STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Eighth Edition 2017.

DESIGN LOADING

Live Load ..... HL - 93 Modified for Strength 1

TRAFFIC DATA

Current (2018) AADT	14,180
Future (2038) AADT	14,890
DHV - % of AADT	11%
Design Hour Volume	164
Heavy Trucks (% of AADT)	4%
Heavy Trucks (% of DHV)	3%
Directional Distribution (% of DHV)	54%
18 kip Equivalent P 2.0	281
18 kip Equivalent P 2.5	268
Design Speed (mph)	35

HYDROLOGIC DATA

Drainage Area	8.36 sq mi
Discharge (Q25)	479.9 cfs
Design Discharge (Q50)	549.6 cfs
Check Discharge (Q100)	644.1 cfs
Headwater Elevation (Q1.1)	15.03 ft
Headwater Elevation (Q25)	16.81 ft
Headwater Elevation (Q50)	17.02 ft
Headwater Elevation (Q100)	17.28 ft
Discharge Velocity (Q1.1)	1.57 fps
Discharge Velocity (Q25)	4.42 fps
Discharge Velocity (Q50)	4.70 fps
Discharge Velocity (Q100)	5.05 fps

MATERIALS

Concrete:	
Precast	Class "P"
All Other	Class "A"
Reinforcing Steel	ASTM A 615, Grade 60

BASIC DESIGN STRESSES

Concrete, Class "A"	f 'c = 4,000 psi
Concrete, Class "P"	f 'c = 6,000 psi
Reinforcing Steel	f y = 60,000 psi

YORK
YORK COUNTY
CAPE NEDDICK BRIDGE
OVER
CAPE NEDDICK RIVER

U.S. ROUTE 1
FEDERAL AID PROJECT NO. STP-2170(900)
PROJECT LENGTH 0.145 mi.
BRIDGE NO. 2127

LIST OF DRAWINGS

UTILITIES

Central Maine Power
Consolidated Communications
Spectrum Cable
York Water District

MAINTENANCE OF TRAFFIC

Maintain alternating one-way traffic controlled by temporary traffic signals during phase 1 and maintain two lanes of traffic during phase 2.

PROJECT LOCATION:	US Route 1 over Cape Neddick River located 0.12 mile north of Route 1A, Latitude 43°11'33" N, Longitude 70°37'11" W
PROGRAM AREA:	Bridge
OUTLINE OF WORK:	Bridge Replacement with 500' of Approach Work

HNTB

WIN 21709.00

STP-2170(900)X

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
APPROVED
COMMISSIONER: DATE 8/13/18
CHIEF ENGINEER: DATE 8-3-18

STATE OF MAINE ROLAND A LAVALLEE No. 6452 LICENSED PROFESSIONAL ENGINEER

Roland A. Lavallee
SIGNATURE
6452
P.E. NUMBER
06/29/18
DATE

PROJECT INFORMATION	
PROGRAM	BRIDGE
PROJECT MANAGER	DEVAN EATON, P.E.
DESIGNER	TIMOTHY COTE, P.E.
CONSULTANT	HNTB
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

YORK
CAPE NEDDICK BRIDGE

TITLE SHEET

SHEET NUMBER
1
OF 29

Date:6/29/2018
Username:
Division:
Filename601_Title.dgn

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.19	Removing Existing Bridge (Concrete = 530 CY)	1	LS
202.202	Removing Pavement Surface	660	SY
203.20	Common Excavation	1,250	CY
203.24	Common Borrow	50	CY
304.10	Aggregate Subbase Course - Gravel	1,300	CY
403.2081	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Polymer Modified)	210	TON
403.209	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Sidewalks, Drives, & Incidentals)	6	TON
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course)	180	TON
403.2131	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate course, Polymer Modified)	150	TON
409.15	Bituminous Tack Coat, Applied	140	GAL
411.09	Untreated Aggregate Surface Course	2.5	CY
461.131	Temporary Pavement	32	TON
514.06	Curing Box for Concrete Cylinders	1	EA
524.301	Temporary Structural Support	1	LS
526.305	Temporary Concrete Barrier, Braced Type 1 (640 LF)	1	LS
527.34	Work Zone Crash Cushions	3	UN
531.51	Bridge Structure Detail-Build	1	LS
606.1301	31" W-Beam Guardrail - Mid-Way Splice (Steel Post, 8" Offset Blocks, Single Faced)	325	LF
606.1304	31" W-Beam Guardrail - Mid-Way Splice (Steel Post, 8" Offset Blocks, Over 15' Radius)	25	LF
606.1306	31" W-Beam Guardrail - Mid-Way Splice Tangent Terminal (31" Height)	3	EA
606.2591	Anchorage Assembly for Driveway Radius	1	EA
606.353	Reflectorized Flexible Guardrail Marker	7	EA
609.31	Curb Type 3	380	LF
610.08	Plain Riprap	10	CY
610.18	Stone Ditch Protection	40	CY
613.319	Erosion Control Blanket	32	SY
615.07	Loam	46	CY
618.14	Seeding Method Number 2	4	UN
619.12	Mulch	4	UN
619.14	Erosion Control Mix	46	CY
620.58	Erosion Control Geotextile	130	SY
627.733	4" White or Yellow Painted Pavement Marking Line	2,600	LF
627.77	Removing Existing Pavement Marking	1,010	SF
627.78	Temporary 4" Painted Pavement Marking Line, White or Yellow	3,450	LF
629.05	Hand Labor, Straight Time	35	HR
631.12	All Purpose Excavator (including operator)	10	HR
631.172	Truck-large (including operator)	10	HR
637.071	Dust Control	1	LS
639.19	Field Office, Type B	1	EA
643.72	Temporary Traffic Signal: Route 1	1	LS
652.312	Type III Barricades	2	EA
652.33	Drum	25	EA
652.34	Cone	25	EA
652.35	Construction Signs	250	SF
652.361	Maintenance of Traffic Control Devices (140 Calendar Days)	1	LS
652.38	Flaggers	240	HR
652.41	Portable Changeable Message Sign	2	EA
656.75	Temporary Soil Erosion and Water Pollution Control	1	LS
659.10	Mobilization	1	LS
822.3701	16" Ductile Iron Water Main, Install Only	200	LF
830.10	Water Main Bridge Crossing, Install Only	1	LS

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

		BY	DATE
PROJ. MANAGER	Devon Eaton		
DESIGN-DETAILED	E. Forgacs	C. Helmick	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

ESTIMATED QUANTITIES

SHEET NUMBER

2

OF 29

Filename: 002_Estimated Quantites.dgn Division: Username: Date:8/3/2018

Filename: 003_GenNotes.dgn Division: Username: Date:7/20/2018

GENERAL NOTES

1. The clearing limits shall be 5' beyond and parallel to the construction slope lines or as shown on the plans unless otherwise authorized by the Resident. The exact limits will be established in the field by the Resident. Payment for clearing will be considered incidental to Contract Items. Single tree and stump removal shall be considered clearing.

2. All utility facilities shall be adjusted by the respective utilities unless otherwise noted.

3. Place loam 2 inches deep on all new or reconstructed side slopes or as directed by the Resident.

4. A MASH compliant guardrail end treatment shall be installed concurrently with the placement of each section of end beam guardrail.

5. Project info referred to below may be accessed at the following MaineDOT web address: http://www.maine.gov/contractors/

6. The existing bridge plans may be accessed at the MaineDOT web address. The plans are reproductions of the original drawings as prepared for the construction of the bridge. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span.

7. The Project Geotechnical Report titled: "Geotechnical Design Report Replacement of Cape Neddick Bridge," may be accessed at the MaineDOT web address.

8. Geotechnical information furnished or referred to in this plan set for the use of Bidders and the Contractor. No assurance is given that the information or interpretations will be representative of actual subsurface conditions at the construction site. MaineDOT will not be responsible for the Bidder's or Contractor's interpretations of, or conclusions drawn from, the geotechnical information. The boring logs contained in the plan set present factual and interpretive subsurface information collected at discrete locations. Data provided may not be representative of the subsurface conditions between boring locations.

9. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:

   a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.

   b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.

   c. If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation and Time.

10. The Contractor shall submit a Bridge Removal Plan to the Resident at least 10 business days prior to the start of demolition work. The plan shall outline the methods and equipment to be used to remove and dispose of all materials included in the existing bridge. No work related to the removal of the bridge shall be undertaken by the Contractor until MaineDOT has reviewed the Bridge Removal Plan for appropriateness and completeness. Payment for all work necessary for developing, submitting and finalizing the demolition Plan will be considered incidental to the bridge removal pay item.

11. For easements, construction limits and right of way lines, refer to the Right of Way Map.

12. All embankment material, except as otherwise shown, placed below El. 15.03 shall be Granular Borrow meeting the requirements of Subsection 703.19, Material for Underwater Backfill.

13. The hydrologic report of the bridge site may be accessed at the MaineDOT web address. The hydrologic report is based on the designers interpretation of the information obtained for the subject site. No assurance is given that the information or the conclusions of the report will be representative of actual conditions at the time of construction.

14. Location of utilities shown are approximate and should be verified in the field by the Contractor.

15. All waste material not used on the project shall be disposed of off the project in a waste area. The Contractor shall have a written agreement with the waste area owner, a copy of which shall be provided to the Department. All work associated with this shall be considered incidental to related Contract items.

16. No existing drainage shall be abandoned, removed or plugged without prior approval of the Resident. Existing drainage called to be abandoned, removed, or plugged shall be incidental to related Contract items.

17. Extended Use Erosion Control Blanket, seeded gutters, riprap downspouts and other gutters lined with Stone Ditch Protection shall be constructed after paving and shoulder work is completed where it is apparent that runoff will cause continual erosion. Payment will be made under the appropriate Contract items.

18. Erosion Control Mix may be substituted in those area normally receiving loam and seed as directed by the Resident. Placement shall be in accordance with Standard Specification Section 619, Mulch. Payment will be made under Item No. 619.14, Erosion Control Mix.

19. Where called for on the Plans, where new pavement joins existing pavement, the existing pavement shall be sawcut along a smooth line to a neat, even, vertical joint, as directed by the Resident. Broken or raveled edges will not be permitted. All work necessary for the preparation of this joint will be considered incidental to the related Contract items.

20. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.

21. In areas where the Resident directs the Contractor not to excavate to the subgrade line shown on the Plans, payment for removing existing pavement, grubbing, shaping, ditching, and compacting the existing subbase and layers of new subbase 6 inches or less thick will be made under appropriate equipment rental items.

22. Place a 24-in wide strip of Temporary Erosion Control Blanket on the sideslopes along the top of riprap and behind the wingwalls.

23. Unpaved entrances shall be constructed with 14" Aggregate Subbase Course Gravel or 11" Aggregate Subbase Course Gravel and 3" Untreated Aggregate Surface Course unless otherwise noted on the Plans or directed by the Resident.

24. Residential paved entrances shall be constructed with: 2" hot mix asphalt and 12" Aggregate Subbase Course Gravel.

25. A 3' paved lip shall be placed at all gravel entrances unless otherwise noted on the Plans or directed by the Resident.

26. Existing signs within the Project Limits shall be removed and reset as directed by the Resident. Payment for removal and reinstallation of existing signs will be considered incidental to the Contract. No separate payment will be made.

27. Protective Coating for Concrete Surfaces shall be applied to the following areas:

   On all concrete headwalls and concrete wall surfaces that are exposed and to limit lines, one foot beyond intersections of concrete surfaces with the ground.

28. Bidders and Contractors should anticipate encountering boulders and cobbles in the excavations for the proposed detailed-build structure and temporary structural support. Any additional work shall be incidental to the related Contract pay items.

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127 BRIDGE PLANS

		BY	DATE
PROJ. MANAGER	Devon Eaton	C. Helmick	6\18
DESIGN-DETAILED	E. Forgacs	R. Hanf	6\18
CHECKED-REVIEWED	L. Driscoll	-	-
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

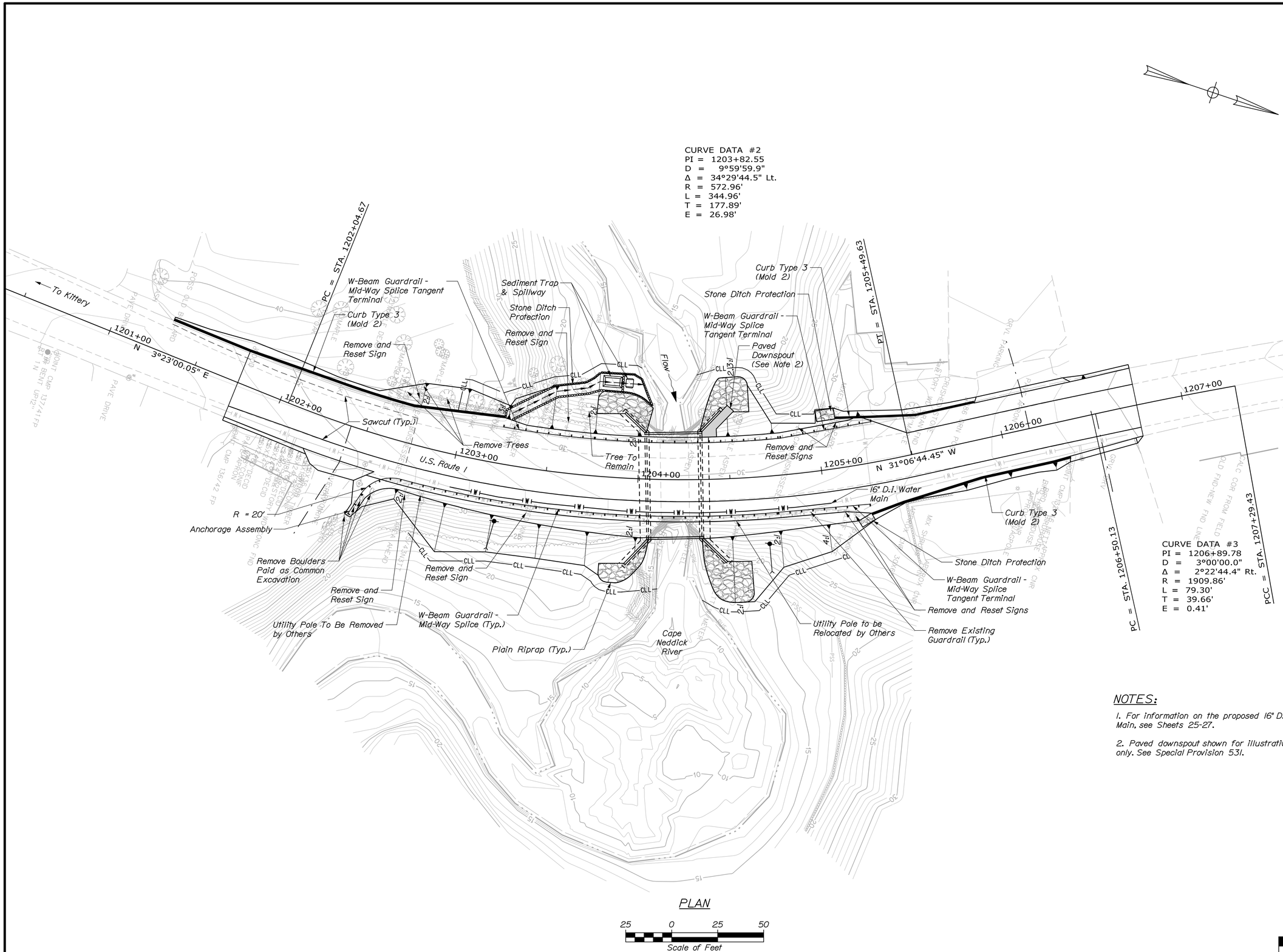
GENERAL NOTES

SHEET NUMBER

3

OF 29

CURVE DATA #2
PI = 1203+82.55
D = 9°59'59.9"
Δ = 34°29'44.5" Lt.
R = 572.96'
L = 344.96'
T = 177.89'
E = 26.98'



CURVE DATA #3
PI = 1206+89.78
D = 3°00'00.0"
Δ = 2°22'44.4" Rt.
R = 1909.86'
L = 79.30'
T = 39.66'
E = 0.41'

NOTES:

1. For information on the proposed 16" D.I. Water Main, see Sheets 25-27.

2. Paved downspout shown for illustrative purposes only. See Special Provision 531.

PLAN

25 0 25 50
Scale of Feet

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	Devon Easton	
DESIGN-DETAILED	E. Forgacs	6\18
CHECKED-REVIEWED	L. Driscoll	6\18
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

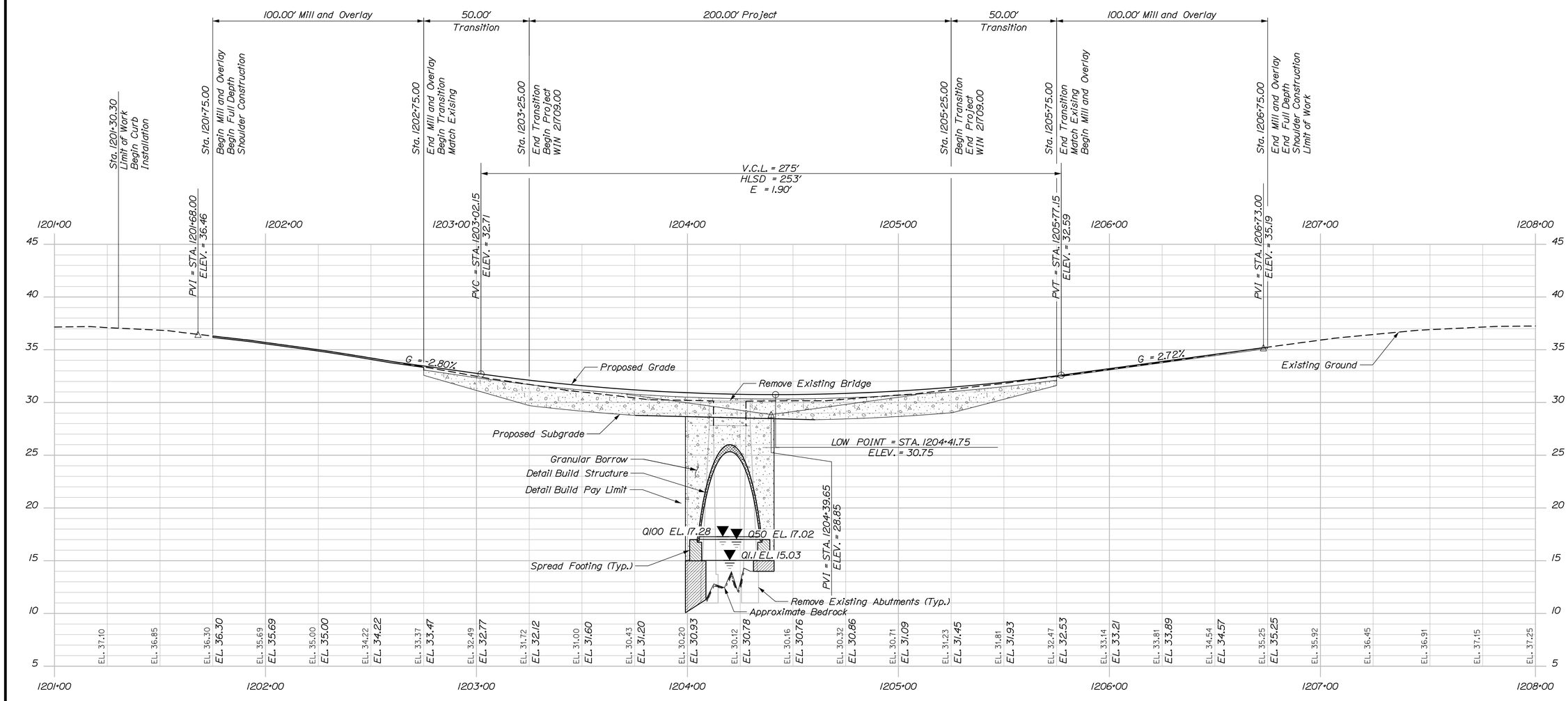
P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

GENERAL PLAN

SHEET NUMBER
4
OF 29



PROFILE

Horiz. 25 0 25 50

Vert. 5 0 5 10

Scale of Feet

HNTB

Username:

Division:

Date:7/20/2018

Filename: 005_Profile.dgn

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

		BY	DATE
PROJ. MANAGER	Devon Easton		
DESIGN-DETAILED	E. Forgacs	C. Helmick	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

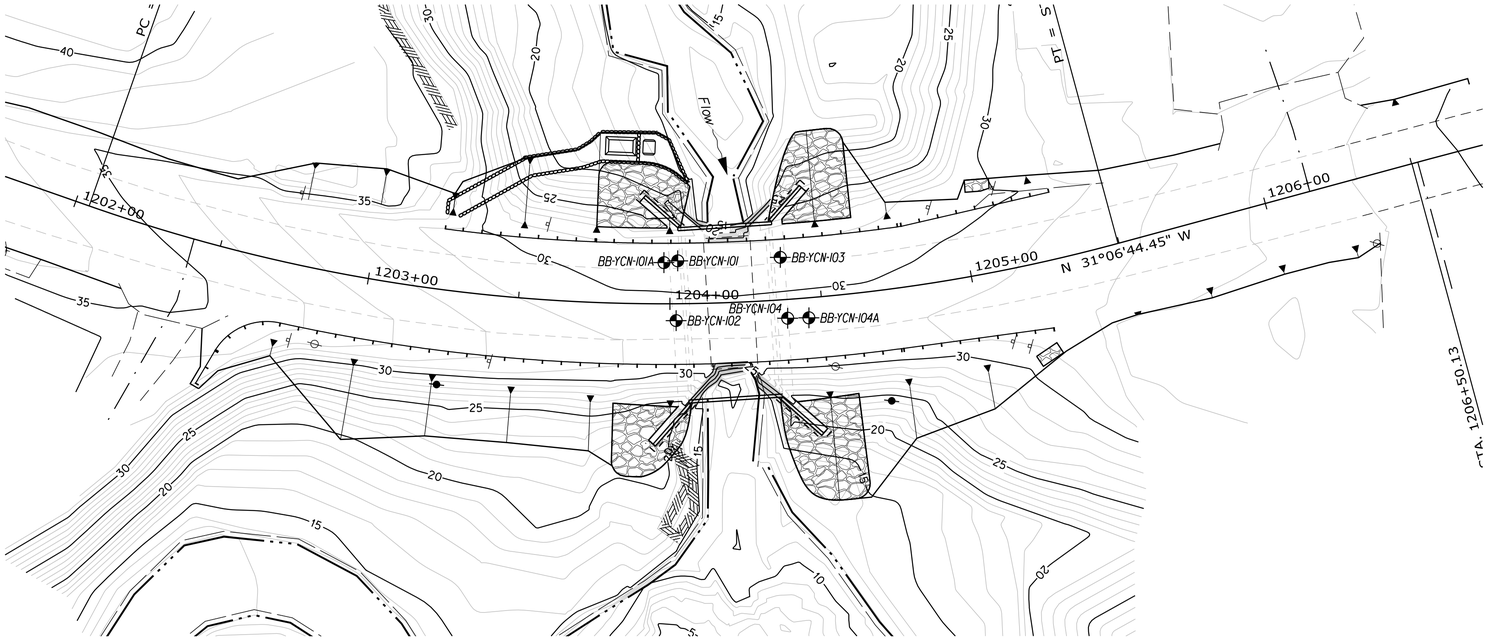
CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

