

# STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

**DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM** 



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## **VT ERS Review Comments**

FINANCIAL PRO	ECT NUM	BER: PROJECT ADMINISTRATOR:	PAGE #:			
Date	Initials	Comments				

\*Recommended review frequency shall be weeky for large jobs, bi-weekly for smaller jobs, or obtain project specific frequency from the District Materials Earthwork Manager.

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Independent Assurance ERS Review Comments

FINANCIAL PROJECT NUMBER: \_\_\_\_\_

Date	IA Inspector	Comments

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Earthwork Technician Qualification List

FINANCIAL PROJECT NUMBER: \_\_\_\_\_

TIN	Initials	Work Title	Begin Work Date	End Work Date	ECI Level 1 Exp. Date	ECI Level 2 Exp. Date

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Earthwork Technician Qualification List

## FINANCIAL PROJECT NUMBER: \_\_\_\_\_

TIN	Initials	Work Title	Begin Work Date	End Work Date	ECI Level 1 Exp. Date	ECI Level 2 Exp. Date								
		_		_	6	7								
1	2	3	4	5										
- This form is	used to	document all the technicians on the pro	ject performing ea	rthwork and identi	fy their qualification.									
- Do not ente	r a techi	nician more than once.				—								
	1) TINE Enter the inspector's CTOP training identification number													
1) <u>IIIN</u> : Enter	1) <u>TIN</u> : Enter the inspector's CTQP training identification number 2) Initials: Enter the initials of the inspector just as they will appear when correcting the Density Log Sheet													
3) Work Title	<ul> <li>2) <u>Initials</u>: Enter the initials of the inspector just as they will appear when correcting the Density Log Sheet</li> <li>3) Work Title: Enter the position title of the technician</li> </ul>													
4) Begin Wo	<ul> <li>Work fitte: Enter the position title of the technician</li> <li>Begin Work Date: Enter the date the technician started to work <u>on the project</u></li> </ul>													
5) End Work	5) End Work Date: Enter the date the technician left the project or the project end date, whichever comes first													
6) <u>ECI Level 1</u>	L Exp. Da	ate: Enter the date of the Earthwork Con	struction Inspectio	n Level 1 expiratio	n date from CTQP	—								
7) <u>ECI Level 2</u>	<u>2 Exp. Da</u>	<u>ate</u> : Enter the date of the Earthwork Con	struction Inspectio	n Level 2 expiratio	n date from CTQP									

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Initial Equipment Comparison Sheet

#### FINANCIAL PROJECT NUMBER:

PAGE #: \_\_\_\_\_

	Initial Equipment Comparison												
#	Company Level	Comparison Date	TIN	Initials	Gauge Manufacturer	Gauge SN	Gauge Cal. Date	Wet Density, Y <sub>wet</sub> (pcf)	Speedy Cal. Date <sup>1</sup>	Calculation: Δ[Wet Density] (pcf)			
	Quality Control (QC)									QC - VT			
	Verification (VT)									VT - IA			
	Independent Assurance (IA)									IA - QC			
	Quality Control (QC)									QC - VT			
	Verification (VT)									VT - IA			
	Independent Assurance (IA)									IA - QC			
	Quality Control (QC) Verification (VT) Independent Assurance (IA)									QC - VT VT - IA IA - QC			
	Quality Control (QC) Verification (VT)									QC - VT VT - IA			
	Independent Assurance (IA)									IA - QC			
	Quality Control (QC)									QC - VT			
	Verification (VT)									VT - IA			
	Independent Assurance (IA)									IA - QC			

<sup>1</sup>Speedy must be calibrated within the last 6 months per FM 5-507.

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Initial Equipment Comparison Sheet

#### FINANCIAL PROJECT NUMBER:

PAGE #: \_\_\_\_\_

	Initial Equipment Comparison											
#	Company Level	Comparison Date	TIN	Initials	Gauge Manufacturer	Gauge SN	Gauge Cal. Date	Wet Density, Y <sub>wet</sub> (pcf)	Speedy Cal. Date <sup>1</sup>	Calcul Δ[Wet I (p	ation: Density] cf)	
	Quality Control (QC)		3		4	5	6	7	8	QC - VT	9	
1	Verification (VT)	2								VT - IA		
	Independent Assurance (IA)									IA - QC		
Quality Control (QC)         QC - VT												
Verification (VT)         VT - I								VT - IA				
	Independ - This form is used to document the initial equipment comparison.											
	Independ       - This form is used to document the initial equipment comparison.         Qualit       - Retain copy of all gauge calibration sheets and place it in the Earthwork Records System in numerical order.         Ver       1) #: Consecutively number the comparison.         Independ       2) Comparison Date: Record the date the initial equipment comparison analysis was performed.         3) TIN: Record the inspector's CTQP training identification number.         Qualit       4) Gauge Manufacturer: Record the manufacturer of the nuclear density gauge. If the gauge is low activity nuclear density gauge (E-Gauge), input L-NDG in parenthesis after the manufacturer's name.         Independ       5) Gauge SN.: Record the manufacturer's serial number for the nuclear/moisture density gauge.         Gauge Cal. Date: Record the most recent gauge calibrate date.       6) Gauge Cal. Date: Record the most recent speedy calibration date. Speedy must be calibrated every 6 months.         Ver       8) Speedy Cal. Date: Record the most recent speedy calibration date. Speedy must be calibrated every 6 months.         Ver       9) Calculation: AlWet Density! Calculate the absolute difference of the wet densities between the two parties											

<sup>1</sup>Speedy must be calibrated within the last 6 months per FM 5-507.

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Equipment Comparison Sheet During Production

#### FINANCIAL PROJECT NUMBER:

					Equipme	nt Compariso	n During P	Production					
				Quality	Control				Verifi	cation			ΔΥ <sub>wet</sub> (p
#	Comparison Date	VT Speedy Cal. Date	TIN	Gauge Manufacturer	Gauge SN	Gauge Cal. Date	Υ <sub>wet</sub> (pcf)	TIN	Gauge Manufacturer	Gauge SN	Gauge Cal. Date	Υ <sub>wet</sub> (pcf)	cf)  QC- VT

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Equipment Comparison Sheet During Production

