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COLLEGE OF EDUCATION
AND PROFESSIONAL STUDIES

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References

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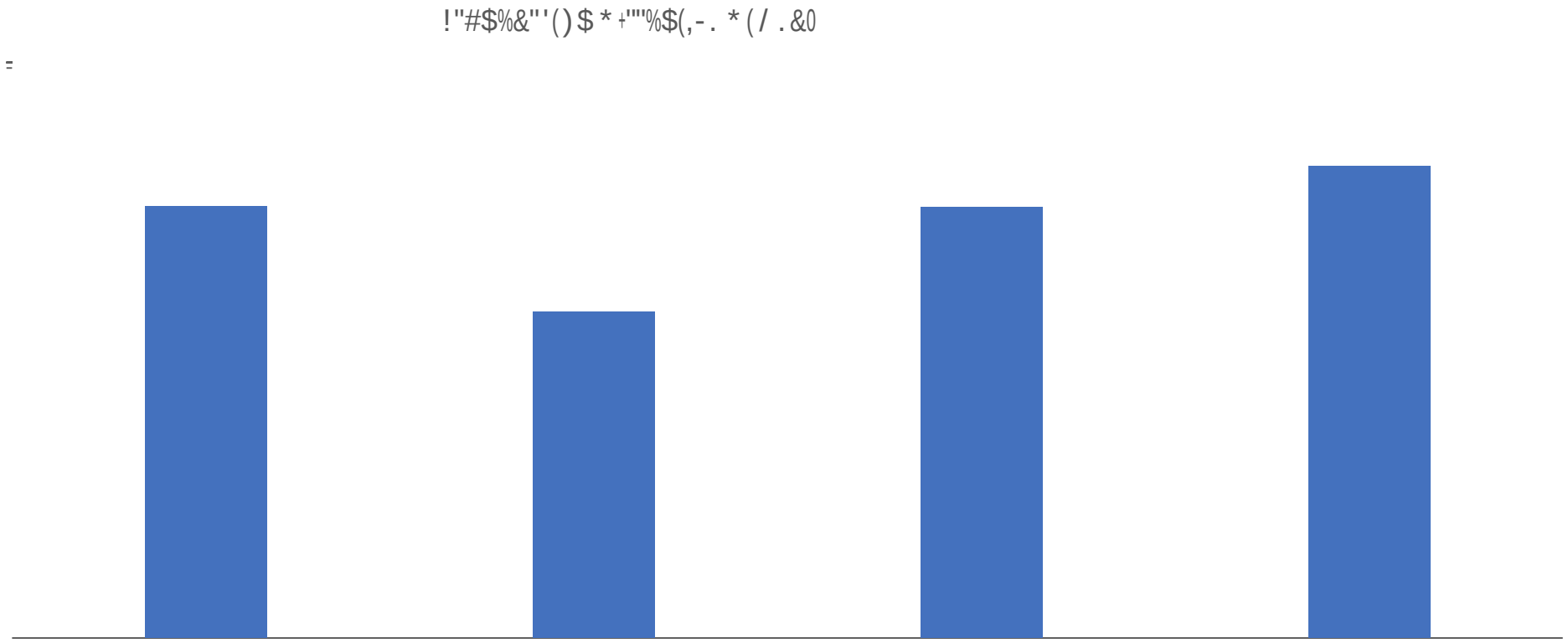

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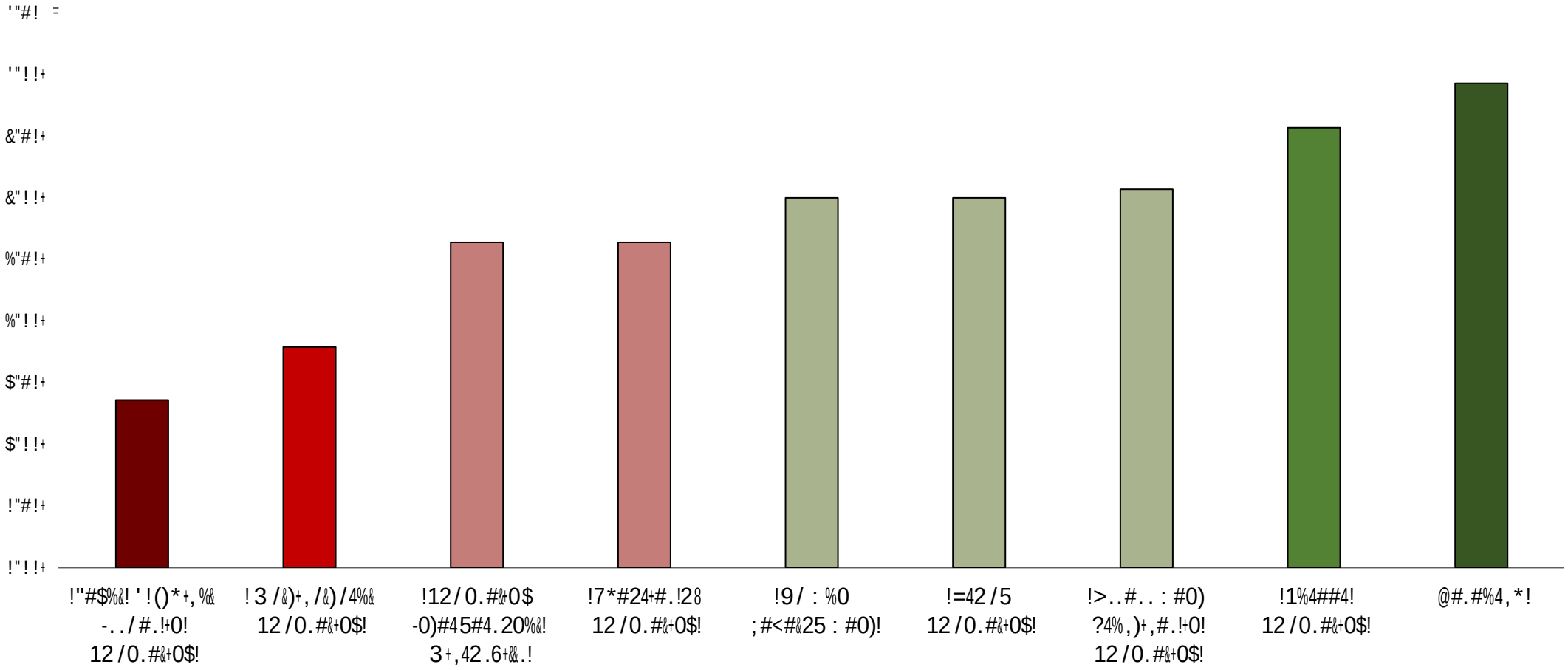
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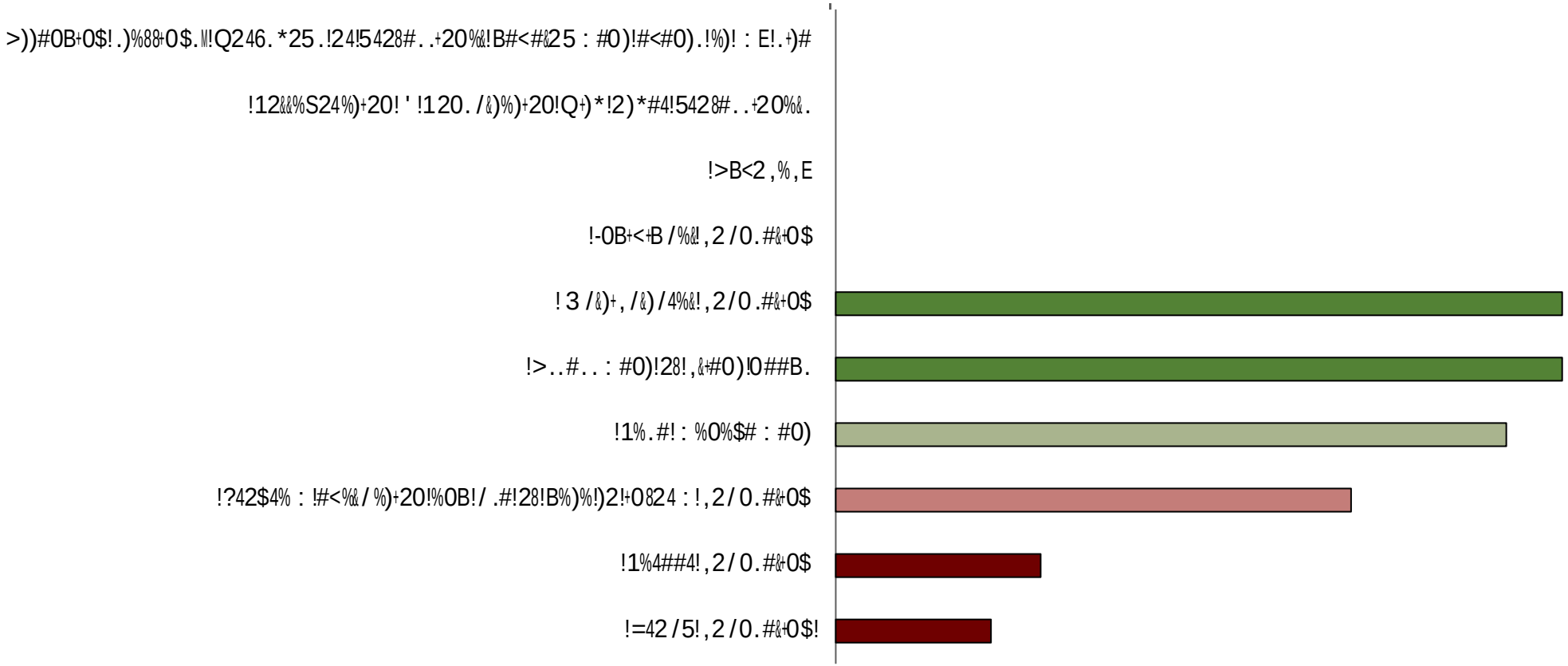

