


**MEMORANDUM****(RA-006-2015)**

**TO:** Jill Asher, PE  
Project Management Coordinator  
Division of Highway Design

**FROM:** Bart Asher, PE, PLS  
Geotechnical Branch Manager  
Division of Structural Design

**BY:** Erik Scott, PE   
Geotechnical Branch

**DATE:** March 12, 2015

**SUBJECT:** Henry County  
JL03 052 0146 002-010  
KY 146 Reconstruction Segment No. 1: KY 153 to Lost Creek  
Mileposts 2.1 to 6.8  
Item No. 5-8300.00  
Mars No. 8304401D  
Geotechnical Engineering Roadway Report Addendum

The project involves reconstruction of KY 146 in Henry County from KY 153 to Lost Creek (approximate mileposts 2.1 to 6.8). The original geotechnical report for this project (R-034-2013) was completed by ICA Engineering, Inc. in November, 2014 and formally issued by KYTC Geotechnical Branch on November 21, 2014.

The structures for the project were drilled subsequent to the roadway investigation. The drilling was performed by Thelen Associates, Inc. under the Statewide Drilling Contract. The structure drilling included rockline soundings for six proposed Reinforced Concrete Pipes (RCPs). A plan view showing the borings obtained for each pipe is attached to this report. The pipe locations and proposed sizes are below.

<b>Proposed Pipe Size</b>	<b>Mainline Station</b>	<b>Boring Numbers</b>
54-inch	124+21.61	1001-1005
66-inch	191+83.53	1014-1016
54-inch	204+39.58	1017-1019
54-inch	209+26.19	1020-1022
60-inch	251+97.73	1029-1031
78-inch	263+38.62	1032-1033

The purpose of this addendum is to update the geotechnical profile sheets to include the pipe sounding information so the rockline information at these locations will be available to the Contractor. The geotechnical notes sheet will be revised to include a note that discusses the pipe borings. A note will also be added concerning construction methods for shale within new embankments. These revised geotechnical notes and profile sheets should replace the previous versions. The CADD input for these sheets, in DGN format, is being provided to the Design Consultant, GRW Engineers, Inc., for inclusion in the roadway plans.

**REVISED GEOTECHNICAL RECOMMENDATIONS:**

- 21.)** Rockline soundings were performed for the culvert pipes at the following approximate locations. See the Geotechnical Profile Sheets for rockline sounding information.

**KY 146**

Station 124+22

Station 191+84

Station 204+40

Station 209+26

Station 251+98

Station 263+39

- 22.)** All embankment construction using non-durable shale will be in accordance with Section 206 of the current Standard Specifications for Road and Bridge Construction, Embankments Principally of Non-Durable Shale.

**cc: Division of Design (Plan Processing Section)**  
**TEBM for Project Delivery & Preservation (District)**  
**TEBM for Project Development (District)**  
**Division of Construction**  
**Project Manager (District)**  
**GRW Engineers, Inc.**  
**ICA Engineering, Inc.**

**Attachments:**

# GEOTECHNICAL NOTES

1. Clearing and grubbing of roadway areas shall be completed in accordance with the requirements of Section 202 of the current Kentucky Department of Highways Standard Specifications for Road and Bridge Construction.
2. In accordance with Section 206 of the current Standard Specifications, the moisture content of embankment fill material shall not vary from the optimum moisture content as determined by KM 64-511 by more than +2 percent or less than –2 percent. This moisture content requirement shall have equal weight with the density requirement when determining the acceptability of embankment construction. Refer to the Family of Curves for moisture/density correlation.
3. All water wells or cisterns, septic tanks, catch basins, manholes, etc., that may be encountered within the limits of the construction, whether shown on plans or not, shall be plugged and/or capped in accordance with Section 708 of the current Kentucky Department of Highways Standard Specifications for Road and Bridge Construction.
4. All soils, whether from roadway or borrow, may require manipulation to obtain proper moisture content prior to compaction. Direct payment shall not be permitted for rehandling, hauling, stockpiling, and/or manipulating soils.
5. The contractor shall conduct grading operations in such a manner that limestone and/or durable rock obtained from roadway excavation shall be stockpiled separately or otherwise manipulated so that quantities are available for those areas requiring said material. No direct payment for hauling, stockpiling, and/or manipulating excavated material shall be permitted.
6. The Contractor shall conduct grading operations in such a manner that soil (free of rock larger than 4 inches and shale) from roadway excavation be stockpiled separately or otherwise manipulated so that ample quantities are available for a chemically stabilized roadbed meeting the requirements of Section 208 of the current Standard Specifications for Road and Bridge Construction. No direct payment will be allowed for such necessary manipulating as stockpiling, hauling and/or handling the material.
7. Excavation of surface ditches and channel changes adjacent to embankment areas shall be performed prior to the placement of the adjacent embankments. The material excavated for the channel changes and surface ditches is suitable for embankment construction if dried to proper moisture content in accordance with Section 206 of the current Standard Specifications.
8. Foundation embankment benches shall be placed in accordance with Standard Drawing RGX-010 at the locations listed below and/or as directed by the Engineer:

Approximate Station Limits	
Mainline	
110+75 to 112+25, Right	
113+75 to 115+75, Left & Right	
117+25 to 118+75, Left & Right	
124+75 to 125+25, Left	
129+25 to End Bent No. 1 Sta.135+14 Left	
End Bent No. 2 Sta.136+42 to 138+75, Left & Right	
159+25 to 160+25, Left & Right	
162+25 to 165+75, Right	
166+25 to 167+25, Left & Right	
211+25 to 213+75, Right	
217+75 to 218+75, Right	
245+75 to 250+75, Right	
251+75 to 252+75, Left	
255+25 to 255+75, Left	
End Bent No. 2 Sta. 268+00 to 269+25, Right	
289+25 to 290+75, Left & Right	
322+25 to End Bent No. 1 Sta. 323+85 Left	

9. Conventional transverse benches at cut to fill transitions shall be constructed and perforated pipe be placed in accordance with Standard Drawings RDP-005 & RDP-006 at the following approximate locations and/or as directed by the Engineer. Contrary to Standard Drawing RDP-006 the transverse benching and perforated pipe underdrains shall be installed on both the upgrade and the downgrade cut to fill transitions.
- Approximate Station Limits

Mainline	
118+69	190+11
122+40	192+93
125+06	195+92
128+42	205+18
150+64	207+37
159+31	211+09
161+02	215+91
166+15	236+05
168+24	238+75
175+49	240+87
180+88	243+45
182+75	316+18
186+21	318+65
10. Perforated pipe for subgrade drainage is typically placed in accordance with Standard Drawing RDP-005 in vertical sags. The following mainline locations shall use perforated pipe at the specified stations, or as directed by the Engineer:
- |          |  |
|----------|--|
| Mainline |  |
| 134+33   |  |
| 148+07   |  |
| 178+13   |  |
| 204+03   |  |
| 222+03   |  |
| 262+44   |  |
| 306+75   |  |
| 331+00   |  |
11. As directed by the Engineer, adequate drainage shall be provided for any natural spring outlets encountered within the construction limits, whether shown on plans or not. Adequate drainage shall be provided by constructing spring box inlets, if there is a defined throat, in accordance with the Kentucky Department of Highway Standard Drawings RDX-010-04 or RDX-011-04. The outlet pipes should extend to the downstream embankment toes for discharge of water onto exterior grades. If there is no defined throat then a one (1) foot drainage blanket wrapped with Type IV Geotextile Fabric shall be used.
12. A minimum of one foot of Kentucky Coarse Aggregate #2's, 3's, or 23's shall be constructed in the areas that chemical stabilization is not feasible due to maintenance of traffic considerations (entrances, cross-overs, or approaches), tie-ins, tapers, etc. The Kentucky Coarse Aggregate shall be in accordance with the current edition of Section 805 and shall be wrapped with Geotextile Fabric, Type IV in accordance with Sections 214 & 843 of the current Standard Specifications. The actual locations and thicknesses shall be determined by the Engineer during construction and may fluctuate due to seasonal changes in the ground water table. At the discretion of the Engineer, quantities may be increased or decreased during construction.

