STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DIXFIELD
OXFORD COUNTY
DURRELLS MILL BRIDGE
OVER
NEWTON BROOK
NORTON ROAD
FEDERAL AID PROJECT NO. 2223400
PROJECT LENGTH 0.028 mi.
BRIDGE NO. 0658

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 I

TRAFFIC DATA

Current (2019) AADT	90
Future (2039) AADT	110
DHV - % of AADT	19
Design Hour Volume	21
Heavy Trucks (% of AADT)	10
Heavy Trucks (% of DHV)	10
Directional Distribution (% of DHV)	60
18 kip Equivalent P 2.0	8
18 kip Equivalent P 2.5	8
Design Speed (mph)	25

HYDROLOGIC DATA

Drainage Area	4.4 sq mi
Ordinary High Water Discharge (Q1.1)	125 cfs
25-Year Discharge (Q25)	770 cfs
Design Discharge (Q50)	1000 cfs
Check Discharge (Q100)	1150 cfs
Headwater Elevation (Q1.1)	567.84 ft
Headwater Elevation (Q25)	571.95 ft
Headwater Elevation (Q50)	573.10 ft
Headwater Elevation (Q100)	573.80 ft
Discharge Velocity (Q1.1)	6.26 fps
Discharge Velocity (Q50)	10.33 fps
Discharge Velocity (Q100)	10.79 fps

MATERIALS

Concrete:	
Precast	Class "P"
Fill	"Fill"
All Other	Class "A"
Reinforcing Steel	ASTM A 615/A 615M, Grade 60
Welded Wire Reinforcement	ASTM A 1064

BASIC DESIGN STRESSES

Precast Concrete	f 'c = 5,000 psi
Reinforcing Steel	f y = 60,000 psi
Welded Wire Reinforcement	F y = 65,000 psi

LIST OF DRAWINGS

UTILITIES

Central Maine Power Company
Charter Communications
Consolidated Communications

MAINTENANCE OF TRAFFIC

Maintain one lane of alternating traffic using an on site special detour.

PROJECT LOCATION	Durrells Mill Bridge (#0658) over Newton Brook on Norton Road. Located 0.04 of a mile north west of Main Street. Lat./Long. 44°33'17.5" N -70°22'50.2" W
PROGRAM AREA	Highway-Bridges
OUTLINE OF WORK	Replace three culverts with a Precast Concrete Box Culvert.

WIN 22234.00

022234.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

	DATE
APPROVED	
COMMISSIONER:	3-18-2020
CHIEF ENGINEER:	3-18-2020

STATE OF MAINE * Richard E. Myers 12670 * LICENSED PROFESSIONAL ENGINEER

Richard E. Myers
SIGNATURE
12670
P.E. NUMBER
March 11, 2020
DATE

PROJECT INFORMATION

PROGRAM	BRIDGE
PROJECT MANAGER	J. STETSON
DESIGNER	A. SHKARA
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

DIXFIELD
DURRELLS MILL BRIDGE

TITLE SHEET

SHEET NUMBER
1
OF 13

Filename:\00\BRIDGE\MSTA\001_Title.dgn Division: BRIDGE Username: armand.j.paradis Date:03/11/20

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.202	REMOVING PAVEMENT SURFACE	40	SY
203.20	COMMON EXCAVATION	440	CY
203.2318	DISPOSAL OF SPECIAL WASTE	34	T
203.24	COMMON BORROW	10	CY
203.25	GRANULAR BORROW	172	CY
203.33	SPECIAL FILL	169	CY
206.061	STRUCTURAL EARTH EXCAVATION - DRAINAGE AND MINOR STRUC.	68	CY
206.07	STRUCTURAL ROCK EXCAVATION - DRAINAGE AND MINOR STRUC.	27	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	440	CY
403.208	HOT MIX ASPHALT 12.5 MM HMA SURFACE	64	T
403.209	HOT MIX ASPHALT 9.5 MM (SIDEWLK, DR., ISLANDS, & INCIDEN.)	2	T
403.213	HOT MIX ASPHALT 12.5 MM BASE	101	T
409.15	BITUMINOUS TACK COAT - APPLIED	24	G
508.13	SHEET WATERPROOFING MEMBRANE (134 SY)	1	LS
510.10	SPECIAL DETOUR, 12' ROADWAY WIDTH VEH. & PED. TRAF. NOT SEP.	1	LS
511.07	COFFERDAM: UPSTREAM	1	LS
511.07	COFFERDAM: DOWNSTREAM	1	LS
513.22	CRUSHED STONE SLOPE PROTECTION	50	SY
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES (38 SY)	1	LS
526.301	TEMPORARY CONCRETE BARRIER TYPE 1 (60 LF)	1	LS
527.34	WORK ZONE CRASH CUSHIONS	5	UN
534.7101	PRECAST CONCRETE BOX CULVERT - STATE SUPPLIED (169 CY)	1	LS
603.17	18 INCH CULVERT PIPE OPTION 1	110	LF
606.23	GUARDRAIL TYPE 3C - SINGLE RAIL	250	LF
606.231	GUARDRAIL TYPE 3C - 15 FOOT RADIUS AND LESS	75	LF
606.265	TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	3	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	8	EA
610.08	PLAIN RIPRAP	225	CY
610.18	STONE DITCH PROTECTION	16	CY
610.210	STREAM CHANNEL ROCK	88	CY
610.2121	STREAMBED ROCK FEATURES (5 CY)	1	LS
613.319	EROSION CONTROL BLANKET	73	SY
615.07	LOAM	15	CY
618.13	SEEDING METHOD NUMBER 1	4	UN
618.14	SEEDING METHOD NUMBER 2	3	UN
619.12	MULCH	3	UN
619.14	EROSION CONTROL MIX	30	CY
620.58	EROSION CONTROL GEOTEXTILE	378	SY
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	132	LF
627.76	TEMP. 4" PAVEMENT MARKING LINES, WHITE OR YELLOW	1	LS
627.77	REMOVING PAVEMENT MARKINGS	44	SF
629.05	HAND LABOR, STRAIGHT TIME	50	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	25	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	25	HR
637.071	DUST CONTROL	1	LS
639.19	FIELD OFFICE TYPE B	1	EA
643.72	TEMPORARY TRAFFIC SIGNAL: ROUTE 2, NORTON RD. & COMMON RD.	1	LS
652.312	TYPE III BARRICADE	4	EA
652.33	DRUM	25	EA
652.34	CONE	50	EA
652.35	CONSTRUCTION SIGNS	400	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (120 CD)	1	LS
652.38	FLAGGER	300	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

GENERAL CONSTRUCTION NOTES

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

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

3. The clearing limits as shown on the plans are approximate. The exact limits will be established in the field by the Resident. Payment for clearing will be considered incidental to Contract items.

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

5. 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.

6. All granular borrow, except as otherwise shown, shall meet the requirements of Subsection 703.19, Material for Underwater Backfill.

7. Stones which cannot be rolled or compacted into the surface of the shoulder shall be removed by hand raking. Payment for hand raking will be considered incidental to Item No. 304.10, Aggregate Subbase Course - Gravel.

8. Place loam 2 inches deep on all new or reconstructed sideslopes or as directed by the Resident.

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

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

11. A Terminal End shall be installed concurrently with the placement of each section of beam guardrail.

12. 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.

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

Concrete headwalls, including to one foot inside the box;
Exposed tops of vertical walls and one foot below the ground on the back side;
Exposed faces of vertical walls and to one foot inside the box.

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

15. The hydrologic report of the bridge site may be accessed at the MaineDOT web address. The hydrologic report is based on MaineDOT's 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.

16. The project geotechnical report titled: Geotechnical Design Report for the Replacement of Durrells Mill Bridge, Norton Road over Newton Brook, Dixfield, Maine, Soils Report No. 2019-39., dated August 28, 2019 may be accessed at the MaineDOT web address.

17. Geotechnical information furnished or referred to in this plan set is for the use of the 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 Bidders' 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 the boring locations.

18. 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.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

WIN 22234.00

BRIDGE NO. 0658 BRIDGE PLANS

PROJ. MANAGER	J. STETSON		
DESIGN-DETAILED	A. SHKARA	D. SHAW	FEB 2020
CHECKED-REVIEWED	A. SHKARA	J. STETSON	FEB 2020
DESIGN2-DETAILED2	A.VANBESKIRK	T. WHITE	JUL 2019
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