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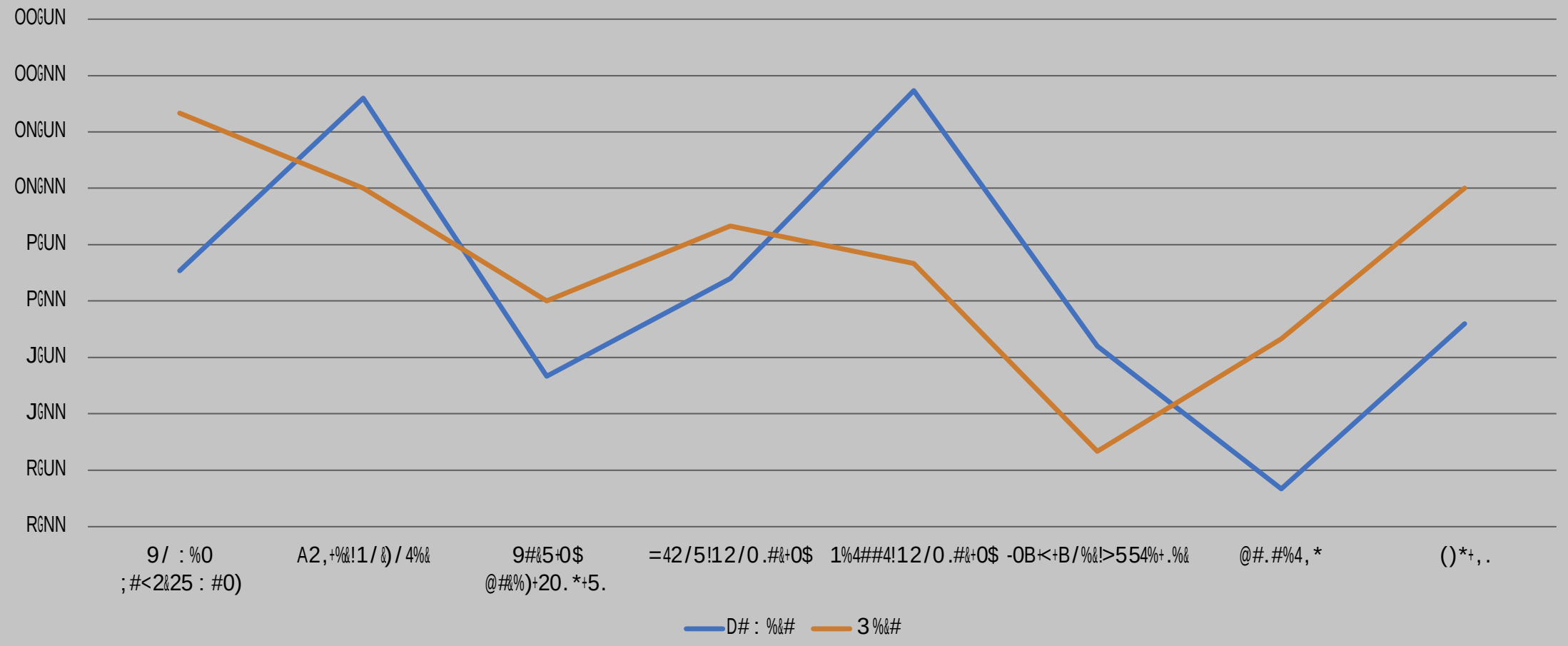

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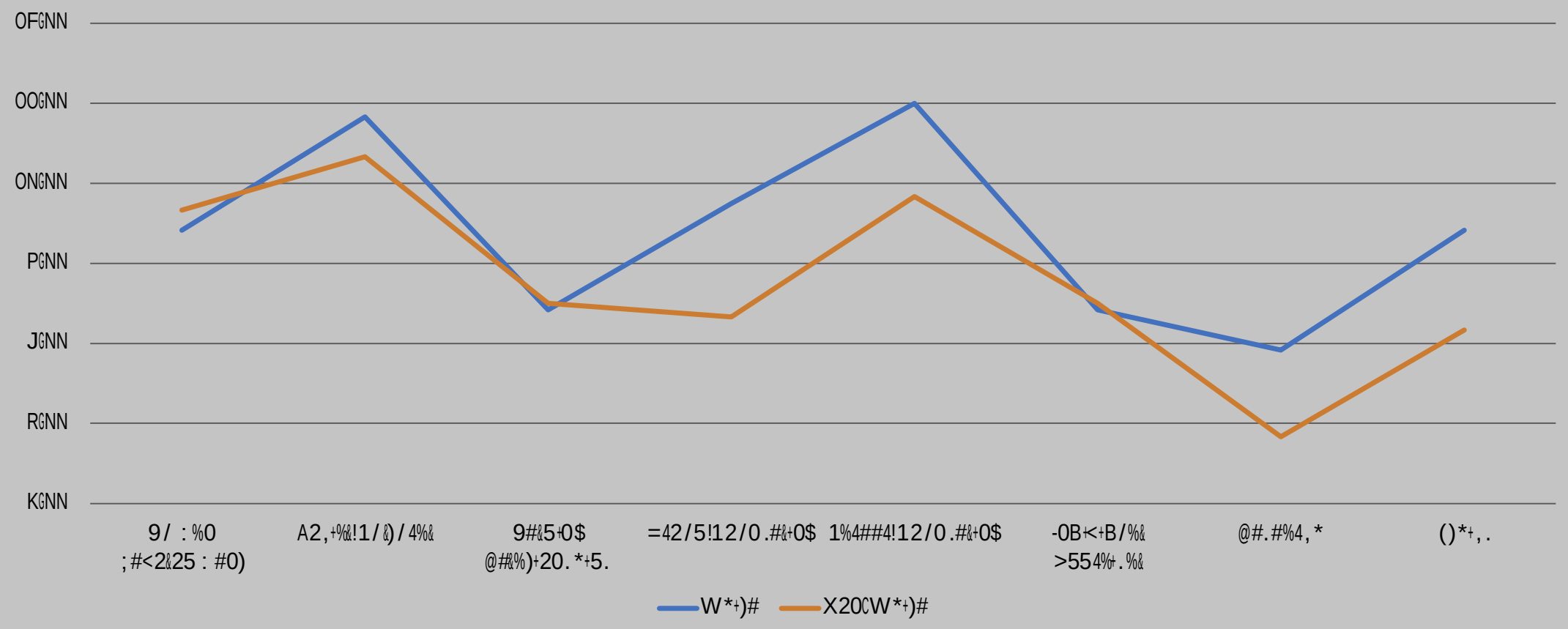

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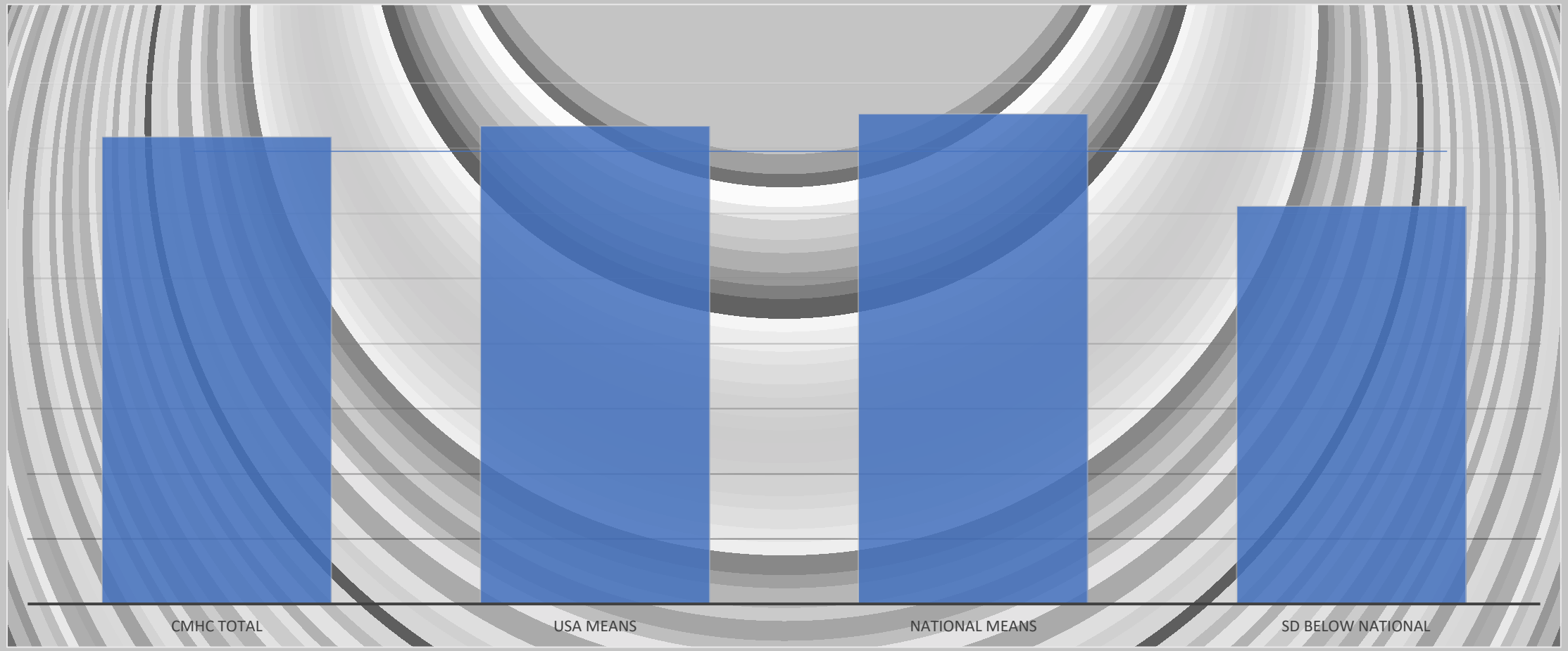

