STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLAN LEGEND

Town, County, State		Catch Basins	Existing ■ Proposed
Property Lines		Manholes	Existing ● Proposed
R/W Lines-Existing		Proposed Underdrain	
R/W Lines-Proposed		Proposed Ditch	
Culvert-Existing		Existing Ditch	
Culvert Proposed		Utility Poles	Existing ◆ Proposed
Curbing	Existing / Proposed	Fire Hydrants	Existing ◆ Proposed
Type 1		Existing Water Line	
Type 3		Existing San. Sewer	
Type 5		Existing San. Sewer Manhole	
Outline of Bodies of Water		Guardrail-Existing	
Exposed Bedrock		Guardrail-Proposed	
Buildings		Guardrail-Cable, Other	
Trees	Conifer / Deciduous	Centerline-Existing	
Tree Line		Centerline-Proposed	10+00
Clearing Limit Line		Travelway-Existing	
Railroad		Travelway-Proposed	

Boring — HB-XXX-###

Pavement Core — PC-#

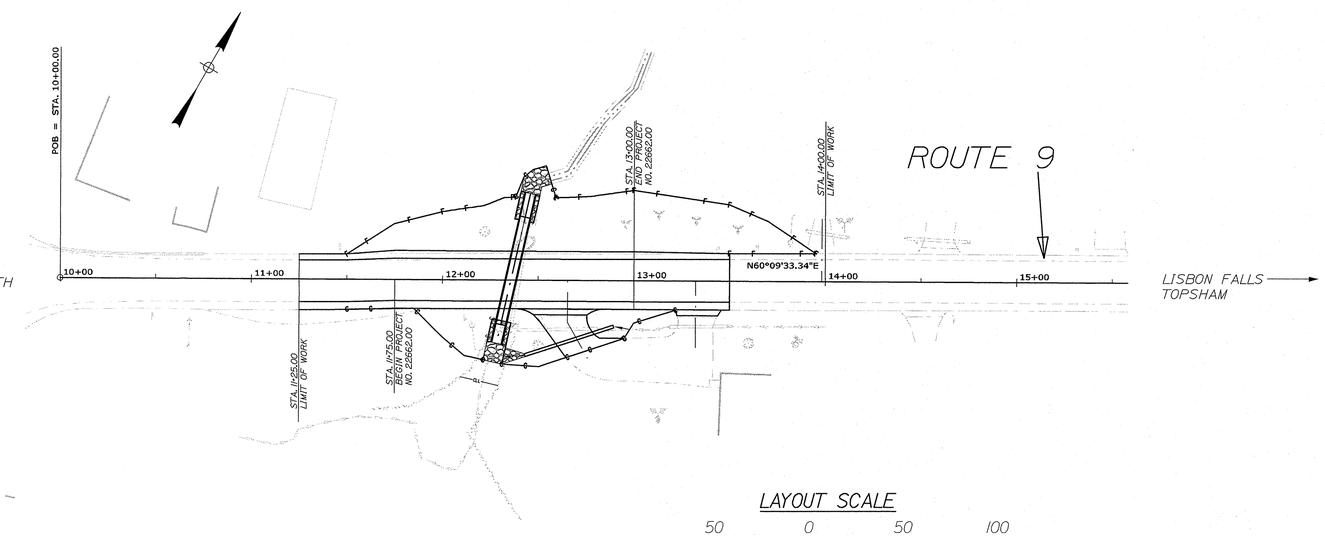
Test Pit — TP-XXX-###

Probe — P-#.#X

#.# = Depth
X = W (Weathered Rock)
R (Refusal)
NR (No Refusal)

DURHAM
ANDROSCOGGIN COUNTY
ROUTE 9
STATE PROJECT NO. 22662.00
PROJECT LENGTH : 0.03 MILES

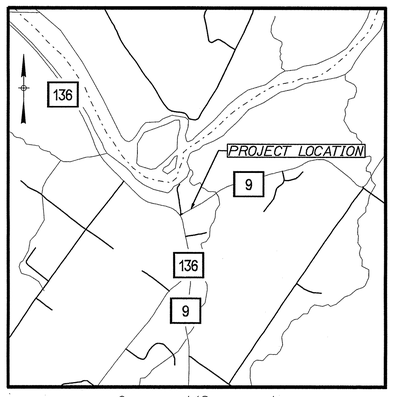
INDEX OF SHEETS



LAYOUT SCALE

50 0 50 100

Scale in Feet



0 1/2 1

Scale in Miles

LOCATION MAP

TRAFFIC DATA

Current (2020) AADT	3080
Future (2032) AADT	3450
DHV - % of AADT	11%
Design Hour Volume	376
% Heavy Trucks (AADT)	7%
Directional Distribution (DHV)	51%
Design Speed (mph)	35 MPH
Functional Class:	Major/Urban Collector
Corridor Priority	3

PROJECT LOCATION:	LARGE CULVERT #121321 LOCATED 0.02 MILE EAST OF ROYALSBOROUGH ROAD
PROGRAM AREA:	HIGHWAY PROGRAM
SCOPE OF WORK:	LARGE CULVERT REPLACEMENT

WIN 22662.00 STATE PROJECT NO. 22662.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER: — 1-5-21

CHIEF ENGINEER: — 1-5-2021

STATE OF MAINE — LICENSED PROFESSIONAL ENGINEER — ATLEE MOUSSEAU — No. 10415

SIGNATURE — 10415

P.E. NUMBER — 10-21-2020

DATE

PROJECT INFORMATION

PROGRAM	HIGHWAY
PROJECT MANAGER	ERNEST MARTIN
DESIGNER	CRAIG H TAYLOR
CONSULTANT	------
PROJECT RESIDENT	------
CONTRACTOR	------
PROJECT COMPLETION DATE	------

DURHAM
ROUTE 9

TITLE SHEET

SHEET NUMBER

1

OF 12

Filename: ...\HIGHWAY\MSTA\001_Title_3.dgn Username: Brooke.Glidden Division: HIGHWAY Date:10/22/2020

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
203.20	COMMON EXCAVATION	606	CY
203.25	GRANULAR BORROW	210	CY
203.55	CULVERT BEDDING STONE	45	CY
206.061	STRUSTURAL EARTH EX - DRAINAGE & MINOR STRUCTURES BELOW GRADE	23	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	418	CY
403.208	HOT MIX ASPHALT 12.5 MM HMA SURFACE	65	T
403.209	HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, ISLANDS & INCIDENTALS)	2	T
403.213	HOT MIX ASPHALT 12.5 MM BASE	105	T
409.15	BITUMINOUS TACK COAT - APPLIED	40	G
511.07	COFFERDAM: UPSTREAM	1	LS
511.07	COFFERDAM: DOWNSTREAM	1	LS
603.17	18 INCH CULVERT PIPE OPTION I	48	LF
603.259	60" CULVERT PIPE OPTION III	80	LF
610.08	PLAIN RIPRAP	32	CY
613.319	EROSION CONTROL BLANKET	10	SY
615.07	LOAM	86	CY
618.13	SEEDING METHOD NUMBER 1	7	UN
619.12	MULCH	7	UN
619.14	EROSION CONTROL MIX	3	CY
620.54	STABILIZATION/REINFORCEMENT GEOTEXTILE	200	SY
620.58	EROSION CONTROL GEOTEXTILE	107	SY
620.65	REINFORCEMENT GEOGRID	67	SY
627.733	4 INCH WHITE OR YELLOW PAINTED PAVE MRK LINE	825	LF
627.78	TEMPORARY 4 INCH PAINTED PAVEMENT MARKING LINE WHITE OR YELLOW	825	LF
629.05	HAND LABOR, STRAIGHT TIME	30	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	15	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	15	HR
643.72	TEMPORARY TRAFFIC SIGNAL	2	EA
652.312	TYPE III BARRICADE	2	EA
652.33	DRUM	20	EA
652.34	CONE	20	EA
652.35	CONSTRUCTION SIGNS	106	SF
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	30	CD
652.38	FLAGGER	200	HR
652.61	STAGED CONSTRUCTION AND TRAFFIC CONTROL	1	LS
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	1	LS
659.10	MOBILIZATION	1	LS

NOTES:

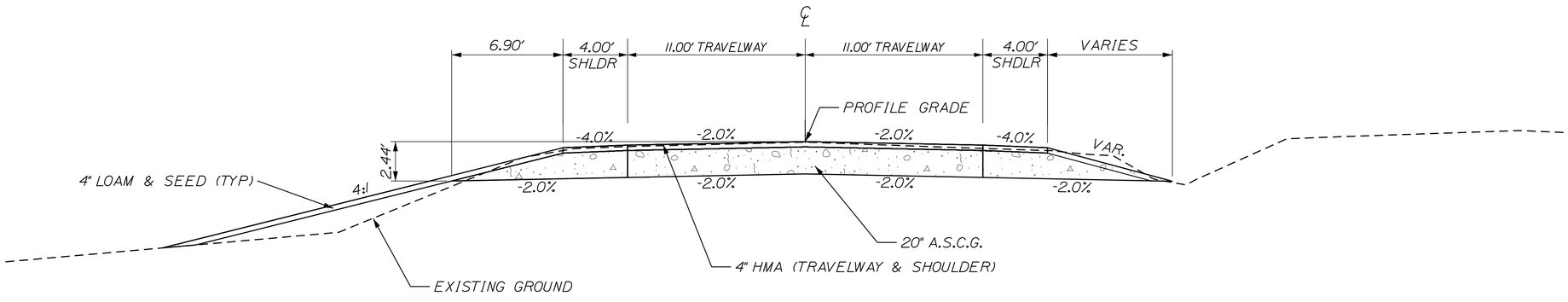
1. THE PAVEMENT, BASE AND SUBBASE DEPTHS AS SHOWN ON THE PLANS ARE INTENDED TO BE NOMINAL.

