



Brad Foley, Program Manager
Rich Crawford & Heath Cowan, Assistant Program Managers
Phone: 624-3480 Fax: 624-3481

Memorandum

To: Shawn Davis, P.E.
From: Kitty Breskin, P.E.
Date: June 21, 2012
Subject: Gouldsboro, PIN 17542.00

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Addendum to geotechnical report for PIN 17121.00, Gouldsboro, by Scott Hayden dated January 18, 2011:

An additional four borings were drilled on June 18, 2012 for replacement of the existing stone box culvert at Station 809+24. All probes were extended to bedrock and a rock core was taken at Station 809+10, 0.27 feet Right. Apparent bedrock was encountered at a depth of 9.4 feet, however the first 6" of this core was through a boulder sitting on the bedrock surface. This core had an RQD of 70% including the section through the boulder. All refusals from these final borings are shown in the table below:

Station	Offset	Refusal depth
809+09	0.27 Rt	9.4 feet
809+09	12.4 Rt	6.2 feet
809+36	0.4 Rt	6.2 feet
809+36	12.6 Rt	4.5 feet

It is possible that the boring at Station 809+36, 12.6 Rt encountered a large boulder, however the depth is not inconsistent with depths of other refusals in borings for this project.

The rock mass quality with RQD of 70% is fair, and this rock is likely to require blasting for excavation.

The final boring log, probe summary sheet and final geoplan are attached to this report.

Driller: MaineDOT	Elevation (ft.): 43.4	Auger ID/OD: 5" Solid Stem
Operator: Giguere/Giles/Daggett	Datum: NAVD88	Sampler: N/A
Logged By: B. Wilder	Rig Type: CME 45C	Hammer Wt./Fall: N/A
Date Start/Finish: 6/18/12; 09:30-13:30	Drilling Method: Cased Wash Boring	Core Barrel: NQ-2"
Boring Location: 809+10, 0.27 ft Rt.	Casing ID/OD: HW	Water Level*: 8.0 ft bgs.

Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample attempt U = Thin Wall Tube Sample R = Rock Core Sample V = Insitu Vane Shear Test SSA = Solid Stem Auger	Definitions: S _u = Insitu Field Vane Shear Strength (psf) T _v = Pocket Torvane Shear Strength (psf) q _p = Unconfined Compressive Strength (ksf) S _u (lab) = Lab Vane Shear Strength (psf) WOH = weight of 140lb. hammer WOR = weight of rods. WOC = weight of casing	Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test
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Depth (ft.)	Sample Information										Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class.	
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)	Graphic Log					
0										SSA		No descriptions given.	
5													
10	R1	60/60	9.40 - 14.40	RQD = 70%				34.00 33.50		NQ-2		Cobbles from 9.4-9.9 ft bgs. Core Times (min:sec) 9.4-10.4 ft (3:46) Top of Rock at Elev. 33.5 ft bgs. 10.4-11.4 ft (2:30) 11.4-12.4 ft (2:30) 12.4-13.4 ft (2:30) 13.4-14.4 ft (2:15) 100% Recovery	
15								29.00				Bottom of Exploration at 14.40 feet below ground surface.	
20													
25													

Remarks:

