TO:	Jill Asher, PE
	<b>Project Management Coordinator</b>
	<b>Division of Highway Design</b>

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.

Proposed Pipe Size	Mainline Station	Boring Numbers
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.

J. Asher (RA-006-2015) Item No. 5-8300.00 3/12/15 Page 2 of 2

### **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.

### <u>KY 146</u>

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

- Clearing and grubbing of roadway areas shall be completed in accordance with the requirements 1 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.
- All soils, whether from roadway or borrow, may require manipulation to obtain proper moisture 4 content prior to compaction. Direct payment shall not be permitted for rehandling, hauling, stockpiling, and/or manipulating soils.
- The contractor shall conduct grading operations in such a manner that limestone and/or durable 5. 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.
- The Contractor shall conduct grading operations in such a manner that soil (free of rock larger 6 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

Conventional transverse benches at cut to fill transitions shall be constructed and perforated 9 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

Main	line
118+69	19
122+40	19
125+06	19
128+42	20
150+64	20
159+31	21
161+02	21
166+15	23
168+24	23
175+49	24
180+88	24
182+75	31
186+21	31

Perforated pipe for subgrade drainage is typically placed in accordance with Standard Drawing 10. 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

- As directed by the Engineer, adequate drainage shall be provided for any natural spring outlets 11. 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.

HENRY 5-8300.00 G002	HENRY
COUNTY OF ITEM NO. SHEET NO.	COUNTY OF

90+11 92+93 95+92 05+18 07+37 11+09 15+91 36+05 38+75 40+87 43+45 16+18 18+65

# GEOTECHNICAL NOTES

- In areas where shale or limestone bedrock is encountered at the top of subgrade in the cuts, the 13. 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.
- Construct a chemically modified soil subgrade with a CBR value of 3.0 for the underlying soil. 14. 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)

- As directed by the Engineer, existing bituminous concrete located at a distance greater than three 16 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.
- Borrow material, if required for subgrade, shall meet the minimum CBR design value of 3.0. 18.
- Some of the soil horizons and slopes on the project are subject to erosion. Necessary procedures 19. in accordance with Sections 212 and 213 of the current Standard Specifications shall be followed on construction.
- Slope protection will be required for bridge spill-through slopes meeting the requirements of 20. 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.

Rockline soundings were performed for the culvert pipes at the following approximate locations. 21. 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

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

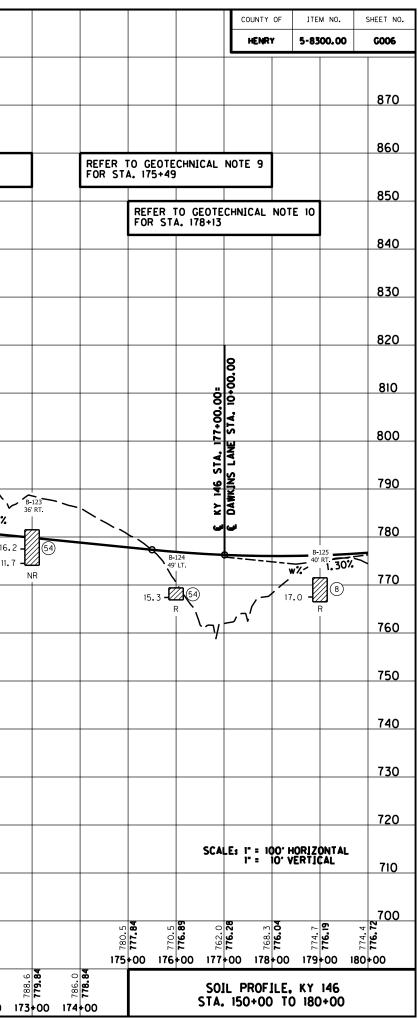
HENRY	5-8300.00	G003	
COUNTY OF	ITEM NO.	SHEET NO.	

																						COUNTY	OF ITEM	NO. SH	HEET NO.
																						HEN			G004
930														R	EFER_TO	GEOTECHN 110+75 TO	ICAL NO	TE 8							
920														FC	OR STA.	110+75 TO	STA. 112	2+25							920
520														RE	EFER TO	GEOTECHN 113+75 TO	ICAL NO	TE 8		F	REFER TO GEOTE		NOTE 8		320
910														Ľ		113+75 10	51A. II:	5+15		Ľ	OR STA. 117725		10+13		910
5.0																				F	REFER TO EMBAN	KMENT S	TABILITY		
900																									900
		BE	EGIN CO	NSTRUCTI( +19.28																	REFER TO GEOTE FOR STA. 118+69	CHNICAL	NOTE 9		
890					$\square \searrow$																				890
				- 07	•/		B-96 36' LT.																		
880				<u>0.97</u>	/ <b></b>			<u>,                                     </u>		B-97															880
							25.2 - R		-2, ₩%	36' RT.															
870												B-98 36' LT													870
									(.)-	R I V		w%													
860												6.4 R	55 <b></b>	<b></b>											860
															B-99 36' RT	·.						<b>PP·</b>			
850															×?	-4.19:					1.95=	<u>}</u>			850
															9.6	(55) (~		B-100 21' LT			, 116+84,95=				
840															- 8.5		~	w?			STA, 1				840
															R			8.3-55			146 S				
830																		- 8.6 - R					B-102 35' RT.		830
820																			$\mathbf{i}$		<b>.</b>		1 1		820
820																							19.9 -	2	820
810																						3			810
010																					<b>~</b> .		$\succ$		010
800																									800
	SAMPLE NO. STATION	10	01+00 119	2 55 +00 110+00																	₩%   \	, - <sup>1</sup>			
790	OFFSET DEPTH CONFOSITION GRAVEL (-3" + NO.IO)	0.0	0'-4.8' 0.5	'RT. 36'RT. '-5.5' 0.5'-7.6' 0 27																	34.4 - R 2	/			790
	COMPOSITION OF TOTAL SAMPLE (-3" + NO.10) SAND (-NO.10 + NO.20) SILT (-NO.200 + 0.002	0)	19	3 13 48 34	_															ő 13	2 80	<b>1</b>	55		94
780	LIQUID LIMIT		23	48 26 47 37																807.6 829.43	801.1 824.08	<b>818.57</b> 800.9	813.06 813.06 812.9 807.55	823.6	802.1
	PLASTIC LIMIT PLASTICITY INDEX ACTIVITY INDEX		8	28 22 19 15 .39 0.58	_																00 116 00 117 DESIGNED BY:	+00 II8·	+00 119+0	0 120+	00
770	SPECIFIC GRAVITY AASHTO CLASSIFICATION	2 A	2.81 2 A-4(3) A-7	.76 2.76 -6(22) A-6(7)	]																ATE SUBMITTED:				
	UNIFIED CLASSIFICATION CALF. BEARING RATIO		CL 1.8	ML CL 4.0 4.7												SCALE: 1	- = 100	HORIZONTA VERTICAL	.		Common	wealt	h of K	entu	cky
760	DRY DENSITY, AASHTO T-99(pcf) OPTIMUM MOISTURE (%) % + No. 4	1	17.0 2	9.6 112.2 2.2 17.1 0 10	-												- = 10,	VERTICAL			DEPARTN	AENT COUN	OF HI	GHW	AYS
					1																	HE	INRY		
750																									
																				P	ROJECT	KY 146 F JL03 052 (	RELOCATION 0146 002-010		
740							2 2	<u></u>	69	0 0	<b>.</b>	2 2		<u> </u>	010	~ ~	œ	m							
					883.1	882.	<b>6</b> 882.57 <b>6</b> 882.57 <b>6</b> 882.57	0 877.2 0 877.46 -	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<b>601</b> <b>611</b> <b>72</b> <b>72</b> <b>75</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b>	<b>901</b> 00 <del>1</del> 00 865.3	0 865.97 0 865.97 0 861.7 0 862.93	0 0 857.7 0 859.57	0 6 853.3 6 855.87	0 6 847.6 0 851.85	0 +111 00 847.67	0.843.48 0.843.48	00 <mark>+2</mark> 11 0	00 834.44				ILE, KY 14		ľ
				98	3+00 99	00 100	+00 101+00	102+00 1	03+00 10	4+00 105	5+00 106	+00 107+0	0 108+00	109+0	0 110+0	0 111+00	112+00	0 113+00	114+00		STA.	100+19.2	28 TO 120	+00	

