!"#\$%&'#()#*+,"*)#

-.&"#/0"12)%"#

!"#\$%"&#'()%(#*+,-."#"(#\$+/0".(1#\$+,,"#%&#)&&)%(#2"%26%24()25#&)/(."6#7)%*#
)/#&%"/#4"#2"%3"'1#\$2"#82"#9&/%"#:.+%4"#;/%#(+,-)%(#*\$2*#1#89.+>"()2(#*"*#
3+/?"&"?"*#5#+%@#8"&"*#*/.#&"#*#&6

A+/.#B%,#C=ID;%1#;/%#(.)0)%&&)%(#\$+,,"#@."/.#49;47*#4)2*#&"#;/).@".#4"#
&)#A+.("#4*#&(1#\$"#>+/.#'()%(#&"#9&/*#\$=)2\$%&#}%(#\$+22/#4"9/%*#&+23(",9*6#
H+/(#)0)%(#\$+,,"2\$'#&"#,)@21#&+'.*%&#)\$\$+,9)32)#&)#," !J#4"#&)#,)%*+2#

4′ "2#:)\$"#>/*;/′ 5½,#&%32"#4"#(.),K)L1#0%*%-&","2(#9+/.#"2(.".#"2#0%&&"#M,N,"#*%1#
("\$=2%;/","2(1#\$' ' ()%(#"2\$+."#5;%&('.%"/.#4"*#.",9).(*O6#F2*/%("1#4)*29#&..#4"#
(.+/0".#4')/(."*#\$&%"2(*1#%&#'()%(#."*('#9.P.*;\#(##&;(.),1#&)2Q)2(#4"*#."3).4*#
9."*;/"#*/99& %)2(*#5#\$=);/"#9)**)3".#;/%#"2#4"*\$"24)%(6#R%2)&","2(1#/2#=+,,"#
ON(/#5#&\$\$%4"2()&;#)2*#4+/("#/2#"2*"%32)2\$;#&/%#4",)24)#4"#&"#\$+24£%."#
&' \$+&"#H+233K)23#\$M O1#"(#B%,#)\$\$"9()#)0"\$#>+%"6

3+.3"#4/2#0".."#4"#0%2#4"#.%X#-+2#ĵ)#\$%&#&"#*+/=)!%#)%%*#*/.(+/(1#%	+/0)%(#)\$="(".#/2#-+!**"**##\$\$"#%&'(**%%***+/9"#4+*#4"#Z /:O#9+/.#*)#:",,"#,)&)4"6 # [)#:",,"#(+/**)%(#4"9/%*#9&/*#42#,+%*6#C+,,"#%&*#**Q**}%"2(#*+/0"2(#**N**"#9)*# 4"#;/+%#99).".#/2#3./)/#4"#,%&&"(1#%**\%\%2**#\0%4",,"2(#9)*#;/"*@+2#4"# , '4%\$),"2(6#H"\$=2%;/","2(1#%&#)/.)%(#9/#*/%&&".#9+/.#)\$="(".#/2"#+/#4"/G# 4+*"*1#,)%*#%**)&#**(#:".,","2(#\$+20)%2\$/#;/*/2"#:+%*#;/+2**#**!:)%(#:/**%**#/2"#,)&)4%"# 5#\$+/9*#4"#.",P4"*1#\$"**&\$**%#L#9."24#3+\(#"(#."0%"2(#*)2*#\$"**"6#[/%0)2(#\$"#9.%2\$%9"# 9".*+22"&1#%&#**)2****#8**(#>),)%*#",,"2'"#\$="X#&"#,'4"\$%21#*%#-%**%29**##\%32+.)%(#(+/(# 4"#*)#,)&)4%"6#7)%*#**5#%**)#4'*+.,)%*#\$+/\$='"#5#9&)(#4+*1#%2\$)9)-&"#4"#*"#(+/.2".1#%& '()%(#\$&)%.#;/"#\$"&)#",9**%#}%#**()&#***** ()%(#)33.**)**0**#**2"#4%X)%2"#4"#>+/.*#**9%**###()9. P*#;/ ' "&&"#"/(#,)23 #4/#,%&&"(#,)&#\$/%(#;/%#&/%#)@#**2%##**\$**0P**."# \$+2*@9)@+**2**\$##,+,"2(E\$51#B%,#)0)%(#82)&","2(#9/#*"#9.+\$/.".#/2#9**)**/\$**2**(1#)\$="(".#/2#9"@(#*)\$#4"#,%&&"(#"(#/2#:)3+(#**5##**)***#G**6#["&+2#*"*#**4%**"?*****## -+22" E5E%"21#9)2%;/"**1**#**28**;%(#:)%(#-+/%&&%.#4)2*#/2"**#**J**16**#**%**#:"/#'()%(#:)%-&"1# "&&"#'()%(#9."**'"1#"(#&"#,%**&@)%#(2**#9)*#-%"2#\$/%(6#A**+/**!**.\\$**'2**?**1##4),2'"# !J#)0)%(#*)%*%#4"#9&"%2"*#9+**;%3&&"*(#4"(**#&"*#)0)%(#"2:+/.2'"*#4)2*#*)# -+/\$="1#\$+,,"#*%#"&&"#\$.)%32**)%@#**0%"22"#&"#&/%#)..)\$=".6#F&&"#)0)%(#\$+2@2/'# >/*;/ '5#0+%.#&"*#>+/"*#3+2^\"*#\$+,,"#4"*#9+%23*6#!"#*+%.#,N,"1#"&&"<u>#</u>**\$**',%**)%("&&"#)0)%(#,)#&)#9+%(.%2"1#*"#*"2()%(#+99."**'"1#"(#.+/&)%(#4"*#L"/G#\$+,,"#"2#9& \$.%*#6

