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"#\$\$!%&'()*!+\$\$&),!-#.(/!0!
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! 1)2!"#\$\$!+\$\$&!#3!(!45#6/)3#.7!1#3.#589#3:/*!;)&</33&)(5*!<&=)/!>:(#)!&<!.:/!1/?().=/5!
&<!@/(>:#58!(5*!A/())5#58!(.!B&9.:/)5!C/.:&*#3.!45#6/)3#.7!D5!OEEF,!3:/!)/>/#6/*!:/!)*&>.&)(./!
#5!3?/>#(\$!/*9>(.#&5!<)&=!;/ (G&*7!H&\$\$/8/!&<!- (5*/)G#\$.!45#6/)3#.7!2!+!<&=)/!3?/>#(\$!/*9>(.#&5!
./(>:/),!:/!)/3/(>: !#3!3>:&&\$IG(3/*!(5*!<&>93/3!&5!\$#./)(>7!(>J9#3#.#&5!<&!)3.9*/5.3! '#.:(5*!
'#.:&9!*#3(G#\$.#./3!B:/!' (3!(')/*!*!:/!KLLL!+ ')/*!<&!)M9.3.(5*#58!N/3/(>: !G7!./!H&95>#!
&5!A/())5#58!1#3(G#\$.#./3!(5*!#3!./!>&I)/>#?#5!.&<!.:/!O/3.1+).#>\$/!#5!A/())5#58!1#3(G#\$.#./3!
N/3/(>:!(5*!;)(>.#>/!<&!)OEEE2!D5!KLOK,!.:/!D5./)5(.#&5(\$!C9\$.#3/53&7!B.)9>.9)/*!A(589(8/
P*9>(.#&5!H&95>#5!?)3/5./!*/!:/!'#.:!./!D55&6(.&)+ ')/*!<&!)M9.3.(5*#58!P*9>(.&2!+<./!)
G/#58!5&=#5(./*!G7!:/!)!3.9*/5.3,!3:/!)/>/#6/*!:/!N&.95*(!M9.3.(5*#58!;)&</33&)(')/*!(.!B C 4!
#5!KLOF2!D5!KLOE,!3:/!' (3!(')/*!*!(!Q&)*!N/3/(>: !Q/\$\$&' 3:#?!)&=!B C 42!+3!?)#5>#?(\$R>&I
?)#5>#?(\$!56/3.#8(.&),!3:/!(3!)/>/#6/*!5/()\$7!SOL!=\$\$\$&5!&</T./)5(\$!)/3/(>: !<95*3,!#5>\$9*#58!(!
SU2U!=\$\$\$&5!8)(5!<95*/*!#5!KLKL!G7!./!D53.#.9./!&<!P*9>(.#&5!B>#5>/3!.&!.!3!./!/<<#>(>7!&<!
./!/"#\$%&'()*%*+\$(, -) ./!\$#./)(>7!>9)>9\$9=! ' :/5!?)&6#*/*!&!3.9*/5.3! '#.:#5./53#6/15//32!B:/!
:(3!(\$3&!)>/#6/*!&6/)!SO!=\$\$\$&5!&!39?&?)!./(>:/!?)/?)(.#&5!(5*!*/6/\$&?= /5.!#5!./!()/(!&<!
\$#./)(>7!D5!(**#.#&5!&!?9G\$#3:#58!/()\$7!\$#./)(>7!?)&8)(=3!<&!)!7?#>(\$!(5*!3.988\$#58!)/(*!/)3!(3!
'/\$\$(3!3.9*/5.3! '#.:#5!#3(G#\$.#./3,!3:/!(3!(\$3&!?9G\$#3:/*!(??)&T#=(./\$7!VL!/?//)I)/6#/'/*!
)3/(>:!(.)#>\$/3!(5*!G&&W!>:(?./)32!@:)&98:&9!:/!)/>()/),!3:/!(3!?)3/5./!* ' #*/\$7!(.15(.#&5(\$!
?)&</33#&5(\$! =//.#583!(5*!:(3!\$/*!59=)/&93!?)&</33#&5(\$!*/6/\$&?= /5.! ' &)W3:&?3!&5!(' #*/!
6(#/7!&<!\$#./)(>7!)/\$(./!*!&?#>3,!#5>\$9*#58!/?//)!.9.:!/()\$7!\$#./)(>7!*/*6/\$&?= /5.,!?:&5/=#>!
(')/5/33!#53.)9>.#&5,!\$#./)(>7!(33/33= /5.,!(5*!/()\$7!\$#./)(>7!./T.2!)