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

Date: 6/22/2012

Username: kilty.breskin

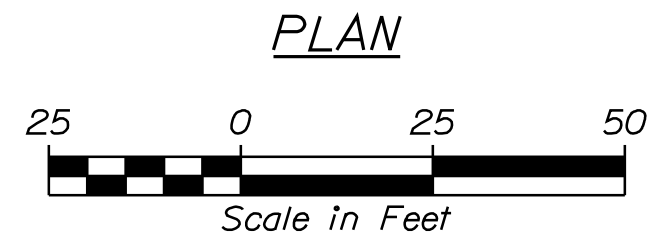
Division: GEOTECH

Filename: ... \00\GEOTECH\MSTAN001_CPI.dgn



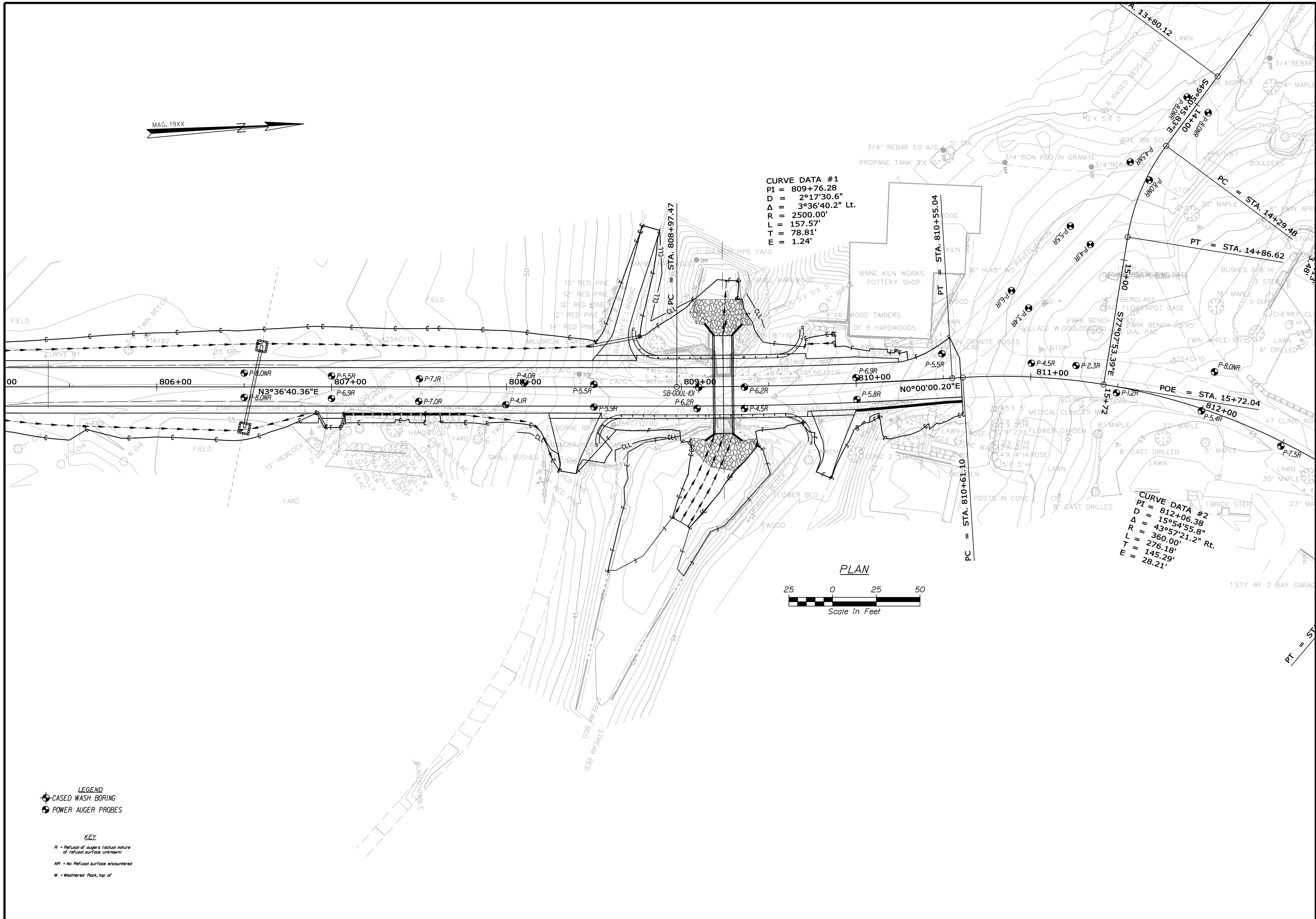
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 PI = 809+76.28
 D = 2°17'30.6"
 Δ = 3°36'40.2" Lt.
 R = 2500.00'
 L = 157.57'
 T = 78.81'
 E = 1.24'

CURVE DATA #2
 PI = 812+06.38
 D = 15°54'55.8"
 Δ = 43°57'21.2" Rt.
 R = 360.00'
 L = 276.18'
 T = 145.29'
 E = 28.21'



LEGEND
 CASED WASH BORING
 POWER AUGER PROBES

KEY
 R = Refusal of augers (actual nature of refusal surface unknown)
 NR = No Refusal surface encountered
 W = Weathered Rock, top of



STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 PRELIMINARY PLANS

DATE	SIGNATURE	P.E. NUMBER	DATE
JUN 2012	T. WHITE		

PROJ. MANAGER	BY	DATE
S. DAVIS	R. CHESTER	

DESIGN DETAILED	CHECKED	REVIEWED

DESIGN DETAILED	DESIGN DETAILED

REVISIONS	REVISIONS	REVISIONS	REVISIONS	FIELD CHANGES
1	2	3	4	

WIN 17542.00
 HIGHWAY PLANS

SHEET NUMBER
1
 OF 1

GOULDSBORO
 ROUTE 186 STRUT
 GEOPLAN

Highway Program

Brad Foley, Program Manager

Memorandum

DATE: January 18, 2011

TO: Dennis Lovely

DEPT: Region 4

FROM: Scott A. Hayden

DEPT: Highway Program

SUBJECT: 17121.00 Gouldsboro Probe Information

Soils Report no. 2012-128

Project Description

A subsurface investigation consisting of 28 power auger probes has been completed for a 0.07 mile portion of Route 186 in the town of Gouldsboro. The project begins 0.10 miles south of the Clinic Road and extends northerly 0.07 miles.