2. WHEN SUPERELEVATION EXCEEDS THE SLOPE OF THE LOW SIDE SHOULDER, THE LOW SIDE SHOULDER SHALL HAVE THE SAME SLOPE AS THE TRAVELWAY.

3. CROWNS FOR BOTH NORMAL AND SUPERELEVATION SECTIONS FOR ALL COURSES OF SUBBASE AND PAVEMENT SHALL BE STRAIGHT.

4. THE GRAVEL QUANTITY CALCULATION IS BASED ON A 4" LOAM OR DIRTY BORROW DEPTH. THE ACTUAL DEPTH MAY VARY. SEE THE GENERAL NOTES.

5. THE ALGEBRAIC DIFFERENCE BETWEEN THE SHOULDER AND TRAVEWAY CROSS SLOPES "ROLLOVER" SHALL NOT EXCEED 8%.



TYPICAL SECTION

NOT TO SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

22662.00

WIN 22662.00

HIGHWAY PLANS

PROJ. MANAGER	ERNEST MARTIN	BY	DATE
DESIGN-DETAILED	CRAIG H TAYLOR	-----	---
CHECKED-REVIEWED	-----	-----	SIGNATURE
DESIGN2-DETAILED2	C.RUSSELL	T.WHITE	May 2019
DESIGN3-DETAILED3	-----	-----	P.E. NUMBER
REVISIONS 1	-----	-----	DATE
REVISIONS 2	-----	-----	
REVISIONS 3	-----	-----	
REVISIONS 4	-----	-----	
FIELD CHANGES	-----	-----	

DURHAM
ROUTE 9

TYPICAL SECTION/ESTIMATED QUANTITIES

SHEET NUMBER

2

OF 12

GENERAL NOTES:

1. ALL CLEARING SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO SEPARATE PAYMENT WILL BE MADE. THE ACTUAL LINES FOR CLEARING SHALL BE ESTABLISHED IN THE FIELD BY THE CONTRACTOR AS INDICATED ON THE PLANS AND APPROVED BY THE RESIDENT.

2. GRUBBING IN FILL AREAS HAS BEEN SHOWN ON THE CROSS SECTIONS AND THE QUANTITIES NOTED. THESE LIMITS ARE APPROXIMATE AND HAVE BEEN USED FOR ESTIMATING PURPOSES ONLY. ACTUAL GRUBBING LIMITS MAY VARY BASED ON FIELD CONDITIONS AS DIRECTED BY THE RESIDENT.

3. ALL INSLOPE AND DITCHES IN CUT AREAS SHALL BE GRADED AS SHOWN ON THE TYPICALS OR FLATTER, OR AS DIRECTED BY THE RESIDENT.

4. THE CONTRACTOR SHALL PLAN AND CONDUCT THEIR WORK ACCORDINGLY SO THAT UPON FINAL COMPLETION OF THE PROJECT THERE IS NO DROP-OFF FROM THE EDGE OF SHOULDER PAVEMENT.

5. DRIVEWAY FILL SIDE SLOPES SHALL BE THE SAME AS THE NON-GUARDRAIL FILL SLOPES UNLESS OTHERWISE NOTED ON THE PLANS.

6. GRANULAR BORROW USED TO BACKFILL MUCK EXCAVATION ON IN LOW WET AREAS TO 1 FOOT ABOVE WATER LEVEL OR OLD GROUND SHALL MEET REQUIREMENTS FOR GRANULAR BORROW MATERIAL FOR UNDERWATER BACKFILL AS SPECIFIED IN STANDARD SPECIFICATIONS ITEM 703.19, GRANULAR BORROW.

7. ALL WASTE MATERIAL NOT USED ON THE PROJECT SHALL BE DISPOSED OF OFF THE PROJECT IN ACCEPTABLE WASTE AREAS REVIEWED BY THE RESIDENT. GRADING, SEEDING AND MULCHING OF WASTE AREAS SHALL BE CONSIDERED INCIDENTAL.

8. EXISTING INSLOPES IN PROPOSED FILL AREAS SHALL BE BENCHED BY EXCAVATING STEPS OF SUFFICIENT WIDTH TO PERMIT PLACING AND COMPACTING THE FILL MATERIAL ALONG WITH THE MATERIAL REMOVED.

9. GRAVEL 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 IN THE PLANS OR DIRECTED BY THE RESIDENT.

10. A 3" PAVED LIP SHALL BE PLACED AT ALL UNPAVED ENTRANCES UNLESS OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE RESIDENT.

11. NO EXISTING DRAINAGE SHALL BE ABANDONED, REMOVED OR PLUGGED WITHOUT PRIOR APPROVAL OF THE RESIDENT.

12. INLETS AND OUTLETS OF ALL CULVERTS SHALL BE RIPRAPPED UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE RESIDENT.

13. UNLESS OTHERWISE NOTED SEEDING METHOD NO. 1 SHALL BE UTILIZED.

14. LOAM SHALL BE PLACED TO A NOMINAL DEPTH OF 4 INCHES IN LAWN AREAS AND 2 INCHES IN ALL OTHER AREAS UNLESS OTHERWISE NOTED OR DIRECTED.

15. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING ALL EXISTING MAILBOXES TO ENSURE THAT THE MAIL WILL BE DELIVERABLE. PAYMENT FOR THIS WORK WILL BE MADE UNDER THE APPROPRIATE RENTAL ITEMS.

16. ANY DAMAGE TO THE SLOPES CAUSED BY THE CONTRACTOR'S EQUIPMENT, PERSONNEL, OR OPERATION SHALL BE REPAIRED TO THE SATISFACTION OF THE RESIDENT. ALL WORK, EQUIPMENT, AND MATERIALS REQUIRED TO MAKE REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE.

17. AREA ON THE PROJECT REQUIRING FILL WILL COME FROM SUITABLE SITES SUCH AS EXCAVATION, DITCH AND INSLOPE OR EQUIPMENT RENTAL AREAS.

18. LOAM HAS BEEN ESTIMATED FOR DISTURBED LAWN AREAS. ACTUAL PLACEMENT OF THE LOAM SHALL BE AS NOTED ON THE PLANS OR DESIGNATED BY THE RESIDENT.

19. NO SEPARATE PAYMENT FOR SUPERINTENDENT OR FOREMAN WILL BE MADE FOR THE SUPERVISION OF EQUIPMENT AND LAYOUT OF WORK BEING PAID FOR UNDER THE EQUIPMENT RENTAL ITEMS.

20. FINAL STRIPING FOR THE PROJECT SHALL BE DONE BY THE CONTRACTOR PER THE STRIPING LAYOUT IN THE CONTRACT DOCUMENTS OR AS PROVIDED BY THE DEPARTMENT. PAYMENT SHALL BE MADE UNDER APPROPRIATE CONTRACT ITEMS.

21. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING ALL EXISTING OPERATIONAL BUSINESS DIRECTIONAL SIGNS (OBDS) TO ENSURE THAT THEY ARE VISIBLE TO THE TRAVELING PUBLIC. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

22. THE PROJECT GEOTECHNICAL REPORT TITLED GEOTECHNICAL DESIGN REPORT FOR THE REPLACEMENT OF: CROSS CULVERT #XC-121321, SOILS REPORT 2021-01, JANUARY 5, 2021 CAN BE ACCESSED AT THE MAINEDOT WEBSITE: HTTP://WWW.MAINE.GOV/MDOT/CONTRACTORS/.

23. GEOTECHNICAL INFORMATION FURNISHED OR REFERRED TO IN THE BID DOCUMENTS IS FOR THE USE OF THE BIDDERS. NO ASSURANCE IS GIVEN THAT THE INFORMATION OR INTERPRETATIONS WILL BE REPRESENTATIVE OF ACTUAL SUBSURFACE CONDITIONS THROUGHOUT THE CONSTRUCTION SITE. MAINEDOT WILL NOT BE RESPONSIBLE FOR ANY INTERPRETATIONS OR CONCLUSIONS DRAWN FROM THE GEOTECHNICAL INFORMATION. THE BORING LOGS PROVIDED IN THE BID DOCUMENTS (IF ANY) PRESENT FACTUAL AND INTERPRETIVE SUBSURFACE INFORMATION COLLECTED AT DISCRETE LOCATIONS. DATA PROVIDED MAY NOT BE REPRESENTATIVE OF THE SUBSURFACE CONDITIONS BETWEEN BORING LOCATIONS.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

22662.00

WIN
22662.00

HIGHWAY PLANS

PROJ. MANAGER	E. MARTIN	BY	DATE
DESIGN-DETAILED	C. TAYLOR	....	Feb. 2017
CHECKED-REVIEWED	....	....	....
DESIGN2-DETAILED2	....	....	....
DESIGN3-DETAILED3	....	....	....
REVISIONS 1	MAY 13, 2019	....	....
REVISIONS 2	....	....	....
REVISIONS 3	....	....	....
REVISIONS 4	....	....	....
FIELD CHANGES	....	....	....