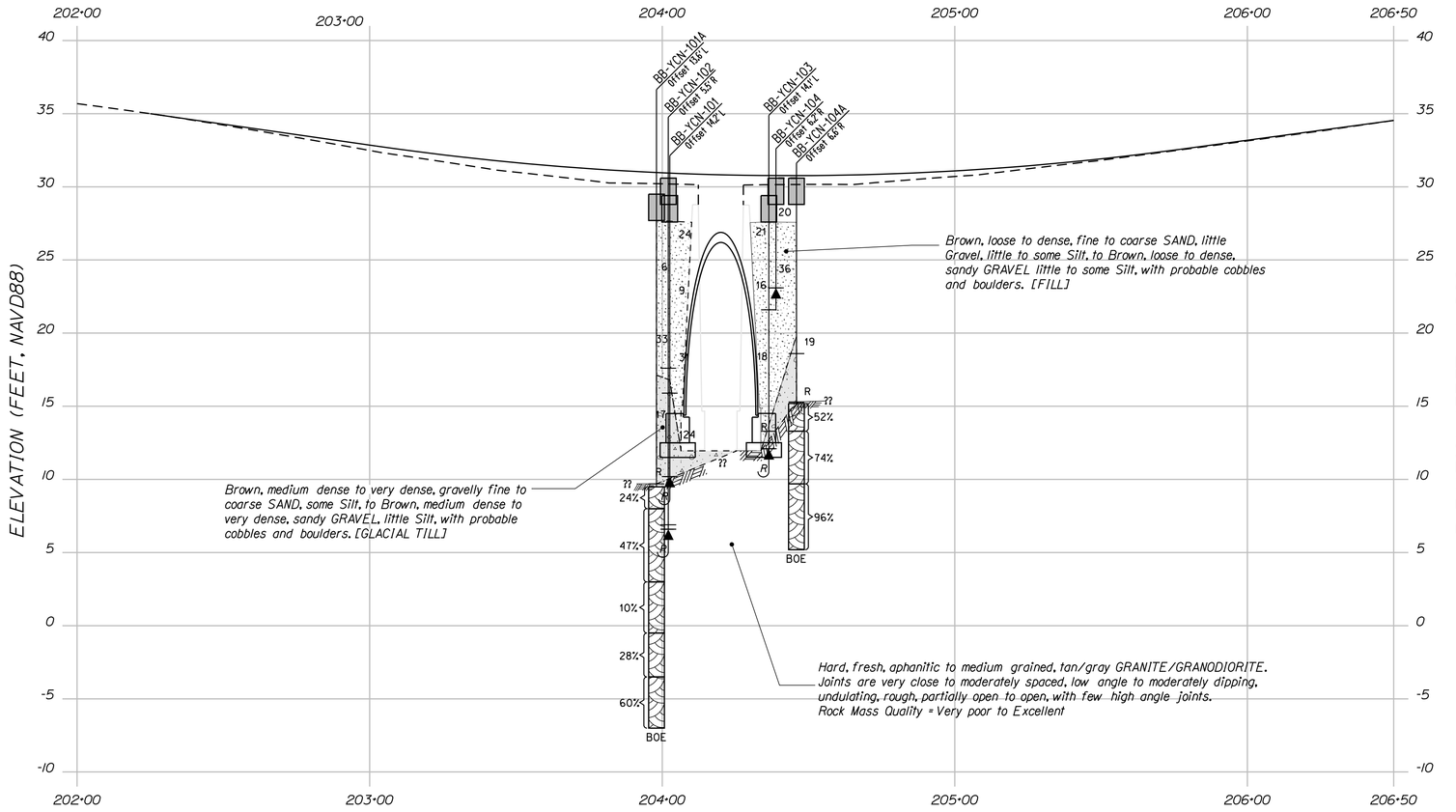
PROFILE

SHEET NUMBER

5

OF 29





NOTES

1) Base map developed from electronic files provided by MaineDOT on March 15, 2017 (Files included BDPLAN.dgn, Contours.dgn, Points.dgn, RWPLAN.dgn, Text.dgn, topo.dgn and wetlands.dgn).

2) Profile developed from electronic files provided by HNTB on March 17, 2016 (Files included Profile.dgn and z_Bridge Elevation.dgn).

3) The as-drilled locations of the test borings were surveyed by a MaineDOT survey crew and supplied to GZA except for BB-YCN-104 which was determined using offset from BB-YCN-104A.

4) BB-YCN-100 series bridge borings were performed by New England Boring Contractors and observed by GZA personnel between March 6 and March 8, 2017.

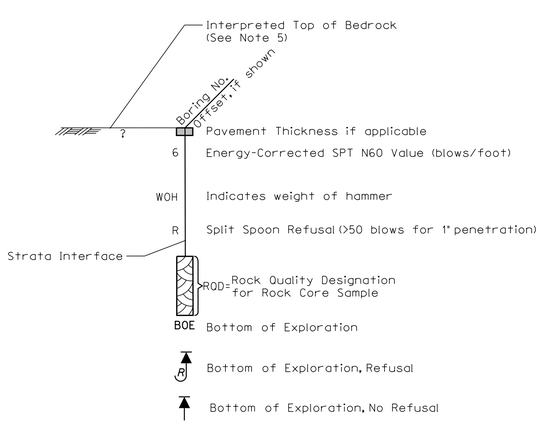
5) Interpreted top of rock considers general trend of ledge lines between borings BB-YCN-101A and -104A.

6) This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

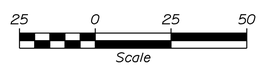
BORING LOCATION PLAN LEGEND

BB-YCN-104 Location and designation of cased wash boring

INTERPRETIVE SUBSURFACE PROFILE LEGEND



PLAN



PROFILE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

WIN 21709.00
BRIDGE NO. 2127
BRIDGE PLANS

PROJ. MANAGER	XXXX		
DESIGN-DETAILED	BMC	APR 2017	
CHECKED-REVIEWED	CLS	APR 2017	
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES	BMC	APR 2017	

P.E. NUMBER

SIGNATURE

DATE

CAPE NEDDICK BRIDGE
ROUTE 1 OVER CAPE NEDDICK RIVER
YORK COUNTY
YORK

BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE

PREPARED BY:

GZA

SHEET NUMBER

6

OF 29

Filename: ...\Geotech\MSTA\BLP\002_BLP.dgn Division: HIGHWAY Username: common Date:6/29/2018

Date:7/20/2018

Username:

Division:

Filename: 007_Boring Logs 1.dgn

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project:	Cape Neddick Bridge 09.0025930.00	Location:	Route 1 Over Cape Neddick River York, Maine	Boring No.:	BB-YCN-101
				PIN:	21709.00
Driller:	New England Boring	Elevation (ft.)	29.4	Auger ID/OD:	4.25" OD
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	Blaine Cardali	Rig Type:	Truck - Mobile Drill	Hammer Wt./Fall:	140/30
Date Start/Finish:	3/7/17 - 3/7/17	Drilling Method:	SSA/Drive & Wash	Core Barrel:	-
Boring Location:	N130976.6, E918950.7	Casing ID/OD:	4"/3"	Water Level *:	13.5'
Hammer Efficiency Factor:	0.6	Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							SSA		-ASPHALT-	
								28.1	1.3	
								27.6	-CONCRETE- 1.8	
	1D	24/3	2.0 - 4.0	16-16-8-6	24	24			Brown, dry, medium dense, fine to coarse SAND, some Gravel, little Silt, with probable cobbles and boulders. -FILL- (SW-SM)	
5	2D	24/1	5.0 - 7.0	14-3-6-4	9	9			Brown, dry, loose, fine to coarse SAND, some Gravel, some Silt, with probable cobbles and boulders. -FILL- (SM)	
10	3D	24/9	10.0 - 12.0	9-14-17-21	31	31	89		Brown, moist, dense, fine to coarse SAND, some Gravel, some Silt, with probable cobbles and boulders. -FILL- (SM)	G#1 A-2-4, SM wc=14.6
							61			
							70			
							58	15.9	13.5	
							50			
15	4D	24/7	15.0 - 17.0	10-99-25-18	124	124	128		Brown, wet, very dense, sandy GRAVEL, little Silt, with probable cobbles and boulders. -GLACIAL TILL- (GM)	G#2 A-1-a, GM wc=14.3
							117			
							136			
							66			
							22/2"	10.2	Broke NW casing. Moved to BB-YCN-101A. 19.2	
									Bottom of Exploration at 19.20 feet below ground surface.	
20										
25										

Remarks:

1. Water level measured 15 minutes after completion of drilling.
2. Cobbles and boulders throughout fill, based on casing and roller cone advancement.
3. 4" casing met refusal at 19.2' bgs; then 3" casing broke while setting up to core. Bottom 10.0' of casing remained in borehole.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 2

Boring No.: BB-YCN-101

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project:	Cape Neddick Bridge 09.0025930.00	Location:	Route 1 Over Cape Neddick River York, Maine	Boring No.:	BB-YCN-101A
				PIN:	21709.00
Driller:	New England Boring	Elevation (ft.)	29.5	Auger ID/OD:	4.25" OD
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	Blaine Cardali	Rig Type:	Truck - Mobile Drill	Hammer Wt./Fall:	140/30
Date Start/Finish:	3/8/17 - 3/8/17	Drilling Method:	SSA/Spin & Wash	Core Barrel:	NX2
Boring Location:	N130972.4, E918952.5	Casing ID/OD:	3"	Water Level *:	13.2'
Hammer Efficiency Factor:	0.6	Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							SPUN		Refer to Boring BB-YCN-101. Moved approximately 4.5' south of boring BB-YCN-101 and spun 3" casing to rock. No sampling in overburden materials.	
5										
10										
15										
								9.7	19.8	
20	R1	18/17	20.0 - 21.5	RQD = 24%			NX2		Spun casing to 19.8' bgs then roller cone to 20.0' bgs and set up to core. R1: Hard, fresh, fine to medium grained, gray/tan, GRANITE/GRANODIORITE. Joints are very close to close, low angle, rough, undulating, fresh, partially open to open. Rock Mass Quality = Very Poor Rock Core Times (min/ft): 2.75, 2.5/6" Recovery = 94%	
	R2	60/58	21.5 - 26.5	RQD = 47%					R2: Hard, fresh, fine to medium grained, gray/tan, GRANITE/GRANODIORITE. Primary joints are very close to close, low angle, rough, undulating, fresh, partially open to open. Secondary joints are moderately spaced, moderate to high angle, rough, undulating, fresh to discolored, partially open to open. Rock Mass Quality = Poor Rock Core Times (min/ft): 3.5, 2.75, 3.5, 3.0, 3.75 Recovery = 97%	
25	R3	42/42	26.5 - 30.0	RQD = 10%					R3: Hard, fresh, aphanitic, gray, GRANODIORITE with calcite stringers. Joints are extremely close to close, low angle, rough, undulating, fresh to discolored, partially open to open. Two high angle joints. Rock Mass Quality = Very Poor Rock Core Times (min/ft): 3.0, 3.25, 3.0, 2.75/6" Recovery = 100%	
30	R4	36/36	30.0 - 33.0	RQD = 28%					R4: Hard, fresh, fine to medium grained, tan/gray, GRANITE/GRANODIORITE. Joints are very close to close, low angle, rough, undulating, fresh to discolored, tight to open. Rock Mass Quality = Poor Rock Core Times (min/ft): 1.5, 2.5, 3.0 Recovery = 100%	
	R5	42/42	33.0 - 36.5	RQD = 60%					R5: Hard, fresh, coarse grained, tan/gray, GRANITE/GRANODIORITE. Joints are very close to moderately spaced, low angle, rough, undulating, fresh to discolored, partially open to open. Rock Mass Quality = Fair Rock Core Times (min/ft): 3.0, 2.75, 2.0, 1.25/6" Recovery = 100%	
35								-7.0	36.5	
									Bottom of Exploration at 36.50 feet below ground surface.	
40										
45										
50										

Remarks:

1. 3" casing to 20' bgs.
2. Water level measured 20 minutes after completion of drilling.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 2 of 2

Boring No.: BB-YCN-101A

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project:	Cape Neddick Bridge 09.0025930.00	Location:	Route 1 Over Cape Neddick River York, Maine	Boring No.:	BB-YCN-102
				PIN:	21709.00
Driller:	New England Boring	Elevation (ft.)	30.6	Auger ID/OD:	4.25" OD
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	Blaine Cardali	Rig Type:	Truck - Mobile Drill	Hammer Wt./Fall:	140/30
Date Start/Finish:	3/6/17 - 3/6/17	Drilling Method:	SSA/Drive & Wash	Core Barrel:	-
Boring Location:	N130981.5, E918969.8	Casing ID/OD:	3"	Water Level *:	15.5'
Hammer Efficiency Factor:	0.6	Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							SSA		-ASPHALT-	
								29.3	1.3	
								28.8	-CONCRETE- 1.8	
	1D	10/10	2.0 - 2.8	19-100/4"					Brown/gray, dry, sandy GRAVEL, little Silt, with probable cobbles and boulders. -FILL- (GP-GM)	
5	2D	24/10	5.0 - 7.0	2-4-2-4	6	6			Brown, dry, loose, fine to coarse SAND, some Silt, little Gravel, with probable cobbles and boulders. -FILL- (SM)	G#3 A-2-4, SM wc=10.4
10	3D	24/3	10.0 - 12.0	3-20-13-8	33	33			Brown, dry, dense, fine to coarse SAND, some Silt, little Gravel, with probable cobbles and boulders. -FILL- (SM)	
							33			
							47			
							24	17.6	13.0	
							20			
15	4D	24/7	15.0 - 17.0	5-4-13-15	17	17	14		Brown, wet, medium dense, gravelly fine to coarse SAND, little Silt, with probable cobbles and boulders. -GLACIAL TILL- (SM)	
							33			
							37			
							110			
							79			
20	5D	2/0	20.0 - 20.2	60/2"	R		RC	10.4	No recovery. 20.2 -POSSIBLE BOULDER-	
								8.6	22.0 -POSSIBLE GLACIAL TILL-	
								7.9	22.7 -POSSIBLE BEDROCK-	
								6.6	24.0	
									Bottom of Exploration at 24.00 feet below ground surface.	
25										

Remarks:

1. 3" casing to 20' bgs.
2. Water level measured 20 minutes after completion of drilling.
3. Cobbles and boulders throughout Fill, based on casing and roller cone advancement.
4. Split spoon refusal at 20.2' bgs, roller cone from 20.2'-24.0' with approximately 1000 psi pressure 750 rpm, intermediate resistance from 20.2'-22.0' bgs, then minimal resistance from 22.0'-22.7' bgs, then increased resistance (approximately 5 min/ft) from 22.7'-24.0' bgs.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1

Boring No.: BB-YCN-102

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project:	Cape Neddick Bridge 09.0025930.00	Location:	Route 1 Over Cape Neddick River York, Maine	Boring No.:	BB-YCN-103
				PIN:	21709.00
Driller:	New England Boring	Elevation (ft.)	29.4	Auger ID/OD:	4.25" OD
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	Blaine Cardali	Rig Type:	Truck - Mobile Drill	Hammer Wt./Fall:	140/30
Date Start/Finish:	3/7/17 - 3/7/17	Drilling Method:	SSA/Spin & Wash	Core Barrel:	-
Boring Location:	N131008.8, E918940.3	Casing ID/OD:	3"	Water Level *:	12.7'
Hammer Efficiency Factor:	0.6	Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
WO1P = Weight of one person
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							SSA		-ASPHALT-	
								27.9	1.5	
								27.6	-CONCRETE- 1.8	
	1D	24/8	2.0 - 4.0	12-10-11-27	21	21			Brown, moist, medium dense, gravelly fine to coarse SAND, little Silt, with probable cobbles and boulders. -FILL- (SM)	
5	2D	24/0	5.0 - 7.0	14-8-8-8	16	16	SPUN		No recovery.	
							/ RC			
								21.6	7.8	
10	3D	24/6	10.0 - 12.0	4-7-11-17	18	18			Brown, moist, medium dense, gravelly fine to coarse SAND, little Silt, with probable cobbles and boulders. -GLACIAL TILL- (SM)	G#4 A-1-a, SM wc=13.8
15								13.3		
	4D	1/0	16.0 - 16.1	50/1"	R		RC		Split spoon refusal at 16.1' bgs. No recovery. 16.1 -POSSIBLE BEDROCK-	
								12.1	17.3	
									Bottom of Exploration at 17.30 feet below ground surface.	
20										
25										

Remarks:

1. From 2.0'-6.0' bgs encountered probable cobbles throughout, based on casing and roller cone advancement.
2. Roller cone advancement with approximately 1,000 psi 750 RPM, from 16.1'-17.3' bgs, advancement greater than 5 min/ft.
3. Water level measured 30 minutes after completion of drilling.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1

Boring No.: BB-YCN-103

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE PLANS

BRIDGE NO. 2127

PROJ. MANAGER	Devon Eaton	BY	DATE
DESIGN-DETAILED	E. Forgacs	C. Helmick	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-		-
REVISIONS 2	-		-
REVISIONS 3	-		-
REVISIONS 4	-		-
FIELD CHANGES	-		-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY

YORK

BORING LOGS 1

SHEET NUMBER

7

OF 29

Username:

Division:

Filename: 008_Boring Logs 2.dgn

Date:7/20/2018

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Cape Neddick Bridge
09.0025930.00

Location: Route 1 Over Cape Neddick River
York, Maine

Boring No.: BB-YCN-104

PIN: 21709.00

Driller:	New England Boring	Elevation (ft.)	30.6	Auger ID/OD:	4.25" OD
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	Blaine Cordell	Rig Type:	Truck - Mobile Drill	Hammer Wt./Fall:	140/30
Date Start/Finish:	3/6/17 - 3/6/17	Drilling Method:	SSA/Drive & Wash	Core Barrel:	NX2
Boring Location:	N131016.7, E918958.9	Casing ID/OD:	4"	Water Level *:	-
Hammer Efficiency Factor:	0.6	Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

Definitions
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = Hammer Efficiency Factor/60(1Hit=uncorrected
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
BWOP = Weight of one person
$S_{u(Lab)}$ = Lab Vane Shear Strength (psf)
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows / (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
							SSA			-ASPHALT-	
								29.4		1.2	
								28.8		-CONCRETE- 1.8	
	10	24/10	1.8 - 3.8	21-12-8-9	20	20				Brown/gray, dry, medium dense, GRAVEL, some fine to coarse Sand, trace Silt, with probable cobbles and boulders. -FILL- (GP-GM)	G*5 A-1-a, GP-GM wc=2.8
										Dark brown, moist, dense, fine to coarse SAND, some Gravel, little Silt, with probable cobbles and boulders,. -FILL- (SM)	
	20	24/9	5.0 - 7.0	25-21-15-14	36	36				No refusal SSA kicked and could not advance casing, probable boulder/ pulled, and moved approximatey 7.0' north.	
								23.1		7.5	
										Bottom of Exploration at 7.50 feet below ground surface.	

Remarks:
1. Boulders/cobbles throughout Fill, based on casing and roller cone advancement.

Stratification lines represent approximate boundaries between soil types: transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 2
Boring No.: BB-YCN-104

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Cape Neddick Bridge
09.0025930.00

Location: Route 1 Over Cape Neddick River
York, Maine

Boring No.: BB-YCN-104A

PIN: 21709.00

Driller:	New England Boring	Elevation (ft.)	30.6	Auger ID/OD:	4.25" OD
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	Blaine Cordell	Rig Type:	Truck - Mobile Drill	Hammer Wt./Fall:	140/30
Date Start/Finish:	3/6/17 - 3/6/17	Drilling Method:	SSA/Drive & Wash	Core Barrel:	NX2
Boring Location:	N131023.4, E918956.9	Casing ID/OD:	4"/3"	Water Level *:	10.6'
Hammer Efficiency Factor:	0.6	Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

Definitions
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR = weight of rods
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = Hammer Efficiency Factor/60(1Hit=uncorrected
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
BWOP = Weight of one person
$S_{u(Lab)}$ = Lab Vane Shear Strength (psf)
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows / (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
							SSA			-ASPHALT-	
								29.4		1.2	
								28.8		-CONCRETE- 1.8	
										Refer to Boring BB-YCN-104 for soil description. Moved approximately 7.0' north, advanced boring to 10.0' and started sampling.	
								23.1		7.5	
	30	24/12	10.0 - 12.0	21-11-8-34	19	19	65			Brown, moist, medium dense, fine to coarse SAND, some Silt, trace Gravel, with probable cobbles and boulders. -FILL- (SM)	G*6 A-2-4, SM wc=15.2
							47	18.6		12.0	
							309			Brown, wet, fine to medium SAND, little Silt, with probable cobbles and boulders. -GLACIAL TILL- (SM)	
							118			15.3	
							48			Split spoon refusal at 15.3' bgs, roller cone to 15.4' and set up to core.	
	4D R1	4/1 23/20	15.0 - 15.3 15.4 - 17.3	100/4" RQD = 52%	R		RC NX2			R1: Hard, fresh, fine to medium grained, gray, GRANODIORITE/GRANITE. Joints are close to moderately spaced, low angle, rough, undulating, fresh to discolored, partially open to open. Rock Mass Quality = Fair Rock Core Times (min/ft): 1.5, 1.75/.9' Recovery = 87%	q_p=4774 ksf
	R2	4.3/40	17.3 - 20.9	RQD = 74%						R2: Hard, fresh, fine to medium grained, gray, GRANODIORITE/GRANITE. Joints are close to moderately spaced, low angle, rough, undulating, fresh to discolored, partially open to open. One high angle joint. Rock Mass Quality = Fair Rock Core Times (min/ft): 2.5, 2.0, 2.5, 1.5/0.6' Recovery = 93%	q_p=4912 ksf
	R3	54/60	20.9 - 25.4	RQD = 96%				5.2		R3: Hard, fresh, fine to coarse grained, gray, GRANODIORITE/GRANITE. Joints are close to moderately spaced, low angle, rough, undulating, fresh to discolored, partially open to open. Rock Mass Quality = Excellent Rock Core Times (min/ft): 2.0, 3.5, 3.0, 2.75, 2.5/0.5' Recovery = 111%	
										25.4	
										Bottom of Exploration at 25.40 feet below ground surface.	