#### FINANCIAL PROJECT NUMBER:

	Equipment Comparison During Production													
				Quality	Control				Verifi	cation			ΔΥ <sub>wet</sub>	
#	Comparison Date	VT Speedy Cal. Date	TIN	Gauge Manufacturer	Gauge SN	Gauge Cal. Date	Υ <sub>wet</sub> (pcf)	TIN	Gauge Manufacturer	Gauge No.	Gauge Cal. Date	Υ <sub>wet</sub> (pcf)	(pcf)  QC- VT	
1	2	3	4	5	6	7	8						9	
	- This form is used to document the equipment comparison during production.													
	- Retain copy of all gauge calibration sheets and place it in the Earthwork Records System in numerical order.													
	1	) <u>#</u> : Consec	cutively number t	he compariso	٦.									
	2	) <u>Comparis</u> ) Speedy C	<b>son Date:</b> Record t al <b>Date:</b> Record t	the most rece	equipment	comparisor	i anaiysis lata Sna	was performed. adv.must.be.calibi	rated every 6	months				
	3	) <b>TIN</b> : Recc	ord the inspector'	s CTOP trainin	g identifica	tion numbe	er.	euy must be canbi	ialeu every u	months.		-		
	5	) Gauge M	anufacturer: Rec	ord the manuf	facturer of	the nuclear	density g	gauge. If the gaug	e is low activit	y nuclear d	density			
$\vdash$		gauge (E-	Gauge), input L-N	NDG in parent	hesis after	the manufa	cturer's r	name.				-		
$\vdash$	6	) <u>Gauge SN</u>	I: Record the mar	nufacturer's se	erial numbe	er for the nu	iclear/mo	pisture density ga	uge.			-		
<u> </u>	7	) <u>Gauge Ca</u>	II. Date: Record the	ne most recen	t gauge cal	ibrate date	at the tir	ne of comparison				-		
	× م	) <u>I<sub>wet</sub> (pct)</u> ) <u>/</u> (pct)	: Record the wet f) IOC-VTI: Calcu	density result	trom the g	gauge to the	e nearest	U.I PCF. ties between the t	two narties					
		) <u>Arwet</u> (pc)	<b>1)  QC-V1 </b> . Calcu					ties between the				1		

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Gauge Calibration Tracking Sheet

#### FINANCIAL PROJECT NUMBER: \_\_\_\_\_

Gauge #	Start Date	Cal. Date 1	Cal. Date 2	Cal. Date 3	Cal. Date 4	Cal. Date 5	Cal. Date 6	Cal. Date 7	Cal. Date 8

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Gauge Calibration Tracking Sheet

#### FINANCIAL PROJECT NUMBER: \_\_\_\_\_

Gauge #	Start Date	Cal. Date 1	Cal. Date 2	Cal. Date 3	Cal. Date 4	Cal. Date 5	Cal. Date 6	Cal. Date 7	Cal. Date 8					
1	2	3	4	5	6	7	8	9	10					
- This form is	used to docum	ent all the gau	ges that are us	ed on the proj	ect.									
- Do not ente	r a gauge more	than once.												
(1) Course #	Entor the man	ufacturaric cor	ial number for	the nuclear/m	oisturo donsitu		rata lina must l	ha						
(1) <u>Gauge #</u> .	r each gauge u	sed on the proi	ect.		oisture defisity	gauge. A sepa	rate inte must	be						
(2) <u>Start Dat</u>	completed for each gauge used on the project.         (2) Start Date: Enter the start date of when the gauge was used on the project         (3) to (10) Cal. Date X: Enter the calibration date each time the gauge has been calibrated.													
(3) to (10) <u>Ca</u>	<ul> <li>(2) Start Date: Enter the start date of when the gauge was used on the project</li> <li>(3) to (10) Cal. Date X: Enter the calibration date each time the gauge has been calibrated.</li> </ul>													
	(3) to (10) <u>Cal. Date X</u> : Enter the calibration date each time the gauge has been calibrated.													

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Summary of Proctor Samples

#### FINANCIAL PROJECT NUMBER: \_\_\_\_\_

			Emb	ankme	nt / Pipe E	Backfill							
	Quality Control		-	-		V	erificati	on/IV			Resoluti	on	Calculation:
Sample #	Material Description	Source	Soil Class	-200 (%)	Max. Density	Sample #	Soil Class	-200 (%)	Max. Density	Soil Class	Max. Density	Compr'd To	Max. Density (QC - VT)
NOTES													
NUTES:													

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Summary of Proctor Samples

#### FINANCIAL PROJECT NUMBER: \_\_\_\_\_

			Emb	ankme	nt / Pipe E	Backfill							
	Quality Control					V	erificati	on/IV			Resolution	on	Calculation:
Sample #	Material Description	Source	Soil Class	-200 (%)	Max. Density	Sample #	Soil Class	-200 (%)	Max. Density	Soil Class	Max. Density	Compr'd To	Max. Density (QC - VT)
1	2	3	4	5	6								7
- Thi	is form is used to report the lab results fr	om MAC											
(1)	<b><u>Sample #</u>:</b> Enter the sample number bas	sed on the	instruc	tions	section c	of this form.							
(2)	Material Description: Enter the descript	ion of the	materi	al beir	ng sample	ed.	• • • •						
(3)	<b>Source:</b> Enter where the material is being (6): Betrieve lab result from MAC and	ig sampled	trom (	stockp	oile, road	way, pond /	4, etc.)						
<u>(4)</u> (7) (	Calculation - Max. Density: Calculate and	l enter the	differe	nce h	ate neius etween (	s. )C's and VT	's Max	imum	Density	Procto	r		
NOTEC													
NUTES:													

## DEPARTMENT - VERIFICATION EARTHWORK RECORDS SYSTEM Summary of Proctor Samples

#### FINANCIAL PROJECT NUMBER: \_\_\_\_\_

		Retaining (MS	E) Wall	/ Geo	synthetic I	Reinforcemer	nt Back	fill					
	Quality Control					Ve	erificat	ion/IV		R	esolution		Calc: Max.
Sample #	Material Description	Source	рН	-200 (%)	Max. Density	Sample #	рН	-200 (%)	Max. Density	Sample #	Max. Density	Compr'd To	Density (QC - VT)
NOTES													
NUTES:													

# Summary of Proctor Samples

FINANCIAL P	ROJECT							Mainline	/Shoulder: _					P	AGE #:	of
							Stab	ilizad Sub	grado							
		Quality Co	ntrol			Verificatio	n/IV (Split P	roctor)	Verif	ication/I	V (Indepen	dent LBR)		Resolut	ion	Coloulation
Sample #	Sample LOT #	Station Sampled	LOTs Represt'd	LBR	Max. Density	Sample #	LOTs Represt'd	Max. Density	Sample #	Sample LOT #	Station Sampled	LOTs Represt'd	LBR	Sample #	Test Result	Max. Density (QC - VT)
NOTES:																

# Summary of Proctor Samples

FINANCIAL P	ROJECT NI	JMBER:					Mainline	e/Shoulder:				PAGE #:	of
			Granula	ır Subbase ir	n-lieu-of Sta	bilized Subgra	ide / Ba	se Rock [	Non Pit-Proc	tor Method]			
		Quality	Control				Verif	ication		R	esolution		Calculation:
Sample #	Sample LOT #	Station Sampled	LOTs Represt'd	Mine #	Max. Density	Sample #	Sample LOT #	LOTs Represt'd	Max. Density	Sample #	Max. Density	Compr'd To	Max. Density (QC - VT)

NOTES		 	 				
NUTES:							

## LOT Index & Special Conditions

FINANCIA	L PF	<b>OJECT NUMBE</b>	R:			-	CONST. T	YPE:	PAGE #:	_ of
Density	RF	Sta	tion	Date Tested	Lift #	VT Ver.	Resolved?	Remarks		
LOT #		Begin	End			(Y/N)	(Y/N)			
NOTES:										

\* This form may be waived upon the approval in writing from the Earthwork Manager at the District Materials Office.