SIGNATURE

P.E. NUMBER

DATE

DURHAM
ROUTE 9

GENERAL NOTES

SHEET NUMBER

3

OF 12

ITEM 610.08 PLAIN RIPRAP

CROSS CULVERT	RIPRAPPED INLET	RIPRAPPED OUTLET	
STA. 12+28.00 RT.	10' X 10'		INSTALL CULVERT END PROTECTION
TO STA. 12+46.04 LT.		10' X 13.25'	INSTALL CULVERT END PROTECTION
STA. 12+28.00 RT.			INSTALL RIPRAP APRON
STA. 12+46.04 LT.			INSTALL RIPRAP APRON

DRIVEWAY CULVERT OUTLETS

STA. 12+42.82 LT.

ITEM 613.319 EROSION CONTROL BLANKET

STA.	TO	STA.	OFFSET	LENGTH
12+89.44		12+97.98	RT.	9 FT.

DRIVES AND ENTRANCES

STATIONING	TYPE
12+65.37 RT.	GRAVEL DR. W/ 3' PAVED LIP
13+32.35 RT.	GRAVEL DR. W/ 3' PAVED LIP

STATION	CULVERT PIPE											CATCH BASIN					PIPE ARCH				MH	UNDERDRAIN						ELBOWS, TEES, WYES AND INLET GRATE UNITS	REMARKS
	RCP			CMP		OPTION I		OPTION III														TYPE B		TYPE C					
								SMOOTHLINED		CORRUGATED										GAGE OR WALL THICKNESS		TYPE B	OUTLET	SMOOTHLINED		CORRUGATED		DESCRIPTIONS	
	SIZE	LENGTH	CLASS	SIZE	LENGTH	SIZE	LENGTH	SIZE	LENGTH	SIZE	LENGTH	A1-C	B1-C		E	F	SPAN	RISE	LENGTH		LENGTH	LENGTH	SIZE	LENGTH	SIZE	LENGTH		
ROADWAY CULVERT																													
STA. 12+28.10, 33.73' RT. TO 12+46.04, 46.27' LT.								60"	80'																				
DRIVEWAY CULVERT																													
STA. 12+42.82, 39.0' RT. TO 12+89.44, 23.88' RT						18"	48'																						

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

22662.00

WIN
WIN 022662.00

HIGHWAY PLANS

PROJ. MANAGER	#PROJMANAGER#	BY	DATE
DESIGN-DETAILED	$designer1$	$detailer1$	$projdate1$
CHECKED-REVIEWED	-----	-----	----- SIGNATURE
DESIGN2-DETAILED2	$designer2$	$detailer2$	$projdate2$
DESIGN3-DETAILED3	$designer3$	$detailer3$	$projdate3$
REVISIONS 1	-----	-----	$revdate1$ P.E. NUMBER
REVISIONS 2	-----	-----	$revdate2$
REVISIONS 3	$revision3$	-----	$revdate3$ DATE
REVISIONS 4	$revision4$	-----	$revdate4$
FIELD CHANGES	$fieldchange$	-----	$fielddate$

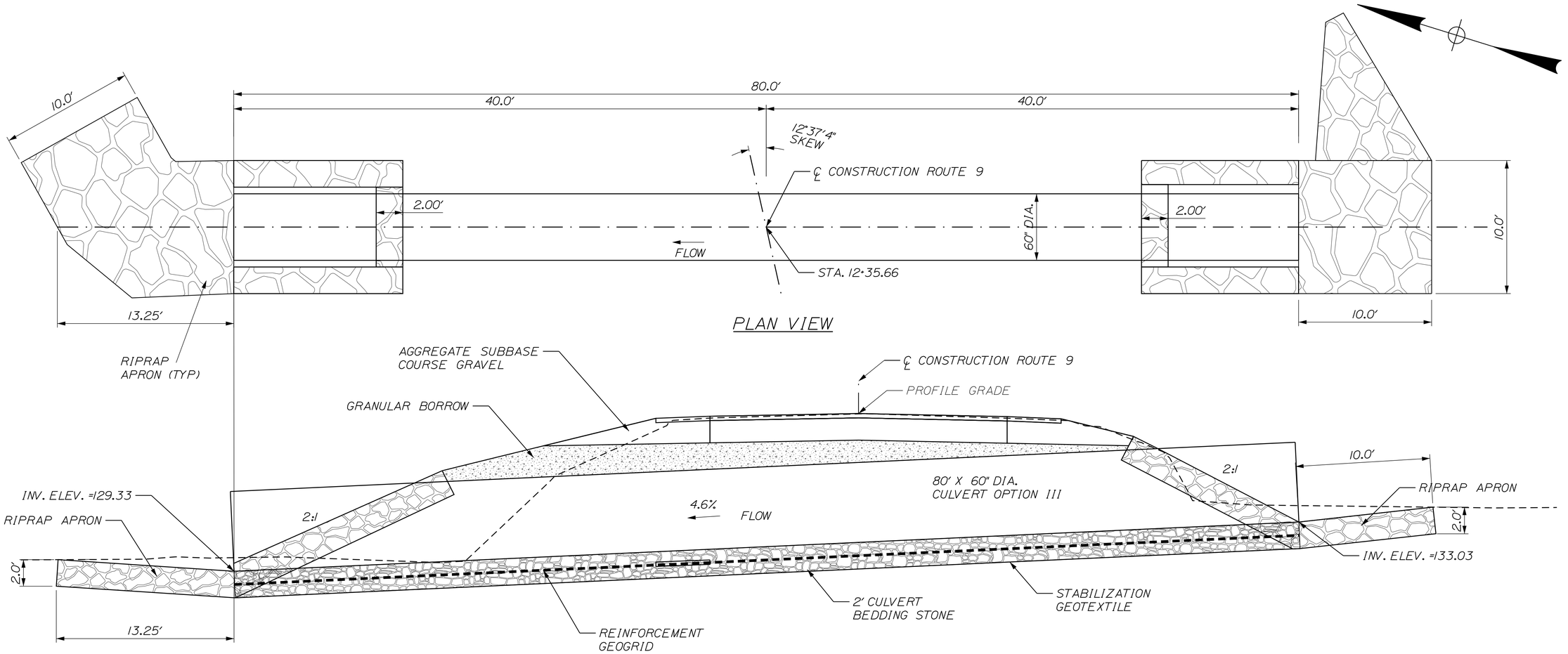
DURHAM
ROUTE 9

CONSTRUCTION/DRAINAGE NOTES

SHEET NUMBER

4

OF 12



PLAN VIEW

TRANSVERSE SECTION

(ALONG CENTERLINE OF CULVERT OPTION III)

CULVERT NOTES

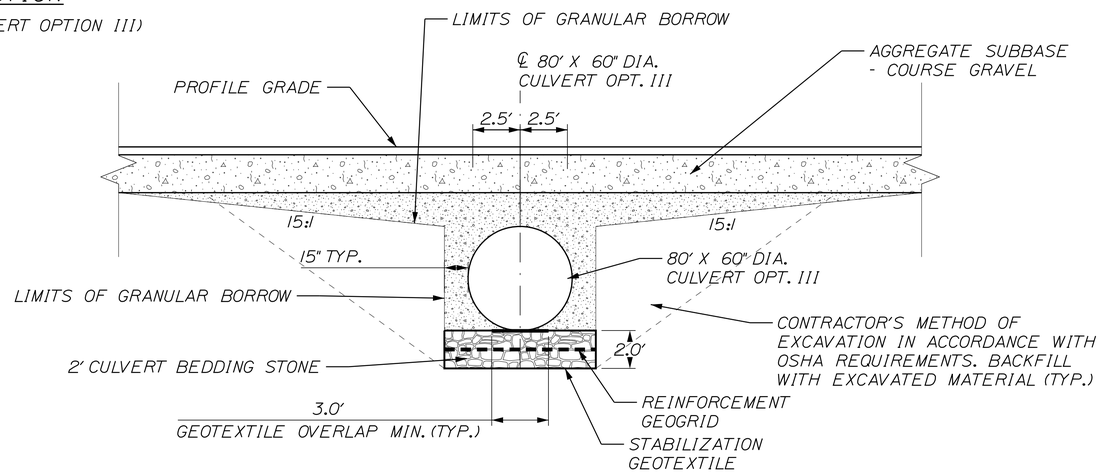
1. CONSTRUCTION, HANDLING, AND ASSEMBLY OF THE PRECAST UNITS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS APPLICABLE.

2. THE PIPE SHALL BE BEDDED ON A 2′ THICK GEOTEXTILE WRAPPED, UNDERDRAIN BACKFILL MATERIAL, TYPE C WITH A LAYER OF GEOGRID AT THE CENTER. PAYMENT WILL BE MADE UNDER THE APPROPRIATE CONTRACT ITEMS.

3. STABALIZATION GEOTEXTILE SHALL BE OVERLAPPED A MINIMUM OF 3′.

4. THE SILT AT THE BEDDING ELEVATION SHOULD BE EXCAVATED USING A SMOOTH-EDGED BACKHOE BUCKET TO MINIMIZE DISTURBANCE TO THE SOFT SOILS AT THE SITE. ANY DISTURBED SOILS AT THE BEDDING ELEVATION RESULTING FROM EXCAVATION ACTIVITIES SHOULD BE REMOVED BY HAND PRIOR TO PLACEMENT OF THE GEOTEXTILE WRAPPED, GEOGRID REINFORCED, CRUSHED STONE MAT.