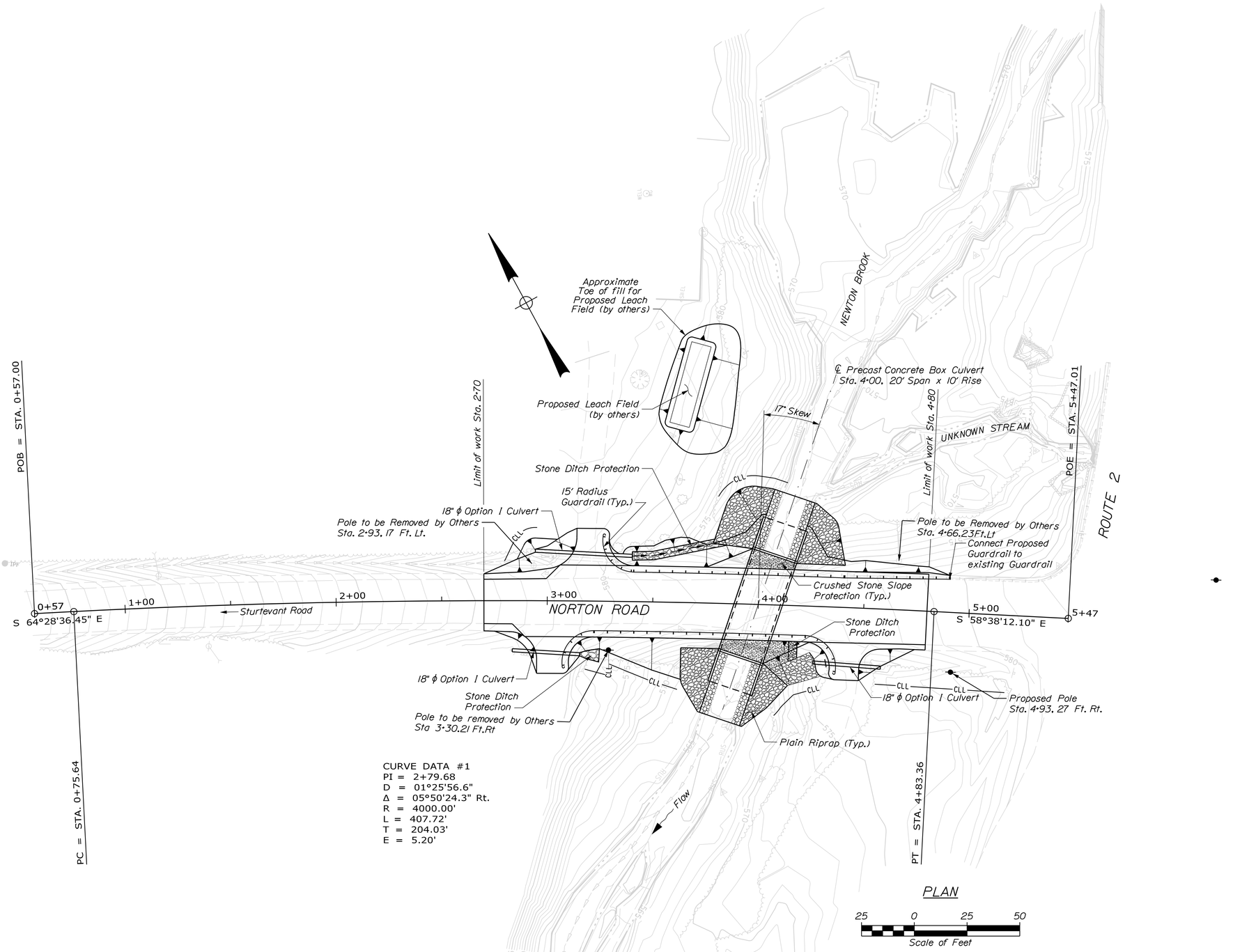
DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD OXFORD COUNTY

ESTIMATED QUANTITIES AND GENERAL CONSTRUCTION NOTES

SHEET NUMBER

2

OF 13



PROJ. MANAGER	J. STETSON	BY	DATE
DESIGN-DETAILED	A. SHKARA	D. SHAW	FEB 2020
CHECKED-REVIEWED		J. STETSON	FEB 2020
DESIGN2-DETAILED2	A.VANBUSKIRK	T. WHITE	JUL 2019
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

WIN 22234.00

BRIDGE NO. 0658

BRIDGE PLANS

DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD OXFORD COUNTY

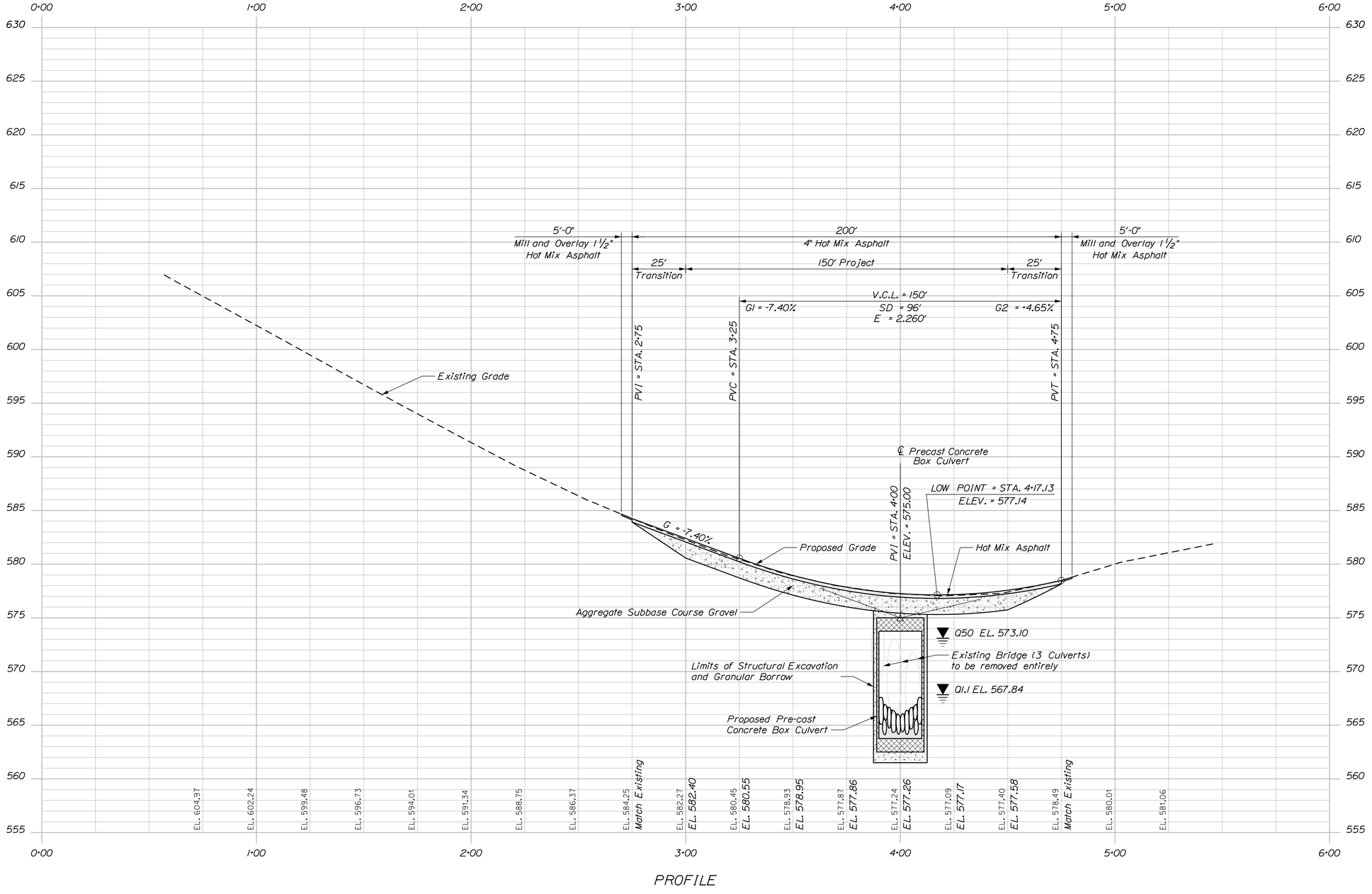
GENERAL PLAN

SHEET NUMBER

3

OF 13

Filename: ...\00\BRIDGE\MSTA\003_GenPlan.dgn Division: BRIDGE Username: armond.j.poradis Date:3/2/2020



PROFILE

Username: armand.j.paradis Date:3/2/2020

Division: BRIDGE

Filename: ...\00\BRIDGE\MSTA\004_Profile.dgn

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

WIN 22234.00

BRIDGE NO. 0658 BRIDGE PLANS

PROJ. MANAGER	J. STETSON		
DESIGN-DETAILED	A. SHKARA	D. SHAW	FEB 2020
CHECKED-REVIEWED		J. STETSON	FEB 2020
DESIGN2-DETAILED2	A.VANBUSKIRK	T. WHITE	JUL 2019
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

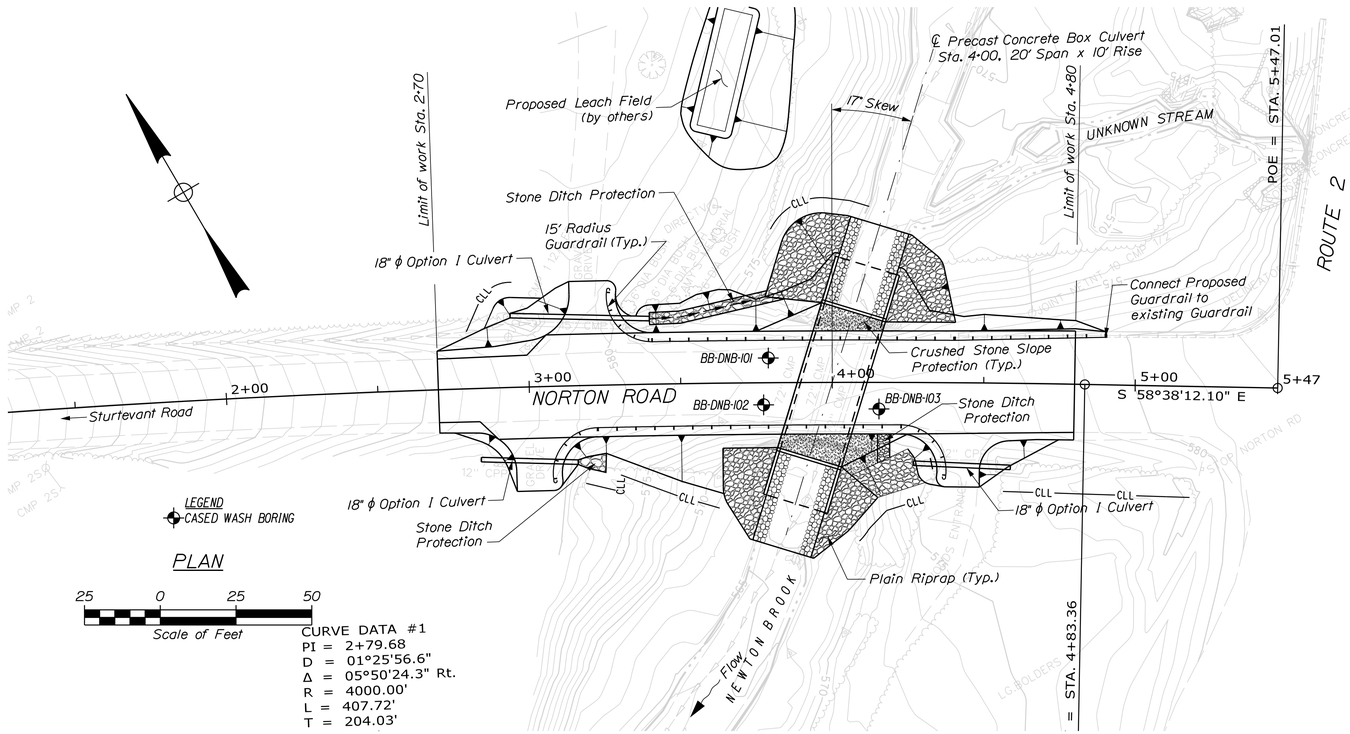
DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD OXFORD COUNTY