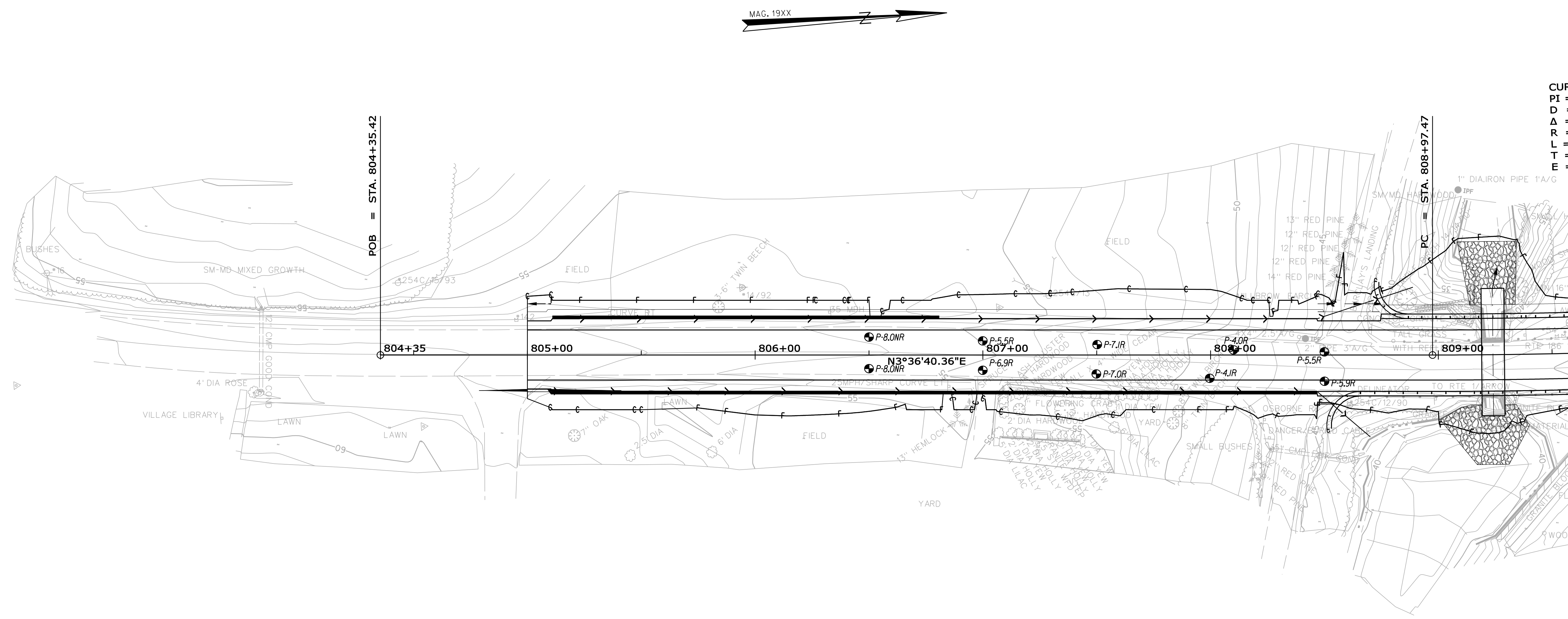
Project stationing was not marked in the field at the time of this work. Stationing was determined in the field using a distance measuring instrument (DMI) and a preliminary plan view (12/13/2010). Offsets in the field were determined based upon existing centerline. These offsets were then converted in the office to the proposed construction centerline. All probes have been plotted on the proposed plan view drawing.

Twenty-eight power auger probes were conducted along the existing left and right edge of pavement. The areas of investigation include several short sections of proposed underdrain. Probes were conducted to determine the possibility of shallow bedrock. The areas of investigation include:

806+50 – 808+50	Rte 186
810+00 – 811+00	Rte 186
811+50 – 813+00	Clinic Road
14+00 – 15+50	Rte 186

Probes were conducted every 50 feet between the above listed areas. A probe depth of 8 feet or refusal was used at each probe location. Refusals were encountered at 22 of the 28 power auger probe locations. Refusal depths range between 1.2' – 9.0' with an average refusal depth of 5.1' (below top of existing pavement). Please refer to the attached power auger summary sheet for refusal depths and locations.