5. THE REINFORCEMENT GEOGRID SHALL MEET THE REQUIREMENTS OF SPECIAL PROVISION 620.



TYPICAL SECTION

NOT TO SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

22662.00

WIN
WIN 022662.00

HIGHWAY PLANS

PROJ. MANAGER	$PROJMANAGER$	BY	DATE
DESIGN-DETAILED	$designer1$	$detailer1$	$proj date1$
CHECKED-REVIEWED	-----	-----	-----
DESIGN2-DETAILED2	$designer2$	$detailer2$	$proj date2$
DESIGN3-DETAILED3	$designer3$	$detailer3$	$proj date3$
REVISIONS 1	-----	-----	$revdate1$
REVISIONS 2	-----	-----	$revdate2$
REVISIONS 3	$revision3$		$revdate3$
REVISIONS 4	$revision4$		$revdate4$
FIELD CHANGES	$fieldchanges$		$fieldchdate$

SIGNATURE

P.E. NUMBER

DATE

DURHAM
ROUTE 9

CULVERT DETAILS

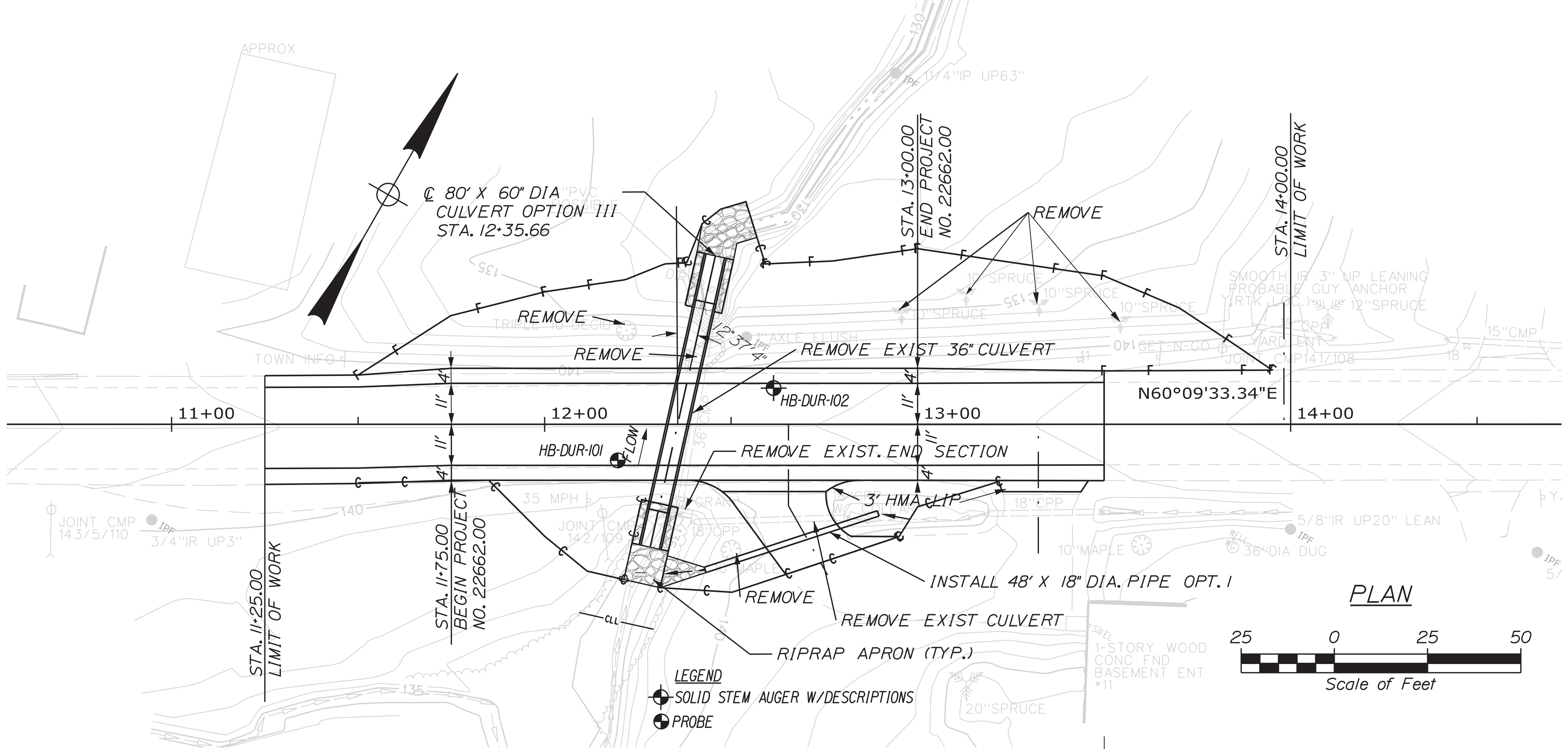
SHEET NUMBER

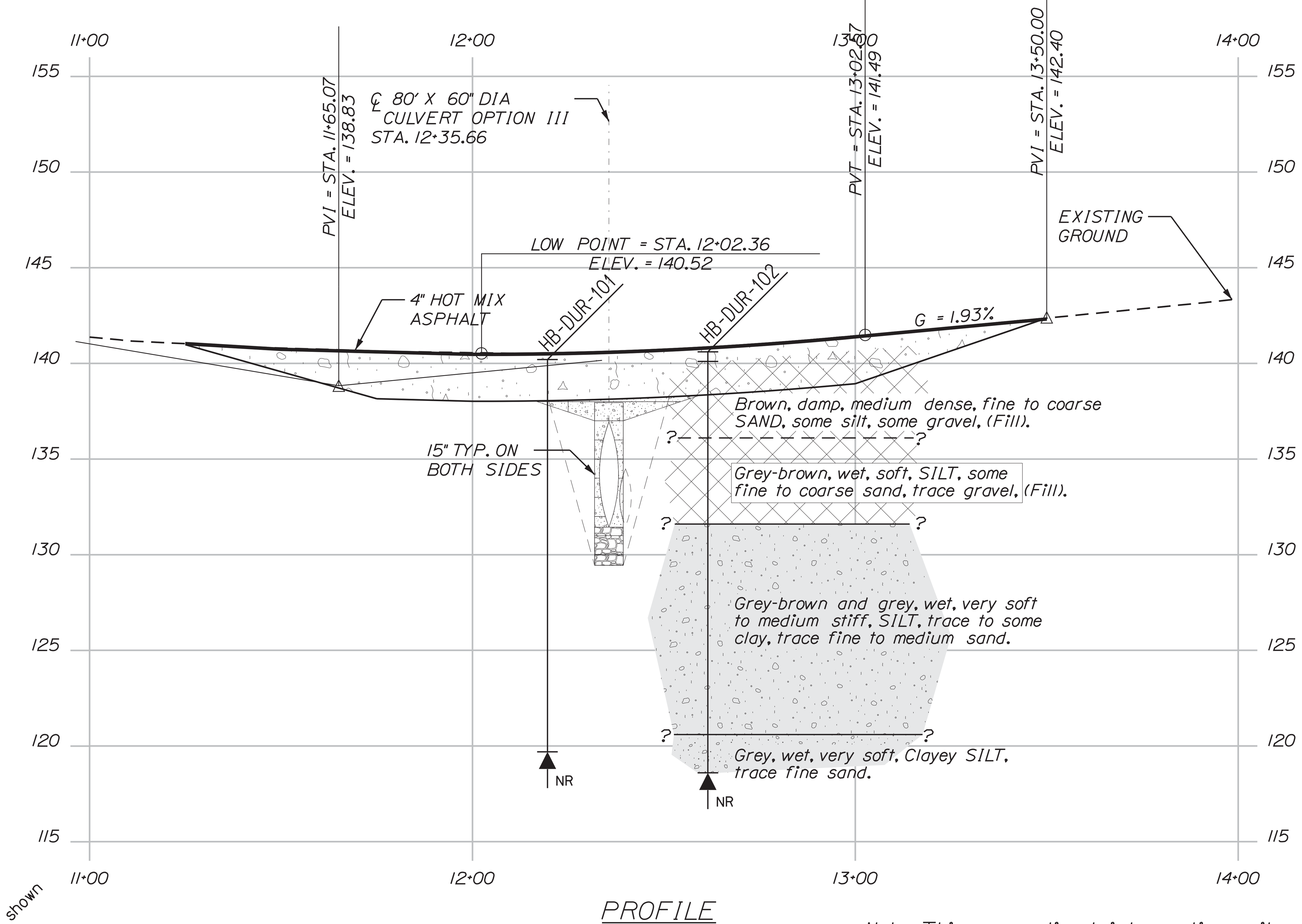
5

OF 12

Filename: ...\MSTA\005_Culvert_Details.dgn Division: HIGHWAY Username: Ryan.Hodgman Date:1/12/2021

Filename: ...\MSTA\002_BLP&ISP WBL1.dgn   Division: GEOTECH   Username: Cody.A.Russell   Date:1/7/2021





LEGEND

- Boring No., Offset, if shown
- Pavement Thickness, if applicable
- Weathered Bedrock, if applicable
- Approximate Top of Bedrock
- RQD= Rock Quality Designation of Bedrock Core Sample
- BOE= Bottom of Exploration
- NR: No Refusal
- R: Refusal

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.