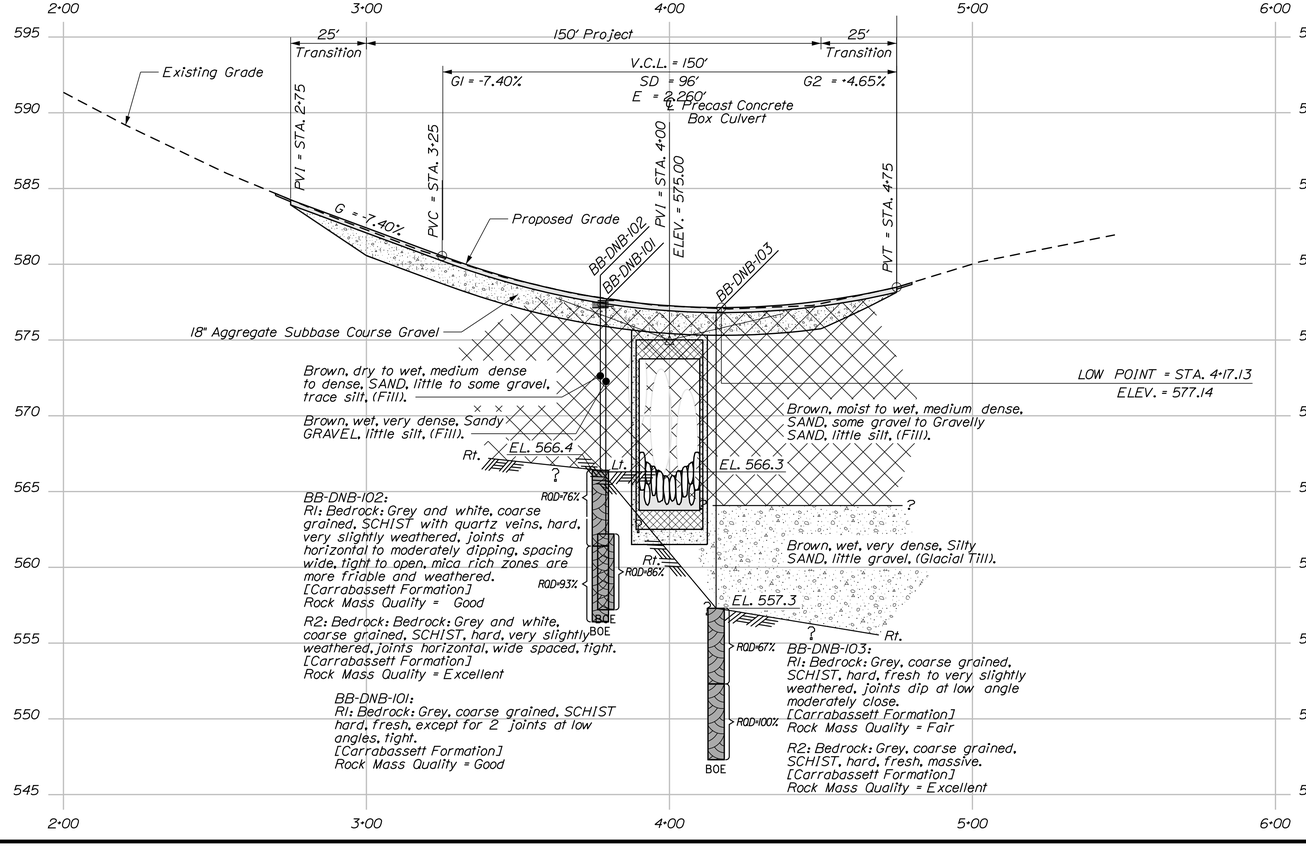
PROFILE

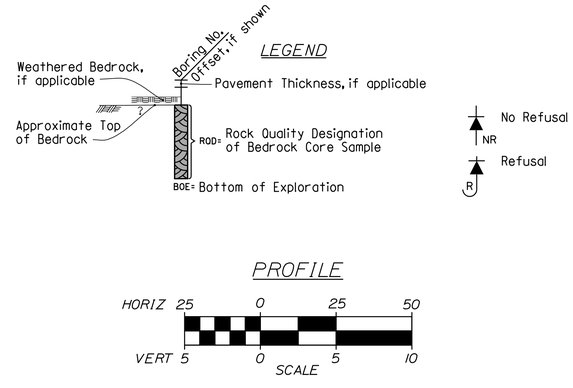
SHEET NUMBER

4

OF 13







Note: 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 and bedrock transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

BRIDGE NO. 0658 — **WIN 22234.00** — BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	J. STETSON	
DESIGN-DETAILED	A. SHKARA	D. SHAW -----
CHECKED-REVIEWED	-----	-----
DESIGN2-DETAILED2	A.VANBUSKIRK	T.WHITE JUL 2019
DESIGN3-DETAILED3	-----	-----
REVISIONS 1	-----	-----
REVISIONS 2	-----	-----
REVISIONS 3	-----	-----
REVISIONS 4	-----	-----
FIELD CHANGES	-----	-----

SIGNATURE

P.E. NUMBER

DATE

DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD — OXFORD COUNTY

BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE

SHEET NUMBER
5
OF 13

Filename: ...\GEOTECH\MSTA\005_BLP&ISP1.dgn Username: armond.j.paradis Division: BRIDGE Date:3/2/2020

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Durrells Mills Bridge #0658 carries Norton Road over Newton
Location: Dixfield, Maine

Boring No.: BB-DNB-101
WIN: 22234.00

Driller: MaineDOT	Elevation (ft.): 577.6	Auger ID/OD:	5" Solid Stem
Operator: Doggett/Niles	Datum: NAVD88	Sampler:	Standard Split Spoon
Logged By: B. Sloven	Rig Type: CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish: 5/22/2018; 07:00–11:00	Drilling Method: Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location: 3+79. 8.2 ft Lt.	Casing ID/OD: HW-4"	Water Level*:	None Observed
Hammer Efficiency Factor: 0.928	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 = Field Vane Shear Test; MV = Unsuccessful Field Vane Shear Test Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; WOH = Weight of 140lb. Hammer; PP = Pocket Penetrometer; WOR/C = Weight of Rods or Casing; WOP = Weight of One Person; S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf); $S_{u(LAB)}$ = Lab Vane Undrained Shear Strength (psf); q_p = Unconfined Compressive Strength (ksf); Nuncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; Nuc = Hammer Efficiency Factor/60%*N-uncorrected; S_t = Pocket Torvane 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 (%)	Nuncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							SSA	577.2		4.5" HMA. — 0.4	
										Brown, wet, medium dense, SAND, some gravel, trace silt, (Fill).	
5							22				
	10	24/2	6.00 – 8.00	5/9/7/8	16	25	36				
							38			Small cobbles.	
							49				
10	20	15.6/1	10.00 – 11.30	7/4/50(3.6")	---		34			Brown, wet, very dense, Sandy GRAVEL, little silt, (Fill).	
							083 BC	566.3		Top of Bedrock at Elev. 566.3 ft. — 11.3	
										Casing REFUSAL. Roller Coned into Bedrock 4.1 ft.	
15	R1	60/60	15.40 – 20.40	RQD = 86%			NQ-2			R1: Bedrock: Grey, coarse grained, SCHIST, hard, fresh, massive except for 2 joints at low angles, tight. Carrabassett Formation Rock Mass Quality = Good R1: Core Times (minsec) 15.4–16.4 ft (3:11) 16.4–17.4 ft (3:23) 17.4–18.4 ft (3:07) 18.4–19.4 ft (time not recorded) 19.4–20.4 ft (3:02) 100% Recovery	
20								557.2		Bottom of Exploration at 20.4 feet below ground surface. — 20.4	
25											

Remarks:

Stratification lines represent approximate boundaries between soil typesst 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-DNB-101

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Durrells Mills Bridge #0658 carries Norton Road over Newton
Location: Dixfield, Maine

