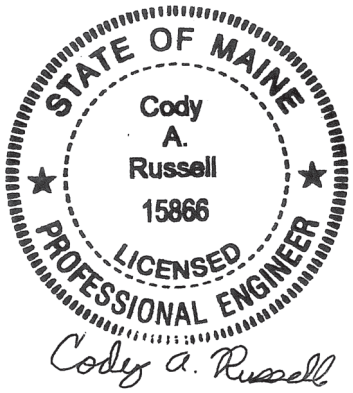
MAINE DEPARTMENT OF TRANSPORTATION
HIGHWAY PROGRAM
GEOTECHNICAL SECTION
AUGUSTA, MAINE

GEOTECHNICAL DATA REPORT

For the Reconstruction of Three Sections of
ROUTE 202
LYMAN / HOLLIS, BUXTON, & GORHAM, MAINE

Prepared by:
Cody Russell, P.E.
Geotechnical Engineer



Reviewed by:
Kathleen Maguire, P.E.
Senior Geotechnical Engineer

York / Cumberland County
WIN 22641.00

Soils Report 2023-28
Federal Project No. NHPP-2264(100)

September 22, 2023

INTRODUCTION

The purpose of this data report is to document subsurface information collected for the reconstruction of three sections of Route 202 in Lyman / Hollis, Buxton, and Gorham. Section 1 of the project begins approximately 0.13 of a mile north of the Route 5 intersection in Lyman and extends northerly approximately 2.16 miles into Gorham. Section 2 of the project begins 0.16 of a mile north of the Route 4A intersection in Buxton and extends northerly approximately 0.2 of a mile. Section 3 of the project begins approximately 0.62 of a mile north of the Osborne Road intersection in Hollis and extends northerly approximately 0.56 of a mile. The project locations are shown on the attached Location Map. The project is needed to address deficiencies in the road width, geometry, and drainage. This report presents the results of a limited geotechnical investigation performed along the proposed highway reconstruction project. Route 202 is a Highway Corridor Priority 1 road.

SUBSURFACE INVESTIGATION

Thirty-seven (37) borings and one (1) probe were drilled along the roadway by the MaineDOT drill crew and a New England Boring Contractors (NEBC) drill crew using a trailer mounted drill rig. Exploration locations are presented in the attached Boring Location Plans. The details and sampling methods used, field data obtained, soil conditions encountered, and exploration locations are presented in the attached Boring Logs.

An experienced geotechnical engineer logged the subsurface conditions encountered. The MaineDOT geotechnical engineer selected the boring and probe locations and drilling methods, designated type and depth of sampling techniques, reviewed boring and probe logs and identified field testing requirements. The borings were located in the field by taping to site features after completion of the drilling program.

LABORATORY TESTING

A laboratory testing program was conducted on select soil samples obtained in the borings to assist in soil classification. Laboratory testing consisted of nineteen (19) standard grain size analyses with natural water content, ten (10) standard grain size analyses with natural water content and hydrometer analysis, and five (5) Atterberg Limits tests. The results of the laboratory tests are summarized in the attached Laboratory Testing Summary Sheet and Grain Size Distribution Curves. Laboratory test results for the samples obtained in the borings are also summarized on the attached Boring Logs.

CLOSURE

This Geotechnical Data Report has been prepared for the use of the MaineDOT Highway Program for specific application to the proposed Route 202 reconstruction in Lyman / Hollis, Buxton, and Gorham, Maine in accordance with generally accepted geotechnical and foundation engineering practices. No other intended use or warranty is expressed or implied.

MaineDOT conducted a limited number of soil explorations at discrete locations along the project alignment. No interpretations or conclusions have been derived from this geotechnical information. MaineDOT shall not be responsible for the Bidder's or Contractor's interpretations, estimates, or conclusions derived from the geotechnical information. Data provided may not be representative of the subsurface conditions between exploration locations.

In the event that any changes in the nature, design, or location of the proposed project are planned, this report should be reviewed by a geotechnical engineer to assess the appropriateness of the information presented and to modify the information as appropriate to reflect the changes in design. The information presented is based in part upon a limited subsurface investigation at discrete exploratory locations completed at the site. If variations from the conditions encountered during the investigation appear evident during construction, it may also become necessary to re-evaluate the information presented in this report.

It is recommended that a geotechnical engineer be provided the opportunity for a review of the design and specifications in order that information presented in this report is properly implemented in the design and specifications.

Attachments:

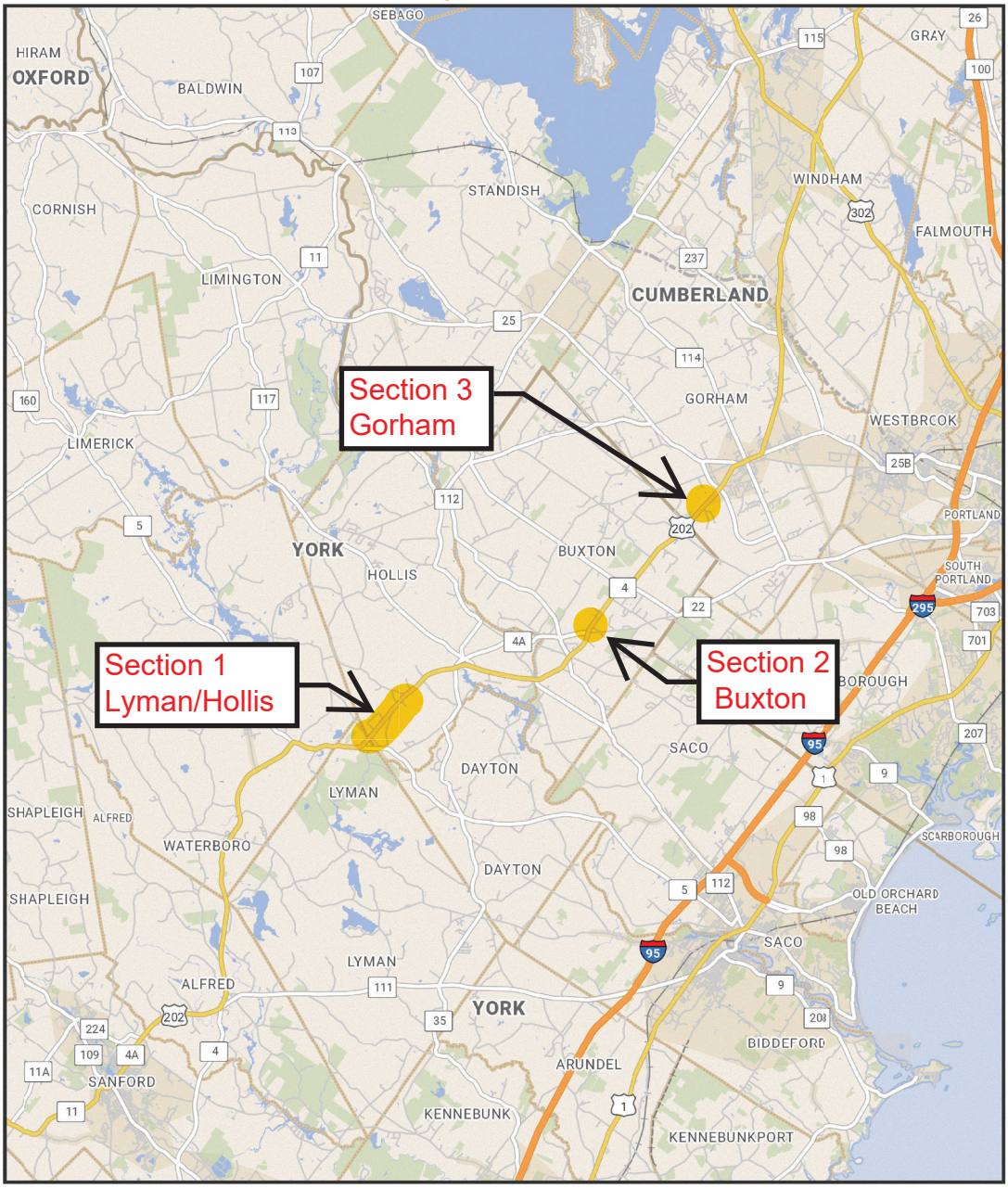
Location Map
Boring Location Plans
Key to Soil and Rock Descriptions and Terms
Boring Logs
Laboratory Testing Summary Sheet
Laboratory Testing Results and Data

Date:8/30/2023

Division: GEOTECH

Username: terry.white

LYMAN/HOLLIS, BUXTON & GORHAM



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

4 Miles

1 inch = 4.55 miles

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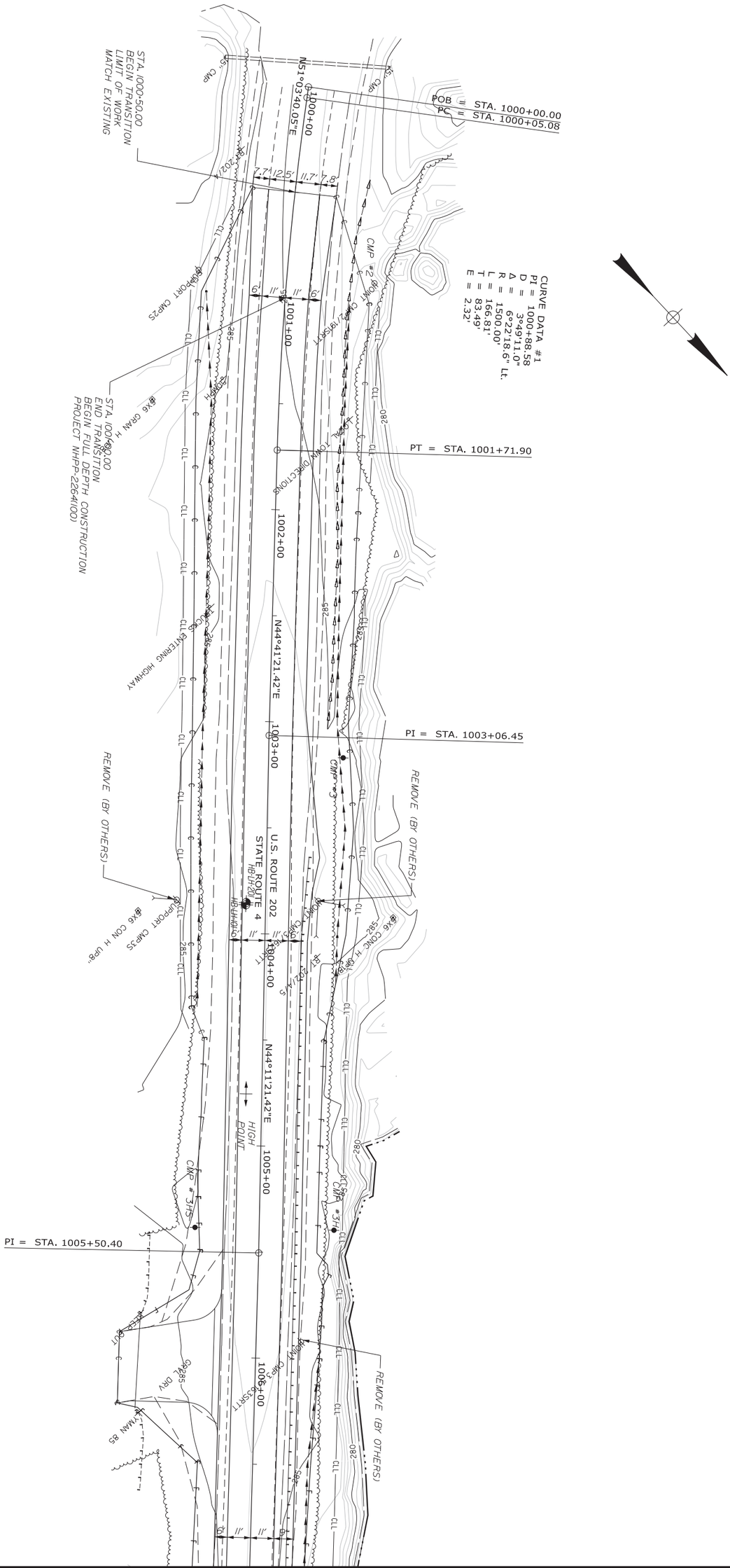
SHEET NUMBER 1 OF 26	LYMAN/HOLLIS, BUXTON & GORHAM ROUTE 202 LOCATION MAP	STATE OF MAINE DEPARTMENT OF TRANSPORTATION NHPP-2264(100) WIN 022641.00 HIGHWAY PLANS



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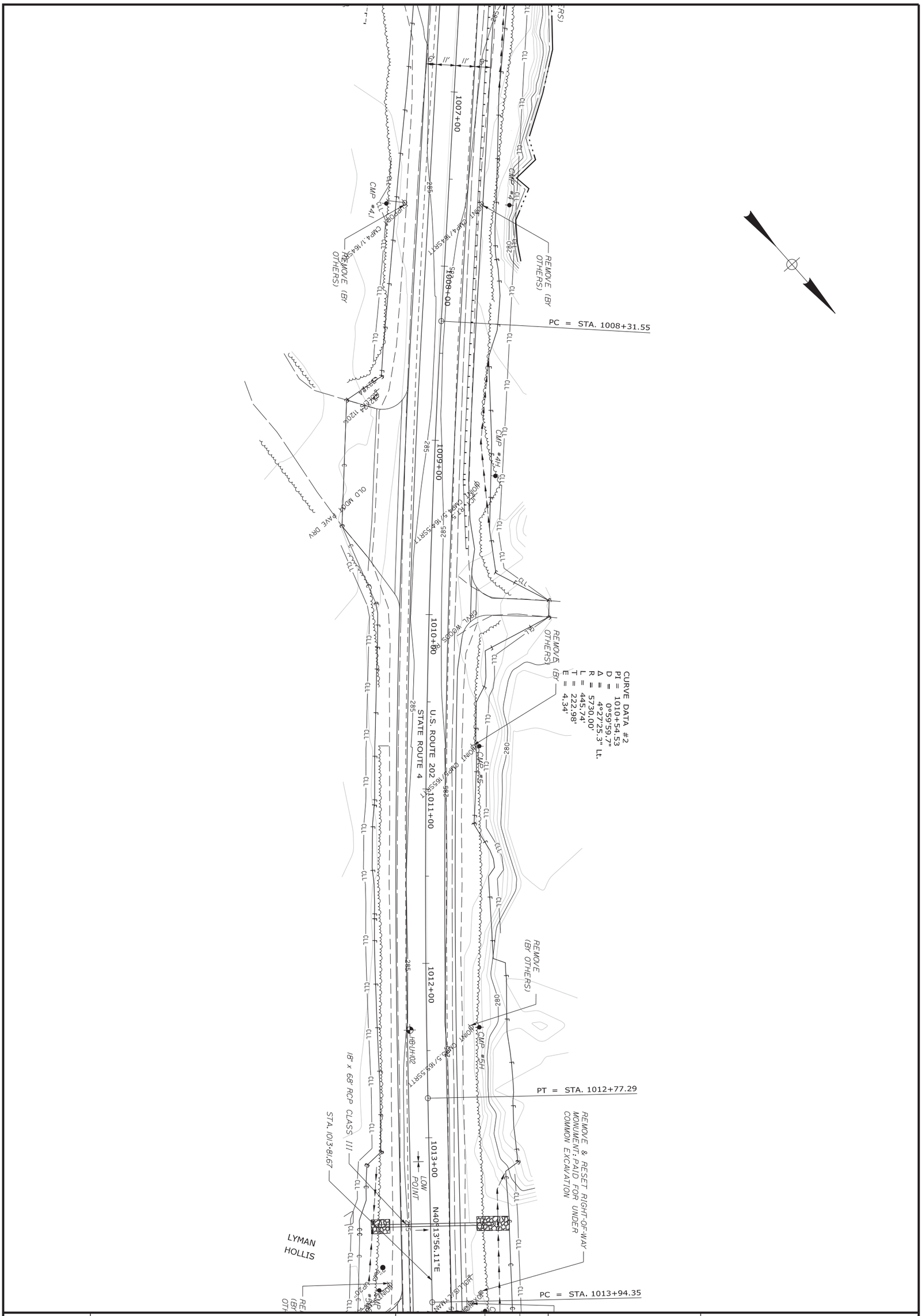

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LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

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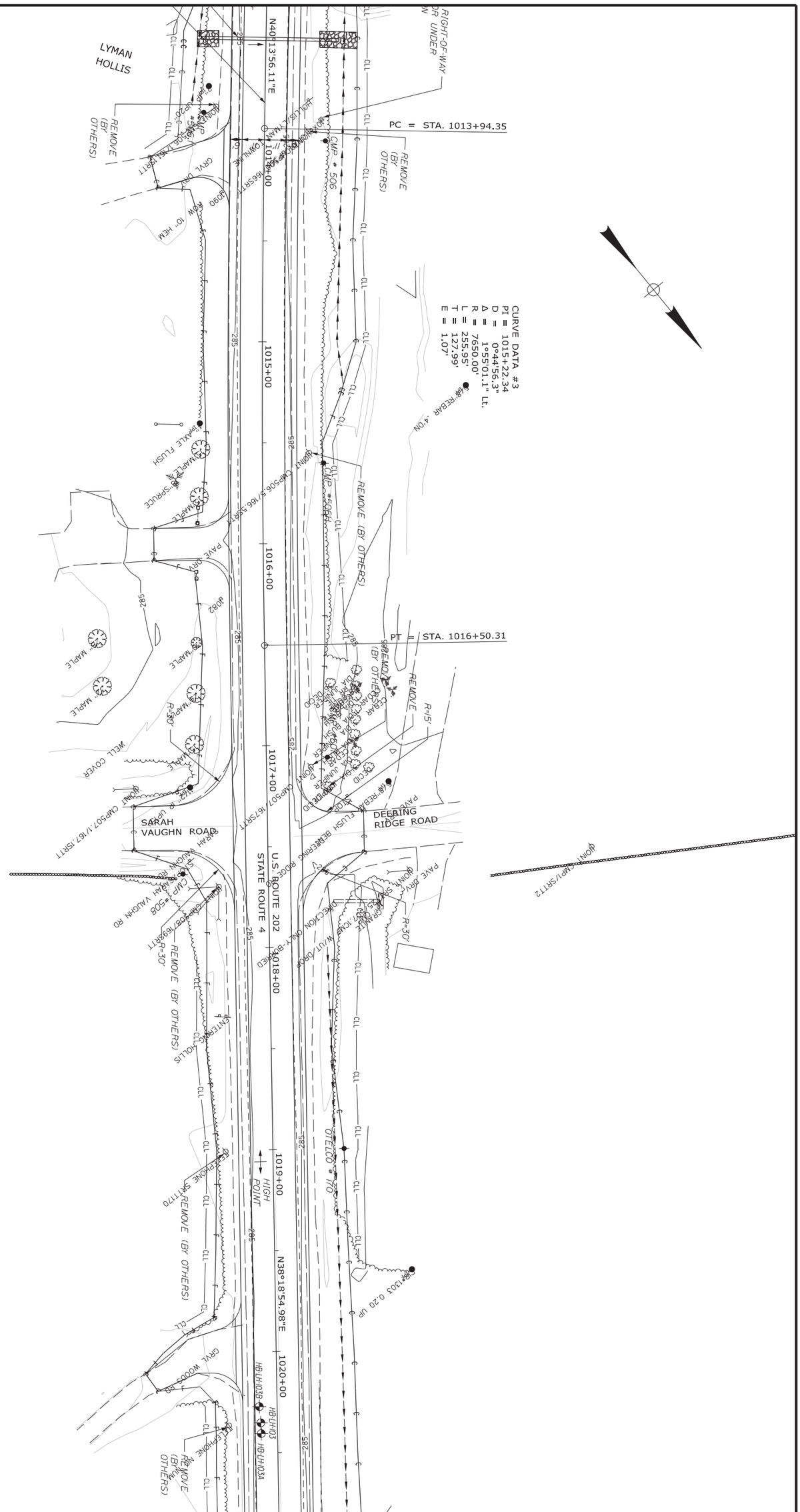

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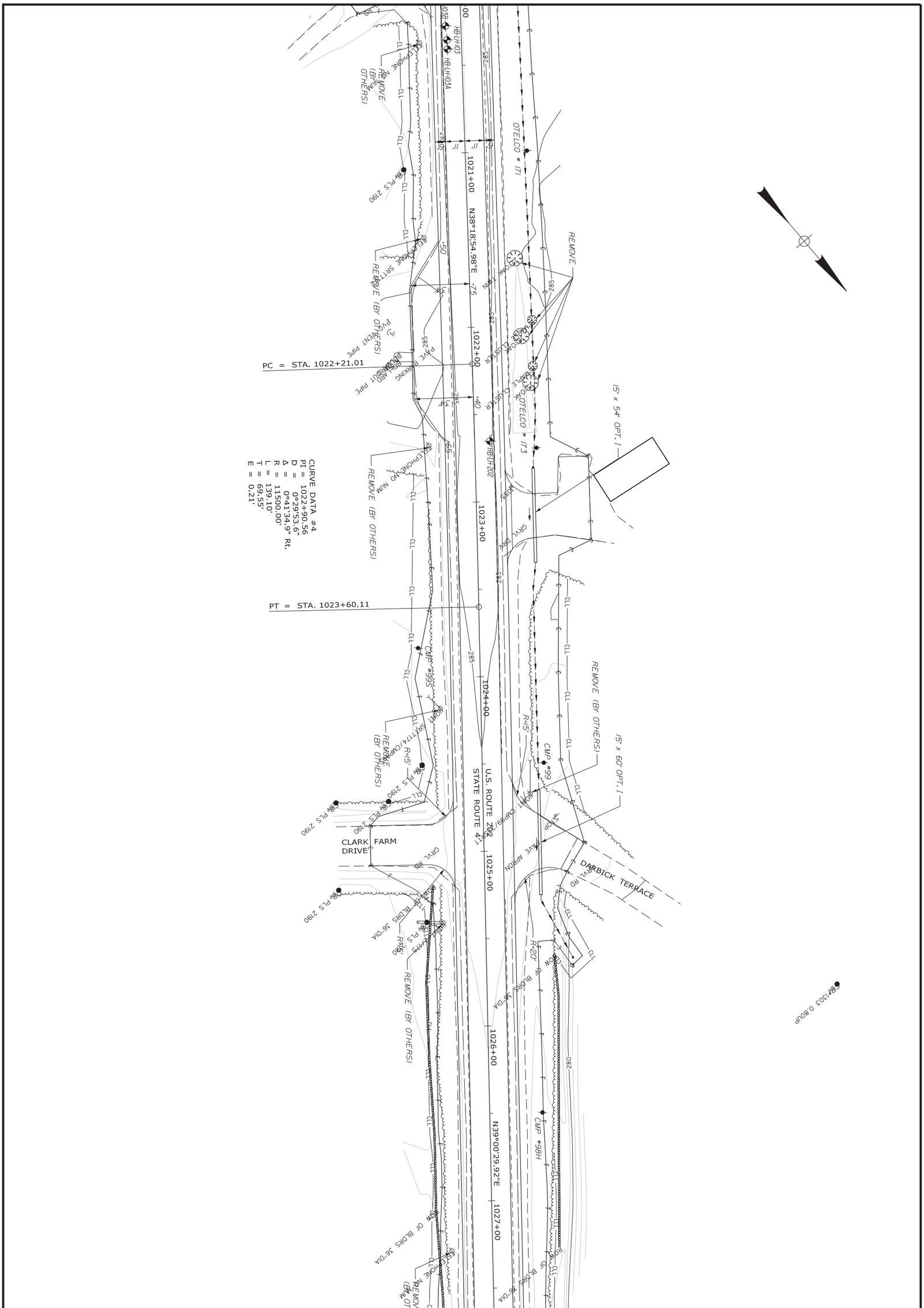

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LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

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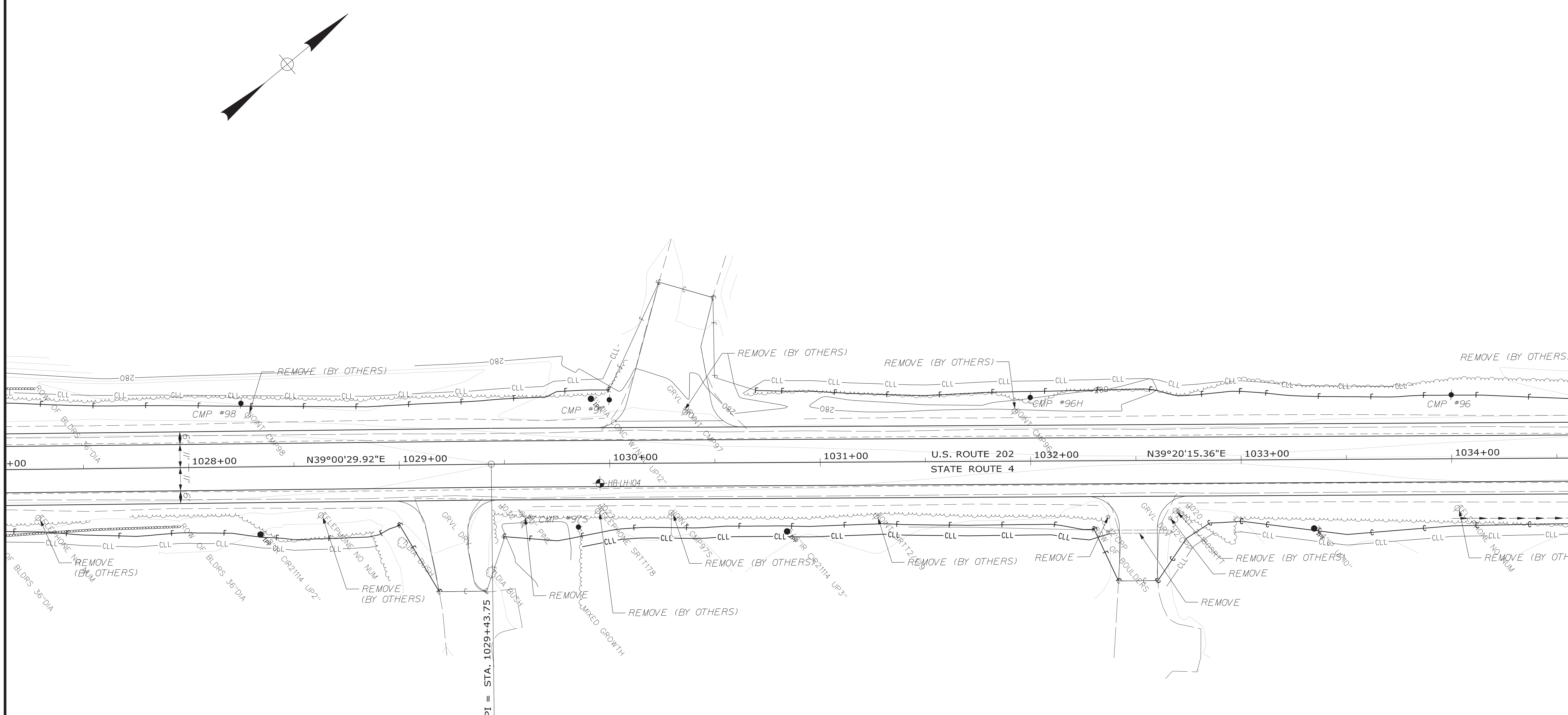

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ROUTE 202

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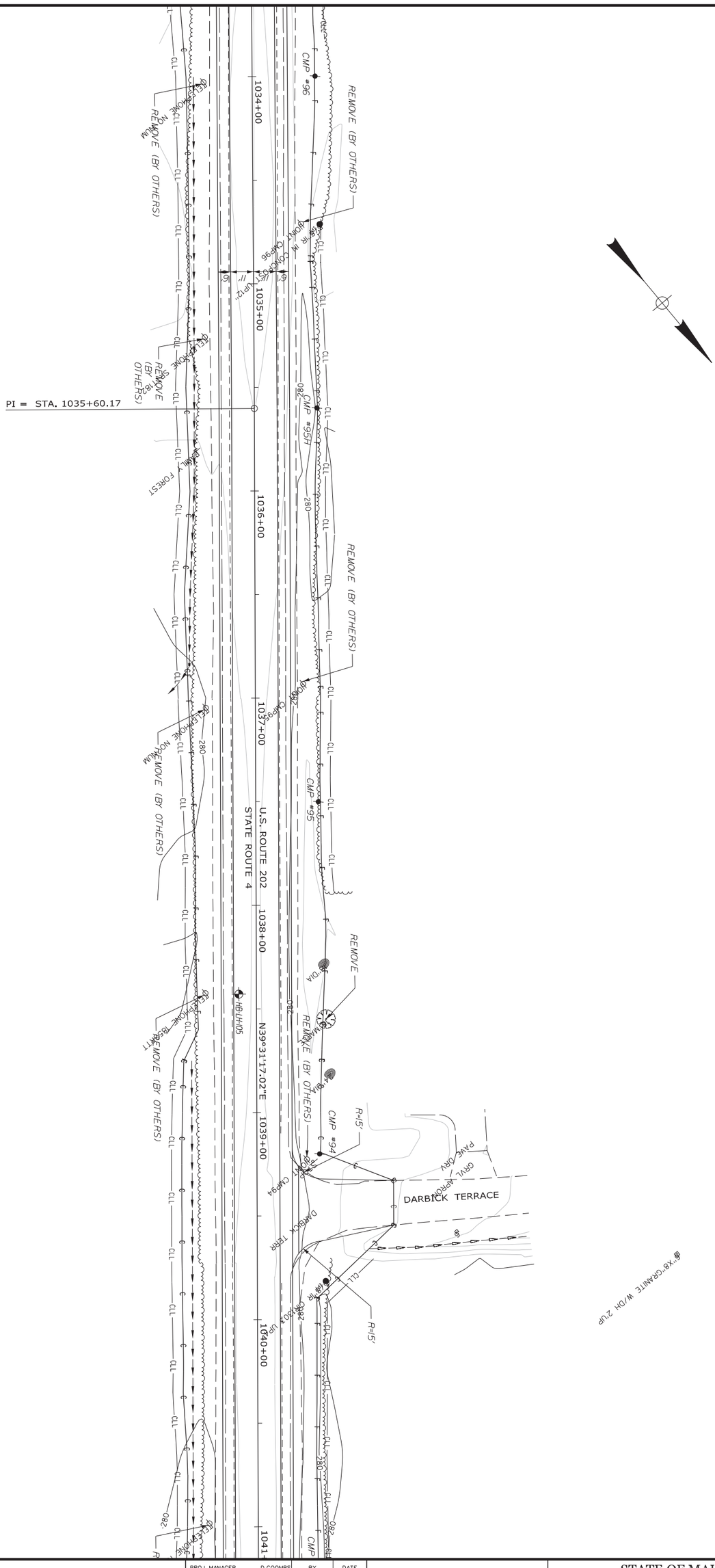

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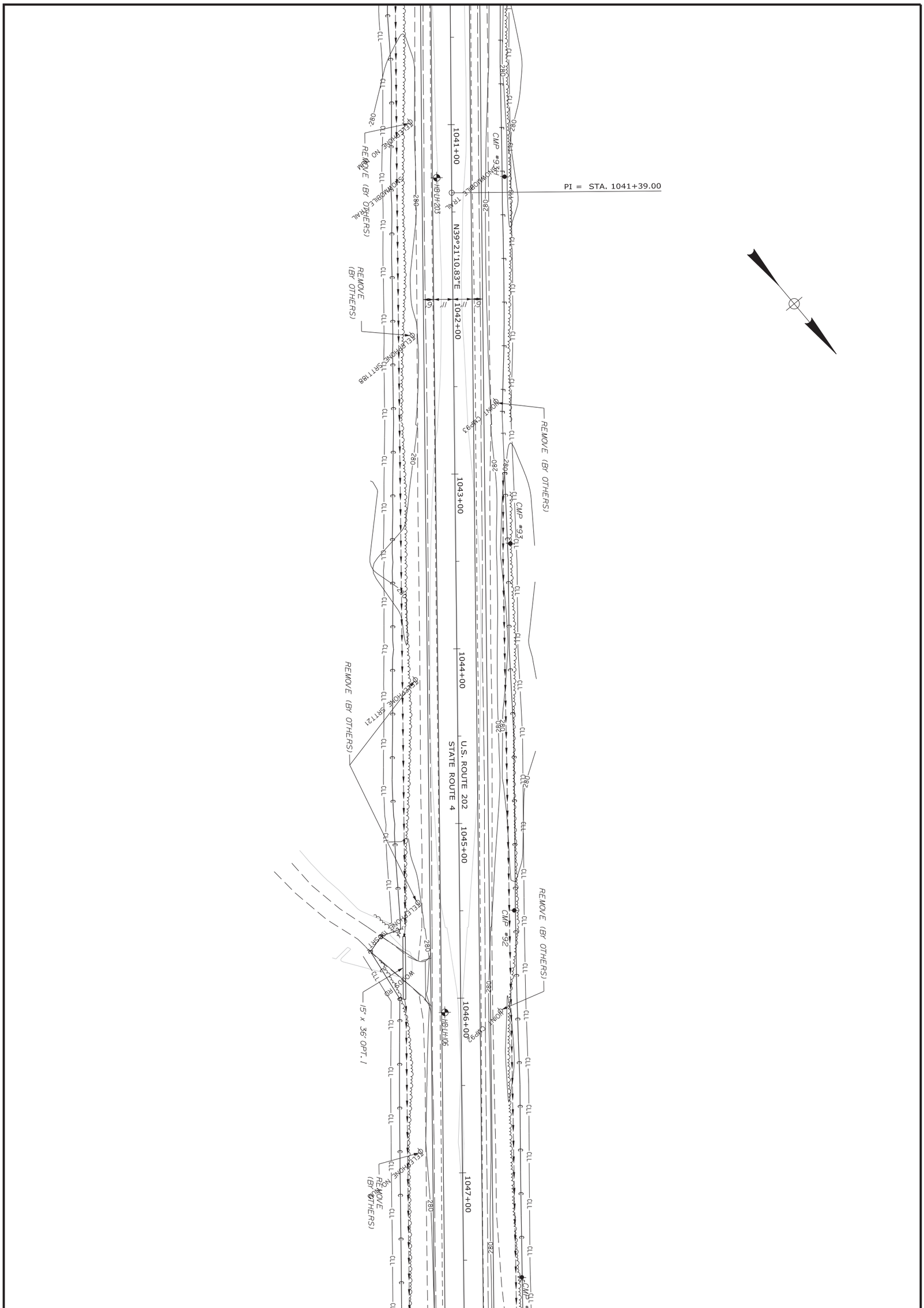