R/.%"/G1#B%,#)0)%(##/.&'

I 「 +2#*)231#:",," !a#H/#(+,-"*#,)&)4"#;/)24#(/#2"#,)23"*#9)*1#"(#(/#(+,-"*# "2\$+."#,)&)4"#;/)24#(/#,)23"* !a#b/* "*(時"#;/"#>"#*/%*#\$"2*'#:)!%#以70."#4+2\$#&"*# L"/G!aJ#

T&#)0)%(#**&**/#*>+/"#4"#*)#:",,"1#;/%#3"%32)%(1#)&&+23'"#5#*"*#9%"4*6#F&&"#)0)%(#

"2(.+/0".(#/2#9"/#9&/*#&"*#L"/G1#,)%*#4"*#&).,"*#L#-.%&&P."2(#)/**%(U(6#F(#B%,1#&/%#))/**%1#*"2@(#*"*#L"/G#&"##.\&".6

"&&"#*/99&%)%(#*+2#,).%#4"#&/%#.)99+.(".#/2#9"/#4"#**!#\$\$\&&\&\#\#&** I !C"?"#,)/4%("#:",," !a#H/#2"#*/99+.("*#,N,"#9)*#&"#3./)/#4"#,%&&"(#"(#(/#0"/G#4/# !"#\$\$"#%&'(**%&**C"*(#9+/.#."(+,-".#,)&)4"#(+/(#4"#*/%("#)9.P*!c!J#

A+/.()2(1#,N,"#4)2*#\$"(#'()(1#"&&"#)2)%(#9)*#9".4/#)\$\textbf{9}' @(6#V"9/%*#(.+%*#>+/.*1#)

T&**\$48**)%(#*".,+22'"#)%2*%1#,)%*#)/#:+24#4"#&/%1#&"#:)%(#4"#2"#9)*#9+/0+%.#&"#&/%#&"#.+23")%**#**(6

V'*+.,)%*1#%&#&"#9+/0)%(#"2826#T	+/..)%(#,N,"#)\$="(".#4"#&)#-+/%&&%"#9+/.#&"/.#& (.+%*#)2*1#e)"?+231#;/%#9&"/.)%(#4"#:)%,#9.P*#4"#*)#,P."#,)&)4\bar{\text{

7)%*#*)#\$=)2\$"#2**"**#;*. N()#9)*#**%**6#W&+.*#**%**&#**/L)%(#&)#*/".#"(#&)#9&/%"#*/.#&)#
2/;/"#)0"\$#/2#\$=%f+2#*)&**5**#**%**#%2"#4%32"**M**(4"#)99"& #2"#*".0%"?"1#"(#;//%&#
*')99. N()%(**5**#+.@.#4"#**%**2\$"%2("#4"#**%**\$+&"1#/2"#0+%**62**#(**%**9"&)#*+/4)%2#**E**9).
4"..%P."!<u>#</u>

I!A+/**" E9+/**" !aJ#

B%,#*%,,+-%&%*)#"(1#"2#*"#."(+/.2)2(1**6)**(9#/2# &FO"#4"#\$"?"#,N,"# ' \$+&"#;/%#
)\$\$+/.)%(6#!"#>"/2"#&)-2#&)**2**!_#

I !C+,-%"2#>/*;/' 5#&)#3)."#4"#g),4)",/2 !c!J#

I!H/#0"/G#)&&".#5#&)#3)."#4"#g),4)"!@2J#

B%,#='*%()#/2#%2*()2(6#C.**)P%32)**\$\text{\$\te

1!g"#*+.*#9)*#)/>+/.4 = /%6#h"*("#5#&)#,)%*+21#>"#*/%*#[J#9#,)&

W0)**%&**&"#,/.,/.'1#&)#."*9%.)@+2#.<9"/*"6#[)2*#L#9.N(".#)?"2@+21#B%,#)0)%(#
.'9&%;/'!#

I!+2#*)231#:",,"1#(/#4'&%.!!¢#[%#>"#."*("#&51#;/%#0)#2+/**!**¢#**2#**/..%.

T&#)0)%(#-+24%#9+/.#9).@.1#,)%*#"&&"#)0)%(#)3%('#:)%-&","2(#&"*#-.)*1#\$+,,"#9+/.#&"#
."("2%.**s**

I!g"#9).*#9)*i #+/#."0%"2*#0%("1#*%#(/#4+P/d5##L#)&&".

F&&*****#**8**)%(#)99***841** / 2*****#0+%**'G#**23**& ***#()24%*#*****/%**&**#***&**+%32**#**%(6

]#9.'*"2(1#"2("24)2(#&' &0"#&/%#4",)24".#4)&&".#>/*;/5#&)#3)."1#B%,#."0%(#"2# 9"2*' "#&"*#,)%2*#(.",-&)2("*#4"#*)#:",,"1#*"*#3.)24*#