Boring No.: BB-DNB-102
WIN: 22234.00

Driller: MaineDOT	Elevation (ft.): 577.5	Auger ID/OD:	5" Solid Stem
Operator: Doggett/Niles	Datum: NAVD88	Sampler:	Standard Split Spoon
Logged By: B. Sloven	Rig Type: CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish: 5/22/2018; 11:00–13:30	Drilling Method: Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location: 3+77.2. 7.4 ft Rt.	Casing ID/OD: HW-4"	Water Level*:	None Observed
Hammer Efficiency Factor: 0.928	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 = Field Vane Shear Test; MV = Unsuccessful Field Vane Shear Test Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; WOH = Weight of 140lb. Hammer; PP = Pocket Penetrometer; WOR/C = Weight of Rods or Casing; WOP = Weight of One Person; S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf); $S_{u(LAB)}$ = Lab Vane Undrained Shear Strength (psf); q_p = Unconfined Compressive Strength (ksf); Nuncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; Nuc = Hammer Efficiency Factor/60%*N-uncorrected; S_t = Pocket Torvane 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 (%)	Nuncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							SSA	577.1		4.5" HMA. — 0.4	
	10	24/5	2.00 – 4.00	5/14/12/12	26	40				Brown, dry, dense, SAND, little gravel, trace silt, (Fill).	GM270769 A-1-b, SM-SW WC=2.6%
5											
	20	24/0	5.00 – 7.00	1/1/3/3	4	6	5			No recovery. Small Cobbles. Coarse Gravel. boney.	
							25				
							40				
10							43				
							41				
	30	13.2/11	10.00 – 11.10	4/25/50(1.2")	---			567.5		Grey, wet, very dense, medium to fine SAND, little silt, trace gravel, (Glacial Till). — 10.0	GM270770 A-2-4, SM WC=28.1%
	R1	60/60	11.10 – 16.10	RQD = 76%			NQ-2	566.4		Top of Bedrock at Elev. 566.4 ft. — 11.1	
15										R1: Bedrock: Grey and white, banded, coarse grained, SCHIST with quartz veins, hard, very slightly weathered, joints at horizontal to moderately dipping, spacing wide, tight to open, mica rich zones are more friable and weathered. Carrabassett Formation Rock Mass Quality = Good R1: Core Times (minsec) 11.1–12.1 ft (3:36) 12.1–13.1 ft (2:00) 13.1–14.1 ft (3:09) 14.1–15.1 ft (3:46) 15.1–16.1 ft (3:52) 100% Recovery	
	R2	60/56	16.10 – 21.10	RQD = 93%						R2: Bedrock: Grey and white, banded, coarse grained, SCHIST, hard, very slightly weathered, joints horizontal, at wide spacing, tight. Carrabassett Formation Rock Mass Quality = Excellent R2: Core Times (minsec) 16.1–17.1 ft (2:57) 17.1–18.1 ft (2:34) 18.1–19.1 ft (3:19) 19.1–20.1 ft (3:51) 20.1–21.1 ft (4:06) 93% Recovery	
20								556.4		Bottom of Exploration at 21.1 feet below ground surface. — 21.1	
25											

Remarks:

Stratification lines represent approximate boundaries between soil typesst 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.

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Boring No.: BB-DNB-102

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Durrells Mills Bridge #0658 carries Norton Road over Newton
Location: Dixfield, Maine

Boring No.: BB-DNB-103
WIN: 22234.00

Driller: MaineDOT	Elevation (ft.): 576.8	Auger ID/OD:	5" Solid Stem
Operator: Doggett/Niles	Datum: NAVD88	Sampler:	Standard Split Spoon
Logged By: B. Sloven	Rig Type: CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish: 5/22/2018–5/23/2018	Drilling Method: Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location: 4+15.4. 8.9 ft Rt.	Casing ID/OD: HW-4"	Water Level*:	None Observed
Hammer Efficiency Factor: 0.928	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 = Field Vane Shear Test; MV = Unsuccessful Field Vane Shear Test Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; WOH = Weight of 140lb. Hammer; PP = Pocket Penetrometer; WOR/C = Weight of Rods or Casing; WOP = Weight of One Person; S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf); $S_{u(LAB)}$ = Lab Vane Undrained Shear Strength (psf); q_p = Unconfined Compressive Strength (ksf); Nuncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; Nuc = Hammer Efficiency Factor/60%*N-uncorrected; S_t = Pocket Torvane 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 (%)	Nuncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							SSA				
5	10	24/10	5.00 – 7.00	5/6/6/4	12	19	35			Brown, moist, medium dense, SAND, some gravel, little silt, (Fill).	GM270771 A-1-b, SM WC=9.2%
							33			Small Cobble. Coarse Gravel. boney.	
							35				
							42				
10							39				
	20	24/7	10.00 – 12.00	12/7/6/23	13	20	37			Brown, wet, medium dense, Gravelly SAND, little silt, (Fill).	GM270772 A-1-b, SM WC=11.7%
							61				
							125	563.8		13.0	
							155				
							200			Brown, wet, very dense, Silty SAND, little gravel, (Glacial Till).	GM270773 A-4b, SM WC=10.0%
15	30	18/15	15.00 – 16.50	58/50/50(6")	100	155				Roller Coned ahead to 19.5 ft bgs.	
							27				
							54				
							80				
	R1	60/60	19.50 – 24.50	RQD = 67%			NQ-2	557.3		Top of Bedrock at Elev. 557.3 ft. — 19.5	
20										R1: Bedrock: Grey, coarse grained, SCHIST, hard, fresh to very slightly weathered, joints dip at low angle, moderately close. Carrabassett Formation Rock Mass Quality = Fair R1: Core Times (minsec) 19.5–20.5 ft (4:04) 20.5–21.5 ft (3:20) 21.5–22.5 ft (2:55) 22.5–23.5 ft (3:29) 23.5–24.5 ft (4:26) 100% Recovery	
	R2	60/60	24.50 – 29.50	RQD = 100%						R2: Bedrock: Grey, coarse grained, SCHIST, hard, fresh, massive. Carrabassett Formation Rock Mass Quality = Excellent R2: Core Times (minsec) 24.5–25.5 ft (5:11) 25.5–26.5 ft (5:03) 26.5–27.5 ft (4:25) 27.5–28.5 ft (3:25) 28.5–29.5 ft (3:27) 100% Recovery	
25								547.3		Bottom of Exploration at 29.5 feet below ground surface. — 29.5	
30											
35											
40											
45											
50											

Remarks:

Stratification lines represent approximate boundaries between soil typesst 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-DNB-103

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

WIN 22234.00

BRIDGE NO. 0658

BRIDGE PLANS

PROJ. MANAGER	J. STETSON	DATE
DESIGN-DETAILED	D. SHAW	BY
CHECKED-REVIEWED	A. SHKARA	SIGNATURE
DESIGN2-DETAILED2	K.VANBUSKIRK	AUG 2019
DESIGN3-DETAILED3	T.WHITE	P.E. NUMBER
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		DATE
REVISIONS 4		
FIELD CHANGES		

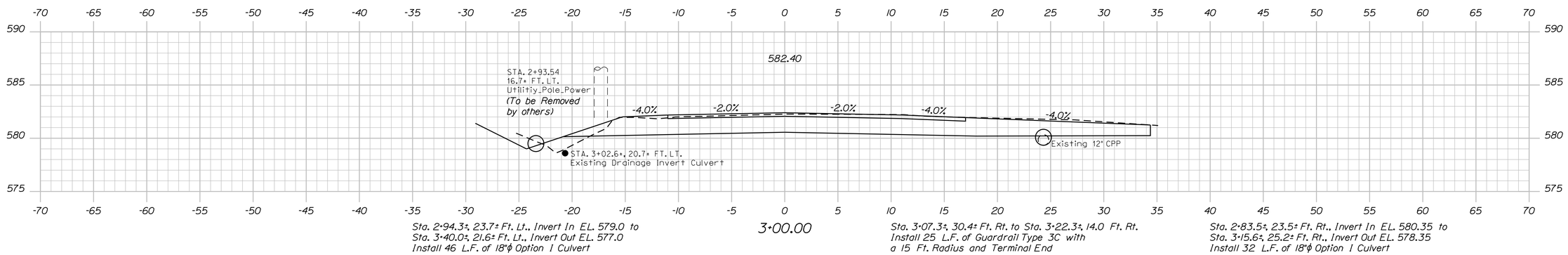
DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD OXFORD COUNTY