## Pit Proctor Tracking Sheet for Granular Subbase in Lieu of Subgrade

FINANCIAL PROJECT NUMBER:

Mainline/Shoulder: \_\_\_\_\_

PAGE #: \_\_\_\_\_ of \_\_\_\_\_

			Qu	ality Contro					Verifi	cation/	/Independe	nt Verificat	tion		Resolution
PIT	Density	Sta	tion	Date	Sampla #	Qtr.	Mino #	Pit	Sampla #	PIT	LOTs	Station	Max	Sample # /	Bomarke/Dien Status
LOT #	LOT #	Begin	End	Tested	Sample #	Year	wine #	Proctor	Sample #	LOT #	Represt'd	Sampled	Density	Max Density	Remarks/Disp. Status
	- st		st an extr		and a		st i oot	h.		rd –	( , , st a	e ethy		ath a	(a star a st
	1."	Quarter (Jan 1	." - Mar 31")		2 <sup>™</sup> Quar	ter (Apr 1	l° - Jun 30°	")	3	"" Quart	er (Jul 1 <sup>°°</sup> - Se	p 30 <sup>°°</sup> )		4 <sup>th</sup> Quarter	(Oct 1 <sup>x</sup> - Dec 31 <sup>x</sup> )
NOTES	<b>):</b>														
* Draw	a bold line	horizontally	all the way if t	the Pit LOT fre	equency is less	s than 16	<b>5</b> LOTs for	mainline &	4 LOTs for n	on-mai	nline or quar	ter/year/mi	ne changes	s before the red	uired frequency is met. For

each bold line/block, there must be an IV test to verify the Pit Proctor.

## Pit Proctor Tracking Sheet for Base

FINAN	ICIAL PRO	JECT NUMB	ER:	1					Mainline	/Shoulder:					F	'AGE #:	_ of
				Quali	ty Control					Verifi	cation/	Independe	nt Verificat	ion		Resolution	
ΡΙΤ	Density	Sta	tion	Тор	Date	Sample #	Qtr.	Mine #	Pit	Sample #	РІТ	LOTs	Station	Max	Sample # /	Remarks/Dis	n Status
LOT #	LOT #	Begin	End	Bot.	Tested	Sumple #	Year	Willie #	Proctor	Sumple #	LOT #	Represt'd	Sampled	Density	Max Density	Kemarksy Bis	p. status
						1											
						-											
			<u> </u>			-											
			<u> </u>			-											
		 	<u> </u>			-											
			<b></b>		<b> </b>	-											
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			<u> </u>			-											
						-											
		ct	ct ct			nd	ct	th.		rd		ct th			th	ct ct-	
	1 <sup>s</sup>	<sup>•</sup> Quarter (Jan 1	1° - Mar 31°)			2 <sup><sup>IIII</sup></sup> Quarter (A	pr 1 <sup>°°</sup> - Ju	n 30"')		3 <sup>ru</sup> Qua	arter (Ju	l 1 <sup>st</sup> - Sep 30 <sup>th</sup>	)	4	1 <sup>····</sup> Quarter (Oct :	1" - Dec 31 <sup>ະເ</sup> )	
NOTE	5:																

\* Draw a bold line horizontally all the way if the Pit LOT frequency is less than 16 LOTs for mainline & 4 LOTs for non-mainline or quarter/year/mine changes before the required frequency is met. For each bold line/block, there must be an IV test to verify the Pit Proctor.

# Pit Proctor Tracking Sheet for Base

FINAN	CIAL PR	ROJECT NUMB	BER:						Mainline	/Shoulder:					I	PAGE #: of
				Quali	ty Control					Verifi	cation	/Independe	ent Verifica	tion		Resolution
PIT	Densit	y Sta	ition	Тор	Date	Sample #	Qtr.	Mine #	Pit	Sample #	PIT	LOTs	Station	Max	Sample # /	Remarks/Disp. Status
LOT #	LOT #	Begin	End	Bot.	Tested	•	Year		Proctor	•	LOT #	Represt'd	Sampled	Density	Max Density	· ·
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	- This f	form is used	to track w	here	Pit Procto	material is	s being	used o	n the pro	piect and r	eport	Pit Procto	r informa	tion.	-	
				nere			5 Senig				eport					
	(1) F	PIT LOT #: N	umber eac	h row	consecuti	velv.										
	(2) <b>[</b>	Density LOT	#: Enter th	ie cor	responding	g LOT # wh	ere the	e densitv	/ was tal	ken by link	ing it t	to the den	sity sheet			
	(3-4) <b>E</b>	Begin/End St		innin	g and endi	ng station o	of secti	ion repr	esented		Ŭ					
	(5) <u>T</u>	op/Bot.: Lift	t 1 is Botto	m and	d lift 2 is to	p. If more	then 2	lifts, the	en list th	e lift num	ber.					
	(6) <u>D</u>	ate Tested:	Enter the	date t	hat the de	ensity test v	vas tak	en to th	e corres	ponding D	ensity	/ LOT #.				
	(7) <u>S</u>	ample #: En	ter the QC	Proct	or sample	number (i.	e. BPO	01Q).								
	(8) <u>C</u>	uarter/Yea	<u>r</u> : Enter the	e quai	ter and ye	ar in relati	on to t	he corre	espondin	g Density	LOT #.					
	(9) <u>N</u>	/line #: Ente	r the mine	numt	er where	the materia	al came	e from ι	ising the	delivery ti	ickets.					
	(10) <u>P</u>	<u><b>Pit Proctor</b></u> : F	Retrieve Pit	: Proc	tor result f	rom MAC /	/SMO v	vebsite.								
	(11) <u>S</u>	ample #: En	ter the IV	Procto	or sample	number wh	here the	e mater	ial was v	erified.						
	(12) <u>P</u>	P <mark>IT LOT #</mark> : En	iter the LO	T num	ber the IV	' sample wa	as retri	eved.								
	(13) <u>L</u>	OTs Represe	ented: The	LOTS	the IV sar	npled verifi	ied.									
	(14) <u>S</u>	tation Samp	oled: Static	on the	IV sample	was retrie	ved.									
	(15) <u>N</u>	<u>/lax Density</u>	: Enter the	lab re	esult for Pr	octor.										
	(16) <u>S</u>	ample # / N	<u>lax Densit</u>	<b>y:</b> If re	esolution is	s used, the	n enter	the res	olution	Proctor						
	(17) <u>R</u>	lemarks/Dis	position S	tatus:	Notes, re	marks, and	/or the	disposi	tion stat	us (compa	ired to	OQC or rev	vert to tra	iditional	sampling, et	tc.).
													<u></u>			
ΝΟΤΙ	* For f	requently as	sked quest	ions a	nd answe	rs, see cons	structio	on's DCE	Memor	andun 17-	14 (ht	tps://www	w.tdot.go	v/constr	uction/mem	nos/2014/2014-
	memo	s.shtm).														
* Draw	a bold l	ine horizontally	/ all the way i	f the Pi	LOT frequer	ncy is less thar	16 LOTs	s for main	line & 4 LC	Ts for non-m	ainline	or quarter/y	ear/mine ch	anges befo	ore the required	d frequency is met. For