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8%639 : \$; " : <965 \$ # " 9 :)

B&9.:/)5!C/.:&*#3.!45#6/)3#.7!
1/?().=/5.!&<!@/(>:#58!(5*!A/())5#58!
+55/..!H(\$* ' /\$\$!B#=#&53!B>:&&\$!&<!P*9>(.#&5!(5*!%9=(5!1/6/\$&?= /5!
; &3.!M<<#>!/O&T!XVLYVV!
1 (\$\$(3,!@/T(3!XVKXVILYVV!
ZKOY[!XF\IKUYF!!!!Q+]^!ZKOY[!XF\IKOXO!

%24 = \$ # " 9 :)

2 +>?+.)+@)%/A>-?'+B0)3CD>'-(%) / A>-?'+B0)+9893.,!OEEF!
0\$)"I\$(2\$34)&5(6)--\$I\$(7(83%&\$"4#-(9%#: \$" "#5,!
_(3:6\$\$/,!@/55/33/!

5 -E?D.)+@)%/A>-?'+B0)3CD>'-(%) / A>-?'+B0! C (7,!OEEK!

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"#\$\$!%& '()*!+\$\$&),!-#.(/!!K!
!"#&#(!)&'+,++

869<%33"9 : \$;)\$ =#" ! "#"%3)
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+9893.,!KLKL!.&!
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4B'JD.E'?I)2'E?'BKA'EGD/!8. +@DEE+.0))
2DC-.?HDB?) +@) #D->G'BK)-B/) ; D-.B'BK)
+55/..!/H(\$*' / \$\$!B# = &53!B>: &&\$!&<!P*9>(.#&5!(5*!%9=(5!1/6/\$&?=/5!
;)<*\$'%"(>\$*+) &#'(9%#: \$"'#*5(
1 (\$\$(3,!@]!

+9893.,!KLOO!.&!
KLKL))
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8. +@DEE+.0)2DC-.?HDB?) +@) #D->G'BK)-B/) ; D-.B'BK)
+55/..!/H(\$*' / \$\$!B# = &53!B>: &&\$!&<!P*9>(.#&5!(5*!%9=(5!1/6/\$&?=/5!
;)<*\$'%"(>\$*+) &#'(9%#: \$"'#*5(
1 (\$\$(3,!@]!

+9893.,!KLLV!.&!
C (7,!KLOY))
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=G-' .0)2DC-.?HDB?) +@) #D->G'BK)-B/) ; D-.B'BK)
+55/..!/H(\$*' / \$\$!B# = &53!B>: &&\$!&<!P*9>(.#&5!(5*!%9=(5!1/6/\$&?=/5!
;)<*\$'%"(>\$*+) &#'(9%#: \$"'#*5(
1 (\$\$(3,!@]!

"9\$7,!KLLY!.&! !
"9\$7,!KLOO!))
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\$EE+>' -?D)8. +@DEE+.0)2DC-.?HDB?) +@) #D->G'BK)-B/) ; D-.B'BK)
+55/..!/H(\$*' / \$\$!B# = &53!B>: &&\$!&<!P*9>(.#&5!(5*!%9=(5!1/6/\$&?=/5!
Q/\$\$& ',!D53.#.9./!<&!)N/(*#58!N/3/(>):!!
;)<*\$'%"(>\$*+) &#'(9%#: \$"'#*5(
1 (\$\$(3,!@]!

+9893.,!OEE\!.&!
"95/,!KLLY))
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\$EE'E?-B?)8. +@DEE+.0)2DC-.?HDB?) +@) =A..!>A(AH)-B/)"BE?.A>?' +B)
B?/>#(\$!P*9>(.#&5!(5*!P(\$7!A#./(>7!
=) <#'#3%3(-,*3*\$ (9%#: \$"'#*5(
O(.&5!N&98/,!A+!Z(')*/!./59)!/(5*!?)&=&./!#5!KLLY[!