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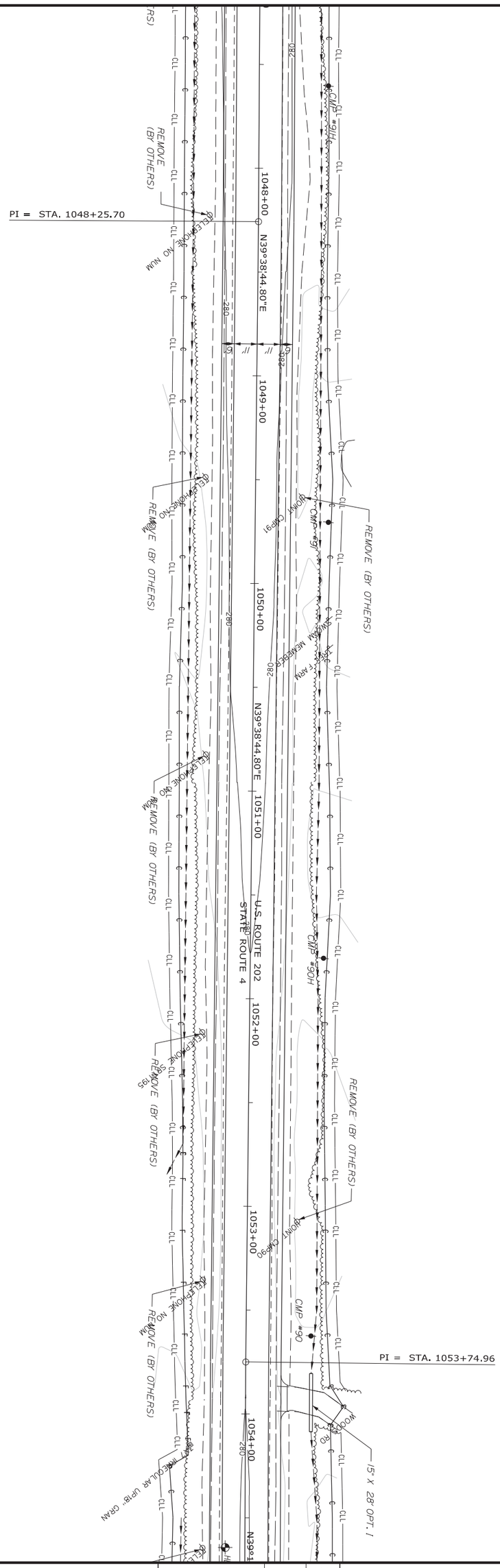

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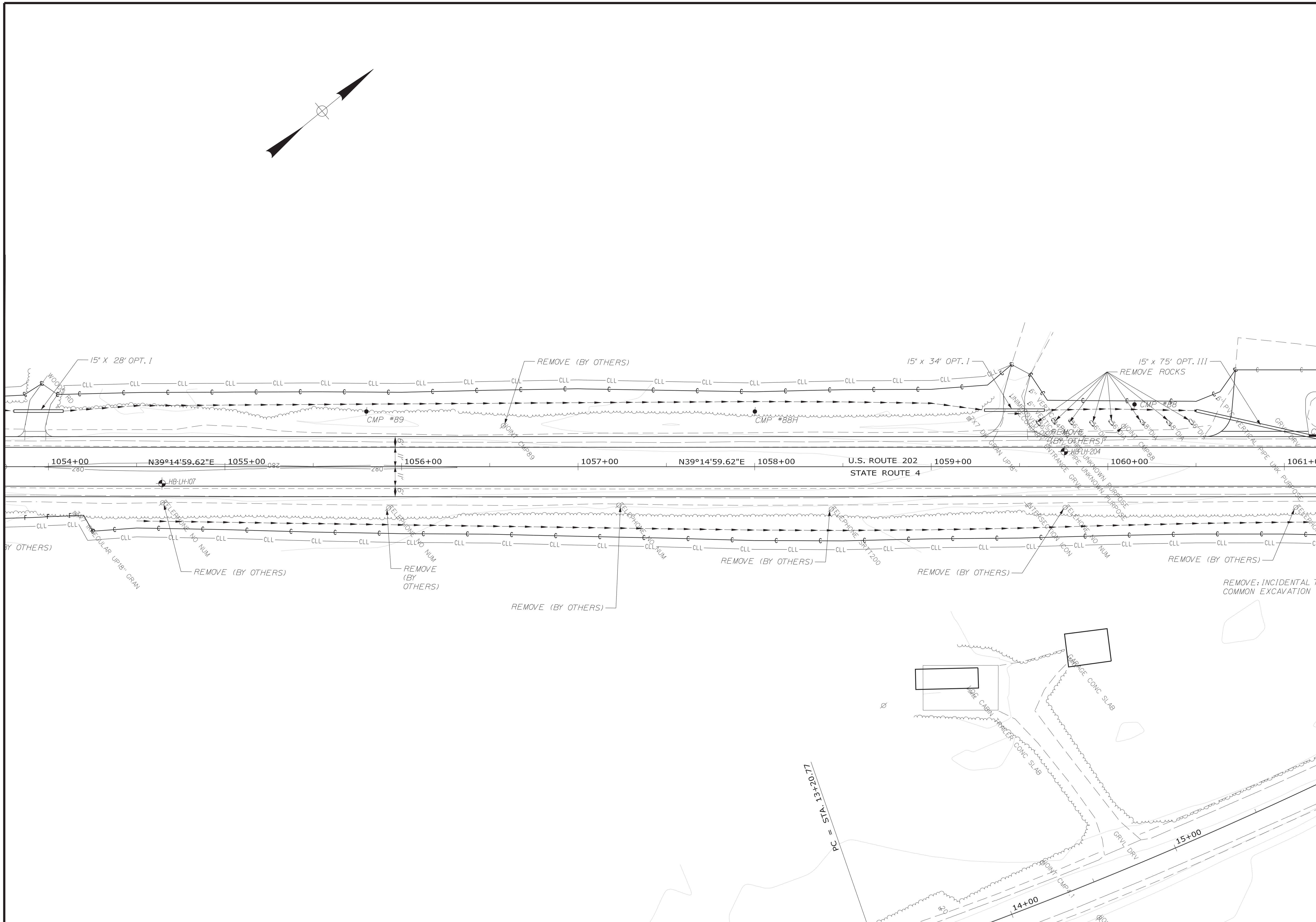

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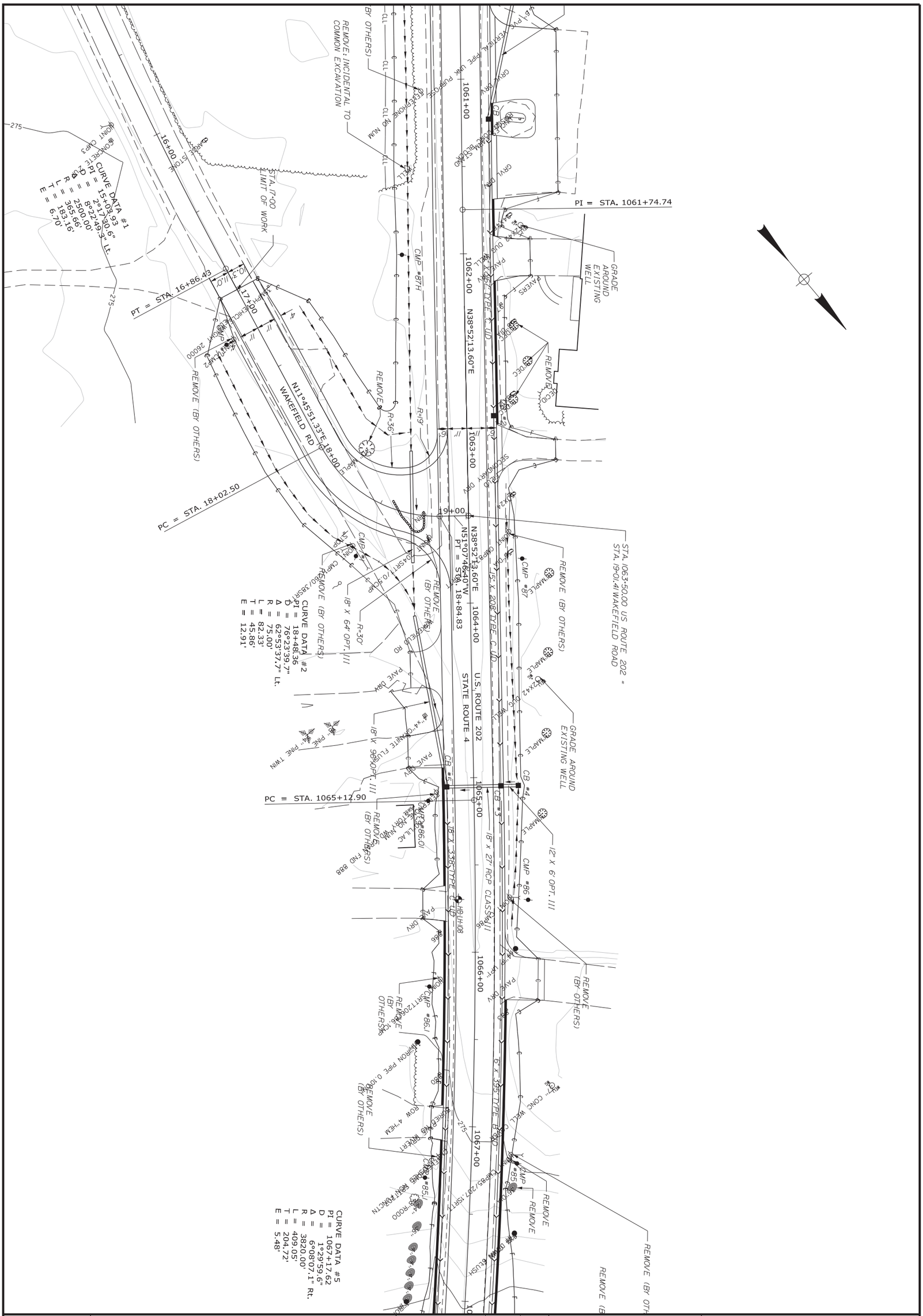

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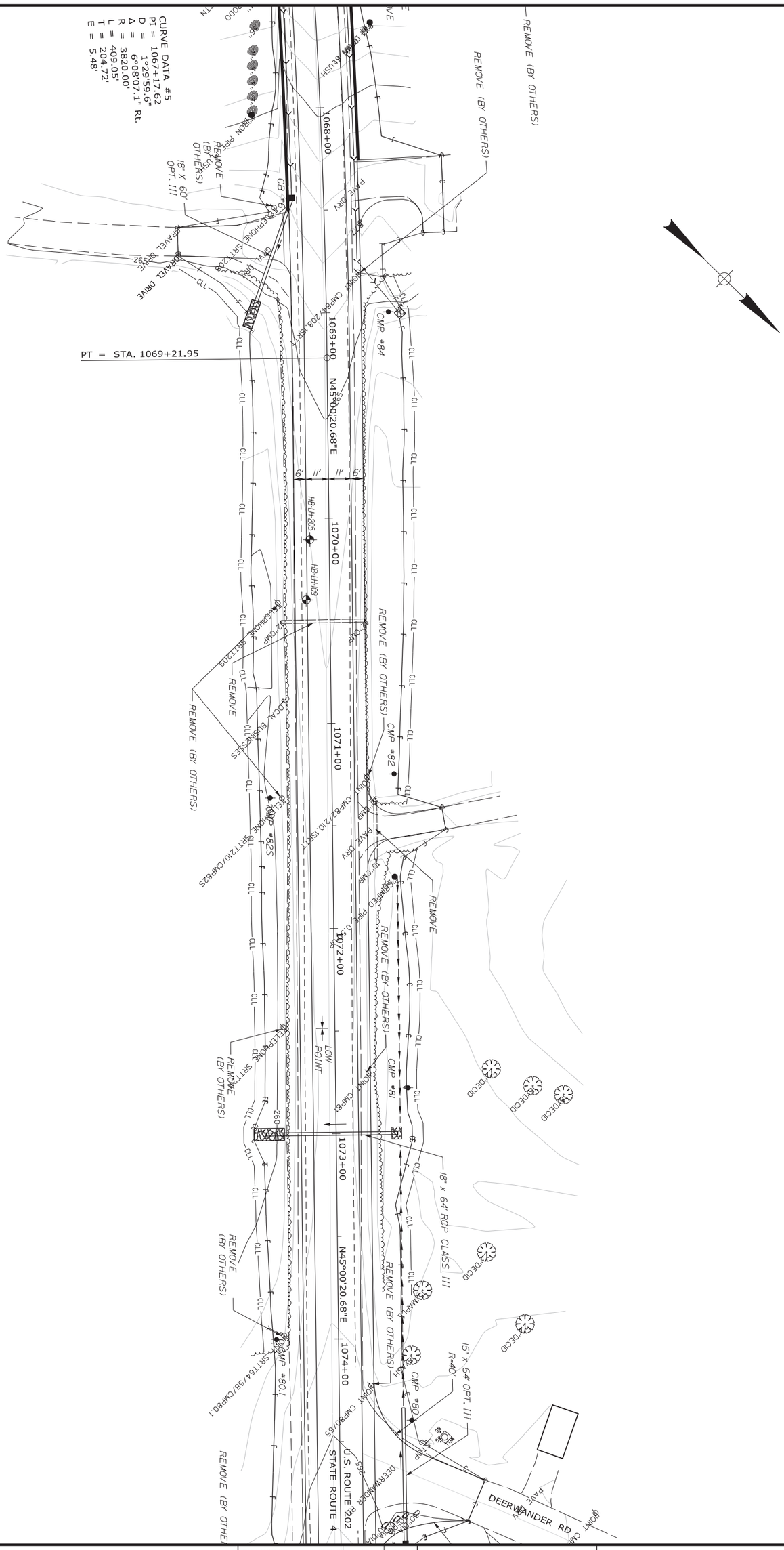

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LYMAN\HOLLIS, BUXTON & GORHAM
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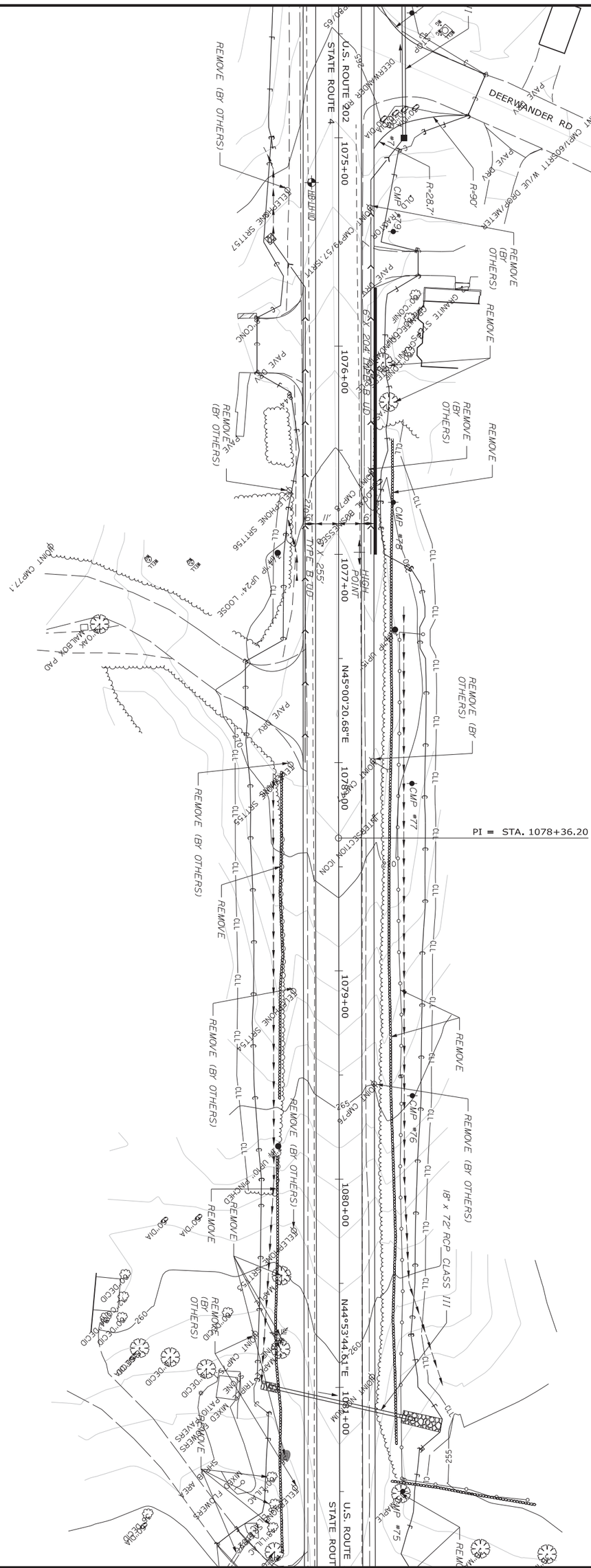

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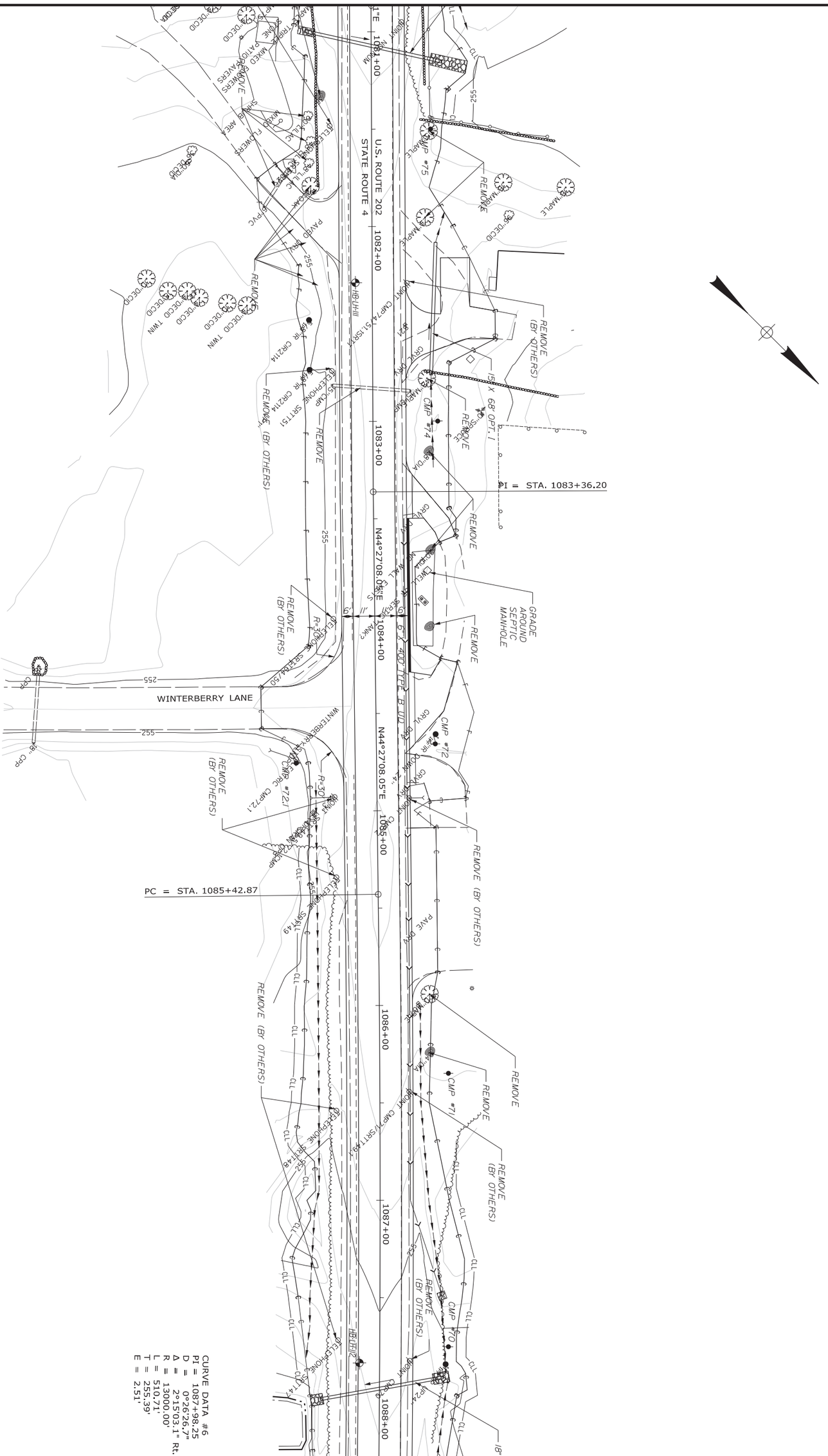

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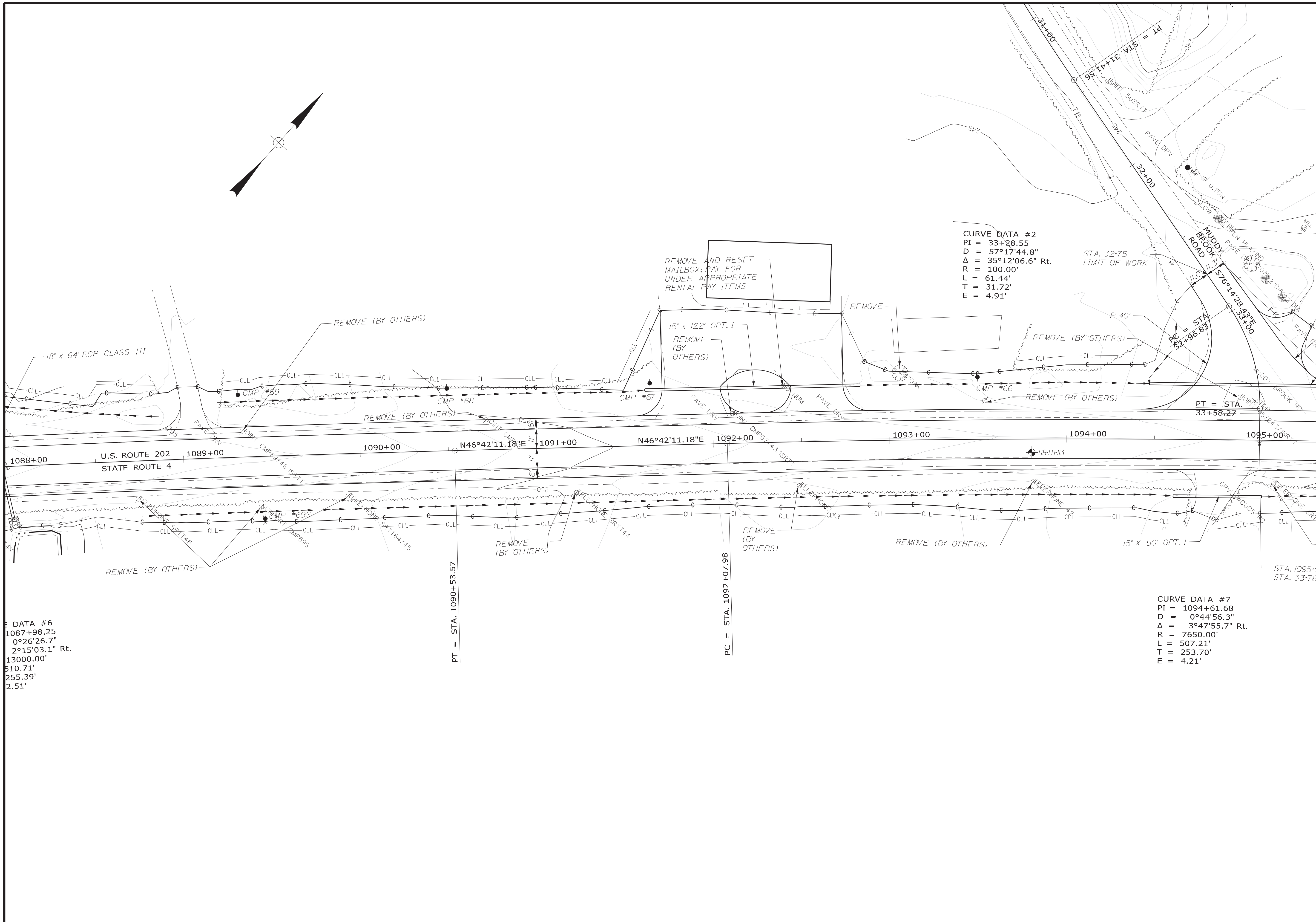

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LYMAN\HOLLIS, BUXTON & GORHAM
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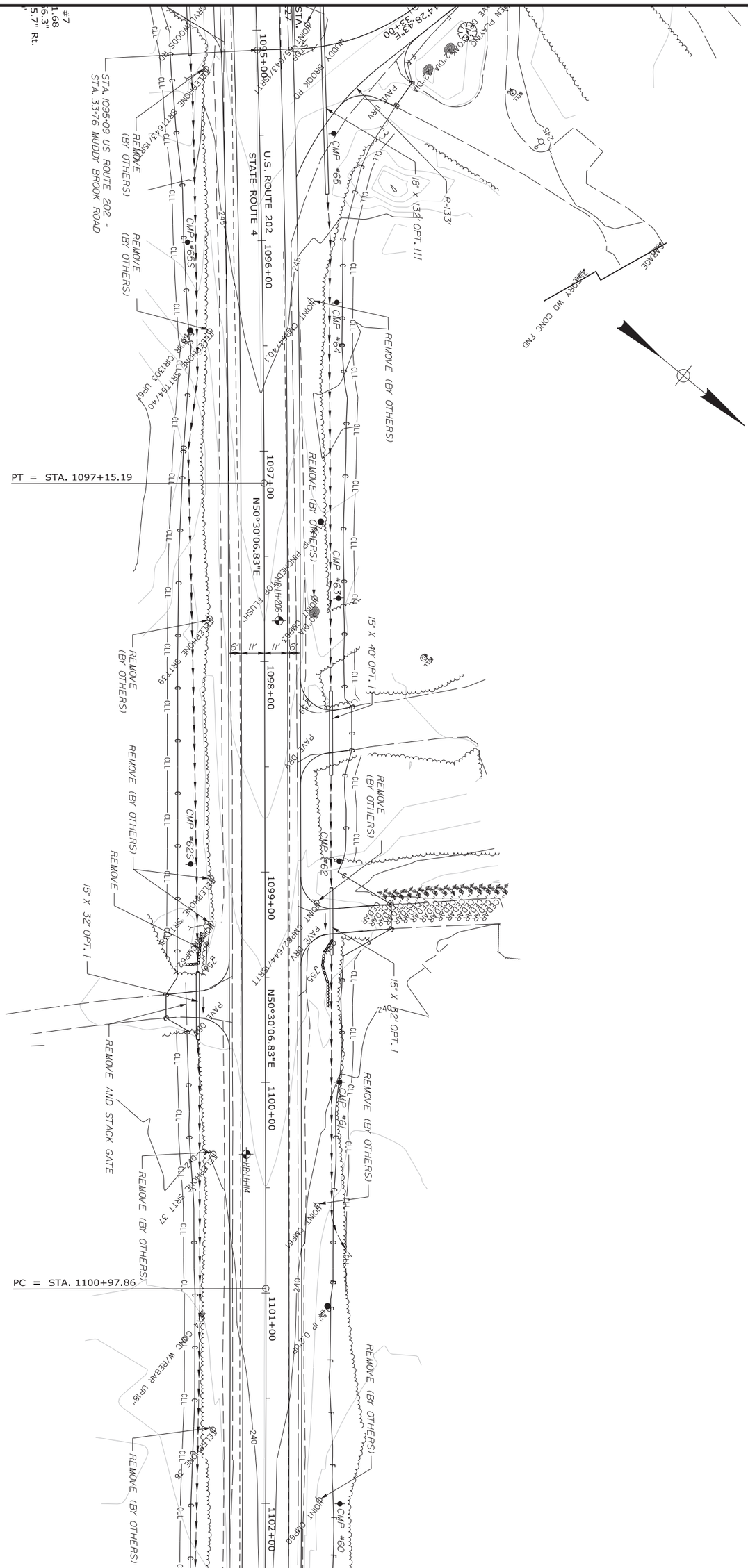

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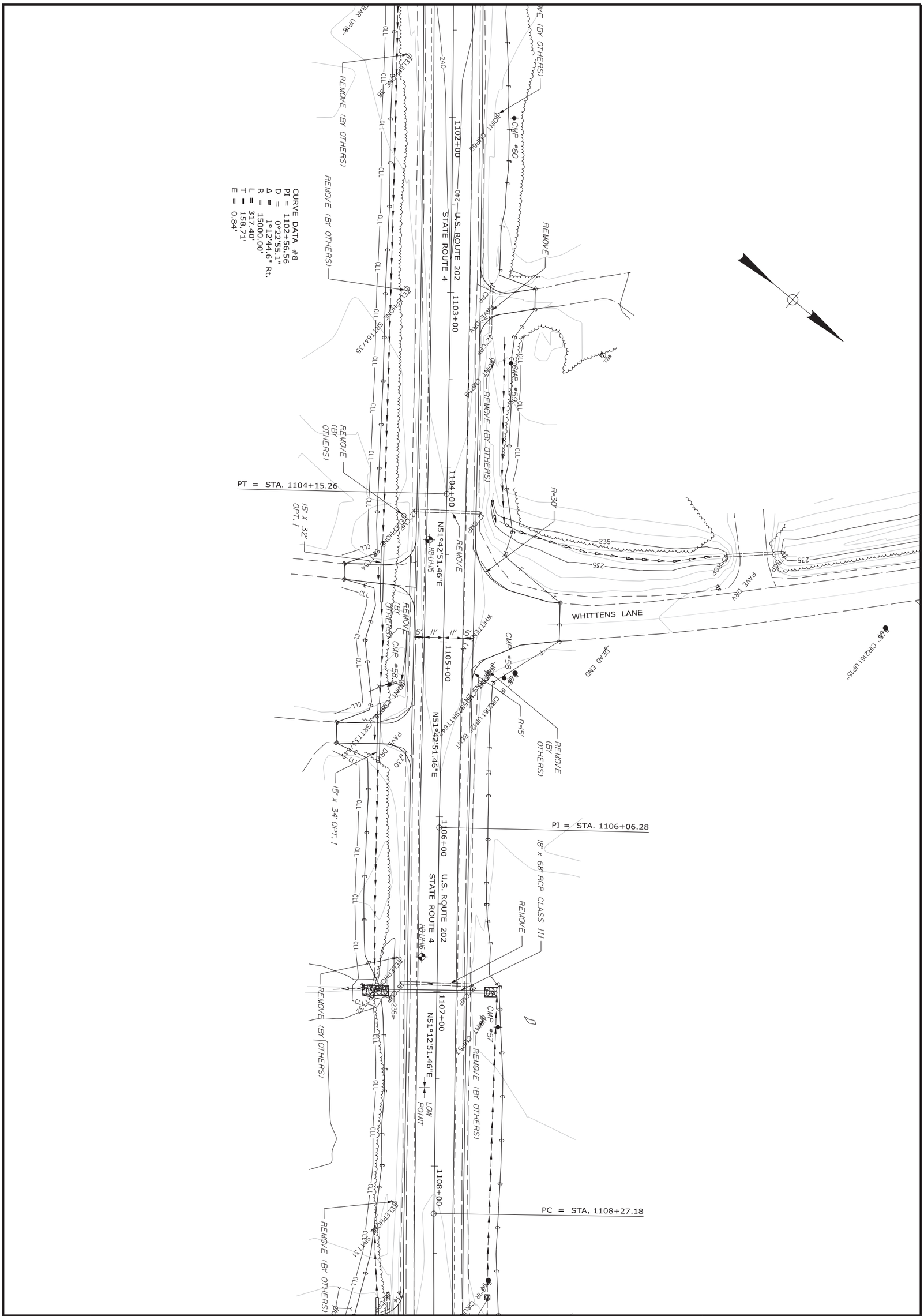

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LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

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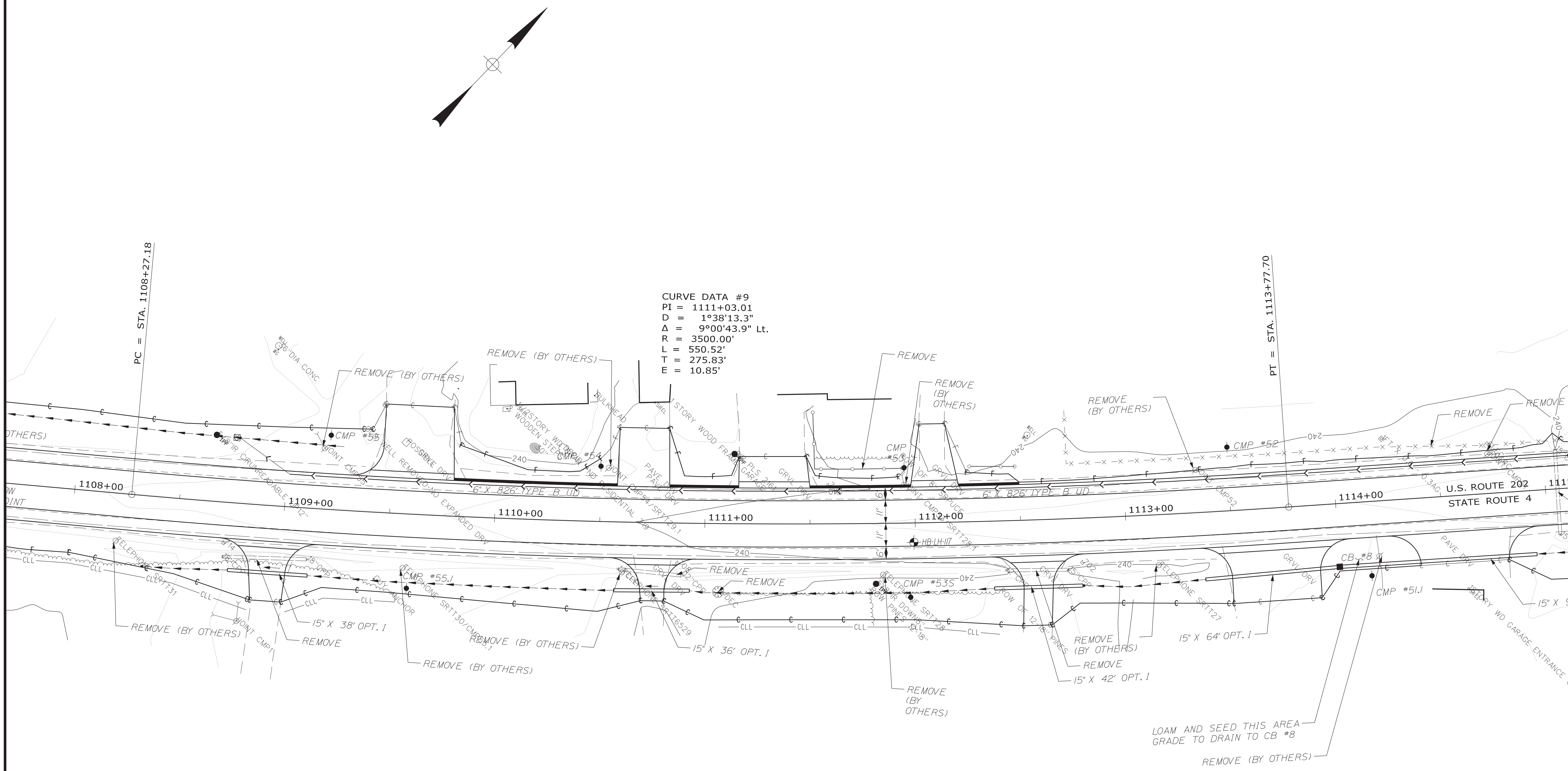