870 860 850 840 830			REFER 1 SECTION	O EMBANI	MENT ST																		
850 840			REFER T SECTION	O EMBAN	MENT ST															1	1 T		
840			REFER T SECTION	O EMBANI	(MENT SI		┥								_								
840					. 124+50	TABILITY					REFER FOR S	TO GEO TA. 129+2	TECHNICA 25 TO 13	L NOTE 8		REFER FOR ST	TO GEOTE A. 136+42	CHNICAL TO 1384	NOTE 8 •75	ļ			
						REFI	ER TO CU TION FOR						REFER	TO GEOTE A. 134+33	CHNICAL	NOTE 10							<u> </u>
830						SEC		STA. 127	+00				FUR ST	A. 154+55									
830				REFER T	0 GEOTE	CHNICAL	NOTE 9 25+06				nal Rocklii t Pipe a												
				AND STA	A. 128+42							Surface	Refusal	Depth to									
820				REFER T	0 GEOTE A. 124+75	CHNICAL	NOTE 8		Hole No 1001 1002	Station 124+97.04 124+59.69	74.1'Lt.	Elev. 758.0 760.4	Elev. 754.2 756.5	Refusal 3.8' 3.9									
820	<b>`</b>	Ň.						4	1002	124+19.77 123+79.51	2.2' Rt.	759.3	757.5	1.8 <sup>4</sup>									
810		B-1 36'							1005	123+37.03			761.6	1.6'									
800		<b>w%</b>							REFER	ΤΟ GEOTE	CHNICAL	NOTE 211	FOR STA.	124+22									
800		28.2	3-				B- 60'	2D ' RT.															
790			~ \ \5,				*%																
780							23.8	52 B	105														
			١			K		\ \ \ \	105 RT.														w%
770					/	-104		20.0		34D 3' RT.					WIDEN E	USTING 3-S		I P.C.J.B.				-	22.7 18.1
760					w% 93'	' LT.	`		22.6	(51)			0.52%			e 20*	8'-50'-38' SKEW LT.				109 'RT.		
75.0					14.1 -	<u>∦</u> 3 R				R	₩% B-1 62'	06 LT.		B-1 39'	07 RT.		B- 40'	 108 LT.		<b>w%</b>	6		
750											17.2			- w%			<u>+</u> <sup>₩</sup> ×− 1 1	3		13.7 <b>E</b> 2	24 R 		
740											17.2 - 16.8 -			17.8 -	() R		// 24.6 - / ' 7 <sup>30.9</sup> -	7					
730																		R					
		SAMPLE NO STATION OFFSET	).			3 122+00 36' LT.	4 152+01 36' L T.	6 143+00 36' LT.	7 137+00 40' LT.	51 129+00 36' RT.	52 127+00 60' RT.												
720		DEPTH COMPOSITION	GRAVEL (- SAND (-NC	-3" + N0.10) 0.10 + N0.200		0.4'-9.8' 1 6	0.0'-4.7' 32 5	0.0'-8.0' 12 15	8.0'-10.0' 0 2	0.5'-9.1' 5 9	0.0' -12.8' 10 11												
710		OF TOTAL SAMPLE	SILT (-NO. CLAY (-O.	200 + 0.002		52 41 37	29 33 53	37 35 40	72 25 34	39 48 50	43 36 36												
		PLASTIC LIM PLASTICITY	IIT INDEX			21 16	27 26	23 17	22 12	24 26	31 5												
700		ACTIVITY INE SPECIFIC GR AASHTO CLA	AVITY ASSIFICATION			0.39 2.75 A-6(15)	0.78 2.78 A-7-6(15)	0.48 2.82 A-6(12)	0.47 2.70 A-6(12)	0.54 2.79 A-7-6(25)	0.14 2.77 A-4(5)												
690		UNIFIED CLA CALF. BEARIN DRY DENSIT	NG RATIO Y, AASHTO 1			CL 3.9 102.4 22.2	CH 2.6 98.1 22.8	CL 2.8 104.9 20.2	CL 7.7 102.2 19.2	CH 3.7 103.2 21.5	ML 3.0 -												
		% + No. 4				0	7	1	0	2	6												
680	<b>0 0</b>	25 m	<b>5</b> o	5 <b>50</b>	<b>66</b> –	<b>N</b> 7	 ⊃30	~ <b>6</b> 1	∞ <b>65</b>	32	<b>7</b> 2	<b>8</b> 3	<b>82</b> თ	4 <b>86</b>	<b>T</b> 10	ں <b>ک</b>	<del>م 8</del>	0 <b>36</b>	وں <b>38</b>	7 <b>7</b>	4 <b>92</b>	M -	32
	2 <b>802</b> .64 802.04 120 +00	<b>136.52</b> 00 796.52		<b>185.50</b> 1785.50						<b>161.35</b> 00 761.35 00 754.5				<b>6</b> 757.86 <b>6</b> 757.86 <b>6</b> 757.4			<b>6.13</b> <b>131</b> <b>137</b>			<b>761.24</b> 00 761.24 0763.4	+151 00 <sup>+</sup> 763.92 +1765.4	5 761. 5 769.1	+ 771.32 0 -

					COUNTY	OF ITE	M NO.	SHEET NO.
					HENR	r 5-83	00.00	G005
								860
			REFER 1	O GEOTE A. 148+07	CHNICAL	NOTE 10		
								850
								840
								830
								820
								810
								800
								790
			B-:	112 RT.				700
— <sup>B-</sup> 36'		0	40 w%		<del>-0.50%</del> _			- 780 -
	6		- 17.4	6				770
.1 -			— 18.9 <b>-</b> [2 N	∕⊿ R		70'	115 RT.	110
I	ז 					<b>w%</b> 23.4 <b>-</b>		760
							<u> </u>  R 	
								750
								740
								730
								720
								710
				SCA	.E: <u>  =</u> 10	0° HORJZ( 10' VERTJ(	DNTAL	
							AL	700
		~	 	.37	<b>.</b> 45		° 33	690 180.53
		145	<b>778.51</b>	<b>179.3</b> 179.8	E 149		62. 617 +00 12(	2 2 2 +00
773.3	<b>774.49</b> 772.2	776.89	00 190					
		4 <u>11</u>		SUI STA.	120+00	ILE, KY TO 150	146 )+00	
-		1						