B/?./=G/),!OEEF!
.&!"9\$7,!OEE\! !
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6DED-.>G)\$EE+>' -?DL\$/MAB>?)8. +@DEE+.!
)&`/>.!H&&)*#5(.,!;) &`/>.!: PNQPH@!Z;)/6/5.#58!P(\$7!N/(*#58!Q(#9)!
G7!P5:(5>#58!H\$(33)&&=!@/>:5&\$&87,!a)(5.!b%0\L aFLLLY[!
;)#5>#?(\$!D56/3.#8(.&)3^!; (.)#>#!(C (.:/3!(5*!"&3/?!:!@&)8/3/5!
!-) "#&3(-,*3*\$ (9%#: \$"'#*5(
@(\$\$(:(33//,!QA!

+9893.!OEEK! !
.&!"95/,!OEEF! !
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6DED-.>G)\$EE'E?-B?!
2\$34)&5(6)--!\$!(7(83%&\$"4#*(9%#: \$"'#*5!
_(3:6#\$\$/,!@ _!

C (7,!OEEF! !
.&!"9\$7,!OEEF! !
)
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8DD.N\$EE'E?D/); D-.B'BK)3?-.?DK'DE)=+BEA(?-B?)
83%&\$"4#*(6+#+&(? \$: \$-)@A\$%*(6\$%*\$"
B9==/)!1(7!@)/(.=/5.!;)&8)(=!<&!H:#\$*)/5!' #.:!!
+../5.#&5!1 /<#>#!.%7?/(>.#6#.7!1#3&*)/!
_(3:6#\$\$/,!@ _!

+9893.,!OEEU!!!
.&!"9\$7,!OEEF! !

8.'J-?D)#A?+..!
_(3:6#\$\$/,!@ _!

! "#\$!%&'()*+\$\$&,-#.(//!!U!
!"#\$%&'()*+,\$-./:;<=>?@ABCD

B9==/)3!&<!! ! 3CD>'-(0%/A>-?'+B)#D->GD.!
OEEU!(5*!OEEY! 83%&\$"4#-*(6+#-&(? \$: \$-)@A\$%*(6\$%*\$"
! ! ! B9==/)!1(7!@)/(.=/5.!;)&8)(=!<&!H:#\$*)/5!'#. :!!
! ! ! +../5.#&5!1 /<#>#!.%7?/)(>.#6#.7!1#3&*)/!
! ! ! _(:6#\$\$/,!@_!
"95!/OEE0! ! "B/'J'/A-(L3H-((NO.+AC)#A?+.!
.&!9\$7!OEEK! ! 6)<% '\$-#%I(3%&(?#3I%)' '#.(B'').#3*\$',!1/5:(=!B?)#583,!A+!
+9893.!OE\ \! ! 3CD>'-(0%/A>-?'+B)#D->GD.!
.&!C(7!OEEK! ! ;\$:\$%*(C3"&(D-\$A\$%*3"5(;.+)-,!1/5:(=!B?)#583,!A+!

! 84F; "=\$# "9 : 3)

! \$.?'>(DE)'B)8DD.N6DJ'D , D/)&+A.B-(E)

H&55/),!H2,!\$(+ .0)&1) *10!B./ ' ().2!"2,!c /()53,!12!C2,!d!a\$\$/3?#/!N&93/,!+2!KLKK[2!+!375.:/3#3!&<!
) /(*#58!>&=?)/:/53#&5!#5./)6/5.#&53!(5*!/=(39)/3!<&!)3.9*/5.3!' #. :!(9.#3=13?/>.)9=
#3&)/!(5*!\$&' !De2(E\$:#\$F(G)<"%3-()7(B<# 'A(3%&(? \$: \$-)@A\$%*3-(?# ')" &\$ " "H!
*#&#ROL2OLLXR3YLY\EILKKILUKOIT!

H&55/),!H2,! "&5/3,!Q2!"2,!+ :\$8)#=I1 /\$f/\$\$,!A2,! g (\$./,!B2,!d!\$(+ .0)&1) *1!ZKLKO[2! g :(!./(>:/)3!
W5&' !(G&9.! /(>:#58!)/(*#58!.&!3.9*/5.3!' #. :!#5./\$\$/>.9\$!(5*!*/6/\$&?= /5.(\$!*#3(G#\$.#/#3^!+!39)6/7!&<!
3?/>#(\$!/*9>(&.)32(G)<"%3-()7(2)-#.5(3%&(2"3.#.\$(#%(? \$: \$-)@A\$%*3-(?# '34#-##\$ 'H(
*#&^OL20000R`??#20KYLF!