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LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

BORING LOCATION PLAN

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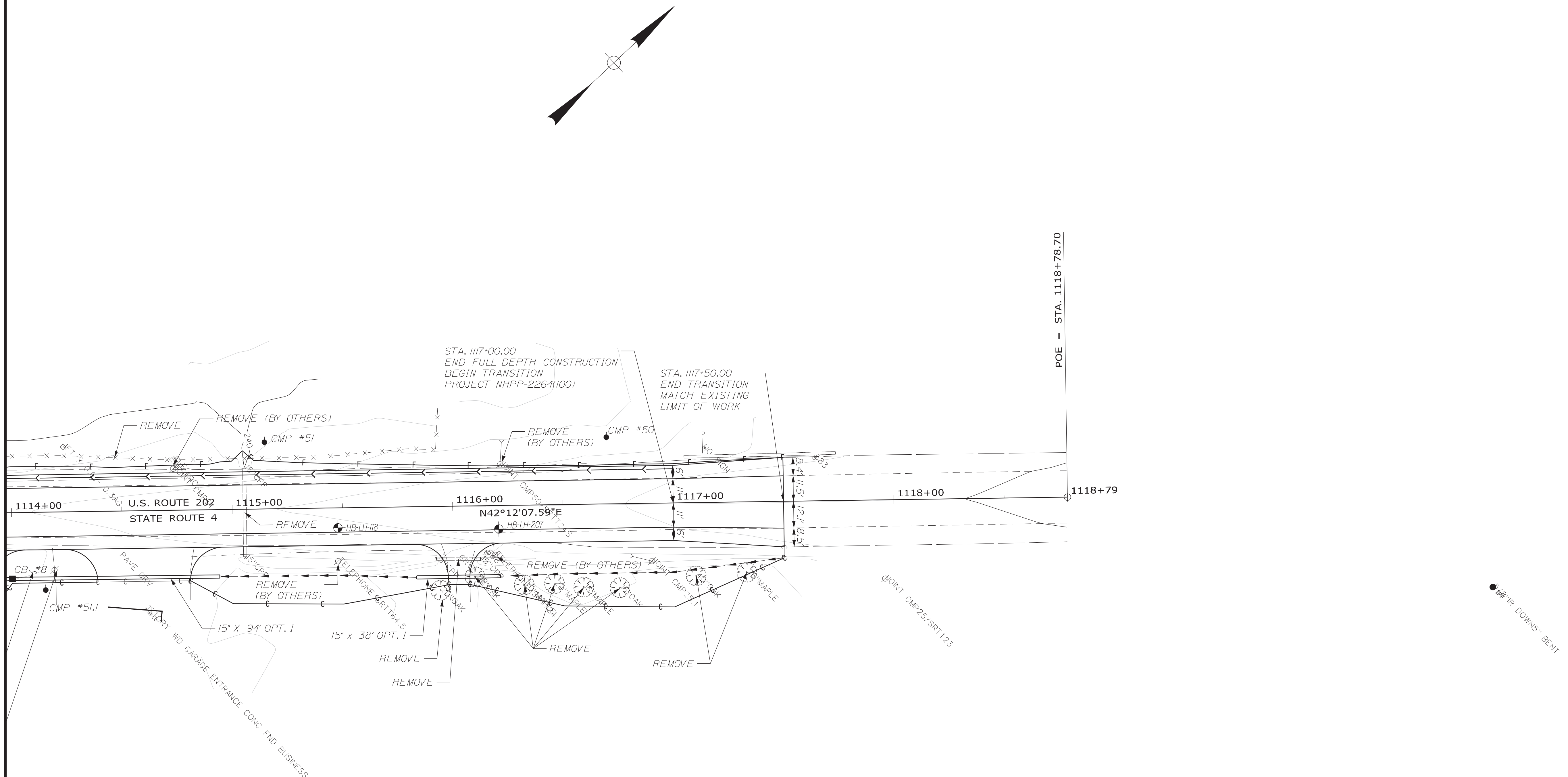

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LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

BORING LOCATION PLAN

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19
OF 26

CURVE DATA #2
PI = 2008+31.63
D = 0°44'56.3"
Δ = 1°38'21.2" Lt.
R = 7650.00'
L = 218.87'
T = 109.44'
E = 0.78'

PC = STA. 2007+22.19

PT = STA. 2009+41.05

STA. 2005+00.00
BEGIN TRANSITION
LIMIT OF WORK
MATCH EXISTING

STA. 2005+50.00
END TRANSITION
BEGIN FULL DEPTH CONSTRUCTION
PROJECT NHPP-2264(100)

JOINT CMP31.5/29SRTT

STREET LT ICON

REMOVE (BY OTHERS)

REMOVE

CMP #39

STEEL

JOINT CMP39/29.5SRTT

POST WIRE REMAINS

TOWN DIRECTORY

REMOVE (BY OTHERS)

CMP #40

JOINT CMP40/2/30SRTT

15" X 32' OPT. I

FIELD

REMOVE (BY OTHERS)

JOINT CMP41 W/UT DROP

REMOVE

CMP #43

POST WIRE REMAINS

18" OAK

18" APPLE

12" OAK

JOINT CMP43

2005+00

N36°13'45.32"E

2006+00

2007+00

2008+00

U.S. ROUTE 202
STATE ROUTE 4

2009+00

HB-BUX-201

N34°35'24.10"E

2010+00

2011+00

N34°3

HB-BUX-101

6" x 403' TYPE B UD

PENNELL RD

MIX DEC SHRUBS

R=25'

36" DIA

R=25'

1 1/2STORY
WD GRAN FND 6

PAVE DRV

40" MAPLE

STOP

LIMIT OF WORK

GRVL DRV

3/4" IR UP18"

STEEL

18" CMP

REMOV

RESE

GATEW

JOINT CMP1/2003/1SRTT

Filename: ...\00\GEOTECH\MSTA\020_BLP19.dgn Division: GEOTECH Username: Cody.A.Russell Date:9/28/2023

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NHPP-2264(100)

WIN
022641.00

HIGHWAY PLANS

	DATE	BY	SIGNATURE
PROJ. MANAGER		D.COOMES	
DESIGN-DETAILED		T.WHITE	SEP 2023
CHECKED-REVIEWED		C.RUSSELL	
DESIGN2-DETAILED2			P.E. NUMBER
DESIGN3-DETAILED3			
REVISIONS 1			DATE
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

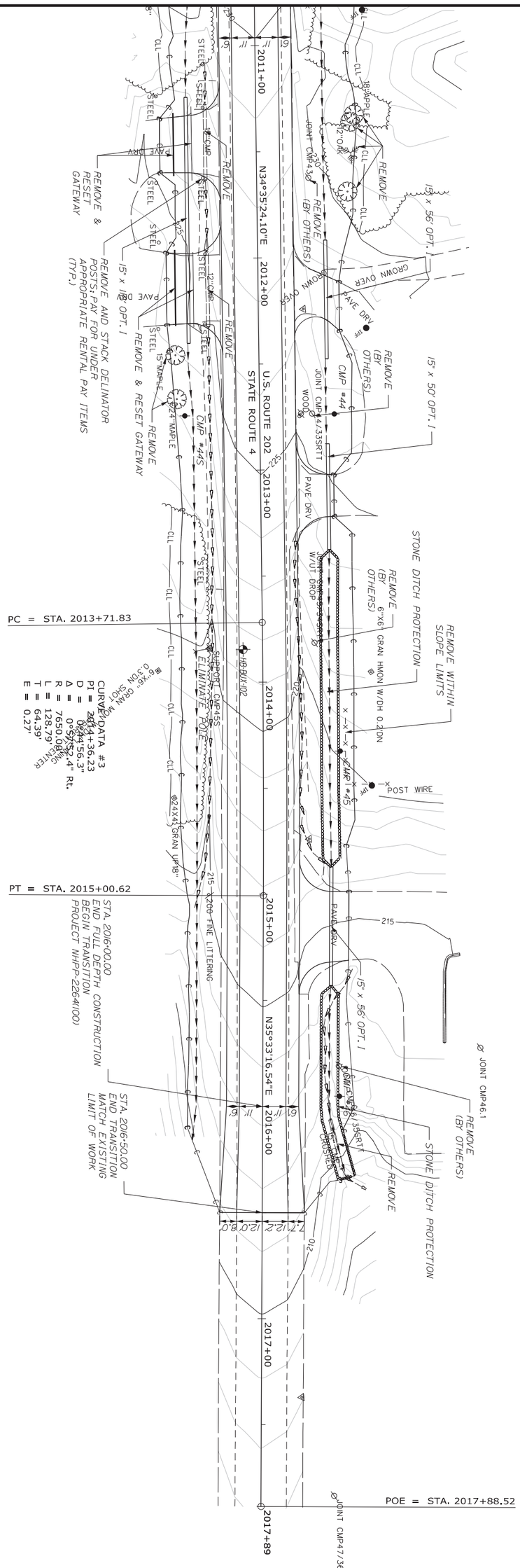
LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

BORING LOCATION PLAN

SHEET NUMBER

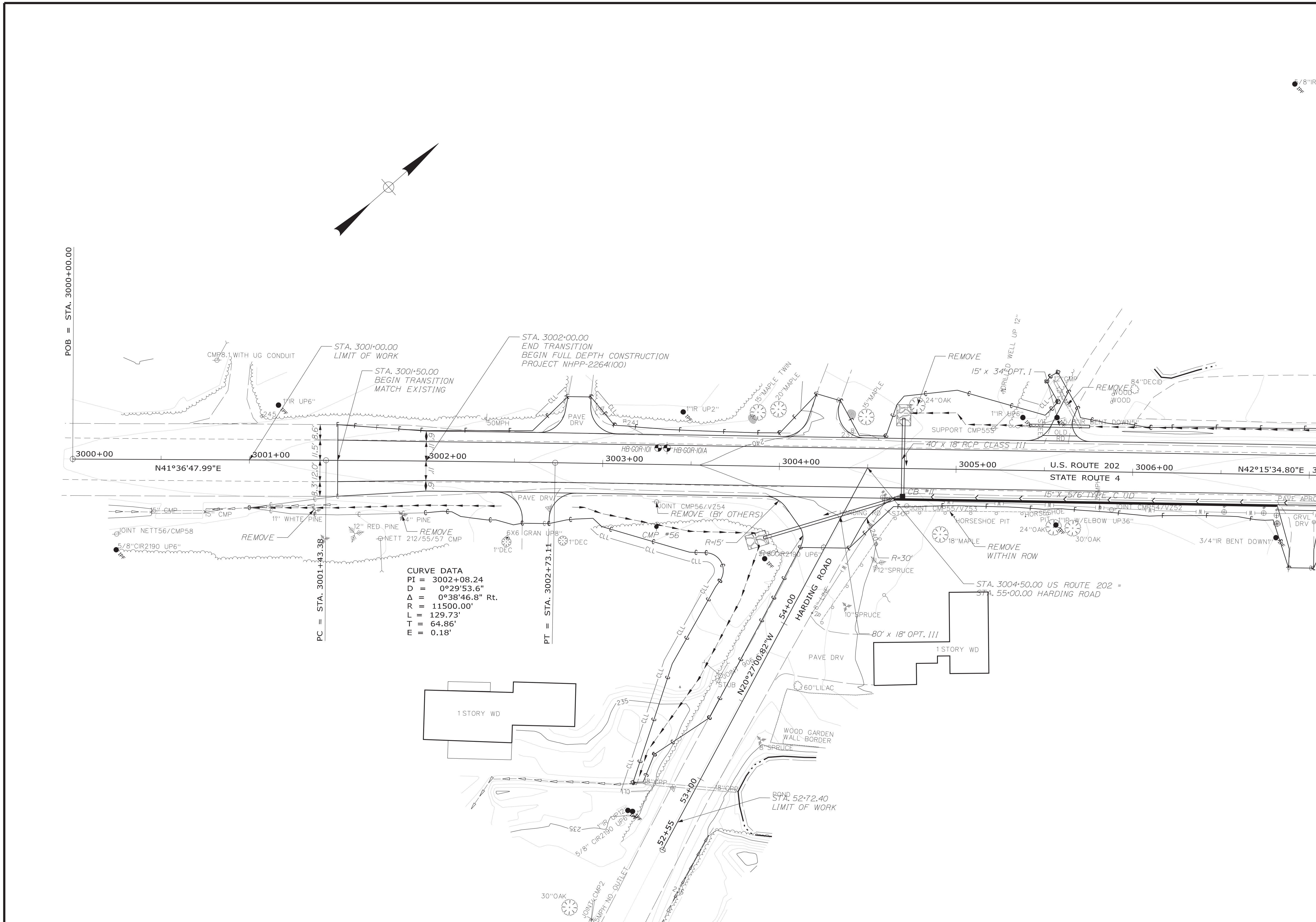
20

OF 26



SHEET NUMBER 21 OF 26	LYMAN\HOLLIS, BUXTON & GORHAM ROUTE 202	PROJ. MANAGER D.COOMBS BY DATE		STATE OF MAINE DEPARTMENT OF TRANSPORTATION
		DESIGN-DETAILED		
		CHECKED-REVIEWED	SIGNATURE	
		DESIGN2-DETAILED2 C.RUSSELL T.WHITE SEP 2023		NHPP-2264(100)
	BORING LOCATION PLAN	DESIGN3-DETAILED3	P.E. NUMBER	
		REVISIONS 1		WIN 022641.00 HIGHWAY PLANS
		REVISIONS 2	DATE	
		REVISIONS 3		
		REVISIONS 4		
		FIELD CHANGES		

Filename: ...\00\GEOTECH\MSTA\022_BLP21.dgn Division: GEOTECH Username: Cody.A.Russell Date:9/28/2023



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NHPP-2264(100)

WIN 022641.00

HIGHWAY PLANS

	BY	DATE
PROJ. MANAGER	D.COOMBS	
DESIGN-DETAILED		
CHECKED-REVIEWED	C.RUSSELL	
DESIGN2-DETAILED2	T.WHITE	SEP 2023
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

BORING LOCATION PLAN

SHEET NUMBER

22

OF 26

5/8"IR BENT DOWN7"

5/8"IR CIR1208 UP2"

REMOVE

5/8"IR CIR1208 UP2"

1 1/2"IP UP24"

GRVL DRV

15"CPP

SUPPORT CMP52

222°

220

8204

N42°15'34.80"E 3007+00 3008+00 3009+00 N42°15'34.80"E 3010+00 3011+00 N42°24'54.05"E 3012+00 3013+00

HB-GOR-102

HB-GOR-201

U.S. ROUTE 202

STATE ROUTE 4

12"

CB #13 15" X 71' TYPE C UD

CB #14

PAVE APRON

15" X 576' TYPE C UD

IR374" FOUND #12

PAVE APRON

PAVE APRON

196' TYPE C UD

PAVE APRON

JOINT CMP53/VZ51

JOINT CMP52/VZ50

JOINT CMP51/VZ49

JOINT CMP50/VZ48

JOINT CMP49/VZ

PAVE DRV

GRVL DRV

GRVL DRV

GRAVEL DRV

52

3/4"IR BENT DOWN1"

12"HEM

15"MAPLE

STEEL

STEEL

MAIDE FOR YOU

PAVE DRV

IP1/2" DOWN 12'

24"OAK

18"OAK

108"ICD

PI = STA. 3010+91.07

1/4"IR ANGLE IR

WATER PITT

WOOD W/METER

WATER PITT

WOOD W/WATER METER

8"BIRCH

WOOD

WATER PITT

374 IR

REMOVE

1 STORY WD

1 STORY WD

2 STORY WD GARAGE

1 STORY WD

Usernname: Cody.A.Russell Date:9/28/2023

Filename: ...\00\GEOTECH\MSTA\023_BLP22.dgn Division: GEOTECH

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NHPP-2264(100)

WIN
022641.00

HIGHWAY PLANS

	DATE	BY	SIGNATURE
D.COMBS			
C.RUSSELL	SEP 2023	T.WHITE	
			P.E. NUMBER
			DATE

PROJ. MANAGER	
DESIGN-DETAILED	
CHECKED-REVIEWED	
DESIGN2-DETAILED2	
DESIGN3-DETAILED3	
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

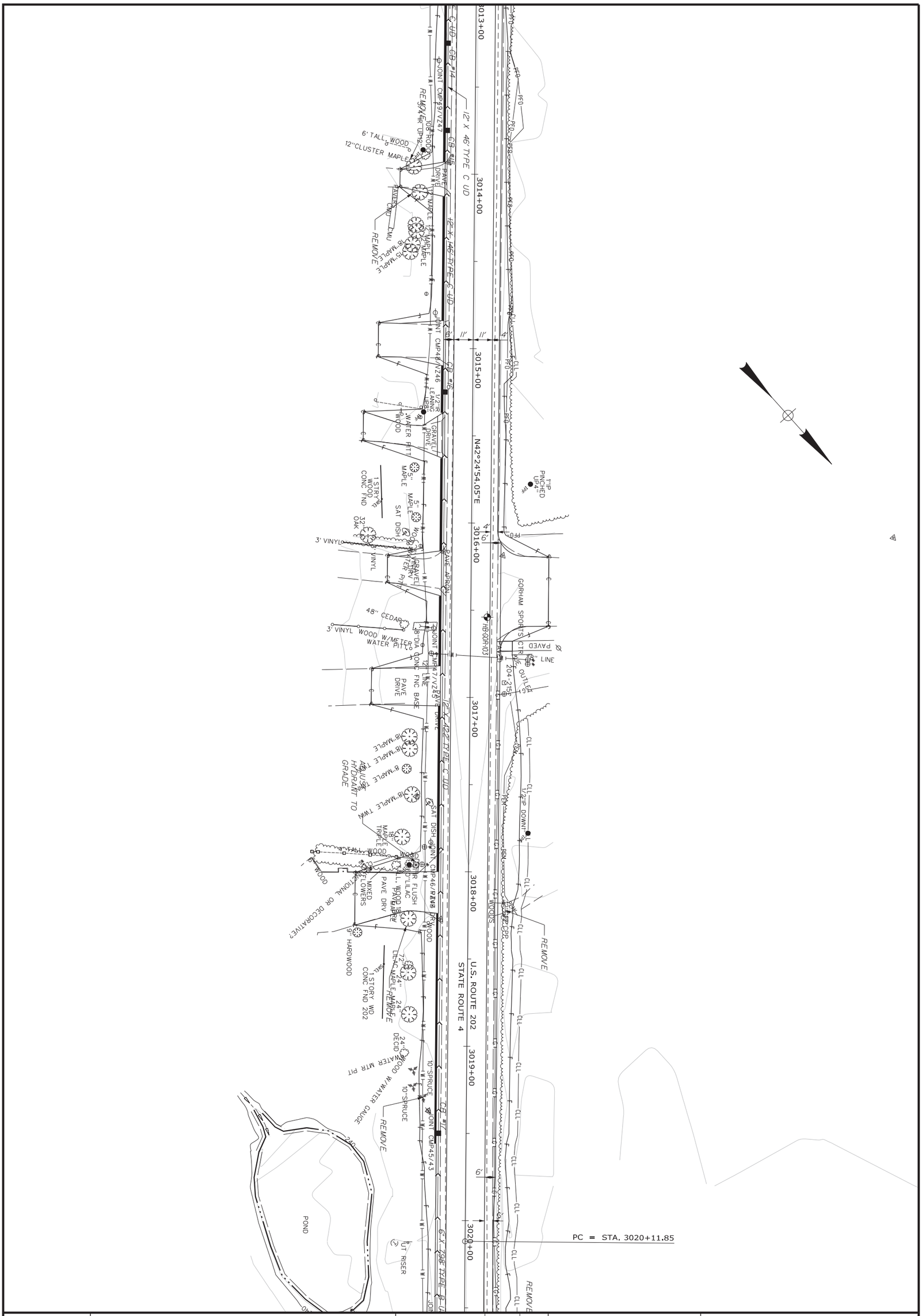
LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

BORING LOCATION PLAN

SHEET NUMBER

23

OF 26



PROJ. MANAGER	D.COOMBS	BY	DATE
DESIGN-DETAILED			
CHECKED-REVIEWED			
DESIGN2-DETAILED2	C.RUSSELL	T.WHITE	SEP 2023
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

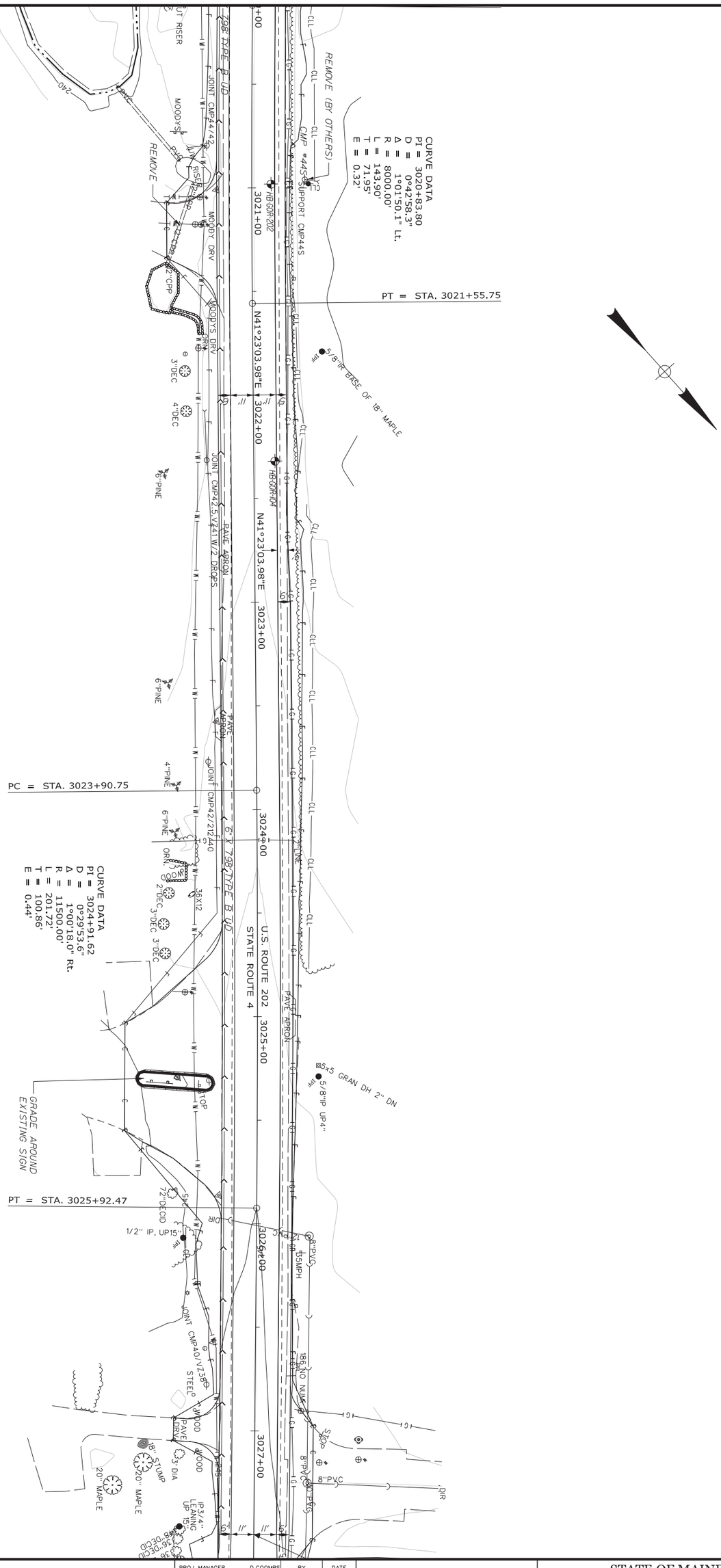
BORING LOCATION PLAN

SHEET NUMBER 24 OF 26

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NHPP-2264(100)

WIN 022641.00 HIGHWAY PLANS



PROJ. MANAGER	D.COOMBS	BY	DATE	
DESIGN-DETAILED				
CHECKED-REVIEWED				SIGNATURE
DESIGN2-DETAILED2	C.RUSSELL	T.WHITE	SEP 2023	
DESIGN3-DETAILED3				P.E. NUMBER
REVISIONS 1				
REVISIONS 2				DATE
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

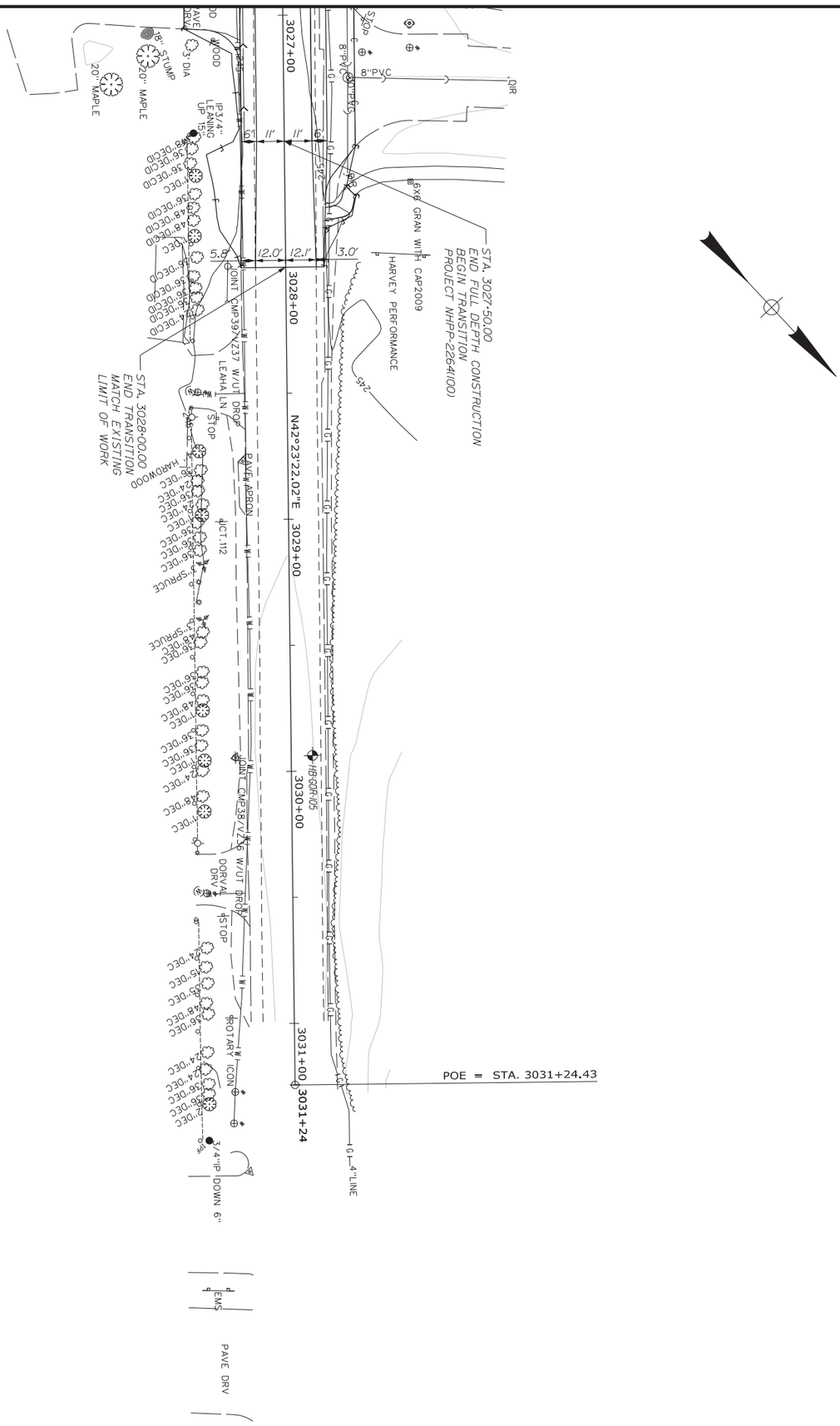
BORING LOCATION PLAN

SHEET NUMBER 25 OF 26

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NHPP-2264(100)

WIN 022641.00 HIGHWAY PLANS



PROJ. MANAGER	D.COOMBS	BY	DATE	
DESIGN-DETAILED				
CHECKED-REVIEWED				SIGNATURE
DESIGN2-DETAILED2	C.RUSSELL	T.WHITE	SEP 2023	
DESIGN3-DETAILED3				P.E. NUMBER
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				DATE
REVISIONS 4				
FIELD CHANGES				

LYMAN\HOLLIS, BUXTON & GORHAM
ROUTE 202

BORING LOCATION PLAN

SHEET NUMBER 26 OF 26

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NHPP-2264(100)

WIN 022641.00 HIGHWAY PLANS

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS (more than half of material is larger than No. 200 sieve size)	GRAVELS (more than half of coarse fraction is larger than No. 4 sieve size)	CLEAN GRAVELS (little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravels, gravel sand mixtures, little or no fines.
		GRAVEL WITH FINES (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SANDS (more than half of coarse fraction is smaller than No. 4 sieve size)	CLEAN SANDS (little or no fines)	SW	Well-graded sands, Gravelly sands, little or no fines
			SP	Poorly-graded sands, Gravelly sand, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures.
FINE-GRAINED SOILS (more than half of material is smaller than No. 200 sieve size)	SILTS AND CLAYS (liquid limit less than 50)		ML	Inorganic silts and very fine sands, rock flour, Silty or Clayey fine sands, or Clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, Gravelly clays, Sandy clays, Silty clays, lean clays.
			OL	Organic silts and organic Silty clays of low plasticity.
	SILTS AND CLAYS (liquid limit greater than 50)		MH	Inorganic silts, micaceous or diatomaceous fine Sandy or Silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
	HIGHLY ORGANIC SOILS		Pt	Peat and other highly organic soils.

Desired Soil Observations (in this order, if applicable):

Color (Munsell color chart)
Moisture (dry, damp, moist, wet)
Density/Consistency (from above right hand side)
Texture (fine, medium, coarse, etc.)
Name (Sand, Silty Sand, Clay, etc., including portions - trace, little, etc.)
Gradation (well-graded, poorly-graded, uniform, etc.)
Plasticity (non-plastic, slightly plastic, moderately plastic, highly plastic)
Structure (layering, fractures, cracks, etc.)
Bonding (well, moderately, loosely, etc.,)
Cementation (weak, moderate, or strong)
Geologic Origin (till, marine clay, alluvium, etc.)
Groundwater level

MODIFIED BURMISTER SYSTEM

Descriptive Term	Portion of Total (%)
trace	0 - 10
little	11 - 20
some	21 - 35
adjective (e.g. Sandy, Clayey)	36 - 50

TERMS DESCRIBING DENSITY/CONSISTENCY

Coarse-grained soils (more than half of material is larger than No. 200 sieve): Includes (1) clean gravels; (2) Silty or Clayey gravels; and (3) Silty, Clayey or Gravelly sands. Density is rated according to standard penetration resistance (N-value).

Density of Cohesionless Soils	Standard Penetration Resistance N-Value (blows per foot)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

Fine-grained soils (more than half of material is smaller than No. 200 sieve): Includes (1) inorganic and organic silts and clays; (2) Gravelly, Sandy or Silty clays; and (3) Clayey silts. Consistency is rated according to undrained shear strength as indicated.