Remarks:
1. 4" casing to 15.0' bgs then 3" to 15.4' bgs.
2. Water level taken approximately 15 minutes after completion of drilling.
3. Boulders/cobbles throughout Fill, based on casing and roller cone advancement.

Stratification lines represent approximate boundaries between soil types: transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 2 of 2
Boring No.: BB-YCN-104A

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

PROJ. MANAGER	Devon Easton	BY	DATE
DESIGN-DETAILED	E. Farages	C. Helmick	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

BORING LOGS 2

SHEET NUMBER

8

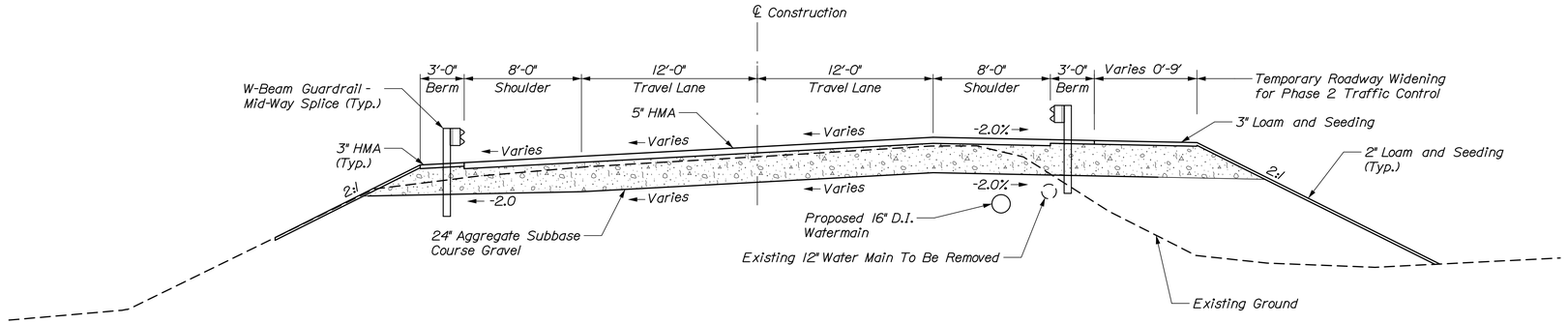
OF 29

NOTES:

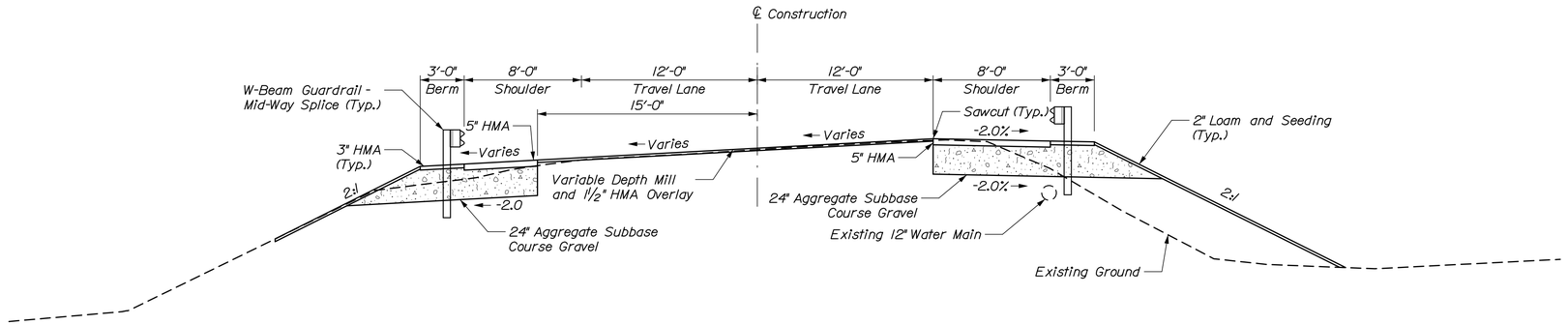
1. The pavement, base and subbase depths as shown on the plans are intended to be nominal.

2. When superelevation of the travelway exceeds the slope of the low side shoulder, the low side shoulder pavement shall have the same cross slope as the travelway.

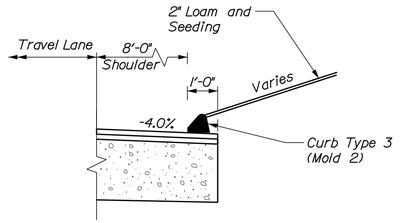
3. Crowns for both normal and superelevation sections for all courses of subbase and pavement shall be straight.



FULL CONSTRUCTION
(Superelevated)



MILL & FILL
FULL DEPTH SHOULDER CONSTRUCTION
(Superelevated)



CURB TYPE 3 DETAIL

Route 1 Super (e)				
Left Shldr. %	Left Lane %	Station	Right Lane %	Right Shldr. %
Match Existing		1201+75	Match Existing	
-4.0	-4.0	1202+00	+4.0	0.0
-4.7	-4.7	1202+25	+4.7	-1.0
-5.4	-5.4	1202+50	+5.4	-2.0
		To		
-5.4	-5.4	1205+00	+5.4	-2.0
-4.5	-4.5	1205+25	+4.5	-2.0
-4.0	-3.6	1205+50	+3.6	-2.0
-4.0	-2.7	1205+75	+2.7	-2.0
-4.0	-1.8	1206+00	+1.8	-2.0
-4.0	-0.9	1206+25	+0.9	-2.0
-3.3	+0.1	1206+50	-0.1	-2.0
Match Existing		1206+75	Match Existing	

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

PROJ. MANAGER	Devon Easton	BY	DATE
DESIGN-DETAILED	E. Farguss	C. Helmick	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

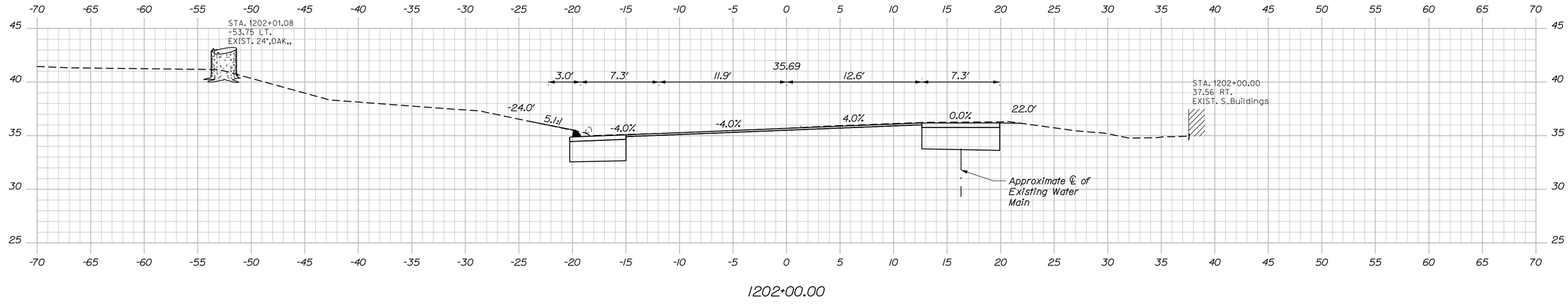
TYPICAL SECTIONS

SHEET NUMBER

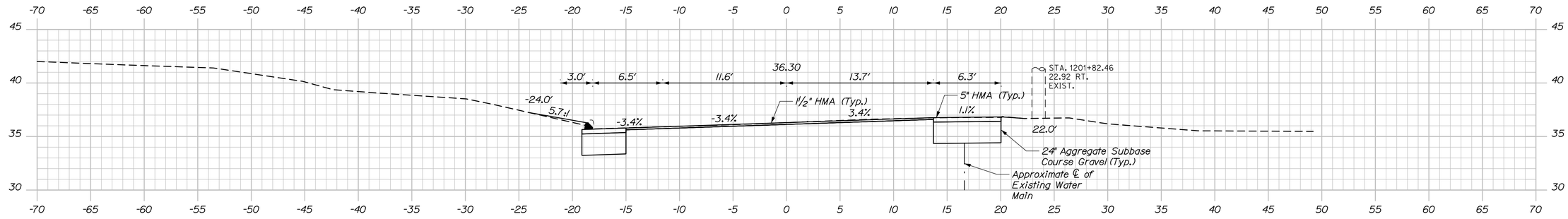
9

OF 29

HNTB

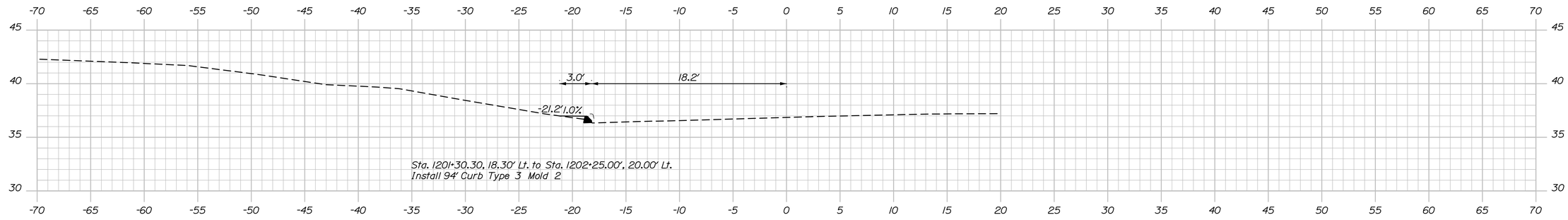


1202+00.00



1201+75.00

Sta. 1201+75.00
Begin Mill & Overlay
Begin Full Depth
Shoulder Construction



Sta. 1201+30.30
Begin Curb Installation
Limit Of Work

1201+50.00

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

PROJ. MANAGER	Devon Eaton	BY	DATE
DESIGN-DETAILED	E. Fargacs	S. Scribner	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

CROSS SECTIONS

SHEET NUMBER

10

OF 29

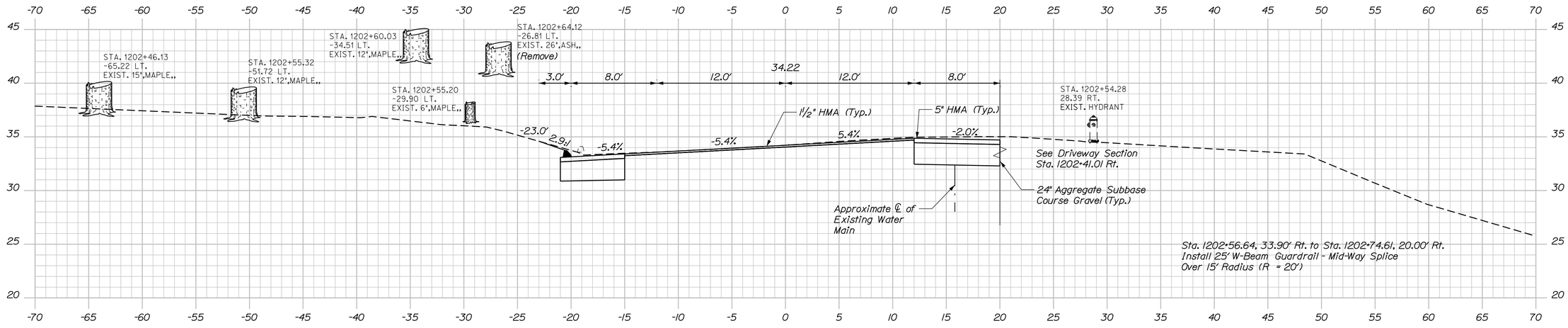
Date:7/20/2018

Username:

Division:

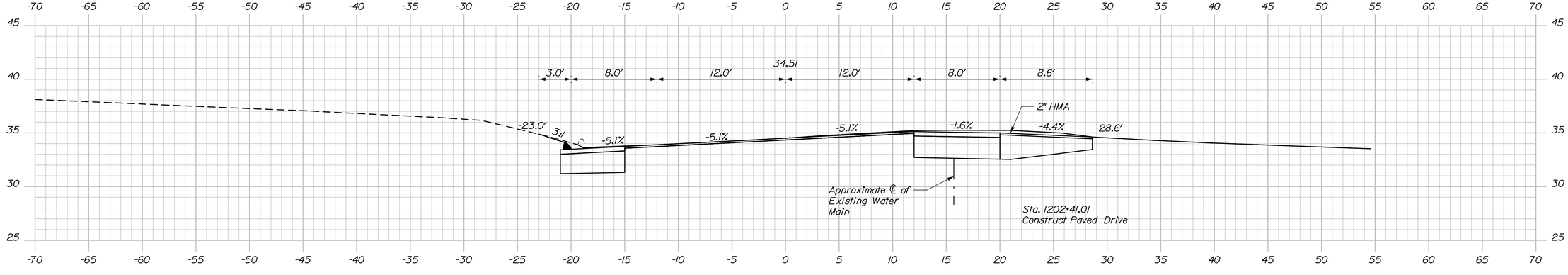
Filename: xsec.dgn

Sta. 1202+71.39, 20.00' Lt. to Sta. 1203+23.19', 25.00' Lt.
Install 50' Curb Type 3 Mold 2

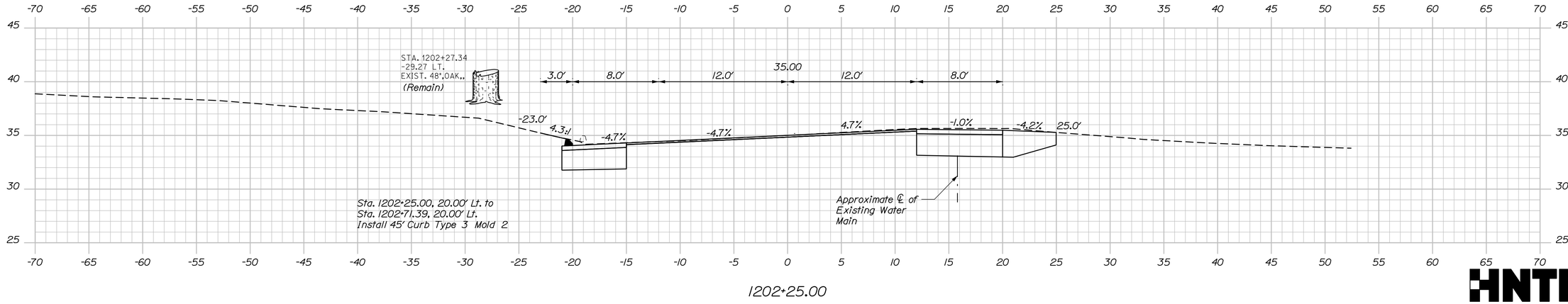


1202+50.00

Sta. 1202+53.30, 45.90' Rt. to Sta. 1202+56.64, 33.90' Rt.
Install 12.5' W-Beam Guardrail - Mid-Way Splice
Anchorage Assembly



1202+41.01



1202+25.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

PROJ. MANAGER	Devon Easton	BY	DATE
DESIGN-DETAILED	E. Forgacs	S. Scribner	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

CROSS SECTIONS

SHEET NUMBER

11

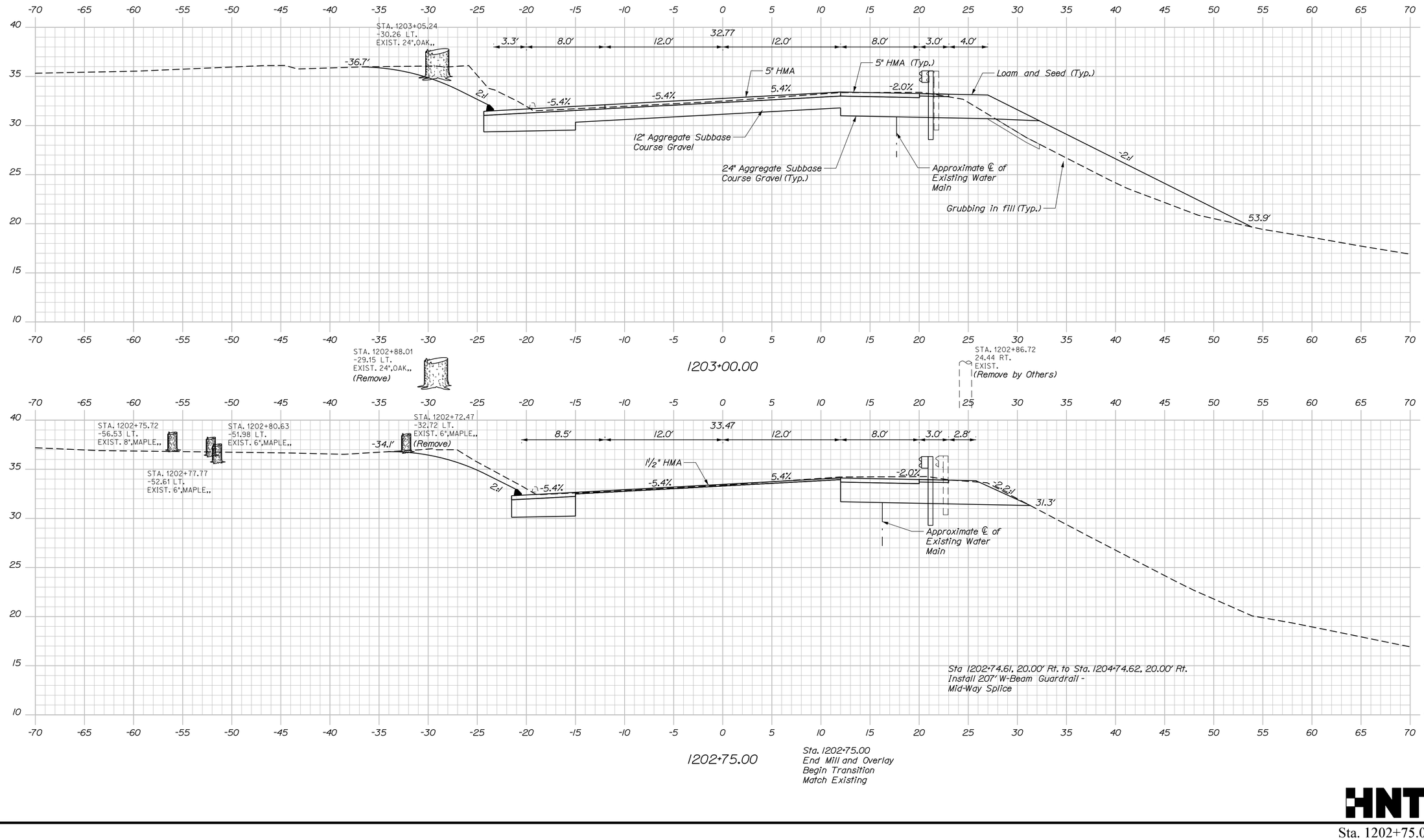
OF 29

HNTB

Sta. 1202+25.00 to Sta. 1202+50.00

Username:
Division:
Filename: xsec.dgn
Date:7/20/2018

Sta. 1203+23.19, 20.00' Lt. to Sta. 1203+75.00, 20.00' Lt.
Install W-Beam Guardrail - Mid-Way Splice Tangent Terminal



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

		BY	DATE
PROJ. MANAGER	Devon Easton		
DESIGN-DETAILED	E. Forgacs	S. Scribner	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