# GEOTECHNICAL NOTES

13.

In areas where shale or limestone bedrock is encountered at the top of subgrade in the cuts, the roadbed shall be undercut one (1) foot below the proposed grade and the limits of the roadbed excavation shall be extended to the ditchlines. The refill shall consist of soil and shall be constructed as specified in Section 204 of the Standard Specifications for Road and Bridge Construction, current edition. Shale cannot be used in the top one foot of the subgrade. For Roadway Excavation projects, the excavation of the shale or limestone material shall be paid at the unit bid price for Roadway Excavation and the placement of soil refill shall be incidental. For Embankment-In-Place projects, the placement of soil refill shall be paid at the unit bid price for Embankment-In-Place and the excavation of the shale material shall be incidental. For either case, no compensation shall be made for the incidental portions of this work.
14.

Construct a chemically modified soil subgrade with a CBR value of 3.0 for the underlying soil. Where soft and/or wet subgrade is encountered during construction, the thickness of the chemically modified soil may need to be adjusted to also serve as a working platform for subgrade stabilization. These adjustments shall be as directed by the Engineer, and may depend on seasonal fluctuations in the water table.
15.

Any saturated, soft foundation areas, and/or drainage swales within embankment foundation limits shall be drained if necessary and stabilized with durable rock from roadway excavation. A thickness of 3 feet is estimated for this treatment, for quantity estimation purposes only. Soft, saturated foundation areas and/or drainage swales were noted within the following intervals, but the occurrence of such areas is not limited to these locations. The actual locations will be determined by the Engineer during construction.

Approximate Station Limits  
Mainline  
Station 337+55 to 338+06 (Pond)

16.

As directed by the Engineer, existing bituminous concrete located at a distance greater than three feet below the proposed subgrade elevation within the limits of new roadway embankments, shall be scarified or broken until all cleavage planes are destroyed, or the pavement shall be removed entirely as conditions demand. This shall be performed in compliance with Section 206 of the Standard Specifications for Road and Bridge Construction.
17.

Existing bituminous concrete that is not being overlaid, and is located at a distance less than three feet below the proposed subgrade elevation within the limits of new roadway embankments, shall be removed entirely. This shall be performed in compliance with Section 206 of the Standard Specifications for Road and Bridge Construction.
18.

Borrow material, if required for subgrade, shall meet the minimum CBR design value of 3.0.
19.

Some of the soil horizons and slopes on the project are subject to erosion. Necessary procedures in accordance with Sections 212 and 213 of the current Standard Specifications shall be followed on construction.
20.

Slope protection will be required for bridge spill-through slopes meeting the requirements of Sections 703 & 805 of the Standard Specifications for Road and Bridge Construction, current edition. The limits, size, and thickness of the slope protection shall be as specified in HEC 23. Place a Type I Geotextile Fabric, in accordance with Sections 214 & 843 of the current Standard Specifications between the embankment and the slope protection.

21.

Rockline soundings were performed for the culvert pipes at the following approximate locations. See the Geotechnical Profile Sheets for rockline sounding information.

Mainline

Station 124+22

Station 191+84

Station 204+40

Station 209+26

Station 251+98

Station 263+39
22.

All embankment construction using non-durable shale will be in accordance with Section 206 of the current Standard Specifications for Road and Bridge Construction, Embankments Principally of Non-Durable Shale.

SAMPLE NO.	1	2	55
	101+00	119+00	110+00
	36' LT.	35' RT.	36' RT.
	0.0'-4.8'	0.5'-5.5'	0.5'-7.6'
COMPOSITION OF TOTAL SAMPLE	GRAVEL (-3" + NO.10)	7	0
	SAND (-NO.10 + NO.200)	19	3
	SILT (-NO.200 + 0.002 mm)	45	48
	CLAY (-0.002 mm)	30	48
LIQUID LIMIT		23	47
PLASTIC LIMIT		15	28
PLASTICITY INDEX		8	19
ACTIVITY INDEX		0.27	0.39
SPECIFIC GRAVITY		2.81	2.76
AASHTO CLASSIFICATION		A-4(3)	A-7-6(22)
UNIFIED CLASSIFICATION		CL	ML
CALF. BEARING RATIO		1.8	4.0
DRY DENSITY, AASHTO T-99 (pcf)		110.6	99.6
OPTIMUM MOISTURE (%)		17.0	22.2
Z + No. 4		3	0

BEGIN CONSTRUCTION STA. 100+19.28

REFER TO GEOTECHNICAL NOTE 8 FOR STA. 110+75 TO STA. 112+25

REFER TO GEOTECHNICAL NOTE 8 FOR STA. 113+75 TO STA. 115+75

REFER TO GEOTECHNICAL NOTE 8 FOR STA. 117+25 TO STA. 118+75

REFER TO EMBANKMENT STABILITY SECTION FOR STA. 118+00

REFER TO GEOTECHNICAL NOTE 9 FOR STA. 118+69

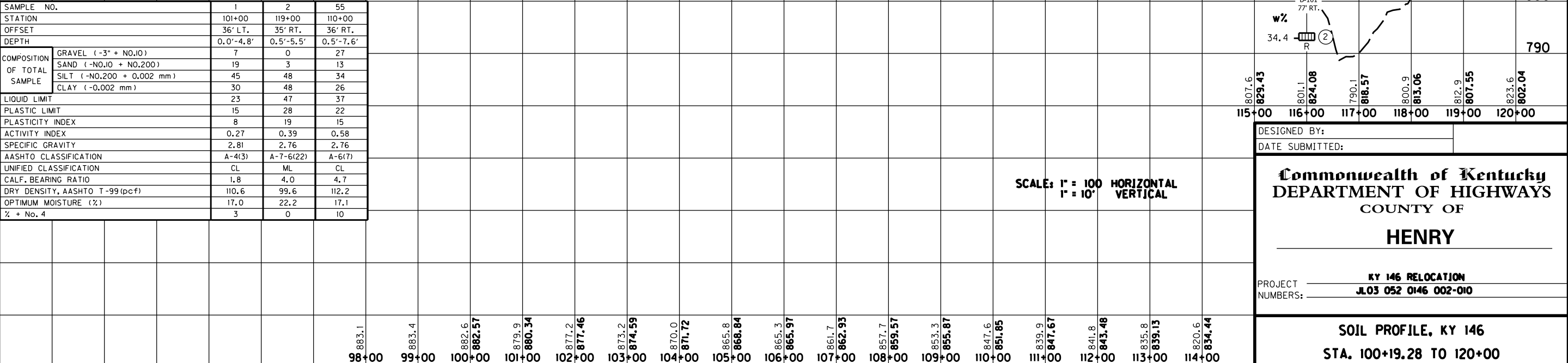
SCALE: 1" = 100 HORIZONTAL  
1" = 10' VERTICAL