Consistency of Cohesive soils	SPT N-Value (blows per foot)	Approximate Undrained Shear Strength (psf)	Field Guidelines
Very Soft	WOH, WOR, WOP, <2	0 - 250	Fist easily penetrates
Soft	2 - 4	250 - 500	Thumb easily penetrates
Medium Stiff	5 - 8	500 - 1000	Thumb penetrates with moderate effort
Stiff	9 - 15	1000 - 2000	Indented by thumb with great effort
Very Stiff	16 - 30	2000 - 4000	Indented by thumbnail
Hard	>30	over 4000	Indented by thumbnail with difficulty

Rock Quality Designation (RQD):

$$\text{RQD (\%)} = \frac{\text{sum of the lengths of intact pieces of core* > 4 inches}}{\text{length of core advance}}$$

*Minimum NQ rock core (1.88 in. OD of core)

Rock Quality Based on RQD

Rock Quality	RQD (%)
Very Poor	≤25
Poor	26 - 50
Fair	51 - 75
Good	76 - 90
Excellent	91 - 100

Desired Rock Observations (in this order, if applicable):

Color (Munsell color chart)
Texture (aphanitic, fine-grained, etc.)
Rock Type (granite, schist, sandstone, etc.)
Hardness (very hard, hard, mod. hard, etc.)
Weathering (fresh, very slight, slight, moderate, mod. severe, severe, etc.)
Geologic discontinuities/jointing:
-dip (horiz - 0-5 deg., low angle - 5-35 deg., mod. dipping - 35-55 deg., steep - 55-85 deg., vertical - 85-90 deg.)
-spacing (very close - <2 inch, close - 2-12 inch, mod. close - 1-3 feet, wide - 3-10 feet, very wide >10 feet)
-tightness (tight, open, or healed)
-infilling (grain size, color, etc.)
Formation (Waterville, Ellsworth, Cape Elizabeth, etc.)
RQD and correlation to rock quality (very poor, poor, etc.)
ref: ASTM D6032 and FHWA NHI-16-072 GEC 5 - Geotechnical Site Characterization, Table 4-12
Recovery (inch/inch and percentage)
Rock Core Rate (X.X ft - Y.Y ft (min:sec))

Maine Department of Transportation
Geotechnical Section
Key to Soil and Rock Descriptions and Terms
Field Identification Information

Sample Container Labeling Requirements:

WIN
Bridge Name / Town
Boring Number
Sample Number
Sample Depth
Blow Counts
Sample Recovery
Date
Personnel Initials

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-101

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	286.4	**Auger ID/OD:**	2.25" ID / 5.88" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/20/15 0955-1050	**Drilling Method:**	hollow stem auger	**Core Barrel:**	N/A
Boring Location:	1003+86.5, 9.4 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	8.1 ft. (inside augers)

Definitions: D = Spilt 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						HSA	285.6		9" HMA (0.8)	
	1D	24/13	2.00 - 4.00	39-26-22-18	48				1D: Brown grading to tan, damp, dense, fine to coarse SAND, some gravel, trace Silt.	
5	2D	24/15	5.00 - 7.00	19-32-41-36	73				2D: Brown-tan, damp, very dense, fine to coarse Sandy GRAVEL, trace silt.	
10	3D	24/15	10.00 - 12.00	8-8-11-12	19		274.4		3D: Tan, wet, medium dense, Gravelly fine to coarse SAND, trace silt. (12.0) **Bottom of Exploration at 12.0 feet below ground surface.** No Refusal.	
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-102

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	285.1	**Auger ID/OD:**	2.25" ID / 5.88" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/20/15 1105-1145	**Drilling Method:**	hollow stem auger	**Core Barrel:**	N/A
Boring Location:	1012+38.1, 9.6 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	7.9 ft. (inside augers)

Definitions: D = Spilt 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						HSA	284.2		11" HMA 0.9	
	1D	24/10	2.00 - 4.00	29-23-26-32	49				1D: Brown-tan, damp, dense, fine to medium Sandy GRAVEL, trace silt, trace coarse sand.	
5	2D	24/16	5.00 - 7.00	27-31-38-31	69				2D: Brown-tan, damp, very dense, Gravelly fine to coarse SAND, trace silt.	A-1-a, SP-SM WC=3.6%
10	3D	24/16	10.00 - 12.00	9-10-9-9	19				3D: Brown, wet, medium dense, fine to coarse SAND, some gravel, trace silt.	
							273.1		12.0 **Bottom of Exploration at 12.0 feet below ground surface.** No Refusal.	
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-103

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	285.1	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/20/15 1150-1235	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1020+35.1, 8.2 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	dry

Definitions: D = Spilt 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 Information: 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	284.3		10" HMA — 0.8	
									Obstruction (boulder or bedrock) at 2.2 ft.	
							282.1		3.0 — **Bottom of Exploration at 3.0 feet below ground surface.** Auger Refusal.	
5										
10										
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-103A

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	285.2	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/20/15 1150-1235	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1020+40.5, 8.0 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	dry

Definitions:
D = Spilt 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 Information: 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				
							283.1		Obstruction (boulder or bedrock) at 1.8 ft bgs.	
									2.1	
									Bottom of Exploration at 2.1 feet below ground surface.	
									Auger REFUSAL	
5										
10										
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-103B

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	285.1	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/20/15 1150-1235	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1020+27.1, 8.8 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	dry

Definitions:
D = Spilt 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 Information: 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				
							282.6		Obstruction (boulder or bedrock) at 1.8 ft bgs.	
2.5									**Bottom of Exploration at 2.5 feet below ground surface.** Auger REFUSAL	
5										
10										
15										
20										
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.

Boring No.: HB-LH-103B

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-104

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	282.4	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/20/15 1245-1315	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1029+95.4, 9.3 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	8.0 ft. (open)

Definitions: D = Spilt 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							281.5		11" HMA	
									0.9	
	1D	24/15	1.00 - 3.00	48-79-84-44	frozen				1D: Brown-tan, damp, dense, Gravelly fine to coarse SAND, trace silt. Frozen to 2.2 ft.	
5	2D	24/17	5.00 - 7.00	4-15-18-14	33				Brown, damp, dense, fine to medium SAND, trace silt. Changing at 6.0 ft to: 2D: Brown-tan, damp, Gravelly fine to coarse SAND, trace silt.	
10	3D	24/16	10.00 - 12.00	8-8-7-7	15				3D: Brown, wet, meduim dense, fine to coarse SAND, trace gravel, trace silt.	
							270.4		12.0	
15									**Bottom of Exploration at 12.0 feet below ground surface.** No Refusal.	
20										
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.

Boring No.: HB-LH-104

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-105

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	280.8	**Auger ID/OD:**	3.25" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/20/15 1325-1400	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1038+42.8, 8.5 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	6.5 ft. (open)

Definitions: D = Spilt 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	280.0		10" HMA (bottom 7" weathered)	
									0.8	
	1D	24/15	2.00 - 4.00	20-14-7-4	21				1D: Reddish-brown, damp, medium dense, fine to coarse SAND, trace gravel, trace silt.	A-1-b, SP-SM WC=10.8%
5	2D	24/16	5.00 - 7.00	9-10-13-16	23				2D: Brown, damp to moist, medium dense, fine to coarse SAND, trace gravel, trace silt.	A-3, SP WC=12.6%
10	3D	24/12	10.00 - 12.00	4-8-7-4	15				3D: Brown, wet, medium dense, fine to coarse Sandy GRAVEL, trace silt.	
							268.8		12.0	
									Bottom of Exploration at 12.0 feet below ground surface. No Refusal.	
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-106

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	280.8	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/20/15 1410-1445	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1046+08, 9.1 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	7.4 ft. (open)

Definitions: D = Spilt 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	280.0		9" HMA (bottom 6" weathered) — 0.8	
	1D	24/17	2.00 - 4.00	20-15-11-8	26				1D: Reddish brown, damp, medium dense, Gravelly fine to coarse SAND, trace silt.	
5	2D	24/17	5.00 - 7.00	5-4-3-2	7				2D: Brown-tan, damp, loose, fine to coarse SAND, trace gravel, trace silt.	
10	3D	24/19	10.50 - 12.50	4-4-5-5	9		268.3		3D: Brown-grey, wet, loose, fine to coarse SAND, trace to little gravel, trace silt. — 12.5	
15									**Bottom of Exploration at 12.5 feet below ground surface.** No Refusal.	
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-107

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	279.8	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/20/15 1455-1525	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1054+64.4, 9.6 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	7.8 ft. (open)

Definitions: D = Spilt 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	278.9		11" HMA (bottom 8" weathered)	
									0.9	
	1D	24/16	2.00 - 4.00	22-12-9-8	21				1D: Reddish brown, damp, medium dense, fine to coarse SAND, some gravel, trace silt.	
5	2D	24/18	5.00 - 7.00	5-5-6-8	11				2D: Tan, damp, medium dense, fine to medium SAND, trace silt.	
10	3D	24/18	10.00 - 12.00	4-5-7-5	12				3D: Tan changing to orange at 11.7 ft, wet, medium dense, fine to medium SAND, trace silt.	
							267.8		12.0	
									Bottom of Exploration at 12.0 feet below ground surface. No Refusal.	
15										
20										
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.

Boring No.: HB-LH-107

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-108

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	276.7	**Auger ID/OD:**	2.25" ID / 5.88" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/21/15 0720-0820	**Drilling Method:**	hollow stem auger	**Core Barrel:**	N/A
Boring Location:	1065+69.8, 9.7 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	10.1 ft. (in augers)

Definitions: D = Spilt 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						HSA	275.9		10" HMA (bottom 3" weathered)	
									0.8	
	1D	24/15	2.00 - 4.00	14-11-8-11	19				1D: Tan, damp, medium dense, fine to coarse SAND, trace to little gravel, trace silt.	
5	2D	24/17	5.00 - 7.00	7-6-5-3	11				2D: Tan, damp, medium dense, fine to coarse SAND, trace gravel, trace silt.	
10	3D	24/18	10.00 - 12.00	8-8-7-10	15				3D: Tan, wet, medium dense, fine to medium SAND, trace silt.	
15	4D	24/17	15.00 - 17.00	25-26-38-39	64				4D: Reddish tan grading to greyish tan, wet, very dense, fine to medium SAND, trace to little silt.	
							259.7		17.0	
20									**Bottom of Exploration at 17.0 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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-109

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	263.7	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/20/15 1325-1400	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1070+39.7, 11.5 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	8.6 ft. (open)

Definitions: D = Spilt 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	262.7		12" HMA (1.0)	
									Fill. 2.0 ft.: obstruction	
	1D	24/2	3.00 - 5.00	1-2-1-1	3		259.7		1D: Dark brown, moist, very loose, fine-grained PEAT. (4.0)	
5	2D	24/13	5.00 - 7.00	4-5-6-7	11		258.7		Dark brown fine-grained PEAT at top of sample. Brown, moist, medium dense, fine to coarse Sand, little gravel, trace to little silt. Changing at 6.4 ft to: (5.0)	
							257.3		2D: Grey, moist, CLAY, some silt, trace fine to coarse sand. (6.4)	A-4, CL WC=21.5% PL=20 LL 28 PI=8
10	3D	24/20	10.00 - 12.00	8-10-16-18	26				3D: Grey with rust laminations in upper 12 inches, wet, very stiff, SILT, some clay, trace to little fine to medium sand.	A-4, ML WC=19.4%
							251.7		(12.0) **Bottom of Exploration at 12.0 feet below ground surface.** No Refusal.	
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-110

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	266.1	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/21/15 0910-0940	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1075+21.4, 13.0 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	9.5 ft. (open hole)

Definitions: D = Spilt 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	265.3		10" HMA (bottom 4" weathered) 0.8	
	1D	24/16	2.00 - 4.00	11-7-5-5	12				1D: Brown grading to tan, damp, medium dense, fine SAND, little silt, trace medium to coarse sand, trace gravel.	A-2-4, SM WC=15.4%
5	2D	24/16	5.00 - 7.00	6-8-9-14	17		261.6		4.5 2D: Grey-tan, damp, very stiff, fine Sandy SILT, grading to Clayey SILT, trace fine sand, with trace fine rounded gravel in bottom 2 inches of sample.	
							259.1		7.0 7.0 ft. - Driller notes boney material.	
10	3D	12/9	10.00 - 11.00	26-62/6"					3D: Grey-tan, wet, fine to coarse Sandy GRAVEL, trace to little silt.	
							255.1		11.0 **Bottom of Exploration at 11.0 feet below ground surface.** Spoon Refusal.	
15										
20										
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.

Boring No.: HB-LH-110

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-111

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	257.2	**Auger ID/OD:**	4.50" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/21/15 0945-1010	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1082+28.7, 8.6 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	8.7 ft. (open)

Definitions: D = Spilt 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	256.4		9" HMA (0.8)	
	1D	24/16	2.00 - 4.00	15-5-4-5	9				1D: Brown, damp, loose, Gravelly fine to coarse SAND, trace silt; changing at 3.2 ft. to reddish-brown, damp, fine SAND, trace silt. (composite sample)	
5	2D	24/18	5.00 - 7.00	4-6-7-10	13				2D: Tan, moist, medium dense, finev to medium SAND, little silt.	A-2-4 SP-SM WC=22.3%
10	3D	24/15	10.00 - 12.00	2-5-7-10	12				3D: Tan, wet, medium dense, fine SAND, trace silt.	
							245.2		(12.0) **Bottom of Exploration at 12.0 feet below ground surface.** No Refusal.	
15										
20										
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.

Boring No.: HB-LH-111

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-112

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	253.4	**Auger ID/OD:**	2.25" ID / 5.88" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/21/15 1015-1110	**Drilling Method:**	hollow stem auger	**Core Barrel:**	N/A
Boring Location:	1087+83.5, 10.4 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	9.3 ft. (in augers)

Definitions: D = Spilt 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						HSA	252.6		9" HMA (bottom 5" weathered)	
									0.8	
	1D	24/4	2.00 - 4.00	23-22-18-17	40				1D: Tan, damp, dense, fine to coarse SAND, some gravel, trace silt.	
5	2D	24/0	5.00 - 7.00	35-29-24-24	53				2D: No recovery.	
10	3D	24/13	10.00 - 12.00	12-21-22-24	43				3D: Tan, wet, dense, fine SAND, trace silt.	
							239.9		13.5	
15	4D	24/19	15.00 - 17.00	4-6-5-7	11				4D: Tan, wet, stiff, interbedded fine Sandy SILT and Clayey SILT, little fine sand.	
							236.4		17.0	
20									**Bottom of Exploration at 17.0 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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-113

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	247.6	**Auger ID/OD:**	4.50" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/21/15 1115-1145	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1093+80.4, 7.6 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	5.1 ft. (open)

Definitions: D = Spilt 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	246.8		10" HMA	
									0.8	
	1D	24/14	2.00 - 4.00	24-17-17-17	34				1D: Tan, damp, dense, fine SAND, trace medium to coarse sand, trace fine gravel, trace silt.	
5	2D	24/18	5.00 - 7.00	5-9-9-9	18				2D: Tan, moist, medium dense, fine to medium SAND, trace silt.	A-3, SP WC=27.4%
							238.3		9.3	
10	3D	24/16	10.00 - 12.00	8-11-12-13	23				between 9 and 9.5 ft: change to cohesive 3D: Tan, wet, medium dense, interbedded fine SAND, trace silt and Clayey SILT, trace to little fine sand.	
							235.6		12.0	
15									**Bottom of Exploration at 12.0 feet below ground surface.** No Refusal.	
20										
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.

Boring No.: HB-LH-113

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-114

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	240.8	**Auger ID/OD:**	2.25" ID / 5.88" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/21/15 1150-1235	**Drilling Method:**	hollow stem auger	**Core Barrel:**	N/A
Boring Location:	1100+34, 9.1 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	3.3 ft. (open)

Definitions:
D = Spilt 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						HSA			15" HMA (bottom 7" weathered)	
							239.5		1.3	
	1D	24/12	2.00 - 4.00	5-4-13-11	17				1D: Brown grading to tan, damp, medium dense, fine to coarse SAND, trace fine gravel, trace silt.	
5	2D	24/15	5.00 - 7.00	3-7-7-11	14				2D: Tan, wet, medium dense, fine to coarse SAND, trace silt, with one 1/4-in. seam Clayey SILT, little fine SAND.	
							233.8		7.0	
10	3D	24/16	10.00 - 12.00	2-5-5-8	10				3D: Multiple material types in spoon; sample composited. 10-11.1 ft: Brown grey, wet, stiff, SILT, some fine sand. 11.1-11.8 ft: Grey, wet, stiff, Clayey SILT, trace fine Sand. 11.8-12 ft: Grey, thinly laminated, mica-rich, fine SAND, trace Silt and fine Sandy SILT.	
							228.8		12.0	
15									**Bottom of Exploration at 12.0 feet below ground surface.** No Refusal.	
20										
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.

Boring No.: HB-LH-114

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-115

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	238.5	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/21/15 1240-1305	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1104+41.8, 9.5 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	5.0 ft. (open hole)

Definitions: D = Spilt 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			14" HMA (bottom 7" weathered)	
							237.3		1.2	
	1D	24/14	2.00 - 4.00	7-6-7-12	13				1D: Brown changing to grey at 3.8 ft, damp, medium dense, fine to coarse SAND, little silt, trace clay, trace gravel, with one 1/4-in. seam fine Sandy SILT at 3.9 ft.	A-2-4, SM WC=18.8%
							234.5		4.0	
5	2D	24/18	5.00 - 7.00	4-6-8-9	14				2D: Grey-brown, mottled, moist, stiff, CLAY, some fine to coarse sand, little silt, with two 1-1/2-in. seams mica-rich fine Sandy SILT.	A-4, CL WC=27.7% PL=20 LL=30 PI=10
10	3D	24/19	10.00 - 12.00	3-5-7-6	12				3D: Grey-brown, wet, stiff, Clayey SILT, with three 1/4- to 1/2-in. seams fine Sandy SILT.	
							226.5		12.0	
15									**Bottom of Exploration at 12.0 feet below ground surface.** No Refusal.	
20										
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.

Boring No.: HB-LH-115

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-116

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	237.7	**Auger ID/OD:**	4.50" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/21/15 1310-1340	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	1106+80.3, 9.0 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	4.4 ft. (open)

Definitions: D = Spilt 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			15" HMA	
							236.4		1.3	
	1D	24/5	2.00 - 4.00	12-5-3-5	8				1D: Brown, damp, loose, fine to coarse SAND, little silt, trace gravel.	
5	2D	24/16	5.00 - 7.00	4-5-8-10	13				Grey brown, wet, medium dense fine to medium SAND, trace to little silt. Changing at 5.8 ft. to:	
							231.9		5.8	
									2D: Grey brown, mottled, stiff, Clayey SILT, little fine sand, with seams and partings of fine SAND, little silt.	
10	3D	24/19	10.00 - 12.00	3-5-7-8	12				3D: Brown grey, moist, stiff, Silty CLAY, trace fine sand, with two 1/4-in. seams grey fine Sand, little silt.	A-6, CL WC=27.3% PL=20 LL=34 PI=14
							225.7		12.0	
15									**Bottom of Exploration at 12.0 feet below ground surface.** No Refusal.	
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-117

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	240.8	**Auger ID/OD:**	2.25" ID / 5.88" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/21/15 1345-1450	**Drilling Method:**	hollow stem auger	**Core Barrel:**	N/A
Boring Location:	1111+99.1, 9.3 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	4.4 ft. (open at end)

Definitions:
D = Spilt 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						HSA			15" HMA (bottom 5" weathered)	
	1D	24/12	1.00 - 3.00	103-64-27-14	frozen		239.5		1.3 1D: Dark brown to tan to reddish brown, moist, fine to coarse SAND, little gravel, trace to little silt.	
5	2D	24/15	5.00 - 7.00	5-9-11-10	20				2D: Tan with rust seams, wet, medium dense, fine to coarse SAND, trace silt, trace clay, with one 1-in. seam Clayey SILT, little fine sand near bottom of sample.	A-2-4 SW-SM WC=19.6%
							233.3		7.5 7.5 ft. - stratum change based upon drilling behavior and auger cuttings	
10	3D	24/21	10.00 - 12.00	3-7-6-6	13				3D: Brown-grey, moist to wet, stiff, CLAY, some silt, little fine to medium sand, with several seams grey, fine SAND, little Silt.	A-6, CL WC=25.4% PL=17 LL=29 PI=12
15	4D	24/24	15.00 - 17.00	1-3-6-7	9				4D: Grey, moist to wet, stiff, Clayey SILT, trace fine Sand, with several seams grey, fine Sandy SILT.	
							223.8		17.0 **Bottom of Exploration at 17.0 feet below ground surface.** No Refusal.	
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Lyman-Hollis

Boring No.: HB-LH-118

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	242.7	**Auger ID/OD:**	2.25" ID / 5.88" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/21/15 1455-1550	**Drilling Method:**	hollow stem auger	**Core Barrel:**	N/A
Boring Location:	1115+47.8, 8.9 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	2.7 ft. (open)

Definitions: D = Spilt 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						HSA	241.7		12" HMA (bottom 5" weathered)	
									1.0	
	1D	24/12	2.00 - 4.00	12-14-26-27	--				1D: Reddish brown, damp, fine to medium SAND, trace silt. Large piece of gravel in tip of spoon.	
									4-5 ft: gravel layers based on drilling behavior	
5	2D	24/5	5.00 - 7.00	80-40-35-49	--				2D: Brown, wet, fine to coarse SAND, some gravel, trace silt.	
									7-8 ft: boney based on drilling behavior	
							234.7		8.0	
									8 ft: apparent stratum change	
10	3D	24/22	10.00 - 12.00	15-20-14-11	34				Grey brown, moist, hard, Clayey SILT, trace fine sand. Changing at 10.8 ft. to:	
							231.9		10.8	
									3D: Brown, wet, fine to coarse SAND, trace gravel, trace silt.	
							230.7		12.0	
									Bottom of Exploration at 12.0 feet below ground surface. No Refusal.	
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Three seperate portions of Route 202

Location: Lyman-Hollis, Buxton and Gorham

Boring No.: HB-LH-201

WIN: 22641.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	286.4	**Auger ID/OD:**	12" Dia.
Operator:	Giles/Daggett/Giles	**Datum:**	NAVD88	**Sampler:**	Bucket-Off Flights
Logged By:	Be Schonewald	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/8/2015; 08:50-09:10	**Drilling Method:**	Soild Stem Auger	**Core Barrel:**	N/A
Boring Location:	1003+85.4, 9.1 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Spilt 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	B1		0.80 - 3.00			SSA	285.8		7" HMA — 0.6	G#266801 A-1-b, SP WC=3.1%
							285.6		Weathered Asphalt — 0.8	
									Damp, fine to coarse SAND, little gravel, trace silt.	
							283.4		3.0	
5									**Bottom of Exploration at 3.0 feet below ground surface.** No Refusal.	
10										
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Three seperate portions of Route 202

Location: Lyman-Hollis, Buxton and Gorham

Boring No.: HB-LH-202

WIN: 22641.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	285.0	**Auger ID/OD:**	12" Dia.
Operator:	Giles/Daggett/Giles	**Datum:**	NAVD88	**Sampler:**	Bucket-Off Flights
Logged By:	Be Schonewald	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/8/2015; 09:25-09:40	**Drilling Method:**	Soild Stem Auger	**Core Barrel:**	N/A
Boring Location:	1022+65.4, 8.7 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Spilt 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	284.3		8" HMA — 0.7	
	B2		1.10 - 3.00				283.9		Weathered Asphalt — 1.1 Damp to moist, fine to coarse SAND, some silt, little gravel.	G#266802 A-2-4, SM WC=14.4%
							282.0		3.0 **Bottom of Exploration at 3.0 feet below ground surface.** No Refusal.	
5										
10										
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Three seperate portions of Route 202

Location: Lyman-Hollis, Buxton and Gorham

Boring No.: HB-LH-203

WIN: 22641.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	281.0	**Auger ID/OD:**	12" Dia.
Operator:	Giles/Daggett/Giles	**Datum:**	NAVD88	**Sampler:**	Bucket-Off Flights
Logged By:	Be Schonewald	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/8/2015; 09:50-10:00	**Drilling Method:**	Soild Stem Auger	**Core Barrel:**	N/A
Boring Location:	1041+30.4, 8.6 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Spilt 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	B3		0.80 - 2.70			SSA	280.2		10" HMA (0.8)	
									Moist, fine to coarse SAND, some gravel, little silt.	G#266803 A-1-b, SM WC=8.0%
							278.3		(2.7)	
									Bottom of Exploration at 2.7 feet below ground surface. No Refusal.	
5										
10										
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Three seperate portions of Route 202

Location: Lyman-Hollis, Buxton and Gorham

Boring No.: HB-LH-204

WIN: 22641.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	277.9	**Auger ID/OD:**	12" Dia.
Operator:	Giles/Daggett/Giles	**Datum:**	NAVD88	**Sampler:**	Bucket-Off Flights
Logged By:	Be Schonewald	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/8/2015; 10:05-10:20	**Drilling Method:**	Soild Stem Auger	**Core Barrel:**	N/A
Boring Location:	1059+75.3, 8.6 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed.

Definitions:
D = Spilt 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	B4		0.80 - 2.70			SSA	277.4		6" HMA — 0.5	
							277.1		Weathered Asphalt — 0.8	G#266804 A-1-b, SP-SM WC=5.8%
									Moist, fine to coarse SAND, trace gravel, trace silt. Some discoloration below weathered asphalt.	
							275.2		2.7	
									Bottom of Exploration at 2.7 feet below ground surface. No Refusal.	
5										
10										
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Three seperate portions of Route 202

Location: Lyman-Hollis, Buxton and Gorham

Boring No.: HB-LH-205

WIN: 22641.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	264.0	**Auger ID/OD:**	12" Dia.
Operator:	Giles/Daggett/Giles	**Datum:**	NAVD88	**Sampler:**	Bucket-Off Flights
Logged By:	Be Schonewald	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/8/2015; 10:25-10:45	**Drilling Method:**	Soild Stem Auger	**Core Barrel:**	N/A
Boring Location:	1070+10.4, 9.4 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Spilt 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	B5		0.90 - 1.80			SSA	263.1		11" HMA (0.9)	
							262.2		Damp, fine to coarse SAND, little gravel, little silt. (1.8)	G#266805 A-1-b, SM WC=3.7%
									Bottom of Exploration at 1.8 feet below ground surface. No Refusal.	
5										
10										
15										
20										
25										

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

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Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Three seperate portions of Route 202

Location: Lyman-Hollis, Buxton and Gorham

Boring No.: HB-LH-206

WIN: 22641.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	243.7	**Auger ID/OD:**	12" Dia.
Operator:	Giles/Daggett/Giles	**Datum:**	NAVD88	**Sampler:**	Bucket-Off Flights
Logged By:	Be Schonewald	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/8/2015; 10:55-11:05	**Drilling Method:**	Soild Stem Auger	**Core Barrel:**	N/A
Boring Location:	1097+80.6, 7.0 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Spilt 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	243.4		4" HMA — 0.3	
	B6		1.10 - 3.00				242.6		Weathered Asphalt — 1.1	G#266806 A-2-4, SP-SM WC=13.4%
									Moist, fine to coarse SAND, little silt, trace gravel, boney. Some discoloration below weathered asphalt.	
							240.7		3.0	
5									**Bottom of Exploration at 3.0 feet below ground surface.** No observed stratum change.	
10										
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Three seperate portions of Route 202

Location: Lyman-Hollis, Buxton and Gorham

Boring No.: HB-LH-207

WIN: 22641.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	243.4	**Auger ID/OD:**	12" Dia.
Operator:	Giles/Daggett/Giles	**Datum:**	NAVD88	**Sampler:**	Bucket-Off Flights
Logged By:	Be Schonewald	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/8/2015; 11:15-11:30	**Drilling Method:**	Soild Stem Auger	**Core Barrel:**	N/A
Boring Location:	1116+20.7, 10.6 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Spilt 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	242.4		12" HMA — 1.0	
	B7		1.20 - 3.00				242.2		Weathered Asphalt — 1.2	G#266807 A-3, SP WC=2.6%
							240.4		Moist, fine to coarse SAND, trace silt, trace gravel. Minor discoloration below weathered asphalt. — 3.0	
									Bottom of Exploration at 3.0 feet below ground surface. No observed stratum change.	
5										
10										
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Buxton

Boring No.: HB-BUX-101

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	235.0	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/22/15 0750-0825	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	2007+90.1, 9.2 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	dry (open hole)

Definitions: D = Spilt 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	234.1		11" HMA (0.9)	
	1D	24/15	2.00 - 4.00	30-4-3-68	7				1D: Brown, damp, medium stiff, Silty fine to coarse SAND, little clay, trace gravel; frozen soil at top of spoon and broken rock in tip of spoon likely affected blow counts. 3.5 ft. - top of weathered rock based upon spoon from 2 to 4 ft. and drilling behavior	A-4, ML WC=25.2%
5	2D	0/0	5.00 - 5.00	50/0"			228.0		2D: no recovery (7.0) **Bottom of Exploration at 7.0 feet below ground surface.** Auger Refusal.	
10										
15										
20										
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.

Boring No.: HB-BUX-101

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Buxton

Boring No.: HB-BUX-102

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	221.6	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/22/15 0830-0905	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	2013+84.4, 9.3 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	dry (open hole)

Definitions: D = Spilt 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	220.7		11" HMA 0.9	
	1D	24/14	2.00 - 4.00	16-38-33-36	71				1D: Brown, damp, very dense, Gravelly fine to coarse SAND, little silt; larger gravel and broken rock in tip of spoon.	A-1-b, SM WC=8.0%
5							216.5		5.1 **Bottom of Exploration at 5.1 feet below ground surface.** Auger Refusal.	
10										
15										
20										
25										

Remarks:

Guy wire across roadway from pole CMP45 to CMP45S suggests shallow rock.

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.

Boring No.: HB-BUX-102

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Three seperate portions of Route 202

Location: Lyman-Hollis, Buxton and Gorham

Boring No.: HB-BUX-201

WIN: 22641.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	233.5	**Auger ID/OD:**	5" and 12" Dia.
Operator:	Giles/Daggett/Giles	**Datum:**	NAVD88	**Sampler:**	Bucket-Off Flights
Logged By:	Be Schonewald	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/8/2015; 12:40-13:00	**Drilling Method:**	Soild Stem Auger	**Core Barrel:**	N/A
Boring Location:	2009+38.9, 10.9 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Spilt 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			12" HMA	
							232.5		1.0	
	B8		1.10 - 3.00				232.4		Weathered Asphalt	G#266808 A-4, SM WC=5.3%
									1.1	
									Moist, Silty fine to coarse SAND, trace gravel. 12" AUGER REFUSAL at 1.4 ft, changed to 5" Auger.	
							230.5		3.0	
									Bottom of Exploration at 3.0 feet below ground surface. No Refusal.	
5										
10										
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Gorham

Boring No.: HB-GOR-101

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	239.5	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/22/15 1350-1500	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	3003+31.2, 9.3 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	N/A

Definitions: D = Spilt 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 Information: 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	233.4		Moved to HB-GOR-101A.	
5									6.1 **Bottom of Exploration at 6.1 feet below ground surface.** Auger Refusal.	
10										
15										
20										
25										

Remarks:

Top of obstruction at 5.8 ft. in HB-GOR-101; likely boulder.
Auger refusal at 6.1 ft. in HB-GOR-101; move up station 5.1 ft to HB-GOR-101A
Augers kick around boulder at 4.5 ft. in HB-GOR-101A.

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.

Boring No.: HB-GOR-101

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Gorham

Boring No.: HB-GOR-101(A)

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	239.5	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/22/15 1350-1500	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	3003+36.3, 9.4 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	8.8 ft. (open hole)

Definitions: D = Spilt 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							238.7		10" HMA	
									0.8	
	1D	24/22	2.00 - 4.00	11-8-9-6	17				1D: Brown, damp, medium dense, fine to coarse SAND, some gravel, trace to little silt; grading at 3.5 ft. to tan, fine to medium SAND, trace silt. (composite sample)	
									Boney below 4 ft. SEE REMARKS	
5	2D	10/8	5.00 - 5.83	20-50/4"	--				2D: Tan, damp, Gravelly fine to coarse SAND, trace to little silt.	
							233.5		6.0	
10	3D	24/22	10.00 - 12.00	20-27-20-19	47				3D: Gray-brown, wet, dense, fine to coarse SAND, little to some silt, little to some fine gravel.	
							227.5		12.0	
									Bottom of Exploration at 12.0 feet below ground surface. No Refusal.	
15										
20										
25										

Remarks:

Top of obstruction at 5.8 ft. in HB-GOR-101; likely boulder.
Auger refusal at 6.1 ft. in HB-GOR-101; move up station 5.1 ft to HB-GOR-101A
Augers kick around boulder at 4.5 ft. in HB-GOR-101A.

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.

Boring No.: HB-GOR-101(A)

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Gorham

Boring No.: HB-GOR-102

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	243.6	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/22/15 1305-1345	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	3010+36.1, 8.2 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	4.3 ft. (open hole)

Definitions:
D = Spilt 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							242.6		12" HMA (1.0)	
						SSA	241.8		Boney to 1.8 ft. (1.8)	
	1D	24/19	2.00 - 4.00	6-4-7-17	11				1D: Grey-brown grading to dark rust, damp, medium dense, fine to coarse SAND, trace to little silt, trace fine gravel.	
5	2D	24/17	5.00 - 7.00	40-32-22-22	54				2D: Dark rust, wet, very dense, fine to coarse SAND, trace silt.	A-3, SP-SM WC=18.4%
							236.1		7.5 ft - apparent stratum change based upon drilling behavior (7.5)	
10	3D	24/19	10.00 - 12.00	13-15-21-33	36				3D: Light grey with one 1/2-in. and one 2-in. pockets of dark grey, wet, dense, fine to coarse SAND, little to some silt, little gravel.	
							231.6		(12.0)	
15									**Bottom of Exploration at 12.0 feet below ground surface.** No Refusal.	
20										
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.

Boring No.: HB-GOR-102

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Gorham

Boring No.: HB-GOR-103

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	243.1	**Auger ID/OD:**	2.25 ID / 5.88" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/22/15 1120-1225	**Drilling Method:**	hollow stem auger	**Core Barrel:**	N/A
Boring Location:	3016+53.9, 9.5 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	2.8 ft. (open hole)

Definitions: D = Spilt 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						HSA			12" HMA	
							242.1		1.0	
									Fill.	
	1D	24/0	2.00 - 4.00	14-8-2-9	10		240.9		2.2	
									1D: No recovery. Wet, stiff, organic fine Sandy SILT based upon auger cuttings in adjacent probe. SEE REMARKS	
							239.4		3.7	
5	2D	24/19	5.00 - 7.00	13-15-15-18	30				2D: Dark rust grading to tan at 6.0 ft., wet, medium dense, fine to coarse SAND, trace gravel, trace silt.	A-3, SP WC=19.8%
							235.1		8.0	
									8.0 ft. - SILT, little fine sand on augers.	
							233.4		9.7	
10	3D	24/20	10.00 - 12.00	38-39-40-52	79				9.7 ft. - Material boney based upon drilling behavior 3D: Tan, wet, very dense, fine to coarse SAND, some silt, trace fine gravel; partially cemented.	A-2-4, SM WC=11.9%
							231.1		12.0	
									Bottom of Exploration at 12.0 feet below ground surface. No Refusal.	
15										
20										
25										

Remarks:

Upon completion of HB-GOR-103, offset 3 ft. down station to re-sample shallow split-spoon. Observed soft, saturated, organic silt-like soil from 2.2 to 3.7 ft.