CROSS SECTIONS

SHEET NUMBER

12

OF 29

HNTB

Date:7/20/2018
Username:
Division:
Filename: xsec.dgn

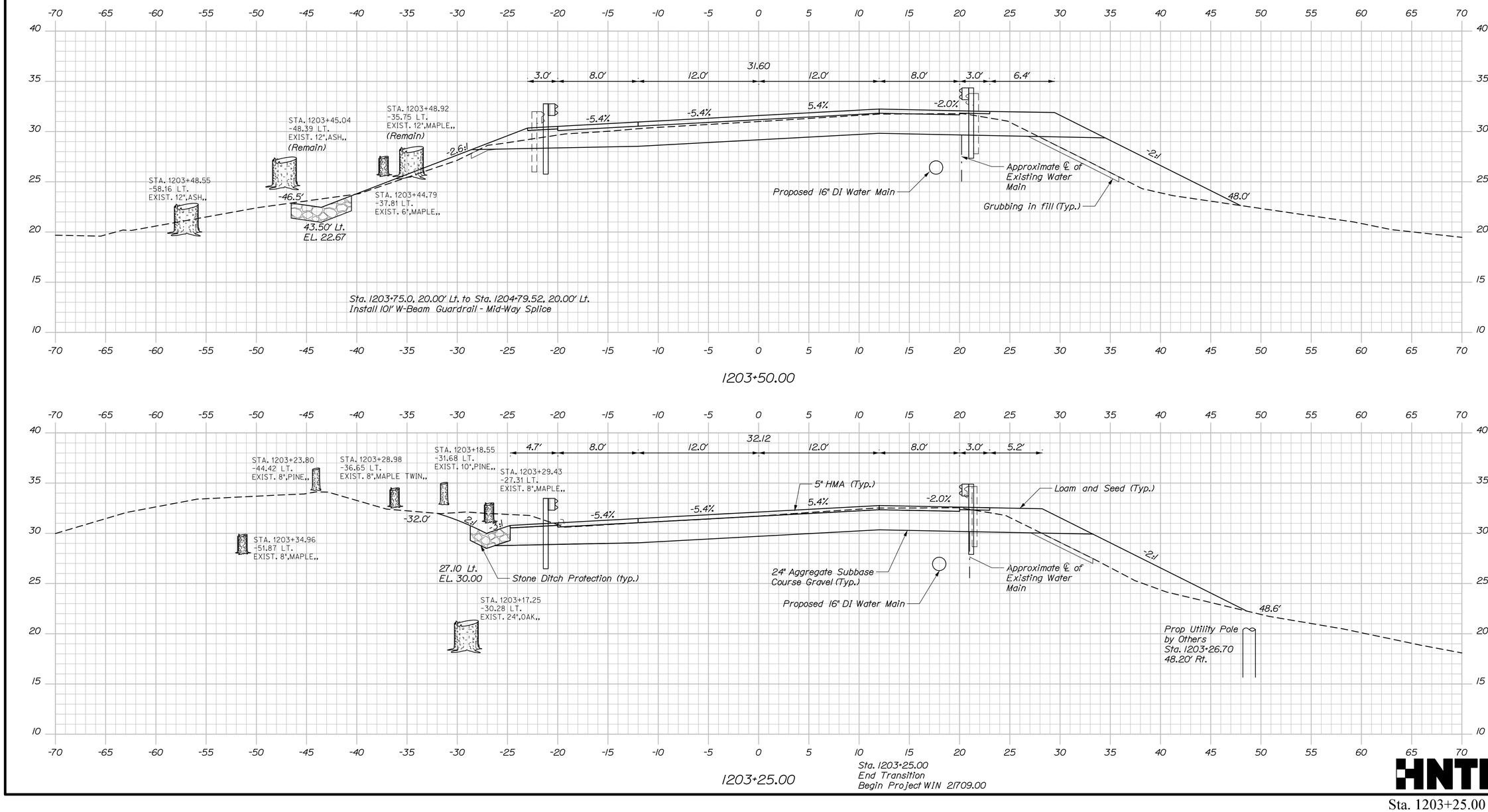
Sta. 1202+75.00 to Sta. 1203+00.00

Username:

Division:

Filename: xsec.dgn

Date:7/20/2018



Sta. 1203+25.00 to Sta. 1203+50.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127 — BRIDGE PLANS

			DATE
PROJ. MANAGER	Devon Easton	BY	DATE
DESIGN-DETAILED	E. Forgacs	S. Scribner	6.18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6.18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

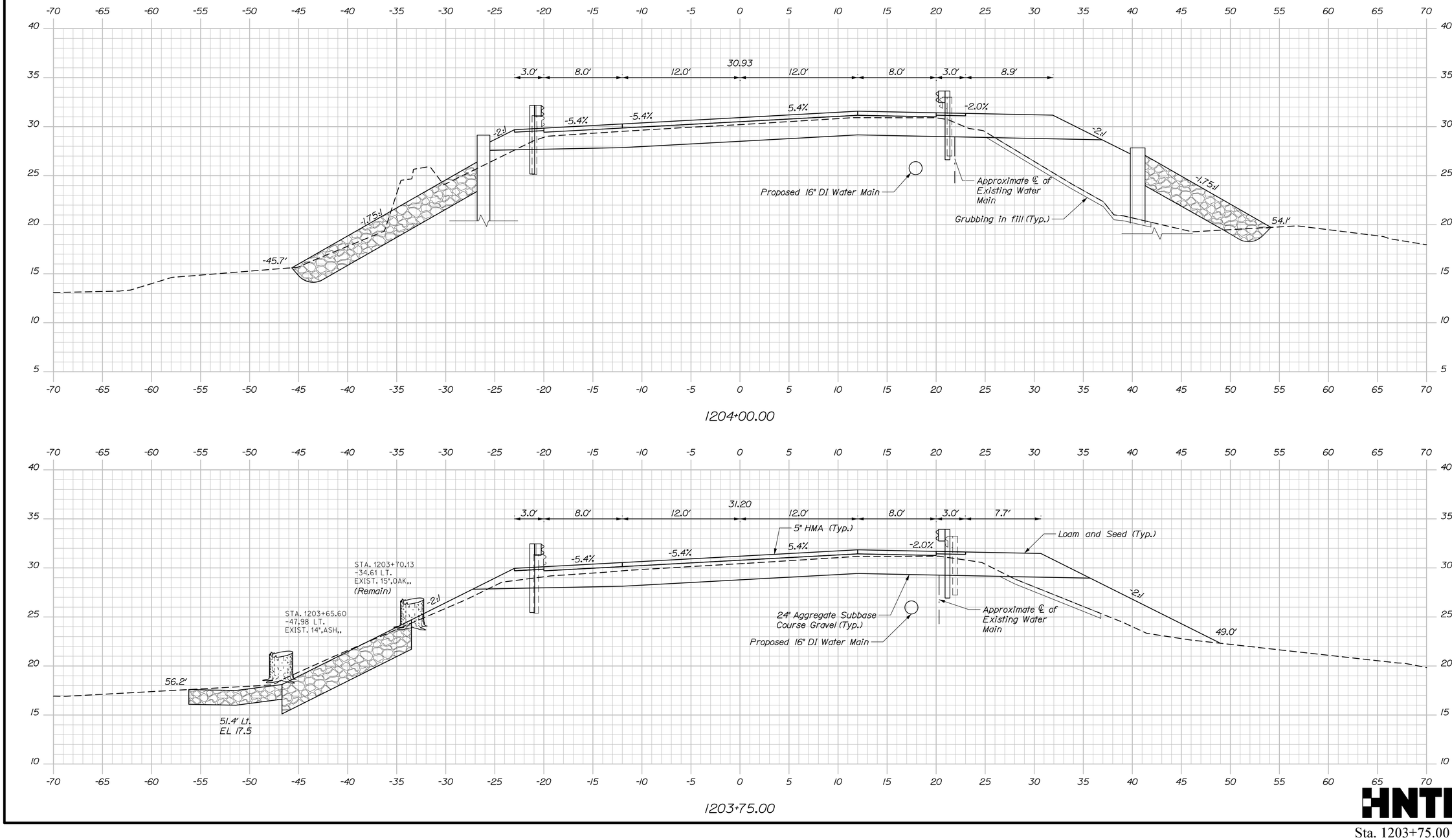
CROSS SECTIONS

SHEET NUMBER

13

OF 29

HNTB



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127 — BRIDGE PLANS

			DATE
PROJ. MANAGER	Devon Easton	BY	
DESIGN-DETAILED	E. Forgacs	S. Scribner	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-		-
REVISIONS 2	-		-
REVISIONS 3	-		-
REVISIONS 4	-		-
FIELD CHANGES	-		-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

CROSS SECTIONS

SHEET NUMBER

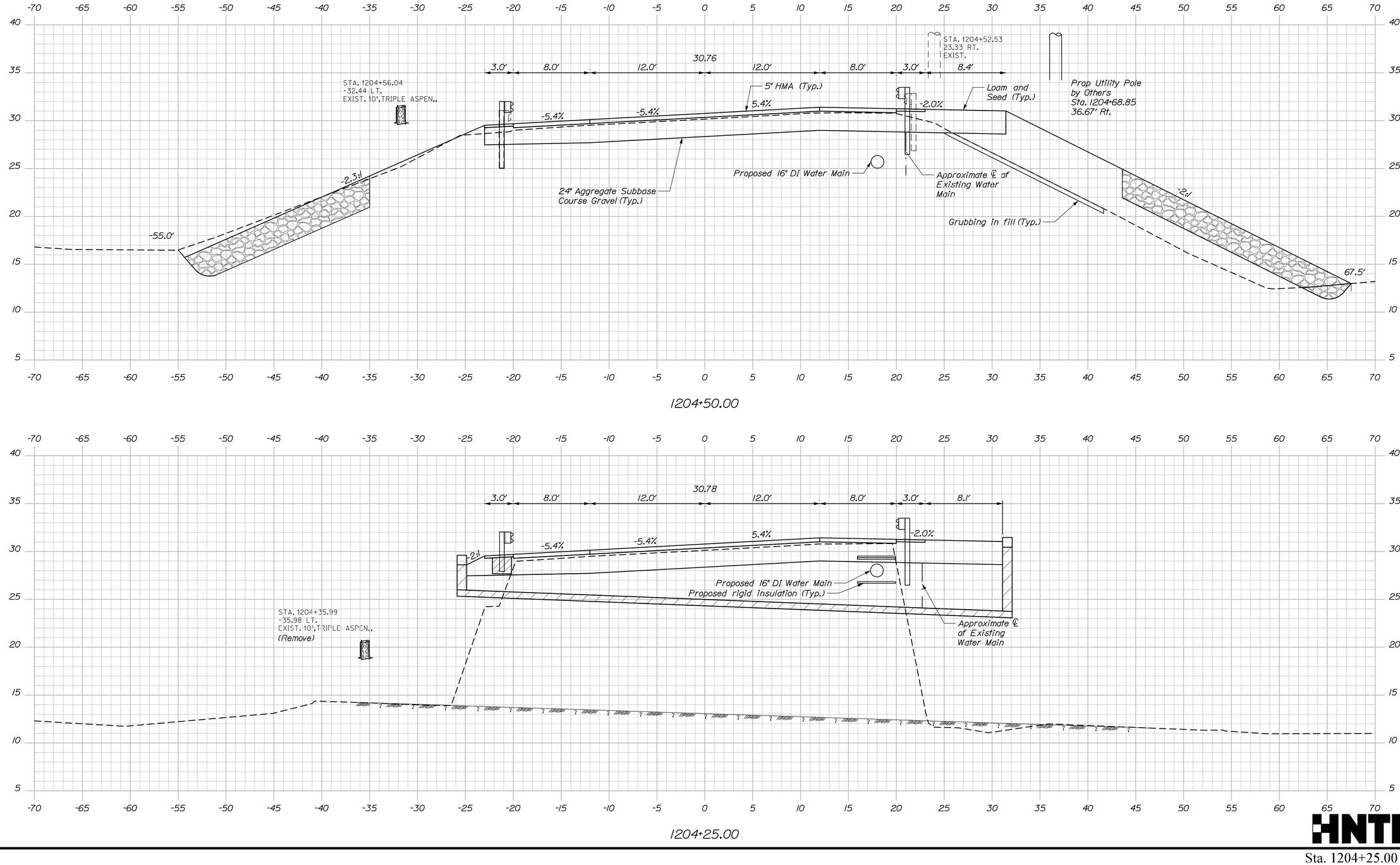
14

OF 29

HNTB

Sta. 1203+75.00 to Sta. 1204+00.00

Username:
Division:
Filename: xsec.dgn
Date:7/20/2018



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

PROJ. MANAGER	Devon Easton	BY	DATE
DESIGN-DETAILED	E. Forgacs	S. Scribner	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

CROSS SECTIONS

SHEET NUMBER

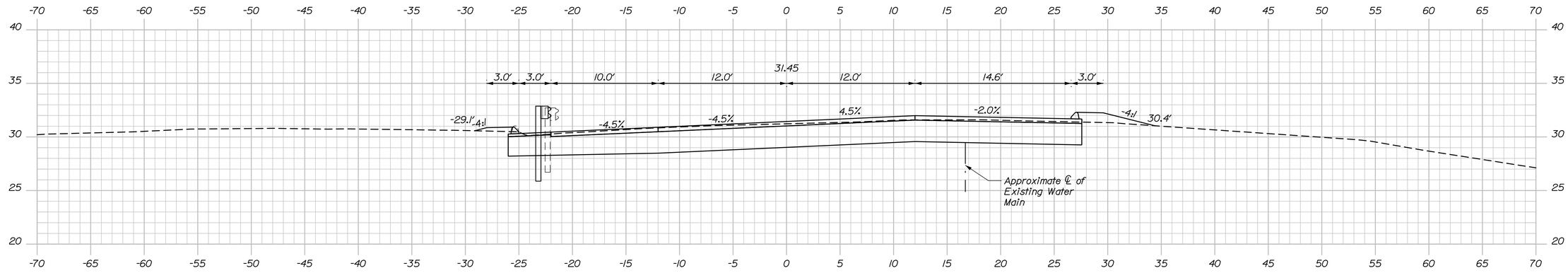
15

OF 29

HNTB

Sta. 1204+25.00 to Sta. 1204+50.00

Filename: xsec.dgn Division: Username: Date:7/20/2018

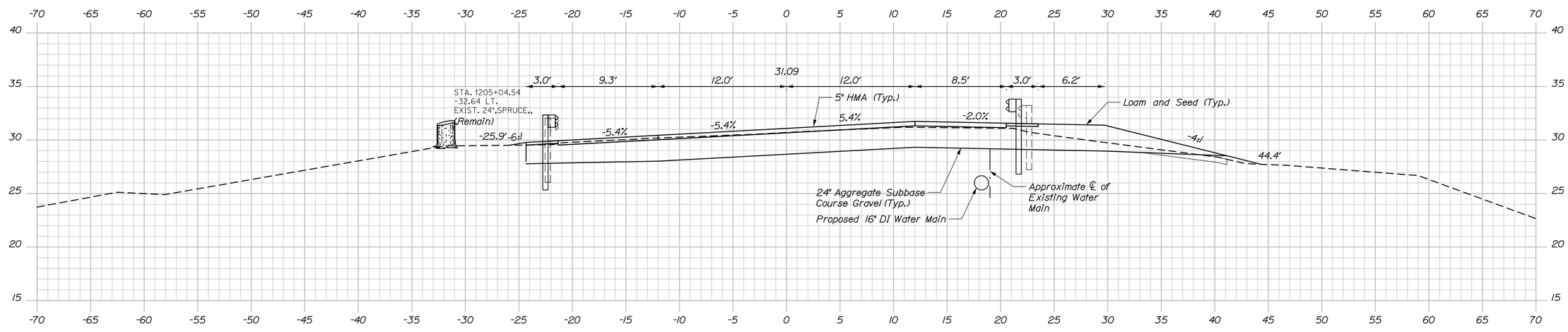


Sta. 1205+11.38, 26.80' Lt. to Sta. 1205+56.30', 20.00' Lt.
Install 44' Curb Type 3 (Mold 2)

1205+25.00

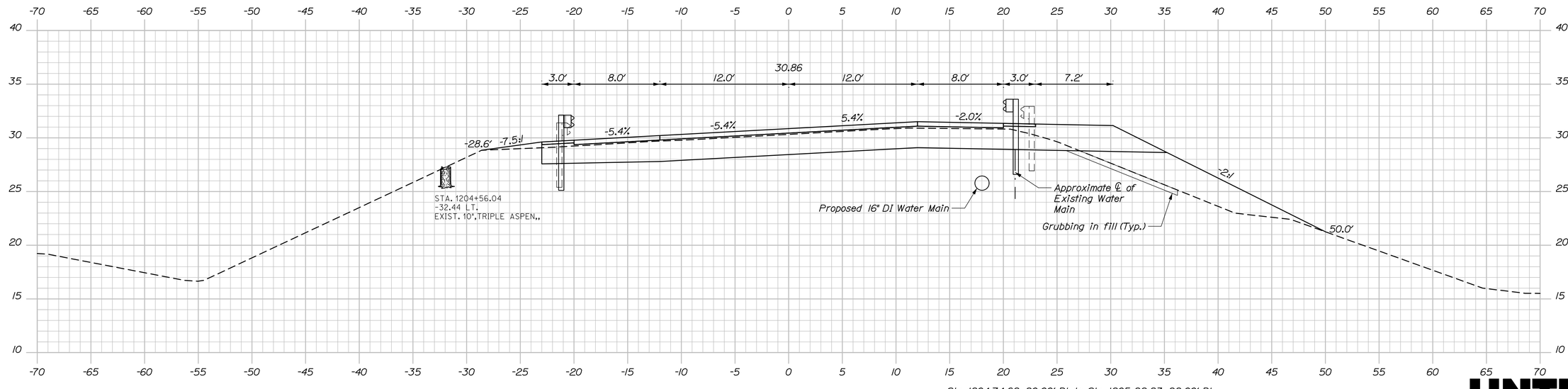
Sta. 1205+25.00
Begin Transition
End Project WIN 21709.00

Sta. 1205+22.83, 27.00' Rt. to Sta. 1205+40.19, 23.90' Rt.
Install 19' Curb Type 3 (Mold 2)



Sta. 1204+79.52, 20.00' Lt. to Sta. 1205+31.40, 22.00' Lt.
Install W-Beam Guardrail - Mid-Way Splice Tangent Terminal

1205+00.00



1204+75.00

Sta. 1204+74.62, 20.00' Rt. to Sta. 1205+22.83, 22.00' Rt.
Install W-Beam Guardrail - Mid-Way Splice Tangent Terminal

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

PROJ. MANAGER	Devon Easton	BY	DATE
DESIGN-DETAILED	E. Forgacs	S. Scribner	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

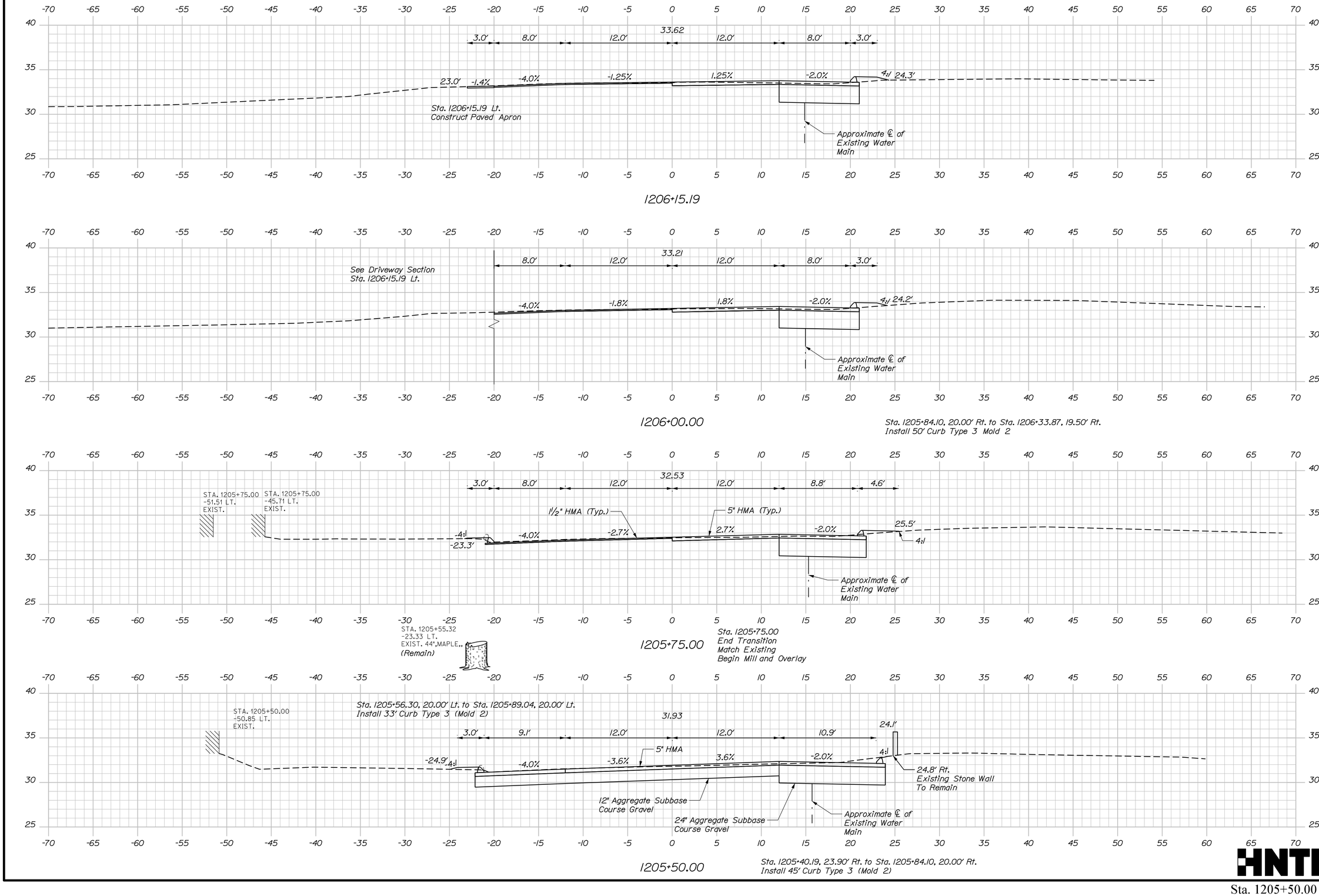
CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

CROSS SECTIONS

SHEET NUMBER
16
OF 29

Sta. 1204+75.00 to Sta. 1205+25.00

Date:7/20/2018
Username:
Division:
Filename: xsec.dgn



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE PLANS

BRIDGE NO. 2127

	BY	DATE
PROJ. MANAGER	Devon Eaton	
DESIGN-DETAILED	E. Foragos	6\18
CHECKED-REVIEWED	L. Driscoll	6\18
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