DESIGNED BY:  
DATE SUBMITTED:

Commonwealth of Kentucky  
DEPARTMENT OF HIGHWAYS  
COUNTY OF  
**HENRY**

PROJECT **KY 146 RELOCATION**  
NUMBERS: **JL03 052 0146 002-010**

SOIL PROFILE, KY 146  
STA. 100+19.28 TO 120+00



REFER TO EMBANKMENT STABILITY  
SECTION FOR STA. 124+50

REFER TO GEOTECHNICAL NOTE 8  
FOR STA. 129+25 TO 135+14

REFER TO GEOTECHNICAL NOTE 8  
FOR STA. 136+42 TO 138+75

REFER TO GEOTECHNICAL NOTE 10  
FOR STA. 148+07

REFER TO CUT STABILITY  
SECTION FOR STA. 127+00

REFER TO GEOTECHNICAL NOTE 10  
FOR STA. 134+33

REFER TO GEOTECHNICAL NOTE 9  
FOR STA. 122+40, STA. 125+06  
AND STA. 128+42

REFER TO GEOTECHNICAL NOTE 8  
FOR STA. 124+75 TO STA. 125+25

Additional Rockline Soundings for  
Culvert Pipe at Station 124+22

Hole No.	Station	Offset	Surface Elev.	Refusal Elev.	Depth to Refusal
1001	124+97.04	74.1' Lt.	758.0	754.2	3.8'
1002	124+59.69	36.2' Lt.	760.4	756.5	3.9
1003	124+19.77	2.2' Rt.	759.3	757.5	1.8'
1004	123+79.51	39.5' Rt.	763.4	759.2	4.2'
1005	123+37.03	79.9' Rt.	763.2	761.6	1.6'

REFER TO GEOTECHNICAL NOTE 21 FOR STA. 124+22

SAMPLE NO.	3	4	6	7	51	52
STATION	122+00	152+01	143+00	137+00	129+00	127+00
OFFSET	36' LT.	36' LT.	36' LT.	40' LT.	36' RT.	60' RT.
DEPTH	0.4'-9.8'	0.0'-4.7'	0.0'-8.0'	8.0'-10.0'	0.5'-9.1'	0.0'-12.8'
COMPOSITION OF TOTAL SAMPLE	GRAVEL (-3" + NO.10)	1	32	12	0	5
	SAND (-NO.10 + NO.200)	6	5	15	2	9
	SILT (-NO.200 + 0.002 mm)	52	29	37	72	39
	CLAY (-0.002 mm)	41	33	35	25	48
LIQUID LIMIT	37	53	40	34	50	36
PLASTIC LIMIT	21	27	23	22	24	31
PLASTICITY INDEX	16	26	17	12	26	5
ACTIVITY INDEX	0.39	0.78	0.48	0.47	0.54	0.14
SPECIFIC GRAVITY	2.75	2.78	2.82	2.70	2.79	2.77
AASHTO CLASSIFICATION	A-6(15)	A-7-6(15)	A-6(12)	A-7-6(12)	A-7-6(25)	A-4(5)
UNIFIED CLASSIFICATION	CL	CH	CL	CL	CH	ML
CALF. BEARING RATIO	3.9	2.6	2.8	7.7	3.7	3.0
DRY DENSITY, AASHTO T-99 (pcf)	102.4	98.1	104.9	102.2	103.2	-
OPTIMUM MOISTURE (%)	22.2	22.8	20.2	19.2	21.5	-
% + No. 4	0	7	1	0	2	6

SCALE: 1" = 100' HORIZONTAL  
1" = 10' VERTICAL

SOIL PROFILE, KY 146  
STA. 120+00 TO 150+00

REFER TO GEOTECHNICAL NOTE 9  
FOR STA. 150+64

REFER TO EMBANKMENT STABILITY  
SECTION FOR STA. 160+00

REFER TO GEOTECHNICAL NOTE 9  
FOR STA. 166+15 AND STA. 168+24

REFER TO GEOTECHNICAL NOTE 9  
FOR STA. 159+31 AND STA. 161+02

REFER TO EMBANKMENT STABILITY  
SECTION FOR STATION 167+50

REFER TO EMBANKMENT STABILITY  
SECTION FOR STA. 163+00

REFER TO CUT STABILITY  
SECTION FOR STA. 170+50

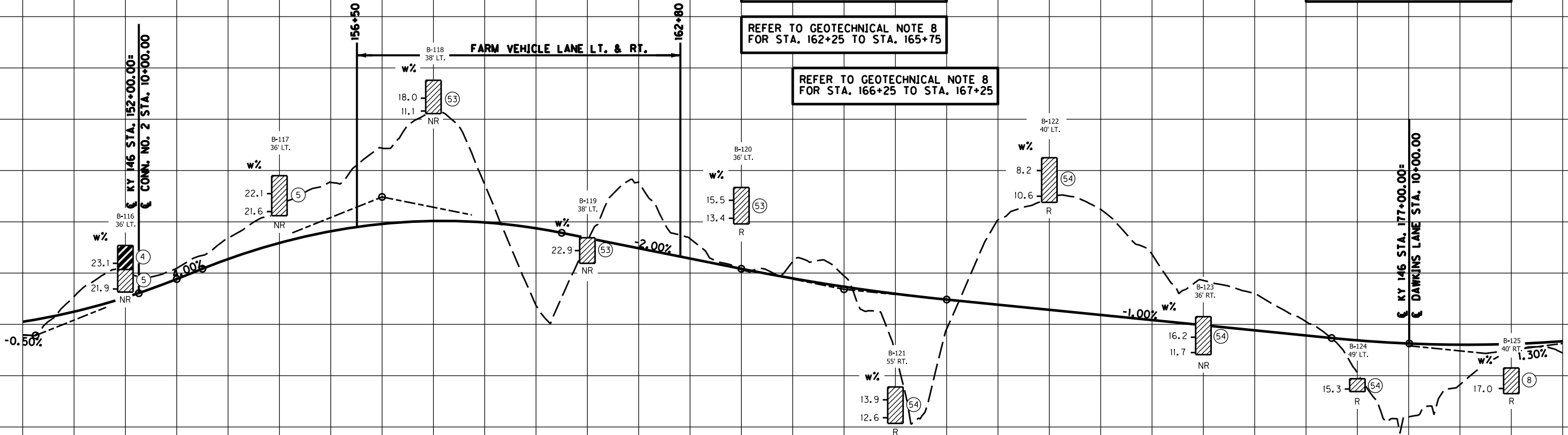
REFER TO GEOTECHNICAL NOTE 9  
FOR STA. 175+49