each bold line/block, there must be an IV test to verify the Pit Proctor.

## Pit Proctor Tracking Sheet for Base

FINAN	ICIAL PRO	JECT NUMB	ER:	1234	56-1-52·	- 01			Mainline	/Shoulder:		Shoulder			F	PAGE #: <u>1</u> of <u>5</u>
	. <u> </u>	<u> </u>		Quali	ty Control		<u> </u>			Verifi	cation,	/Independe	nt Verificat	tion		Resolution
PIT	Density	Sta	tion	Тор	Date	Sample #	Qtr.	Mine #	Pit	Sample #	PIT	LOTs	Station	Max	Sample # /	Remarks/Disp. Status
LOT #	LOT #	Begin	End	Bot.	Tested		Year		Proctor		LOT #	Represt'd	Sampled	Density	Max Density	
1	1-17	1050+00	1070+00	Bot	11/1/18											
2	2-17	1070+00	1090+00	Bot	11/2/18	BPDD1Q	Q4	TW111	128	BROMITY	3	1-4	1091+00	127		
3	3-17	1090+00	1110+00	Bot	11/3/18	010014	2018		120				10-11-00	161		
4	4-17	1110+00	1130+00	Bot	11/4/18											
5	5-17	1130+00	1150+00	Bot	11/5/18											
6	6-17	1150+00	1170+00	Bot	11/6/18	BP0010	Q4	TM111	120	BPOD2TV	a	5.0	1200+00	122	BP002R	Compared to QC, use
7	7-17	1170+00	1190+00	Bot	11/7/18	Provid	2018		120	DIUUZIV	U	7-0	1200+00	100	130pcf	128pcf
8	8-17	1190+00	1210+00	Bot	11/8/18				N							
9	9-18	1210+00	1230+00	Top	1/20/19											
10	10-18	1230+00	1250+00	Top	1/21/19	BP0020	Q1	TMAAA	126	37002TV		0.12	4220100	120		
11	11-18	1250+00	1270+00	Top	1/22/19	DIUUSA	2019		124	DIOUDIN		4-12	1220700	120		
12	12-18	1270+00	1290+00	Top	1/23/19											
13	13-18	1290+00	1310+00	Top	1/24/19											Dit Proctor cuspended
14	14-18	1310+00	1330+00	Top	1/25/19	BP0020	Q1	T1111	126	BRODATY	15	12-16	1250+00	122	BP004R	for the Qtr. Revert to
15	15-18	1330+00	1350+00	Top	1/26/19	PLODA	2019	1 10111	124	DIUUTIV	19	12-14	1000000	154	131pcf	traditional sampling &
16	16-18	1350+00	1370+00	Top	1/27/19											TOSTING.
	1 <sup>s</sup>	<sup>t</sup> Quarter (Jan	1 <sup>st</sup> - Mar 31 <sup>st</sup> )			2 <sup>nd</sup> Quarter (A	pr 1 <sup>st</sup> - Ju	in 30 <sup>th</sup> )		3 <sup>rd</sup> Qua	arter (Ju	l 1 <sup>st</sup> - Sep 30 <sup>th</sup>	)		4 <sup>th</sup> Quarter (Oct :	1 <sup>st</sup> - Dec 31 <sup>st</sup> )
NOTES	5:															

\* Draw a bold line horizontally all the way if the Pit LOT frequency is less than 16 LOTs for mainline & 4 LOTs for non-mainline or quarter/year/mine changes before the required frequency is met. For each bold line/block, there must be an IV test to verify the Pit Proctor.

# Earthwork Density Report

FINANC	INANCIAL PROJECT NUMBER:												PAGE #: OF					
CONST.	ТҮР	E:				STATION:			то_				M/L OF		.DER:			
LOT #	R F	Date	TIN	Gauge SN	Std. Density Mst./Bkgrd. Count	Proctor Sample #	Test #	Station	Offset /RL	Lift #	Test Depth	Soil Density Mst./Bkgrd Count	Wet Density	% Moist.	Dry Density	% Max. Density	LOTs Acpt'd	
NOTES:																		