CROSS SECTIONS

SHEET NUMBER

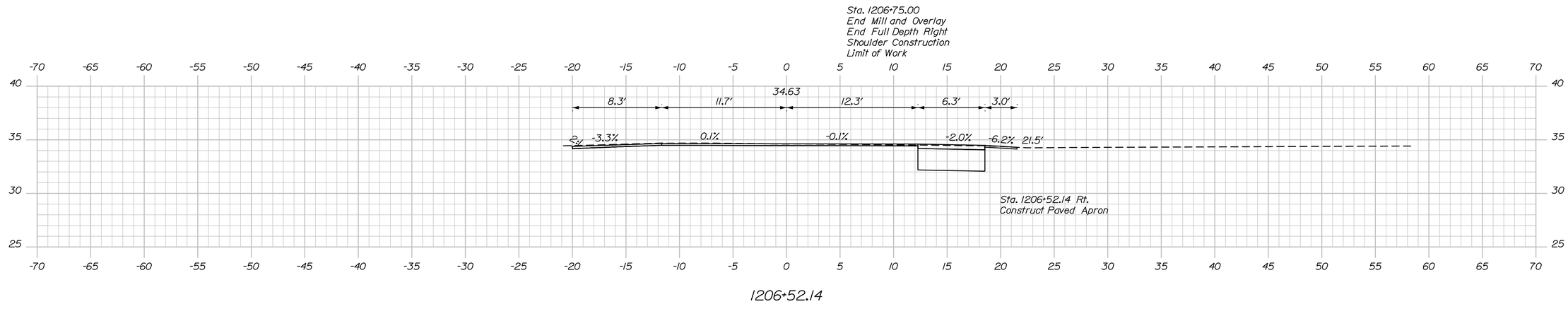
17

OF 29

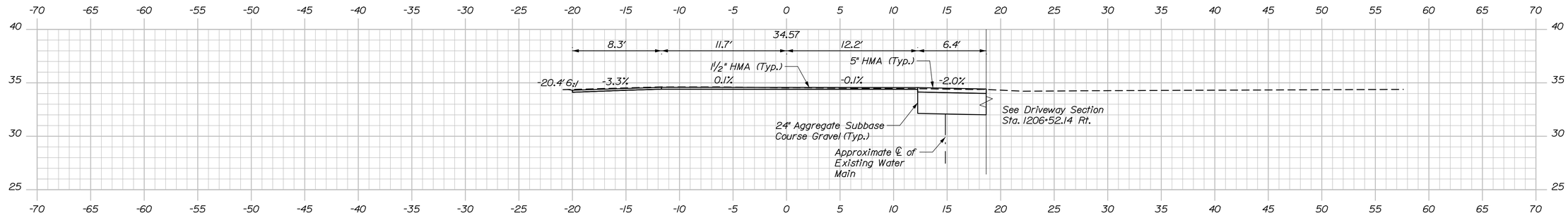
HNTB

Sta. 1205+50.00 to Sta. 1206+15.19

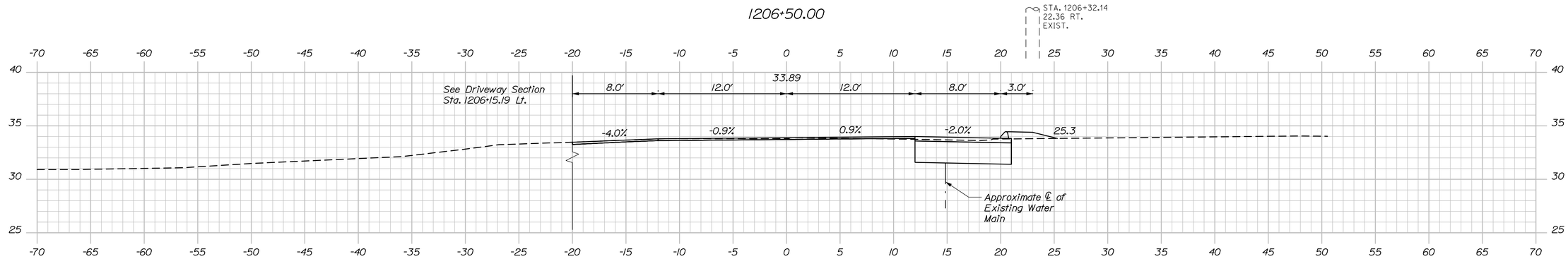
Date:7/20/2018
Username:
Division:
Filename: xsec.dgn



1206+52.14



1206+50.00



1206+25.00

HNTB

Sta. 1206+25.00 to Sta. 1206+75.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	Devon Eaton	
DESIGN-DETAILED	E. Forgacs	6\18
CHECKED-REVIEWED	L. Driscoll	6\18
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

CROSS SECTIONS

SHEET NUMBER

18

OF 29

Date:7/20/2018

Username:

Division:

Filename: xsec.dgn

LEGEND

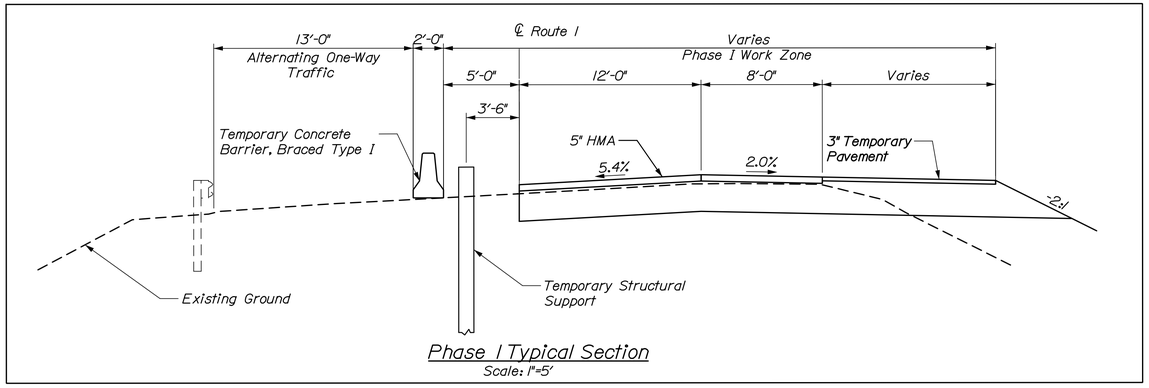
Signal Head

Wood or Strain Pole

TSYCL = Temporary Solid Yellow Center Line

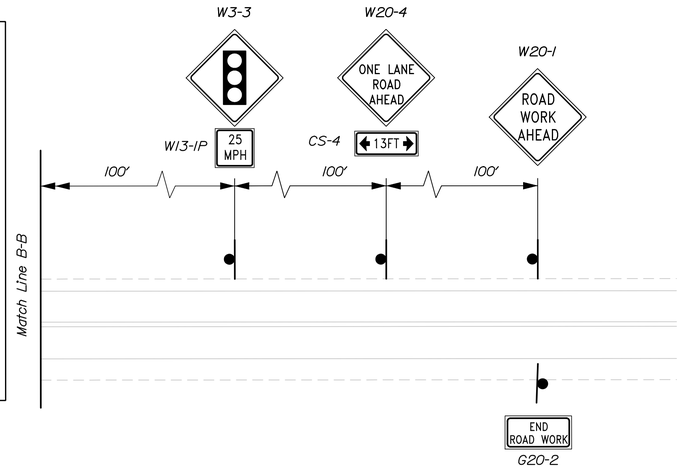
TSWEL = Temporary Solid White Edge Line

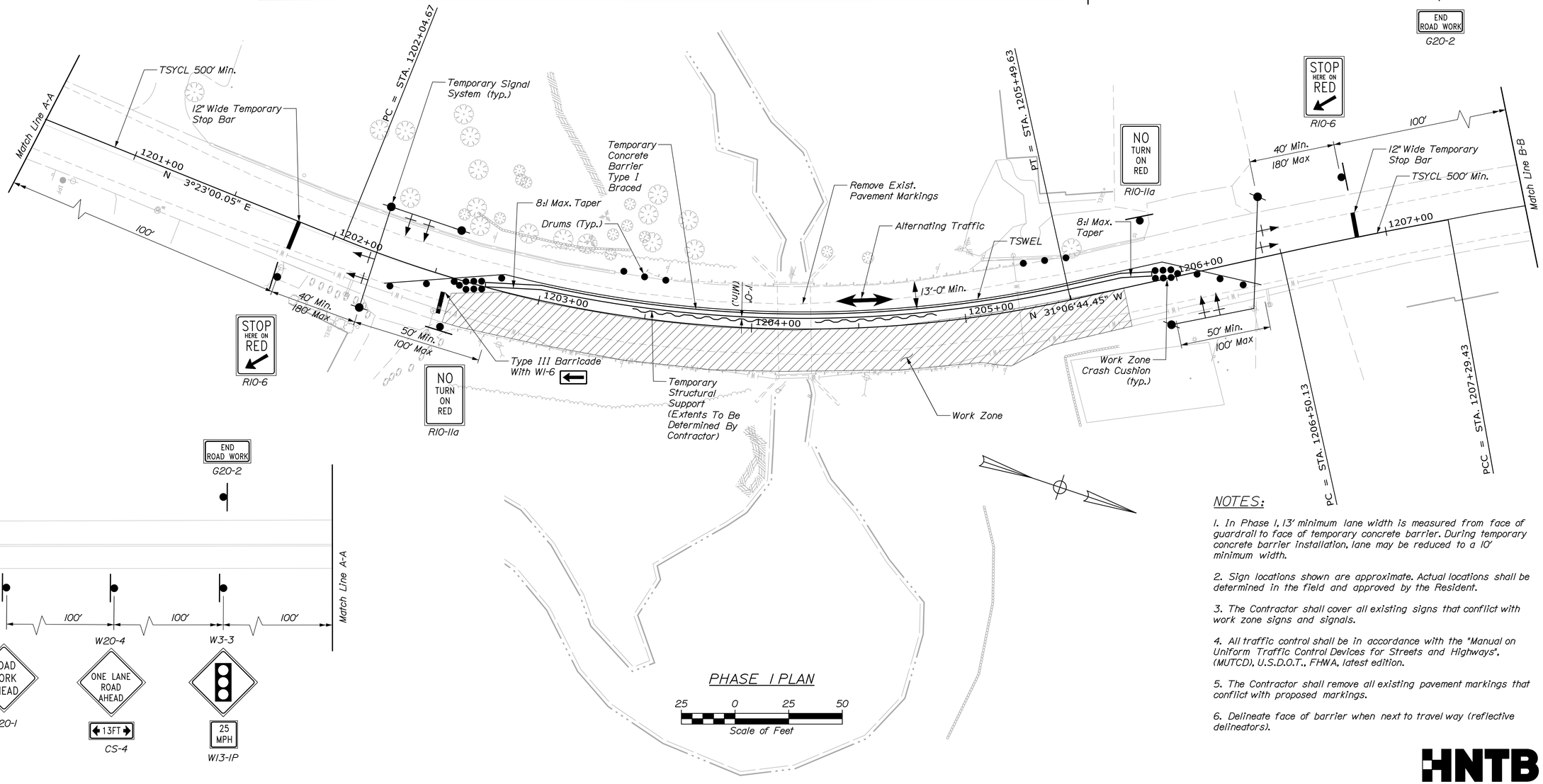
TSDYCL = Temporary Solid Double Yellow Center Line



Phase I Typical Section

Scale: 1"=5'





PHASE I PLAN

25 0 25 50

Scale of Feet

NOTES:

1. In Phase I, 13' minimum lane width is measured from face of guardrail to face of temporary concrete barrier. During temporary concrete barrier installation, lane may be reduced to a 10' minimum width.

2. Sign locations shown are approximate. Actual locations shall be determined in the field and approved by the Resident.

3. The Contractor shall cover all existing signs that conflict with work zone signs and signals.

4. All traffic control shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways", (MUTCD), U.S.D.O.T., FHWA, latest edition.

5. The Contractor shall remove all existing pavement markings that conflict with proposed markings.

6. Delineate face of barrier when next to travel way (reflective delineators).

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE PLANS

BRIDGE NO. 2127

	BY	DATE
PROJ. MANAGER	Devon Eaton	
DESIGN-DETAILED	E. Davidson	6\18
CHECKED-REVIEWED	L. Driscoll	6\18
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER YORK COUNTY
YORK

CONCEPTUAL TRAFFIC CONTROL PLAN

SHEET NUMBER

19

OF 29

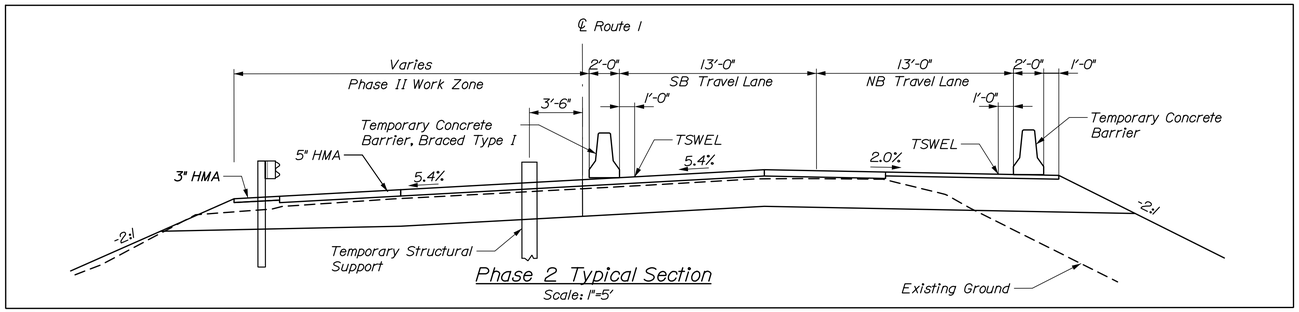
Filename: 019_Traffic Control Plan_1.dgn Division: Username: Date:7/20/2018

LEGEND

TSYCL = Temporary Solid Yellow Center Line

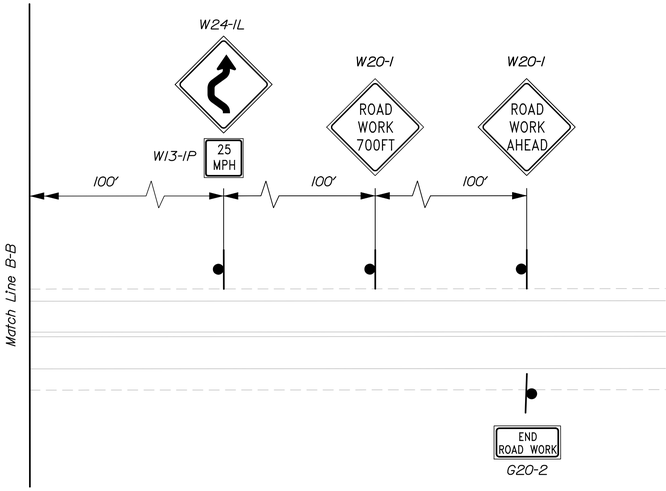
TSWEL = Temporary Solid White Edge Line

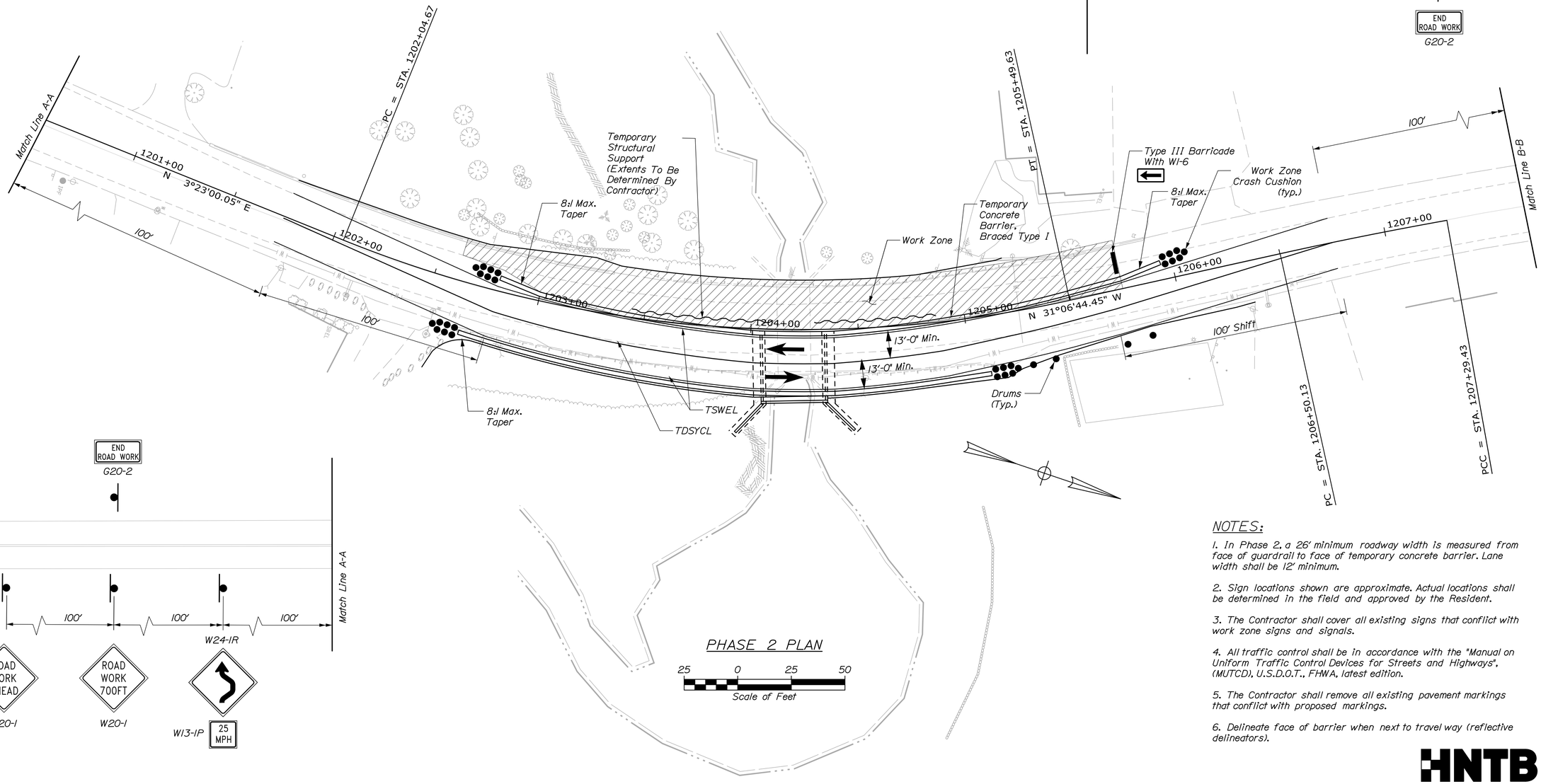
TSDYCL = Temporary Solid Double Yellow Center Line



Phase 2 Typical Section

Scale: 1"=5'

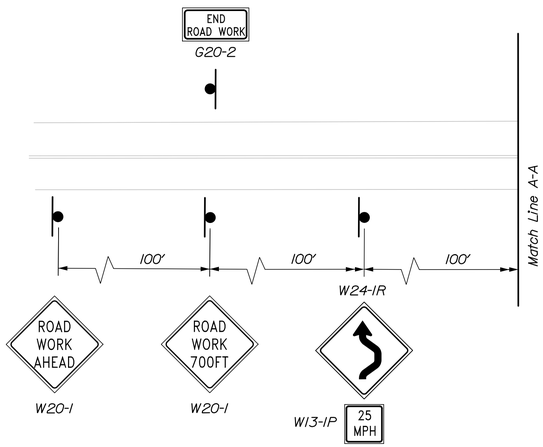




PHASE 2 PLAN

25 0 25 50

Scale of Feet



NOTES:

1. In Phase 2, a 26' minimum roadway width is measured from face of guardrail to face of temporary concrete barrier. Lane width shall be 12' minimum.

2. Sign locations shown are approximate. Actual locations shall be determined in the field and approved by the Resident.

3. The Contractor shall cover all existing signs that conflict with work zone signs and signals.

4. All traffic control shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways", (MUTCD), U.S.D.O.T., FHWA, latest edition.

5. The Contractor shall remove all existing pavement markings that conflict with proposed markings.

6. Delineate face of barrier when next to travel way (reflective delineators).

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	Devon Eaton	
DESIGN-DETAILED	E. Davidson	6\18
CHECKED-REVIEWED	L. Driscoll	6\18
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

CONCEPTUAL
TRAFFIC CONTROL PLAN

SHEET NUMBER

20

OF 29

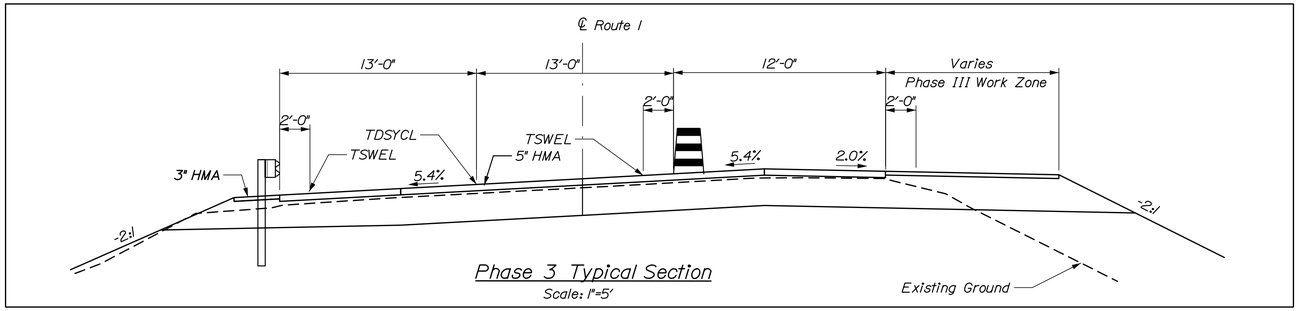
Filename: 020_Traffic ControlPlan_2.dgn Division: Username: Date:7/20/2018

LEGEND

TSYCL = Temporary Solid Yellow Center Line

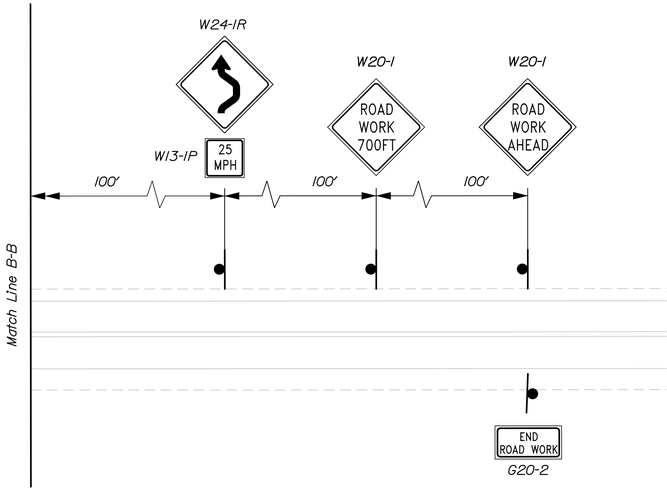
TSWEL = Temporary Solid White Edge Line

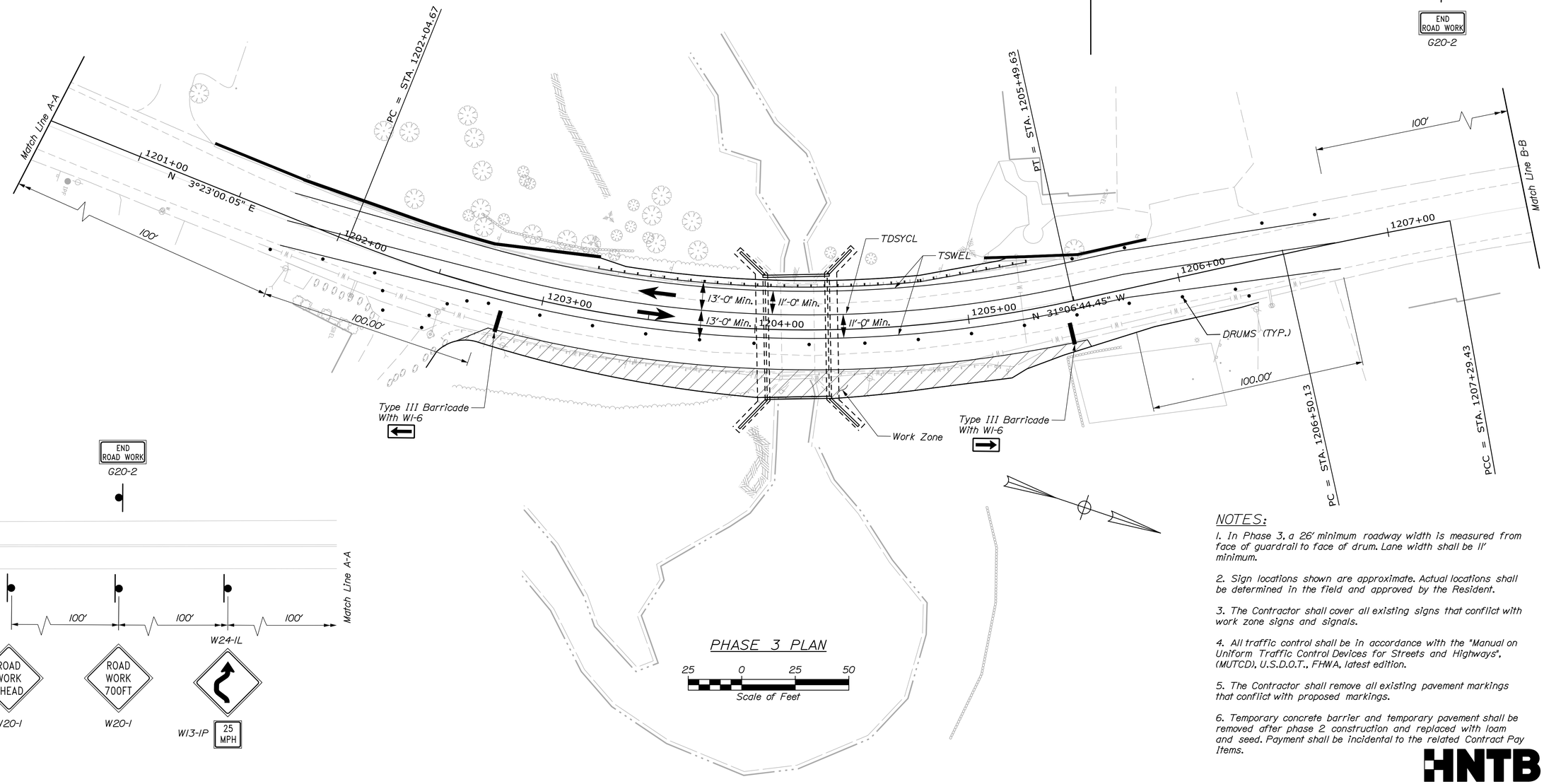
TSDYCL = Temporary Solid Double Yellow Center Line



Phase 3 Typical Section

Scale: 1"=5'





PHASE 3 PLAN

25 0 25 50

Scale of Feet

NOTES:

1. In Phase 3, a 26' minimum roadway width is measured from face of guardrail to face of drum. Lane width shall be 11' minimum.

2. Sign locations shown are approximate. Actual locations shall be determined in the field and approved by the Resident.

3. The Contractor shall cover all existing signs that conflict with work zone signs and signals.

4. All traffic control shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways", (MUTCD), U.S.D.O.T., FHWA, latest edition.

5. The Contractor shall remove all existing pavement markings that conflict with proposed markings.

6. Temporary concrete barrier and temporary pavement shall be removed after phase 2 construction and replaced with loam and seed. Payment shall be incidental to the related Contract Pay Items.

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	Derron Eaton	
DESIGN-DETAILED	E. Davidson	6\18
CHECKED-REVIEWED	L. Driscoll	6\18
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

CONCEPTUAL
TRAFFIC CONTROL PLAN

SHEET NUMBER

21

OF 29

Filename: 021_Traffic Control Plan_3.dgn Division: Username: Date:7/20/2018

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR		BORDER RADIUS	AREA IN SQUARE FEET	NOTES
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND BORDER			
CS-4	30"	15"	⇤13FT⇥	7"D			2	ORANGE	BLACK	1.875"	3.125 (6.25)	
G20-2	36"	18"	END ROAD WORK	TEXT DIMENSIONS SHALL CONFORM TO "STANDARD HIGHWAY SIGNS" - 2000			2	SHALL CONFORM TO "STANDARD HIGHWAY SIGNS" - 2000			4.50 (9)	
R10-6	24"	36"	STOP HERE ON RED ↙				2				6.00 (12)	
R10-11a	24"	30"	NO TURN ON RED				2				5.00 (10)	
W1-6	48"	24"	←				2				8.00 (16)	
W3-3	36"	36"					2				9.00 (18)	
W13-1P	24"	24"	25 MPH				2				4.00 (8)	
W20-1 (AHEAD) (700 FT)	36"	36"	ROAD WORK XX				2 2				9.00 (18) (18)	
W20-4	36"	36"	ONE LANE ROAD AHEAD				2				9.00 (18)	
W20-7	36"	36"					2				9.00 (18)	
W24-1L	36"	36"					1				9.00 (9)	
W24-1R	36"	36"					1				9.00 (9)	

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

PROJ. MANAGER	Devon Eaton		
DESIGN-DETAILED	E. Forgacs	BY	DATE
CHECKED-REVIEWED	L. Driscoll	C. Helmick	6\18
DESIGN2-DETAILED2	-	R. Hanf	6\18
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

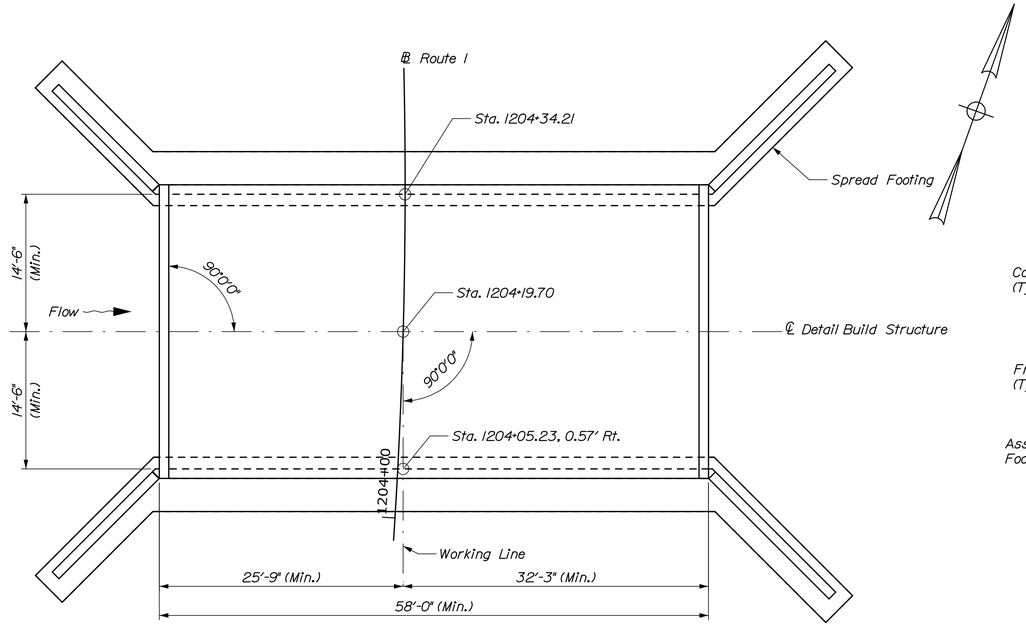
SIGN SUMMARY

SHEET NUMBER

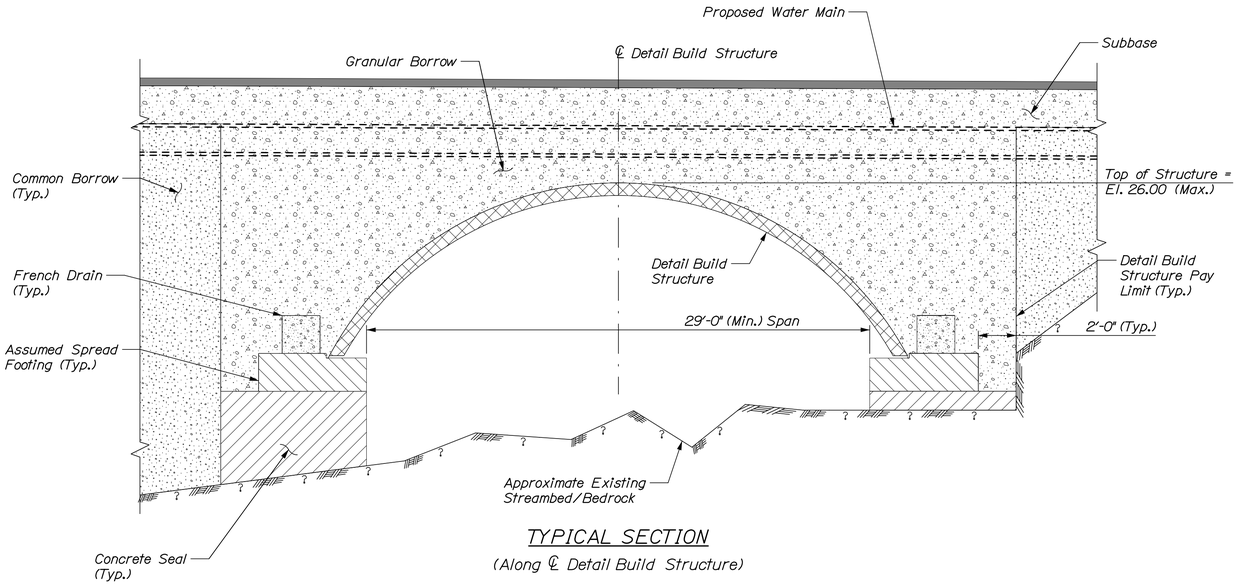
22

OF 29

Filename: 022_Sign Summary.dgn Division: Username: Date:7/20/2018

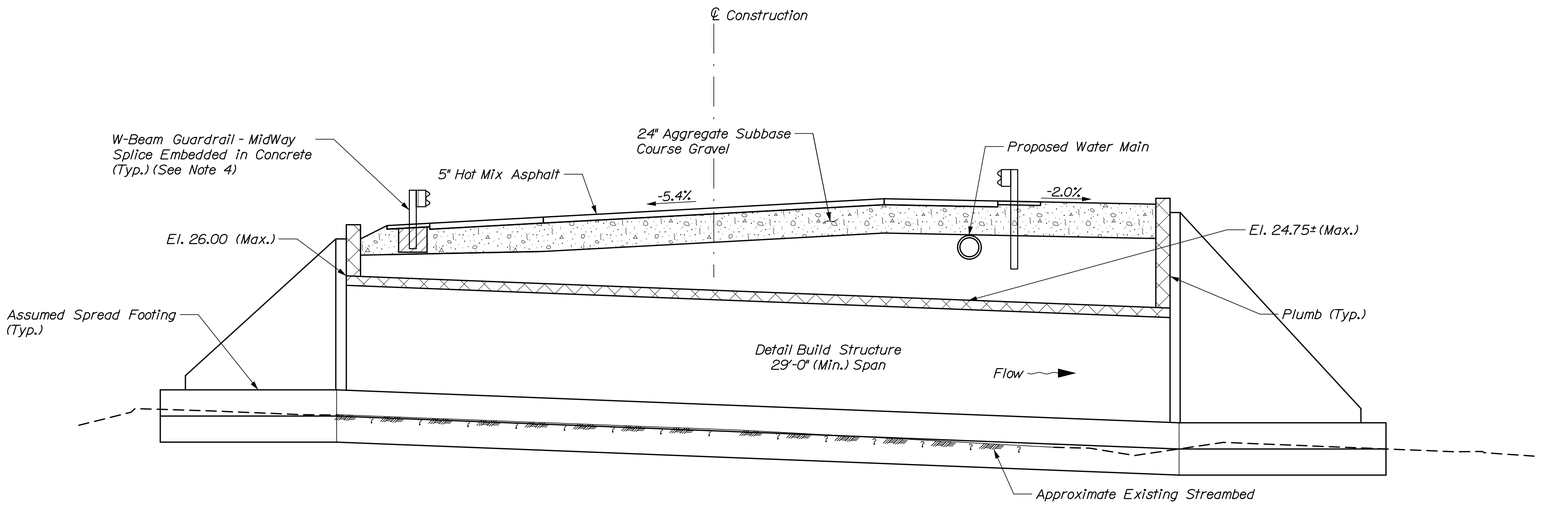


BRIDGE STRUCTURE DETAIL BUILD PLAN



TYPICAL SECTION

(Along ℄ Detail Build Structure)



LONGITUDINAL CROSS SECTION

DETAIL BUILD BRIDGE STRUCTURE NOTES:

1. Structure and foundation are shown for illustrative purposes only. See Special Provision 531.

2. Construct French Drains behind each base of the Structure Detail Build and wingwalls in accordance with Standard Specification Section 512, French Drains. Daylight french drains through weepholes in the abutment and wingwalls. Coordinate daylight locations with Resident in field.

3. Foundations for detail build structure are shown for illustrative purposes only. Actual dimensions will vary based on the Contractor's proposed design concept. See Special Provision 531 and Project Geotechnical Report for additional information and design requirements.

4. For additional information see Standard Detail 606(20).

5. Foundation concrete shall be placed on bedrock, cleaned of all loose rock or soil. The bedrock subgrade shall be confirmed to be relatively level. Where the bedrock slope exceeds 4H:1V, the bedrock shall be benched to make level steps or made completely level. When prepared bedrock surface is below the bottom of the footing, concrete fill may be placed to fill the void.

6. Concrete seal not shown in plan view for clarity.

7. Concrete seal shall be incidental to the Detail Build Structure Pay Item.

8. The Detail Build Structure shall have a minimum hydraulic opening of 233 square feet.

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

PROJ. MANAGER	Devon Easton		
DESIGN-DETAILED	E. Forgacs	BY	DATE
CHECKED-REVIEWED	L. Driscoll	C. Helmick	6\18
DESIGN2-DETAILED2	-	R. Hanf	6\18
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

BRIDGE PLAN AND DETAILS

SHEET NUMBER

23

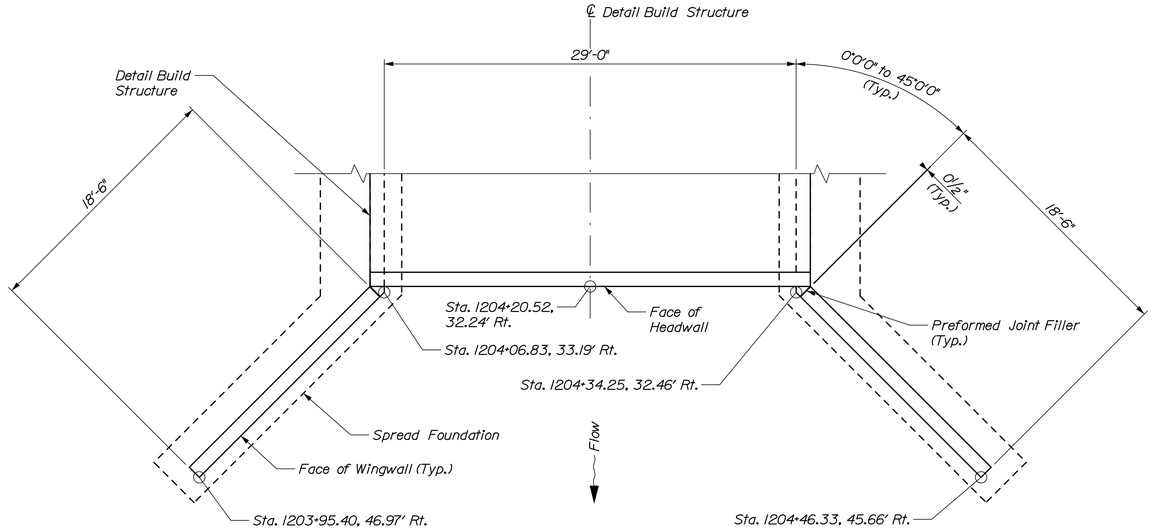
OF 29

Username:

Division:

Date:7/20/2018

Filename: 023_Typ.dgn



PLAN

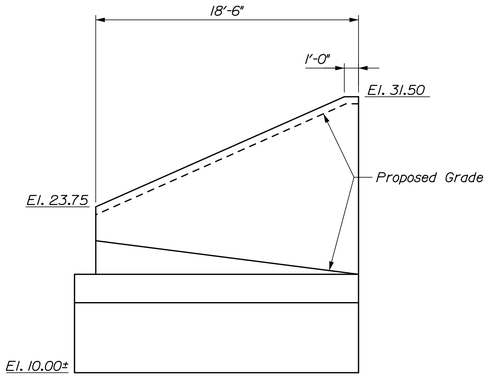
DETAIL BUILD BRIDGE HEADWALL AND WINGWALL NOTES:

1. Bottom of concrete seal is approximate. Top of bedrock is variable and shall be field verified.

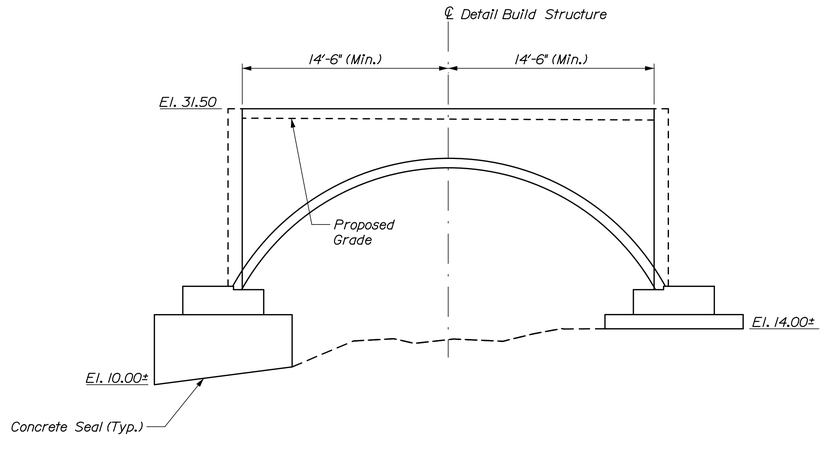
2. Detail build headwall and wingwall structure shown is for illustrative purposes only. See Special Provision 531 and Project Geotechnical Report.

3. Wingwalls and their footings shall be backfilled with Granular Borrow. Backfill will not be measured for payment, but shall be included in the Detail Build Structure Pay Item.

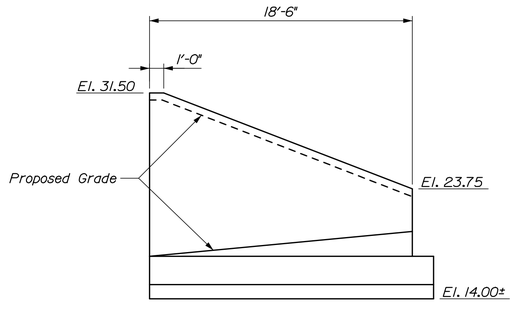
4. Refer to the Project Geotechnical Report for detail build wingwall geotechnical design requirements.