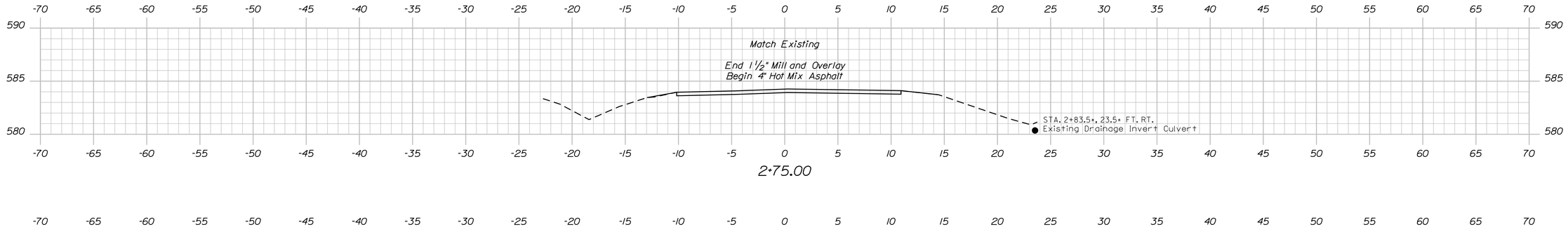
BORING LOGS

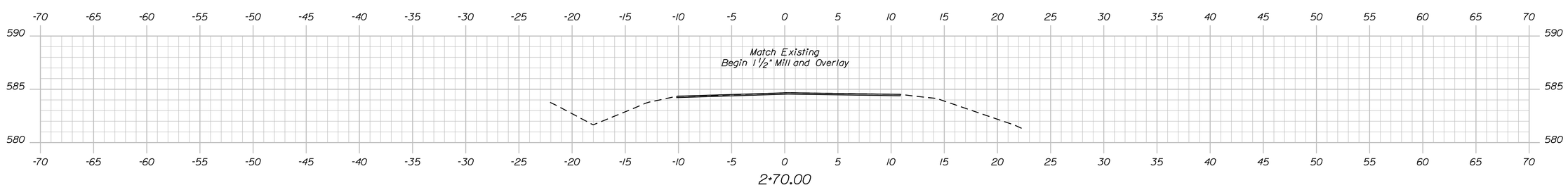
SHEET NUMBER

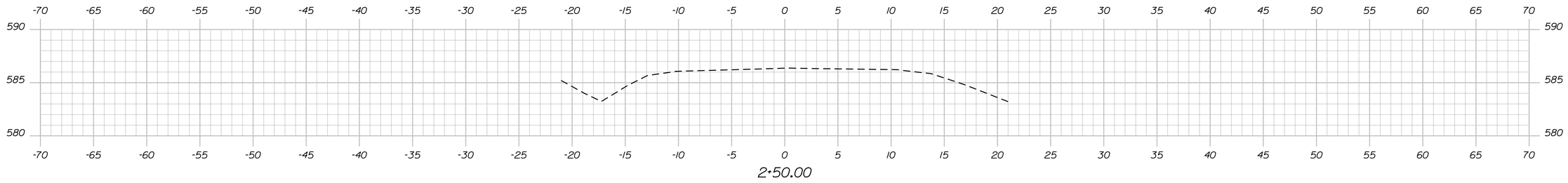
6

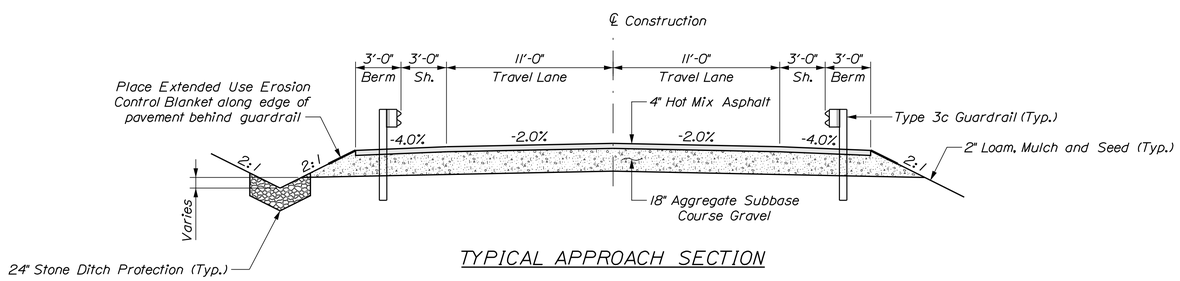
OF 13











TYPICAL APPROACH SECTION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

WIN 22234.00

BRIDGE PLANS

BRIDGE NO. 0658

	BY	DATE
PROJ. MANAGER	J. STETSON	
DESIGN-DETAILED	D. SHAW	FEB 2020
CHECKED-REVIEWED	A. SHKARA	FEB 2020
DESIGN2-DETAILED2	J. STETSON	JUL 2019
DESIGN3-DETAILED3	A.VARBUSKIRK	
REVISIONS 1	T. WHITE	
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD OXFORD COUNTY

CROSS SECTIONS

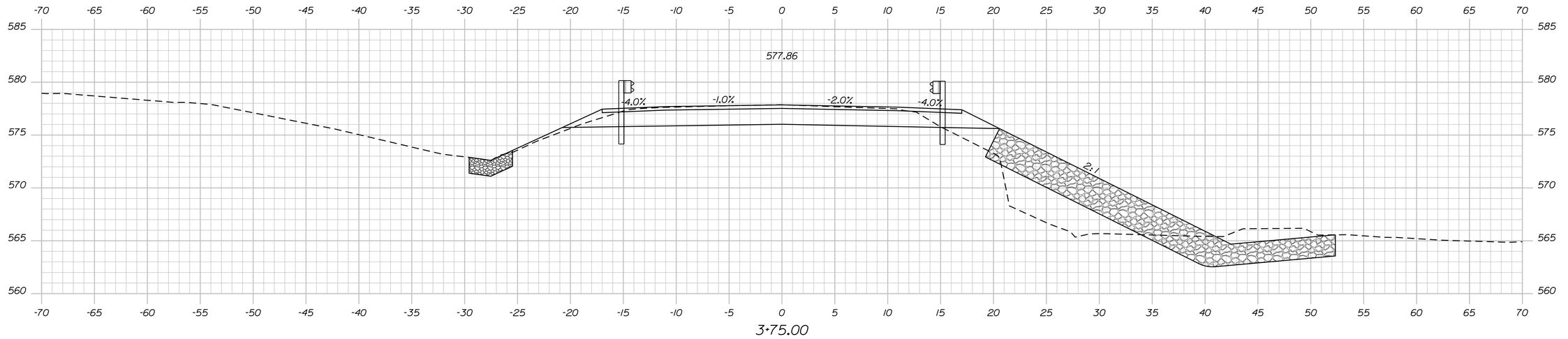
SHEET NUMBER

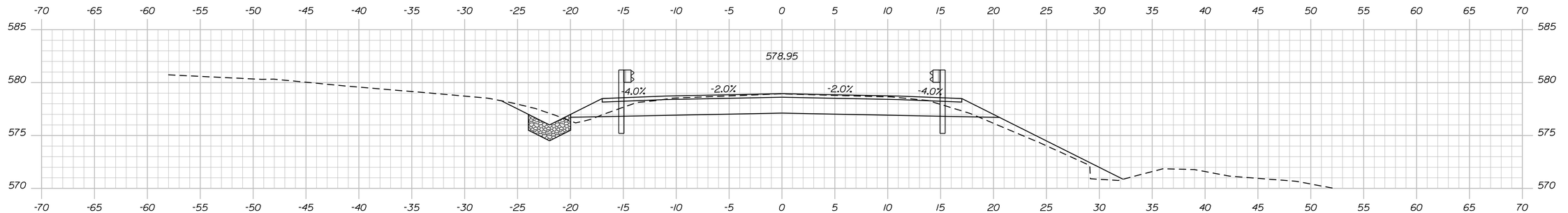
7

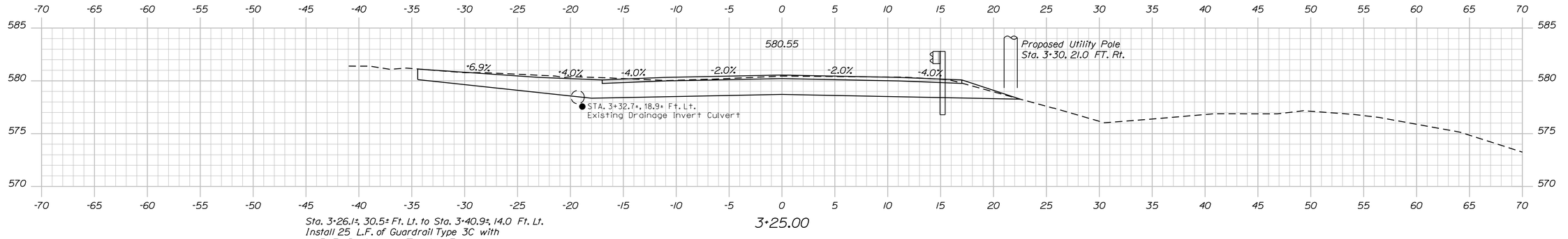
OF 13

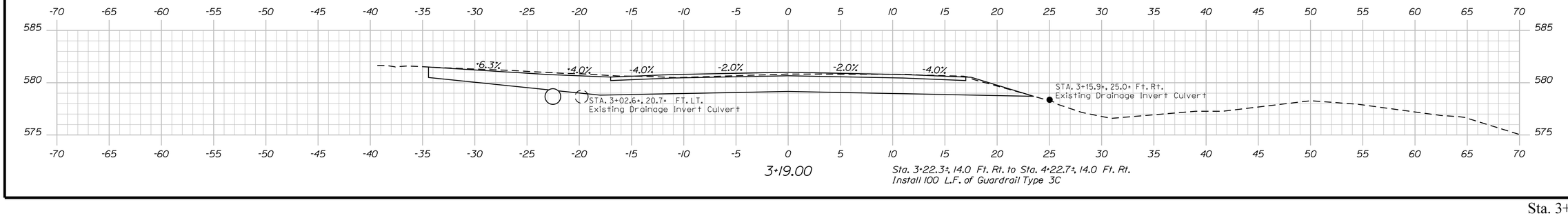
Filename: ...\MSTA\007_XSECT_2+50-3+00.dgn Username: armond.j.paradis Division: BRIDGE Date:3/2/2020

Sta. 2+50 to Sta. 3+00









STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

WIN 22234.00

BRIDGE NO. 0658

BRIDGE PLANS

PROJ. MANAGER	J. STETSON		DATE
DESIGN-DETAILED	A. SHKARA	D. SHAW	FEB 2020
CHECKED-REVIEWED		J. STETSON	FEB 2020
DESIGN2-DETAILED2	A.VANBUSKIRK	T. WHITE	JUL 2019
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD OXFORD COUNTY