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.

Boring No.: HB-GOR-103

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Gorham

Boring No.: HB-GOR-104

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	242.6	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/22/15 1040-1115	**Drilling Method:**	solid stem auger	**Core Barrel:**	N/A
Boring Location:	3022+32, 10.2 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	4.4 (open)

Definitions:
D = Spilt 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	241.7		11" HMA	
									0.9	
									Fill.	
							240.6		2.0	
	1D	24/16	2.00 - 4.00	4-2-4-30	6				1D: Brown-grey, wet, loose, organic fine Sandy SILT; changing at 3.2 ft. to:	A-2-5(0), SM WC=29.5% -#200=20% PL=44 LL=51 PI=7.6
							239.4		3.2	
									Dark rust and grey (layered), fine to coarse SAND, little silt, trace fine gravel. [COMPOSITED SAMPLE]	
5	2D	24/19	5.00 - 7.00	72-94-50-42	144				2D: Dark rust grading to brown at 6.7 ft., wet, very dense, Gravelly fine to coarse SAND, trace to little silt; possible cementation in dark rust layer.	
10	3D	24/17	10.00 - 12.00	7-16-16-26	32				3D: Tan, wet, dense, fine SAND, trace silt, with one 4-in. and one 1/2-in. layers of SILT, trace fine sand.	
							230.6		12.0	
									Bottom of Exploration at 12.0 feet below ground surface. No Refusal.	
15										
20										
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.

Boring No.: HB-GOR-104

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Preliminary Highway Borings
Route 202 Reconstruction
Location: Gorham

Boring No.: HB-GOR-105

WIN: 22641.00

Drilling Contractor:	New England Boring Contractors	**Elevation (ft.)**	246.0	**Auger ID/OD:**	4.5" OD
Operator:	Enos/Dube	**Datum:**	NAVD88	**Sampler:**	standard split-spoon
Logged By:	Schonewald	**Rig Type:**	Mobile Drill B-53, trailer	**Hammer Wt./Fall:**	140# / 30", rope & cathead
Date Start/Finish:	1/22/15 1000-1035	**Drilling Method:**	solid stem auger	**Core Barrel:**	
Boring Location:	3029+93.8, 8.4 ft Lt.	**Casing ID/OD:**		**Water Level*:**	7.0 ft. (open)

Definitions: D = Spilt 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							245.3		8" HMA — 0.7	
	1D	24/17	2.00 - 4.00	11-11-11-12	22				1D: Tan, damp, m. dense, Gravelly fine to coarse SAND, trace silt.	
5	2D	24/13	5.00 - 7.00	15-16-20-21	36				2D: Tan, damp, dense, fine to coarse Sandy GRAVEL, trace silt.	
10	3D	24/18	10.00 - 12.00	12-14-13-12	27				3D: Tan, wet, m. dense, Gravelly fine to coarse SAND, trace silt.	
							234.0		12.0	
15									**Bottom of Exploration at 12.0 feet below ground surface.** No refusal encountered.	
20										
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.

Boring No.: HB-GOR-105

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Three seperate portions of Route 202

Location: Lyman-Hollis, Buxton and Gorham

Boring No.: HB-GOR-201

WIN: 22641.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	243.6	**Auger ID/OD:**	12" Dia.
Operator:	Giles/Daggett/Giles	**Datum:**	NAVD88	**Sampler:**	Bucket-Off Flights
Logged By:	Be Schonewald	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/8/2015; 13:30-13:50	**Drilling Method:**	Soild Stem Auger	**Core Barrel:**	N/A
Boring Location:	3011+88.2, 8.5 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Spilt 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			14" HMA	
	B9		1.20 - 1.80				242.4		1.2	G#266809
							241.8		Moist, fine to coarse SAND, some gravel, little silt, boney.	A-1-b, SW-SM
									1.8	WC=5.2%
									Bottom of Exploration at 1.8 feet below ground surface. No Refusal.	
5										
10										
15										
20										
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.

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Three seperate portions of Route 202

Location: Lyman-Hollis, Buxton and Gorham

Boring No.: HB-GOR-202

WIN: 22641.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	242.6	**Auger ID/OD:**	12" Dia.
Operator:	Giles/Daggett/Giles	**Datum:**	NAVD88	**Sampler:**	Bucket-Off Flights
Logged By:	Be Schonewald	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/8/2015; 13:55-14:15	**Drilling Method:**	Soild Stem Auger	**Core Barrel:**	N/A
Boring Location:	3020+98.2, 9.3 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions: D = Spilt 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 Information: 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			13" HMA	
							241.5		1.1	
	B10		1.10 - 1.90						Moist, fine to coarse SAND, some gravel, little silt, Boney.	G#266810 A-1-b, SM WC=6.0%
							240.7		1.9	
									Bottom of Exploration at 1.9 feet below ground surface. No Refusal	
5										
10										
15										
20										
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.

State of Maine - Department of Transportation

Laboratory Testing Summary Sheet

Town(s): Lyman-Hollis, Buxton, Gorham Work Number: 22641.00

Boring & Sample Identification Number	Station (Feet)	Offset (Feet)	Depth (Feet)	Reference Number	G.S.D.C. Sheet	W.C. %	L.L.	P.I.	Classification		
									Unified	AASHTO	Frost
HB-LH-102, 2D	1012+38.1	9.6 Rt.	5.0-7.0	13510a		3.6			SP-SM	A-1-a	0
HB-LH-105, 1D	1038+42.1	8.5 Rt.	2.0-4.0	13510b		10.8			SP-SM	A-1-b	0
HB-LH-105, 2D	1038+42.1	8.5 Rt.	5.0-7.0	13510c		12.6			SP	A-3	0
HB-LH-109, 2D	1070+39.7	11.5 Rt.	5.0-7.0	13510d		21.5	28	8	CL	A-4(7)	IV
HB-LH-109, 3D	1070+39.7	11.5 Rt.	10.0-12.0	13510e		19.4			ML	A-4	IV
HB-LH-110, 1D	1075+21.4	13.0 Rt.	2.0-4.0	13511a		15.4			SM	A-2-4	II
HB-LH-111, 2D	1082+28.7	8.6 Rt.	5.0-7.0	13511b		22.3			SP-SM	A-2-4	II
HB-LH-113, 2D	1093+80.4	7.6 Rt.	5.0-7.0	13511c		27.4			SP	A-3	0
HB-LH-115, 1D	1104+41.8	9.5 Rt.	2.0-4.0	13511d		18.8			SM	A-2-4	II
HB-LH-115, 2D	1104+41.8	9.5 Rt.	5.0-7.0	13511e		27.7	30	10	CL	A-4(4)	IV
HB-LH-116, 3D	1106+80.3	9.0 Rt.	10.0-12.0	13512a		27.3	34	14	CL	A-6(13)	IV
HB-LH-117, 2D	1111+99.1	9.3 Rt.	5.0-7.0	13512b		19.6			SW-SM	A-2-4	0
HB-LH-117, 3D	1111+99.1	9.3 Rt.	10.0-12.0	13512c		25.4	29	12	CL	A-6(7)	IV
HB-BUX-101, 1D	2007+90.1	9.2 Rt.	2.0-4.0	13512d		25.2			ML	A-4	IV
HB-BUX-102. 1D	2013+84.4	9.3 Rt.	2.0-4.0	13512e		8.0			SM	A-1-b	II
HB-GOR-102, 2D	3010+36.1	8.2 Lt.	5.0-7.0	13513a		18.4			SP-SM	A-3	0
HB-GOR-103, 2D	3016+53.9	9.5 Lt.	5.0-7.0	13513b		19.8			SP	A-3	0
HB-GOR-103, 3D	3016+53.9	9.5 Lt.	10.0-12.0	13513c		11.9			SM	A-2-4	II
HB-GOR-104, 1D	3022+32	10.2 Lt.	2.0-4.0	13513d		29.5	51	8	SM	A-2-5	II
HB-LH-201, B1	1003+85.4	9.1 Rt.	0.8-3.0	266801	1	3.1			SP	A-1-b	0
HB-LH-202, B2	1022+65.4	8.7 Lt.	1.1-3.0	266802	1	14.4			SM	A-2-4	II
HB-LH-203, B3	1041+30.4	8.6 Rt.	0.8-2.7	266803	1	8.0			SM	A-1-b	II
HB-LH-204, B4	1059+75.3	8.6 Lt.	0.8-2.7	266804	1	5.8			SP-SM	A-1-b	0
HB-LH-205, B5	1070+10.4	9.4 Rt.	0.9-1.8	266805	2	3.7			SM	A-1-b	II
HB-LH-206, B6	1097+80.6	7.0 Lt.	1.1-3.0	266806	2	13.4			SP-SM	A-2-4	0
HB-LH-207, B7	1116+20.7	10.6 Rt.	1.2-3.0	266807	2	2.6			SP	A-3	0
HB-BUX-201, B8	2009+38.9	10.9 Lt.	1.1-3.0	266808	3	5.3			SM	A-4	III
HB-GOR-201, B9	3011+88.2	8.5 Rt.	1.2-1.8	266809	3	5.2			SW-SM	A-1-b	0
HB-GOR-202, B10	3020+98.2	9.3 Lt.	1.1-1.9	266810	3	6.0			SM	A-1-b	II

Classification of these soil samples is in accordance with AASHTO Classification System M-145-40. This classification is followed by the "Frost Susceptibility Rating" from zero (non-frost susceptible) to Class IV (highly frost susceptible). The "Frost Susceptibility Rating" is based upon the MaineDOT and Corps of Engineers Classification Systems.

GSDC = Grain Size Distribution Curve as determined by AASHTO T 88-93 (1996) and/or ASTM D 422-63 (Reapproved 1998)

WC = water content as determined by AASHTO T 265-93 and/or ASTM D 2216-98

LL = Liquid limit as determined by AASHTO T 89-96 and/or ASTM D 4318-98 NP = Non Plastic

PI = Plasticity Index as determined by AASHTO 90-96 and/or ASTM D4318-98

R. W. Gillespie & Associates, Inc.
86 Industrial Park Road, Suite 4, Saco, ME 04072 207-286-8008
200 Int'l Drive, Suite 170, Portsmouth, NH 03801 603-427-0244
44 Wood Avenue, Suite I, Mansfield, MA 508-623-0101

LETTER OF TRANSMITTAL

Date: MAR 11 2015

Project No.: 1368-003

Attention:
Isable V. (Be) Schonewald, P.E. (Be@SchonewaldEngineering.com)

Schonewald Engineering Associates, Inc.

129 Middle Road

Cumberland, Maine 04021

Re:
Laboratory Testing
Miscellaneous Testing - 2015
Cumberland, Maine

We are sending you attached Laboratory Test Results.

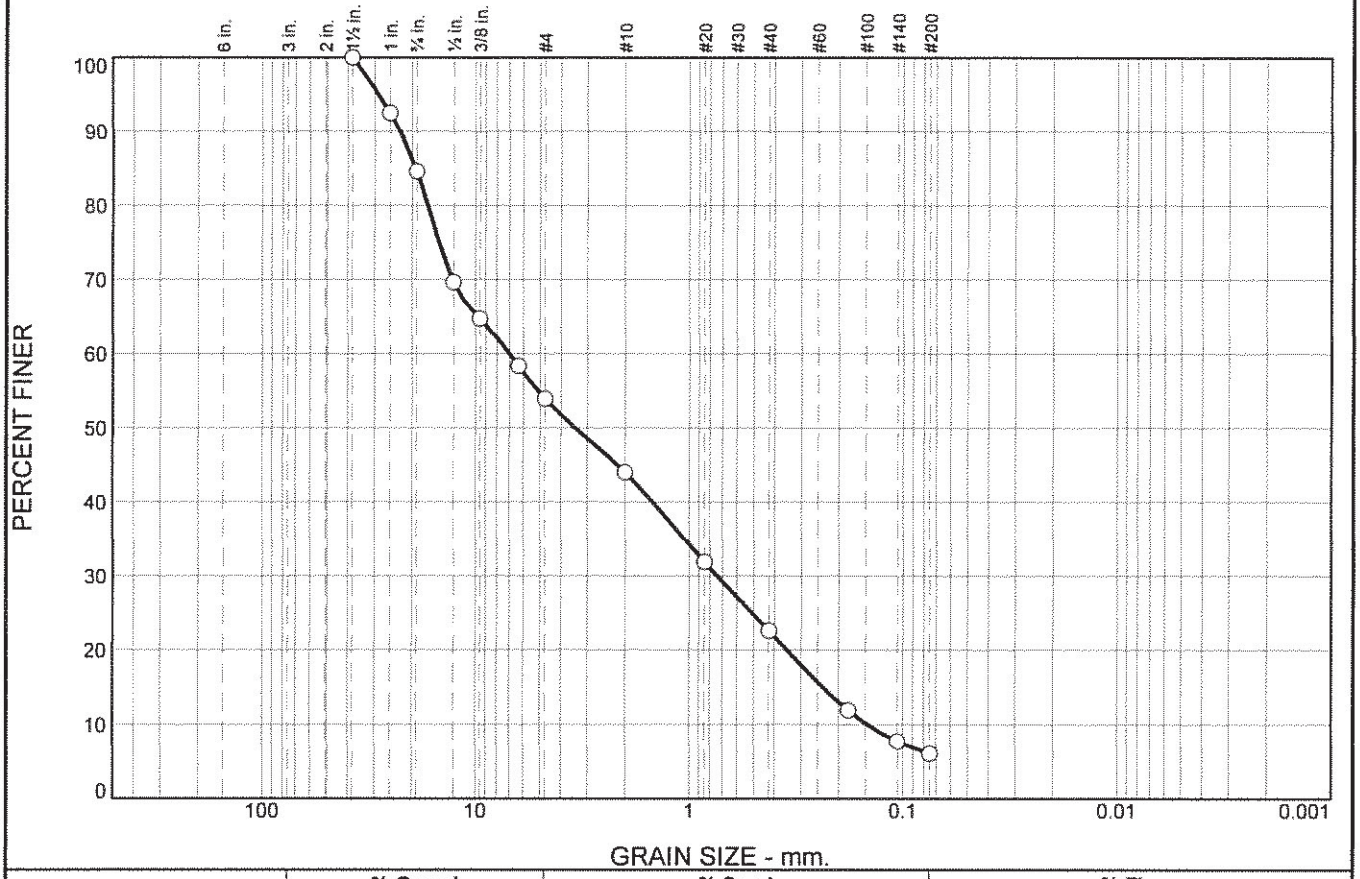
Laboratory No. (s)	Test (s) Performed
13510a	Washed Gradation
13510b	Washed Gradation
13510c	Washed Gradation
13510d	Sieve with hydrometer, MD, & Atterberg limits
13510e	Sieve with hydrometer, MD, & Atterberg limits
13511a	Washed Gradation
13511b	Washed Gradation
13511c	Washed Gradation
13511d	Sieve with hydrometer, MD, & Atterberg limits
13511e	Sieve with hydrometer, MD, & Atterberg limits
13512a	Sieve with hydrometer, MD, & Atterberg limits
13512b	Sieve with hydrometer, MD, & Atterberg limits
13512c	Sieve with hydrometer, MD, & Atterberg limits
13512d	Sieve with hydrometer, MD
13512e	Washed Gradation
13513a	Sieve with hydrometer, MD, & Atterberg limits
13513b	Washed Gradation
13513c	Washed Gradation
13513d	Sieve with hydrometer, MD, & Atterberg limits

Remarks:

Copy to:

If enclosures are not noted, kindly notify us as once.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	15.3	30.8	9.9	21.3	16.6	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 1/2"	100.0		
1"	92.5		
3/4"	84.7		
1/2"	69.7		
3/8"	64.8		
1/4"	58.3		
#4	53.9		
#10	44.0		
#20	31.9		
#40	22.7		
#80	11.9		
#140	7.7		
#200	6.1		

* (no specification provided)

Soil Description

poorly graded sand with silt and gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 19.2414 D_{60}= 7.0248 D_{50}= 3.4316
D_{30}= 0.7405 D_{15}= 0.2365 D_{10}= 0.1465
C_u= 47.95 C_c= 0.53

Classification

USCS= SP-SM AASHTO= A-1-a

Remarks

Moisture Content: 3.6%

Sample No.: 2D **Source of Sample:** HB-LH-102 **Date:** 3/3/2015
Location: Lyman-Hollis **Elev./Depth:** 5'-7'

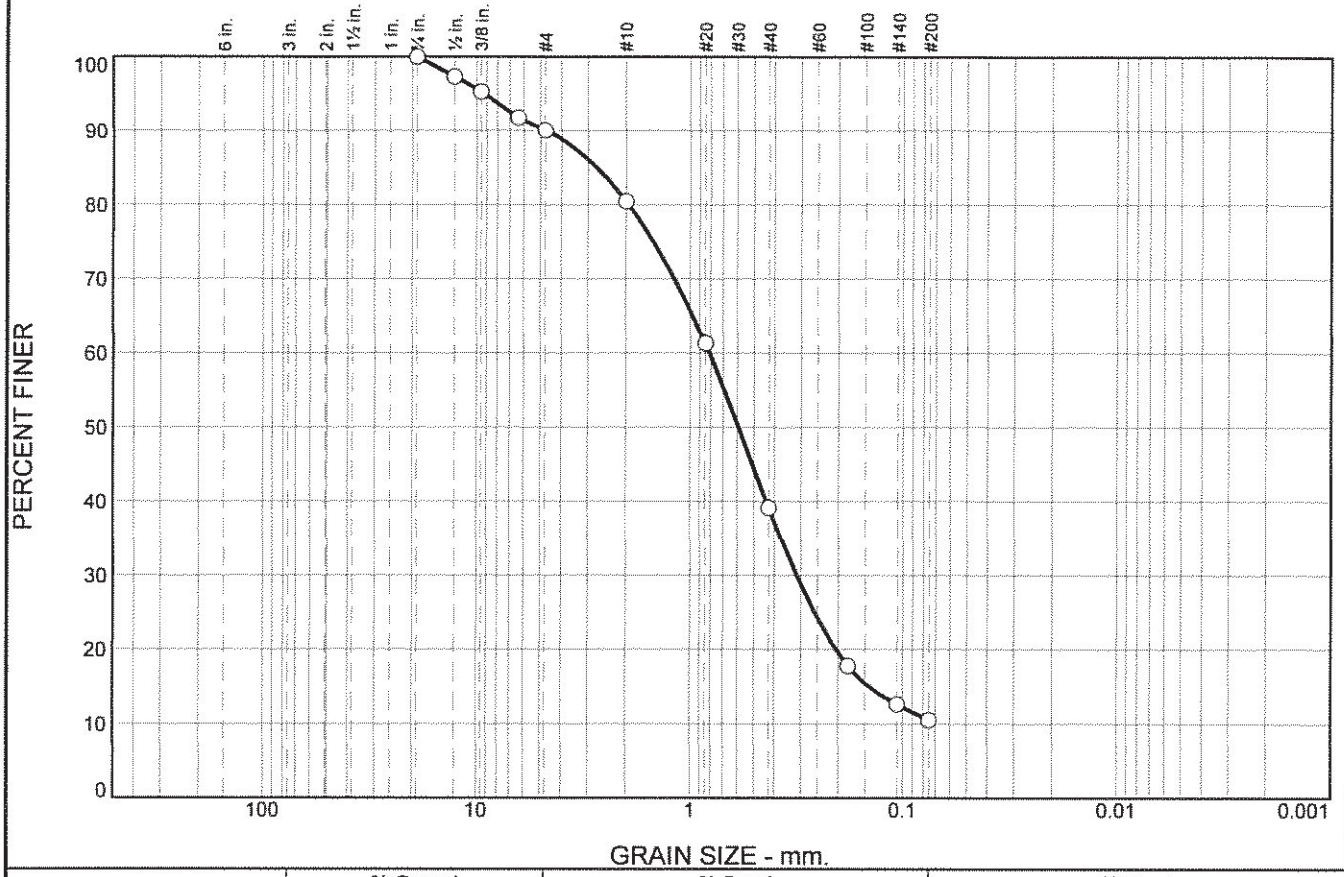
R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13510a

Tested By: GSM **Checked By:** DCH DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	9.9	9.6	41.4	28.5	10.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	97.3		
3/8"	95.3		
1/4"	91.8		
#4	90.1		
#10	80.5		
#20	61.3		
#40	39.1		
#80	17.8		
#140	12.6		
#200	10.6		

* (no specification provided)

Soil Description

poorly graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 2.7307 D_{60}= 0.8122 D_{50}= 0.5925
D_{30}= 0.3130 D_{15}= 0.1432 D_{10}=
C_u= C_c=

Classification

USCS= SP-SM AASHTO= A-1-b

Remarks

Moisture Content: 10.8%

Sample No.: 1D **Source of Sample:** HB-LH-105 **Date:** 3/3/2015
Location: Lyman-Hollis **Elev./Depth:** 2'-4'

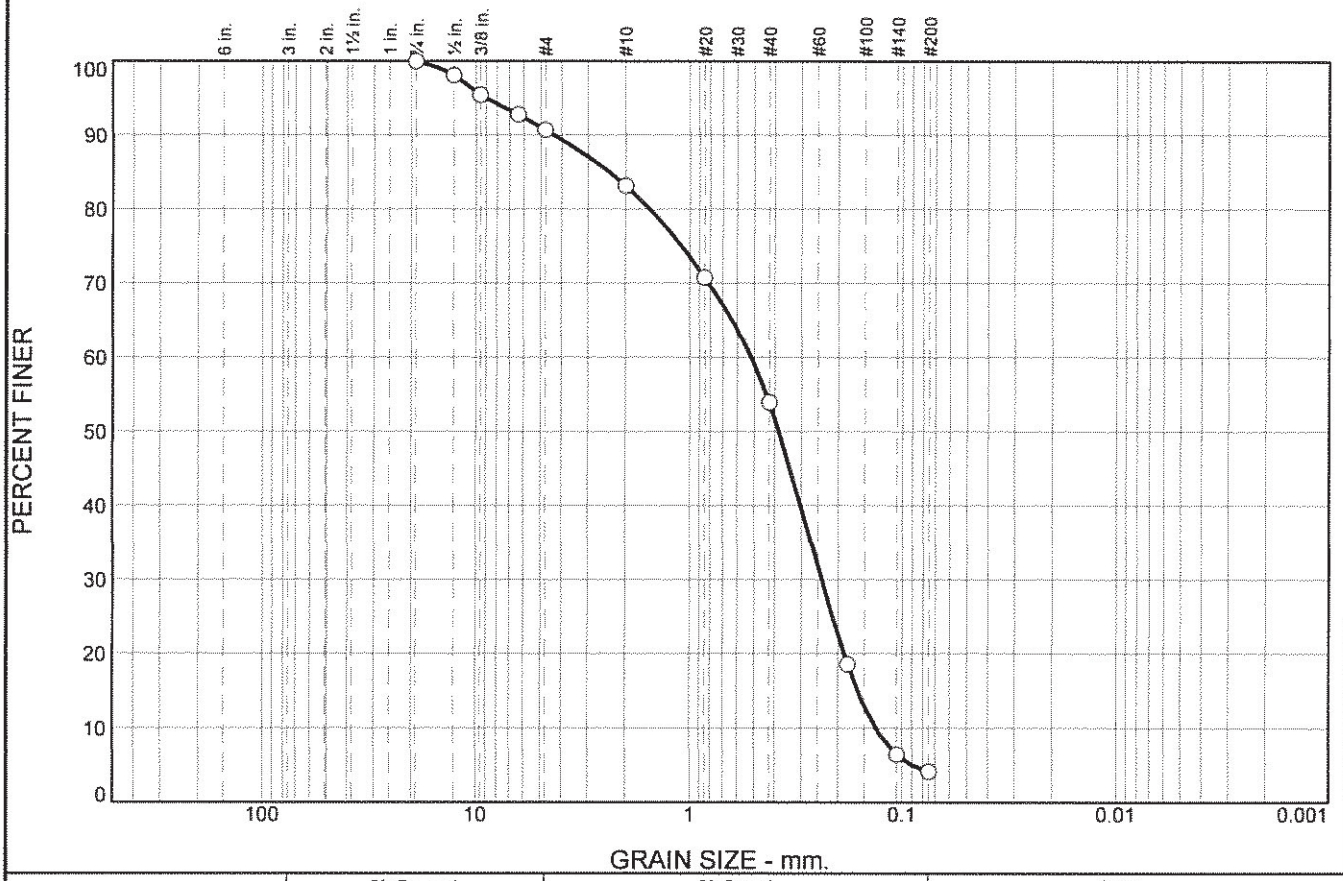
R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13510b

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	9.3	7.5	29.3	49.8	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	98.1		
3/8"	95.5		
1/4"	92.8		
#4	90.7		
#10	83.2		
#20	70.8		
#40	53.9		
#80	18.6		
#140	6.4		
#200	4.1		

* (no specification provided)

Soil Description

poorly graded sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 2.3887 D_{60}= 0.5160 D_{50}= 0.3825
D_{30}= 0.2402 D_{15}= 0.1610 D_{10}= 0.1321
C_u= 3.91 C_c= 0.85

Classification

USCS= SP AASHTO= A-3

Remarks

Moisture Content: 12.6%

Sample No.: 2D **Source of Sample:** HB-LH-105 **Date:** 3/3/2015
Location: Lyman-Hollis **Elev./Depth:** 5'-7'

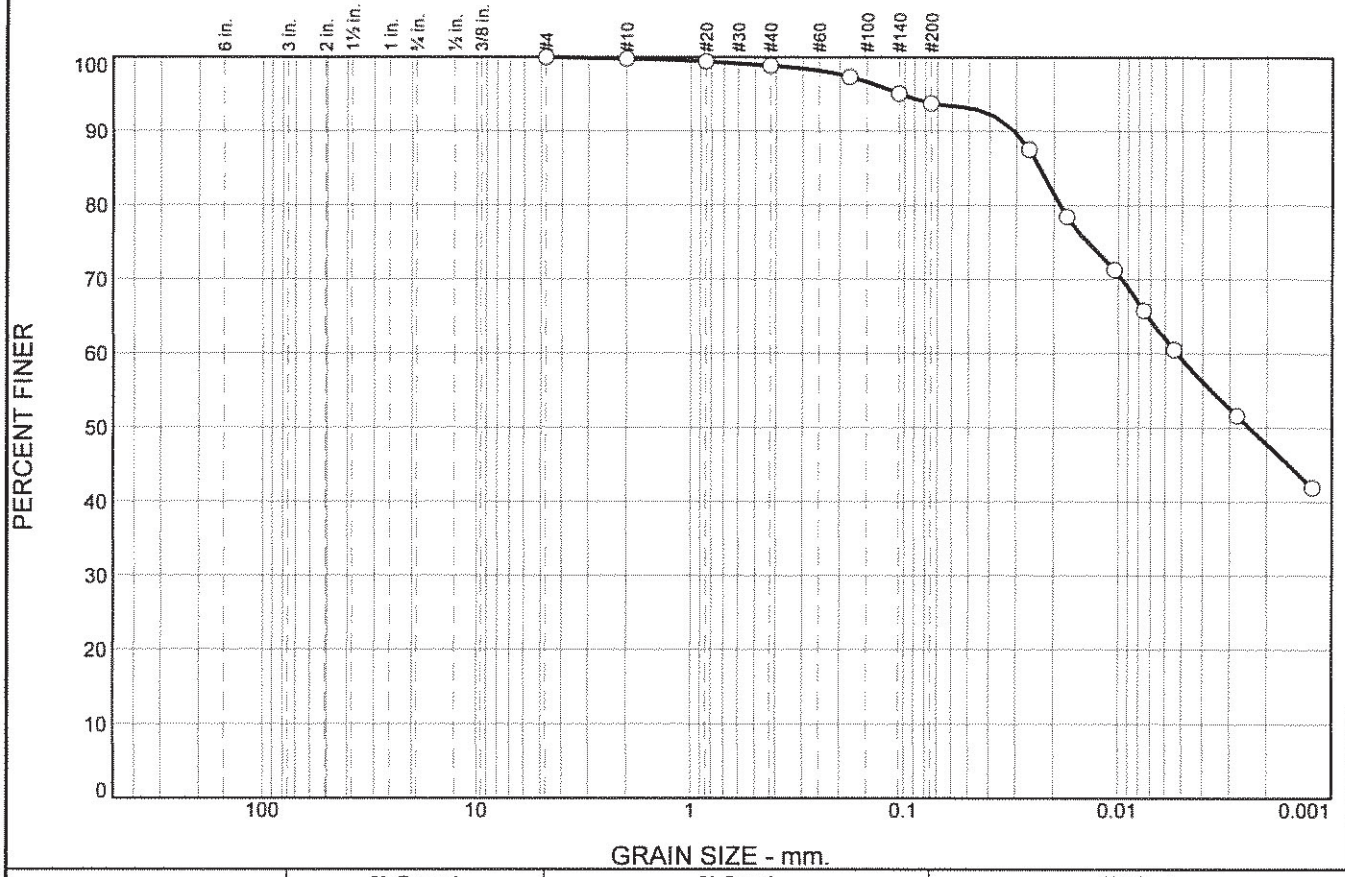
R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13510c

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.9	5.1	34.6	59.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.8		
#20	99.4		
#40	98.9		
#80	97.4		
#140	95.1		
#200	93.8		
0.0262 mm.	87.5		
0.0174 mm.	78.5		
0.0104 mm.	71.3		
0.0076 mm.	65.8		
0.0055 mm.	60.5		
0.0028 mm.	51.6		
0.0012 mm.	42.0		

* (no specification provided)

Soil Description

lean clay

Atterberg Limits

PL= 20.1 LL= 28.0 PI= 7.9

Coefficients

D_{85}= 0.0232 D_{60}= 0.0053 D_{50}= 0.0024
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-4(7)

Remarks

Moisture Content: 21.5%

Sample No.: 2D **Source of Sample:** HB-LH-109 **Date:** 3/6/2015
Location: Lyman-Hollis **Elev./Depth:** 5'-7'

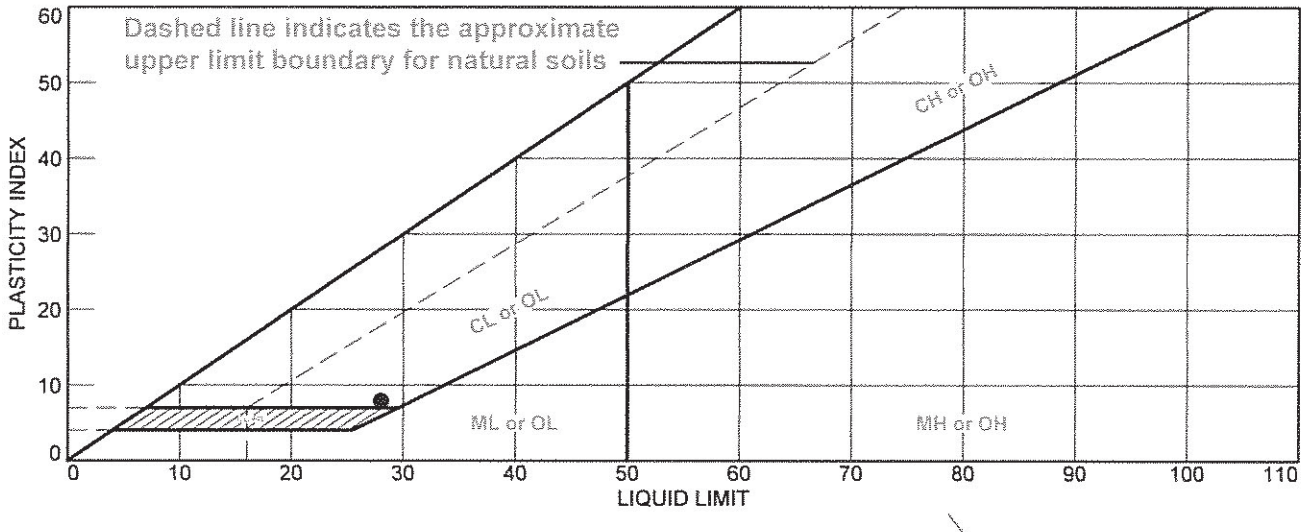
R.W. Gillespie & Associates, Inc.
Saco, Maine

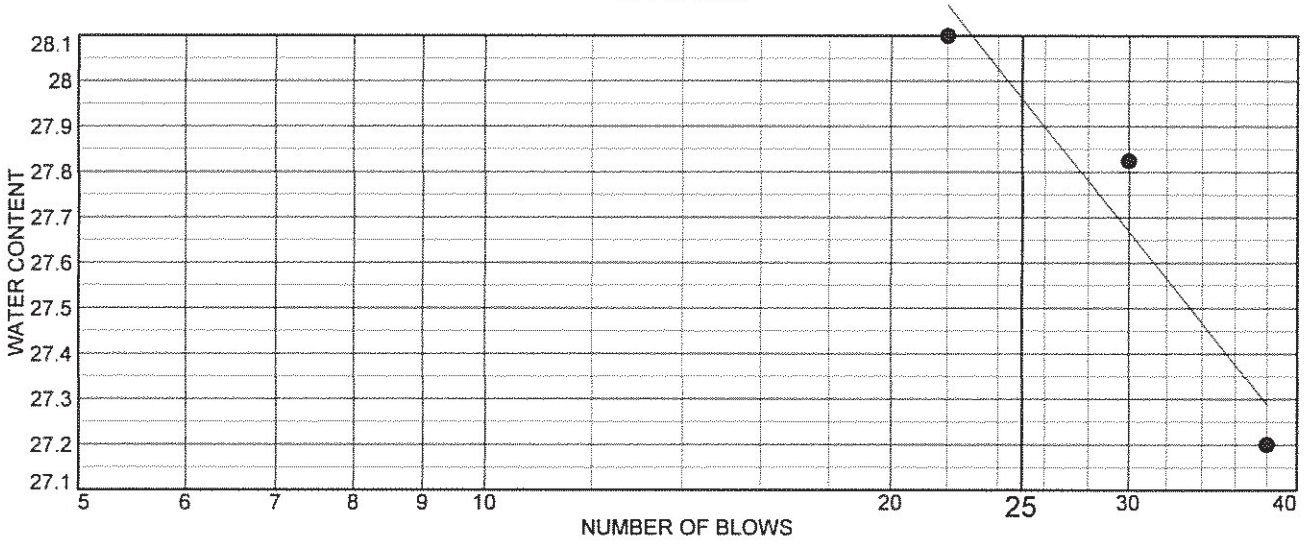
Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13510d

Tested By: GSM **Checked By:** DCH

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	lean clay	28.0	20.1	7.9	98.9	93.8	CL

Project No. 1368-003 **Client:** Schonewald Engineering Associates, Inc.

Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

● **Location:** HB-LH-109 **Depth:** 5'-7' **Sample Number:** 2D

Remarks:

● Moisture Content: 21.5%

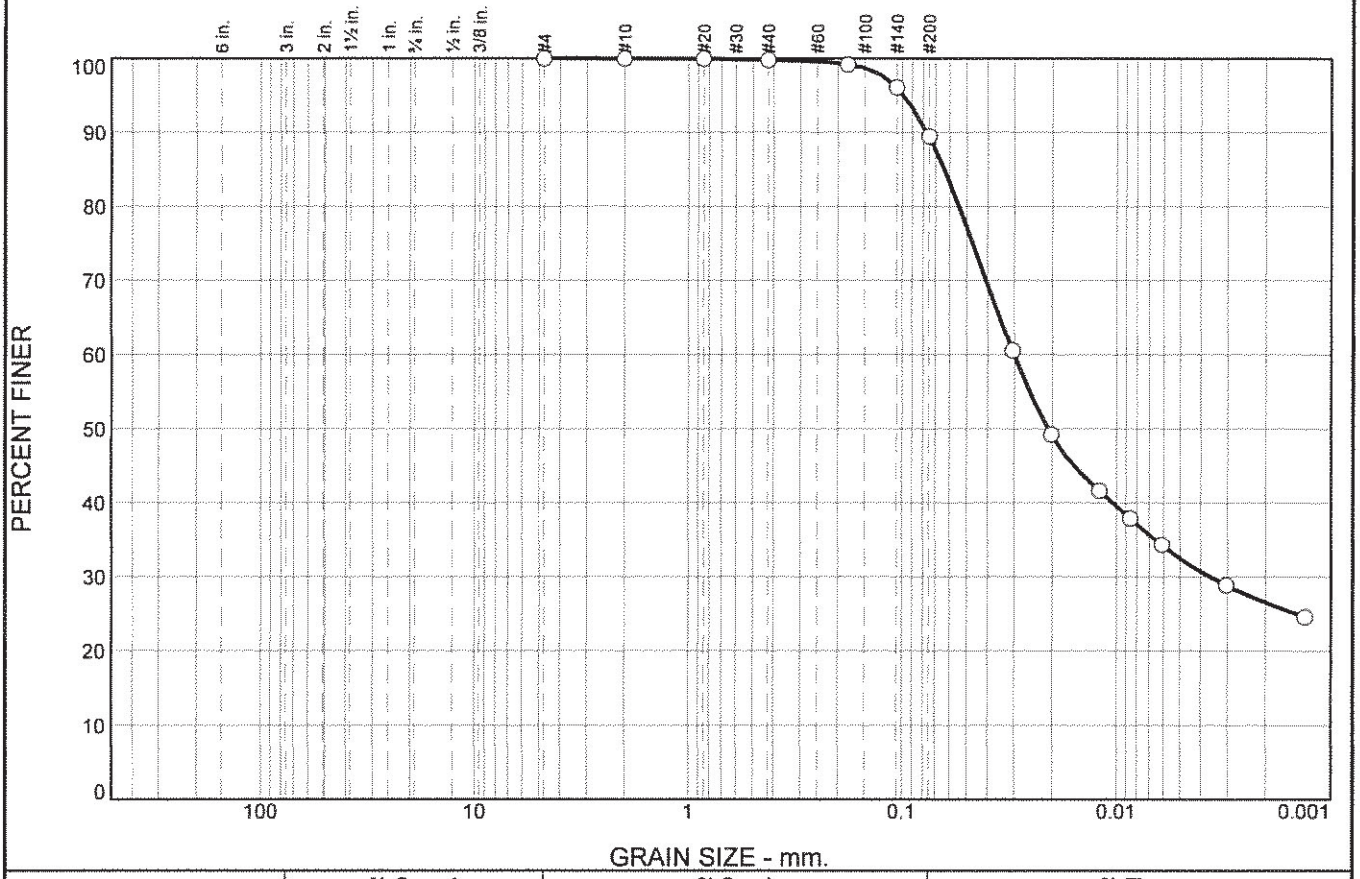
R.W. Gillespie & Associates, Inc.

Saco, Maine

Lab No. 13510d

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	10.3	57.0	32.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.8		
#80	99.2		
#140	96.1		
#200	89.5		
0.0306 mm.	60.5		
0.0202 mm.	49.2		
0.0120 mm.	41.7		
0.0086 mm.	37.9		
0.0061 mm.	34.3		
0.0030 mm.	28.9		
0.0013 mm.	24.6		

* (no specification provided)

Soil Description

silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.0637 D_{60}= 0.0301 D_{50}= 0.0209
D_{30}= 0.0036 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Moisture Content: 19.4%

Sample No.: 3D **Source of Sample:** HB-LH-109 **Date:** 3/6/2015
Location: Lyman-Hollis **Elev./Depth:** 10'-12'

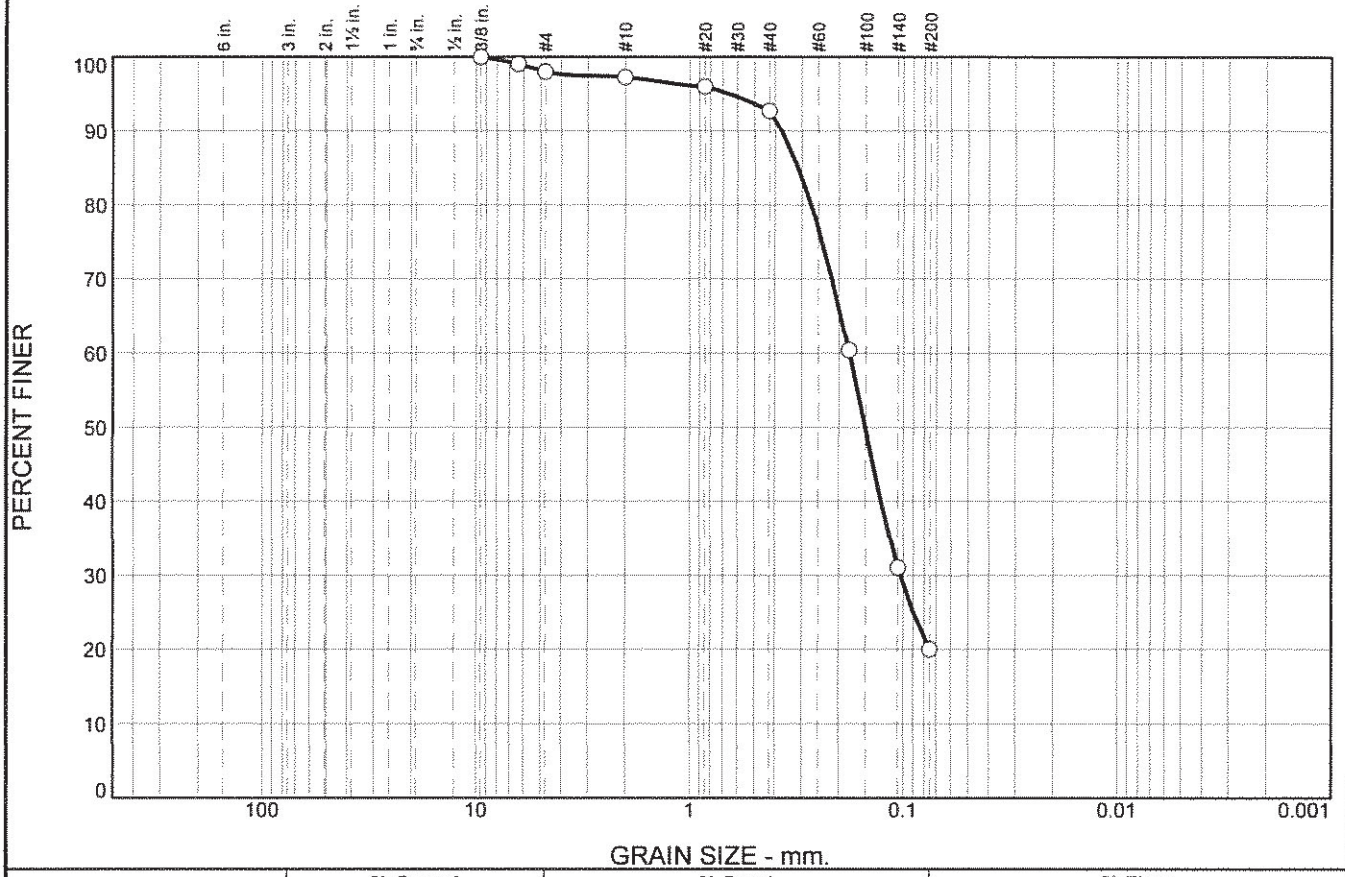
R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13510e

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	0.7	4.6	72.7	20.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
1/4"	99.0		
#4	98.0		
#10	97.3		
#20	96.0		
#40	92.7		
#80	60.4		
#140	31.1		
#200	20.0		

* (no specification provided)

Soil Description

silty sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.3109 D_{60}= 0.1787 D_{50}= 0.1508
D_{30}= 0.1033 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Moisture Content: 15.4%

Sample No.: 1D **Source of Sample:** HB-LH-110 **Date:** 3/3/2015
Location: Lyman-Hollis **Elev./Depth:** 2'-4'

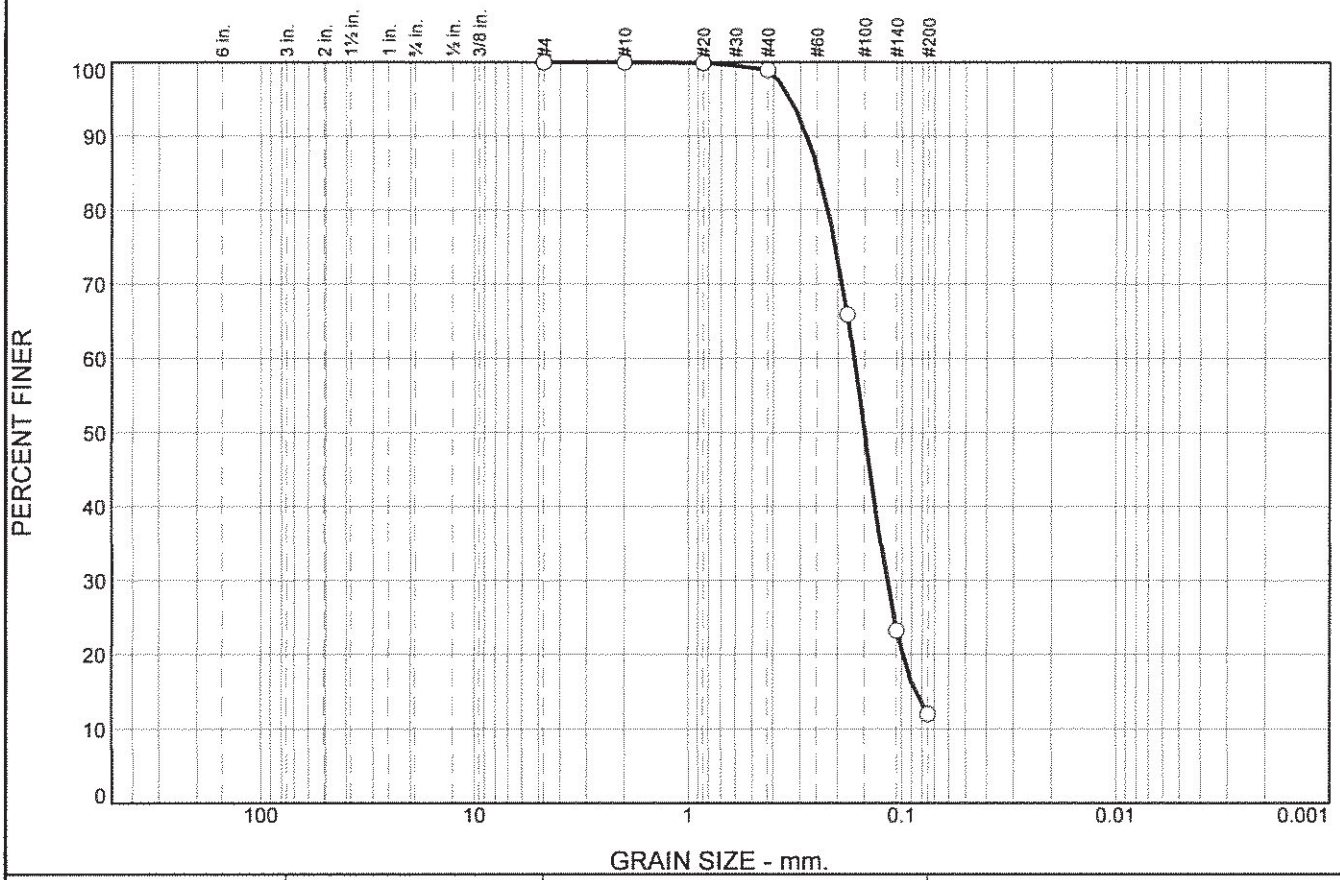
R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13511a

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.0	87.0	12.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.0		
#80	65.9		
#140	23.3		
#200	12.0		

* (no specification provided)

Soil Description

poorly graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.2464 D_{60}= 0.1673 D_{50}= 0.1492
D_{30}= 0.1175 D_{15}= 0.0854 D_{10}=
C_u= C_c=

Classification

USCS= SP-SM AASHTO= A-2-4(0)

Remarks

Moisture Content: 22.3%

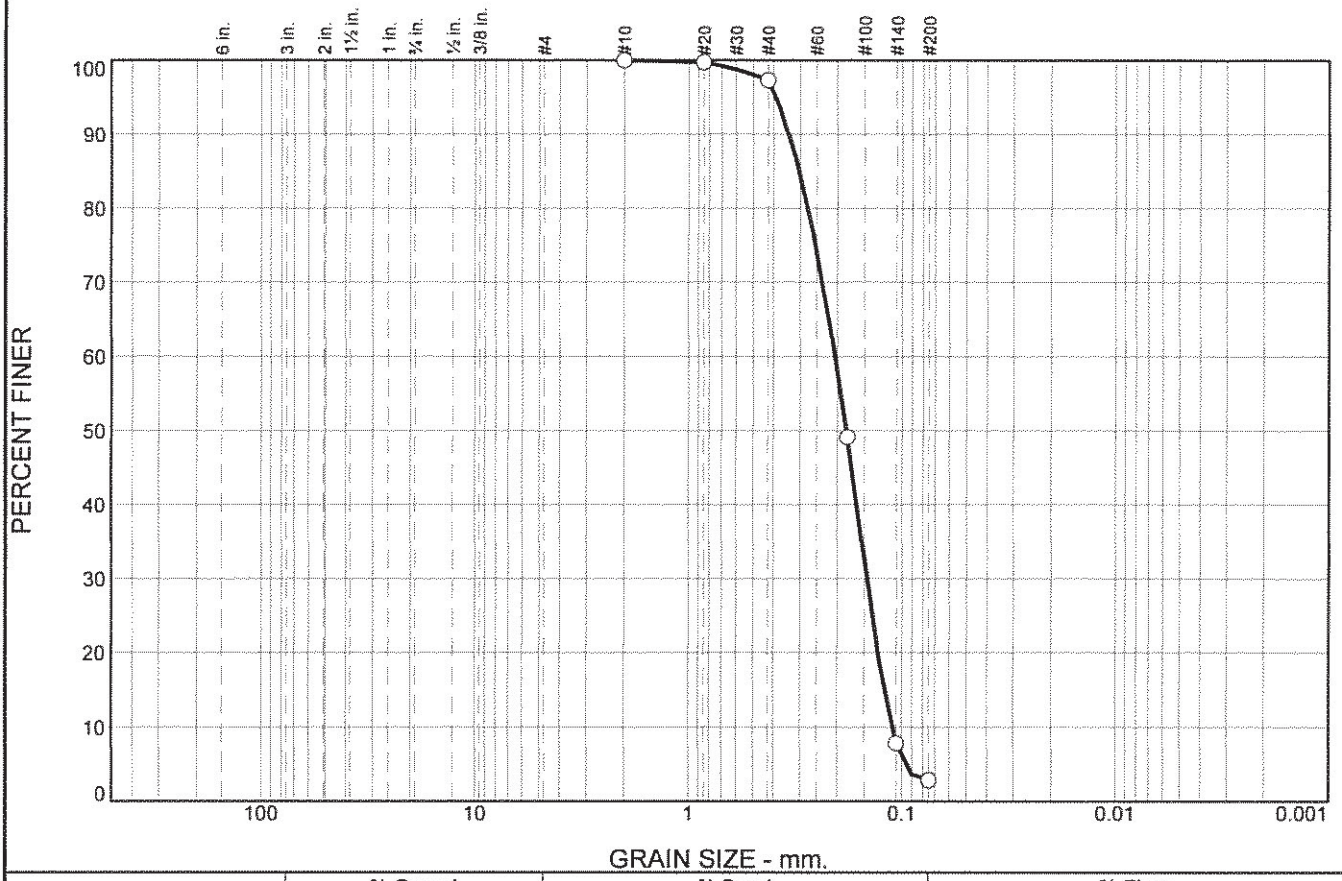
Sample No.: 2D **Source of Sample:** HB-LH-111 **Date:** 3/3/2015
Location: Lyman-Hollis **Elev./Depth:** 5'-7'

R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)
Project No: 1368-003 **Lab No.** 13511b

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.7	94.4	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.7		
#40	97.3		
#80	49.1		
#140	7.8		
#200	2.9		

* (no specification provided)

Soil Description

poorly graded sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.3024 D_{60}= 0.2052 D_{50}= 0.1818
D_{30}= 0.1456 D_{15}= 0.1206 D_{10}= 0.1110
C_u= 1.85 C_c= 0.93

Classification

USCS= SP AASHTO= A-3

Remarks

Moisture Content: 27.4%

Sample No.: 2D **Source of Sample:** HB-LH-113 **Date:** 3/3/2015
Location: Lyman-Hollis **Elev./Depth:** 5'-7'

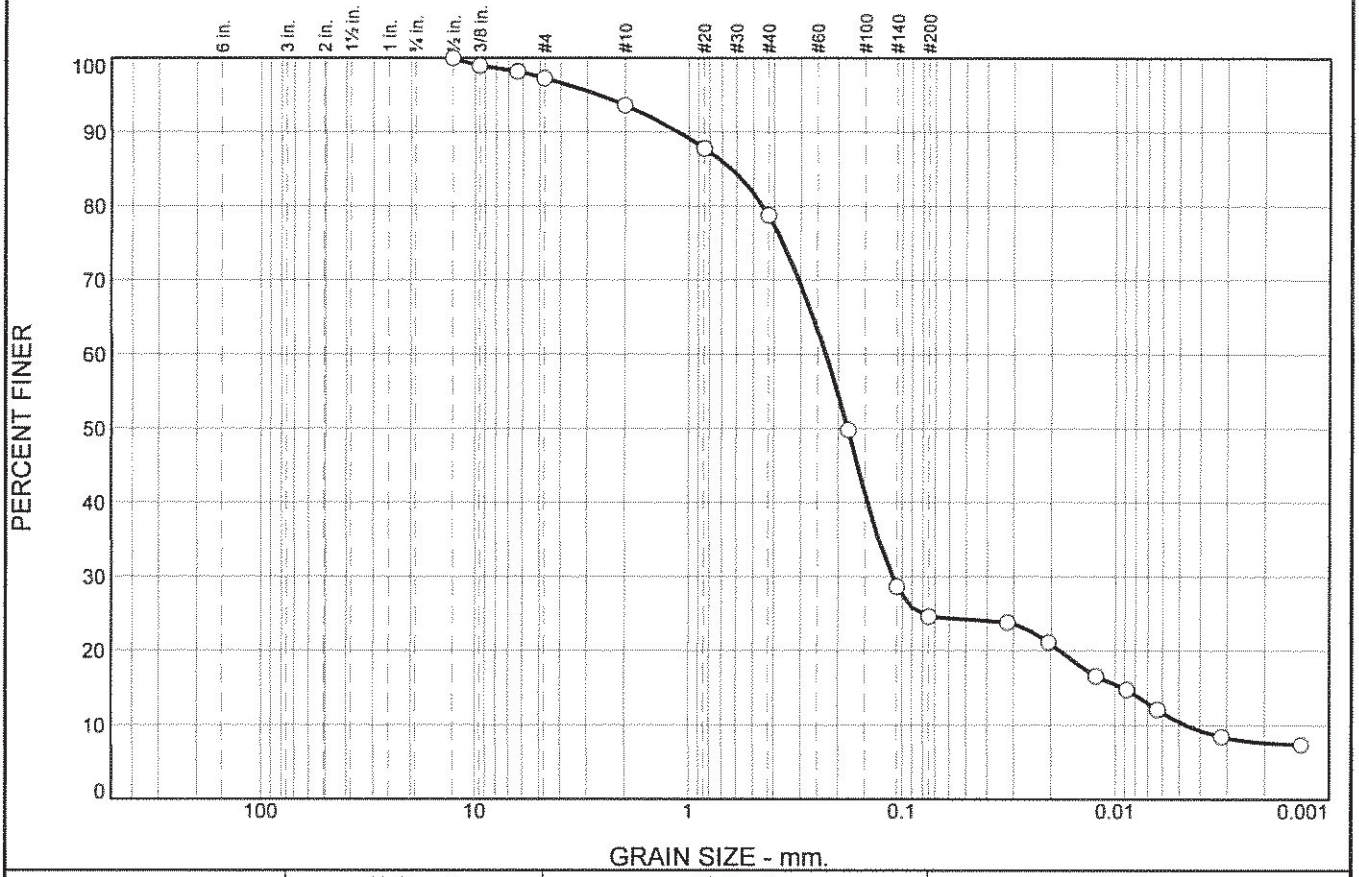
R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13511c

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.7	3.7	14.8	54.2	14.2	10.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	99.0		
1/4"	98.2		
#4	97.3		
#10	93.6		
#20	87.8		
#40	78.8		
#80	49.8		
#140	28.7		
#200	24.6		
0.0321 mm.	23.9		
0.0205 mm.	21.2		
0.0123 mm.	16.6		
0.0088 mm.	14.8		
0.0063 mm.	12.1		
0.0032 mm.	8.5		
0.0014 mm.	7.3		

* (no specification provided)

Soil Description

silty sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.6326 D_{60}= 0.2293 D_{50}= 0.1807
D_{30}= 0.1114 D_{15}= 0.0091 D_{10}= 0.0046
C_u= 49.52 C_c= 11.68

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Moisture Content: 18.8%

Sample No.: 1D **Source of Sample:** HB-LH-115 **Date:** 3/6/2015
Location: Lyman-Hollis **Elev./Depth:** 2'-4'

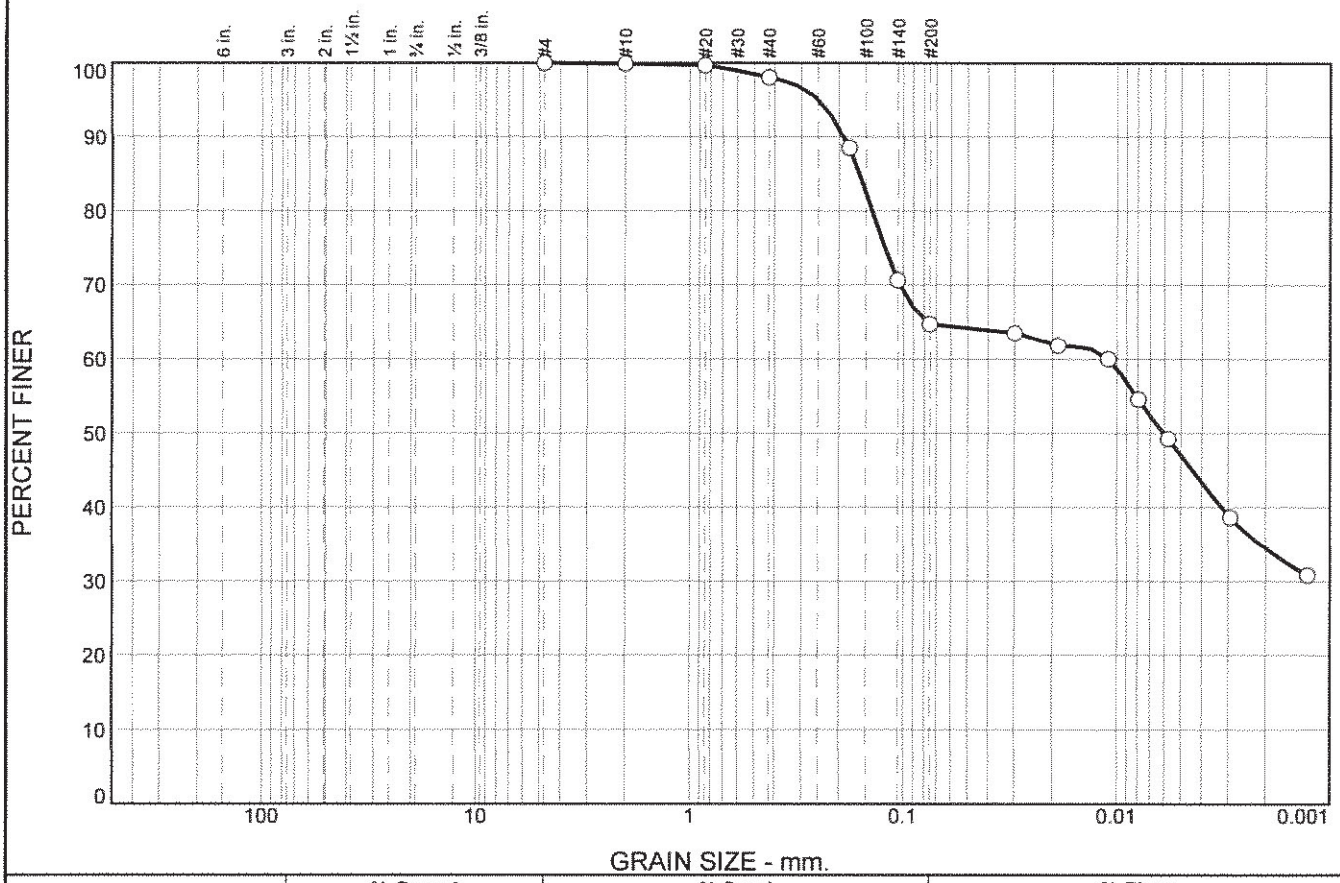
R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13511d

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.9	33.3	17.7	47.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.0		
#80	88.5		
#140	70.7		
#200	64.7		
0.0298 mm.	63.5		
0.0189 mm.	61.9		
0.0110 mm.	60.0		
0.0080 mm.	54.6		
0.0057 mm.	49.3		
0.0029 mm.	38.7		
0.0013 mm.	30.9		

* (no specification provided)

Soil Description

sandy lean clay

Atterberg Limits

PL= 19.5 LL= 29.6 PI= 10.1

Coefficients

D_{85}= 0.1610 D_{60}= 0.0110 D_{50}= 0.0060
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-4(4)

Remarks

Moisture Content: 27.7%

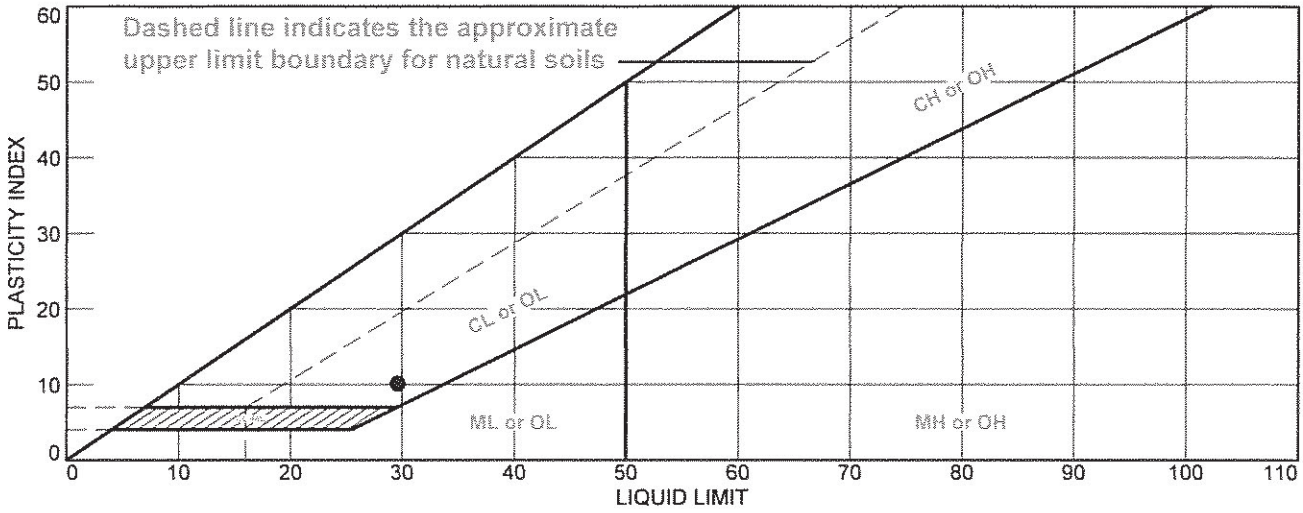
Sample No.: 2D **Source of Sample:** HB-LH-115 **Date:** 3/6/2015
Location: Lyman-Hollis **Elev./Depth:** 5'-7'

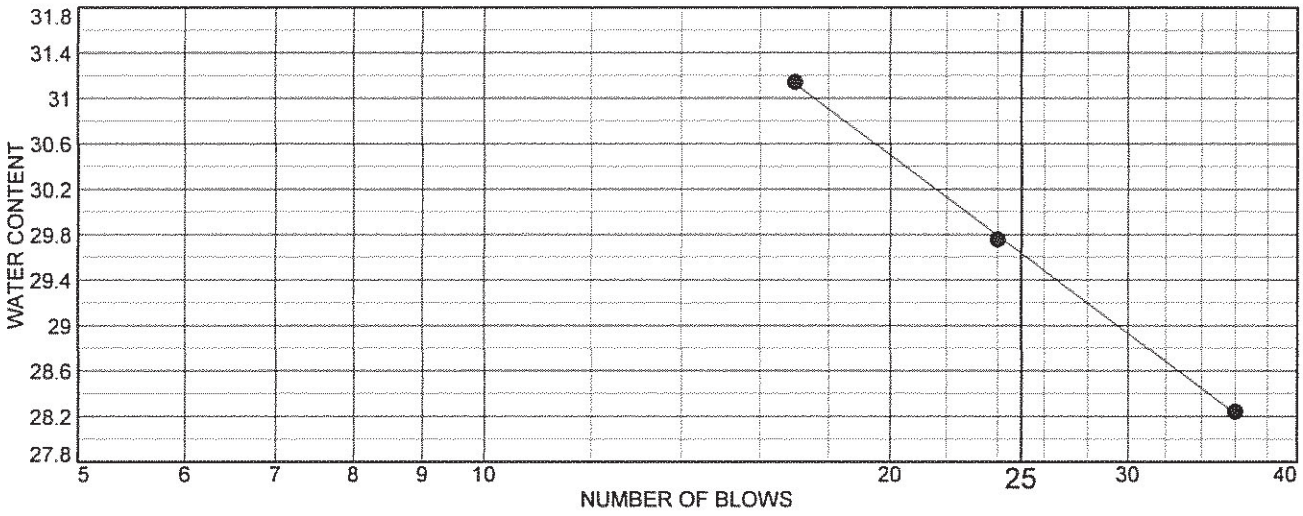
R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)
Project No: 1368-003 **Lab No.** 13511e

Tested By: GSM **Checked By:** DCH

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	sandy lean clay	29.6	19.5	10.1	98.0	64.7	CL

Project No. 1368-003 **Client:** Schonewald Engineering Associates, Inc.

Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

● **Location:** HB-LH-115 **Depth:** 5'-7' **Sample Number:** 2D

Remarks:

● Moisture Content: 27.7%

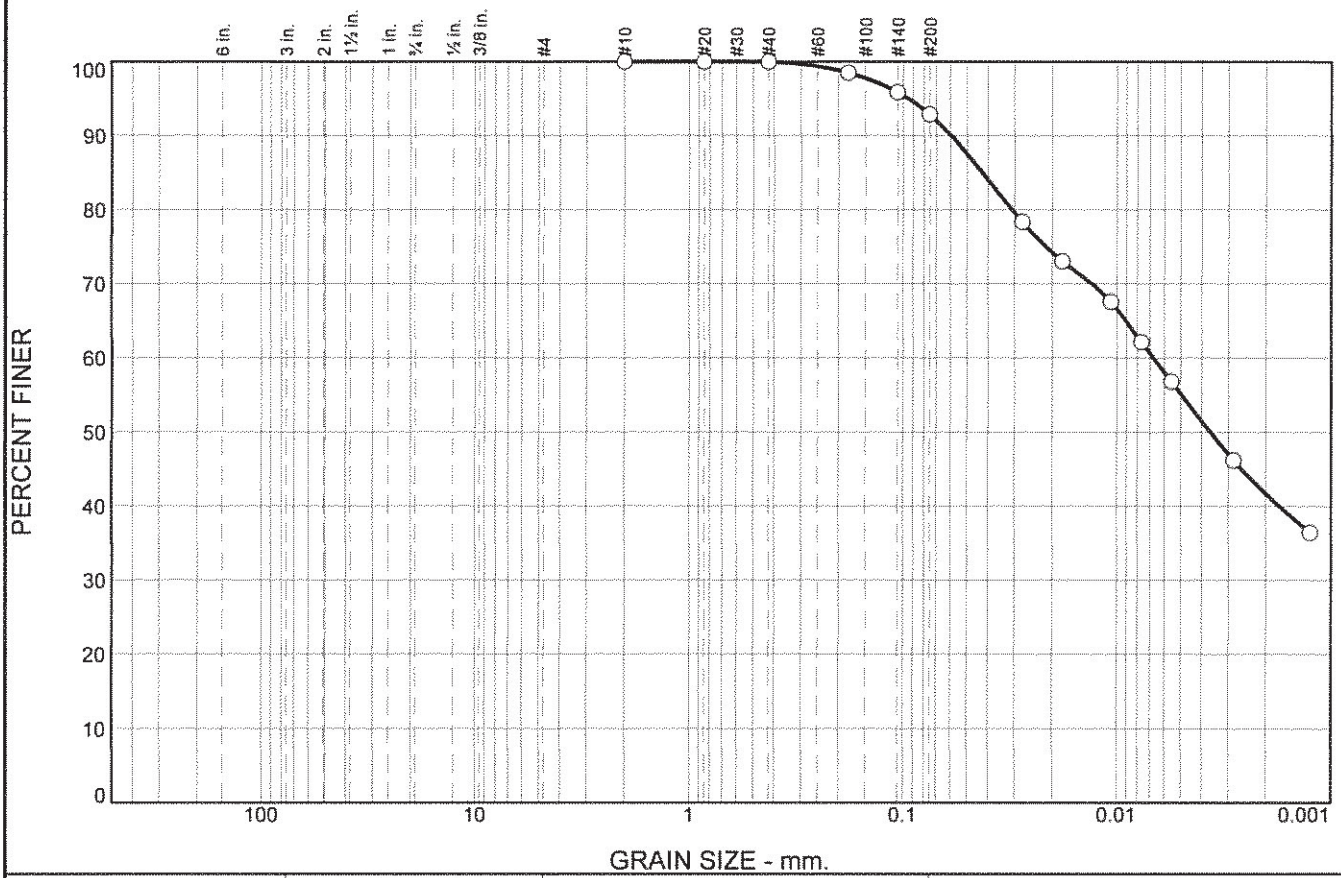
R.W. Gillespie & Associates, Inc.

Saco, Maine

Lab No. 13511e

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	7.1	37.8	55.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	100.0		
#40	100.0		
#80	98.5		
#140	95.9		
#200	92.9		
0.0276 mm.	78.4		
0.0179 mm.	73.1		
0.0106 mm.	67.6		
0.0077 mm.	62.2		
0.0056 mm.	56.8		
0.0028 mm.	46.2		
0.0012 mm.	36.5		

* (no specification provided)

Soil Description

lean clay

Atterberg Limits

PL= 19.9 LL= 33.9 PI= 14.0

Coefficients

D_{85}= 0.0425 D_{60}= 0.0068 D_{50}= 0.0036
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(13)

Remarks

Moisture Content: 27.3%

Sample No.: 3D **Source of Sample:** HB-LH-116 **Date:** 3/6/2015
Location: Lyman-Hollis **Elev./Depth:** 10'-12'

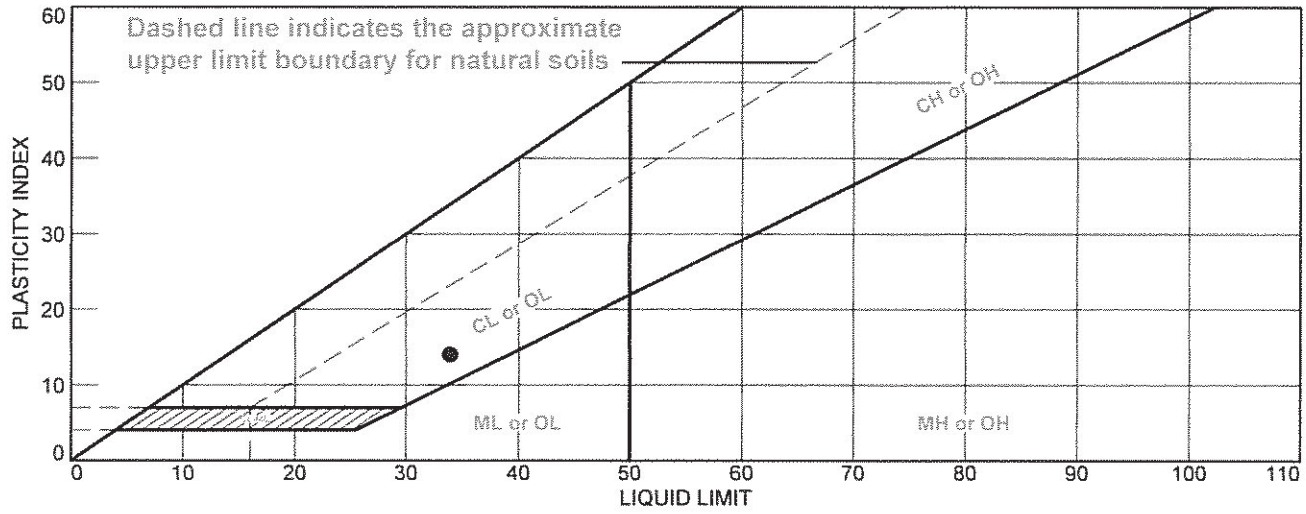
R.W. Gillespie & Associates, Inc.
Saco, Maine

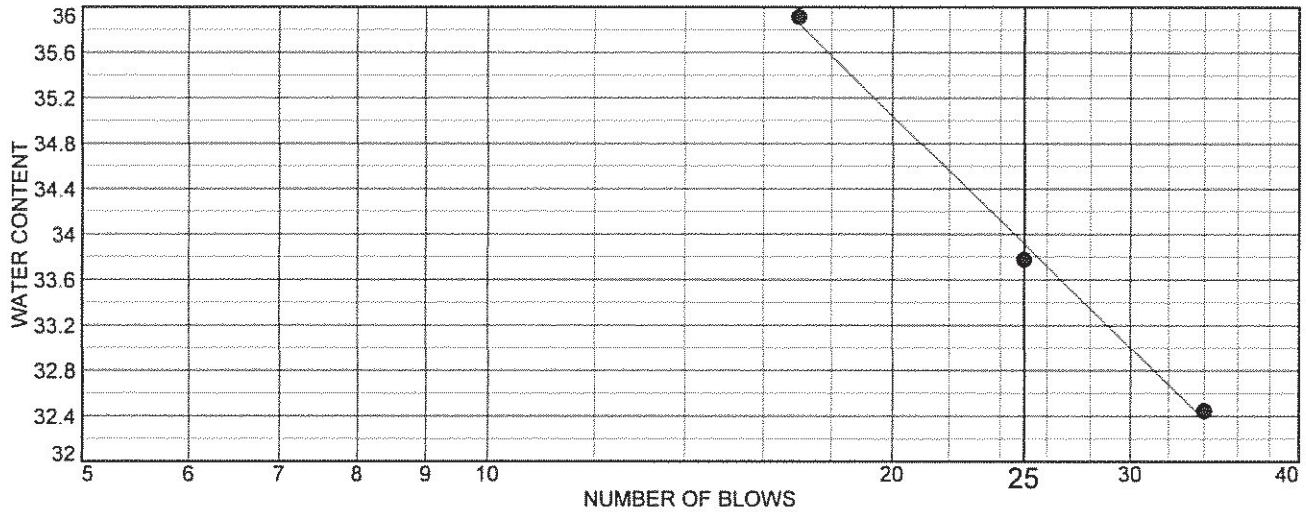
Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13512a

Tested By: GSM/JSL **Checked By:** DCH DCH

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	lean clay	33.9	19.9	14.0	100.0	92.9	CL

Project No. 1368-003 **Client:** Schonewald Engineering Associates, Inc.

Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

● **Location:** HB-LH-116 **Depth:** 10'-12' **Sample Number:** 3D

Remarks:

● Moisture Content: 27.3%

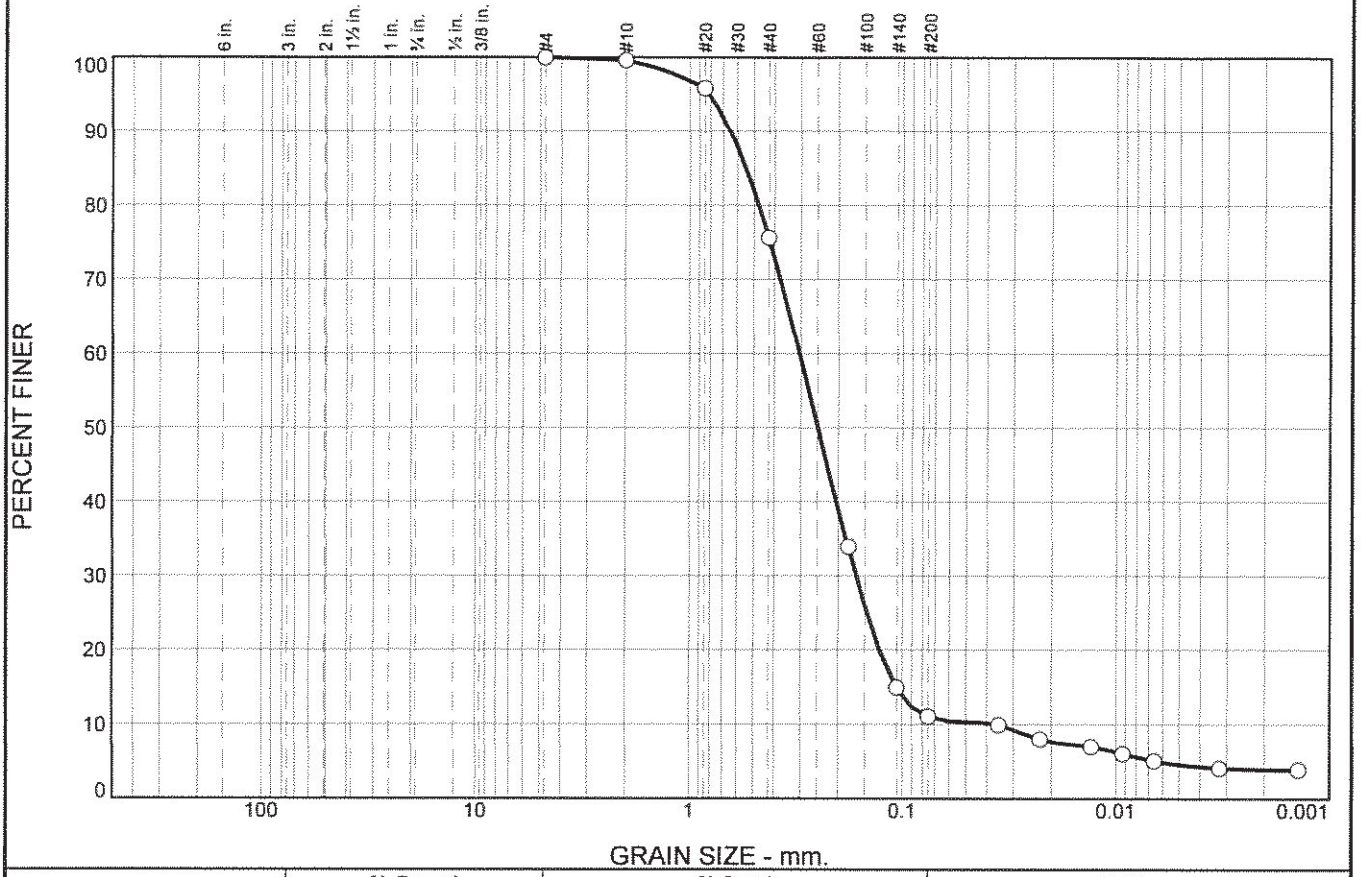
R.W. Gillespie & Associates, Inc.

Saco, Maine

Lab No. 13512a

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	24.0	64.5	6.5	4.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.6		
#20	95.8		
#40	75.6		
#80	34.0		
#140	15.0		
#200	11.1		
0.0352 mm.	9.9		
0.0225 mm.	8.0		
0.0131 mm.	7.0		
0.0093 mm.	6.0		
0.0066 mm.	5.1		
0.0033 mm.	4.1		
0.0014 mm.	3.9		

* (no specification provided)

Soil Description

well-graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.5456 D_{60}= 0.3037 D_{50}= 0.2492
D_{30}= 0.1650 D_{15}= 0.1062 D_{10}= 0.0362
C_u= 8.39 C_c= 2.48

Classification

USCS= SW-SM AASHTO= A-2-4(0)

Remarks

Moisture Content: 19.6%

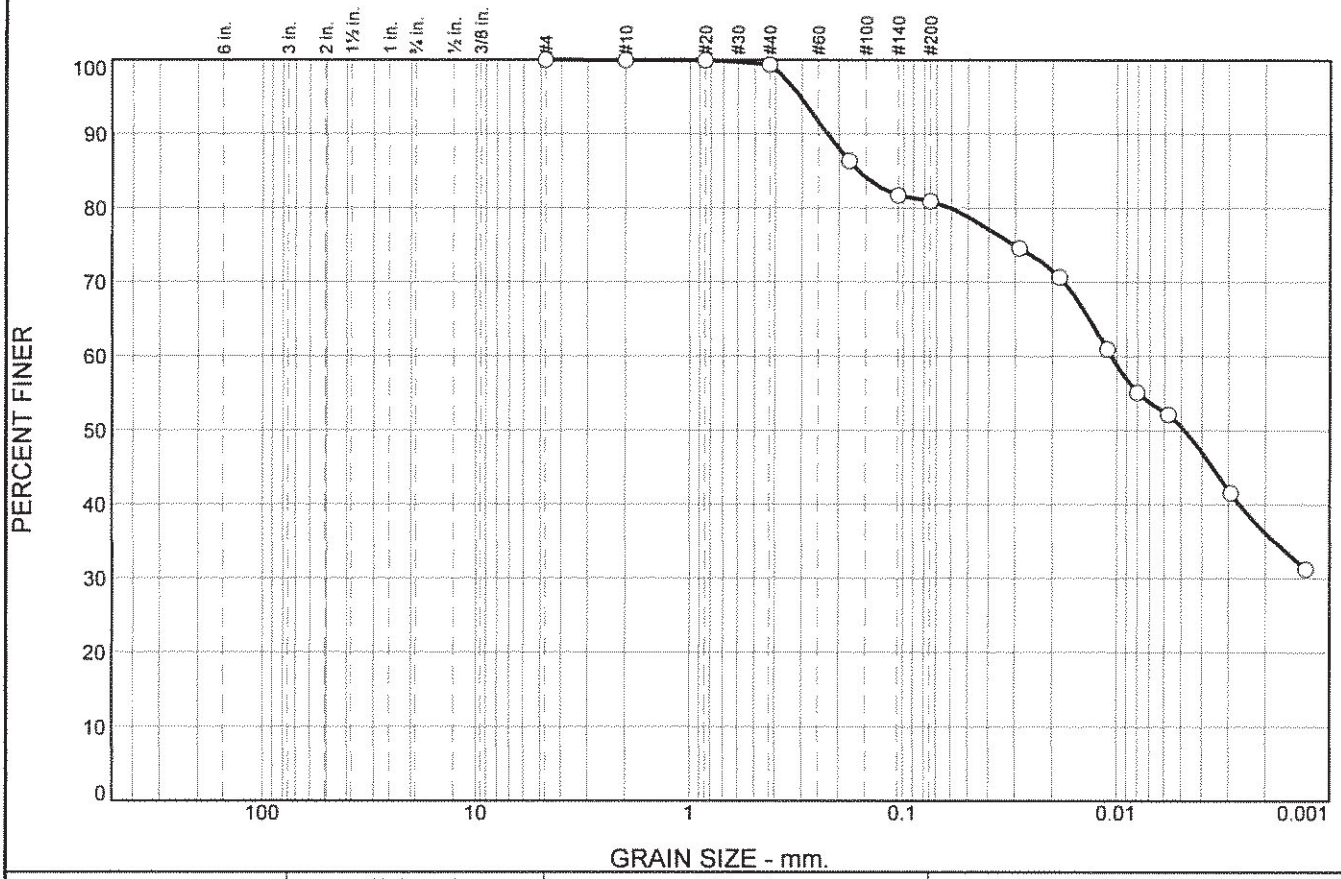
Sample No.: 2D **Source of Sample:** HB-LH-117 **Date:** 3/6/2015
Location: Lyman-Hollis **Elev./Depth:** 5'-7'

R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)
Project No: 1368-003 **Lab No.** 13512b

Tested By: GSM/JSL **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	18.4	30.5	50.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.4		
#80	86.4		
#140	81.8		
#200	81.0		
0.0286 mm.	74.6		
0.0184 mm.	70.7		
0.0111 mm.	61.0		
0.0080 mm.	55.1		
0.0057 mm.	52.2		
0.0029 mm.	41.6		
0.0013 mm.	31.2		

* (no specification provided)

Soil Description

lean clay with sand

Atterberg Limits

PL= 17.0 LL= 28.5 PI= 11.5

Coefficients

D_{85}= 0.1620 D_{60}= 0.0106 D_{50}= 0.0048
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(7)

Remarks

Moisture Content: 25.4%

Sample No.: 3D **Source of Sample:** HB-LH-117 **Date:** 3/10/2015
Location: Lyman-Hollis **Elev./Depth:** 10'-12'

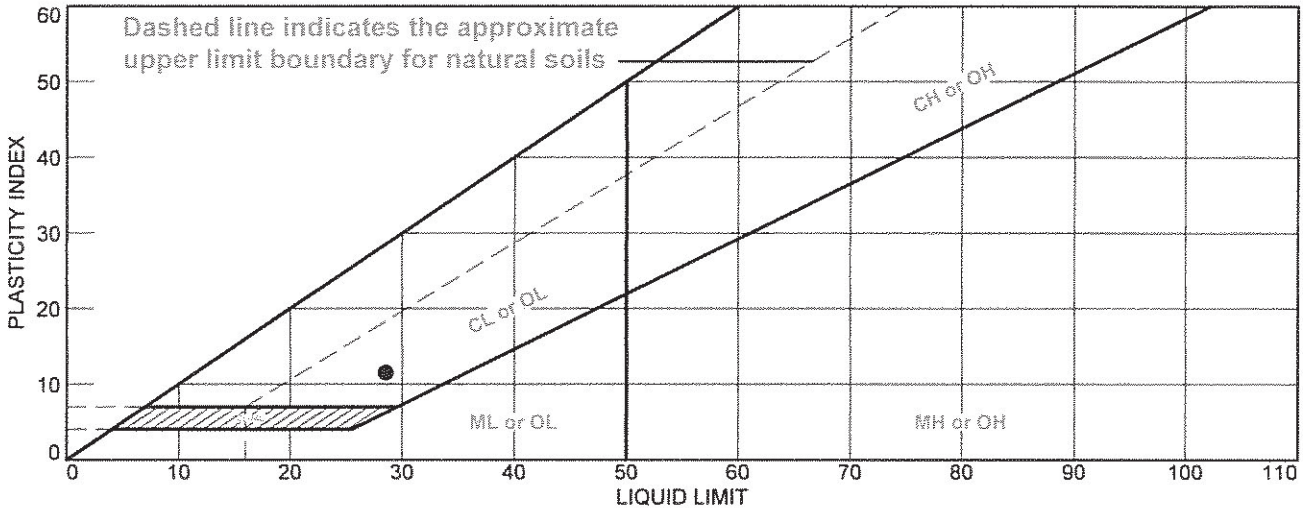
R.W. Gillespie & Associates, Inc.
Saco, Maine

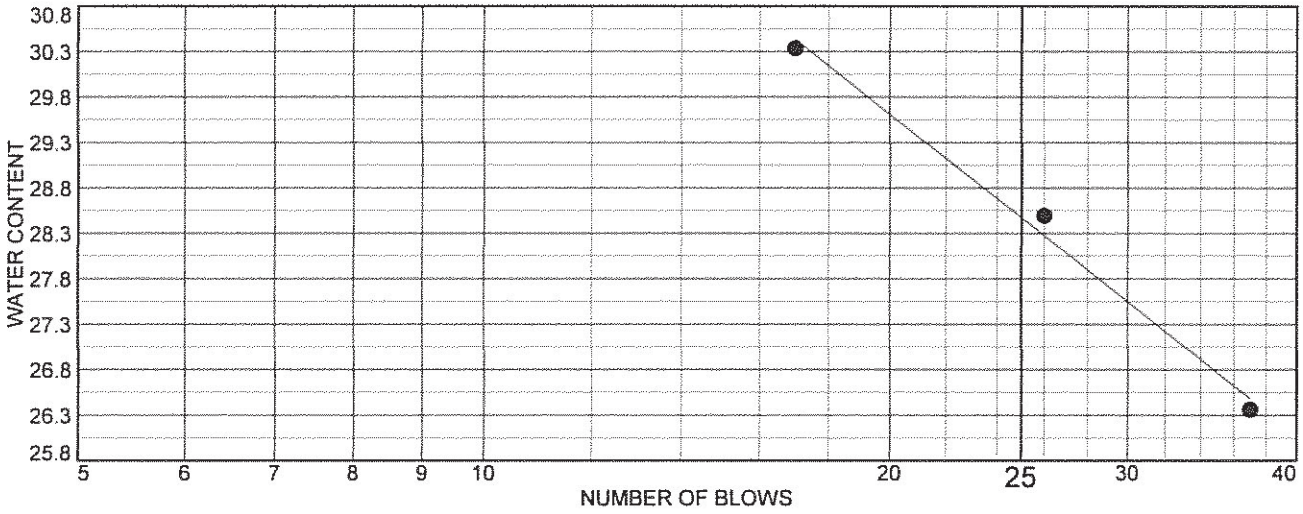
Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13512c

Tested By: GSM/JSL **Checked By:** DCH

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	lean clay with sand	28.5	17.0	11.5	99.4	81.0	CL

Project No. 1368-003 **Client:** Schonewald Engineering Associates, Inc.

Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

● **Location:** HB-LH-117 **Depth:** 10'-12' **Sample Number:** 3D

Remarks:

● Moisture Content: 25.4%

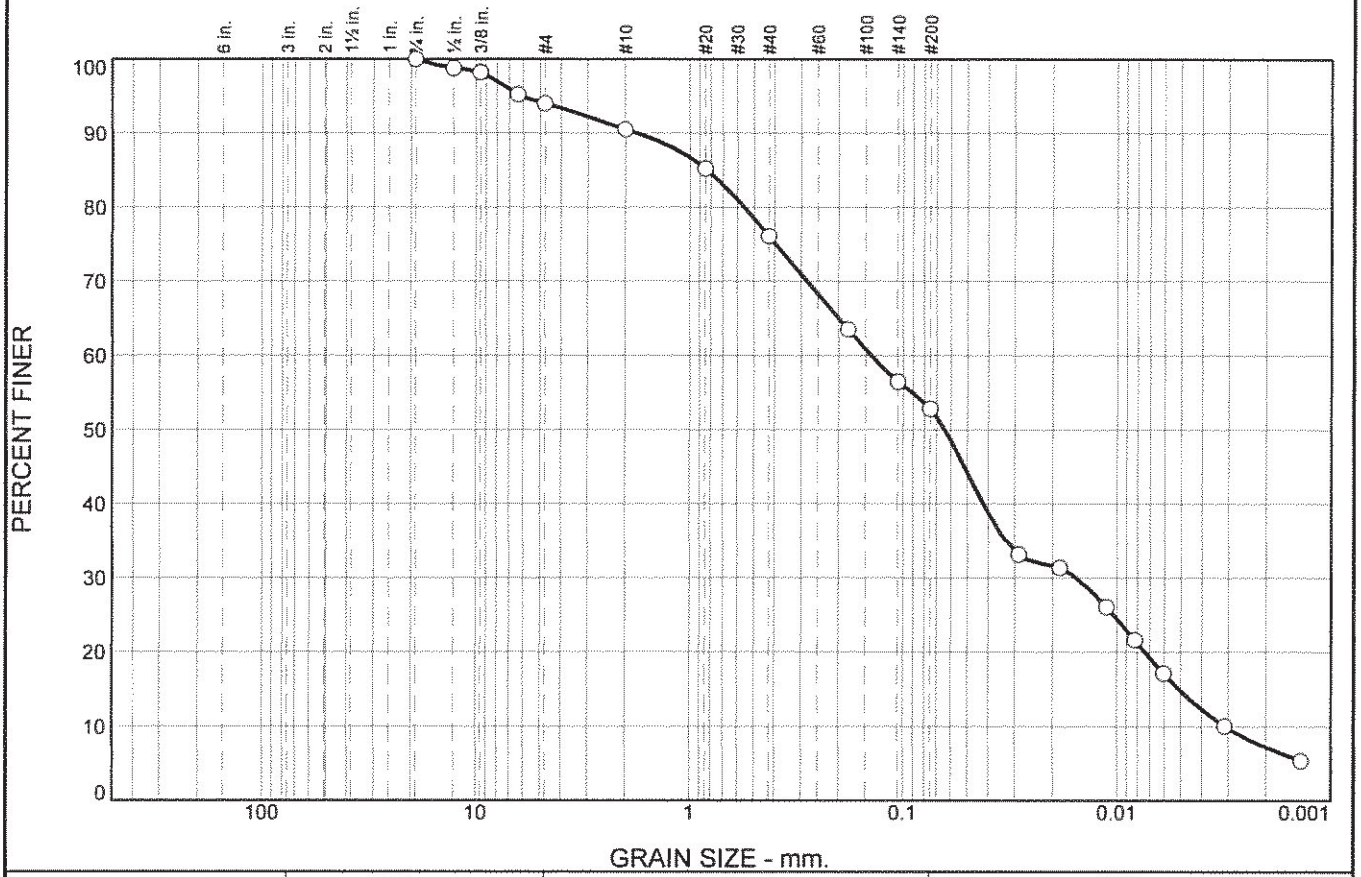
R.W. Gillespie & Associates, Inc.

Saco, Maine

Lab No. 13512c

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	6.0	3.5	14.4	23.3	38.0	14.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	98.8		
3/8"	98.2		
1/4"	95.3		
#4	94.0		
#10	90.5		
#20	85.2		
#40	76.1		
#80	63.5		
#140	56.5		
#200	52.8		
0.0288 mm.	33.2		
0.0185 mm.	31.4		
0.0112 mm.	26.1		
0.0082 mm.	21.7		
0.0060 mm.	17.2		
0.0031 mm.	10.1		
0.0014 mm.	5.3		

* (no specification provided)

Soil Description

sandy silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.8302 D_{60}= 0.1413 D_{50}= 0.0640
D_{30}= 0.0154 D_{15}= 0.0051 D_{10}= 0.0031
C_u= 46.01 C_c= 0.54

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Moisture Content: 25.2%

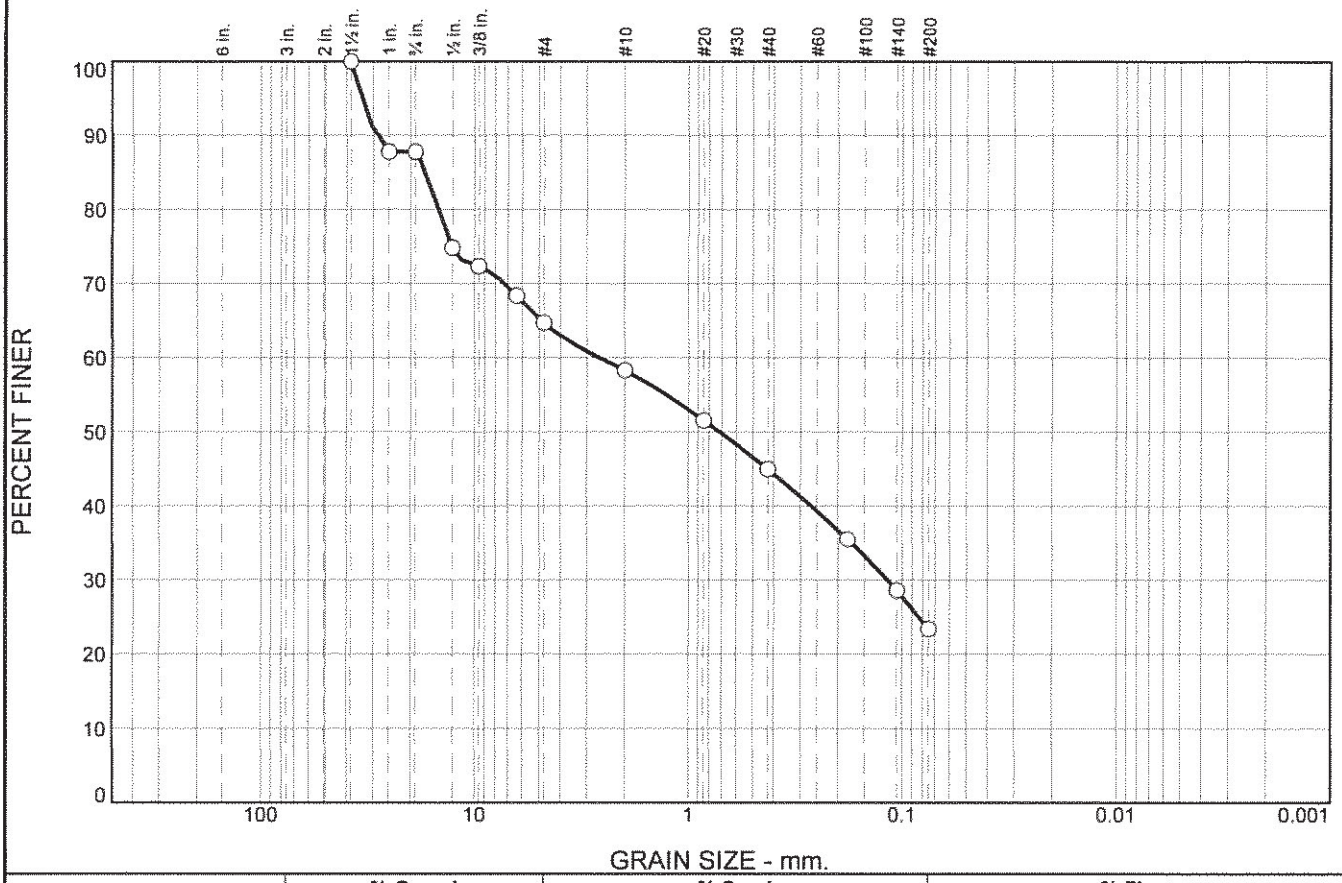
Sample No.: 1D **Source of Sample:** HB-BUX-101 **Date:** 3/6/2015
Location: Buxton **Elev./Depth:** 2'-4'

R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)
Project No: 1368-003 **Lab No.** 13512d

Tested By: GSM/JSL **Checked By:** DCH DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.2	23.1	6.4	13.3	21.6	23.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 1/2"	100.0		
1"	87.8		
3/4"	87.8		
1/2"	74.8		
3/8"	72.4		
1/4"	68.4		
#4	64.7		
#10	58.3		
#20	51.6		
#40	45.0		
#80	35.5		
#140	28.6		
#200	23.4		

* (no specification provided)

Soil Description

silty sand with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 16.9716 D_{60}= 2.6386 D_{50}= 0.7163
D_{30}= 0.1169 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-1-b

Remarks

Moisture Content: 8.0%

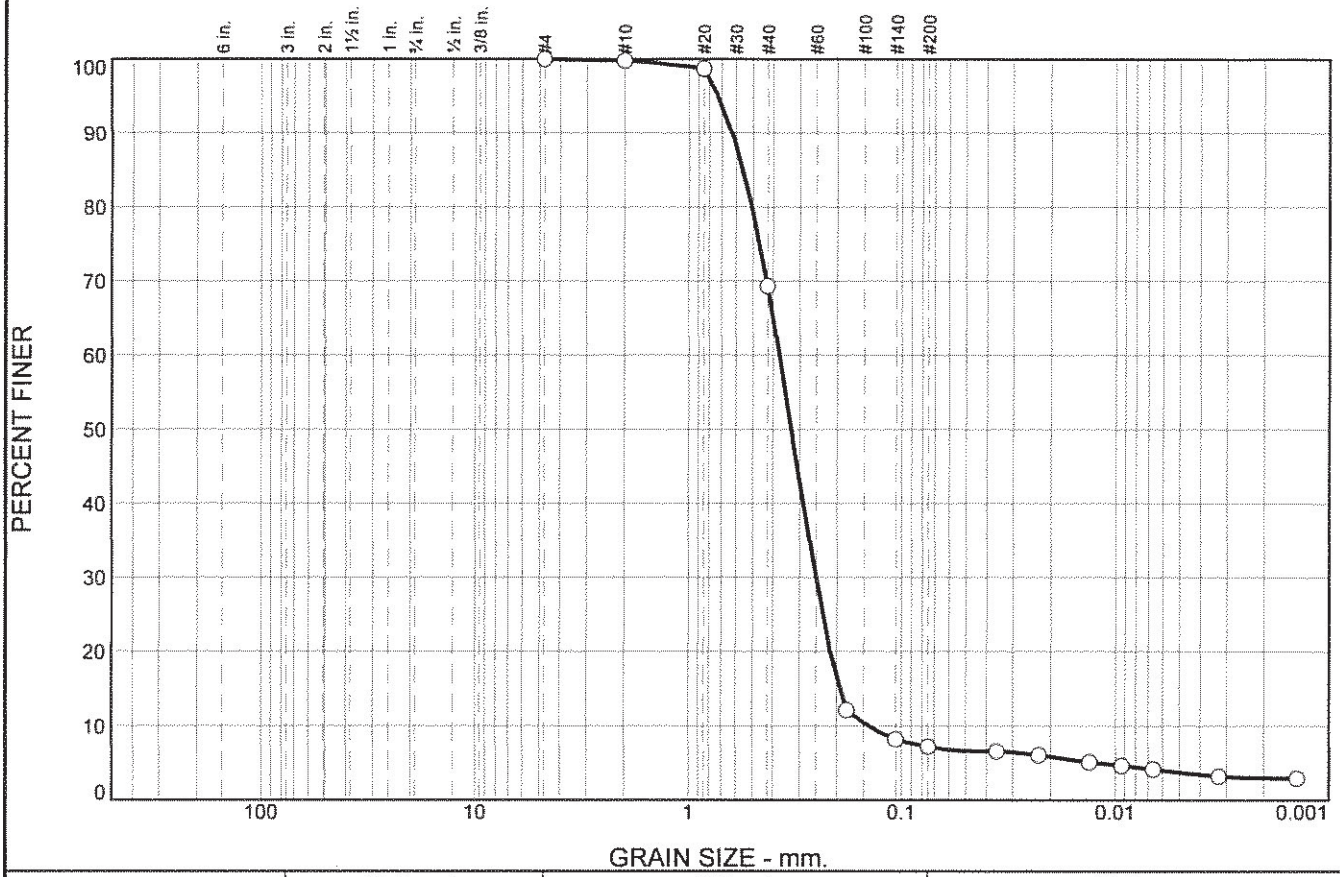
Sample No.: 1D **Source of Sample:** HB-BUX-102 **Date:** 3/3/2015
Location: Buxton **Elev./Depth:** 2'-4'