REFER TO GEOTECHNICAL NOTE 8  
FOR STA. 159+25 TO STA. 160+25

REFER TO GEOTECHNICAL NOTE 10  
FOR STA. 178+13

REFER TO GEOTECHNICAL NOTE 8  
FOR STA. 162+25 TO STA. 165+75

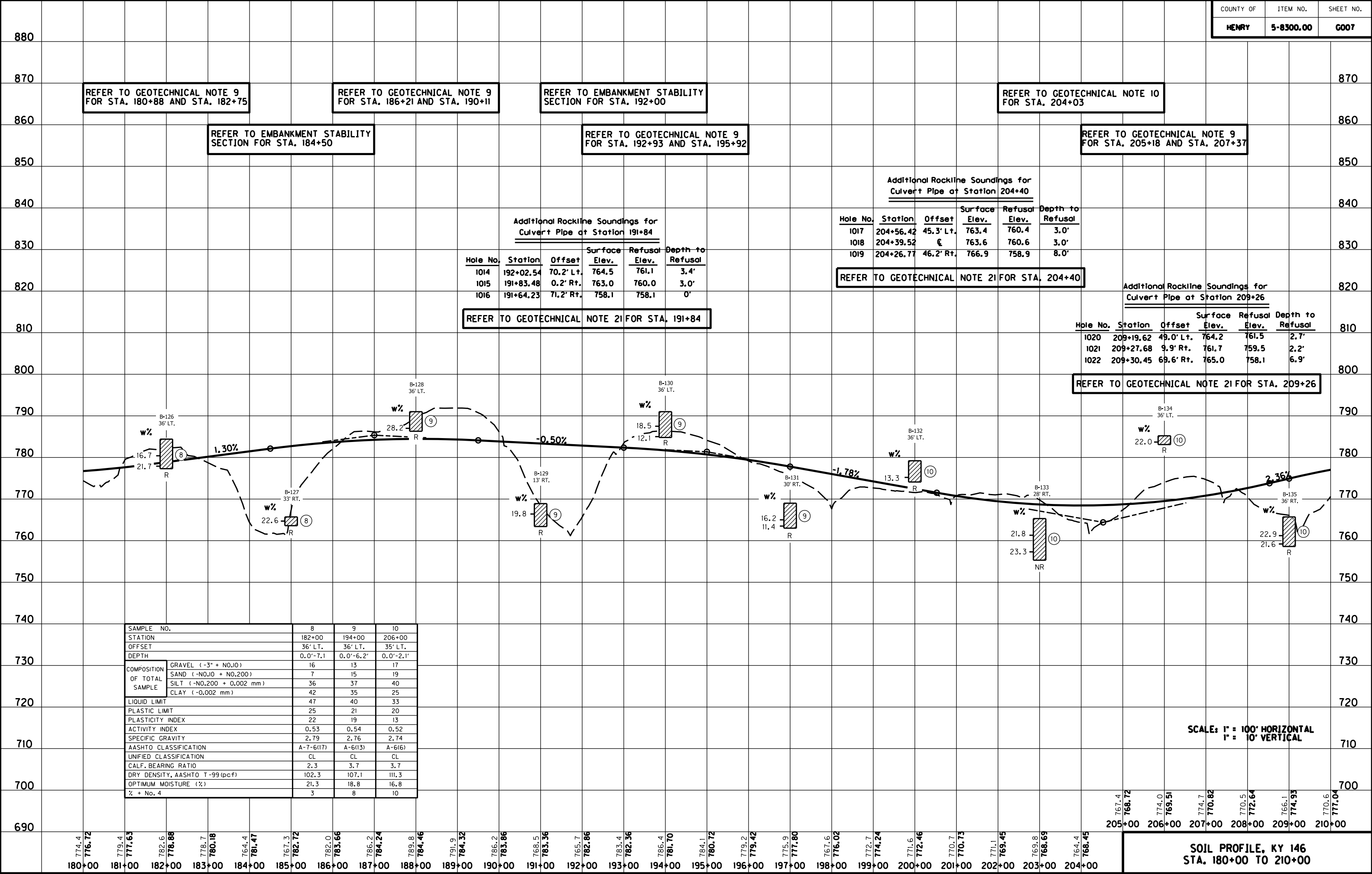
REFER TO GEOTECHNICAL NOTE 8  
FOR STA. 166+25 TO STA. 167+25



SAMPLE NO.	4	5	8	53	54
STATION	152+01	152+01	182+00	161+01	170+00
OFFSET	36' LT.	36' LT.	36' LT.	38' LT.	40' LT.
DEPTH	0.0'-4.7'	4.7'-9.1'	0.0'-7.1'	0.5'-5.0'	0.5'-8.7'
COMPOSITION OF TOTAL SAMPLE	GRAVEL (-3" + NO.10)	32	30	16	17
	SAND (-NO.10 + NO.200)	5	8	7	7
	SILT (-NO.200 + 0.002 mm)	29	30	36	52
	CLAY (-0.002 mm)	33	32	42	25
LIQUID LIMIT	53	46	47	28	24
PLASTIC LIMIT	27	23	25	18	16
PLASTICITY INDEX	26	23	22	10	8
ACTIVITY INDEX	0.78	0.71	0.53	0.41	0.41
SPECIFIC GRAVITY	2.78	2.80	2.79	2.78	2.72
AASHTO CLASSIFICATION	A-7-6(15)	A-7-6(12)	A-7-6(17)	A-4(6)	A-4(2)
UNIFIED CLASSIFICATION	CH	CL	CL	CL	CL
CALF. BEARING RATIO	2.6	2.3	2.3	3.0	6.0
DRY DENSITY, AASHTO T-99(pcf)	98.1	103.8	102.3	115.9	117.1
OPTIMUM MOISTURE (%)	22.8	19.3	21.3	14.5	13.5
% + No. 4	7	21	3	9	5

SCALE: 1" = 100' HORIZONTAL  
1" = 10' VERTICAL

SOIL PROFILE, KY 146  
STA. 150+00 TO 180+00





REFER TO GEOTECHNICAL NOTE 9  
FOR STA. 211+09 AND STA. 215+91

REFER TO GEOTECHNICAL NOTE 8  
FOR STA. 275+75 TO STA. 218+75

REFER TO GEOTECHNICAL NOTE 9  
FOR STA. 236+05 AND  
STA. 238+75

REFER TO GEOTECHNICAL NOTE 8  
FOR STA. 211+25 TO STA. 213+75

REFER TO GEOTECHNICAL NOTE 10  
FOR STA. 222+03

SAMPLE NO.		10	11	12	17
STATION		206+00	233+00	224+00	215+00
OFFSET		35' LT.	37' LT.	45' RT.	36' LT.
DEPTH		0.0'-2.1'	0.0'-9.0'	0.0'-5.0'	0.0'-5.7'
COMPOSITION OF TOTAL SAMPLE	GRAVEL (-3" + NO.10)	17	6	1	15
	SAND (-NO.10 + NO.200)	19	14	14	20
	SILT (-NO.200 + 0.002 mm)	40	42	49	38
	CLAY (-0.002 mm)	25	38	36	27
LIQUID LIMIT		33	45	40	31
PLASTIC LIMIT		20	26	24	16
PLASTICITY INDEX		13	19	16	15
ACTIVITY INDEX		0.52	0.51	0.45	0.56
SPECIFIC GRAVITY		2.74	2.73	2.78	2.75
AASHTO CLASSIFICATION		A-6(6)	A-7-6(16)	A-6(14)	A-6(7)
UNIFIED CLASSIFICATION		CL	CL	CL	CL
CALF. BEARING RATIO		3.7	4.7	4.4	3.3
DRY DENSITY, AASHTO T-99 (pcf)		111.3	102.9	99.9	110.5
OPTIMUM MOISTURE (%)		16.8	20.2	20.9	17.0
% + No. 4		10	3	0	5