SOUTHEAST WINGWALL



EAST HEADWALL



NORTHEAST WINGWALL

ELEVATION

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

PROJ. MANAGER	Devon Easton	BY	DATE
DESIGN-DETAILED	E. Forgacs	C. Helmick	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

EAST HEADWALL AND WINGWALLS

SHEET NUMBER

24

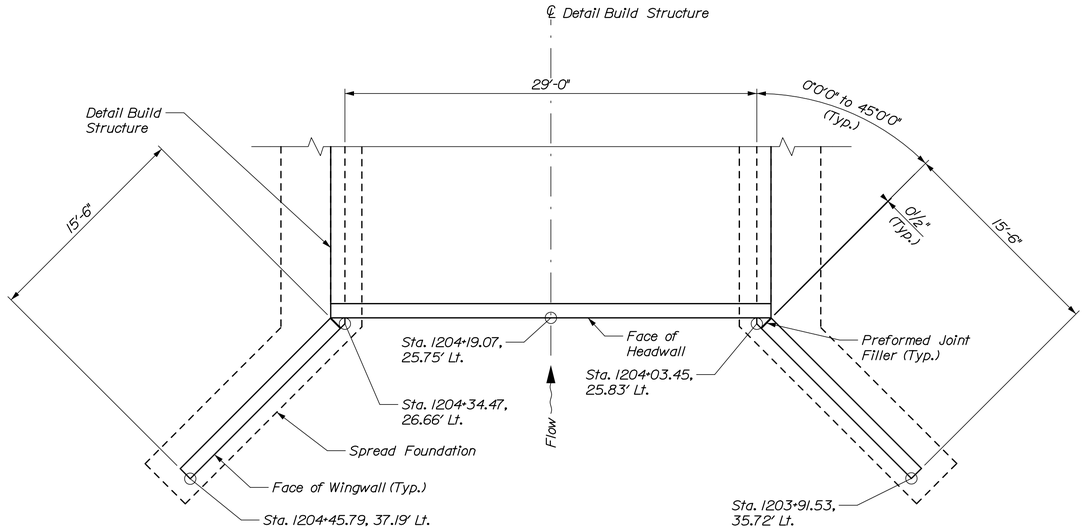
OF 29

Username:

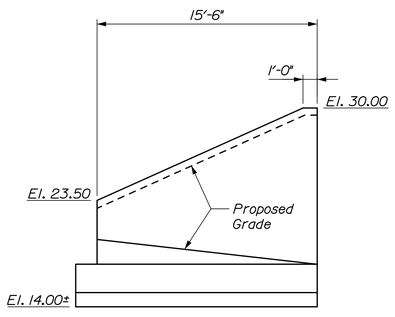
Division:

Date:7/20/2018

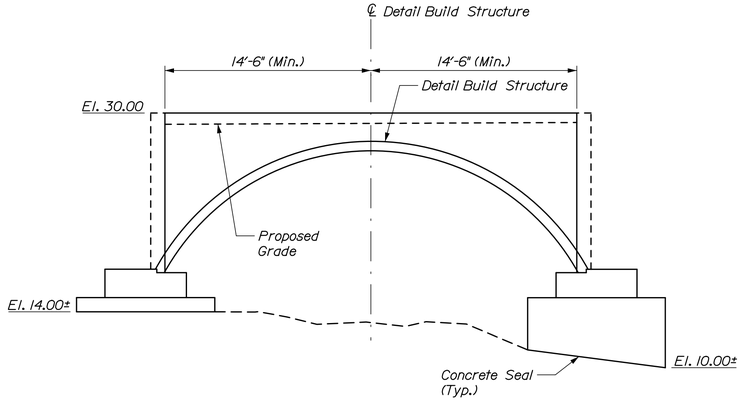
Filename: 024_Headwall1.dgn



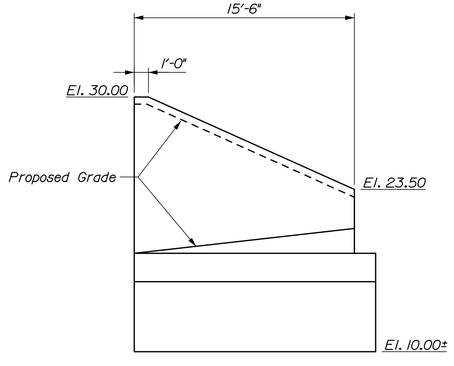
PLAN



NORTHWEST WINGWALL



WEST HEADWALL



SOUTHWEST WINGWALL

ELEVATION

HNTB

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170900

WIN 21709.00

BRIDGE NO. 2127

BRIDGE PLANS

			DATE
PROJ. MANAGER	Devon Easton	BY	DATE
DESIGN-DETAILED	E. Forgacs	C. Helmick	6\18
CHECKED-REVIEWED	L. Driscoll	R. Hanf	6\18
DESIGN2-DETAILED2	-	-	-
DESIGN3-DETAILED3	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE

P.E. NUMBER

DATE

CAPE NEDDICK BRIDGE
CAPE NEDDICK RIVER
YORK COUNTY
YORK

WEST HEADWALL AND WINGWALLS

SHEET NUMBER

25

OF 29

Username:

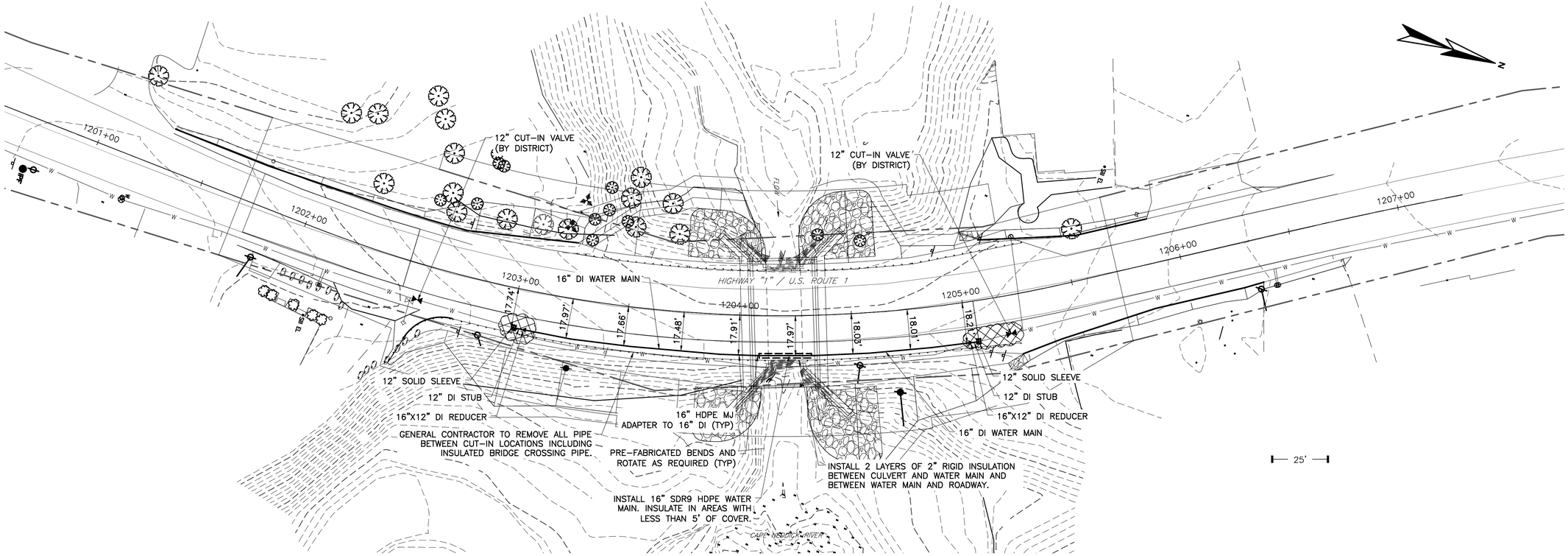
Division:

Date:7/20/2018

Filename: 025_Headwall 2.dgn

NOTES:

1. EXISTING CONDITION INFORMATION SHOWN ON THIS PLAN IS BASED ON INFORMATION FROM THE STATE OF MAINE DEPARTMENT OF TRANSPORTATION (MDOT) BRIDGE DESIGN PLAN SET TITLED, "CAPE NEDDICK BRIDGE OVER CAPE NEDDICK RIVER – U.S. ROUTE 1 – FEDERAL AID PROJECT NO. STP–2170(900)X" DATED JANUARY 18, 2018, CREATED BY HNTB.
2. CONTRACTOR TO DIG TEST PIT TO CONFIRM LOCATION OF EXISTING 12" WATER MAIN AND EXISTING UTILITIES.
3. INSERTION VALVES TO BE INSTALLED BY YORK WATER DISTRICT.



NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1			
2			
3			
4			

DRAWN BY: WTE
CHECKED BY:
DATE:
APPROVED BY:
DATE:
BOOK NO.:
PROJECT NO.: 13970A
SCALE:

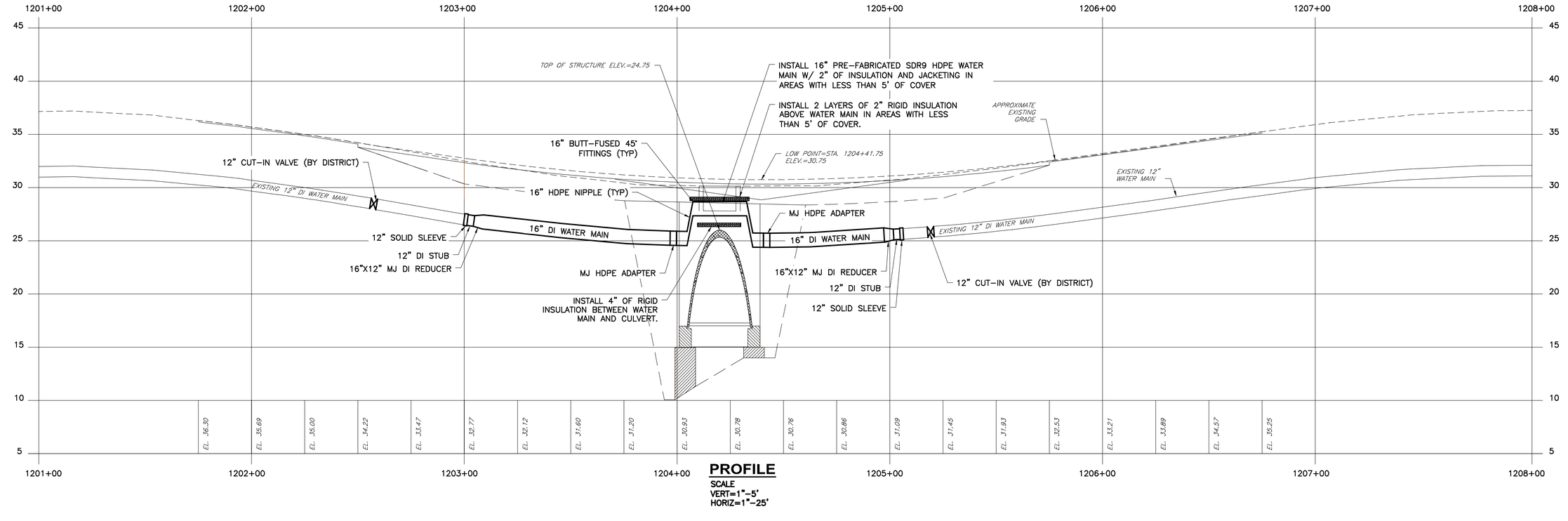
STATE OF MAINE
JEFFREY P MUSICH
No. 6686
REGISTERED PROFESSIONAL ENGINEER

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

CAPE NEDDICK CROSSING
CAPE NEDDICK RIVER
YORK COUNTY
YORK

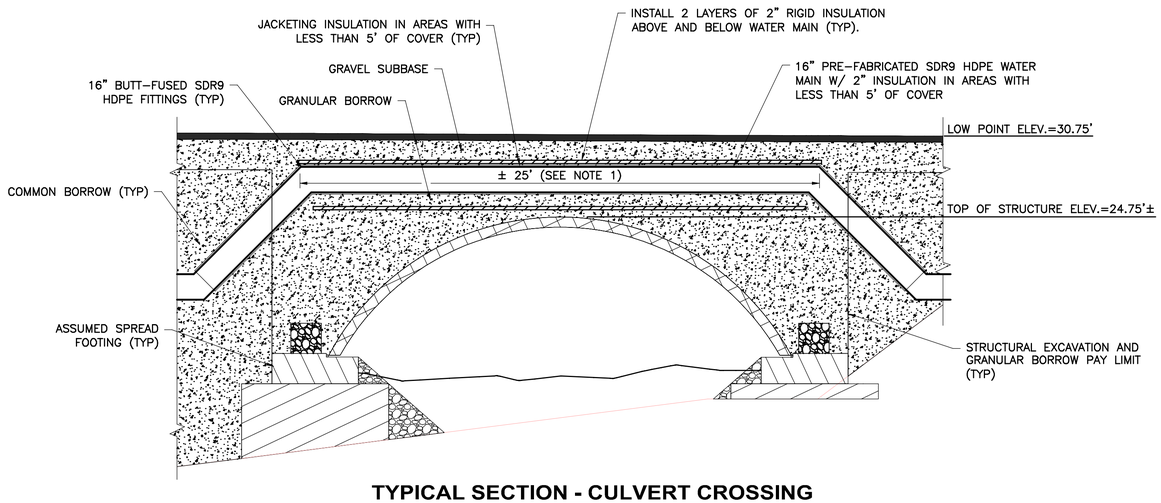
WATER MAIN REPLACEMENT – SITE PLAN

DRAWING
26



PROFILE

SCALE
VERT=1"=5'
HORIZ=1"=25'

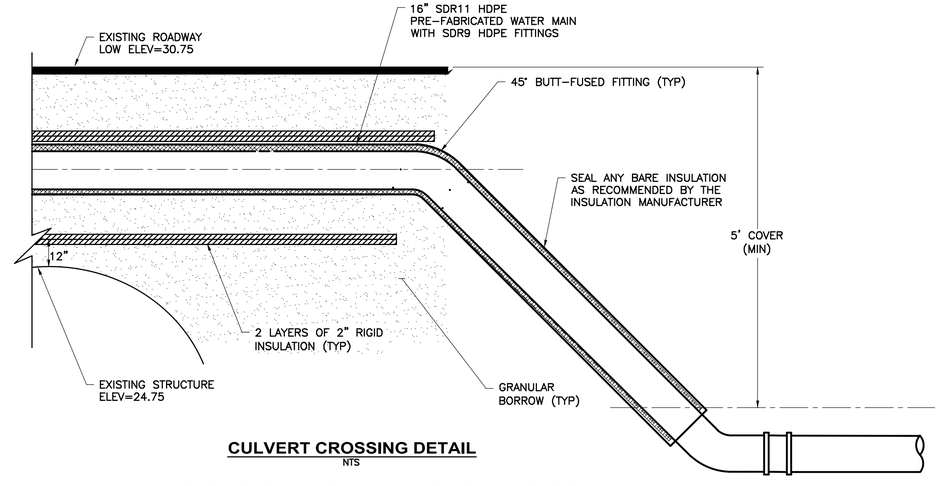


TYPICAL SECTION - CULVERT CROSSING

NTS

NOTES:

1. EXACT DIMENSIONS WILL BE CONFIRMED AFTER CULVERT DESIGN IS APPROVED DURING THE CONSTRUCTION PHASE.
2. DISTRICT WILL FURNISH ENTIRE HDPE PIPE SEGMENT, PRE-FABRICATED AND FUSED. DISTRICT WILL ALSO FURNISH ALL DI PIPE AND FITTINGS.
3. ALL HDPE SHALL HAVE 2-INCHES OF PIPE INSULATED JACKETING (TO BE FURNISHED WITH PIPE BY THE YORK WATER DISTRICT.



CULVERT CROSSING DETAIL

NTS

1. CONTRACTOR TO NOTE THIS DETAIL IS TYPICAL FOR BOTH SIDES OF BRIDGE.
2. INSTALL 16" SDR9 HDPE PRE-FABRICATED WATER MAIN OVER THE CULVERT. ALL BENDS AND WATER MAIN SHALL BE INSULATED WITH 2" INSULATION AND JACKET IN AREAS WITH LESS THAN 5' OF COVER.
3. TWO LAYERS OF 2" RIGID POLYURETHANE INSULATION SHALL BE PLACED ABOVE AND BELOW WATER MAIN IN AREAS WITH LESS THAN 5' OF COVER.
4. ALL BELOW GRADE BENDS SHALL BE RESTRAINED MECHANICAL JOINT AND BE PROVIDED WITH THRUST BLOCKS. SEE THRUST BLOCK DETAIL, THIS SHEET.
5. ALL UNINSULATED BELOW GRADE PIPING SHALL BE ENCASED WITH A TUBE TYPE POLYETHYLENE ENCASEMENT WRAP. FOR ADDITIONAL INFORMATION, REFER TO SPECIFICATION.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1			
2			
3			
4			

DRAWN BY WTE
CHECKED BY
DATE
APPROVED BY
DATE
BOOK NO.
PROJECT NO. 13970A
SCALE

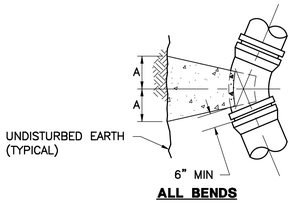
STATE OF MAINE
JEFFREY P MUSICH
No. 6686
REGISTERED PROFESSIONAL ENGINEER

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

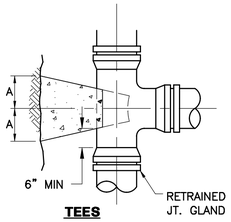
CAPE NEDDICK CROSSING
CAPE NEDDICK RIVER
YORK COUNTY
YORK

WATER MAIN CROSSING - PROFILE VIEW

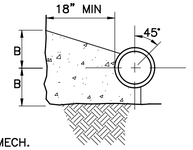
DRAWING
27



ALL BENDS



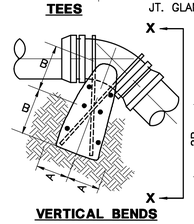
TEES



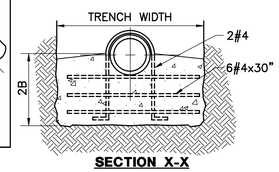
ELEVATION

NOTES

1. THRUST BLOCK SIZES SHOWN ARE BASED ON A SOIL BEARING CAPACITY OF 1000 PSF AND TEST PRESSURES OF 170 PSI.
2. POLYETHYLENE (6 MIL) SHALL BE PLACED AROUND FITTINGS PRIOR TO CONCRETE PLACEMENT.
3. PRECAST THRUST BLOCKS NOT ALLOWED FOR VERTICAL BENDS.



VERTICAL BENDS



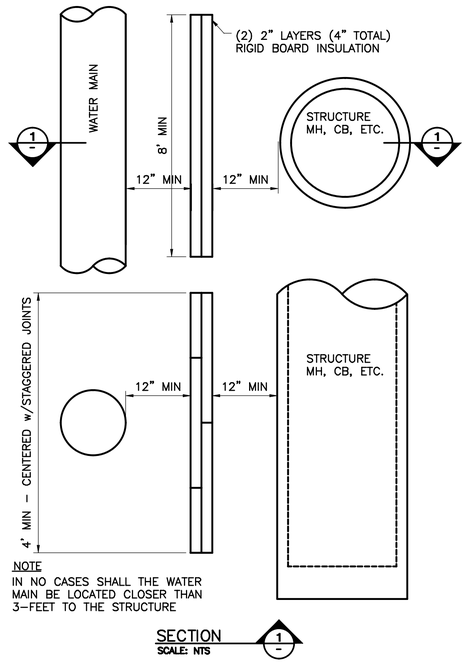
SECTION X-X

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		VERTICAL BEND (DOWN)		DEAD END	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
6"	15"	12"	12"	9"	9"	6"	6"	6"	12"	12"	24"	21"	–	–
8"	20"	15"	14"	12"	9"	9"	9"	6"	18"	12"	33"	24"	–	–
10"	21"	21"	18"	15"	15"	9"	9"	9"	20"	18"	40"	27"	–	–
12"	27"	24"	23"	15"	15"	12"	12"	9"	25"	18"	48"	30"	–	–
16"	37"	30"	30"	21"	21"	15"	13"	12"	32"	24"	57"	36"	–	–
20"/24"	36"	36"	30"	24"	24"	24"	24"	24"	32"	30"	32"	30"	32"	30"

THRUST BLOCK DETAIL
NTS

NOTES:

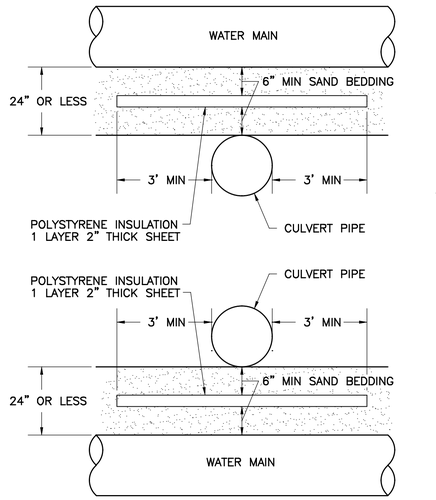
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF THE NEW WATER MAIN. LAYOUT SHALL BE REVIEWED AND ACCEPTED BY YORK WATER DISTRICT.
2. MINIMUM DEPTH OF COVER FOR WATER MAINS SHALL BE 5'–0" AND MAXIMUM DEPTH OF COVER SHALL BE 7'–0" UNLESS SHOWN OTHERWISE ON THE DRAWINGS. THE NEW WATER MAINS SHALL GENERALLY FOLLOW THE GROUND CONTOUR.
3. NEW MAINS SHALL BE DUCTILE IRON PIPE WITH PUSH–ON JOINTS UNLESS SHOWN OTHERWISE ON THE DRAWINGS. ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT, UNLESS OTHERWISE REQUIRED FOR JOINT RESTRAINT OR SHOWN ON THE DRAWINGS.
4. ALL BENDS, TEES, REDUCERS, HYDRANTS AND PLUGS SHALL BE RESTRAINED BY USING PRECAST CONCRETE THRUST BLOCKS AND MECHANICAL JOINT RESTRAINTS, OR OTHER METHODS AS SHOWN ON THE DRAWINGS. ANCHOR TEES SHALL BE USED FOR ALL HYDRANT BRANCHES EXCEPT IN LOCATIONS WHERE GATE VALVES CAN NOT BE CONNECTED DIRECTLY TO TEE, IN WHICH CASE RODS SHALL BE USED.
5. TEST PRESSURE FOR THE COMBINED PRESSURE AND LEAKAGE TEST SHALL BE AS NOTED IN SPECIFICATION SECTION 611.3.12.
6. TRENCHES SHALL NOT BE LEFT OPEN DURING NON–WORKING HOURS. ALL OPEN PIPES SHALL BE SECURED WITH A WATER–TIGHT PLUG WHEN THE PIPE IS TEMPORARILY BACKFILLED AND WHEN PIPE LAYING IS NOT IN PROGRESS.
7. WHERE A NEW WATER MAIN PASSES BELOW OR ABOVE A SANITARY OR STORM SEWER, A FULL LENGTH OF WATER MAIN SHALL BE CENTERED ABOVE/BELOW THE SEWER. MAINTAIN A MINIMUM SEPARATION DISTANCE OF 18 INCHES.
8. CONNECTIONS TO EXISTING WATER MAIN SHALL BE COORDINATED WITH THE YORK WATER DISTRICT.
9. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE CONNECTION. CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. TEST PITS SHALL BE USED AS REQUIRED.
10. PROVIDE 4" RIGID INSULATION OVER WATER LINES WHEN COVER IS ALLOWED, BY THE ENGINEER, TO BE LESS THAN 5' OVER MAINS AND SERVICES. STAGGER ALL JOINTS ON RIGID INSULATION BOARD. INSULATION BOARD TO BE SUPPLIED BY DISTRICT.
11. WATER SERVICE INTERRUPTIONS SHALL BE 4 HOURS OR LESS IN DURATION WITH NOTIFICATION TO ALL WATER CUSTOMERS AND THE YORK WATER DISTRICT A MINIMUM OF 72 HOURS PRIOR TO ANY INTERRUPTION IN SERVICE.
12. DO NOT SCALE DRAWINGS UNLESS OTHERWISE NOTED.
13. CONTRACTOR SHALL PROVIDE, FOR REVIEW AND APPROVAL BY THE ENGINEER AND THE YORK WATER DISTRICT, DETAILED CONSTRUCTION SCHEDULES OUTLING PROJECT TIMING, EXPECTED SHUTDOWNS AND ANTICIPATED DURATION.
14. ALL ABANDONED PIPES SHALL BE REMOVED AND LOADED ONTO YORK WATER DISTRICT TRUCKS. THE YORK WATER DISTRICT WILL DISPOSE OF ALL ABANDONED PIPES AND MATERIALS.
15. ALL PIPE MATERIALS AND APPURTENANCES TO BE FURNISHED BY THE YORK WATER DISTRICT.



NOTE
IN NO CASES SHALL THE WATER MAIN BE LOCATED CLOSER THAN 3–FEET TO THE STRUCTURE

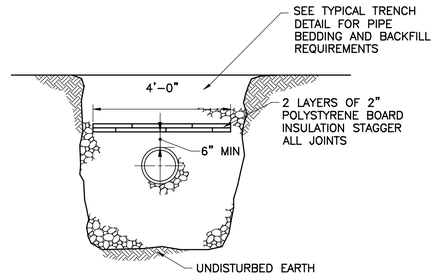
SECTION 1
SCALE: NTS

WATER MAIN-STRUCTURE INSULATION DETAIL
NTS



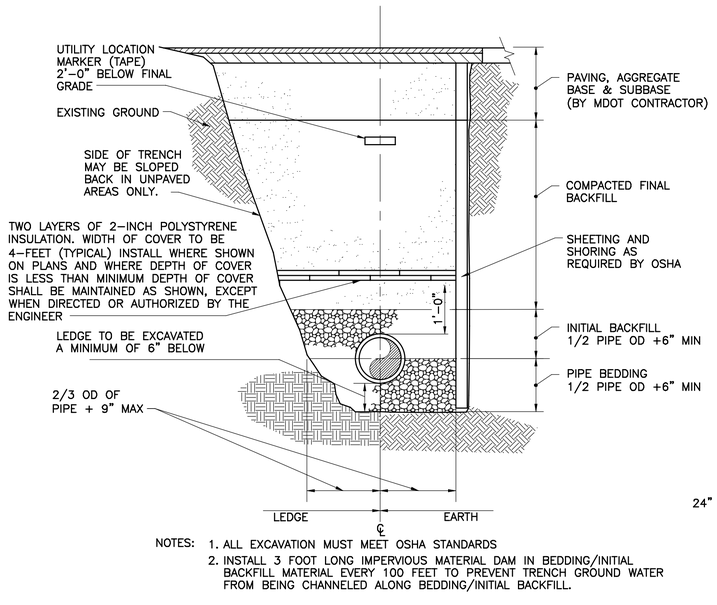
NOTE: INSULATION TO BE USED WHERE PIPE SEPARATION IS 24" OR LESS.

CULVERT CROSSING DETAIL
NTS



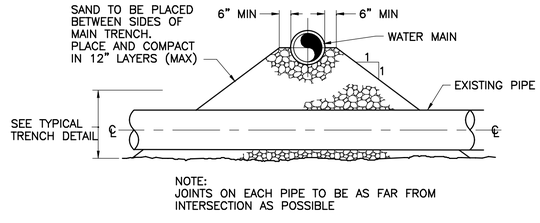
NOTE:
1. TRENCH PIPE INSULATION TO BE USED WHERE DEPTH OF COVER IS LESS THAN 5'–0" FEET OR AS DIRECTED BY THE ENGINEER.

TRENCH PIPE INSULATION DETAIL
NTS



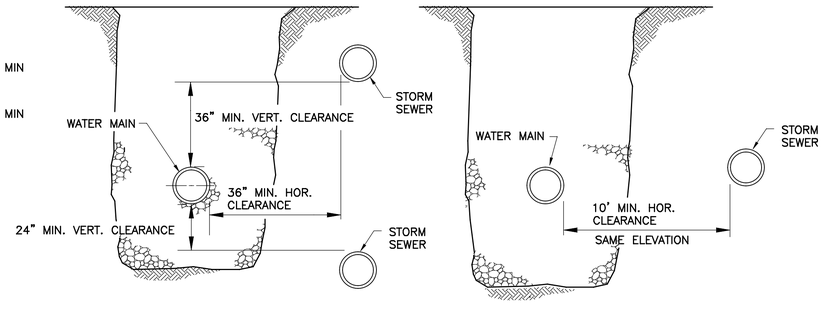
NOTES: 1. ALL EXCAVATION MUST MEET OSHA STANDARDS
2. INSTALL 3 FOOT LONG IMPERVIOUS MATERIAL DAM IN BEDDING/INITIAL BACKFILL MATERIAL EVERY 100 FEET TO PREVENT TRENCH GROUND WATER FROM BEING CHANNELED ALONG BEDDING/INITIAL BACKFILL.

PIPE TRENCH DETAIL
NTS



NOTE:
JOINTS ON EACH PIPE TO BE AS FAR FROM INTERSECTION AS POSSIBLE

PIPE CROSSING DETAIL
NTS



TRENCH PIPE CLEARANCE DETAIL
NTS

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1			
2			
3			
4			

DRAWN BY WTE
CHECKED BY
DATE
APPROVED BY
DATE
BOOK NO.
PROJECT NO. 13970A
SCALE

STATE OF MAINE
JEFFREY P MUSICH
No. 6686
REGISTERED PROFESSIONAL ENGINEER
LICENSED

WRIGHT-PIERCE
Engineering a Better Environment
888.621.8156 | www.wright-pierce.com

CAPE NEDDICK CROSSING
CAPE NEDDICK RIVER
YORK COUNTY
YORK

WATER MAIN DEAILS I

DRAWING
28

PLAN LEGEND

Town, County, State	Approx. Property Lines — P.L.	Existing Right of Way
Limits of Wrought Portion — L.O.W.P.	Control Of Access — C.O.A.	New Right of Way
New Easement	New Temporary Rights	New R/W Within Existing R/W
New R/W Along Existing R/W	Building	Clearing Limit Line — CLL
Trees: Conifer, Deciduous	Tree Line	Bush Line
Water Edge	Ledge	Rock/Boulder
Flag Pole	Fence: Chain Link, Barb Wire, Stockade	Sign, Well, Mailbox

	Existing	Proposed
Sanitary Sewer		
Telephone Line		
Electric Line		
Water Line		
Underdrain Line		
Gas Line		
Guardrail		
Culvert		
Traveled Way		
Ditch		
Catch Basin		
Manhole		
Sewer Manhole		
Utility Pole		
Fire Hydrant		
Curbing		

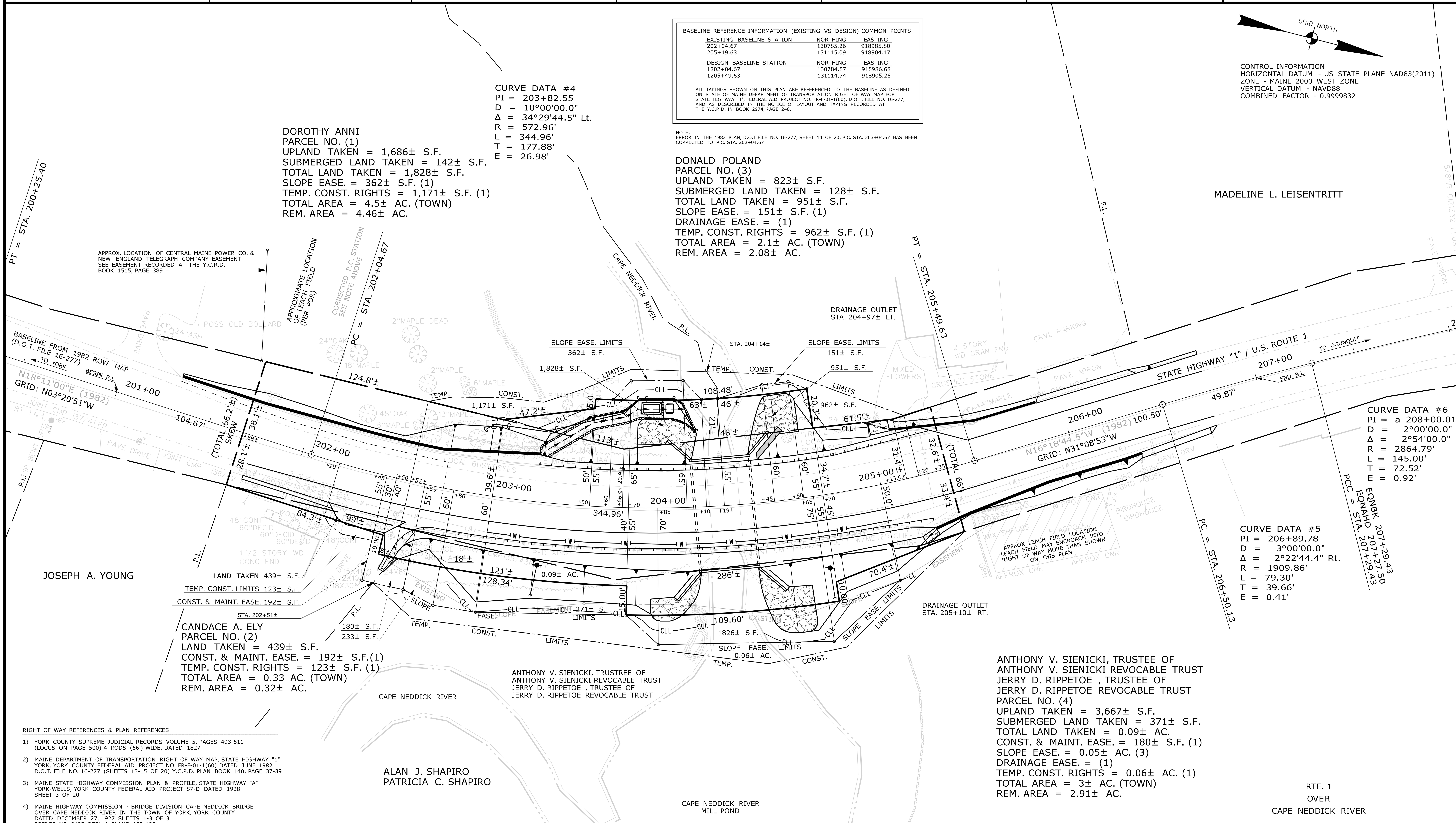
Cut Line, Fill Line, Stonewall, Retaining Wall, Baseline (10+00, 11+00, 12+00), Monument, Traverse Point, Iron Rod Found IRF, Pipe Found IPF, Replacement Pin Set

STATE OF MAINE
REGISTRY OF DEEDS

COUNTY ______
RECEIVED ______, ______
at ______h ______m ______M and recorded in
Plan Book ______, Page ______
Attest: ______
REGISTER

THIS PLAN WAS PREPARED IN CONNECTION WITH THE DEPARTMENT'S ACQUISITION OF REAL PROPERTY FOR TRANSPORTATION PURPOSES. IT CANNOT BE USED TO ESTABLISH LEGAL BOUNDARIES BETWEEN ABUTTING PROPERTY OWNERS.

25 0 25 50 75 100
Scale of Feet



BASELINE REFERENCE INFORMATION (EXISTING VS DESIGN) COMMON POINTS
EXISTING BASELINE STATION | NORTHING | EASTING
202+04.67 | 130785.26 | 918985.80
205+49.63 | 131115.09 | 918904.17
DESIGN BASELINE STATION | NORTHING | EASTING
1202+04.67 | 130784.87 | 918986.68
1205+49.63 | 131114.74 | 918905.26
ALL TAKINGS SHOWN ON THIS PLAN ARE REFERENCED TO THE BASELINE AS DEFINED ON STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP FOR STATE HIGHWAY "1", FEDERAL AID PROJECT NO. FR-F-01-1(60), D.O.T. FILE NO. 16-277, AND AS DESCRIBED IN THE NOTICE OF LAYOUT AND TAKING RECORDED AT THE Y.C.R.D. IN BOOK 2974, PAGE 246.
NOTE: ERROR IN THE 1982 PLAN, D.O.T.FILE NO. 16-277, SHEET 14 OF 20, P.C. STA. 203+04.67 HAS BEEN CORRECTED TO P.C. STA. 202+04.67
GRID NORTH
CONTROL INFORMATION
HORIZONTAL DATUM - US STATE PLANE NAD83(2011)
ZONE - MAINE 2000 WEST ZONE
VERTICAL DATUM - NAVD88
COMBINED FACTOR - 0.9999832
CURVE DATA #4
PI = 203+82.55
D = 10°00'00.0"
Δ = 34°29'44.5" Lt.
R = 572.96'
L = 344.96'
T = 177.88'
E = 26.98'
DOROTHY ANNI
PARCEL NO. (1)
UPLAND TAKEN = 1,686± S.F.
SUBMERGED LAND TAKEN = 142± S.F.
TOTAL LAND TAKEN = 1,828± S.F.
SLOPE EASE. = 362± S.F. (1)
TEMP. CONST. RIGHTS = 1,171± S.F. (1)
TOTAL AREA = 4.5± AC. (TOWN)
REM. AREA = 4.46± AC.
DONALD POLAND
PARCEL NO. (3)
UPLAND TAKEN = 823± S.F.
SUBMERGED LAND TAKEN = 128± S.F.
TOTAL LAND TAKEN = 951± S.F.
SLOPE EASE. = 151± S.F. (1)
DRAINAGE EASE. = (1)
TEMP. CONST. RIGHTS = 962± S.F. (1)
TOTAL AREA = 2.1± AC. (TOWN)
REM. AREA = 2.08± AC.
MADELINE L. LEISENTRITT
PT = STA. 200+25.40
APPROX. LOCATION OF CENTRAL MAINE POWER CO. & NEW ENGLAND TELEGRAPH COMPANY EASEMENT SEE EASEMENT RECORDED AT THE Y.C.R.D. BOOK 1515, PAGE 389
APPROXIMATE LOCATION OF LEACH FIELD (PER POR)
CORRECTED P.C. STATION SEE NOTE ABOVE
PC = STA. 202+04.67
CAPE NEDDICK RIVER
PT = STA. 205+49.63
DRAINAGE OUTLET STA. 204+97± LT.
SLOPE EASE. LIMITS 362± S.F.
1,828± S.F.
STA. 204+14±
SLOPE EASE. LIMITS 151± S.F.
951± S.F.
BASELINE FROM 1982 ROW MAP (D.O.T. FILE 16-277)
TO YORK
BEGIN B.L.
201+00
N18°11'00"E (1982)
GRID: N03°20'51"W
104.67'
124.8'±
TEMP. CONST. 1,171± S.F.
47.2'±
108.48'
63'± 46'±
962± S.F.
61.5'±
STATE HIGHWAY "1" / U.S. ROUTE 1
TO OGUNQUIT
207+00
END B.L.
49.87'
206+00
100.50'
N16°18'44.5"W (1982)
GRID: N31°08'53"W
(TOTAL 66.2'±) SKEW
38.1'±
28.1'±
202+00
113'±
21'±
48'±
203+00
204+00
205+00
344.96'
31.4'±
32.6'±
(TOTAL 66')
33.4'±
84.3'±
99'±
18'±
121'±
128.34'
0.09± AC.
286'±
70.4'±
109.60'
1826± S.F.
SLOPE EASE. LIMITS 0.06± AC.
CURVE DATA #6
PI = a 208+00.01
D = 2°00'00.0"
Δ = 2°54'00.0" Rt.
R = 2864.79'
L = 145.00'
T = 72.52'
E = 0.92'
CURVE DATA #5
PI = 206+89.78
D = 3°00'00.0"
Δ = 2°22'44.4" Rt.
R = 1909.86'
L = 79.30'
T = 39.66'
E = 0.41'
PC = STA. 206+50.13
PCC = STA. 207+29.43
EQNBK 207+29.43 EQNAHD 207+27.50
APPROX LEACH FIELD LOCATION. LEACH FIELD MAY ENCROACH INTO RIGHT OF WAY MORE THAN SHOWN ON THIS PLAN
DRAINAGE OUTLET STA. 205+10± RT.
JOSEPH A. YOUNG
LAND TAKEN 439± S.F.
TEMP. CONST. LIMITS 123± S.F.
CONST. & MAINT. EASE. 192± S.F.
STA. 202+51±
180± S.F.
233± S.F.
271± S.F.
CANDACE A. ELY
PARCEL NO. (2)
LAND TAKEN = 439± S.F.
CONST. & MAINT. EASE. = 192± S.F.(1)
TEMP. CONST. RIGHTS = 123± S.F. (1)
TOTAL AREA = 0.33 AC. (TOWN)
REM. AREA = 0.32± AC.
ANTHONY V. SIENICKI, TRUSTEE OF ANTHONY V. SIENICKI REVOCABLE TRUST JERRY D. RIPPETOE , TRUSTEE OF JERRY D. RIPPETOE REVOCABLE TRUST
CAPE NEDDICK RIVER
ANTHONY V. SIENICKI, TRUSTEE OF
ANTHONY V. SIENICKI REVOCABLE TRUST
JERRY D. RIPPETOE , TRUSTEE OF
JERRY D. RIPPETOE REVOCABLE TRUST
PARCEL NO. (4)
UPLAND TAKEN = 3,667± S.F.
SUBMERGED LAND TAKEN = 371± S.F.
TOTAL LAND TAKEN = 0.09± AC.
CONST. & MAINT. EASE. = 180± S.F. (1)
SLOPE EASE. = 0.05± AC. (3)
DRAINAGE EASE. = (1)
TEMP. CONST. RIGHTS = 0.06± AC. (1)
TOTAL AREA = 3± AC. (TOWN)
REM. AREA = 2.91± AC.
ALAN J. SHAPIRO
PATRICIA C. SHAPIRO
CAPE NEDDICK RIVER MILL POND
RTE. 1
OVER
CAPE NEDDICK RIVER

RIGHT OF WAY REFERENCES & PLAN REFERENCES

1) YORK COUNTY SUPREME JUDICIAL RECORDS VOLUME 5, PAGES 493-511 (LOCUS ON PAGE 500) 4 RODS (66') WIDE, DATED 1827
2) MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, STATE HIGHWAY "1" YORK, YORK COUNTY FEDERAL AID PROJECT NO. FR-F-01-1(60) DATED JUNE 1982 D.O.T. FILE NO. 16-277 (SHEETS 13-15 OF 20) Y.C.R.D. PLAN BOOK 140, PAGE 37-39
3) MAINE STATE HIGHWAY COMMISSION PLAN & PROFILE, STATE HIGHWAY "A" YORK-WELLS, YORK COUNTY FEDERAL AID PROJECT 87-D DATED 1928 SHEET 3 OF 20
4) MAINE HIGHWAY COMMISSION - BRIDGE DIVISION CAPE NEDDICK BRIDGE OVER CAPE NEDDICK RIVER IN THE TOWN OF YORK, YORK COUNTY DATED DECEMBER 27, 1927 SHEETS 1-3 OF 3 BRIDGE NO. 2127 REEL 4, PLANS 183-185

BRIDGE NO. 2127 WIN 021709.00

TECH	CHECKED	ITEM
R.M.C.	C.W.K.	EXISTING CONDITION PLAN
R.M.C.	N.T.A.	FINAL RIGHT OF WAY
R.M.C.	N.T.A.	AREAS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016 - 207-624-3460
YORK
RIGHT OF WAY MAP

REVISIONS			
NO.	DATE	DESCRIPTION	BY

PLAN FILED IN PLAN BOOK ______ PAGE ______ COUNTY RECORD

NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE

DAVID BERNHARDT
COMMISSIONER
JOYCE NOEL TAYLOR
CHIEF ENGINEER
DATE

To the best of my knowledge and belief the Highway Right of Way lines depicted hereon are based upon a survey conforming to the Standards of Practice promulgated by the Maine Board of Licensure for Professional Land Surveyors 02-360 CMR, Chapter 90; Exceptions: (1) No separate survey report, (2) Monumentation only as shown on plan. See sheet X of this plan set for coordinates. (3) Other boundary lines, including lines between abutters are approximate and for general reference purposes only.

STATE HIGHWAY "1"
U.S. ROUTE 1
YORK YORK COUNTY
FEDERAL AID PROJECT NO. STP-2170(900)

OCTOBER 2017 | RIGHT-OF-WAY MAP | D.O.T. FILE NO. 16-524
SCALE 1" = 25' | SHEET 1 OF 1

SHEET NUMBER
29
OF 29

Filename: ...\00\ROW\MSTA\029_RWPLAN1.dgn Division: ROW Username: Ronald.M.Carpentier Date:7/18/2018