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 9 Large Culvert
Location: Durham, Maine
Boring No.: HB-DUR-101
WIN: 22662.00

Drilling Contractor:	MaineDOT	Elevation (ft.)	140.3	Auger ID/OD:	5" Dia.
Operator:	Daggett/John	Datum:	NAVD88	Sampler:	N/A
Logged By:	B. Wilder	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	3/14/2019; 09:00-11:30	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	12+19.6, 9.6 ft Rt.	Casing ID/OD:	N/A	Water Level*:	None Observed

Definitions: D = Split Spoon Sample; S = Sample off Auger Flights; B = Bucket Sample off Auger Flights; MD = Unsuccessful Split Spoon Sample Attempt; U = Thin Wall Tube Sample; MV = Unsuccessful Field Vane Shear Test Attempt; V = Field Vane Shear Test, PP= Pocket Penetrometer; MU = Unsuccessful Thin Wall Tube Sample Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; WOH = Weight of 140lb. Hammer; WOR/C = Weight of Rods or Casing; WO1P = Weight of 1 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); N-value = Raw Field SPT N-value; T_v = Pocket Torvane Shear Strength (psf); WC = Water Content, percent; ≅ = Similar or Equal too; 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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0						SSA			Probe, similar soils as HB-DUR-102.	
20.5							119.80		Bottom of Exploration at 20.5 feet below ground surface. NO REFUSAL	

Remarks:

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.: HB-DUR-101

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 9 Large Culvert
Location: Durham, Maine
Boring No.: HB-DUR-102
WIN: 22662.00

Driller:	MaineDOT	Elevation (ft.)	140.6	Auger ID/OD:	5" Dia.
Operator:	Daggett/John	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	3/14/2019; 09:00-11:30	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	12+61.5, 9.8 ft Lt.	Casing ID/OD:	N/A	Water Level*:	16.0 ft bgs
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, PP = Pocket Penetrometer; 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; WOR/C = Weight of Rods or Casing; WO1P = 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); N-uncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected; T_v = 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 (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							SSA	140.1		6" HMA. (0.5)	
	1D	24/17	1.50 - 3.50	4/13/11/8	24	37				Brown, wet, medium dense, fine to coarse SAND, some silt, some gravel, (Fill).	G#337135 A-2-4, SM WC=10.0%
5	2D	24/24	5.00 - 7.00	1/1/1/3	2	3				Grey-brown, wet, soft, SILT, some fine to coarse sand, trace gravel, (Fill).	G#337136 A-4, CL WC=30.0%
10	3D	24/20	10.00 - 12.00	1/2/2/2	4	6		131.6		(9.0) Grey-brown, wet, medium stiff, SILT, trace fine to medium sand.	G#337137 A-4, CL-ML WC=26.7%
15	4D	24/22	15.00 - 17.00	1/WOH/WOH/WOH	---					Grey, wet, very soft, SILT, some clay, trace fine sand.	G#337138 A-4, CL-ML WC=31.7% LL=26 PL=20 PI=6
20	5D	24/24	20.00 - 22.00	WOH/WOH/1/1	1	2		120.6		(20.0) Grey, wet, very soft, Clayey SILT, trace fine sand.	G#337139 A-4, CL-ML WC=33.3%
								118.6		(22.0) Bottom of Exploration at 22.0 feet below ground surface. NO REFUSAL	
25											

Remarks:

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.: HB-DUR-102

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
22662.00
WIN 22662.00
HIGHWAY PLANS

STATE OF MAINE — Cody A. Russell — 15866 — LICENSED PROFESSIONAL ENGINEER

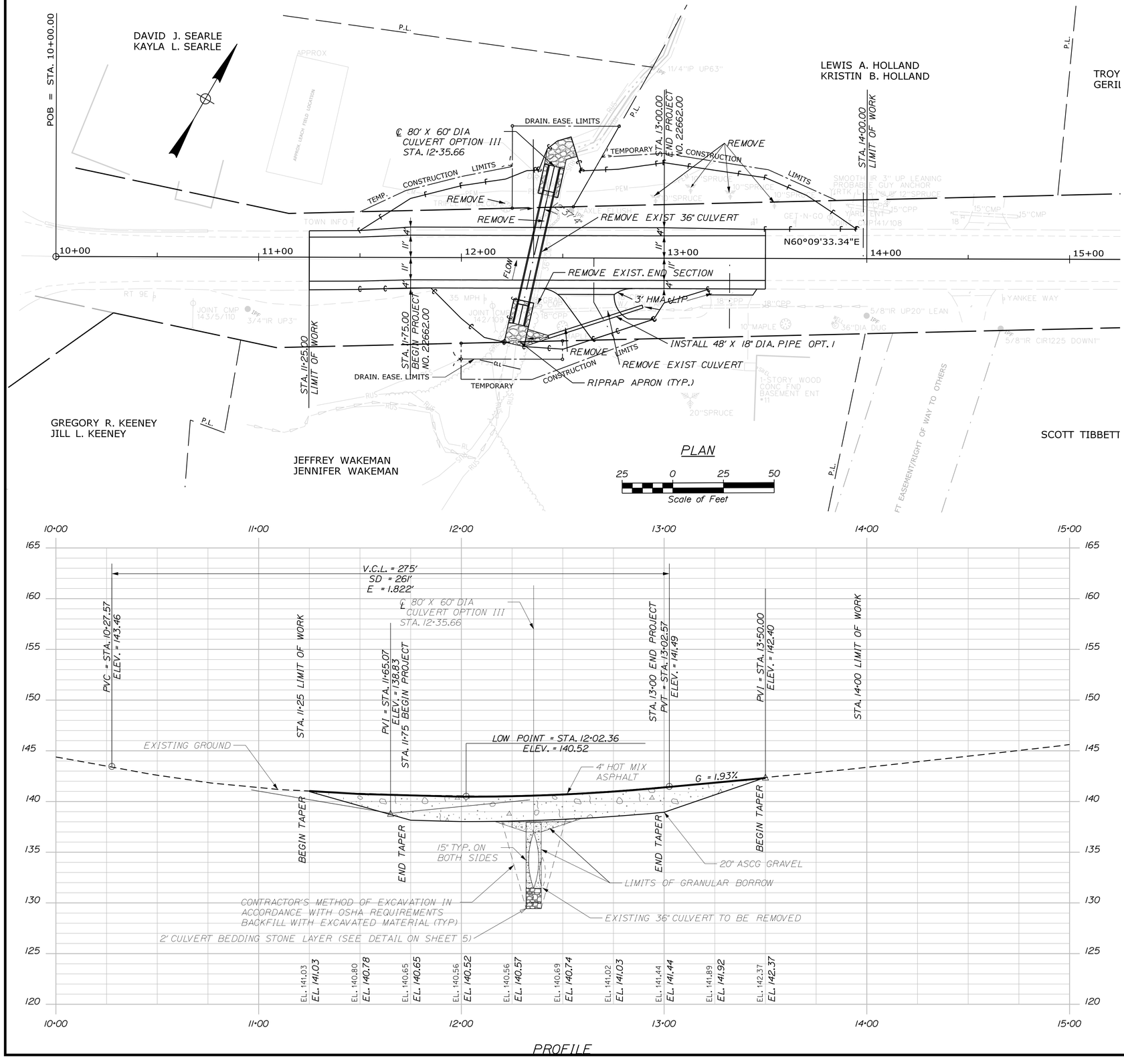
Cody A. Russell
SIGNATURE
15866
P.E. NUMBER
01/06/2021
DATE

	BY	DATE
PROJ. MANAGER	ERNEST MARTIN	
DESIGN-DETAILED	CRAIG H TAYLOR	
CHECKED-REVIEWED	T. WHITE	DEC 2020
DESIGN2-DETAILED2	C.RUSSELL	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

DURHAM
ROUTE 9

BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE WITH BORING LOGS

SHEET NUMBER
6
OF 12



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

22662.00

WIN 22662.00

HIGHWAY PLANS

		BY	DATE
PROJ. MANAGER	ERNEST MARTIN		
DESIGN-DETAILED		CRAIG H. TAYLOR	-----
CHECKED-REVIEWED		C.RUSSELL	-----
DESIGN2-DETAILED2		T. WHITE	May 2019
DESIGN3-DETAILED3		----------	-----
REVISIONS 1		------	------
REVISIONS 2		------	------
REVISIONS 3		------	------
REVISIONS 4		------	------
FIELD CHANGES		------	------