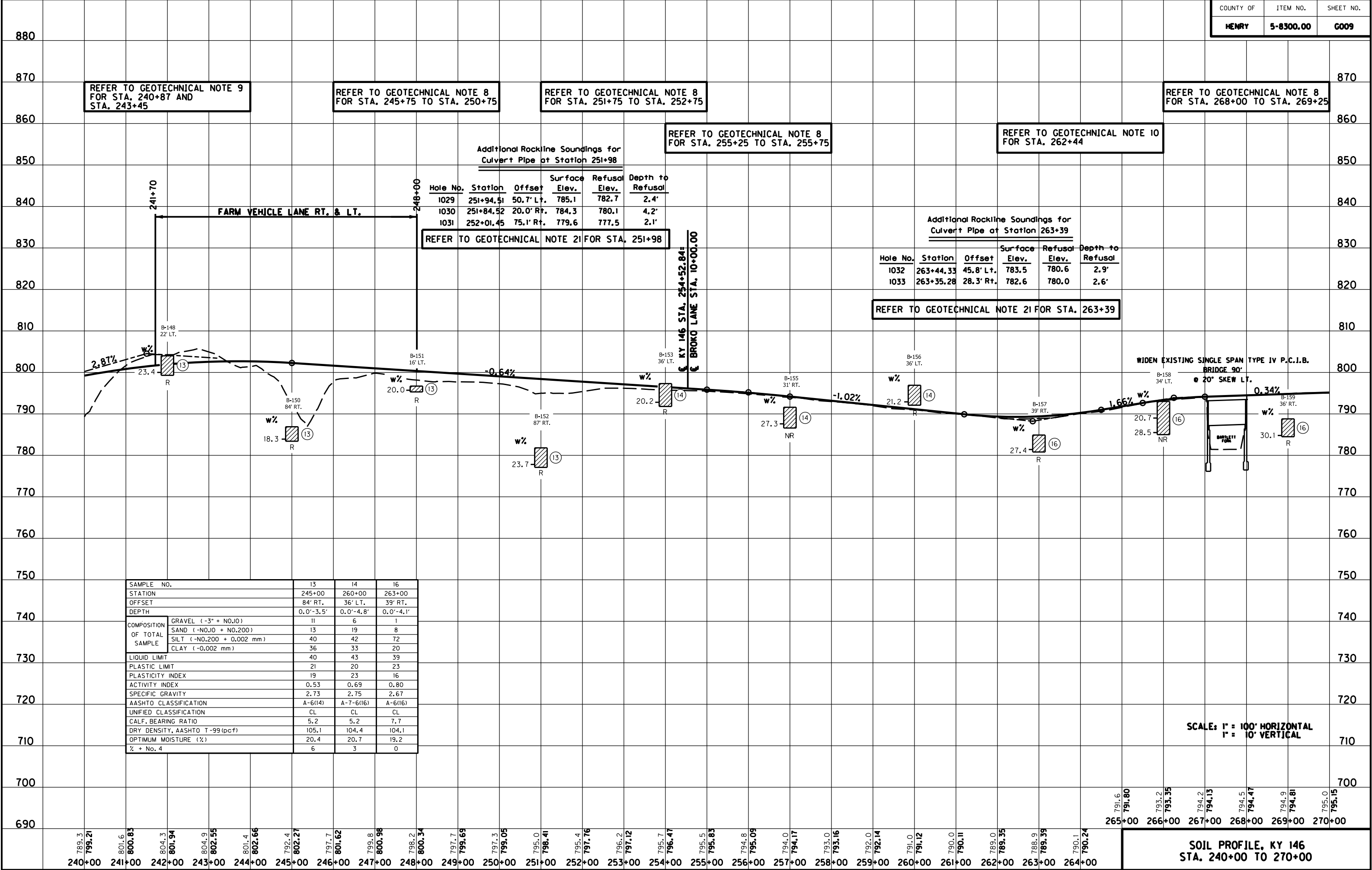
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1" = 10' VERTICAL

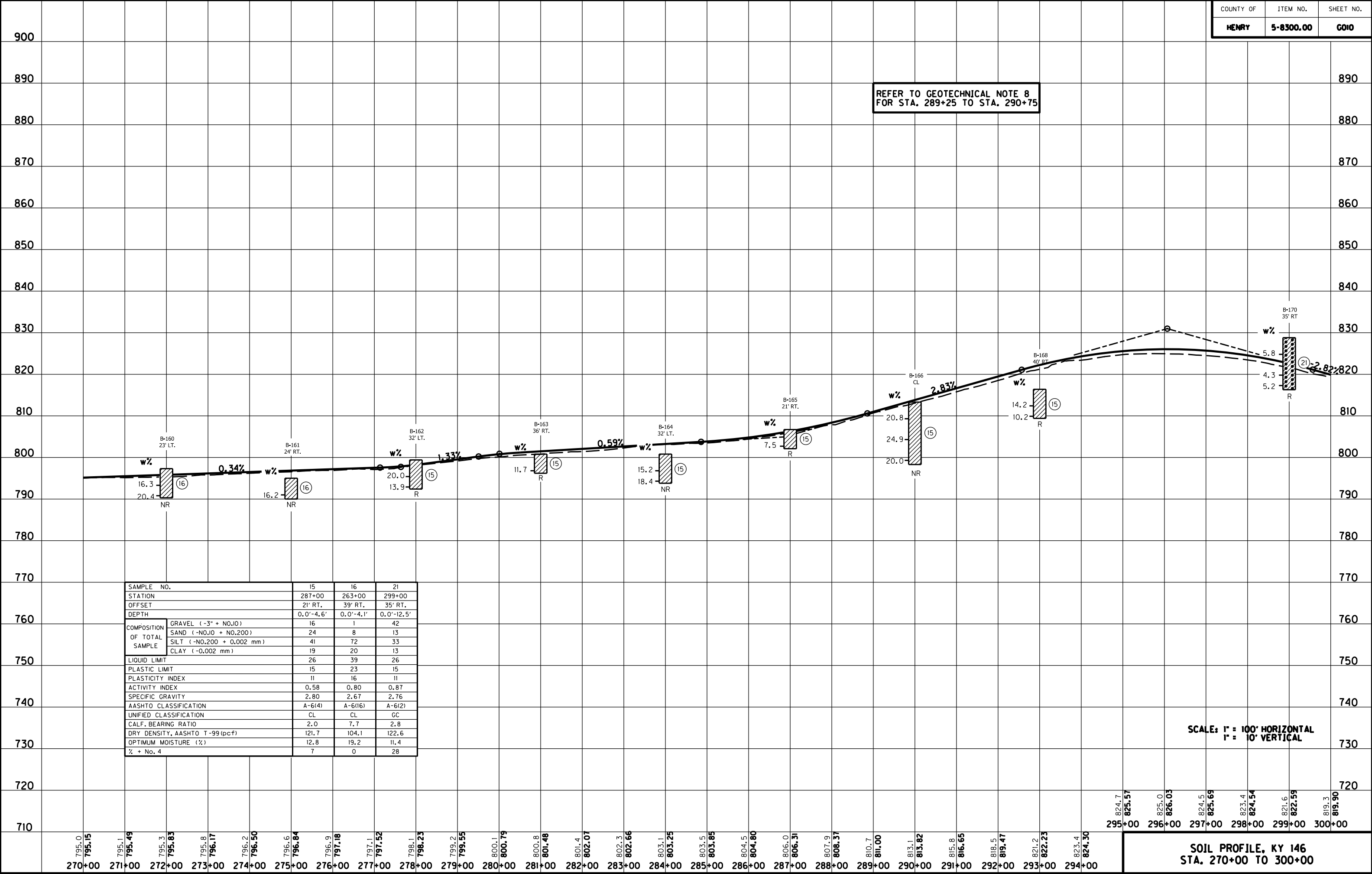
SOIL PROFILE, KY 146  
STA. 210+00 TO 240+00