R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)
Project No: 1368-003 **Lab No.** 13512e

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	30.4	62.2	3.5	3.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.8		
#20	98.7		
#40	69.4		
#80	12.1		
#140	8.2		
#200	7.2		
0.0360 mm.	6.6		
0.0228 mm.	6.1		
0.0132 mm.	5.1		
0.0094 mm.	4.6		
0.0066 mm.	4.2		
0.0033 mm.	3.2		
0.0014 mm.	2.9		

* (no specification provided)

Soil Description

poorly graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.5581 D_{60}= 0.3729 D_{50}= 0.3275
D_{30}= 0.2513 D_{15}= 0.1941 D_{10}= 0.1413
C_u= 2.64 C_c= 1.20

Classification

USCS= SP-SM AASHTO= A-3

Remarks

Moisture Content: 18.4%

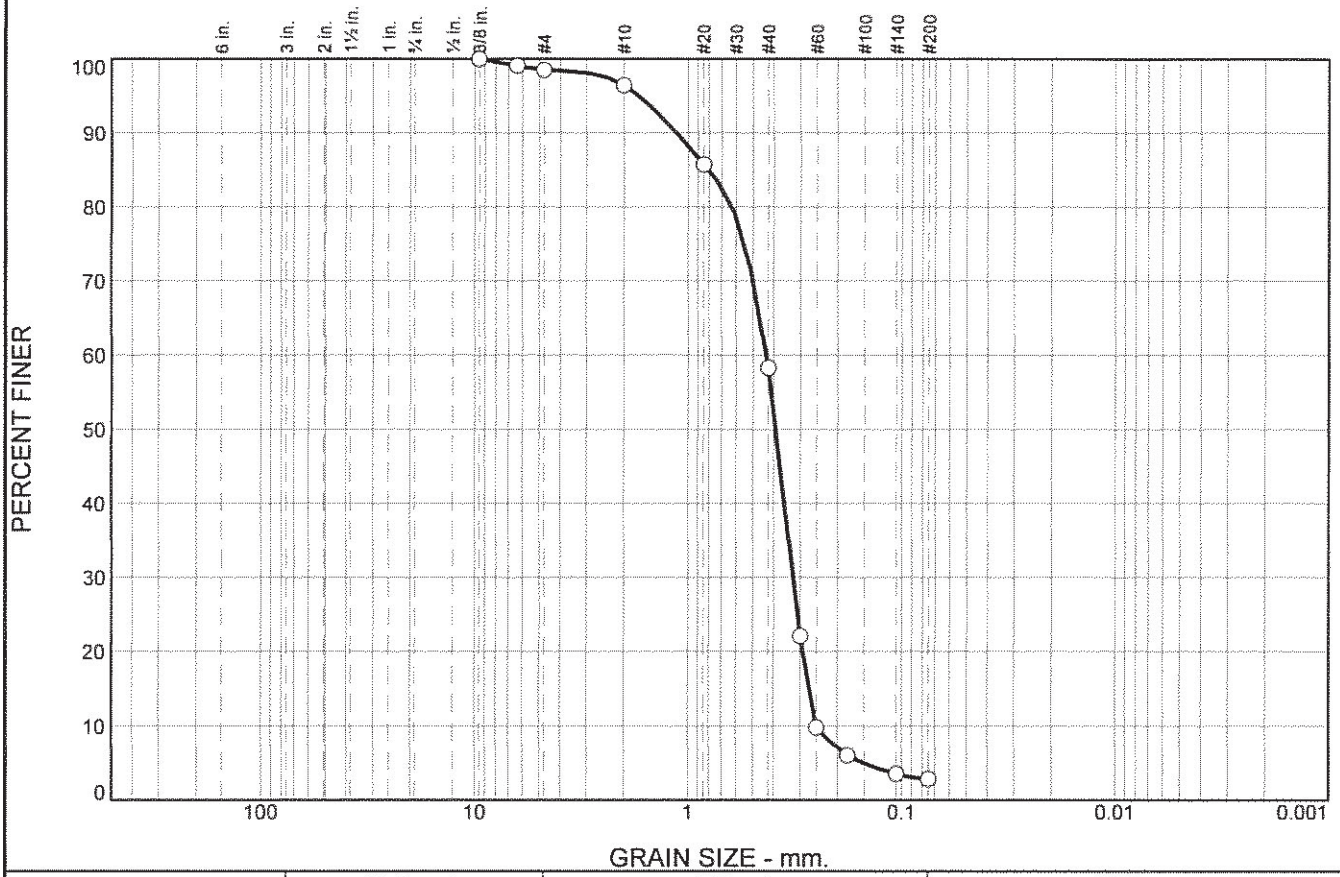
Sample No.: 2D **Source of Sample:** HB-GOR-102 **Date:** 3/6/2015
Location: Gorham **Elev./Depth:** 5'-7'

R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)
Project No: 1368-003 **Lab No.** 13513a

Tested By: GSM/JSL **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	2.1	38.1	55.5	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
1/4"	99.1		
#4	98.5		
#10	96.4		
#20	85.8		
#40	58.3		
#50	22.1		
#60	9.8		
#80	6.0		
#140	3.5		
#200	2.8		

* (no specification provided)

Soil Description

poorly graded sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.8055 D_{60}= 0.4333 D_{50}= 0.3908
D_{30}= 0.3250 D_{15}= 0.2743 D_{10}= 0.2510
C_u= 1.73 C_c= 0.97

Classification

USCS= SP AASHTO= A-3

Remarks

Moisture Content: 19.8%

Sample No.: 2D **Source of Sample:** HB-GOR-103 **Date:** 3/3/2015
Location: Gorham **Elev./Depth:** 5'-7'

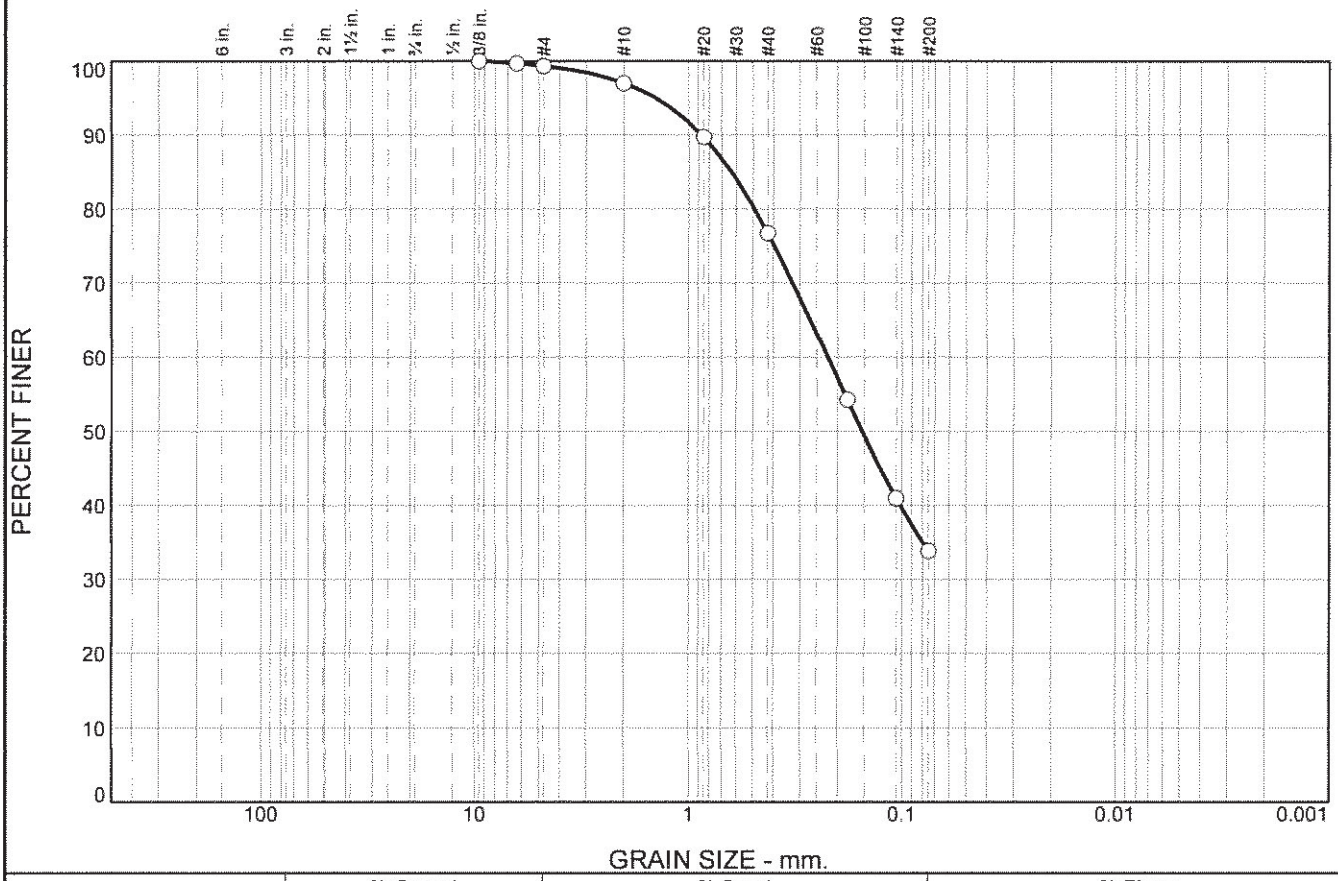
R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

Project No: 1368-003 **Lab No.** 13513b

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	2.3	20.2	43.0	33.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
1/4"	99.7		
#4	99.3		
#10	97.0		
#20	89.7		
#40	76.8		
#80	54.3		
#140	41.0		
#200	33.8		

* (no specification provided)

Soil Description

silty sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.6317 D_{60}= 0.2222 D_{50}= 0.1532
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Moisture Content: 11.9%

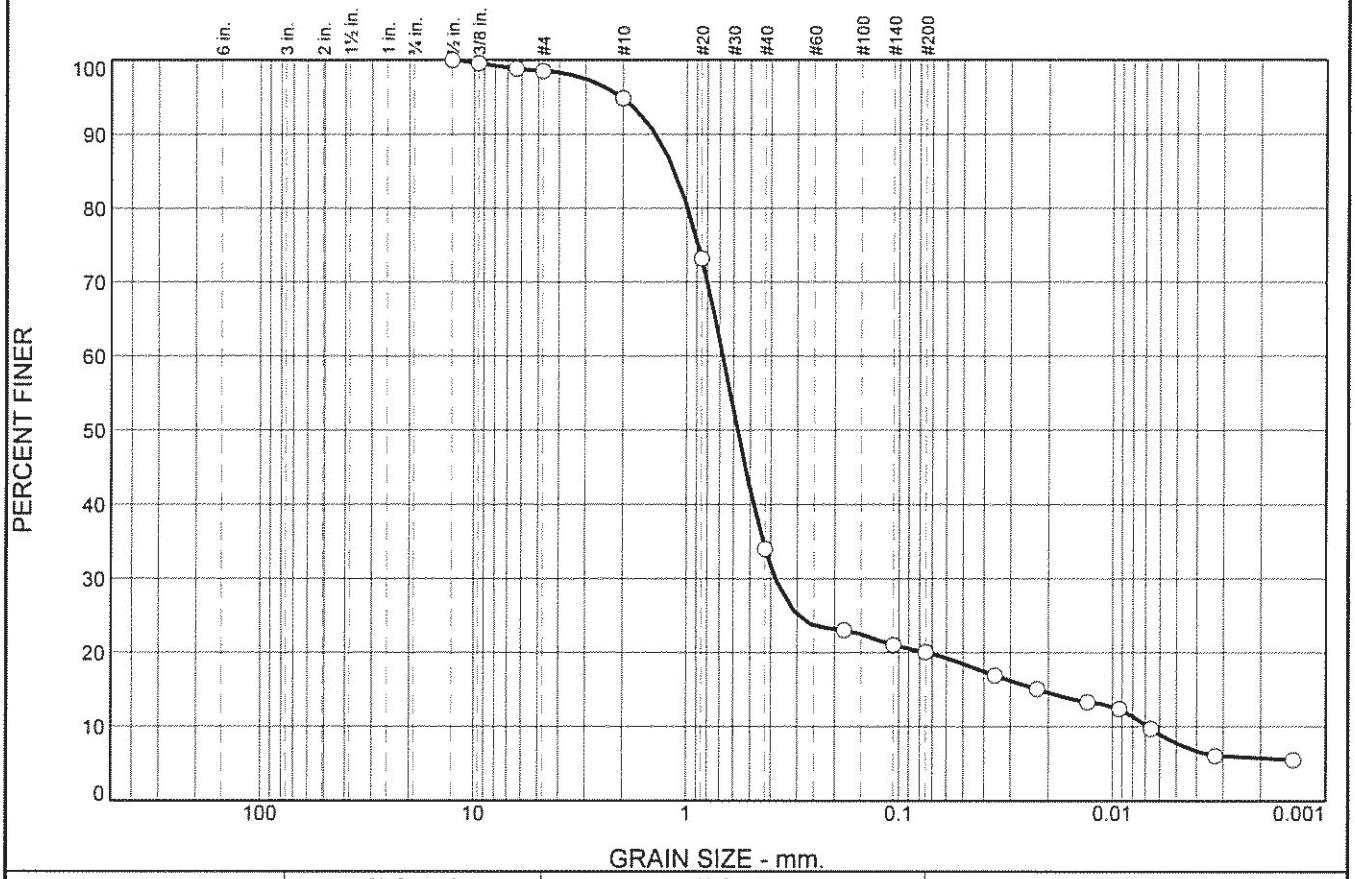
Sample No.: 3D **Source of Sample:** HB-GOR-103 **Date:** 3/3/2015
Location: Gorham **Elev./Depth:** 10'-12'

R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)
Project No: 1368-003 **Lab No.** 13513c

Tested By: GSM **Checked By:** DCH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.4	3.8	60.8	14.0	12.2	7.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	99.6		
1/4"	98.8		
#4	98.6		
#10	94.8		
#20	73.2		
#40	34.0		
#80	23.0		
#140	21.0		
#200	20.0		
0.0354 mm.	16.9		
0.0225 mm.	15.1		
0.0131 mm.	13.3		
0.0093 mm.	12.4		
0.0066 mm.	9.7		
0.0033 mm.	6.1		
0.0014 mm.	5.5		

* (no specification provided)

Soil Description

silty sand

Atterberg Limits

PL= 43.7 LL= 51.3 PI= 7.6

Coefficients

D_{85}= 1.1462 D_{60}= 0.6753 D_{50}= 0.5747
D_{30}= 0.3798 D_{15}= 0.0222 D_{10}= 0.0068
C_u= 99.03 C_c= 31.32

Classification

USCS= SM AASHTO= A-2-5(0)

Remarks

Moisture Content: 29.5%
Sample was a composite of organic fine sandy silt and fine to medium sand.

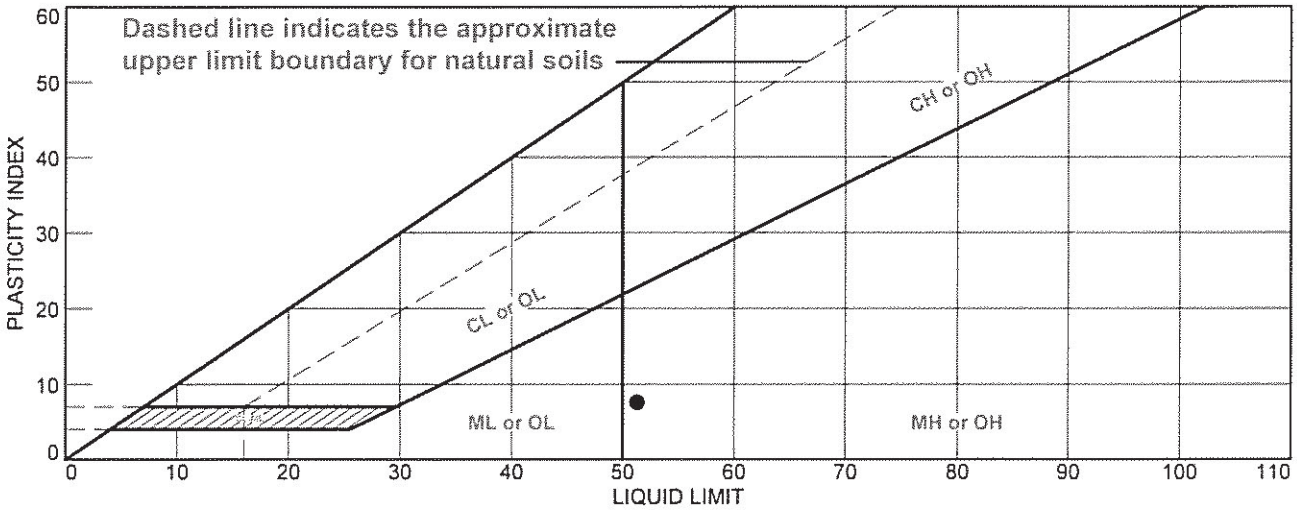
Sample No.: 1D **Source of Sample:** HB-GOR-104 **Date:** 3/11/2015
Location: HB-GOR-104 **Elev./Depth:** 2'-4'

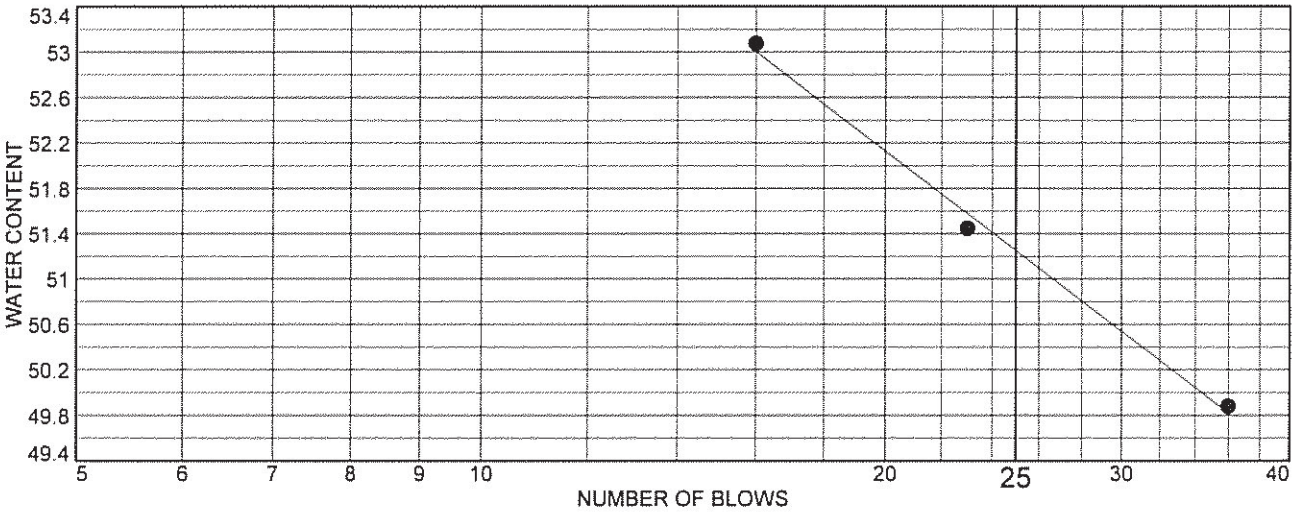
R.W. Gillespie & Associates, Inc.
Saco, Maine

Client: Schonewald Engineering Associates, Inc.
Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)
Project No: 1368-003 **Lab No.** 13513d

Tested By: GSM/JSL **Checked By:** DCH

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	silty sand	51.3	43.7	7.6	34.0	20.0	SM

Project No. 1368-003 **Client:** Schonewald Engineering Associates, Inc.

Project: #14-023 Route 202 Lyman-Gorham (MaineDOT WIN 22641.00)

● **Location:** HB-GOR-104 **Depth:** 2'-4' **Sample Number:** 1D

Remarks:

● Moisture Content: 29.5% Sample was a composite of organic fine sandy silt and fine to medium sand.

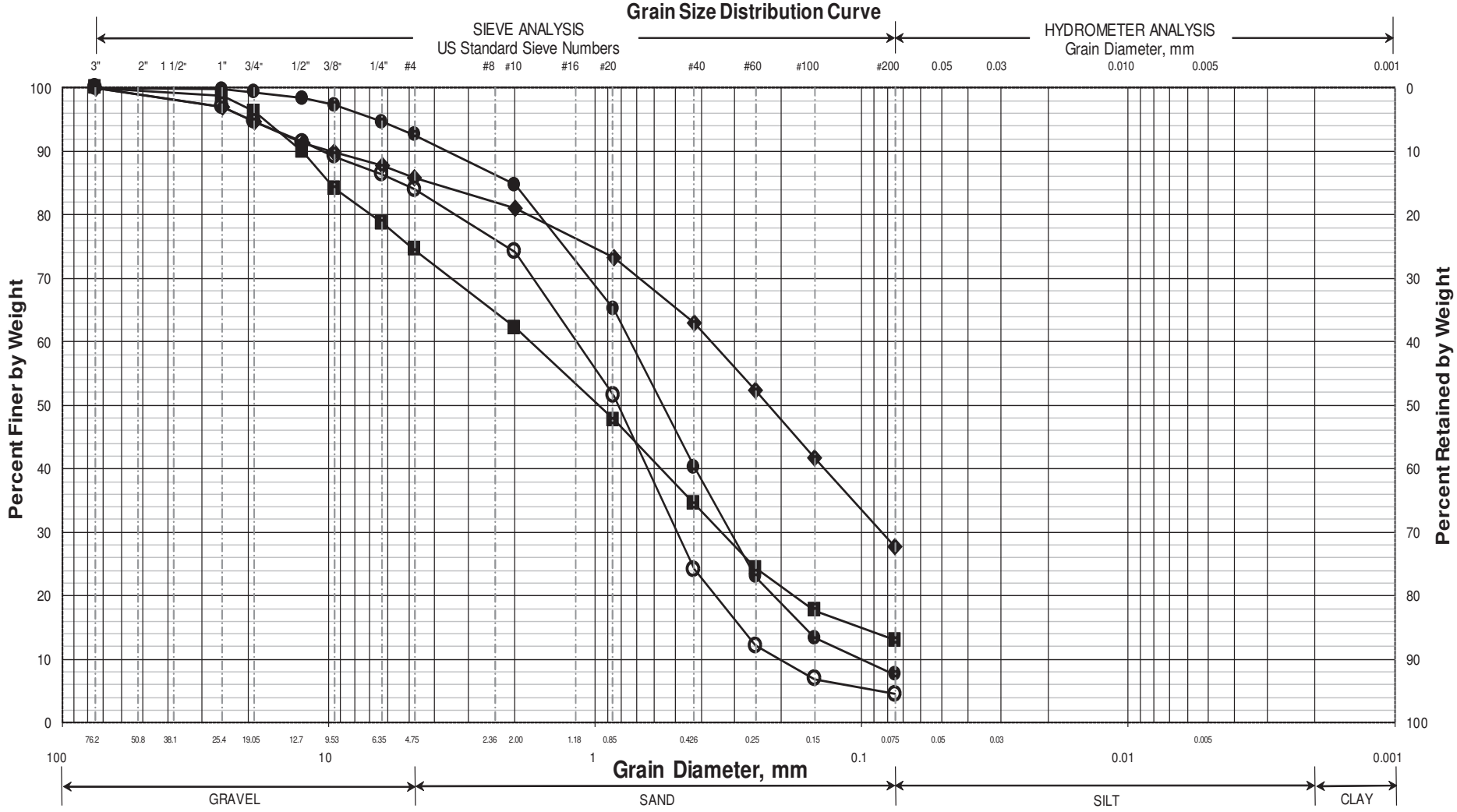
R.W. Gillespie & Associates, Inc.

Saco, Maine

Lab No. 13513d

Tested By: GSM **Checked By:** DCH

Maine Department of Transportation
Grain Size Distribution Curve

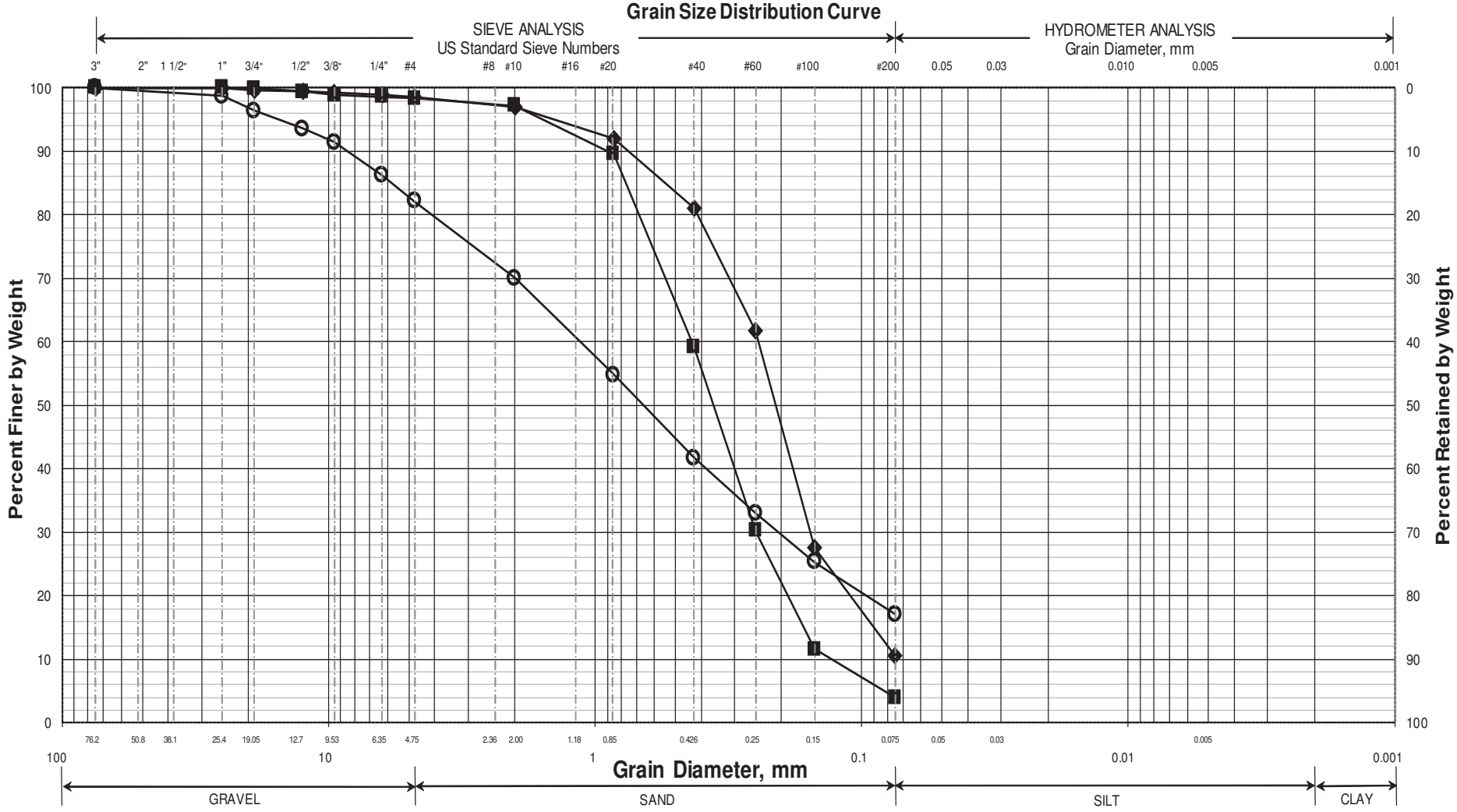


UNIFIED CLASSIFICATION

	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	WC, %	LL	PL	PI
○	HB-LH-201/B1	1003+85.4	9.1 RT	0.8-3.0	SAND, little gravel, trace silt.	3.1			
◆	HB-LH-202/B2	1022+65.4	8.7 LT	1.1-3.0	SAND, some silt, little gravel.	14.4			
■	HB-LH-203/B3	1041+30.4	8.6 RT	0.8-2.7	SAND, some gravel, little silt.	8.0			
●	HB-LH-204/B4	1059+73.5	8.6 LT	0.8-2.7	SAND, trace silt, trace gravel.	5.8			
▲									
×									

WIN
022641.00
Town
Buxton, Gorham, Hollis, Lyman
Reported by/Date
WHITE, TERRY A 4/15/2021

Maine Department of Transportation
Grain Size Distribution Curve



UNIFIED CLASSIFICATION

	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	WC, %	LL	PL	PI
○	HB-LH-205/B5	1070+10.4	9.4 RT	0.9-1.8	SAND, little gravel, little silt.	3.7			
◆	HB-LH-206/B6	1097+80.6	7.0 LT	1.1-3.0	SAND, little silt, trace gravel.	13.4			
■	HB-LH-207/B7	1116+20.7	10.6 RT	1.2-3.0	SAND, trace silt, trace gravel.	2.6			
●									
▲									
×									

WIN
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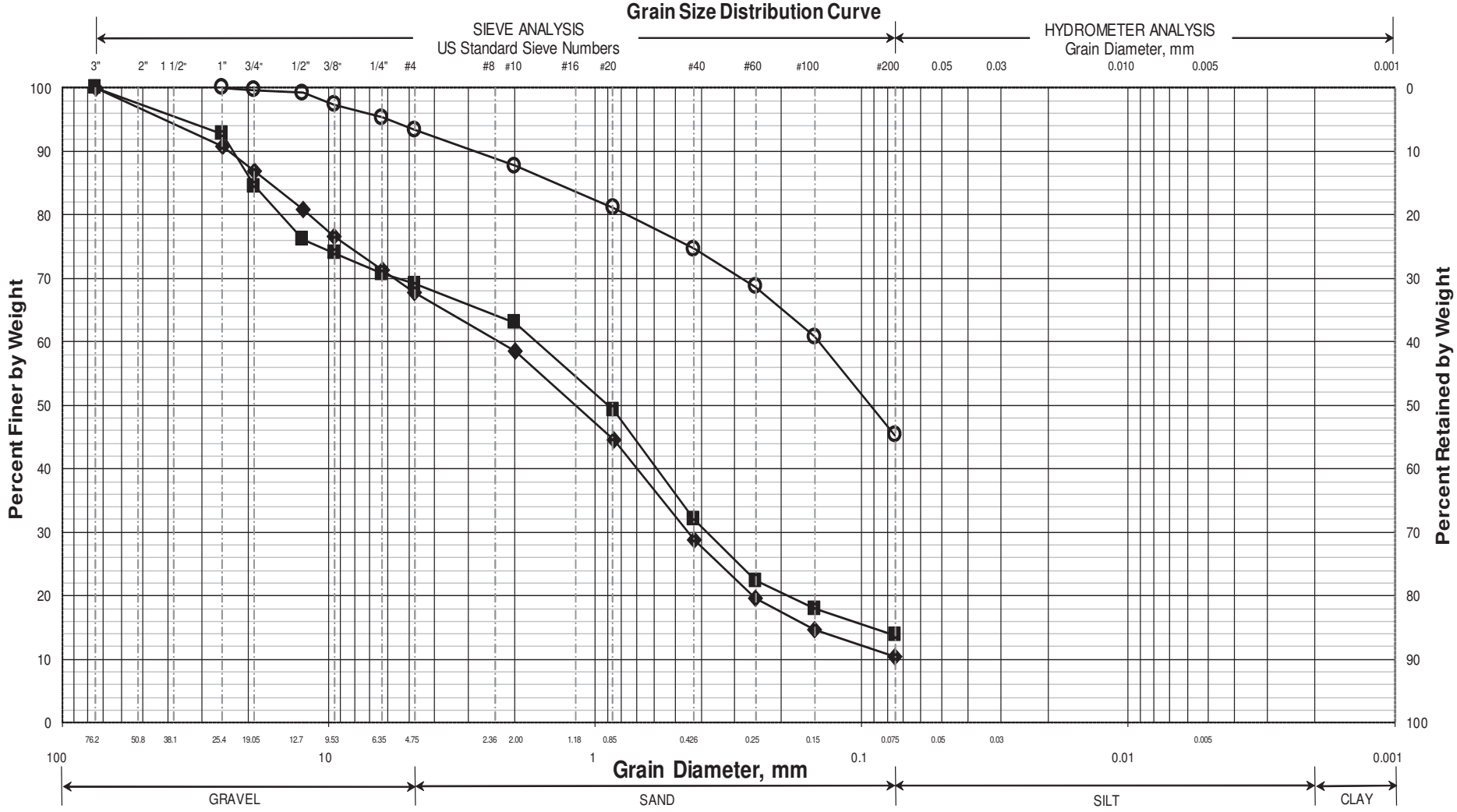
Maine Department of Transportation
Grain Size Distribution Curve



UNIFIED CLASSIFICATION

	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	WC, %	LL	PL	PI
○	HB-BUX-201/B8	2009+38.9	10.9 LT	1.1-3.0	Silty SAND, trace gravel.	5.3			
◆	HB-GOR-201/B9	3011+88.2	8.5 RT	1.2-1.8	SAND, some gravel, little silt.	5.2			
■	HB-GOR-202/B10	3020+98.2	9.3 LT	1.1-1.9	SAND, some gravel, little silt.	6.0			
●									
▲									
×									

WIN
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