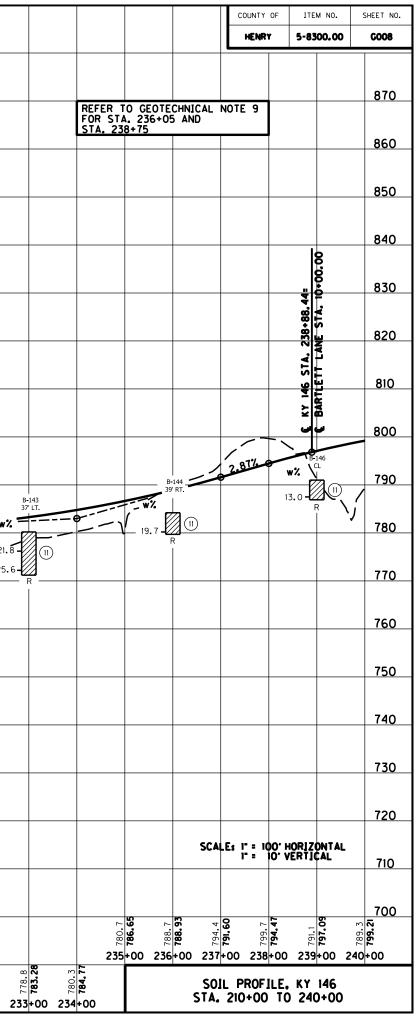
880	REFER TO GEOTECHNICAL NOTE 9 FOR STA. 150+64		RE	FER TO EMBANKMENT CTION FOR STA. 160+	STABILITY 00		REFER TO GEOTECHNICA FOR STA. 166+15 AND S	AL NOTE 9 STA. 168+24	
870			RE	EFER TO GEOTECHNICA DR STA. 159+31 AND S	L NOTE 9		REFER TO EME SECTION FOR	BANKMENT STABILITY STATION 167+50	
860					REFER TO EMBANKME				
850					SECTION FOR STA. I	63+00		REFER TO CUT S SECTION FOR STA	4. 170+50
840		S .			9	REFER TO GEOTE FOR STA. 159+25	ECHNICAL NOTE 8 5 TO STA. 160+25		
	8		B-118	FARM VEHICLE LAN	ELT. & RT.	REFER TO GEOTE FOR STA. 162+2	ECHNICAL NOTE 8 5 TO STA. 165+75		
330	152+00.00= 51A. 10+00.00		- w%			REFER FOR ST	TO GEOTECHNICAL NOTE A. 166+25 TO STA. 167+	8 25	
320	2 STA		18.0 (5 11.1 NR	3				B-122 40' LT.	
810	146 STA. NO. 2	B-117 36' LT.				₿-120 36' LT.		<b>w%</b> 8.2	
300		22.1 5	<b>-</b>			15.5		10.6 R	$\mathbf{k}$
	w%			<b>%</b> 22.9	2.00%	R			
790	21.9				NR		/		
780	NK								-1.00%
770	-0.50%								
760									
							R		
750	SAMPLE NO. STATION	4 5 152+01 152+01		53 54 61+01 170+00					
740	OFFSET DEPTH COMPOSITION GRAVEL (-3" + N0.10) SAND (-N0.10 + N0.200)	36' LT. 36' LT. 0.0'-4.7' 4.7'-9.1' 32 30 5 8	0.0'-7.1' 0.5	8' LT.         40' LT.           5'-5.0'         0.5'-8.7'           17         16           7         28					
730	SAMPLE SILT (-N0.200 + 0.002 mm CLAY (-0.002 mm)	29         30           33         32           53         46	36 42 47	52         37           25         19           28         24					
700	PLASTIC LIMIT PLASTICITY INDEX ACTIVITY INDEX SPECIFIC GRAVITY	27         23           26         23           0.78         0.71           2.78         2.80	22 0.53	18         16           10         8           0.41         0.41           2.78         2.72					
720	AASHTO CLASSIFICATION UNIFIED CLASSIFICATION CALF. BEARING RATIO	A-7-6(15)         A-7-6(12)           CH         CL           2.6         2.3	A-7-6(17) A CL 2.3	A-4(6) A-4(2) CL CL 3.0 6.0					
710	DRY DENSITY, AASHTO T-99(pcf) OPTIMUM MOISTURE (%) % + No. 4	98.1 103.8 22.8 19.3 7 21	21.3	115.9         117.1           14.5         13.5           9         5					
700									
690				807.3 <b>799.88</b> 783.7 <b>798.74</b>					00 781.84 793.7 780.84



880																							
870																							
	REFER FOR S	TO GEOTE TA. 180+88	CHNICAL AND ST	NOTE 9 A. 182+75	5		REFER FOR S	TO GEOT TA. 186+;	ECHNICAL	. NOTE 9 A. 190+11		REFER T SECTION	O EMBAN FOR ST	KMENT S A. 192+00	TABILITY )								REFER FOR S
860																							
850				SECTION	N FOR ST	NKMENT S							FOR ST	A. 192+93	CHNICAL N AND STA	NOTE 9 . 195+92							
																					nal Rockli		
840																					t Pipe o	Sur face	Refuse
												onal Rockli rt Pipe a							Hole No 1017	204+56.42	45.3'Lt.	Elev. 763.4	Elev. 760.4
830										Hole No	. <u>Station</u>	Offset	Surface Elev.	Refusal	<del>Depth to</del> Refusal				1018 1019	204+39.52 204+26.77		763.6 766.9	760.6 758.9
820										1014 1015	192+02.54 191+83.48	0.2' Rt.	763.0	761.1 760.0	3.4' 3.0'				REFER	ΤΟ GEOTE	CHNICAL	NOTE 2	FOR ST
										1016	191+64.23			758.1	0,	7							
810										REFER	TO GEOT	ECHNICAL	NOTE 2	IFOR STA	. 191+84	J							
800									B-128 36' LT.					B- 36	130 ' LT.								
790			126					w%						w%									
		₩%.	ст.   Z <b>л</b>					28.2	R		-	0.50%		18.5						B-1 36'	132 LT.		
780		16.7	8	1.30%									$\int$	<b>\$</b>					•	w%			
770	~~		<u>२</u> 	$\left  \right\rangle$	F	3-127					13	129 ' RT. 	<i>'</i>				30	131 ' RT.	-1.78%	13.3 -			
110					w% 3	3' RT. ———					19.8 -	<b>1</b> 0	/				<b>w%</b> 16.2	<b></b> `	V		1		w%
760					22.6-	<i>I</i> <sub>R</sub> <sup>™</sup>						₽ R H					11.4 <b>1</b> 2						21.8
																							23.3
750																							
740																							
		SAMPLE N STATION OFFSET	0.		1	8 182+00 36' LT.	9 194+00 36' LT.	10 206+00 35' LT.															
730			GRAVEL (	-3" + N0.10)		0.0'-7.1	0.0'-6.2'	' 0.0'-2.1' 17	,														
		OF TOTAL SAMPLE		0.10 + N0.200 0.200 + 0.002 .002 mm)		7 36 42	15 37 35	19 40 25	_														
720		LIQUID LIMIT PLASTIC LIM PLASTICITY	<i>I</i> IT			47 25 22	40 21 19	33 20 13	_														
710		ACTIVITY IN SPECIFIC GF AASHTO CL	DEX RAVITY	NI		0.53 2.79 A-7-6(17)	0.54 2.76 A-6(13)	0.52 2.74 A-6(6)	_														
		UNIFIED CLA CALF. BEAR	SSIFICATION	1		CL 2.3	CL 3.7	CL 3.7															
700		DRY DENSIT OPTIMUM M % + No. 4				102.3 21.3 3	107.1 18.8 8	111.3 16.8 10	_														
									1														
690	774.4 <b>776.72</b>	779.4 777.63 782.6	778.88	780.18 780.18	781.47	782.72 782.0	783.66	784.24	784.46	791.9 784.32	<b>783.86</b> 768.5	<b>783.36</b> 765.7	<b>2.86</b> .₄	<b>782.36</b>	<b>781.70</b> 784.1	<b>780. 72</b> 779. 2	<b>6 7</b>	777.80 767.6	<b>776.02</b>	<b>774.24</b> 771.6	<b>2.46</b> ).7	0.73	9.45
	180+00 I											82 392 00 192	₩ <sup>6</sup> +00 193	≝ 28 8 8+00 194	₩ +00 195	₩ •00 196	60 197	2 400 198	2 <b>E</b> 12 8+00 199	122 +00 200	12 12 100 201	• 10. 73 • 00 • 10. 73	2+00 20

								COUNTY	OF	ITE	M NO.	SHEET NO.
								HENR	۲	5-83	00.00	G007
						_						
												870
FR T	O GEO	TF	CHNIC	Δ١	NOTE 10							
ST4	. 204+	0	5									
												860
			DEEEE	) T(	) GEOTE	CHNI						000
								. 207+37	,			
									ļ			05.0
												850
for												
40												
usai	Depth 1	ю										840
€v.	Refuso											
0.4	3.0'											
0.6	3.0											830
8.9	8.0'											
ст4	204+4	10	1									
STA	204+4	ŧυ	J		Addition	al Roc	kline:	Sounding	for			820
								tation 20				
						-	с.	rface R	f.,	= N Ner	th to	
		н	ole No	. s	tation	Offs			eruso Elev.		fusal	810
		-	1020			49.0'		64.2	761.5		2.7	
			1021		9+27.68				759.5		2.2'	
			1022	209	+ 30. 45	69.6'	Rt. 7	65.0	758.1		6.9'	
												800
		R	EFER	то	GEOTEC	HNIC	AL NO	TE 21 FO	R SI	TA. 2	09+26	
												-
						B-134 36'LT. –						790
					w%							
					22.0		5)					
					22.07	R	9					780
						_				2.36		-
	133							- Jan			r I	770
28	RT.				/	-		~~`		B- 36'	135 RT	770
". —				1	(·	1-			<b>`</b> v	v%	L /~	
. 7	3 -	-	1/0									
.8 -	10-		1.							2.9 -		760
.3-									2		<b>∠⊿</b> २	
N N	∠J R											
	· ·											750
									1			
									1			740
						-			1			
									1			
									1			
						_						730
									1			
									1			
									<b> </b>			720
							SCA	LE:  " =     " =	<b>ф0</b> , н	ORIZ	DNTAL	
								1" =	10° V	ERTJ(	AL	710
									1			
												700
				4	22	<b></b>	2	<b>8</b> 3	64		<u>۳</u> 6	<u> </u>
				67.	768.72	769.5I	74.7	<b>770.82</b>	772.64	56.1	774.93	770.6 777.04
				 205	⊷ ⊷00 000		307					
	σ			205	+00 20	6+00	207	+00 208	+00	209	+00 2	210+00
769.8	8.6	764.4	8.4				SO	L PROF	11 6	K Y	146	
76	76						STA	180+00	166. ) Tr	, , , , , , , , , , , , , , , , , , ,	)+00	
203	+00 20	04	+00				J 1 M.		, 10	, <b>בו</b> נ	- 00	