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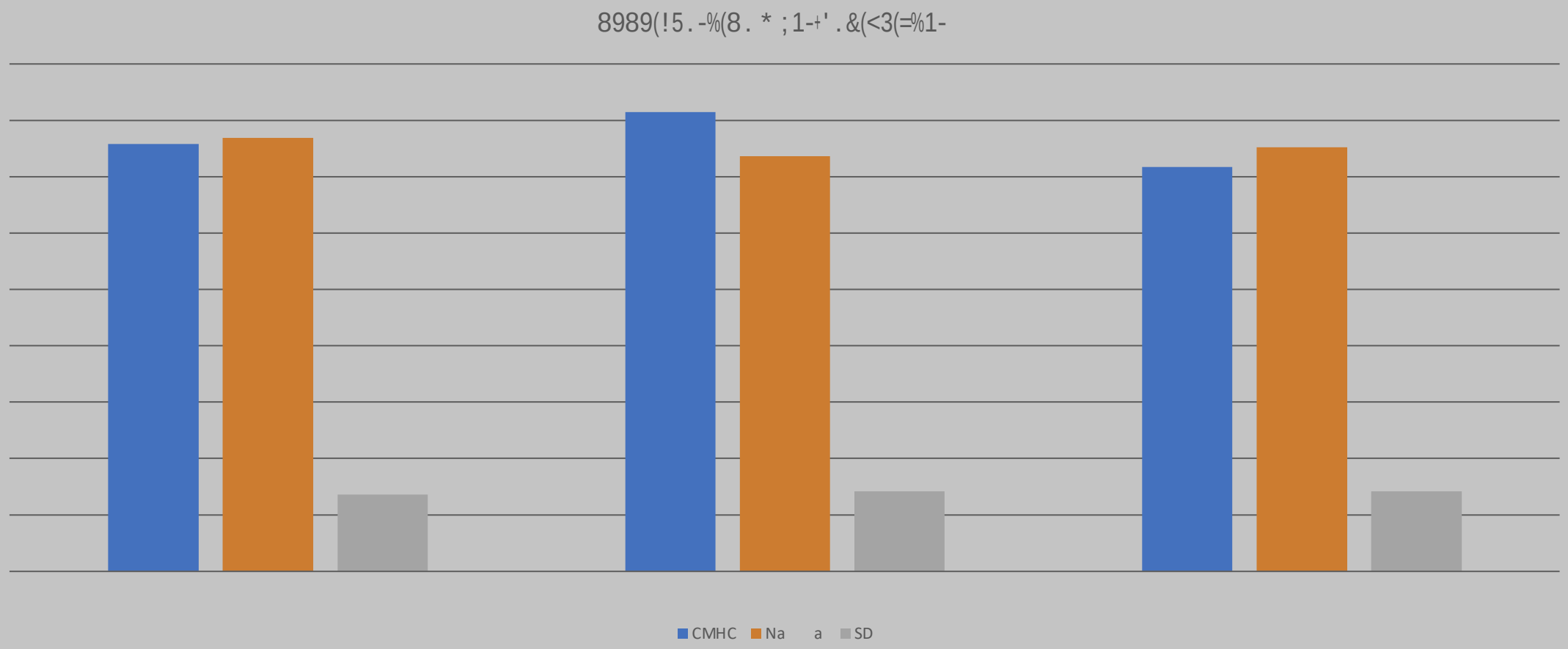

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+#2,"&)/$+"#$K1(,#''fN4&..'$,(-1'#$2)5$2..$,(1#$*2,-.+3
6#1#$&)$2/1##%#)+$(*$2$01(*&,&#)+$(1$"&/"#1$12+&)/$(*$'#.*@
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-)5#11#01#'#)+#5$82,4/1(-)5'T$#21)#5E'()$+"#$#I2%A
+"#$%2_(1&+3$(*$'+-5#)+'$#21)#5$D'A$2)5F'+-5#)+'$Q%2_(1&+3
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2,25#%&,$2**2&1'$+($+#2,"$+"#
,(-1'#$2/2&)$&)$+"#$*-+-1#9$!"#
*2,-.+3$21#$#)/2/&)/$2)(+"#1$)#6
&)'+1-,+(1A$*(1$6"(%$+"&'$6(-.5
2.'($8#$+"#&1$*&1'+$/125-2+#
,(-)'#.&)/$,(-1'#9$!($01#021#$*(1
01(8.#%'$6&+"$2001(01&2+#$+#'+&)/
,1&+#1&()$8#&)/$-'#5$+"#$01(/12%
*2,-.+3$6&..$1#7&#6$+"#$%&5@+#1%
2)5$*&)2.$#I2%$,()+#)+$*(1$+"&'
,(-1'#$2)5$01(7&5#$/-&52),#$2)5
,()'-.+2+&()$*(1$+"#$&)'+1-,+(1
&),.-5&)/$&+#%$1#7&#6$2'$6#..$2'
#I2%&)&)/$&+#%'$0('+@+#'+&)/$+(
5#+#1%&)#$&*$2)3$&+#%'$62112)+
8#&)/$5&',215#5$5-#$+($"&/"#1
+"2)$)(1%2.$*2&.-1#$12+#'$()$'2&5
&+#%'9$$Q<RS;GS><>>T

!"#$:(1#$M2,-.+3
"2'$%(7#5$+"#$%-.+&,-.+-12.
,(-)'#.&)/$,(-1'#$+($NO1&)/
N#%#'+#1$2'$(*$NO1&)/$><>>9$!"#
12+&()2.#$*(1$%(7&)/$+"#$,(-1'#

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
	6&+"&)$;$'+2)5215$5#7&2+&()$(*$+"#)2+&()2.$%#2)$*(1$+"2+$3#219 NO1&)/$'#%#'+#1	2,25#%&,$3#219$$Y)$+"#$'(,&2.$2)5$,-.+-12.$*(-)52+&()' 5(%2&)$:U`:$'+-5#)+'$(8+2&)#5$2)$27#12/#$',(1#$(*$;<9[?9 !"&'$62'$'.&/"+.3$28(7#$+"#$(7#12..$CNE$,(-)'#.&)/$01(/12% %#2)$(*$;<9\[A$2)5$'.&/"+.3$8#.(6$+"#$)2+&()2.$%#2)$(* ;;9;R9$N,(1#'$8#.(6$W9RR$6#1#$8#.(6$;$'+2)5215$5#7&2+&() -)&+$*1(%$+"#$)2+&()2.$%#2)9$!"-'A$+"#$:U`:$',(1#$&'$6#.. 6&+"&)$+"#$27#12/#$12)/#9E'&)/.#$'+-5#)+$#21)#5$2$'(,&2. ,-.+-12.$*(-)52+&()'$',(1#$8#.(6$+"#$@;NO$12)/#$Q',(1#$B$[T9 ;;S;>$'+-5#)+'$(8+2&)#5$',(1#'$6&+"&)$+"#$@;NO$12)/#9 Q<RS;;S><>>T	*1(%$'-%%#1$'#%#'+#1$+($'01&)/ '#%#'+#1$62'$+"2+$2)$W@6##4 '-%%#1$'#%#'+#1$5&5$)(+$01(7&5# #)(-/"$+&%#$+($,(7#1$+"#$,()+#)+A 2..(6$'+-5#)+'$+($2551#''$+"#&1 8&2'#'A$)(1$5&5$&+$01(7&5#$#)(-/" +&%#$*(1$'+-5#)+'$+($25#d-2+#.3 '#.*@1#*.#,+$()$+"#$,()+#)+$2'$6#.. 2'$+"#&1$8&2'#'$2)5$/1(6+"9$!"# 0-10('#$*(1$%(7&)/$+"#$,(-1'#$&' +($01(7&5#$'+-5#)+'$6&+"$;?$6##4' +($,(7#1$+"#$,()+#)+A$#I0.(1# 8&2'#'A$2)5$+($'#.*@1#*.#,+$()$+"#&1 8&2'#'A$/(2.'A$2)5$/1(6+"$&)$+"# 21#2$(*$'(,&2.S,-.+-12.$5&7#1'&+39 !"#$:(1#$M2,-.+3$6&..$#72.-2+#$+"# '+-5#)+'V$&)5&7&5-2.$0#1*(1%2),# ()$+"#$:H:H$&)$+"#$5(%2&)$(* '(,&2.S,-.+-12.$5&7#1'&+3$2'$6#..$2' &)5&7&5-2.'$',(1#'$&)$+"&'$5(%2&) &)$NO1&)/$><>F$6"&,"$6&..$8#$+"# *&1'+$25%&)&'+12+&()$(*$+"#$:H:H 2*+#1$+"#$%-.+&,-.+-12.$,(-1'#$62' %(7#5$+($NO1&)/$N#%#'+#19 Q<RS;;S><>>T
	:-11#)+$:(-)'#.&)/ N+-5#)+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ e,-.+-12.$*2,+(1'$1#.#72)+$+($,.&)&,2. %#)+2.$"#2.+"$,(-)'#.&)/e$2)5$+"# 27#12/#$2,1(''$2..$'+-5#)+'$6&..$8#$2 F9?$(1$"&/"#1$()$2$[@0(&)+$b&4#1+@+30# ',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ [$:U`:$'+-5#)+'$,(%0.#+#5$+"#$'-17#3$&)$N#0+#%8#1$(* ><>>$2)5$+"#&1$27#12/#$'#.*@12+&)/$()$+"&'$&+#%$62'$F9;G9 Q<RS;FS><>>T	
	:-11#)+$:(-)'#.&)/ N+-5#)+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ eN#)'&+&7#$2)5$2621#$(*$,-.+-12. 5&**#1#),#'e$2)5$+"#$27#12/#$2,1(''	U()&+(1&)/ :1&+#1&()$U#+ [$:U`:$'+-5#)+'$,(%0.#+#5$+"#$'-17#3$&)$N#0+#%8#1$(* ><>>$2)5$+"#&1$27#12/#$',(1#$()$+"&'$&+#%$62'$F9>W9 Q<RS;FS><>>T	