# Earthwork Density Report

FINAN	CIAL	PROJECT N	NUMBER:         ROADWAY NAME:         PAGE #:         OF           1         STATION:         2         TO         M/L OR SHOULDER:														
CONST	. TYF	PE:	1			STATION:	STATION:         2         TO         M/L OR SHOULDER:           Proctor         To         To         Wot         %         Dry         % Max         H										
LOT #	R F	Date	TIN	Gauge SN	Std. Density Mst./Bkgrd. Count	Proctor Sample #	Test #	Station	Offset /RL	Lift #	Test Depth	Soil Density Mst./Bkgrd. Count	· Wet Density	% Moist.	Dry Density	% Max. Density	LOTs Acpt'd
3	4	5	6	7	<u>8</u> 9	10 11	12	13	14	15	16	17 18	19	20	21	22	23
- This	forr	n is used to	document the requi	ired densities	s per specificati	on.		CONTIN	UED			-			-	-	
1) 🧕	onsi	truction Typ	<b><u>be</u>:</b> Record the type of	of construction	on (i.e. Embank	ment,		14) <u>Off</u> s	et/RL: R	Record	the offs	et distance fro	m a surve	yed line	(C/L or B <sub>/</sub>	/L of	_
9	Stabi	lized Subgra	ade, Base, MSE Wall,	, etc.).				Cons	structior	n with t	he dire	ction 'L' or 'R' f	ollowing t	he num	ber)		
2) §	tatio	on Begin to	End: Record beginni	ing station to	ending station	of the section	on	15) <u>Lift</u>	<u>#</u> : Recor	d the l	ift numl	per and total lif	ts at the t	est loca	tion (i.e. 2	2/10)	
repre	sent	ed.				<b>.</b>	<ul> <li>16) <u>lest Depth</u>: Record the depth of the density test in inches.</li> <li>17) Soil Density: Record the soil density count reading for the test from the</li> </ul>										
3) <u>L</u>		E Record tr	ie LOT # - Plot Page #	#. Start a nev	v set of number	rs for each	density gauge. For L-NDG's, this will be displayed as DC.										
(A) E	ype E D	or construc	mark for LOTs that	ronrocont ro	duced frequence	SV.	<ul> <li>density gauge. For L-NDG's, this will be displayed as DC.</li> <li>18) Mst./Bkgrd. Count: Record the soil moisture count reading for NDG's or</li> </ul>										
5)	<u>.</u>	Record the	date that the densit	tv test was ta	iken.	-y.	18) <u>Mst./Bkgrd. Count:</u> Record the soil moisture count reading for NDG's or soil background count diplayed as BC if using L-NDG.										
6) 1	IN: F	Record the i	nspector's CTQP trai	ining identific	cation number.			19) <u>We</u> t	Density	<u>/:</u> Reco	ord the v	vet density res	ult from t	he gaug	e to the n	earest	Ī
7)	aug	<u>e SN</u> : Recor	d the manufacturer'	's serial numb	per for the nucl	ear/ moistui	re	0.1	PCF.								1
dens	ty ga	auge.						20) <u>% N</u>	loist.: Re	ecord t	he perc	ent moisture v	alue to th	e neares	st 0.1%.		Ē
8) <u>5</u>	td. [	Density: Red	cord the daily standa	rd density co	ount of the gaug	ge used to		21) <u>Dry</u>	<b>Density</b>	: Calcu	late dry	density using t	he formu	la belov	/ and repo	ort to the	
	perfc	orm the den	sity test. For L-NDG	s, this will be	displayed as D	S.		nea	rest 0.1	PCF.							H
9) <u>N</u>	<u>lst./</u>	Bkgrd. Cou	nt: Record the daily s	standard moi	sture count of	the Nuclear				L	Dry Dei	$v_{isity} = \frac{We}{100}$	t Density	$\xrightarrow{\nu}$ 1	00		·
- C	ensi	ty Guage (N	IDG) or standard bac	kground cou	nt if using a Lov	w Activity		22) % M	lav Don	sity C	alculate	- 100 +	% Moist	ure ity using	the form	ula	-
	lucie	ar Density (	Jauge (L-NDG). For L	-NDG'S, the s	standard backg	rouna count		belo	w and re	enort t	o the ne	Parest whole ni	imber.	ity using	s the form	iuia	·
10)	layu Proct	e uispiayeu or: Record	as bod of DSB uepe the laboratory Maxi	mum Density	Proctor value	to the		-				D	ry Densi	ty	400		-
	heare	est 1 PCF.					% Max. Density = $\frac{1}{Max. Density Proctor} \times 100$									-	
11)	amr	ole #: <u>Recor</u>	d the sample number	er reported in	n 'Earth <u>work Su</u>	immary of		23) <u>Disp</u>	osition	Status	or LOTs	Accepted: In C	QC's logbo	ok, inpu	t P/F for o	density	-
	Pro <u>c</u>	tors' she <u>et</u> :	for the Maximum De			test	pass or 1	fail. In	additior	n, input V for th	ne sample	that wa	s verified	by the			
12)	est	#: Record t	est number sequent	plot page or fo	r each		Dep	artment	repres	entativ	e. In VT's logbo	ook, list LC	DTs verif	ied by this	s test		
2	tatio	on begin and	d end areas.					(QC	LOT #'s -	- Corre	spondir	ig QC Page #'s).					
		I	I I	I	I	I											
INOTES	:																

675-020-28 Materials - 11/2023

## Earthwork Density Report for MAC-ERS

FINANCIAL F	PROJ	ECT NUMBER:			LOGBOOK NAME: STATION: TO					ULDER:		MAC MTL ID:		
MAC CATEG	ORY,	/ТҮРЕ:			STATION: TO PA									
FDOT	DE	Test Date	Company Name	Std. Density	Proctor (pcf)	Station /	Offset	Test	Soil Density	Wet Density	% Moist.	Dry Density	% Max. Density	MAC Condition #'s
SAMPLE #	Γ	Gauge SN	TIN	Mst./Bkgrd. Count	Sample #	El. (ft)	RL	Depth	Mst./Bkgrd. Count			Notes		
	-							-			<u> </u>			I
	-													
		·						-						I
		·						-			<b>_</b>			I
								-			<b>_</b>			I
											<b></b>			I
	-							-						
								-			<b>_</b>			I
		·						-			<b>_</b>			I
		· - <b></b>									<u> </u>			I