880 870 860 850 840 830	REFER FOR ST	REFER T FOR STA		CHNICAL NO AND STA. NOTE 8 213+75	OTE 9 215+91		REFER T FOR STA	0 GEOTE( . 275+75	CHNICAL N 5 TO STA.		REFER FOR ST	TO GEOTI											
860 850 840	REFER FOR ST				OTE 9 215+91		REFER T FOR STA	0 GEOTE: 275+75	CHNICAL N 5 TO STA.			TO GEOTI											
860 850 840	REFER FOR ST				OTE 9 215+91		REFER T	O GEOTE: 275+75	CHNICAL N 5 TO STA.			TO GEOTI											
850	REFER FOR ST	TO GEOTE( A. 211+25	CHNICAL N TO STA.	NOTE 8 213+75							REFER FOR ST			NOTE									
840				213+75							FOR ST						I			1		1	
840										·		A. 222+0	3	NOTE TO									
									1 1	1													
830																							
				۰ I			 																
820							   																
810	1																						
800		B- 36	136 / LT.		B-13 36' L'	37 ———— LT.		<u> </u>															
790		<b>w%</b>			w%	](7					36	-139 ' LT											
780	2.36	×				<u> </u>	<u></u>	0.50%			<b>w%</b> 20.0_			B	140 'LT. <b>O</b>		B-141 36' LT.	0.50%		B-14 52' R	42 RT.		<b>- %%</b>
770	/-							- w%		~~~				- w%		~_+	23.3-			- <b>w%</b>	⊿ ∣		25.6
760									R R					N	R					R			
750																							
740		SAMPLE NO	0.			10	11	12	17	   ]													
730		STATION OFFSET DEPTH COMPOSITION OF TOTAL	GRAVEL (-3 SAND (-NO	3" + N0.10) .10 + N0.200)		206+00 35' LT. 0.0'-2.1' 17 19	233+00 37' LT. 0.0'-9.0' 6 14	224+00 45' RT. 0.0'-5.0' 1 14	215+00 36' LT. 0.0'-5.7' 15 20														
720		SAMPLE	SILT (-N0.2 CLAY (-0.0	200 + 0.002 m		40 25 33	42 38 45	49 36 40	38 27 31														
		PLASTIC LIN PLASTICITY	IT INDEX			20 13	26 19	24 16	16 15														
710			AVITY ASSIFICATION ASSIFICATION			0.52 2.74 A-6(6) CL 3.7	0.51 2.73 A-7-6(16) CL 4.7	0.45 2.78 A-6(14) CL 4.4	0.56 2.75 A-6(7) CL 3.3														
700		DRY DENSIT	Y, AASHTO T DISTURE (%)			111.3 16.8 10	102.9 20.2 3	99.9 20.9 0	110.5 17.0 5														
690	• <b>6</b> •	<b>69</b>	- 85	• 2 <b>4</b>	<u>c </u> e		2 <b>66</b> ∞	67 0	<b>66</b> ω	<b>67</b> Ω	0 <b>03</b>	<b> 3</b>	<b>с</b>	<b>22.</b> 6	× 03	<del>ç</del> {	<u>ה היי</u>	<u>∞</u> 6	0	20	<u>5                                    </u>	<b>4</b> 9	61.
	210.6 210.6 210.6 210.6 210.6 210.7 210.6 21.6 21.6 21.6 21.6 21.6 21.6 21.6 21		<b>779.85</b> 00 779.85 512 783.7	00 780.54 51 787.7 1 787.7	c, ng 8, 987 00 512 12 12 12 12 12 12 12	8 <sup>877</sup> 00 216	8.757 8.7577 8.75777 8.7577 8.7577 8.7577 8.75777 8.75777 8.75777 8.75777 8.75777 8.75777 8.75777 8.75777 8.75777 8.75	0.817 768.0	+00 219 175.6	<b>778.49</b> 778.49 774.5	776.	<b>777.0</b>	777.62	<b>771.72</b>	<b>778.02</b> 774.2	774.80 774.8	775.1 779.49	774.8 <b>779.99</b>	775.0 <b>780.4</b> 9	774.2	-00 231+ -00 231+	0 781.49	-00 2



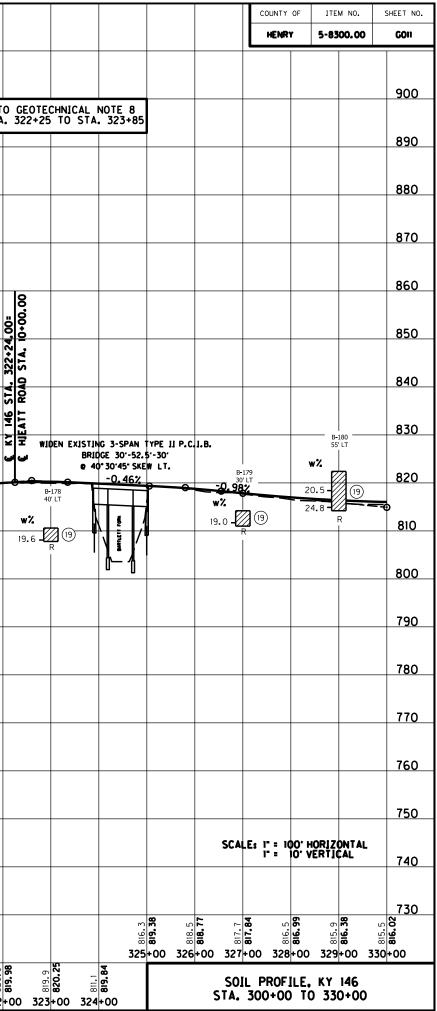
880																						
870	REFER	TO GEOTE	CHNICAL	NOTE 9			REFER					REFER										
860	FOR ST STA. 24	TO GEOTE A. 240+8  3+45	7 AND				FOR ST	A. 245+7		NOTE 8 . 250+75		FOR ST	TO GEOTE A. 251+75									
850											ional Rock ert Pipe		dings for on 251+98		REFER T	O GEOTECHNICAL 255+25 TO ST	NOTE 8 A. 255+75	5				REF FOR
		70							Hole N	w. Statio		Sur fac	e Refusa	Depth to Refusal								
840		7 241+70		FARM	VEHICLE	LANE RT.	<u>&amp; LT.</u>		₽ 1029 V 1030 1031	251+94.	51 50.7'L 52 20.0'R 45 75.1'R	t. 785.1 t. 784.3	782.7	2.4 <sup>,</sup> 4.2 <sup>,</sup> 2.1 <sup>,</sup>						Additic	nal Rockli	ine So
830										TO GEOT					] <u> </u> 8						t Pipe a	
820															254+52.84= STA. 10+00.00				1032	<u>Station</u> 263+44.33 263+35.28	45.8'Lt.	. 783
810		B-	148												KY 146 STA. 2' BROKO LANE S'				REFER T	Ο GEOTE	CHNICAL	NOTE
		22		<u> </u>				E	151 / LT.					В-						-156 ' LT.		
800	2.87%-	23.4	1 <u>3</u>					10 <b>w% -</b> 20.0 <b>-0</b>		<u>-0.</u>	64%			36 w%			B-155 31' RT.		*			
790	/				w%	3 150 4' RT		20.04	R 		в.	152		20.2		w%		-1.02%	21.2	R R		
780					18.3	R R					w%	кі.      (3)				27.3-						<b>W</b> 27
770											23.7-											
760																						
750		SAMPLE N	).			13	14	16														
740		STATION OFFSET DEPTH				245+00 84' RT. 0.0'-3.5'	260+00 36' LT. 0.0'-4.8'	263+00 39' RT. 0.0'-4.1'	-													
		COMPOSITION OF TOTAL SAMPLE	SAND (-N	-3" + N0.10) 0.10 + N0.20 0.200 + 0.000	0) 2 mm)	11 13 40 36	6 19 42 33	1 8 72 20														
730		LIQUID LIMIT PLASTIC LIN PLASTICITY	AIT.			40 21 19	43 20 23	20 39 23 16	-	<u> </u>												
720		ACTIVITY IN SPECIFIC GR AASHTO CL	DEX AVITY ASSIFICATIO			0.53 2.73 A-6(14)	0.69 2.75 A-7-6(16)	0.80 2.67 A-6(16)														
710		UNIFIED CLA CALF. BEARI DRY DENSIT OPTIMUM MO	NG RATIO Y, AASHTO	T-99(pcf)		CL 5.2 105.1 20.4	CL 5.2 104.4 20.7	CL 7.7 104.1 19.2	-													
110		% + No. 4				6	3	0	] 													
700																			+			
690		~ 83	<u> </u>	<b>1</b> 2	- 9 -	51	- <mark>2</mark> ~	86 ^	- M	<b>5</b>	<u> </u>		92 ~~	2.	<b>K</b>	<u> </u>						35
	9-108 240+00 241	800.800.80 800.80 804.3 *00 242	801.9	55.56 605.52 805.52 805.52	<b>802.66</b>	12.208 240 5+00 240	5901.62 249 801.62	86.008 7+00 248			<b>50.67</b> <b>795.</b> 0 <b>7</b> 95.0	798.41	<b>796.</b> 2 736. 2	795.7	796.4	50.367 8.467 8.467 792 8.467 792 8.467 700 726 700 700 700 700 700 700 700 700 700 70	794.1	91.67 193.66 700 52	0.192.0 792.14 791.0 791.0	0.067 <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b> <b>7.1.12</b>	1.061 +00 263	<b>789.35</b>