SIGNATURE

P.E. NUMBER

DATE

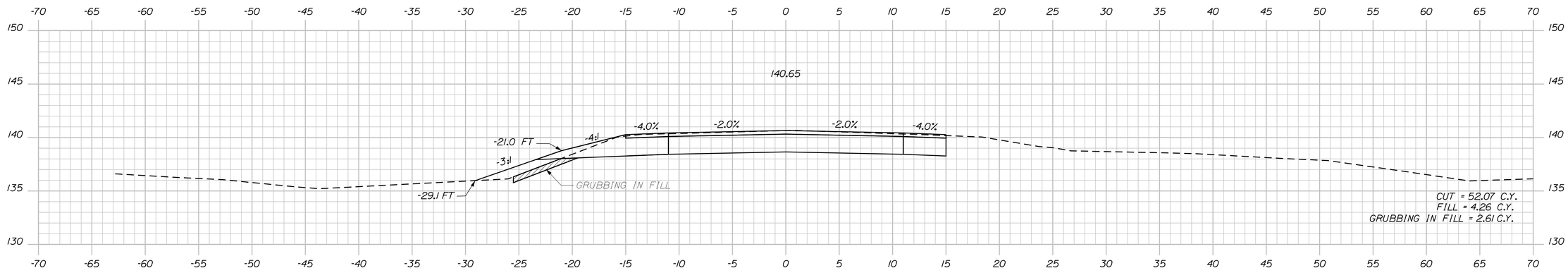
DURHAM
ROUTE 9

PLAN / PROFILE

SHEET NUMBER

7

OF 12



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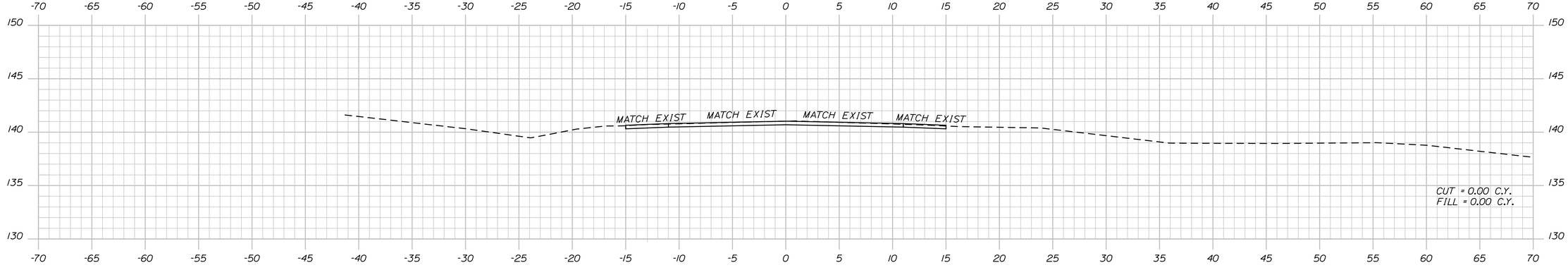
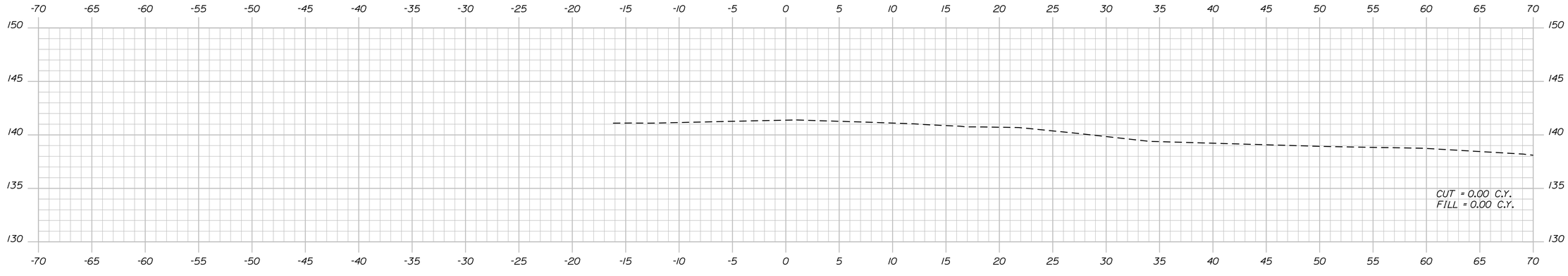


11+25.00 LIMIT OF WORK



11+00.00

Sta. 11+00.00 to Sta. 11+75.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

22662.00

WIN
WIN 022662.00

HIGHWAY PLANS

PROJ. MANAGER	$PROJMANAGER$	BY	DATE
DESIGN-DETAILED	$designer1$	$detailer1$	$proj date1$
CHECKED-REVIEWED	-----	-----	-----
DESIGN2-DETAILED2	$designer2$	$detailer2$	$proj date2$
DESIGN3-DETAILED3	$designer3$	$detailer3$	$proj date3$
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REVISIONS 2	-----	-----	$revdate2$
REVISIONS 3	$revision3$	-----	$revdate3$
REVISIONS 4	$revision4$	-----	$revdate4$
FIELD CHANGES	$fieldchange$	-----	$fielddate$

SIGNATURE

P.E. NUMBER

DATE

DURHAM
ROUTE 9

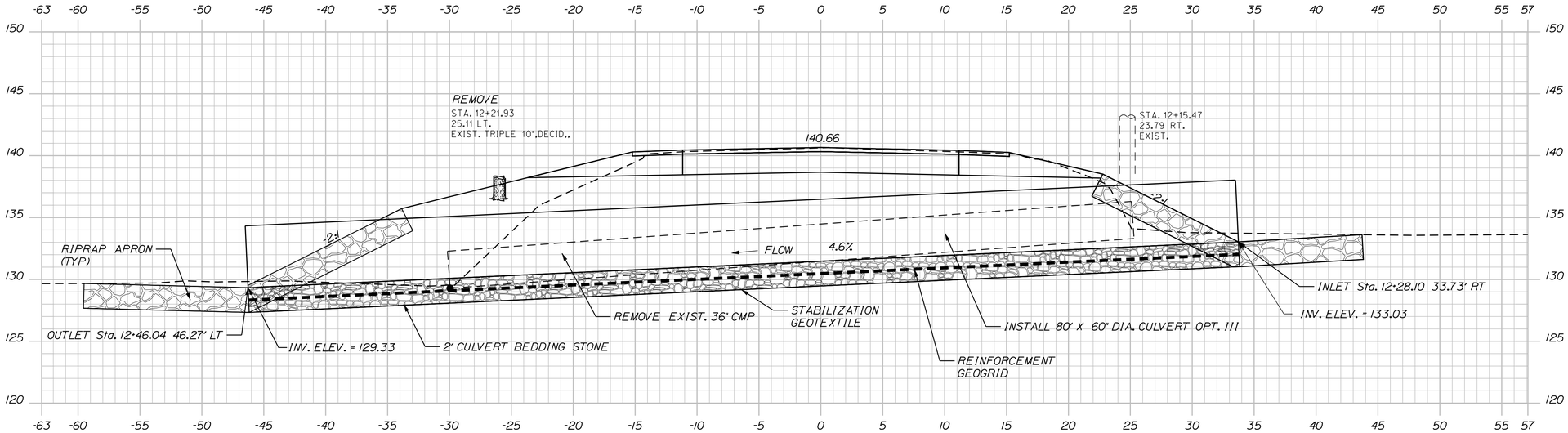
CROSS SECTIONS

SHEET NUMBER

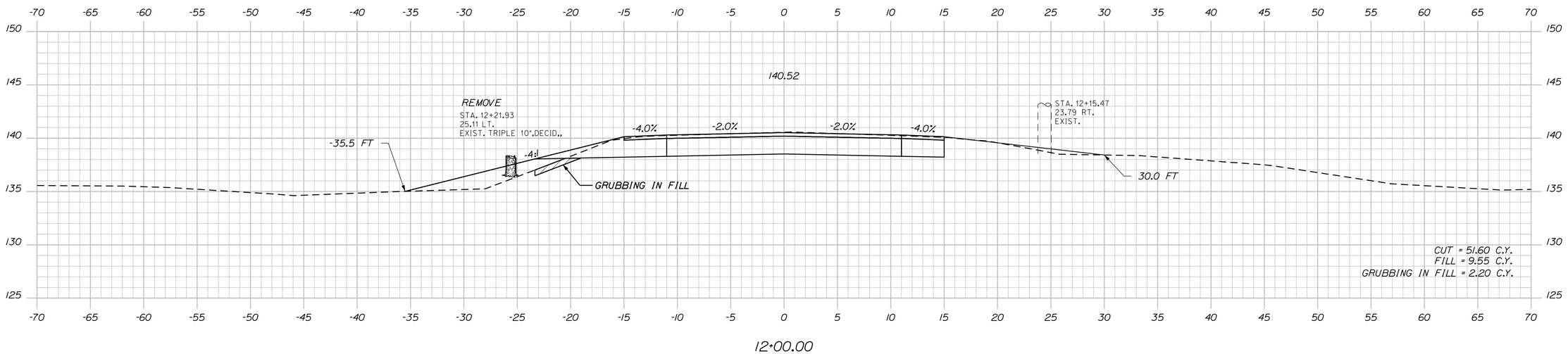
8

OF 12

Filename: ...\MSTA\008_XSECT_11+00_001.dgn Division: HIGHWAY Username: Ryan.Hodgman Date:1/12/2021



12+35.66 SKEW 12°37'04"



12+00.00

Sta. 12+00.00 to Sta. 12+35.66

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

22662.00

WIN
WIN 022662.00

HIGHWAY PLANS

PROJ. MANAGER	$PROJMANAGER$	BY	DATE
DESIGN-DETAILED	$designer1$	$detailer1$	$proj date1$
CHECKED-REVIEWED	-----	-----	----- SIGNATURE
DESIGN2-DETAILED2	$designer2$	$detailer2$	$proj date2$
DESIGN3-DETAILED3	$designer3$	$detailer3$	$proj date3$ P.E. NUMBER
REVISIONS 1	-----	-----	$revdate1$
REVISIONS 2	$revision3$	$revdate3$	$revdate2$
REVISIONS 3	$revision4$	$revdate4$	$revdate4$ DATE
REVISIONS 4	$fieldchange5$	$fieldchange5$	$fielddate5$