#### Earthwork Density Report for MAC-ERS

FINANCIAL	PROJ	ECT NUMBER:			LOGBOOK N		1		M/L OR SHO	ULDER:	2		ΜΑር ΜΤΙ	ID: <u>3</u>			
MAC CATEO	ORY,	′ТҮРЕ:	4		STATION:	5	го		PAGE NOTE:			6					
FDOT	рг	Test Date	Company Name	Std. Density	Proctor (pcf)	Proctor     Station /     Offset     Test     Soil Density     Wet     Moist.     Dry     % Max.     MAC       (pcf)     Length     Offset     Test     Soil Density     Density     % Moist.     Density     Density     Density     Condition #       Sample #     El. (ft)     RL     Depth     Mst./Bkgrd     Notes     Notes											
SAMPLE #	ĸŀ	Gauge SN	TIN	Mst./Bkgrd Count	Sample #	El. (ft)	RL	Depth	Mst./Bkgrd Count			Notes					
7		9	11	13	15	17	19	20	21	23	24	25	26	27			
	Ŭ	10	12	14	16	18		20	22			28					
<ul> <li>1) Logborner, the planer, the pla</li></ul>	ok Na ots are r Sho ay or D: Re Catego ories/t n Beg ented Note: For e: Samp lance ace a o oate: F Samp lance ace a o oate: F SN: I en va Dany N Record Densit ty tes Bkgrd or sta 6). For ing or pr: Re le #: R	Internet the second the name of the maxe o	me of the logbook exactly a ther the densities are taken erial ID that the sample belo he name of the MAC catego RS Sample Manual (see link he beginning station to endi c notes that would affect th ensities, enter the pipe run (i OT Sample number pertain ling Numbering instructions is that represent reduced free t the density test was taken cturer's serial number of the ect gauge tab in MAC-ERS. hame of the QC technician's 'QP training identification no standard density count of t will be displayed as DS. daily standard moisture cou count if using a Low Activity dard background count may hum Density Proctor value to humber reported in 'Earthwa tor.	s it appears in MA in mainline/whole ongs to (i.e. 120, 14 ry/type. For the lis 1). ing station of the s e entire page; if no i.e. S-1 to S-2). ing to the density f (see link 2). equency. h. e nuclear/moisture employer. umber. he gauge used to unt of the Nuclear y Nuclear Density G be displayed as BG o the nearest 0. 1 F ork Summary of Pr	C-ERS where e width of the 45, 160, 200, st of section one leave it test in e density that perform the Density Guage Gauge D or DSB PCF. roctors' sheet	17) 18) 19) 20) 21) 22) 23) 24) 25) 26) 27) 28) LINI Link Link Sou	Station/Leg distance (le <u>El.:</u> Record <u>Offset/RL</u> : the directio <u>Test Depth</u> <u>Soil Density</u> L-NDG's, thi <u>Mst./Bkgrc</u> count dipla <u>Wet Density</u> PCF. <u>% Max. Dep</u> report to th <u>MAC Condir</u> into MAC FI Manual, cha <u>Notes:</u> Add target comp (S: <u>1</u> : https://fv cce/material	ngth: Rec ngth) fron the eleva Record th n 'L' or 'R : Record f r Record f r Record f r Record f r Record f r Record f r Count: F yed as BC r Y Record the cord the cecord the cecord the cecord the cecord the cecord the cecord the cecord the r Calculat f Count: F r S Calculat the nearest r Calculat r Calcula	ord the station I m the beginning ation of the test he offset distance ' following the r the depth of the the soil density displayed as DC. Record the soil n C if using L-NDG. I the wet densit e percent moiste te the dry densit Dry Dense culate the percee t whole number. % Max. Dense Record all the percee t whole number. % Max. Dense Record all the percee t e link 1). cional notes abo overriden, then .gov/materials/n blob.core.windc aining/ers/ers-sa	ocation when of the pipe in feet taker e from a sur number). density test count readi noisture count y result from ure value to y using the f $ty = \frac{Wa}{100 + 1}$ nt maximum $ty = \frac{L}{Max}$ . issible MAC or a list of M ut the densific record the finance mac mac mys.net/site amples/sam	ere the test w for drainage n in relation t rveyed line (C t in inches. ng for the te- unt reading for n the gauge t the nearest of formula belo et Density - % Moistur n density usin Dry Density Pro- conditions th AC condition ty test for fut required con finity/docs/d ple-numberi	vas taken for plots. to the ERS plo C/L or B/L of st from the d or NDG's or s to the neares 0.1%. w and report $\frac{1}{ce} \times 100$ ng the formu $\frac{1}{cctor} \times 100$ nat are requi as, refer to th ture reference npaction pero-	ESB plots of ot. Construction lensity gauge oil backgrou at 0.1 PCF to the near la below an red to be en e ERS Samp ces. For exar centage.	r the n with e. For and est 0.1 d tered le nple, if			

	Stabilizing wixing Depth
FINANCIAL PROJECT NUMBER:	Mainline/Shoulder:

LOT #	Witnessed by TIN	Data	Station	Range	QC Depth Check 1StationOffsetDepthS			QC Dep	th Chec	k 2	QC Dep	th Checl	k 3	LOT	Disp.
	withessed by Till	Date	Begin	End	Station Offset Depth St			Station	Offset	Depth	Station	Offset	Depth	Average	Status
NOTES:															

FINANC	IAL PROJECT NUMBER:					Mainlir	ne/Shoul	der:					PAGE	#:	of
IOT #	Witnessed by TIN	Date	Station	Range	QC Dep	oth Chec	k 1	QC Dep	th Chec	k 2	QC Dep	th Chec	k 3	LOT	Disp.
201 #	withessed by fire	Date	Begin	End	Station	Offset	Depth	Station	Offset	Depth	Station	Offset	Depth	Average	Status
1	2	3	4	5	6	/	8							9	10
- This (1)	s form is used to doc LOT #: Enter the cor	ument the nsecutive L	mixing dep .OT # per ro	th for subgr adwav/cons	ade materia struction typ	al oe and	plan thi	ckness							
(2)	TIN: Enter the inspe	ctor's CTQI	P training id	entification	number										
(3) (4)	Date: Enter the date Begin Station: Enter	e of the tes	t taken ning station	representir	ng the IOT n	umber									
(5)	End Station: Enter th	ne ending s	station repr	esenting the	e LOT numb	er									-
(6)	QC Depth Check - St	ation: Ente	er the statio	n location v	vhere the d	epth ch	eck wa	s taken				<i>(</i> , )			-
(7) - num	QC Depth Check - Offset: Enter the offset distance from a surveyed line (C/L or B/L of Construction with the direction 'L' or 'R' following the nber)														
(8)	<u>QC Depth Check - Depth Check </u>	<b>epth:</b> Reco	rd the final	compacted	depth of th	e mixe	d stabilz	ed subgrac	le meas	sured b	y the QC te	chniciar	n to the	nearest	1/4"
inch.	IOT Average Coloul	ate and re	port the ave	rage of the	three depth	<b>.</b>									
(9)	Disp. Status: Enter t	he disposit	tion status c	of the LOT av	verage dept	is :h checl	k (Verifi	ed? Yes/Nc	))						-
-					· ·		·		, 1						
NOTES:			1						I						

## **Rock Base Thickness**

FINANCIAL PROJECT NUMBER:

M/L OR SHOULDER: \_\_\_\_\_

PAGE #: \_\_\_\_\_ of \_\_\_\_\_ PAY ITEM #: \_\_\_\_\_

PLAN THICKNESS: \_\_\_\_\_

Core	Mittan and Dev (TIAI)	Data		Stat	tion	Q	C Core 1		Q	Core 2		Q	C Core 3		Disp.
LOT #	witnessed By (TIN)	Date	wiath	Begin	End	Station	Offset/RL	Depth	Station	Offset/RL	Depth	Station	Offset/RL	Depth	Status
NOTES	:														