							COUNTY OF ITEM NO.					s	SHEET NO.
								HENRI	t	5-83	00.00		C009
													870
					REF	ER T	) GE	OTEC	CHNI	CAL	NOTE	8	010
					FOR	STA	. 26	8+00	0 TO	STA	. 269	+25	860
ER_1	O GE	OTE	CHNICAL	NOTE 10	5								000
R ST/	4. 262	2+44	4		4								850
													020
													0.40
oundi	ngs fo	or											840
	263+3												070
iace ev.	Refu Elev		<del>Depth to</del> Refusal										830
5.5 2.6	780. 780.		2.9' 2.6'										000
													820
21 F	OR S	TA.	263+39										010
													810
				WIDEN	I EXIST				TYPE	IV P.	с.і.в.		800
					B-158 34' LT.			<u>e 90'</u> Kew l'	r.				000
B-	157		<u>6</u>	6 <u>% </u> %			F				159 RT.		790
	RT.			20.7-	16					v% ₽	(16)		
				28.5 <b>-</b>	NR		<b>-</b>	<u>**''</u> /	3	0.1 <b>-1</b> 2			780
F							<u>  </u>	ľ	5				
													770
													760
													750
													740
													730
													720
						601	<b>F</b> . •		A04 11	00174			
						JLAL	.53	- 10	io v	ERTIC	ONTAL AL		710
		_								_			
									~				700
			9"16.	791.80	793.2 <b>793.35</b>	794.2	794. IJ	794.5	794.4	794.9	194.81	795.0	795.15
	<b>5</b>		265	+00 26	6+00	267	+00	268	+00	269		.∼ 270	+00
788.9	789. 39	790.1	790.2			SOI STA.	ĻP	ROF	LE.	KY	146		
263		264				STA.	24(	)+00	TC	) 27(	0+00		

900														
890														
880												REFER TO GEO FOR STA. 289+		290+
870														
860														
850														
840														
830														
820												B-166		 
810							B-163				B-165 21' RT.	20.8		14.2 - 10.2
800		8-160 23'LT.	B-161 24' RT.		B-162 32' LT.	<u><u> </u></u>	36' RT.	0.59%	B-164 32'LT.		R 15	24.9		
790		16.3 20.4 NR	0.34% w%		20.0 13.9 R		11.7 - R		15.2 - (15) 18.4 - NR					
780														
770		SAMPLE NO.	15	16	21									
760		STATION OFFSET DEPTH COMPOSITION SAND (-NOJO +		39' RT.	299+00 35' RT. 0.0'-12.5' 42 13									
750		OF TOTAL SAMPLE SLIT (-N0.200 CLAY (-0.002 n LIOUID LIMIT PLASTIC LIMIT	mm) 19 26 15	72 20 39 23	33 13 26 15									
740		PLASTICITY INDEX ACTIVITY INDEX SPECIFIC GRAVITY AASHTO CLASSIFICATION UNIFIED CLASSIFICATION	11 0.58 2.80 A-6(4 CL	16 0.80 2.67 A-6(16) CL	11 0.87 2.76 A-6(2) CC									
730		CALF. BEARING RATIO CALF. BEARING RATIO DRY DENSITY, AASHTO T-99( OPTIMUM MOISTURE (%) % + No. 4	2.0	7.7           104.1           19.2           0	2.8 122.6 11.4 28									
720														
710	<u></u>	<u>- 67 % 83 % </u>		<u>6 8 8</u>		<u>19</u> 19	∞ Θ	- Co m		<u>800</u> 8		O N		
	270+00	66         56         1         56         1         56         1         56         1         56         1         36         1         36         1         36         1         36         1         37         1         36         1         37         1         36         1         37         1         36         1         37         1         36         1         37         1         36         1         37         3	0 274+00 275+00 2	1.72 1.72 1.72 1.72 1.72 1.72 1.72 1.72	00 278+00 279	55.00 55.00 1.008 1.	0 281+00 28	2+00 283+0	00 284+00 285	<b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>601.5</b> <b>60</b>	<sup>908</sup> <b>908</b> <b>287+00</b> <b>288+00</b>	0 1 1 1 1 1 1 1 1 1 1 1 1 1	+ 265 00+16 815.8 818.5 + 265 00+16 818.5 + 818.5	00 2