DURHAM
ROUTE 9

CROSS SECTIONS

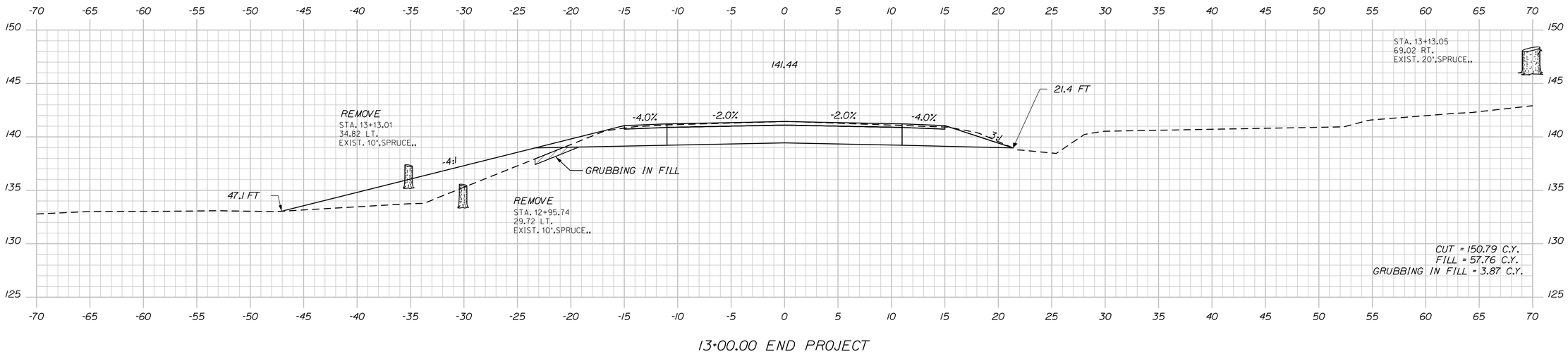
SHEET NUMBER

9

OF 12

Username: Ryan.Hodgman Date:1/12/2021

Filename: ...\MSTA\009_XSECT_12+00_002.dgn Division: HIGHWAY



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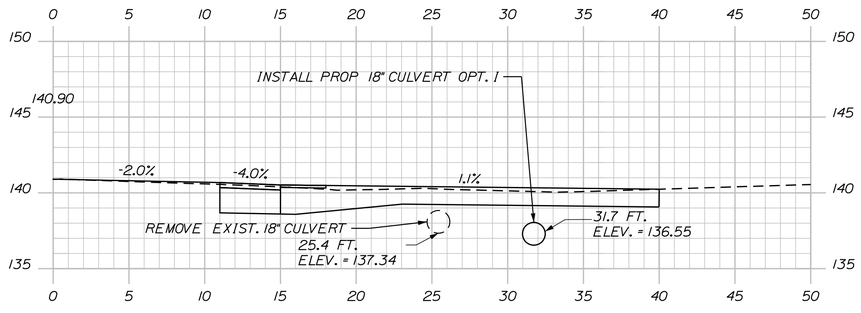

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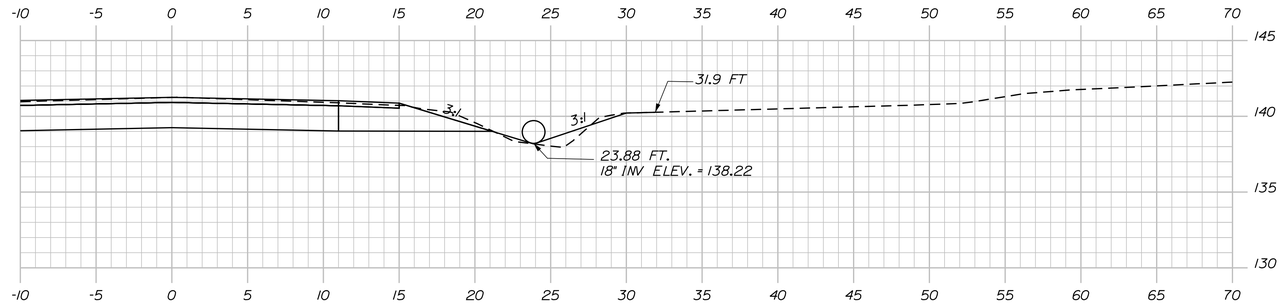
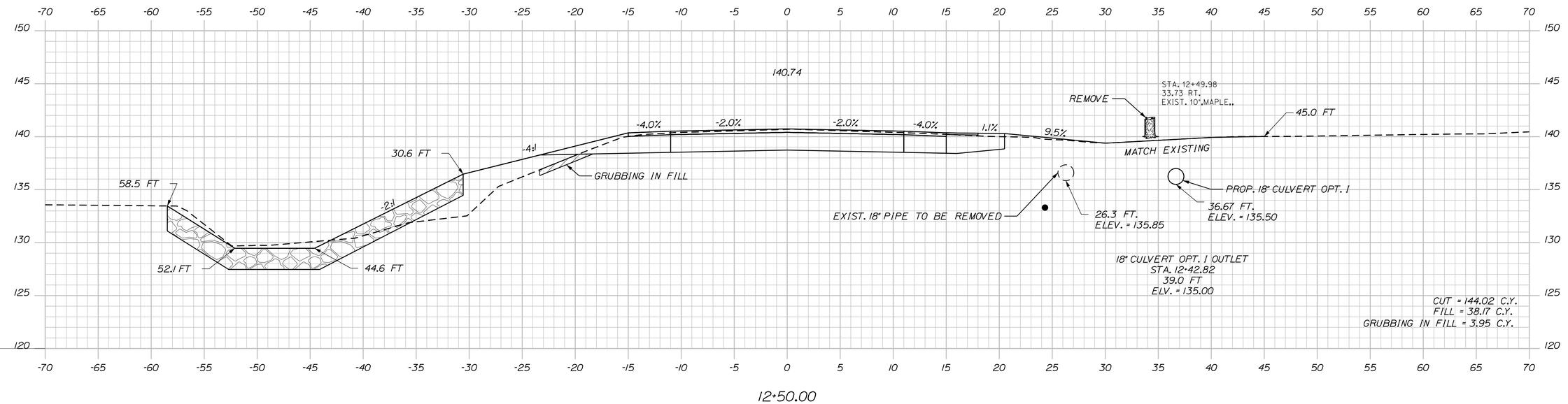


12+89.44



12+50.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

22662.00

WIN
WIN 022662.00

HIGHWAY PLANS

	BY	DATE
PROJ. MANAGER $PROJMANAGER$		
DESIGN-DETAILED $designer1$	$detailer1$	$proj date1$
CHECKED-REVIEWED _____	_____	_____ SIGNATURE
DESIGN2-DETAILED2 $designer2$	$detailer2$	$proj date2$
DESIGN3-DETAILED3 $designer3$	$detailer3$	$proj date3$
REVISIONS 1 _____	_____	$revdate1$ P.E. NUMBER
REVISIONS 2 $revision3$		$revdate3$
REVISIONS 3 $revision4$		$revdate4$ DATE
REVISIONS 4 $revision5$		$revdate5$
FIELD CHANGES $fieldchange$		$fielddate$

DURHAM
ROUTE 9

CROSS SECTIONS

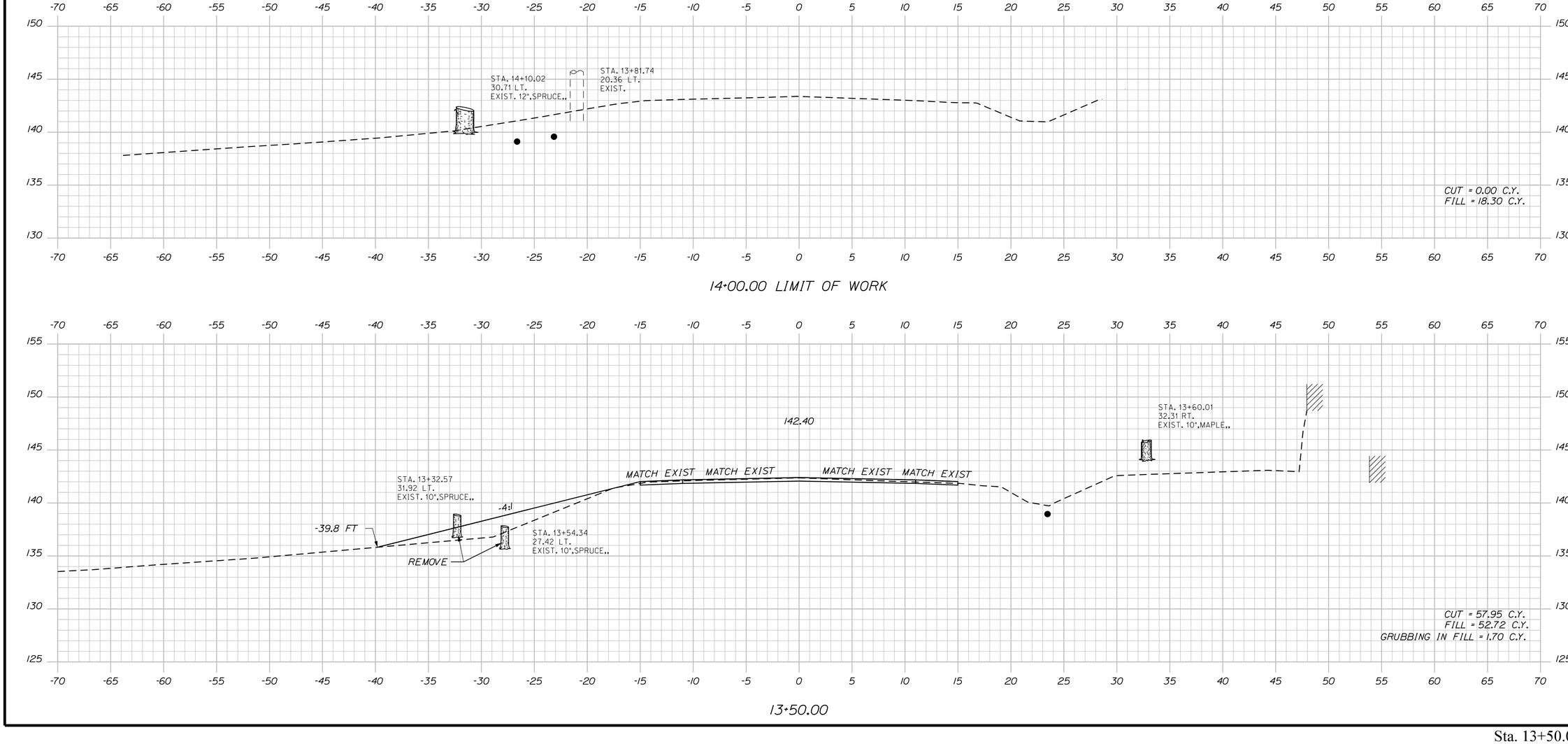
SHEET NUMBER

10

OF 12

Sta. 12+50.00 to Sta. 13+00.00

Filename: ...\MSTA\010_XSECT_12+50_003.dgn Division: HIGHWAY Username: Ryan.Hodgman Date:1/12/2021