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
	2..$'+-5#)+'$6&..$8#$2$>9?$(1$"&/"#1$() 2$G@0(&)+ N-%%#1$N#%#'+#1 :(-)'#.&)/$N+-5#)+ HI&+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ eP$2,d-&1#5$4)(6.#5/#$2)5$'4&..'$+"2+ 6&..$2..(6$%#$+($,(-)'#.$#**#,+&7#.3 6&+"2,-.+-12..3$5&7#1'#$0(0-.2+&() (*$,.&#)+'$e$2)5$+"#$27#12/#$2,1(''$2.. '+-5#)+'$6&..$8#$2$>9?$(1$"&/"#1$()$2 G@0(&)+ N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ F$:U`:$'+-5#)+'$,(%0.#+#5$+"&'$&+#%$2)5$+"#&1$27#12/# 12+&)/$62'$G9$$Q<RS;RS><>>T	
	:(-)'#.&)/$N+-5#)+ E.-%)&$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ eP$,2)$6(14$#**#,+&7#.3$6&+"$2 ,-.+-12..3$5&7#1'#$0(0-.2+&()$(* ,.&#)+'eA$2)5$+"#$27#12/#$(*$2.. '+-5#)+$12+&)/'$6&..$8#2>9?$(1 "&/"#1$()2G@0(&)+$b&4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ P),(),.-'&7# !"#$2.-%)&$'-17#3&'$5#.&7#1#5$#7#13$(+"#1$3#219$P+$6&..$8# ,(..#,+#5$2/2&)$&)$'-%%#1$(*$><>F9$Q<RS;FS><>>T	
cKP$>$@$N+-5#)+'$6&..$&5#)+&*3$2)5 5#',1&8#$+"#(1&#'$2)5$%(5#.'$(* %-.+&,-.+-12.$,(-)'#.&)/A$,-.+-12. &5#)+&+3$5#7#.(0%#)+A$'(,&2.$_-'+&,#A 2)5$257(,2,3h$2)5$'+-5#)+'$6&.. '#.#,+$(1$&%0.#%#)+$'+12+#/&#'$+(1#5-,#A$%&+&/2+#A$(1$#.&%&)2+# 8211&#1'A$(001#''&()A$2)5 5&',1&%&)2+&()9 Q"T$'+12+#/&#'$*(1$&5#)+&*3&)/$2)5 #.&%&)2+&)/$8211&#1'A$01#_-5&,#'A$2)5 01(,#''#'$(*$&)+#)+&()2.$2)5 -)&)+#)+&()2.$(001#''&()$2)5	:HO$?\\ U-.+&,-.+-12.$:(-)'#.&)/$@$'+-5#)+ 01#'#)+2+&() M2,-.+3$%#%8#1$12+&)/$(* +"#$'+-5#)+a'$%-.+&,-.+-12. ,(-)'#.&)/$01#'#)+2+&()$6&..$8#$2+$2 /125#$(*$D$(1$"&/"#1 NO1&)/$'#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ E..$:U`:$'+-5#)+'$%#+$+"#$,1&+#1&()$(*$#21)&)/2D$(1$"&/"#1 ()$+"#$%-.+&,-.+-12.$01#'#)+2+&()$2'$2..$'+-5#)+'$#21)#5$2) E$()$+"#$01#'#)+2+&()9$Q<RS;FS><>>T	
	:HO$?R[$:U`:$P)+#1)'"&O$@ E57(,2,3$K1(_#,+$M&)2.$g#0(1+ M2,-.+3$6&..$12+#$+"# E57(,2,3$K1(_#,+$M&)2.$g#0(1+$2+$2 /125#$(1D(1$"&/"#1 NO1&)/$N#%#'+#1	E,+&()$K.2))&)/ :1&+#1&()$U#+ E..$:U`:$'+-5#)+'$%#+$+"#$,1&+#1&()$(*$(8+2&)&)/$2$D$(1 "&/"#1$()$+"#$E57(,2,3$K1(_#,+$M&)2.$g#0(1+9$O-1&)/ &)+#1)'"&OA$6"&,"$'+-5#)+'$+30&,2..3$+24#$+"#&1$G+"$2)5$?+" '#%#'+#1'$&)$+"#$01(/12%A$Q:U`:T$'+-5#)+'$*&)&'"$+"#&1)##5'$2''#''%#)+$2)5$257(,2,3$01(_#,+$0.2)$Q&*$)(+	:U`:$*2,-.+3$6&.. +6#24$+"#$E57(,2,3$K1(_#,+ 5#',1&O+&()$2)5$#72.-2+&()$+(&),.-5#$'0#,&*&,$&)'+1-,+&()'$() "(6$+($2551#''$01(_#,+$#.#%#)+' +"2+$6#1#$)(+$28.#$+($8#$*-..3 &%0.#%#)+#5$(1$01(_#,+'$+"2+$5&5

: -11#)+

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
	,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ e&%02,+$(*$8&(.(/&,2.$2)5)#-1(.(/&,2.$%#,"2)&'%'$()$%#)+2. "#2.+"e$2)5$+"#$27#12/#$2,1(''$2.. '+-5#)+'$6&..$8#2F9?$(1$"&/"#1$()$2 [@0(&)+$b&4#1+@+30#$',2.# N-%%#1$N#%#'+#1	+"#&1$27#12/#$',(1#$62'$\9;G9$$Q<RS;FS><>>T	
	HKi$?>; `-%2)$O#7#.(0%#)+$@$ L&'5(% K1(_#,+]125$(*$D$(1$"&/"#1 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ E..$:U`:$'+-5#)+'$#21)#5$2$/125#$(*$D$(1$"&/"#1$()$+"# L&'5(%$K1(_#,+9$N+-5#)+'\$',(1#'$12)/#5$*1(%$RF=$+($RR= ()$+"&'$01(_#,+$6&+"$'+-5#)+'$&5#)+&*3&)/$2)5$5&',-''&)/ '3'+#%&,$2)5$#)7&1()%#)+2.$*2,+(1'$&%02,+&)/$"-%2) /1(6+"A$5#7#.(0%#)+A$*-),+&()&)/A$2)5$8#"27&(1 Q<RS;FS><>>T	
:-11#)+	N,(1#$()$+"#$`-%2) O#7#.(0%#)+$O(%2&)$+"2+$&'$6&+"&) ;$'+2)5215$5#7&2+&()$(*$+"#$)2+&()2. %#2)$*(1$+"2+$+#'+&)/$3#21		!"#$:(-)'#.(1 H5-,2+&()$K1(/12%$"2'$&)&+&2+#5$2 :(%01#"#)'&7#$HI2%$N+-53$N&+# ()$:E^jEN$8-+$+"#$'&+#$&'$)(+$6#.. (1/2)&Z#5$(1$-'#1$*1&#)5.3$$E /125-2+#$2''&'+2)+$6&..$(1/2)&Z# +"#$'&+#$2)5$8#/&))&)/$N01&)/$><>F +"&'$'&+#$6&..$8#$(1/2)&Z#5$&)$'-,"$2 623$+"2+$'+-5#)+'$,2)$1#7&#6 01#7&(-'$,(-1'#$%2+#1&2.A$01#7&(-' d-&ZZ#'A$2)5$,(-1'#$'+-53$/-&5#' +($2''&'+$+"#%$&)$01#021&)/$+($+24# +"#&1$,(%01#"#)'&7#$HI2%'9$L# "(0#$+"2+$01(7&5&)/$2)$(1/2)&Z#5 '+-53$'&+#$6&..$"#.0$'+-5#)+' 1#7&#6$*(1$+"#&1$,(%01#"#)'&7# #I2%$2)5$&%01(7#$+"#&1$',(1#'9 Q<RS;FS><>>T

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
:-11#)+		'#%#'+#1$QM2..$'#%#'+#1$>)5$3#21T9$!#)$'+-5#)+'$#21)#5$2)E$()$+"#&1$L(14#1$P)+#17&#6A$;$'+-5#)+$#21)#5$2DA2)5$F	2''&/)%#)+9$E..$8-+$(#$'+-5#)+'-8%&++#5$2,25#%&,$,()+#)+$+"2+1#*.#,+#5$%2'+#13$(*$+"#2''&/)%#)+9$]&)/$*(16215$+"#&)'+1-,+(1$6&..$1#d-&1#$%(1#5&',-''&()$(*$+"#$01(_#,+$&)$+"#&1'%2..$/1(-0'$#21.&#1$&)$+"#$,(-1'#2'2*(1%$(*$0##1$&)+#17#)+&()$+(01(%(+#$+&%#.3$01(/1#''$2)5A-.+&%2+#.3A$()@+&%#$'-8%&''&()$(*+"#$2''&/)%#)+9$$Q<RS;GS><>>T	