SAMPLE NO.	13	14	16
STATION	245+00	260+00	263+00
OFFSET	84' RT.	36' LT.	39' RT.
DEPTH	0.0'-3.5'	0.0'-4.8'	0.0'-4.1'
COMPOSITION OF TOTAL SAMPLE	GRAVEL (-3" + NO.10)	11	6
	SAND (-NO.10 + NO.200)	13	19
	SILT (-NO.200 + 0.002 mm)	40	42
	CLAY (-0.002 mm)	36	33
LIQUID LIMIT	40	43	39
PLASTIC LIMIT	21	20	23
PLASTICITY INDEX	19	23	16
ACTIVITY INDEX	0.53	0.69	0.80
SPECIFIC GRAVITY	2.73	2.75	2.67
AASHTO CLASSIFICATION	A-6(14)	A-7-6(16)	A-6(16)
UNIFIED CLASSIFICATION	CL	CL	CL
CALF. BEARING RATIO	5.2	5.2	7.7
DRY DENSITY, AASHTO T-99 (pcf)	105.1	104.4	104.1
OPTIMUM MOISTURE (%)	20.4	20.7	19.2
% + No. 4	6	3	0

Additional Rockline Soundings for Culvert Pipe at Station 251+98						
Hole No.	Station	Offset	Surface Elev.	Refusal Elev.	Depth to Refusal	
1029	251+94.51	50.7' Lt.	785.1	782.7	2.4'	
1030	251+84.52	20.0' Rt.	784.3	780.1	4.2'	
1031	252+01.45	75.1' Rt.	779.6	777.5	2.1'	

Additional Rockline Soundings for Culvert Pipe at Station 263+39						
Hole No.	Station	Offset	Surface Elev.	Refusal Elev.	Depth to Refusal	
1032	263+44.33	45.8' Lt.	783.5	780.6	2.9'	
1033	263+35.28	28.3' Rt.	782.6	780.0	2.6'	