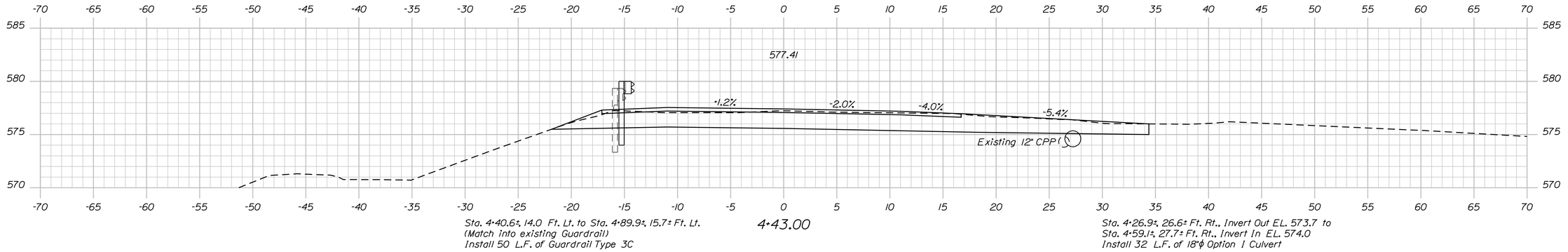
CROSS SECTIONS

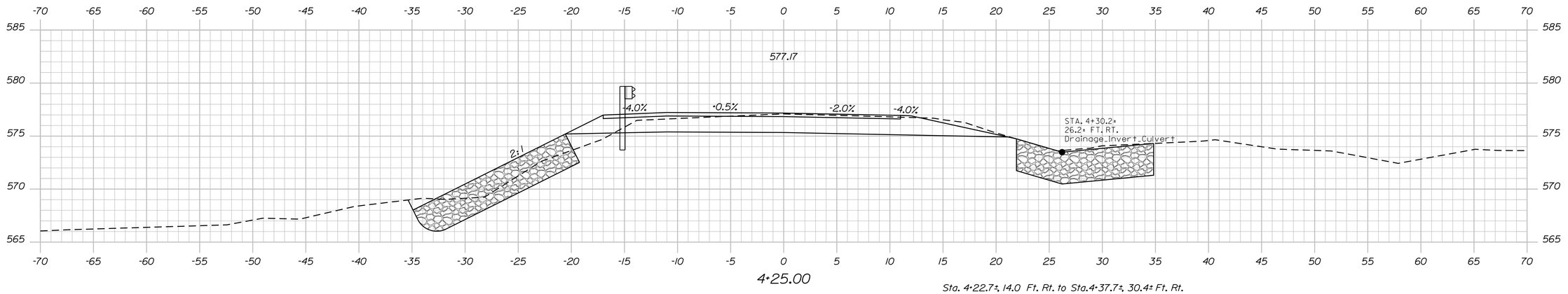
SHEET NUMBER

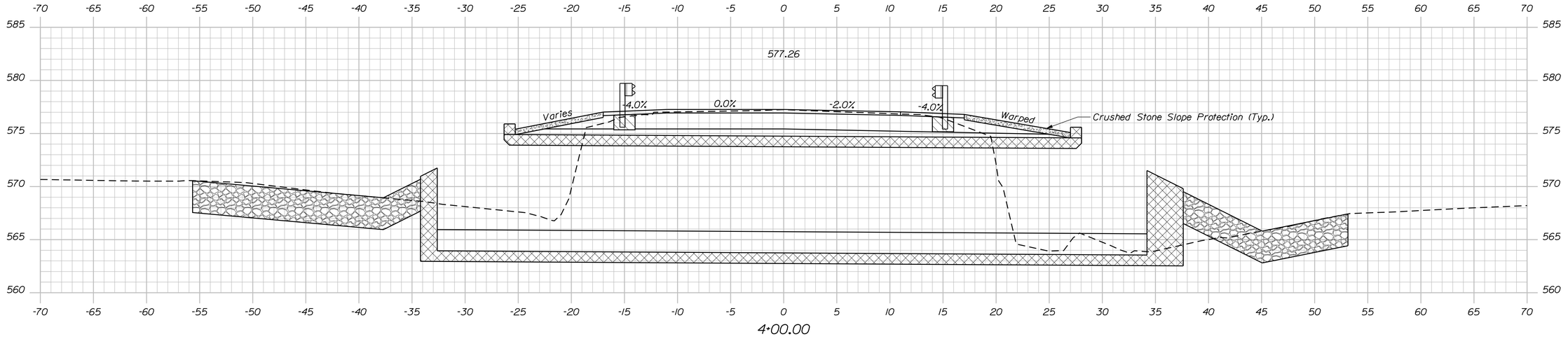
8

OF 13

Sta. 3+19 to Sta. 3+75







STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

WIN 22234.00

BRIDGE NO. 0658

BRIDGE PLANS

PROJ. MANAGER	J. STETSON		DATE
DESIGN-DETAILED	A. SHKARA	D. SHAW	FEB 2020
CHECKED-REVIEWED		J. STETSON	FEB 2020
DESIGN2-DETAILED2	A.VANBUSKIRK	T. WHITE	JUL 2019
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD OXFORD COUNTY

CROSS SECTIONS

SHEET NUMBER

9

OF 13

Sta. 4+00 to Sta. 4+43

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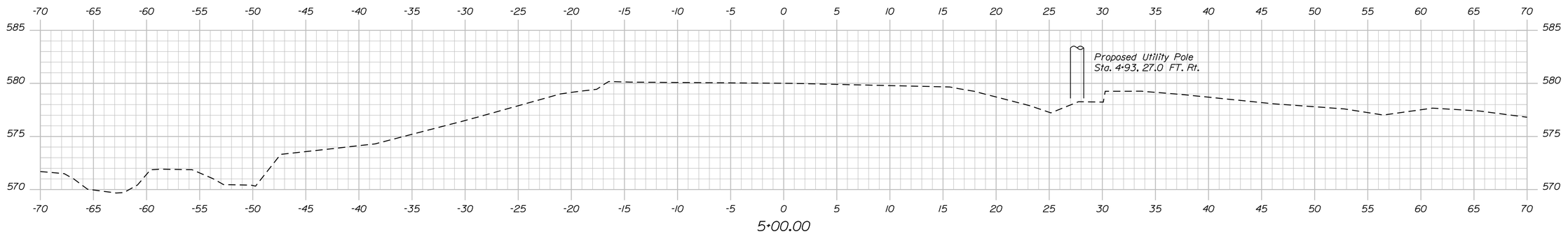

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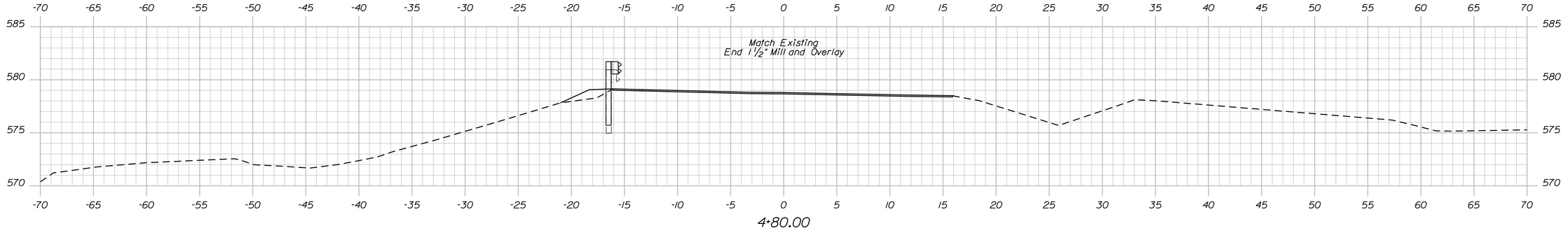

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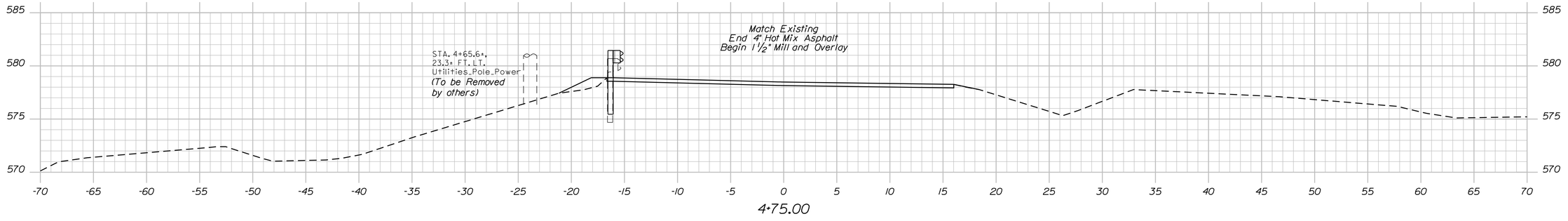

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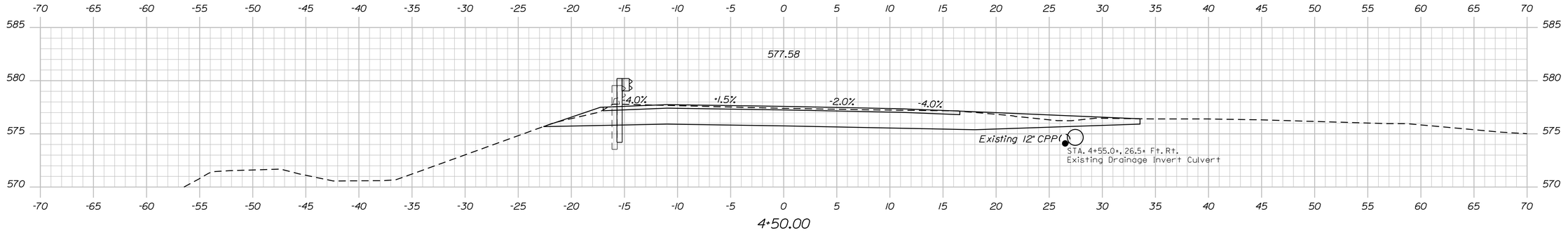


4+50.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

WIN 22234.00

BRIDGE NO. 0658

BRIDGE PLANS

PROJ. MANAGER	J. STETSON		
DESIGN-DETAILED	A. SHKARA	D. SHAW	FEB 2020
CHECKED-REVIEWED	A. SHKARA	J. STETSON	FEB 2020
DESIGN2-DETAILED2	A.VANBOSKIRK	T. WHITE	JUL 2019
DESIGN3-DETAILED3	A.VANBOSKIRK		
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD OXFORD COUNTY

CROSS SECTIONS

SHEET NUMBER

10

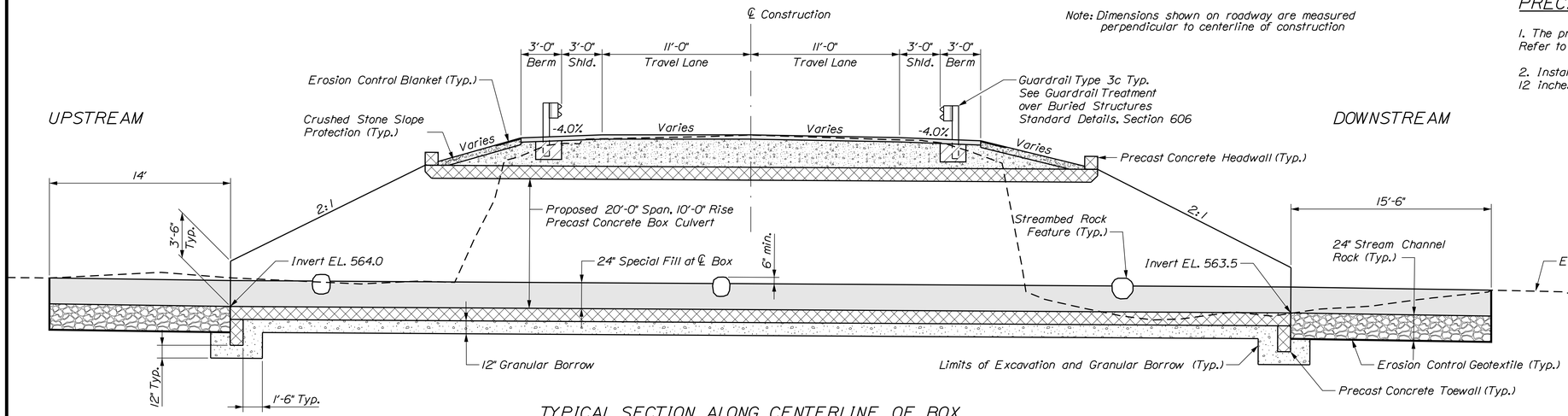
OF 13

Sta. 4+50 to Sta. 5+00

Username: armond.j.paradis Date:3/2/2020

Division: BRIDGE

Filename: ...\MSTA\010_XSECT_4+50-5+00.dgn



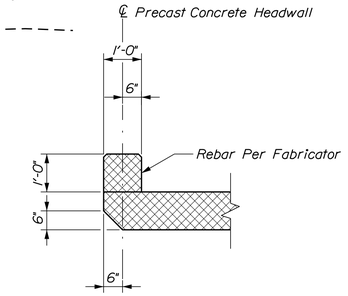
TYPICAL SECTION ALONG CENTERLINE OF BOX

Note: Dimensions shown on roadway are measured perpendicular to centerline of construction

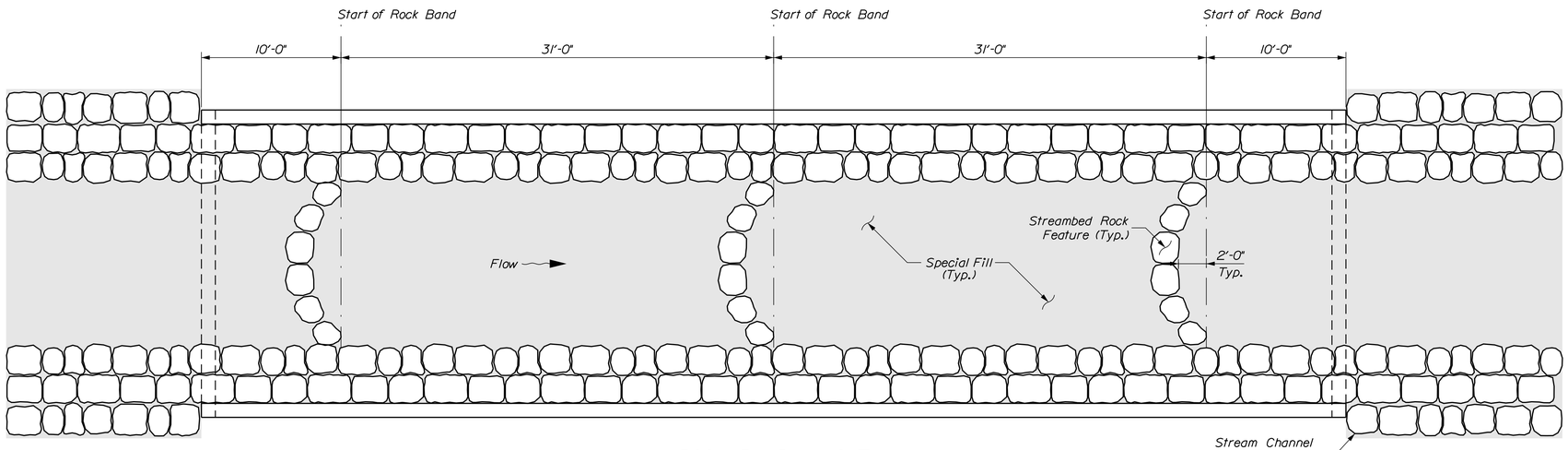
PRECAST CONCRETE BOXES NOTES

1. The precast concrete box culvert will be supplied by the MaineDOT. Refer to Special Provision Section 534.

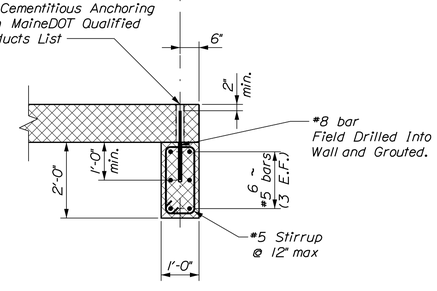
2. Install standard membrane waterproofing over the top and to 12 inches down the exterior sides of the precast units.



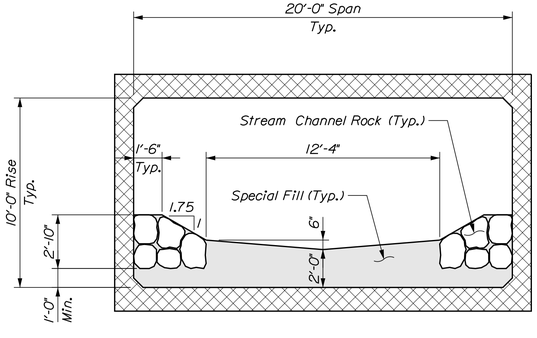
PRECAST CONCRETE HEADWALL DETAIL



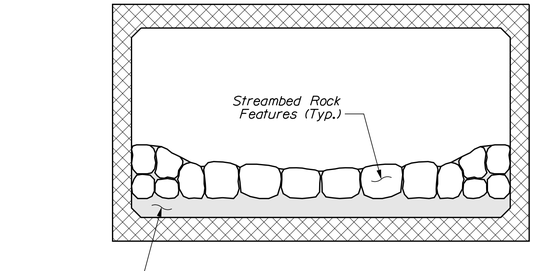
ROCK BAND LAYOUT
Shown without top of box



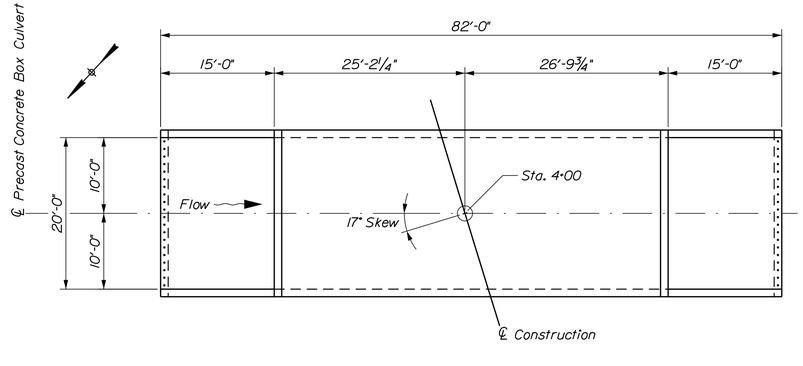
PRECAST CONCRETE TOEWALL DETAIL



TYPICAL BOX SECTION
Between Rock Bands



TYPICAL BOX SECTION
Near Rock Bands



PLAN

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

WIN 22234.00

BRIDGE NO. 0658

BRIDGE PLANS

	BY	DATE
DESIGNED	J. STETSON	
DETAILED	D. SHAW	FEB 2020
CHECKED	A. SHKARA	J. STETSON	FEB 2020
REVIEWED	A.VANBUSKIRK	T. WHITE	JUL 2019
DESIGN2-DETAILED2	A.VANBUSKIRK		
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