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DESIGN-DETAILED	$designer1$	$detailer1$	$prodate1$
CHECKED-REVIEWED	-----	-----	-----
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REVISIONS 1	-----	$detailer1$	$revdate1$
REVISIONS 2	-----	$revision3$	$revdate3$
REVISIONS 3	$revision3$	$revision4$	$revdate4$
REVISIONS 4	$revision4$	$fieldchange$	$fieldate$
FIELD CHANGES	$fieldchange$		

SIGNATURE

P.E. NUMBER

DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

22662.00

WIN
WIN 022662.00

HIGHWAY PLANS

DURHAM
ROUTE 9

CROSS SECTIONS

SHEET NUMBER

11

OF 12

Sta. 13+50.00 to Sta. 14+00.00

Filename: ...\MSTA\011_XSECT_13+50_004.dgn Division: HIGHWAY Username: Ryan.Hodgman Date:1/12/2021

PLAN LEGEND

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

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

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.

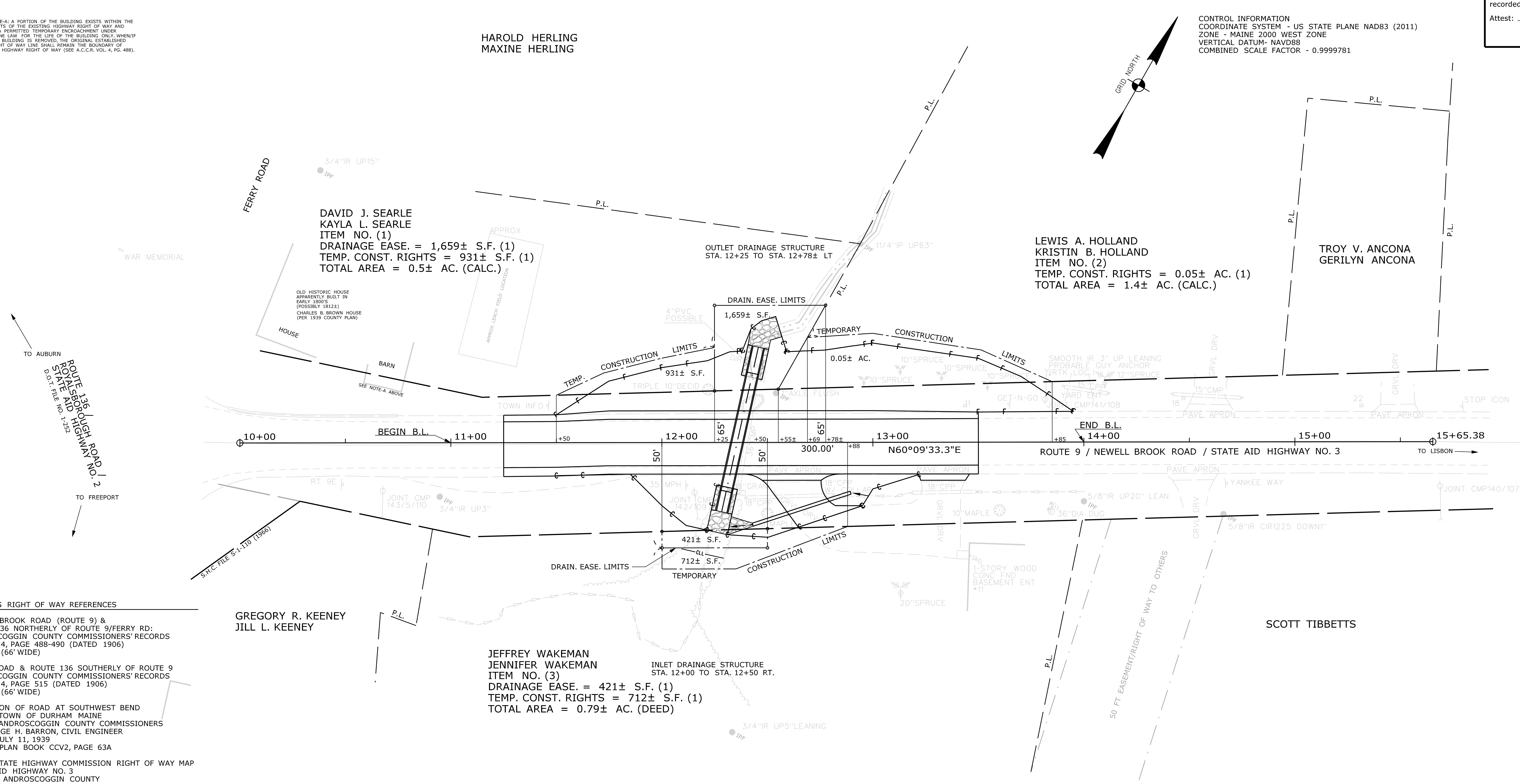
25 0 25 50 75 100
Scale of Feet

STATE OF MAINE
REGISTRY OF DEEDS

COUNTY ________________
RECEIVED ________, ____
at ____h ____m ____M and
recorded in Plan Bk ____, Pg.____
Attest: ________________
REGISTER

NOTE-A: A PORTION OF THE BUILDING EXISTS WITHIN THE LIMITS OF THE EXISTING HIGHWAY RIGHT OF WAY AND IS A PERMITTED TEMPORARY ENCROACHMENT UNDER MAINE LAW FOR THE LIFE OF THE BUILDING ONLY. WHEN/IF THE BUILDING IS REMOVED, THE ORIGINAL ESTABLISHED RIGHT OF WAY LINE SHALL REMAIN THE BOUNDARY OF THE HIGHWAY RIGHT OF WAY (SEE A.C.C.R. VOL. 4, PG. 488).

CONTROL INFORMATION
COORDINATE SYSTEM - US STATE PLANE NAD83 (2011)
ZONE - MAINE 2000 WEST ZONE
VERTICAL DATUM- NAVD88
COMBINED SCALE FACTOR - 0.9999781



EXISTING RIGHT OF WAY REFERENCES

NEWELL BROOK ROAD (ROUTE 9) &
ROUTE 136 NORTHERLY OF ROUTE 9/FERRY RD:
ANDROSCOGGIN COUNTY COMMISSIONERS' RECORDS
VOLUME 4, PAGE 488-490 (DATED 1906)
4 RODS (66' WIDE)

FERRY ROAD & ROUTE 136 SOUTHERLY OF ROUTE 9
ANDROSCOGGIN COUNTY COMMISSIONERS' RECORDS
VOLUME 4, PAGE 515 (DATED 1906)
4 RODS (66' WIDE)

DEFINITION OF ROAD AT SOUTHWEST BEND
IN THE TOWN OF DURHAM MAINE
BY THE ANDROSCOGGIN COUNTY COMMISSIONERS
BY GEORGE H. BARRON, CIVIL ENGINEER
DATED JULY 11, 1939
A.C.R.D. PLAN BOOK CCV2, PAGE 63A

MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP
STATE AID HIGHWAY NO. 3
DURHAM, ANDROSCOGGIN COUNTY
JUNCTION OF ROUTE 9 & 136
S.H.C. FILE S-1-110, SHEET 1 OF 1
DATED DECEMBER 1966
A.C.R.D. PLAN BOOK 18, PAGE 59

MAINEDOT- RIGHT OF WAY MAP
STATE AID HIGHWAY NO 2. (RTE. 136)
DURHAM, ANDROSCOGGIN COUNTY
FEDERAL AID PROJECT NO. STP-9186(00)X
D.O.T. FILE 1-252 SHEETS 3 & 4 OF 10,
DATED JUNE 2001
A.C.R.D PLAN BOOK 43, PAGE 122 & 123

WIN 022662.00

Filename: ...\00\ROW\MSTA\012_RWPLAN1.dgn Division: ROW Username: Jude.Hogan Date:10/23/2020

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

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

REVISIONS

NO.	DATE	DESCRIPTION	BY

PLAN FILED IN PLAN BOOK ____ PAGE ____ COUNTY RECORD

NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE

BRUCE VAN NOTE
COMMISSIONER
JOYCE NOEL TAYLOR
CHIEF ENGINEER
DATE

STATE AID HIGHWAY NO. 3
ROUTE 9 / NEWELL BROOK ROAD
DURHAM ANDROSCOGGIN COUNTY
STATE PROJECT NO. 22662.00

JULY 2020 | RIGHT-OF-WAY MAP | D.O.T. FILE NO.1-341
SCALE 1" = 25' | SHEET 1 OF 1

SHEET NUMBER
12
OF 12