## **Rock Base Thickness**

|--|

M/L OR SHOULDER: \_\_\_\_\_

PAGE #:	of
PAY ITEM #:	2

PLAN THICKNESS: \_\_\_\_1\_\_\_\_

Core	ore Witnessed By (TIN) Date Width Station End Station Offset/RL Depth Station														Disp.
LOT #	withessed by (Thy)	Date	wiath	Begin	End	Station	Offset/RL	Depth	Station	Offset/RL	Depth	Station	Offset/RL	Depth	Status
3	4	5	6	7	8	9	<u>   10    </u>	11							12
	- Separate for	m must be	ument used if	Roadway or	Plan Thickr	ness change	aı. S.								
	(1) <u>Plan Thio</u> (2) Pay Item	c <mark>kness</mark> : Reco #: Record t	ord the	thickness c	alled for in t er associate	the Plans. Ind with the o	denth me	asurer	nents						
	(3) <u>Core LO1</u>	<u>#</u> : Record	the co	nsecutive Co	pre LOT # pe	er roadway/	construc	tion ty	pe and plan	thicknes	s.				
	(4) <u>TIN</u> : Reco (5) <u>Date</u> : Re														
	(6) <u>Width</u> : R														
	<ul> <li>(7) <u>Begin Station</u>: Record the beginning station representing the LOT number.</li> <li>(8) <u>End Station</u>: Record the ending station representing the LOT number.</li> </ul>														
	<ul> <li>(9) <u>QC Core - Station</u>: Record the station location where the depth check was taken.</li> <li>(10) <u>QC Core - Offset/RI: Becord the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a surveyed line (C/L or B/L of Construction with the offset distance from a survey between the offset distance from a survey </u></li></ul>														
	direction 'L' o	r 'R' followi	ng the	number)											
	(11) <u>QC Core</u> subbbase in li	<u>- Depth</u> : Re eu of stabil:	cord th zed sub	ne thickness ograde if use	of the core d.	hole measu	ured to 0.	1 inch.	Subtract or	ut the gra	inular				
	(12) <b>Disp. Status:</b> Record the disposition status of the core depths check (Verified? Yes/No)														
													<u> </u>		
NOTES															

## **Stabilizing Mixing Depth for MAC-ERS**

FINANCIAL PROJECT NUMBER: \_\_\_\_\_\_ LOGBOOK NAME: \_\_\_\_\_\_ M/L OR SHOULDER: \_\_\_\_\_\_

WITNESSED BY COMPANY: \_\_\_\_\_

PAD THICKNESS : \_\_\_\_\_

FDOT	Company Name	Test Data	Station	n Range	QC D	epth Check 1		QC De	epth Check 2		QC De	epth Check 3		
SMPL #	Witnessed by TIN	Test Date	Begin	End	Station	Offset/RL	Depth	Station	Offset/RL	Depth	Station	Offset/RL	Depth	LUT AVg.
NOTES:														

# Stabilizing Mixing Depth for MAC-ERS

FINANCI	AL PROJECT NUMBER	LOGBOOK	NAME:	M/L OR SHOULDER:					2					
WITNESS	SED BY COMPANY:							PA	AD THICKNE	SS :	4			
FDOT	Company Name	Test Data	Statior	n Range	QC D	epth Check 1		QC D	epth Check 2	2	QC D	8		
SMPL #	Witnessed by TIN	Test Date	Begin	End	Station	Station Offset/RL Depth Station Offset/RL Depth Station Offset/RL M								
5	6 7	8	9		1011 12									
	1) Logbook Name: Record the name of the logbook exactly as it appears in MAC-ERS where the plots are drawn.													
	2) <u>M/L or Shoulder:</u> Denote whether the depth checks are taken in mainline/whole width of the roadway or shoulder.													
	3) Witnessed by Company: Record the name of the VT technician's employer who is witnessing the QC test.													
	4) <u>Pad Thickne</u>	ess: Recor	d the pad th	hickness wh	en measuri	ng depth f	or shou	lder areas.	If mainline	e, input	N/A.		_	
	Numbering System document and the ERS Sample Manual (documents can be found @ www.fdot.gov/materials/mac).													
	6) <u>Company Name:</u> Record the name of the QC technician's employer.													
	7) <u>Measured k</u>	<mark>by TIN</mark> : Re	cord the ins	pector's CT	QP training	identificat	ion nur	nber.						
	8) <u>Test Date</u> : F	Record the	e date that t	he density t	est was tak	æn.							_	
	9) <u>Station Ran</u>	ige (Begin	to End): Re	cord the be	ginning stat	tion to enc	ling sta	tion of the s	section rep	present	ed.			
	– 10) <u>Station:</u> Re	cord the s	tation locat	ion where th	he depth ch	ieck was ta	aken.						-	
	11) <u>Offset/RL:</u> [	Enter the o	offset distar	nce from a s	urveyed lin	e (C/L or B	/L of Co	onstruction	with the c	lirectior	n 'L' or 'R' f	ollowing th	ne	
	number).												( - 1)	
	12) <b>Depth:</b> Rec	ord the fir	nal compact	ed depth of	the mixed	stabilzed s	ubgrad	e measured	by the Q	C techni	cian to the	nearest 1,	/4"	
	inch.				e	1								
	13) <u>LOT Avg.:</u> C	alculate a	nd report th	ne average c	of the three	depths.							-	
						+						-		
						<b></b>								
NOTES:			1	1	1	1			1			1	<u>I</u>	

### **Rock Base Thickness for MAC-ERS**

\_\_\_\_

LOGBOOK NAME: \_\_\_\_\_

	M/	'L OR	SHOU	LDER:
--	----	-------	------	-------

WITNESSED BY COMPANY: \_\_\_\_\_

DEPTH INCLUDES LRI (Y/N): \_\_\_\_\_

PLAN THICKNESS: \_\_\_\_\_

FDOT	Company Name	Tost Data	Width	Stat	tion	QC	Core 1		QC	Core 2		QC	C Core 3	
SMPL #	Witnessed By (TIN)	Test Date	width	Begin	End	Station	Offset/RL	Depth	Station	Offset/RL	Depth	Station	Offset/RL	Depth
NOTES:														