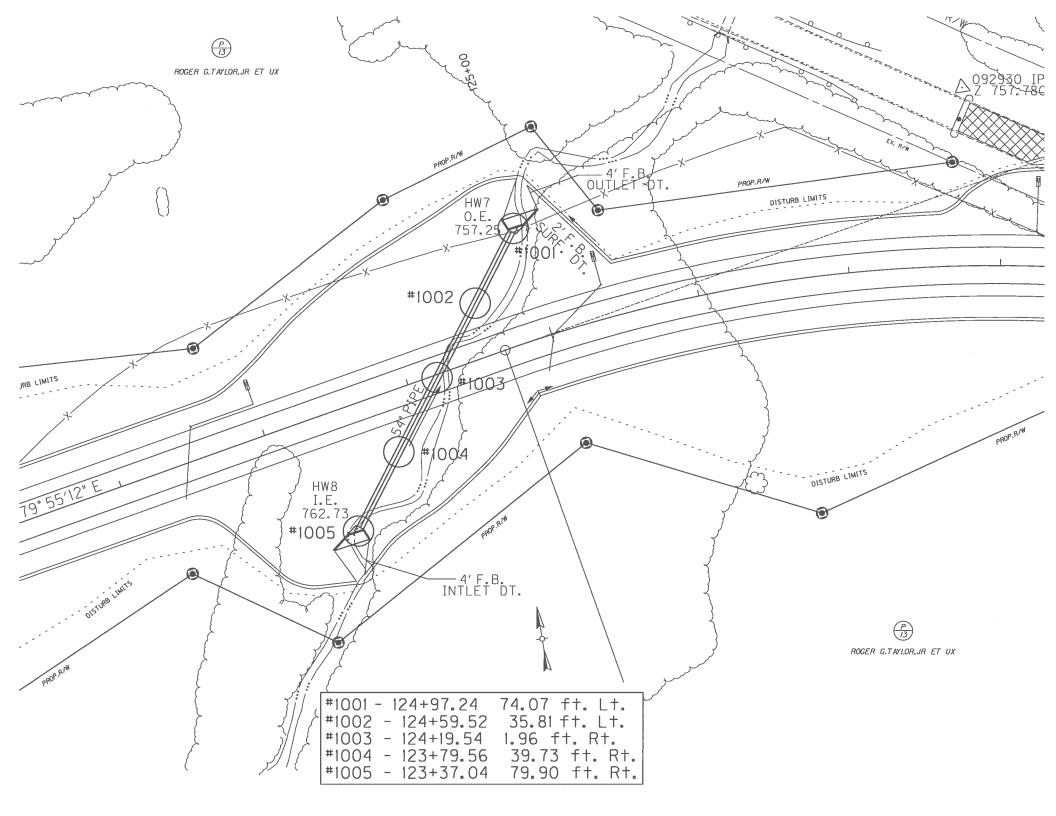
									C	COUNTY	OF	ITE	M NO.	4	SHEET NO.
									Ĺ	HENRI	۲	5-83	00.00		G010
8															890
8 )+75															
															880
															870
															860
															850
															840
															0-0
							_					B-1 35'	170 RT		070
				_			<u> </u>	;			- 1	v% Ø	2		830
B-: 40	168 RT	<u></u>	<u> </u>		_		—	_				.8 /	2	<b>.</b>	
وم ۲.												1.3		<u> </u>	2%820
.2	(15)											5.2 <b>- </b>	2 <b>1</b> ?		
). 2 <b>-</b> 2	2														810
F	۲ 														
															800
															790
															780
															770
															110
															76.0
															760
															750
															740
								SCA	.E:	1" = 10 1" = 1	<b>)0</b> , н	IORIZO	NTAL		
										I" = 1	10° V	ERTIC	:AL		730
					~		<b>m</b>		<b>თ</b>		<b>.</b>		m		720
				824.7	125.5	25.0	+ 826.03 0	824.5	125.6	23.4	824.54	821.6	122.5	19.3	+00
				。 295	80 +00	∞ 296	æ +00	297	æ +00	∞ 298	<del>ه</del> +00	299	æ +00	300 300	∞ +00
21.2	22.23	23.4	824.30					SO	LF	ROF	ILF.	KY			
<b>593</b>	ക് +00	82 294	ക് +00				S	TA.	27	PROF 0+00	TC	300	0+00		

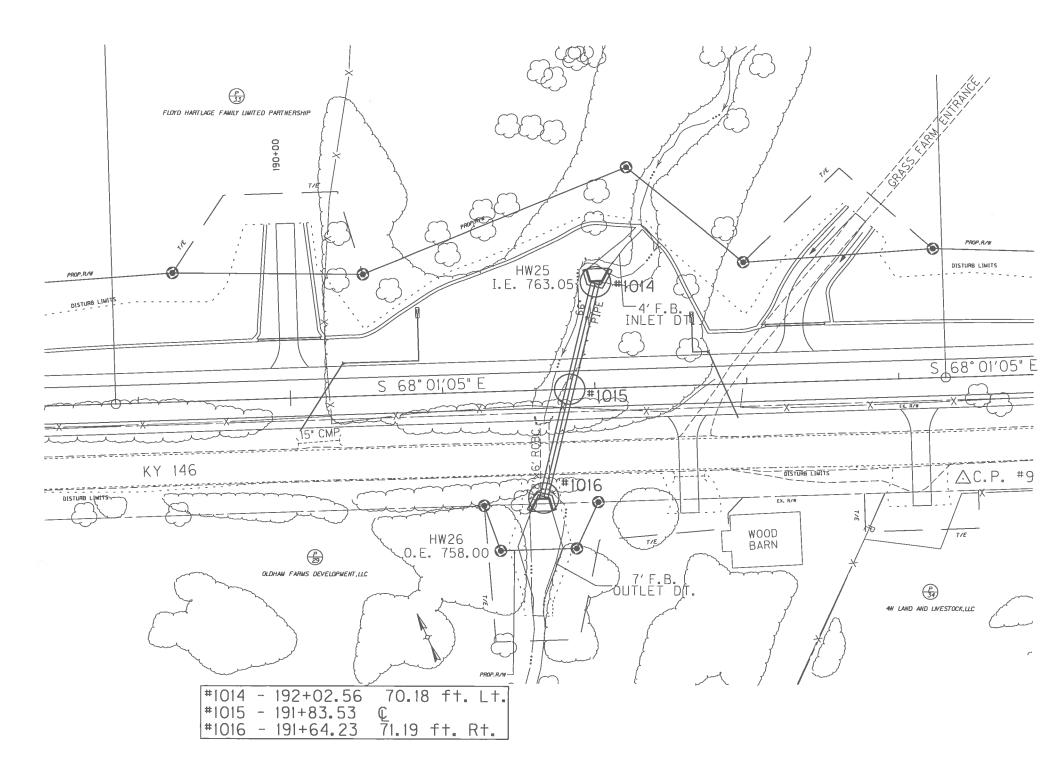
910																				
900				REFER TO GI		. NOTE 10							REFER 1		CHNICAL	NOTE 9 A. 318+65			REFER TO	
890				FOR STA. 30	6+75		4						FOR ST	A. 316+18	AND ST	A. 318+65		Ľ	FOR STA.	322+
880																				
870																				
860																				
850																				KY 146 STA, 322+24,00= Hjeatt Road Sta, 10+00.00
840														в.	-176					<u>- 322-</u> AD ST/
														42 W%	2' RT					11 R0
830									B-174 36' RT.					23.7	2 R 18—		B-1	77		
820		B-171		B-172 48' RT.				2	24.1 R						<u> </u>			L	82%	
		-2.82		w%			B-173					 B-175 CL 		Ĺ			- 26.8 -	18		w%
810				13.5		w%	a		0.66%		<b></b>		- ~							19.6
800						21.2	(18) R				23.3. 22.0									
790							<u> </u>													
780																				
180		SAMPLE NO. STATION OFFSET		308	+00 329+00	_														
770		DEPTH COMPOSITION GRAVEL (	-3" + N0.10) 0.10 + N0.200)	C 0.0' 1	5.5' 0.0'-8.2 7															
760		OF TOTAL SAMPLE SILT (-NC CLAY (-O	.200 + 0.002 m		2 <u>35</u> 340	-														
		PLASTIC LIMIT PLASTICITY INDEX ACTIVITY INDEX		22	1 23 2 23	-														
750		SPECIFIC GRAVITY AASHTO CLASSIFICATIO UNIFIED CLASSIFICATION		2. A-7- C	77 2.82 6(16) A-7-6(17 - CL	 }														
740		CALF. BEARING RATIO DRY DENSITY, AASHTO OPTIMUM MOISTURE (%	T-99(pcf)	5. 103 19	0 5.2 5 102.4 6 20.2															
		% + No. 4			3															
730																				
720				- la		•	<u>6</u>	_	N											
	€18 300+00 30	01+00 302+00 30		67.908 00 305+00	<b>306+00</b> 305-11 305-11	<b>301.4</b>	±;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	6.908 9+00 310+00	00.10 808.02 904-115	- <sup>808</sup> 808 312+00	313+00 3	808.3 14+00 31	8.008 8.0 8.0 8.0 8.0 7 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0	+00 317	813.44 813.44	<b>815.</b> 8 815.8 815.8 815.8	817.05 817.05 817.4	67.0 10.618 +00 321+	820.0	8 618 +00 32
	300+00 30	01+00 302+00 30	5+00 304+	00 305+00	306+00 30	07+00 <b>3</b> 0	8+00 30	9+00 310+00	311+00	312+00	313+00 3	4+00 31	5+00 316	+00 317	1+00 31	8 <u>+</u> 00 319	+00 320	+00 321+	00 322	00 3