PROJ. MANAGER: J. STETSON

SIGNATURE

P.E. NUMBER

DATE

DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD OXFORD COUNTY

PRECAST CONCRETE BOX DETAILS

SHEET NUMBER
11
OF 13

Username: armond.j.paradis Date:3/2/2020
Division: BRIDGE
Filename: ...\011_Precast_Box_Details.dgn

PLAN LEGEND

Town, County, State		New R/W Along Existing R/W		Sanitary Sewer		Traveled Way	
Approx. Property Lines	P.L.	Building	Clearing Limit Line CLL	Telephone Line	T	Ditch	
Existing Right of Way		Trees Conifer / Deciduous		Electric Line	E	Catch Basin	
Limits of Wrought Portion	L.O.W.P.	Tree Line	Bush Line	Water Line	W	Manhole	
Control Of Access	C.O.A.	Water Edge		Underdrain Line		Sewer Manhole	
New Right of Way		Ledge	Rock/Boulder Flag Pole	Gas Line	G	Utility Pole	
New Easement		Fence CHAIN LINK / BARB WIRE / STOCKADE		Guardrail		Fire Hydrant	
New Temporary Rights		Sign	Well WELL Mailbox	Culvert		Curbing	
New R/W Within Existing R/W							

	Existing	Proposed
Sanitary Sewer		
Telephone Line	T	T
Electric Line	E	E
Water Line	W	W
Underdrain Line		
Gas Line	G	G
Guardrail		
Culvert		

	Existing	Proposed
Traveled Way		
Ditch		
Catch Basin		
Manhole		
Sewer Manhole		
Utility Pole		
Fire Hydrant		
Curbing		

Cut Line C—C—C Fill Line F—F—F
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

PLOT PLAN OF BRADFORD ESTATES
BY ROBERT F. BRADFORD
DATED DECEMBER 1989, O.C.R.D. FILE NO. 1763

GRID NORTH
NAD83 (2011) MAINE 2000 WEST ZONE
COMBINED FACTOR 0.99995964

DENNIS N. RACKLIFFE
ELIZABETH F. CROCKETT
ITEM NO. (3)
SLOPE EASE. = 0.07± AC. (1)
DRAINAGE EASE. = (1)
CONST. & MAINT. EASE. = 115± S.F. (1)
TEMP. CONST. RIGHTS = 0.13± AC.(2)
TEMP. ROAD RIGHT = 0.35± AC. (1)
TOTAL AREA = 3.27± AC. (PER TOWN)

COLIN B. PHILBRICK
JEAN L. PHILBRICK
ITEM NO. (1)
TEMP. ROAD RIGHT = 129± S.F. (1)
TOTAL AREA = 6.03± AC. (PER TOWN)

JOCELYN B. FERLAND
DREW F. BEEDY
PAMELA L. PALMER
CONSTANCE A. BEEDY - LIFE ESTATE
ITEM NO. (2)
SLOPE EASE. = 0.07± AC. (1)
DRAINAGE EASE. = (3)
CONST. AND MAINT. EASE. = 192± S.F. (2)
TEMP. CONST. RIGHTS = 422± S.F. (2)
TOTAL AREA = 1.67± AC. (PER TOWN)

HEIRS OF EDWARD DALEY
KATHLEEN DALEY

POB = STA. 0+57.00
PC = STA. 0+75.64
PT = STA. 4+83.36
POE = STA. 5+47.01
BEGIN B.L. 1+00
END B.L. STA. 5+47.00
0+57
2+00
3+00
4+00
5+00
5+47
407.72'
S58°38'12.1"E
63.64'
P.I. 2+22.68
NORTON ROAD
NEWTON BROOK
D.O.T. FILE NO. 9-309
STATE HIGHWAY "25"
MAIN STREET
U.S. ROUTE 2 & ROUTE 17
Approximate Location of Cofferdam
TOE OF SLOPE DITCH STA. 3+60 TO STA. 4+10 LT.
TEMP. ROAD LIMITS 0.35± AC.
TEMP. CONST. LIMITS 0.12± AC.
TEMP. ROAD LIMITS
SLOPE EASE. LIMITS 0.07± AC.
INLET DRAINAGE STRUCTURE STA. 4+09± LT.
CONST. & MAINT. EASE. LIM. CONST. LIM. 115± S.F.
TEMP. 129± S.F.
TEMP. 465± S.F.
337± S.F. TEMP. CONST. LIMITS
DRAINAGE STRUCTURE STA. 2+84± TO STA. 3+17± RT.
CONST. & MAINT. EASE. LIM.
TOE OF SLOPE DITCH STA. 3+17 TO STA. 3+80 RT.
68± S.F. CONST. & MAINT. EASE. LIM.
85± S.F. TEMP. CONST. LIMITS
EXISTING HIGHWAY DITCH DRAINAGE ACQUIRED AS PART OF D.O.T. FILE NO. 9-309, APRIL 2002
DRAINAGE STRUCTURE STA. 4+27± TO STA. 4+33± RT.
OUTLET DRAINAGE STRUCTURE STA. 3+92± RT.
TOE OF SLOPE DITCH STA. 4+00 TO STA. 4+27 RT.
EXISTING SLOPE EASE LIMITS
EXISTING SLOPE EASEMENT ACQUIRED AS PART OF D.O.T. FILE NO. 9-309, APRIL 2002

CURVE DATA #1
PI = 2+22.68
D = 1°25'56.6"
Δ = 5°50'24.3" Rt.
R = 4000.00'
L = 407.72'
T = 204.03'
E = 5.20'

EXISTING RIGHT OF WAY REFERENCES

NORTON ROAD
DIXFIELD TOWN RECORDS
ACCEPTED - SEPTEMBER 10, 1832
3 RODS WIDE

SEE ALSO:

D.O.T. FILE NO. 9-309, SHEET 11, APRIL 2002
S.H.C. FILE NO. 9-4, OCTOBER 1930

REVISIONS			
NO.	DATE	DESCRIPTION	BY

PLAN FILED IN PLAN BOOK PAGE COUNTY RECORD

NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE
		COND.	11/12/19	5492	68

BRUCE A. VAN NOTE
COMMISSIONER
JOYCE NOEL TAYLOR
CHIEF ENGINEER
DATE

BRIDGE NO. 0658 DURRELLS MILL BRIDGE OVER NEWTON BROOK WIN 022234.00

TOWN WAY
NORTON ROAD
DIXFIELD OXFORD COUNTY
FEDERAL AID PROJECT NO. 2223400

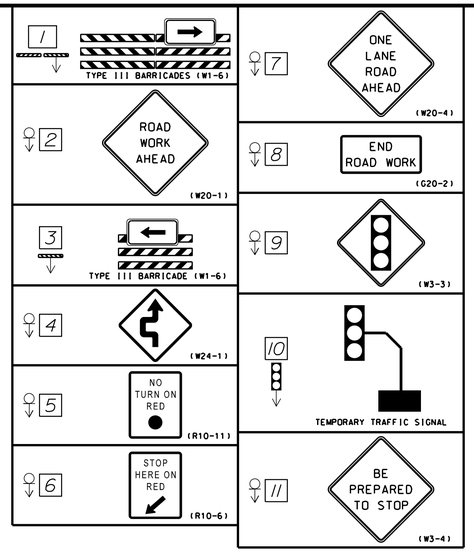
MAY 2019 | RIGHT-OF-WAY MAP | D.O.T. FILE NO. 9-403
SCALE 1" = 25' | SHEET 1 OF 1

ITEM	TECH	CHECKED
EXISTING CONDITION PLAN	PNS	
FINAL RIGHT OF WAY	PNS	
AREAS		

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

SHEET NUMBER
12
OF 13

Filename: ...\00\ROW\MSTA\001_RWPLAN1.dgn Division: BRIDGE Username: armond.j.porodis Date:3/2/2020



CURVE DATA #1
PI = 2+79.68
D = 01°25'56.6"
Δ = 05°50'24.3" Rt.
R = 4000.00'
L = 407.72'
T = 204.03'
E = 5.20'

PLAN

25 0 25 50
Scale of Feet

NOTES

1. This Traffic Control Plan is conceptual and for informational purposes only. The Contractor is still responsible for continuous and effective traffic control as well as the submission of a Traffic Control Plan in accordance with Section 652 of the Standard Specifications. The design of the detour is the responsibility of the Contractor.

2. On all approaches, W23-2 "New Traffic Pattern Ahead" shall be installed and displayed for up to (2) weeks upon activation of the detour.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022234.00

WIN 22234.00

BRIDGE NO. 0658

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	J. STETSON	
DESIGN-DETAILED	D. SHAW	FEB 2020
CHECKED-REVIEWED	A. SAKARA	J. STETSON FEB 2020
DESIGN2-DETAILED2	A.VARBUSKIRK	T. WHITE JUL 2019
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

DURRELLS MILL BRIDGE
NEWTON BROOK
DIXFIELD OXFORD COUNTY

TRAFFIC CONTROL PLAN

SHEET NUMBER

13

OF 13