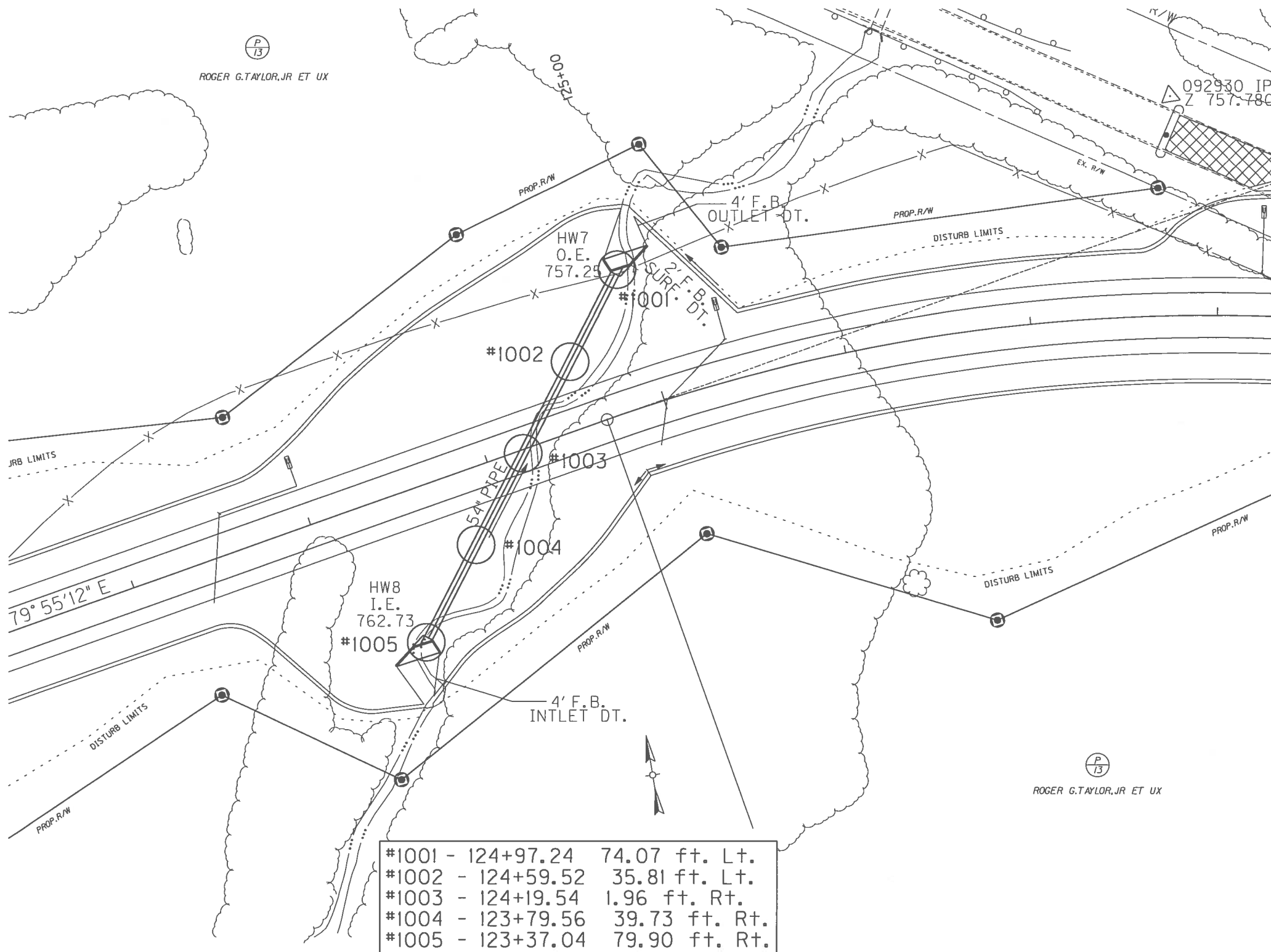








ROGER G. TAYLOR, JR ET UX

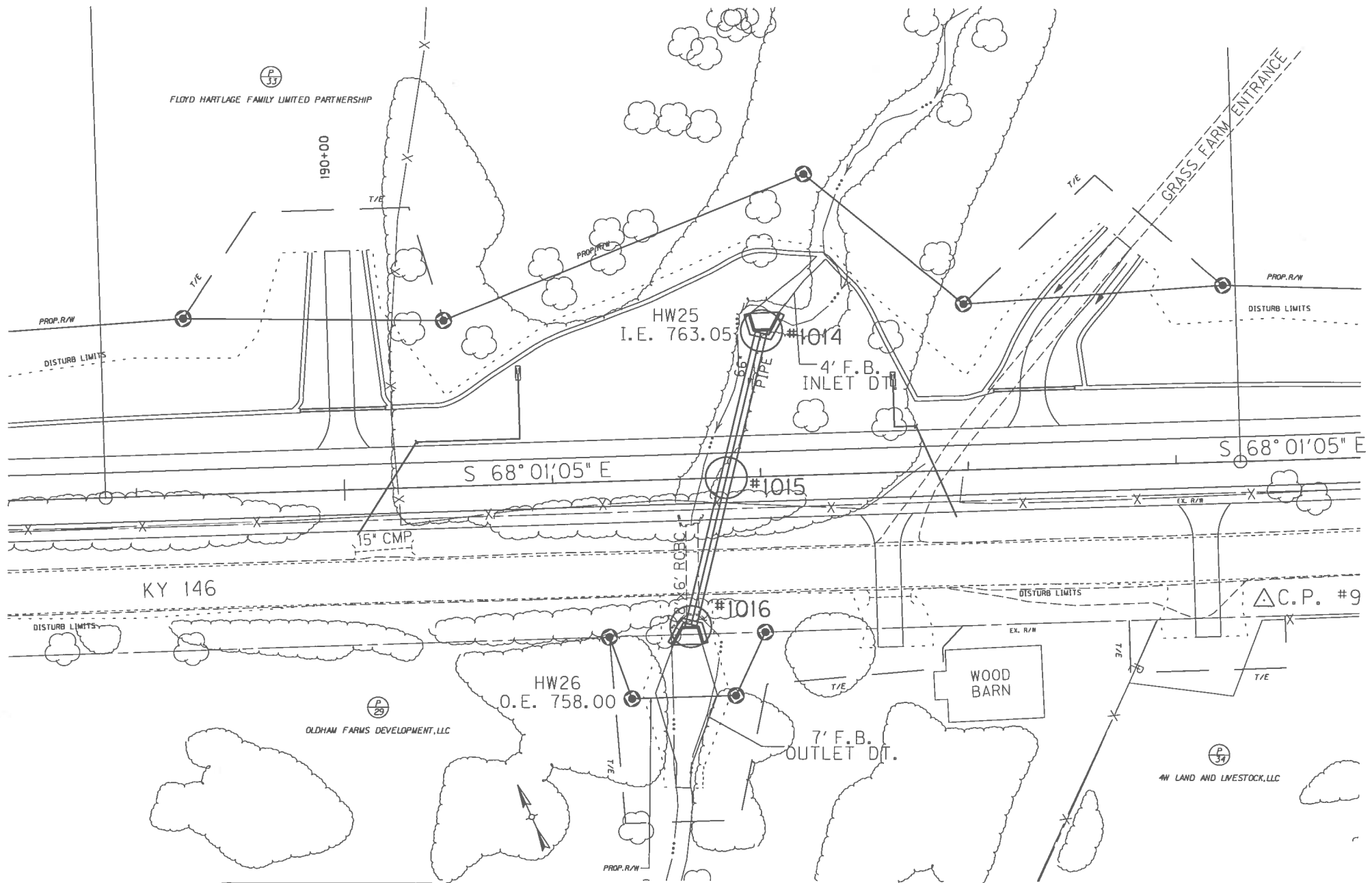


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ROGER G. TAYLOR, JR ET UX

#1001	- 124+97.24	74.07 ft. Lt.
#1002	- 124+59.52	35.81 ft. Lt.
#1003	- 124+19.54	1.96 ft. Rt.
#1004	- 123+79.56	39.73 ft. Rt.
#1005	- 123+37.04	79.90 ft. Rt.



#1014	- 192+02.56	70.18 ft. Lt.
#1015	- 191+83.53	⊙
#1016	- 191+64.23	71.19 ft. Rt.

FLOYD HARTLAGE FAMILY LIMITED PARTNERSHIP

T/E

PROP. R/W

DISTURB LIMITS

4' F.B. INLET DT.

205+00

MESI  
I.E. 761.74

#1017

#1018

#1019

S 75°15'43" E

KY 146

DISTURB LIMITS

• SIGN

EX. R/W

HW29  
O.E. 760.64

4' F.B. OUTLET DT.

DISTURB LIMITS

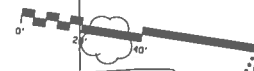
T/E

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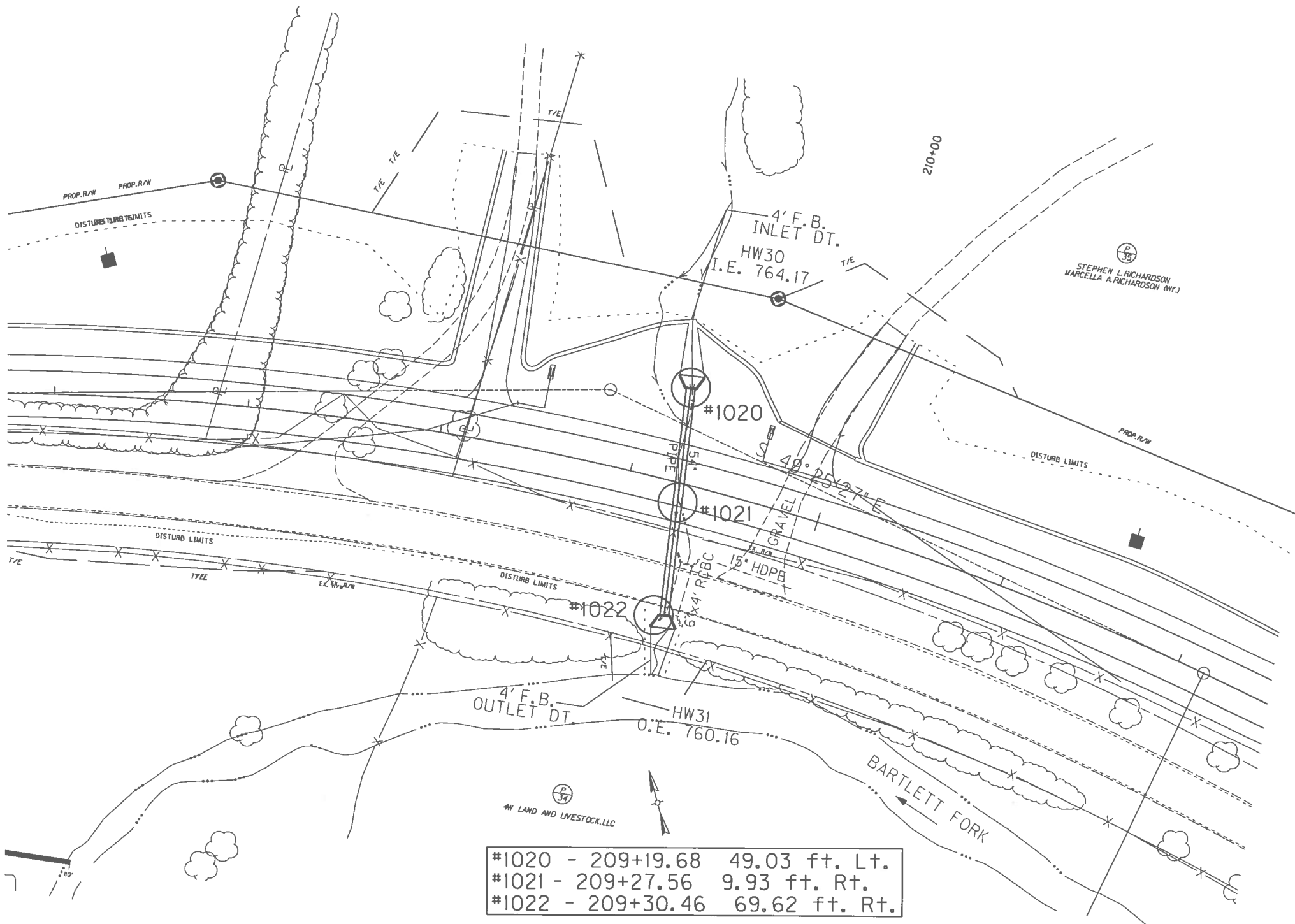
EX. R/W