It is anticipated that these refusals are due to the presence of a bedrock surface. The bedrock in this area is mapped (“Bedrock Geologic Map of Maine”, Maine Geologic Society, 1985) as granite. Granite is a coarse grained plutonic rock containing quartz as an essential component, along with feldspar and mafic minerals. Granite tends to be very hard and it is anticipated that blasting will be required for its removal.



LEGEND

P-⊕ POWER AUGER PROBE

KEY

R - Refusal of auger's actual nature of refusal surface unknown

NR - No Refusal surface encountered

W - Weathered Rock, top of

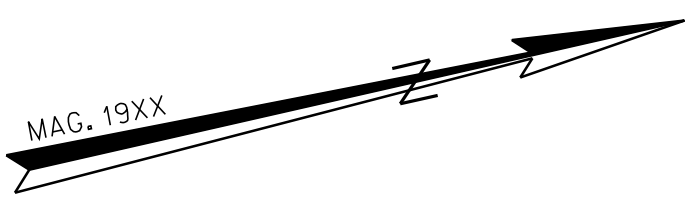
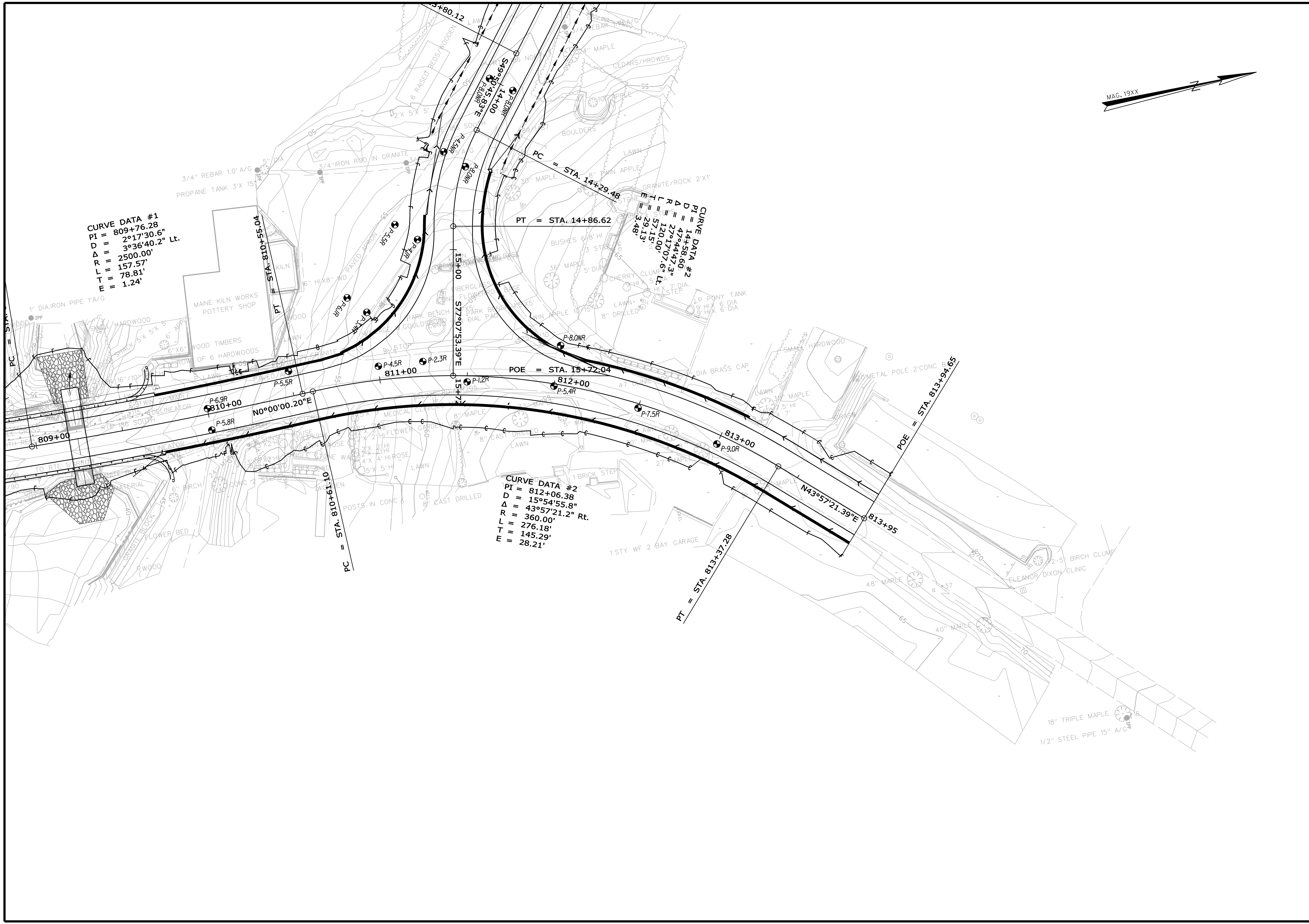
CURV
PI =
D =
A =
R =
T =
E =
I =