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
:-11#)+		(*$#21)&)/$2D(1$"&/"#1$6&+"$',(1#'$12)/&)/$*1(%$R[=$@RR= ()$+"#$N0#,&2.$K(0-.2+&()$]1(-0$K1#'#)+2+&()9$Q<RS;FS><>>T	
	:(%01#"#)'&7#$HI2%$:21##1 O#7#.(0%#)+$O(%2&) N,(1#$6&+"&)$;$'+2)5215 5#7&2+&()$(*$+"#$%#2)$*(1$+"#$:21##1 O#7#.(0%#)+$O(%2&)$*(1$+"2+ +#'+&)/$3#21 N01&)/$N#%#'+#1	E,+&()$K.2))&)/ :1&+#1&()$^(+$U#+ :U`:$'+-5#)+'$27#12/#$',(1#$()$+"#$:21##1$O#7#.(0%#)+ O(%2&)$(*$+"#$:H:H$:(%01#"#)'&7#$HI2%$62'$;<9<$6"&," 62'$'.&/"+.3$8#.(6$Q@<9;>T$+"#$)2+&()2.$27#12/#$(*$;<9;>9$E.. 8-+$>$'+-5#)+'$',(1#5$6&+"&)$;$'+2)5215$5#7&2+&()$(*$+"# %#2)9$Y)#$'+-5#)+$Q:2-,2'&2)T$',(1#5$2$\$6"&,"$62'$%(1# +"2)$;$NO$8#.(6$+"#$)2+&()2.$%#2)$Q[9?[T$"(6#7#1$+"&' '+-5#)+$02''#5$2..$(+"#1$'#,+&()'$(*$+"#$:H:H9$!"#$'+-5#)+ Q:2-,2'&2)T$6"($',(1#5$2$[$6"&,"$62'$_-'+$'.&/"+.3$%(1# +"2)$;NO8#.(6$+"#$)2+&()2.$%#2)$5&5$)(+$02''$+"# ,(%01#"#)'&7#$#I2%9$$Q<RS;;S><>>T	!"#$:(-)'#.(1 H5-,2+&()$K1(/12%$"2'$&)&+&2+#5$2 :(%01#"#)'&7#$HI2%$N+-53$N&+# ()$:E^jEN$8-+$+"#$'&+#$&'$)(+$6#.. (1/2)&Z#5$(1$-'#1$*1&#)5.3$$E /125-2+#$2''&'+2)+$6&..$(1/2)&Z# +"#$'&+#$2)5$8#/&))&)/$NO1&)/$><>F +"&'$'&+#$6&..$8#$(1/2)&Z#5$&)$'-,"$2 623$+"2+$'+-5#)+'$,2)$1#7&#6 01#7&(-'$,(-1'#$%2+#1&2.A$01#7&(-' d-&ZZ#'A$2)5$,(-1'#$'+-53$/-&5#' +($2''&'+$+"#%$&)$01#021&)/$+($+24# +"#&1$,(%01#"#)'&7#$#I2%'9$L# "(0#$+"2+$01(7&5&)/$2)$(1/2)&Z#5 '+-53$'&+#$6&..$"#.0$'+-5#)+' 1#7&#6$*(1$+"#&1$,(%01#"#)'&7# #I2%$2)5$&%01(7#$+"#&1$',(1#'9 Q<RS;FS><>>T
cK P$\J N+-5#)+'$6&..$&5#)+&*3$+"#(1&#'$2)5 %(5#.'$(*$,(-)'#.&)/9 Q2T$+"#(1&#'$2)5$%(5#.'$(*$,(-)'#.&)/ :-11#)+	:HO$?[>$K1&),&0.#'f!"#(1&#'$(* :(-)'#.&)/$@$M&)2.$HI2%&)2+&()]125#$(*$D$(1$"&/"#1 M2..$'#%#'+#1	E,+&()$K.2))&)/ :1&+#1&()$^(+$U#+ W>=$$(*$:U`:$'+-5#)+'$%25#$2D(1$"&/"#1$()$+"#&1$*&)2. #I2%$&)$K1&),&0.#'$2)5$!"#(1&#'$(*$:(-)'#.&)/9$!"1## '+-5#)+'$Q2..$*1(%$5&7#1'#$82,4/1(-)5'T$',(1#5$'.&/"+.3 8#.(6$2DQ[[=T$2)5$+6($'+-5#)+'$Q:2-,2'&2)T$',(1#5$[?= 2)5$[<=9$Q<RS;FS><>>T	P)'+1-,+(1$+#2,"&)/ +"#$,(-1'#$6&..$#72.-2+#$01#@+#'+ ',(1#'$2)5$%&5@+#1%$#I2%$',(1#' +($&5#)+&*3$'+-5#)+'$'+1-//.&)/$() +"#$#I2%'9$!"#$&)'+1-,+(1$6&.. 01(7&5#$2)$255&+&()2.$1#7&#6 '#''&()$*(1$2..$'+-5#)+'$2)5 #),(-12/#$+"('#$6"($"27# '+1-//.#5$()$#I2%'$+($2++#)5$ Q<RS;GS><>>T
	:HO$?[> K1&),&0.#'$f$!"#(1&#'$(*$:(-)'#.&)/$@ K#1'()2.$!"#(1&#'$K20#1]125#$(*$D$(1$"&/"#1 M2..$N#%#'+#1	E,+&()$K.2))&)/ :1&+#1&()$^(+$U#+ RF=$(*$:U`:$'+-5#)+'$#21)#5$2D(1$"&/"#1$()$+"#&1 K#1'()2.$!"#(1&#'$K20#19$Y)#$'+-5#)+$',(1#5$[R=$_-'+ '.&/"+.3$8#.(6$+"#$,1&+#1&()$6"&.#$+"#$(+"#1$'+-5#)+$',(1#5$2 [>=A$"(6#7#1$+"#$'+-5#)+$+-1)#5$+"#$020#1$&)$.2+#$2)5 0(&)+'$6#1#$5#5-,+#5$Q8(+"$'+-5#)+'$6#1#$*1(%$5&7#1'# 82,4/1(-)5'T9$$Q<RS;FS><>>T	P)$M2..$><>>$*2,-.+3 +#2,"&)/$+"#$,(-1'#$6&..$,1#2+# (00(1+-)&+&#'$*(1$'+-5#)+'$+(5&',-''$+"#&1$K#1'()2.$!"#(1&#' K20#1$2)5$01(/1#''$&)$+"#&1$'%2.. /1(-0'$5-1&)/$,.2''$&)$"(0#'$+"2+ '+-5#)+'$6&..$1#%2&)$()$+12,4$+(,(%0.#+#$+"#&1$020#1$2)5$'-8%&+

!"#$"%$%& ' (#)*+$, -,,$,,+$"#& . $#/*%, 0$,(1#, 2,$&*3&0$,(1#,

+"#%$()$+&%#$$E55&+&()2..3A$0##1
*##582,4$&'$.&4#.3$+($"#.0$'+-5#)+'
+-1)$&)$2$0#1'()2.$+"#(1&#'$020#1
+"2+$&'$%(1#$,(%01#"#)'&7#$2)5