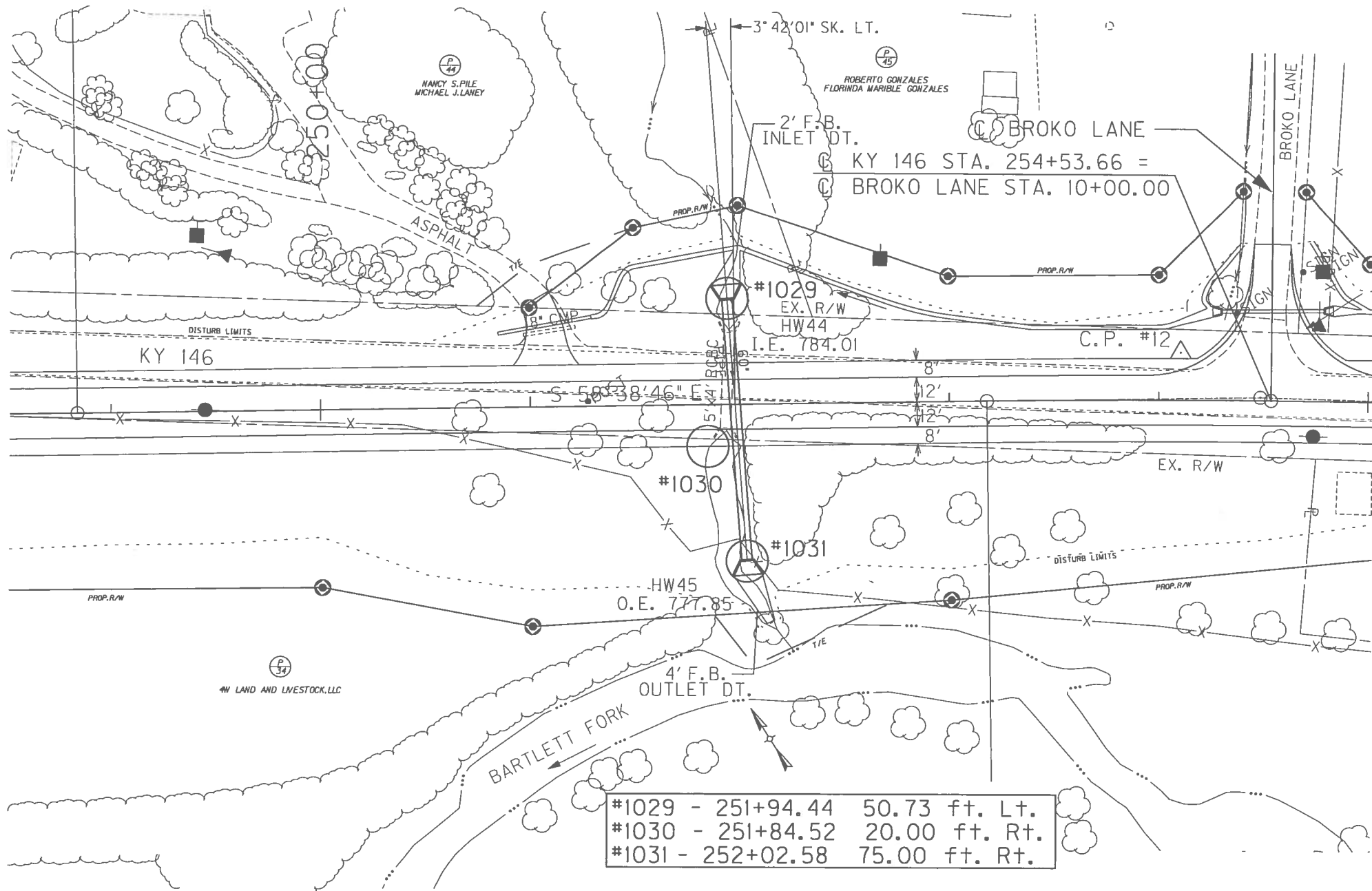
AW LAND AND LIVESTOCK, LLC

#1017	-	204+56.50	45.42 ft. Lt.
#1018	-	204+39.58	Q
#1019	-	204+26.86	46.14 ft. Rt.









JESSIE D.CHISHOLM  
ALMA K.CHISHOLM

JESSIE D. CHISHOLM  
ALMA K. CHISHOLM

265+00

#1032	- 263+44.34	45.75 ft. L+.
#1033	- 263+35.40	28.38 ft. R+.

KY 146 RECONSTRUCTION

BARRY WAYNE LEIGEY  
EDNA JEAN LEIGEY

SEPTIC TANK

LEACH  
FIELD

— 2' F.B.  
INLET DT.

#1032  
MES4  
I.E. 781.20

#1033  
MES5  
O.E. 781.11

~~KY 146~~

S 56° 05' 46" E

LEACH  
FIELD

LEACH  
FIELD

-LEACH  
FIELD

MOBILE  
RES

SEPTIC  
TANK

MOBILE  
RES

SEPTIC  
TANK

4' F.B. -  
OUTLET DT

BARRY WAYNE LEIGEY  
EDNA JEAN LEIGEY

4W LAND AND LIVESTOCK, LLC

4W LAND AND LIVESTOCK, LLC

WHITE FAMILY FARM, LLC

**COORDINATE DATA SUBMISSION FORM**  
**KYTC DIVISION OF STRUCTURAL DESIGN -- GEOTECHNICAL BRANCH**

County HENRY

Date 12/1/2014

Road Number KY 146

Survey Crew / Consultant GRW ENGINEERS, INC.

Contact Person Tim Robinson

Item # 5-8300.00

Mars # PON2-625-1100000003

Project # JL03 052 0146 002-010

Notes:

Elevation Datum = NAVD88 or ASSUMED

**PIPES**

HOLE NUMBER	LATITUDE (Decimal Degrees)	LONGITUDE (Decimal Degrees)	HOLE NUMBER	STATION	OFFSET	ELEVATION (ft)
<b>KY 146 MAINLINE</b>						
1001	38.45300	-85.28585	1001	124+97.04	-74.1	757.97
1002	38.45288	-85.28597	1002	124+59.69	-36.2	760.40
1003	38.45276	-85.28608	1003	124+19.77	2.2	759.29
1004	38.45264	-85.28620	1004	123+79.51	39.5	763.40
1005	38.45251	-85.28632	1005	123+37.03	79.9	763.22
1014	38.45139	-85.26456	1014	192+02.54	-70.2	764.52
1015	38.45123	-85.26472	1015	191+83.48	0.2	763.04
1016	38.45107	-85.26487	1016	191+73.34	67.4	768.38
1017	38.45021	-85.26048	1017	204+56.42	-45.3	763.43
1018	38.45011	-85.26058	1018	204+39.52	0.0	763.60
1019	38.44999	-85.26066	1019	204+26.77	46.2	766.92
1020	38.44976	-85.25893	1020	209+19.62	-49.0	764.23
1021	38.44961	-85.25901	1021	209+27.68	9.9	761.66
1022	38.44946	-85.25910	1022	209+30.45	69.6	764.98
1029	38.44316	-85.24661	1029	251+94.51	-50.7	785.08
1030	38.44301	-85.24676	1030	251+80.41	22.5	784.25
1031	38.44286	-85.24681	1031	252+01.45	75.1	779.55
1032	38.44140	-85.24327	1032	263+44.33	-45.8	783.47
1033	38.44125	-85.24344	1033	263+35.28	28.3	782.57
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