## **Rock Base Thickness for MAC-ERS**

FINANCIA	NANCIAL PROJECT NUMBER: LOGBOOK NAME:1 M/L OR SHOULDER:							: <u>2</u>						
WITNESSED BY COMPANY:       3       DEPTH INCLUDES LRI (Y/N):       4       PLAN THICKNESS:							5							
FDOT	Company Name	Test Data	\A/;dth	Stat	tion	Q	C Core 1		Q	Core 2	Core 2 QC Core 3			
SMPL #	Witnessed By (TIN)	Test Date	width	Begin	End	Station	Offset/RL	Depth	Station	Offset/RL	Depth	Station Offset/R		Depth
6	7 8	9	10	11		12	<u>13</u>	14						
	- This form is used to document the core thickness for base material for later upload into MAC-ERS													
	1) Logbook Name: Record the name of the logbook exactly as it appears in MAC-ERS where the plots are drawn													
	2) M/L or Shoulde	er: Denote v	whethe	r the base r	ock cores ar	e taken in n	nainline/v	whole v	vidth of the	roadway	or sho	ulder		
	3) Witnessed by (	Company: R	ecord t	he name of	the VT tech	nician's em	nlover wh	no is wi	tnessing the	OC test				
	4) Denth Includes	IRI: Record	l ves or	no if the h	ase thicknes	s test inclu	des granu	ilar sub	ace in lieu c	of subgra	de			
	5) Plan Thickness	Record the	Plan t	hickness of t	the hase gro	nun Exclude	6" when		annlicahle	1 200810	ис.			
	6) <b>FDOT Sample #</b>	• Record th		-Sample nu	mher nertai	ning to the	density te	est in a	cordance w	ith the F	RSSan	nnling Numł	nering	
	System document a	nd the FRS	Sample	Manual (d	ocuments ca	an he found		fdot go	w/materials	(mac)				
	7) Company Nam	e. Record th	ne nam	e of the OC	technician's	emplover		ruot.gc	, matchai	, macj.				
	8) Measured by T	IN: Record t	the inci	e of the Qe	)P training id	dentification	numher							
	9) Test Date: Reco	nd the date	that th	he density to	act was take	n	manifici							
	10) Width Becord	the wdith o	f the re	he density to	covers the	hase laver								
	11) Station Bange	(Regin to F		acord the be	ginning stat	tion to endi	ng station	of the	section ren	recented				
	12) Station: Record	the station	locati	on where th	e rock base	thickness w	ng station vas takon	i or the	section rep	nesentet	•			
	12) Offset/RI · Ente	ar the offcot	distan	ce from a si	irveved line	(C/L  or  R/L	of Constr	uction	with the dir	ection (1)	' or 'R'	following th		
	number)													
	1/1) Denth: Record	the final co	mnacte	d denth of t	the rock has	a thicknoss	maasura	d by th	o OC tochni	cian to th	no noor	oct 0 1 inch		
	14) Deptil. Record		Πρατιέ				measure	συγτη			ie neai			
NOTES:					<u> </u>	<u> </u>	<u> </u>		<u> </u>	1	<u> </u>	<u> </u>	I	

## **INSTRUCTIONS FOR NON-ELECTRONIC ERS PROJECTS**

#### **General Instructions:**

- For MAC-ERS projects, refer to manuals posted on www.fdot.gov/materials/mac.
- Keep a copy of the instruction with the logbook.
- Keep books separated by construction types (Left Roadway, Right Roadway, MSE Wall, Ramp, Pipe Backfill, etc.)
- Ensure all required information on the plot and density report are current, legible, and written in ink.
- Do not use dittos, white-out, and erasures, unless otherwise allowed in the directions.
- Make corrections with a single line striking through the original data and writing the corrected data in close proximity. Initial and date all corrections.
- If earthwork testing and sampling is different from the standard specification, then place a copy of the contract specification documents in the logbook.
- Notes may be written in Earthwork Records System by Independent Assurance personnel to assist in review of the Earthwork Records System.

#### **FDOT Sample Numbering Process**

- Keep a copy of the FDOT sample numbering instructions for Proctor samples (page 1) from the 'ERS Sample Numbering System' manual posted on www.fdot.gov/materials/mac in the logoobk.

#### Embankment, Bar Graphs, and Drainage Plot

- Use the Density Log Book Plot program to plot Embankment, Subgrade, Base, Shared-Use-Paths, Sidewalks/Driveways and Drainage Pipes.
- Plot the test number excluding the page number at the appropriate station and lift location where the test was conducted.
- All failing test locations should be circled to indicate the failing status
- Groundwater elevations and the date of the observation should be noted on the plot sheet (i.e. ▼07/04/25). The horizontal line represents the water table elevation. The symbol should be placed at the left or right side of the graph. Water table elevations should be indicated, dated, and initialed.

#### EARTHWORK RANDOM NUMBER GENERATOR

#### Instructions:

Choose random numbers to determine the each location and offset for Earthwork sampling and testing. Arbitrarily select numbers for the row and column. Use the row and column numbers to determine the random number from the table below.

	1	2	3	4	5	6	7	8	9	10	11	12
1	0.834	0.996	0.385	0.603	0.821	0.821	0.370	0.526	0.342	0.502	0.414	0.737
2	0.138	0.329	0.581	0.333	0.434	0.596	0.848	0.524	0.638	0.751	0.793	0.911
3	0.788	0.370	0.460	0.348	0.224	0.375	0.785	0.003	0.875	0.589	0.350	0.979
4	0.693	0.679	0.317	0.476	0.684	0.881	0.392	0.959	0.513	0.076	0.242	0.915
5	0.846	0.670	0.572	0.118	0.559	0.677	0.764	0.016	0.202	0.538	0.764	0.774
6	0.001	0.492	0.940	0.922	0.852	0.138	0.147	0.876	0.788	0.072	0.940	0.758
7	0.736	0.562	0.862	0.807	0.655	0.630	0.628	0.636	0.873	0.635	0.126	0.197
8	0.829	0.543	0.061	0.947	0.112	0.497	0.787	0.717	0.009	0.773	0.372	0.582
9	0.725	0.834	0.189	0.345	0.503	0.987	0.059	0.709	0.125	0.196	0.251	0.553
10	0.251	0.368	0.405	0.795	0.866	0.394	0.791	0.484	0.393	0.567	0.638	0.111
11	0.341	0.782	0.180	0.057	0.214	0.835	0.298	0.206	0.740	0.271	0.441	0.535
12	0.660	0.748	0.578	0.712	0.882	0.941	0.769	0.664	0.110	0.775	0.164	0.261
13	0.884	0.723	0.188	0.547	0.527	0.658	0.226	0.096	0.129	0.871	0.765	0.135
14	0.567	0.187	0.151	0.399	0.238	0.923	0.133	0.757	0.532	0.679	0.063	0.357
15	0.254	0.163	0.145	0.240	0.390	0.164	0.589	0.491	0.840	0.220	0.587	0.148
16	0.376	0.314	0.673	0.260	0.423	0.527	0.418	0.409	0.699	0.459	0.977	0.422
17	0.306	0.863	0.382	0.069	0.077	0.210	0.613	0.462	0.568	0.703	0.213	0.796
18	0.300	0.468	0.206	0.155	0.401	0.263	0.901	0.825	0.074	0.802	0.230	0.631

#### **Density test example:**

To get station and offset for a density test, multiply the length of the LOT in question by a random number obtained from the chart. For example, if the LOT you are testing is 500ft, and you choose Row 4 Column 5, then the number is 0.684. Your location for testing would be 0.684 X 500' = 342' from the beginning of the LOT, or 342' up station. Then select a random number and multiply by the width to determine the offset. For example, if the LOT is 24 ft and you selected the random number from Row 8 Column 2, your offset is 0.543 X 24' = 13.0 ft.