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
			'4&..'A$2)5$%-.+&,-.+-12. ,(-)'#.&)/9$!"#$%##+&)/$6&.. 01(%(+#$#2,"$&)'+1-,+(1$+($8# 2621#$(*$#2,"$'+-5#)+a' 8-1/#()&)/$+"#(1#+&,2.$(1&#)+2+&() 2)5$01(7&5#$(00(1+-)&+&#'$&)$#2," ,(-1'#$*(1$'+-5#)+'$+($200.3 +"#(13$+($,.&)&,2.$,2'#'9$!"&'$&' &)+#)5#5$+($01(%(+#$(8_#,+&7#.3 2)5$'-8_#,+&7#.3$&),1#2'#5 ,(%0#+#),#$&)$+"#(1#+&,2.$%(5#.' (*$,(-)'#.&)/9$Q<RS;GS><>>T
	:(-)'#.&)/$N+-5#)+ HI&+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ ec)(6.#5/#$(*$721&(-'$+"#(1#+&,2. %(52.&+&#'$'0#,&*&,$+($,(-)'#.&)/$2)5 0'3,"(+"#1203$&)$%#)+2.$"#2.+" '#++&)/'e$2)5$+"#$27#12/#$2,1(''$2.. '+-5#)+'$6&..$8#$>9?$(1$"&/"#1$()$2$G@ K(&)+$b&4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ F$:U`:$'+-5#)+'$,(%0.#+#5$+"&'$&+#%$()$+"#$#I&+$'-17#3 2)5$2,"&#7#5$2)$27#12/#$12+&)/$(*$F9FF9$$Q<RS;RS><>>T	
cKP$[J$N+-5#)+'$6&.. 5#%()'+12+#$82'&,$,(-)'#.&)/$'4&..')##5#5$*(1$012,+&,#9 Q/T$#''#)+&2.$&)+#17&#6&)/A$,(-)'#.&)/A 2)5$,2'#$,()#0+-2.&Z2+&()$'4&..' :-11#)+	:HO$?W\ :(-)'#.&)/$N4&..'fK1(,#''$@$M&)2. N&%-.2+#5$:(-)'#.&)/$j&5#(H72.-2+&()]125#$(*$D$(1$"&/"#1 NO1&)/$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ E..$:U`:$'+-5#)+'$#21)#5$2$D$(1$"&/"#1$()$+"#&1$*&)2. '&%-.2+#5$%(,4$,(-)'#.&)/$7&5#(9$N+-5#)+'$6#1#$',(1#5$2+ R;=$+($RW=$()$+"#&1$'4&..'A$'#.*@#72.-2+&()$(*$'4&..'A$1#*.#,+&() (*$'4&..'A$2)5$/(2.'$*(1$&%01(7#%#)+9$$Q<RS;FS><>>T	
	:HO$?[\ N-0#17&'#5$K12,+&,-%$&)$:(-)'#.&)/$@ M&)2.$#72.-2+&()$83$012,+&,-%$'&+# '-0#17&'(1 N&+#$'-0#17&'(1$12+&)/ '+-5#)+$()$&+#%'$1#.2+#5$+(&)+#17&#6&)/A$,(-)'#.&)/$'4&..'$2)5 ,2'#$,()#0+-2.&Z2+&()$'4&..$2' e01(*&,&#)+e$(1$"&/"#1$()$+"#$bP4#1+@ +30#$',2.#	U()&+(1&)/ P),(),.-'&7# &)'-**&,&#)+$52+2$Q().3$GS;F$'+-5#)+'$"25$,(%0.#+#5$*&)2. 012,+&,-%$#72.-2+&()'$*1(%$+"#&1$012,+&,-%$'-0#17&'(1'$2+ +"#$+&%#$(*$+"&'$1#0(1+9$Y).3G'+-5#)+'$"25$2..$+"#&1 012,+&,-%$"(-1'$2)5$5(,-%#)+'$,(%0.#+#5$2+$+"#$+&%#$(* +"&'$1#0(1+T$Q<RS;FS><>>T	Y).3$GS;F$'+-5#)+' "25$2..$+"#&1$012,+&,-%$"(-1'$2)5 #72.-2+&()'$,(%0.#+#5$2+$+"#$+&%# (*$+"&'$1#0(1+9$N&+#$'-0#17&'(1 12+&)/$'+-5#)+$()$&+#%'$1#.2+#5$+(&)+#17&#6&)/A$,(-)'#.&)/$'4&..'$2)5 ,2'#$,()#0+-2.&Z2+&()$'4&..' 27#12/#5$2,1(''$2..$1#.2+#5$&+#%' 2'$F9W

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
	N-%%#1$N#%#'+#1		Q01(*&,&#)+$&'$FT9$^($012,+&,-% '+-5#)+$',(1#$8#.(6$2$F$()$2)3 &+#%$$1#.2+#5$+($&)+#17&#6&)/A ,(-)'#.&)/$'4&..'$2)5$,2'# ,(),#0+-2.&Z2+&()$'4&..'9 Q<RS;FS><>>T
	:HO$?R[$:U`: P)+#1)'"&O$@$M&)2.$'&+#$'-0#17&'(1 #72.-2+&() !"#$'&+#$'-0#17&'(1$6&.. 12+#$+"#$'+-5#)+$()$&+#%'$1#.2+#5$+(&)+#17&#6&)/A$,(-)'#.&)/$'4&..'$2)5 ,2'#$,(),#0+-2.&Z2+&()$'4&..'$2' e01(*&,&#)+e$(1$8#++#1 NO1&)/$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ E..$+6#.7#$:U`:$'+-5#)+'$1#,#&7#5$12+&)/'$(*$F$Q01(*&,&#)+T ()$&+#%'$1#.2+#5$+($&)+#17&#6&)/A$,(-)'#.&)/$'4&..'A$2)5$,2'# ,(),#0+-2.&Z2+&()9$!"#$12)/#$(*$',(1#'$*(1$+"#'#$21#2'$62' F9<@?9<9$!"#$27#12/#$12+&)/$2,1(''$&+#%'$1#.2+#5$+(&)+#17&#6&)/A$,(-)'#.&)/$'4&..'A$2)5$,2'#$,(),#0+-2.&Z2+&() 62'$G9GG$6"&,"$&'$6#..$28(7#$+"#$01(*&,&#)+$12+&)/$(*$F9<9 Q<RS;FS><>>T	
	:-11#)+$:(-)'#.&)/ N+-5#)+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ e8&(0'3,"('(,&2.$,2'# ,(),#0+-2.&Z2+&()$2)5$+1#2+%#)+ 0.2))&)/e$2)5$+"#$27#12/#$2,1(''$2.. '+-5#)+'$6&..$8#$F9?$(1$"&/"#1$()2[@ K(&)+$b&4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ [$:U`:$'+-5#)+'$1#'0()5#5$+($+"&'$&+#%$2)5$+"#&1$27#12/# 12+&)/$62'$G9;G9$Q<RS;FS><>>T	
	:-11#)+$:(-)'#.&)/ N+-5#)+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ e&)+24#$&)+#17&#6A$%#)+2.$'+2+-' #72.-2+&()A$8&(0'3,"('(,&2.$"&'+(13A %#)+2.$"#2.+"$"&'+(13A$2)5 0'3,"(.(/&,2.$2''#''%#)+$*(1 +1#2+%#)+$0.2))&)/$2)5$,2'#.(25 %2)2/#%#)+$e$2)5$+"#$27#12/# 2,1(''$2..$'+-5#)+'$6&..$8#$F9?$(1 "&/"#1$()2[@K(&)+$b&4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ [$'+-5#)+'$12+#5$+"#&1$,(%0#+#),3$()$+"&'$&+#%$2)5$+"#&1 27#12/#$',(1#$62'$G9$Q<RS;FS><>>T	
	:(-)'#.&)/$N+-5#)+	U()&+(1&)/	

N+-5#)+'$6&..$12+#$+"#&1
,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@
eN4&..$&)$,()5-,+&)/$5&2/)('+&,$,.&)&,2.
&)+#17&#6'$-'&)/$+"#$ONU@?$'3'+#%'e
2)5$+"#$27#12/#$2,1(''$2..$'+-5#)+'
6&..$8#$>9?$(1$"&/"#1$()$2$G@K(&)+
b&4#1+@+30#$',2.#9

:1&+#1&()$U#+
F$:U`:$'+-5#)+'$1#'0()5#5$+($+"&'$&+#%$2)5$+"#&1$27#12/#
()5-,#12/#

:-11#)+

+"#&1$,(%01#"#)'&7#$#I2%'9$L#
"(0#$+"2+$01(7&5&)/$2)$(1/2)&Z#5
'+-53$'&+#$6&..$"#.0$'+-5#)+'
1#7&#6$*(1$+"#&1$,(%01#"#)'&7#
#I2%$2)5$&%01(7#$+"#&1$',(1#'9
Q<RS;FS><>>T

:-11#)+

8#$&)'+1-,+#5$+($5#',1&8#$8211&#1'
#),(-)+#1#5A$&''-#'$+"2+$21('#A
2)5$6"2+$,(-.5$8#$5()#
5&**#1#)+.3$&)$+"#$$*-+-1#$+(

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
		8#$2)2.3Z#5$$Q<RS;FS><>>T	1#'#21,"$01(0('2.$2*+#1$.#21)&)/ +"#$,()#0+'$&)$1#'#21,"$,.2''9 :(1#$*2,-.+3$6&..$%##+$&)$%&5@ N#0+#%8#1$6&+"$'+-5#)+'$2)5$2'4 *(1$%(1#$&)@5#0+"$*##582,49 M2,-.+3$21#$,()'&5#1&)/$,"2)/&)/ +"#$'-%%#1$2''&/)%#)+$+($2 g#'#21,"$K1(0('2.$Y-+.&)#$+"2+ 01#021#'$'+-5#)+'$+($,(%0.#+#$2 1#'#21,"$01(0('2.$&)$+"#$*2.. '#%#'+#1$2'$+"#3$21#$6(14&)/$() +"#&1$E57(,2,3$K1(_#,+9 Q<RS;FS><>>T
		U()&+(1&)/	
	]125#$(*$D$(1$"&/"#1		

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
	]125#$(*$D$(1$"&/"#1 NO1&)/$N#%#'+#1	L 1&+#@C0$!"#$27#12/#$*(1$+"#$U2_(1$:2'#$L 1&+#@-0$62' R?9F=9$!"#$12)/#$62'$W>=@;<<=9$!"#1#$6#1#GD'$Q; :2-,2'&()A$F$*1(%$5&7#1'#$82,4/1(-)5'T9$!"#$%2_(1$,2'# 61&+#@-0$1#d-&1#'$'+-5#)+'$+($5#',1&8#$+"#$5&2/)('+&, 01(,#''A$&),.-5&)/$5&**#1#)+&2.$5&2/)('&'$2)5$+"#$-'#$(* ,-11#)+$5&2/)('+&,$,.2''&*&,2+&()$'3'+#%'A$&),.-5&)/$+"# O&2/)('+&,$%2)-2.$(*$U#)+2.$O&'(15#1'$QONUTA$2)5$5#7#.(0 2$+1#2+%#)+$0.2)9$$Q<RS;FS><>>T	
	]125$(*$D$(1$"&/"#1	U()&+(1&)/ :1&+#1&()$U#+ E..$:U`:$'+-5#)+'$%25#2D$(1$"&/"#1$(#"#$-'#P'$%1("#)1($$[$($,)1(.2''&O@[(2$+)1(1)1(#)1((&+)1(#K1(%	
:-11#)+			

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
	>9?$(1$"&/"#1$()$2$G@0(&)+$b&4#1+@+30# ',2.#9 N-%%#1$N#%#'+#1 :(-)'#.&)/$N+-5#)+ HI&+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ eN4&..$&)$,()5-,+&)/$5&2/)('+&,$,.&)&,2. &)+#17&#6'$-'&)/$+"#$ONU@? '3'+#%'eA$2)5$+"#$27#12/#$2,1(''$2.. '+-5#)+'$6&..$8#$2$>9?$(1$"&/"#1$()$2 G@0(&)+$b&4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ F$:U`:$'+-5#)+'$1#'0()5#5$+($+"&'$&+#%$2)5$2,"&#7#5$2) 27#12/#$12+&)/'$(*$F9FF$Q<RS;RS><>>T	
	M&)2.$P)+#1)'"&0 H72.-2+&()$(*$N+-5#)+$83$N&+# N-0#17&'(1 !"#$27#12/#$12+&)/'$2,1('' 2..$'+-5#)+'$()$5&2/)('&'$4)(6.#5/# 2)5$'4&..'$&+#%'$6&..$8#2F$(1$"&/"#1 ()2G@0(&)+$bP4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ E..$:U`:$'+-5#)+'$1#,#&7#5$#72.-2+&()'$*1(%$+"#&1$'&+# '-0#17&'(1'$()$5&2/)('&'$'4&..'$+"2+$6#1#$2F(1$"&/"#19 Q<RS;RS><>>T	
	:HO$?W\ :(-)'#.&)/$N4&..'fK1(,#''$@$M&)2. H72.-2+&()$(*$N&%-.2+#5$:(-)'#.&)/ j&5#( ]125#$(*D(1$"&/"#1 N01&)/$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ E..$:U`:$'+-5#)+'$#21)#5$2$D$(1$"&/"#1$()$+"#&1$*&)2. '&%-.2+#5$%(,4$,(-)'#.&)/$7&5#(9$N+-5#)+'$6#1#$',(1#5$2+ R;=$+($RW=$()$+"#&1$'4&..'A$'#.*@#72.-2+&()$(*$'4&..'A$1#*.#,+&() (*$'4&..'A$2)5$/(2.'$*(1$&%01(7#%#)+9$$Q<RS;FS><>>T	
:-11#)+	!"#$'&+#$'-0#17&'(1$6&.. 12+#$'+-5#)+'$()$&+#%'$0#1+&)#)+$+(+"#(1&#'$2)5$%(5#.'$(*$%#)+2. "#2.+"$,(-)'#.&)/$+"#$.#7#.$(* e01(*&,&#)+e$(1$"&/"#1	U()&+(1&)/ :1&+#1&()$U#+ E..$+6#.7#$:U`:$'+-5#)+'$1#,#&7#5$12+&)/'$(*$F$Q*$%#)+2.	K.#2'#$'##$0.2) #)+#1#5$-)5#1$-'#$(*$1#'-.+'$*(1 "(6$6#$6&..A$/#)#12..3A$01(%(+# #)"2),#5$%2'+#13$(*$200.3&)/ +"#(1&#'$+($,.&)&,2.$6(149$K#1+&)#)+ +($200.3&)/$:U`:$+"#(1&#'A '0#,&*&,2..3A$*2,-.+3$6&..$%24# ,"2)/#'$&)$+"#$5&52,+&,$0(1+&()$(* +"#$'-%%#1$&)&+&2.$012,+&,-% ,(-1'#9$N0#,&*&,2..3A$'+-5#)+'$6&.. 8#$1#d-&1#5$+($,&+#$2)5$200.3

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
: U ` :$cKP$>$@$N+-5#)+' 6&..$5#%()'+12+#$82'&,$,(-)'#.&)/ '4&..'$2)5$+"#(1#+&,2..3$&)*(1%#5 +#,")&d-#'$+"2+$*('+#1$,(..28(12+&7# ,(-)'#.&)/$1#.2+&()'"&0'$6"&," *2,&.&+2+#$+"#$#I0.(12+&()$(*$+"(-/"+'A *##.&)/'A$8#"27&(1'A$2)5$,(),#1)'A 6"&.#$1#'0#,+&)/$+"#$,.&#)+V' 2-+()(%39  : U ` :cKP>$@$N+-5#)+'$6&.. 5#%()'+12+#$82'&,$,(-)'#.&)/$'4&..' 2)5$+"#(1#+&,2..3$&)*(1%#5 +#,")&d-#'$+"2+$*('+#1$,(..28(12+&7# ,(-)'#.&)/$1#.2+&()'"&0'$6"&," *2,&.&+2+#$+"#$#I0.(12+&()$(*$+"(-/"+'A *##.&)/'A$8#"27&(1'A$2)5$,(),#1)'A 6"&.#$1#'0#,+&)/$+"#$,.&#)+V' 2-+()(%39 : -11#)+	: HO$?W\ :(-)'#.&)/$N4&..'fK1(,#''$@$M2,-.+3 #72.-2+&()$(*$*&)2.$'&%-.2+#5 ,(-)'#.&)/$7&5#( ]125#$(*$D$(1$"&/"#1 NO1&)/$N#%#'+#1 : HO$?R[$: U ` : P)+#1)'"&O$@$M&)2.$#72.-2+&()$83 &)+#1)'"&O$'&+#$'-0#17&'(1$(*$'+-5#)+ N&+#$'-0#17&'(1$6&..$12+# '+-5#)+'$()$&+#%'$0#1+&)#)+$+(,(-)'#.&)/$&)+#17#)+&()$+#,")&d-#' 2+$+"#$.#7#.$(*$e01(*&,&#)+e$(1$"&/"#1 NO1&)/$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ E..$:U ` :$'+-5#)+'$#21)#5$2$D$(1$"&/"#1$()$+"#&1$*&)2. '&%-.2+#5$%(,4$,(-)'#.&)/$7&5#(9$N+-5#)+'$6#1#$',(1#5$2+ R;=$+($RW=$()$+"#&1$'4&..'A$'#.*@#72.-2+&()$(*$'4&..'A$1#*.#,+&() (*$'4&..'A$2)5$/(2.'$*(1$&%01(7#%#)+9$$Q<RS;FS><>>T  U()&+(1&)/ :1&+#1&()$U#+ ;;S;>$:U ` :$'+-5#)+'$1#,#&7#5$12+&)/'$(*FQ01(*&,&#)+T$() &+#%'$1#.2+#5$+($,(-)'#.&)/$&)+#17#)+&()$+#,")&d-#'9$Y)# '+-5#)+$',(1#5$2$>$()$>$&+#%'$8-+$2..$(+"#1$&+#%'$6#1#$12+#5 2+$F$(1$"&/"#19$!"#$12)/#$(*$',(1#'$*(1$+"#'#$21#2'$62'$>9<@ ?9<9$!"#$27#12/#$12+&)/$2,1(''$&+#%'$1#.2+#5$+($+"#(1&#'$2)5 %(5#.'$(*$%#)+2.$"#2.+"$62'$F9W\$6"&,"$&'$6#..$28(7#$+"# 01(*&,&#)+$12+&)/$(*$F9<9$Q<RS;FS><>>T	U()&+(1&)/ :1&+#1&()$U#+ [$'+-5#)+'$1#'0()5#5$+($+"&'$&+#%$2)5$+"#&1$27#12/# 1#'0()'#$62'$'?9GF$Q<RS;FS><>>T
	: -11#)+$:(-)'#.&)/ N+-5#)+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ e#+&(.(/3A$)(%#),.2+-1#A$+1#2+%#)+A 1#*#112.A$2)5$01#7#)+&()$(*$%#)+2. 2)5$#%(+&()2.$5&'(15#1'eA$2)5$+"# 27#12/#$2,1(''$2..$'+-5#)+'$6&..$8#$2 F9?$(1$"&/"#1$()$2$[@0(&)+$b&4#1+@+30# ',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ [$'+-5#)+'$1#'0()5#5$+($+"&'$&+#%$2)5$+"#&1$27#12/# 1#'0()'#$62'$'?9GF$Q<RS;FS><>>T	
	: -11#)+$:(-)'#.&)/ N+-5#)+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ e%#)+2.$"#2.+"$'#17&,#$5#.&7#13 %(52.&+&#'$6&+"&)$+"#$,()+&)--%$(* ,21#A$'-,"$2'$&)02+&#)+A$(-+02+&#)+A 021+&2.$+1#2+%#)+$2)5$2*+#1,21#A$2)5 +"#$%#)+2.$"#2.+"$,(-)'#.&)/ '#17&,#'$)#+6(14'eA$2)5$+"#$27#12/# 2,1(''$2..$'+-5#)+'$6&..$8#2F9?$(1 "&/"#1$()2[@0(&)+$b&4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ [$'+-5#)+'$1#'0()5#5$+($+"&'$&+#%$2)5$(8+2&)#5$2)$27#12/# ',(1#$(*$\9$$Q<RS;FS><>>T	

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
	:-11#)+$:(-)'#.&)/ N+-5#)+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ e+#,")&d-#'$2)5$&)+#17#)+&()'$*(1 01#7#)+&()$2)5$+1#2+%#)+$(*$2$81(25 12)/#$(*$%#)+2.$"#2.+"$&''-#'eA$2)5 +"#$27#12/#$2,1(''$2..$'+-5#)+'$6&.. 8#2F9?$(1$"&/"#1$()$2$[@0(&)+ b&4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ [$'+-5#)+'$1#'0()5#5$+($+"&'$&+#%$2)5$+"#&1$27#12/#$12+&)/ 62'$?9>W$Q<RS;FS><>>T	
	:(-)'#.&)/$N+-5#)+ HI&+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ ec)(6.#5/#$(*$#7&5#),#@82'#5 +1#2+%#)+$02125&/%'$*(1$'0#,&*&, +30#'$(*$%#)+2.$"#2.+"$01(8.#%'9eeA 2)5$+"#$27#12/#$2,1(''$2..$'+-5#)+' 6&..$8#$2$>9?$(1$"&/"#1$()2G@0(&)+ b&4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ F$:U`:$'+-5#)+'$,(%0.#+#5$+"&'$&+#%$2)5$+"#&1$27#12/# ',(1#$62'$F9FF9$$Q<RS;RS><>>T	
:-11#)+	]125#$(*$D$(1$"&/"#1	U()&+(1&)/ :1&+#1&()$U#+ E..$:U`:$'+-5#)+'$+24#$:21##1$O#7#.(0%#)+A$E''#''%#)+A f$P)+#17#)+&()$2)5$%-'+$,(%0.#+#$2$N0#,&2.$K(0-.2+&()]1(-0$01#'#)+2+&()$+"2+$&),.-5#'$&)@5#0+"$&)7#'+&/2+&()$(* ,21##1$5#7#.(0%#)+$2)5$2$5&7#1'#$/1(-0S0(0-.2+&()A$O2+2 1#/215&)/$#%0.(3%#)+A$8211&#1'A$2)5$'0#,&2.$,()'&5#12+&()'A 2)5$2$,2'#$'+-53$+"2+$&),.-5#'$2001(01&2+#$'#.#,+&()$(1$-'# (*$*(1%2.$2)5$&)*(1%2.$,21##1$2''#''%#)+'A$+((.'A +#,")&d-#'A$2)5$+"#$+"#(1#+&,2.$2001(2,"$-'#5$+(,(),#0+-2.&Z#$+"#$,2'#9$E..$:U`:$'+-5#)+'$%#+$+"#$,1&+#1&() (*$#21)&)/$2D(1$"&/"#1$6&+"$',(1#'$12)/&)/$*1(%$R[=$@RR= f$P21)&	

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
	5#7&2+&()$(*$+"#$%#2)$()$+"# P)5&7&5-2.$E0012&'2.$O(%2&)$*(1$+"2+ +#'+&)/$3#21 M2..$N#%#'+#1	62'$'.&/"+.3$8#.(6$Q@<9;>T$+"#$)2+&()2.$27#12/#$(*$;<9;>9$E.. 8-+$>$'+-5#)+'$',(1#5$6&+"&)$;$'+2)5215$5#7&2+&()$(*$+"# %#2)9$Y)#$'+-5#)+$Q:2-,2'&2)T$',(1#5$2$\$6"&,"$62'$%(1# +"2)$;$NO$8#.(6$+"#$)2+&()2.$%#2)$Q[9?[TA$"(6#7#1A$+"&' '+-5#)+$O2''#5$2..$(+"#1$'#,+&()'$(*$+"#$:H:H9$!"#$'+-5#)+ Q:2-,2'&2)T$6"($',(1#5$2$[$6"&,"$62'$_-'+$'.&/"+.3$%(1# +"2)$;NO8#.(6$+"#$)2+&()2.$%#2)$5&5$)(+$O2''$+"# ,(%01#"#)'&7#$#I2%9$$Q<RS;;S><>>T	(1/2)&Z#5$(1$-'#1$*1&#)5.3$E /125-2+#$2''&'+2)+$6&..$(1/2)&Z# +"#$'&+#$2)5$8#/&))&)/$NO1&)/$><>F +"&'$'&+#$6&..$8#$(1/2)&Z#5$&)$'-,"$2 623$+"2+$'+-5#)+'$,2)$1#7&#6 01#7&(-'$,(-1'#$%2+#1&2.A$01#7&(-' d-&ZZ#'A$2)5$,(-1'#$'+-53$/-&5#' +($2''&'+$+"#%$&)$01#021&)/$+($+24# +"#&1$,(%01#"#)'&7#$#I2%'9$L# "(0#$+"2+$01(7&5&)/$2)$(1/2)&Z#5 '+-53$'&+#$6&..$"#.0$'+-5#)+' 1#7&#6$*(1$+"#&1$,(%01#"#)'&7# #I2%$2)5$&%01(7#$+"#&1$',(1#'9 Q<RS;FS><>>T
	:-11#)+$:(-)'#.&)/ N+-5#)+$N-17#3 N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ e0'3,"(.(/&,2.$+#'+'$2)5$2''#''%#)+' '0#,&*&,$+($,.&)&,2.$%#)+2.$"#2.+" ,(-)'#.&)/$e$2)5$+"#$27#12/#$2,1('' 2..$'+-5#)+'$6&..$8#$2$F9?$(1$"&/"#1$() 2$[@0(&)+$bP4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ [$'+-5#)+'$12+#5$+"#&1$'4&..'$()$+"&'$&+#%'$2)5$+"#&1$27#12/# ',(1#$62'$?9;G$Q<RS;FS><>>T	
	$N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ ec)(6.#5/#$(*$721&(-'$2''#''%#)+ '+12+#/&#'$'0#,&*&,$+($%#)+2.$"#2.+" '#++&)/'9e$2)5$+"#$27#12/#$2,1(''$2.. '+-5#)+'$6&..$8#$2$>9?$(1$"&/"#1$()$2 G@0(&)+$b&4#1+@+30#$',2.#9	U()&+(1&)/ :1&+#1&()$U#+ F$:U`:$'+-5#)+'$,(%0.#+#5$+"&'$&+#%$2)5$2,"&#7#5$2) 27#12/#$',(1#$(*$F9(*,1(#)1(%)1(2)5$2,)1("&*1($(#)1(8000sin(1)100sin(1))/)]2($2)(#)12)(#(&)]0-1e85=	

012,+&,#eA$2)5$+"#$27#12/#$2,1(''$2..
'+-5#)+'$6&..$8#2>9?$(1$"&/"#1$()$2
G@0(&)+$b&4#1+@+30#$',2.#9

!"#$'&+#$'-0#17&'(1a'$12+&)/
2,1(''$2..$&+#%'$(*$+"#$*&)2.

!"#$"%$%& ' (#)*+$,	-,,$,,+$"#& . $#/*%,	0$,(1#,	2,$&*3&0$,(1#,
		2)5$:H:H$',(1#'$2+$+"#$%2&)$#**#,+$.#7#.9$$Q<RS;FS><>>T	
	:HO$?\< O&2/)('&'$ f $!1#2+%#)+$K.2))&)/$@ U2_(1$:2'#$ L 1&+#-0$E''&/)%#)+]125#$(*D(1$"&/"#1 NO1&)/$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ E..$:U`:$'+-5#)+'$%25#2D$(1$"&/"#1$()$+"#$U2_(1$:2'# L 1&+#@C0$!"#$27#12/#$*(1$+"#$U2_(1$:2'#$ L 1&+#@-0$62' R?9F=9$!"#$12)/#$62'$W>=@;<<=9$!"#1#$6#1#$GD'Q; :2-,2'&()AF*1(%$5&7#1'#$82,4/1(-)5'T9$!"#$%2_(1$,2'# 61&+#@-0$1#d-&1#'$'+-5#)+'$+($5#',1&8#$+"#$5&2/)('+&, 01(,#''A$&),.-5&)/$5&**#1#)+&2.$5&2/)('&'$2)5$+"#$-'#$(* ,-11#)+$5&2/)('+&,$,.2''&*&,2+&()$'3'+#%'A$&),.-5&)/$+"# O&2/)('+&,$%2)-2.$(*$U#)+2.$O&'(15#1'$QONUTA$2)5$5#7#.(0 2$+1#2+%#)+$0.2)9$$Q<RS;FS><>>T	
	$:HO$?R[:U`:$P)+#1)'"&O$@$:2'#$K1#'#)+2+&()]125#$(*$D$(1$"&/"#1 NO1&)/$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ E..$:U`:$'+-5#)+'$%25#2D$(1$"&/"#1$()$+"#$P)+#1)'"&0@ :2'#$K1#'#)+2+&()9$!"#$,2'#$01#'#)+2+&()$1#d-&1#'$'+-5#)+' +($5#%()'+12+#$+"#&1$28&.&+3$+($0#1*(1%$5&**#1#)+&2. 5&2/)('&'$2)5$2++#)5$+($0(+#)+&2.$,(%(18&5&+3$-+&.&Z&)/ +"#(1#+&,2..3$82'#5$,2'#$,(),#0+-2.&Z2+&()$1#'-.+&)/$&) +1#2+%#)+$0.2)'$+"2+$21#$,(..28(12+&7#.3$5#7#.(0#5$6&+" ,.&#)+'9$Q<RS;FS><>>T	
:-11#)+	:-11#)+$:(-)'#.&)/ N+-5#)+$N-1&12+:-11#)+$:(-)'#.&)/ N+-5#)+'$6&..$12+#$+"#&1 ,(%0#+#),#$()$+"#$*(..(6&)/$&+#%$@ e8&(0'3,"('(,&2.$,2'# ,()#0+-2.&Z2+&()$2)5$+1#2+%#)+ 0.2))&)/e$2)5$+"#$27#12/#$2,1(' ''+-5#)+'$6&..$8#2F9?$(1$"&/"#1$()$2 [@0(&)+$b&4#1+@+30#$',2.#9 N-%%#1$N#%#'+#1	U()&+(1&)/ :1&+#1&()$U#+ [$'+-5#)+'$1#'0()5#5$+($+"&'$&+#%$2)5$+"#&1$27#12/#$'#.*@ 12+&)/$62'$G9;G$Q<RS;FS><>>T	