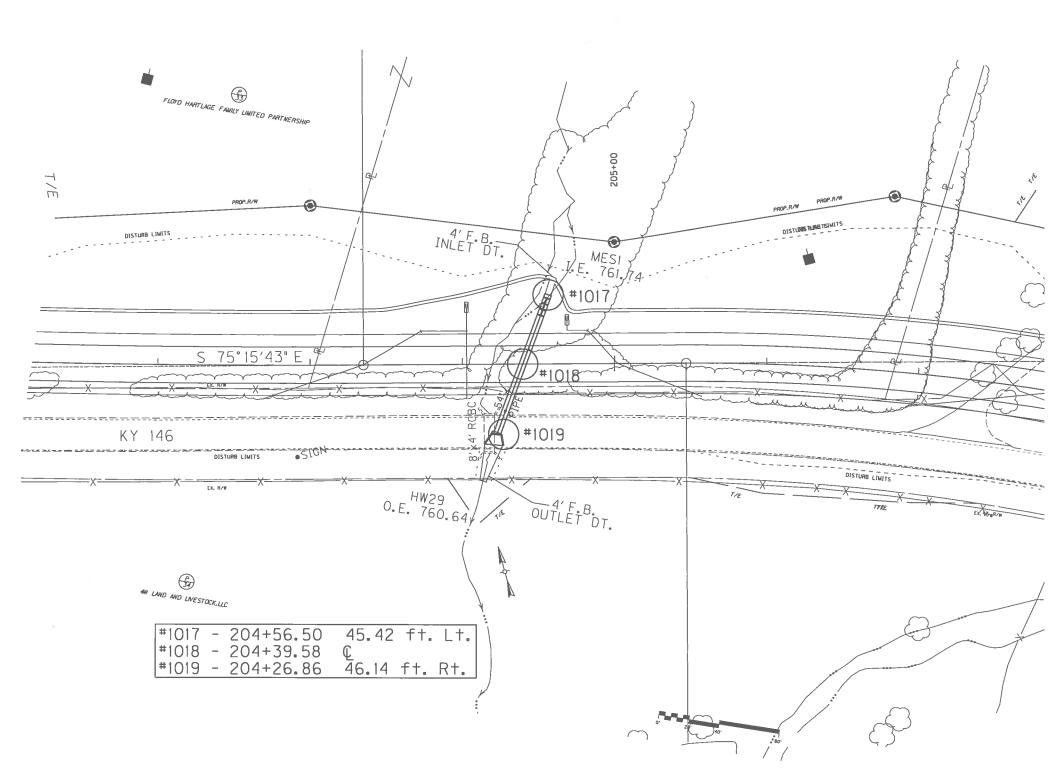


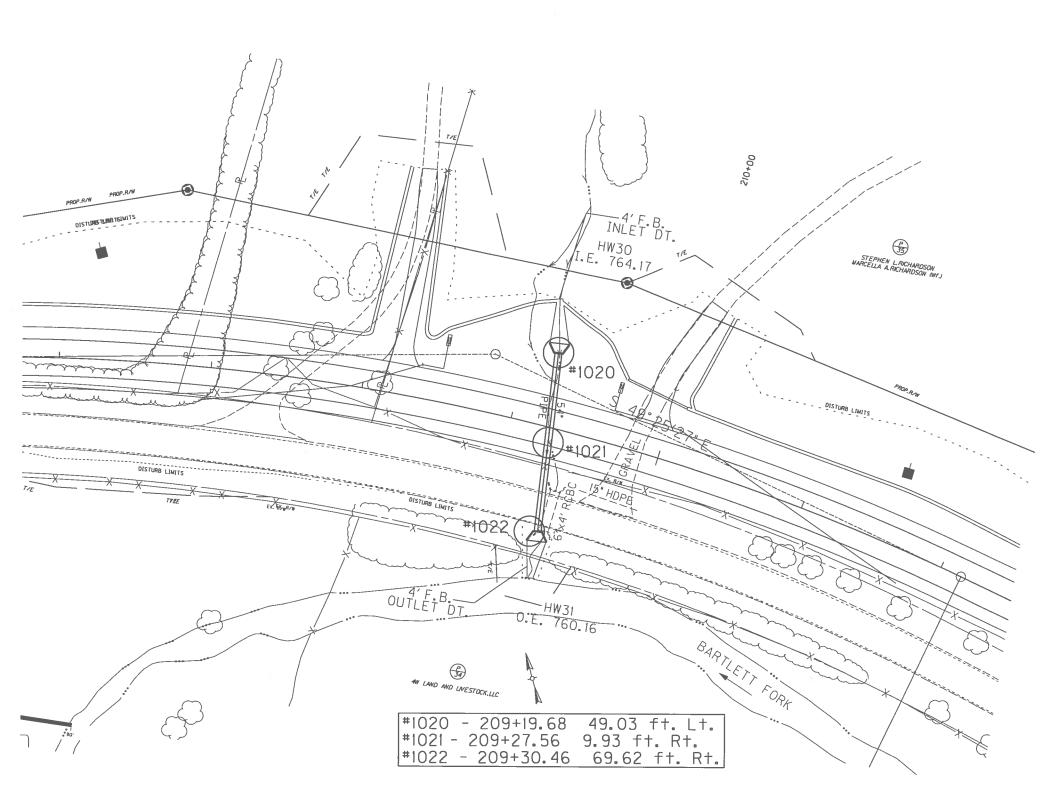
910											
900	REFER	TO GEOTECHNICAL NOTE 10	REFER 1	O GEOTECHNICAL	NOTE 15						
890	FORS	TO GEOTECHNICAL NOTE IO TA. 331+00	FOR ST	O GEOTECHNICAL A. 337+55							
880											
870											
860											
850			SEGMENT I BEGIN CONS SEGMENT 2					0.00			
840											
830							B-192 13 RT 1		B-232 36' LT	B-233 41' RT	w%
820		B-181 38' RT 0.50%	B-182 36 LT w%	B-185 20' RT		<u> </u>	<b>w%</b>	₩ 23.4		26.2 NR	24.4 24.6
810	<del></del>	0.50	24.6 <b>-</b>				22.9 <b>-</b>				
800		R									
790											
780		SAMPLE NO.	19 20	2-2 2-4							
770		STATION           OFFSET           DEPTH           COMPOSITION           GRAVEL (-3" + NO.IO)           SAND (-NO.IO + NO.2OO)	329+00 338+00 55' LT. 20' RT. 0.0'-8.2' 0.0'-5.3' 7 3 18 16	356+00         347+00           13' RT.         36' LT.           0.0'-5.0'         0.0'-5.0'           7         0           21         9							
760		SAMPLE SILT (-N0.200 + 0.002 mm) CLAY (-0.002 mm) LIQUID LIMIT PLASTIC LIMIT	35         15           40         24           46         35           23         21	45         62           26         29           39         34           20         19							
750		PLASTICITY INDEX           ACTIVITY INDEX           SPECIFIC GRAVITY           AASHTO CLASSIFICATION           UNIFICE CLASSIFICATION	23         14           0.57         0.57           2.82         2.73           A-7-6(17)         A-6(11)	19         15           0.72         0.52           2.79         2.69           A-6(12)         A-6(13)							
740		UNIFIED CLASSIFICATION CALF. BEARING RATIO DRY DENSITY, AASHTO T-99(pcf) OPTIMUM MOISTURE (%) % + No. 4	CL         CL           5.2         5.4           102.4         103.2           200.2         17.8           3         1	CL         CL           5.6         10.4           107.8         103.6           18.5         16.6           1         0							
730											
720	2			<b>n</b> -	<del>ل</del> ان ال	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	<u>نہ</u> ہ	N 1	<u>v</u> v	<u> </u>	o
	20,985.5 310,400 315,50 316,02	<u>∠ '518</u> 6 <u>6</u> 5 <u>6</u> 5 <u>6</u> 5 5	8 '918 8 '918 335+00 336+00 337	88.43 816.3 816.3 816.3 821.8	<b>819.91</b> 819.91 820.75 00+000+000	90+158 822.6 822.43 822.42 822.42	<b>823.8</b> <b>823.8</b> <b>824.5</b> <b>824.5</b> <b>824.5</b>	241.6 824.92 824.92 825.67 825.67	92         94           853.4         855.0           856.0         84           876.1         84 <td>249+00 350+00 351+ 549+00 350+00 350+00 351+ 549+00 350+00 350+000 351+ 549+000 350+00 350+000 350+000+000+ 549+000+000+ 549+000+00+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+00+ 54</td> <td>878 878 878 878 878 878 878 878 878 878</td>	249+00 350+00 351+ 549+00 350+00 350+00 351+ 549+00 350+00 350+000 351+ 549+000 350+00 350+000 350+000+000+ 549+000+000+ 549+000+00+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+000+ 549+00+ 54	878 878 878 878 878 878 878 878 878 878