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PRELIMINARY PLANS
PIN 17121.00
HIGHWAY PLANS

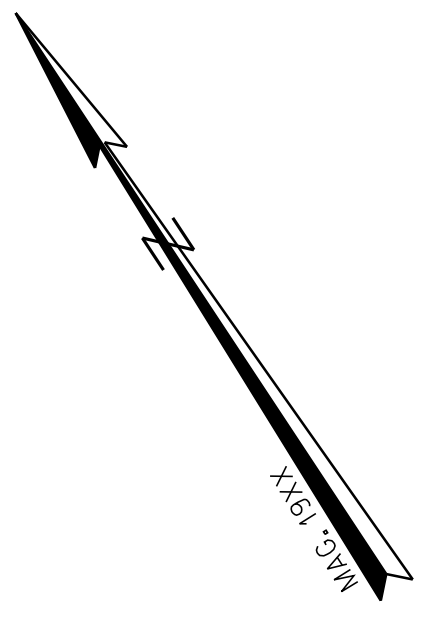
DATE	BY	PROJ. MANAGER	E. LOVELY
JAN 2011	T. WHITE	S. HAYDEN	
		CHECKED-REVIEWED	
		DESIGNS DET. TAILED	
		DESIGNS DET. TAILED	
		REVISIONS 1	
		REVISIONS 2	
		REVISIONS 3	
		REVISIONS 4	
		FIELD CHANGES	

GOULDSBORO
ROUTE 186
GEOPLANS

SHEET NUMBER
1
OF 3



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
PRELIMINARY PLANS		HIGHWAY PLANS	
PIN 17121.00		17121.00	
SHEET NUMBER		2	
OF 3		OF 3	
PROJ. MANAGER	E. LOVELY	BY	T. WHITE
DESIGN/DETAILED	S. HAYDEN	DATE	JAN 2011
CHECKED/REVIEWED		SIGNATURE	
DESIGNS DET/ALD		P.E. NUMBER	
DESIGNS DET/ALD		DATE	
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			



POB = STA. 10+00.00

10+00

11+00

12+00

13+00

14+00

15+00

16+00

17+00

18+00

S54°54'30.27"E

PC = STA. 12+03.42

CURVE DATA #1
 PI = 12+91.83
 D = 2°51'53.2"
 Δ = 5°03'44.4" Rt.
 R = 2000.00'
 L = 176.71'
 T = 88.41'
 E = 1.95'

PT = STA. 13+80.12

S49°50'45.83"E

CURVE DATA #2
 PI = 14+58.60
 D = 47°44'47.3"
 Δ = 27°17'07.6" Lt.
 R = 120.00'
 L = 57.15'
 T = 29.13'
 E = 3.48'

PC = STA. 14+29.48

PT = STA. 14+88.62

S77°07'53.39"E

15+00

16+00

17+00

18+00

CURVE DATA #1
 PI = 809+56.28
 D = 2°11'30.2" Lt.
 Δ = 47°36'40.2" Lt.
 R = 536.40'
 L = 150.00'
 T = 78.81'
 E = 1.24'

PC = STA. 808+97.47

PT = STA. 810+55.04

S0°00'20"E

19+00

20+00

21+00

22+00

SHEET NUMBER

3

OF 3

GOULDSBORO
ROUTE 186

GEOPLANS

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

PRELIMINARY PLANS

PIN 17121.00

HIGHWAY PLANS

PROJ. MANAGER	E. LOVELY	BY	DATE
DESIGN-DETAILED	S. HAYDEN	T. WHITE	JAN 2011
CHECKED-REVIEWED			
DESIGNS DET AILED			
DESIGNS DET AILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE