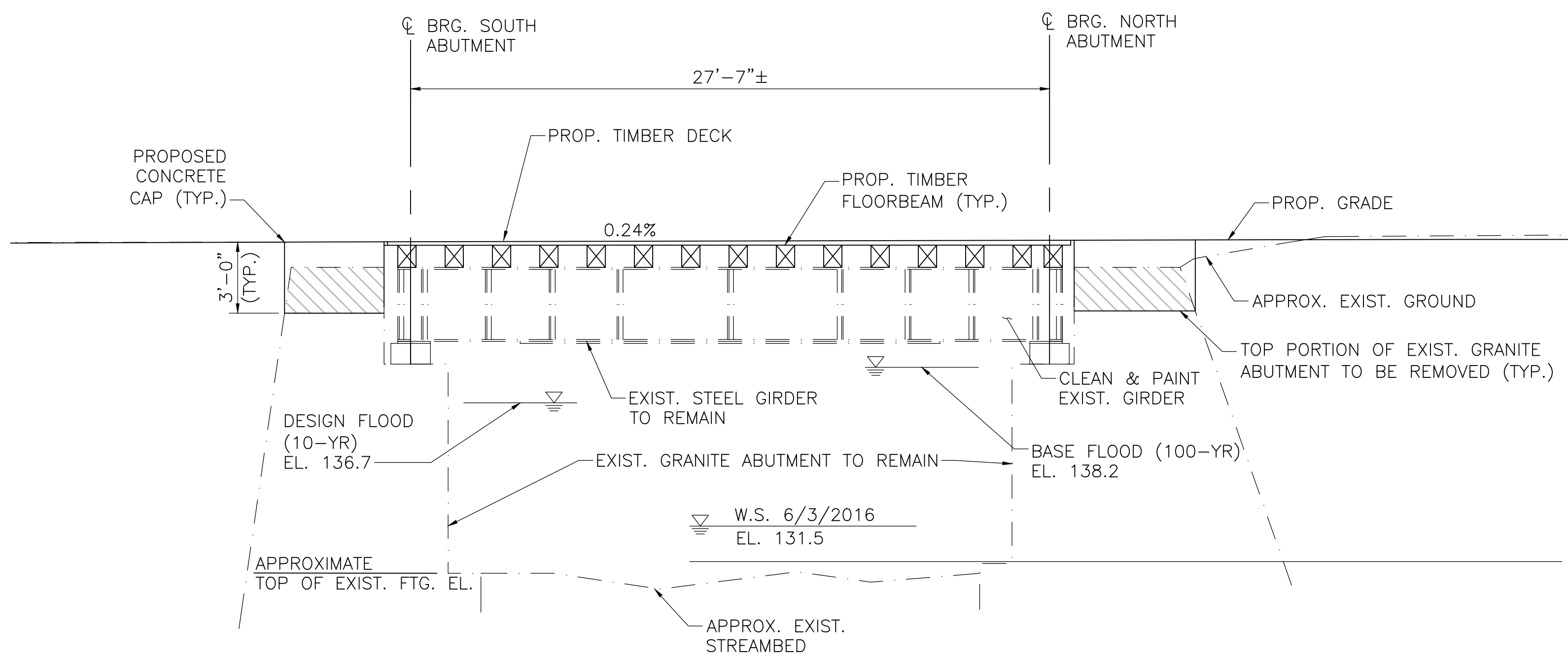
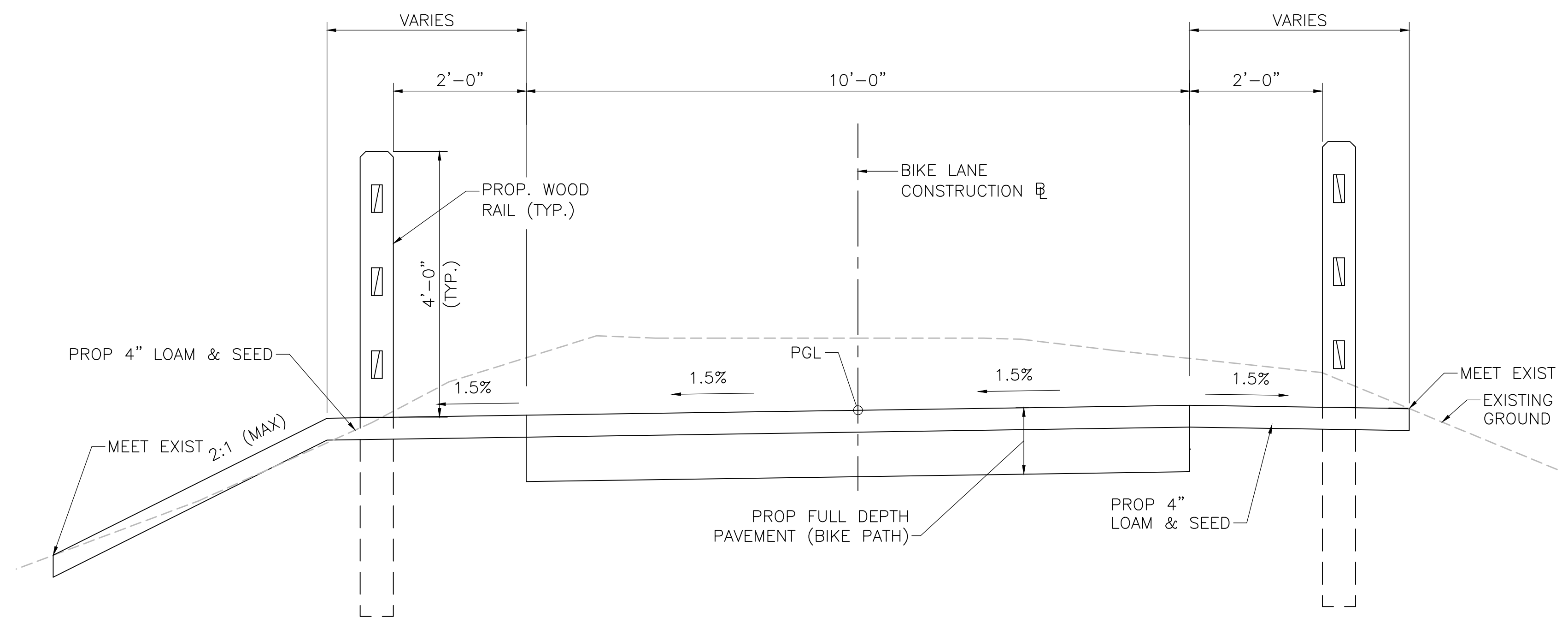
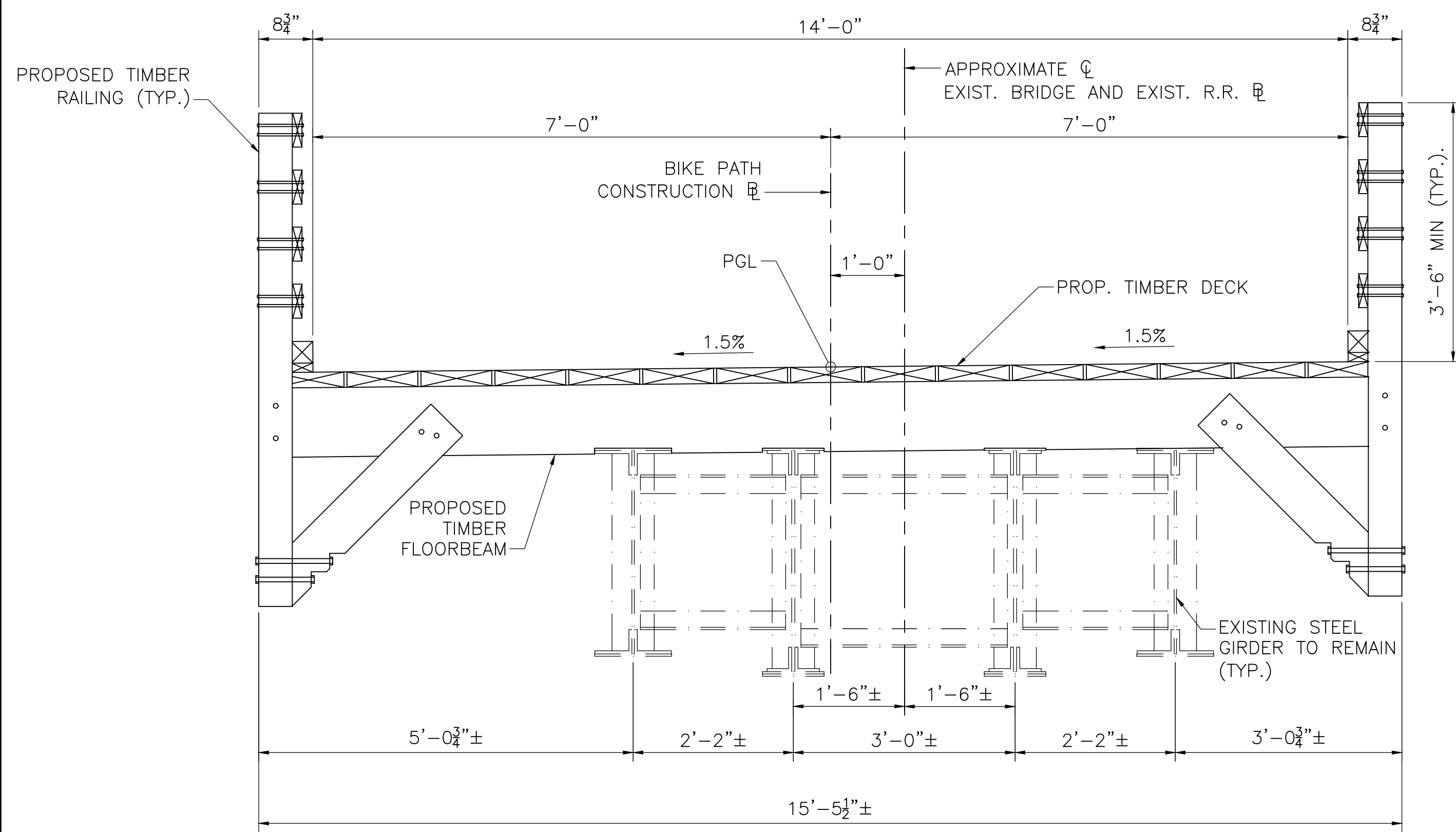
ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(ft)	PID (ppm)	SOIL AND ROCK DESCRIPTION	NOTES
	0-2	2 3 2	5	S1	0 - 2	24/10		S1: (0-4") Topsoil. Dry, black, medium SAND, trace Gravel. (4-10") Dry, brown, fine SAND, trace Silt.	
140	2-4	1 3 4	6	S2	2 - 4	24/12		S2: Dry, loose, brown, medium to coarse SAND, little Gravel.	
	4-6	3 3 4	6	S3	4 - 6	24/16		S3: Dry, loose, brown, fine to medium SAND, some Silt.	
5	6-8	3 3 3	7	S4	6 - 8	24/17		S4: Dry, loose, brown, fine to coarse SAND, little Silt.	
135	8-9.4	3 4 3 5	50/5*	S5	8 - 9.4	17/12		S5: Dry, very dense, brown, medium to coarse SAND, little Gravel, trace Silt.	
10	10-10	2 8 50/5*	50/0*	S6	10 - 10	0/0		Bottom of Borehole at 10 feet.	1 2

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES
<p>1. Boring terminated at 10' due to an obstruction.</p> <p>2. Boring offset 9' north and continued. See boring log BB-103B.</p>

BORING NOTES:  
SEE SHEET 2 FOR BORING NOTES.





# 001\_608164\_BFRT 25% Sketch Plans Rev 03\_Hop Brook\_2020-06-01

Final Audit Report

2020-06-26

Created:	2020-06-26
By:	Alexander Bardow (Alexander.Bardow@dot.state.ma.us)
Status:	Signed
Transaction ID:	CBJCHBCAABAA3WwLS4pPsT-NEW8rH7TBhnP-njQ09v1B

## "001\_608164\_BFRT 25% Sketch Plans Rev 03\_Hop Brook\_2020-06-01" History

-  Document created by Alexander Bardow (Alexander.Bardow@dot.state.ma.us)  
2020-06-26 - 1:19:20 AM GMT- IP address: 146.243.160.4
-  Document emailed to john.bechard@dot.state.ma.us john.bechard@dot.state.ma.us (john.bechard@dot.state.ma.us) for signature  
2020-06-26 - 1:20:30 AM GMT
-  Email viewed by john.bechard@dot.state.ma.us john.bechard@dot.state.ma.us (john.bechard@dot.state.ma.us)  
2020-06-26 - 6:27:00 PM GMT- IP address: 146.243.160.4
-  Document e-signed by john.bechard@dot.state.ma.us john.bechard@dot.state.ma.us (john.bechard@dot.state.ma.us)  
Signature Date: 2020-06-26 - 6:29:07 PM GMT - Time Source: server- IP address: 146.243.160.4
-  Signed document emailed to Alexander Bardow (Alexander.Bardow@dot.state.ma.us), Frederick.J.Nohelty@dot.state.ma.us Frederick.J.Nohelty@dot.state.ma.us (frederick.j.nohelty@dot.state.ma.us), Lucy.Manousakis@dot.state.ma.us Lucy.Manousakis@dot.state.ma.us (lucy.manousakis@dot.state.ma.us), and john.bechard@dot.state.ma.us john.bechard@dot.state.ma.us (john.bechard@dot.state.ma.us)  
2020-06-26 - 6:29:07 PM GMT