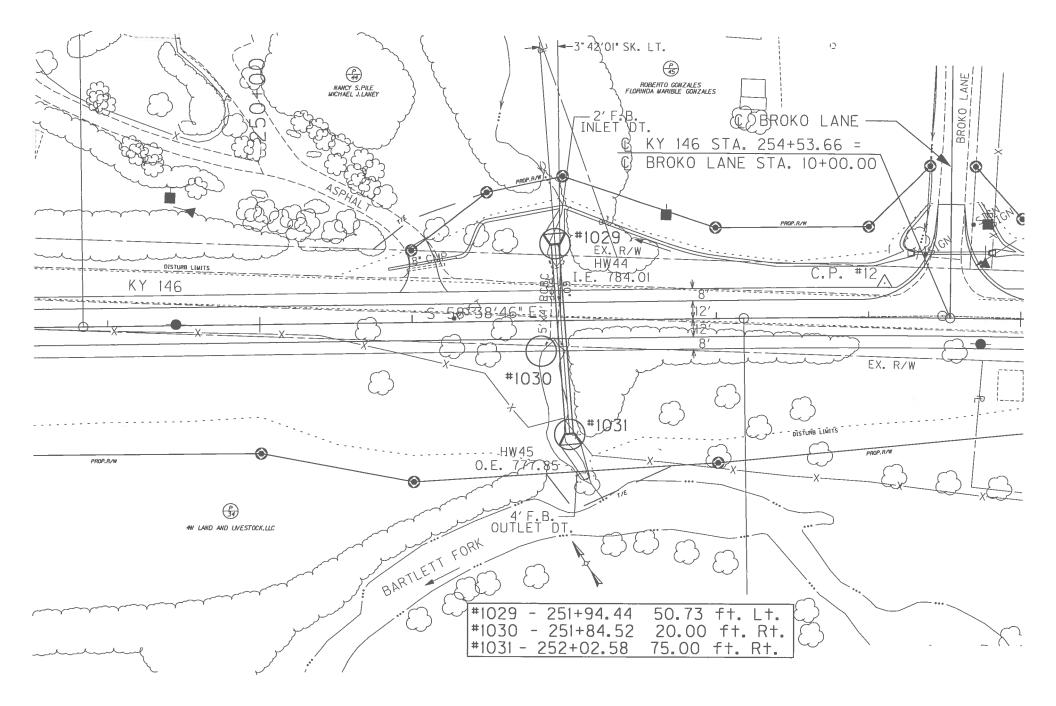
								(	COUNTY	OF	ITE	W NO.	s	HEET NO.
									HENRI	r	5-83	00.00		G012
														000
														900
														890
														880
														870
	EA	DM	VEHJC		ANE	DT	• •	•			-			860
	F#		VENIC	<u>LE L</u>		R1.	<u>a L</u>							
														850
														840
В- 36	235 ' LT				B-	237					B-2 36'	39 LT		
%	0.5	0%				237 ' RT		<u>، م</u>		_ *		71~~	-	830
	(2-2)	$\sim$	,	— w	<u>,</u> 7	2	N N	•		2	3.4-L		-1	
1.4 <b>-</b> 1.6 <b>-</b> F	2			21	.2 -	2 -	,				1			820
														020
														810
														010
														800
													_	790
														780
														770
														760
														750
							504	F.	1" = 14	با ۲ <b>۰</b>	00174			
							JUA		i = 1	íŏ <sup>,</sup> v	ĔŔŤĴŎ	ONTAL CAL		740
					_				_					
														730
			829.7	30.26	30.0	830.76	831.0	31.26	30.3	831.76	829.3	32.26	829.4	32.76
			8 355	∞ +00	356	∞ +00	ଞ 357	ಹ +00	ີ 358	∞ +00	8 359	∞ +00_3	ة 60	₩ +00
7.9	829.26 826.9	829.76							PROF					
<sub>82</sub> 353	ଛି ି +00 354	¦₩ 1+00				S	TA.	33	0+00	TO	360	0+00		

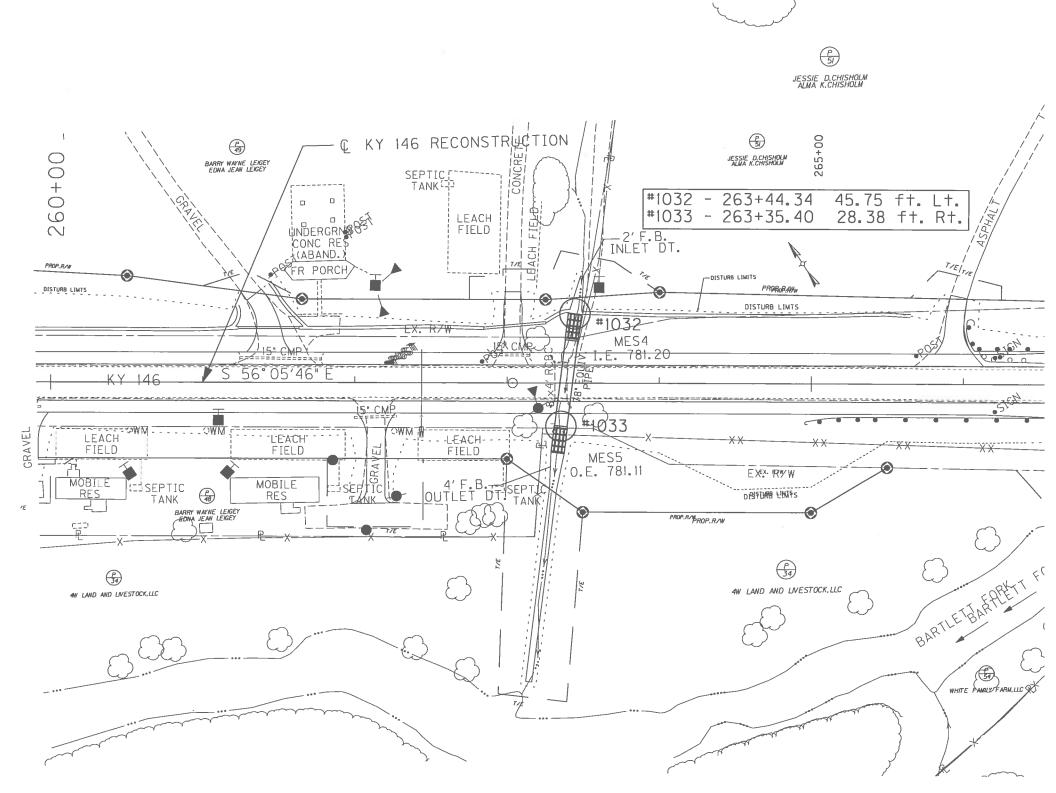












### COORDINATE DATA SUBMISSION FORM KYTC DIVISION OF STRUCTURAL DESIGN -- GEOTECHNICAL BRANCH

County	HENRY		Date12/1/2014	4
Road Num	ber	KY 146		
Survey Cre	ew / Consultant	GRW ENGINEERS, INC.	Notes:	
Contact Pe	erson	Tim Robinson	_	
Item #	5-8300.00			
Mars #	PON2-625-110000	0003		
Project #	JL03 052 0146 002	2-010		

#### Elevation Datum = NAVD88 or ASSUMED

PIPES

HOLE	LATITUDE	LONGITUDE	HOLE	STATION	OFFSET	ELEVATION (ft)
NUMBER	(Decimal Degrees)	(Decimal Degrees)	NUMBER			
		KY 146	MAINLINE		•	-
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