H&55/),!H2,!O(W/),!12,!d!\$(+ .0)&1) *1!ZKLKL[2!C9\$.#?\$/!\$(589(8!/T?&39)/!<&!)>:#\$*)/5!' #. :!
(9.#3=13?/>.)9=!#3&*)/)!<&=>9\$9)(\$7!(5*!#589#3.#>(\$7!*#6/)3/!
>&=95#.#/32!,#-#%I<3-(E\$'\$3".+(G)<"%3-I(JKI!*&#^!OL2OL\LROVKUV\ \K2KLKL20XEE\ \V!

\$(+ .0)&1) *10)h&6(5&<<!,;2,!+\$!M.(#G(,!B2,!M).#f,!C2!O2,!d!H&55/),!H2!ZKLKL[2!P6#*/5>/!<&!)(!
\$#./(>7!#5./)6/5.#&5!<&!)3.9*/5.3!' #. :!#5./\$\$/>.9\$!(5*!*/6/\$&?= /5.(\$!*#3(G#\$.#/#32!
D<.3#)% (3%&(L"3#%#%I(#%<# 'A(3%&(? \$: \$-)@A\$%*3-(?# '34#-##\$ 'I(MMI(KELIULK2!

+\$!M.(#G(,!B2,!\$(+ .0)&1) *10!O(W/),!c2,!H&55/),!H2,!B./ ' ().,!"2,!d!*/!\$(!H)9f,!- 2!C2!ZKLOE[2!
@/(>:#58!?:&5/=#>!(')/5/33!(5*!' &*)/(*#58!3W\$\$3^!Q&>93#58!&5!/T?#\$#>#!(5*!
373./=(.#>!(??)&(>:/32!2\$"'@\$. #:.\$')%(=3%I<3I\$(3%&(=#\$3"3.5,!JM,!OOIOF2!

+\$!M.(#G(,!B2,!O(W/),!c2,!A(5,!;2,!\$(+ .0)&1) *10!N#6(3,!O2,!h&6(5&<<!,;2!d!c(=(.(!+2!ZKLOE[2!
P\$/=/5.(?)7!./(>:/)i3!W5&' \$/*8/!&<!)3?&53/!.&!#5./)6/5.#&5!#=?\$/=/5.(#&5^!+!
?)/#=#5(7!<(>.&!)5(\$73#32!B%#3-')7(? \$' - \$N#3I(OPI(UYIVUH!*&#^!OL2OLLXR300\ \OILO\I
LLOXOIV!

"&5/3,!a2!Q2,!a#<&&)*,!12!O2,!h&6(5&<<!,;2,!+\$!M.(#G(,!B2!A/67,!12,!d!\$(+ .0)&1)ZKLOE[2!+\$. /)5(. /!
(33/33=/5.!<&)=(.3!<&!)?)&8)/33!=#5#.&)#58!3.9*/5.3!' #. :!#5./\$\$/>.9\$!(5*!#3(G#\$.#/#3!(5*!
G/\$&' !(6/)(8!/#5./\$\$8/5>!/J9&.#/5.3^!+5!/T?#\$&)(.&)7!3.9*72! !) .<')%(B<# 'A(3%&(Q*+\$"
? \$: \$-)@A\$%*3-(?# '34#-##\$ 'I(KJZO[,!YOIVOH(+**@ 'RSS&)#) "ISTUH TTVVSTUWWMVOTWVOXVJP(
!

! "##\$!%&'()*+\$\$&,-#./!Y!
!"#\$%&'()*+,,

A/= &53,!H2!"2,!+\$\$&),!"2!%2,!+!\$M.(#G(,!B2,!A/" /95/,!A2!C2!Z)/?)#5.!#5!KLO\j!#5(\$\$7!KLOF[2!@/5!
) /3/(>: IG(3/*!.#?3!<&)/5: (5>#58!\$#./)(>7!#53.)9>.#&5!<&)!>: #5*)/5!(5*!(*&\$ /3>/5.3! ' #. :!
#5./\$\$/>.9(\$!*#3(G#\$#.72!L\$3. +#%I(DN. \$@*#)%3-(6+#+-&"\$%I(MUI(KKLIKUK2!

)
\$((+.0)&1) * 10) a#<<&)*,! 1 2!O2,!!"&5/3,!Q2! a2,!+!\$M.(#G(,!B2,!h&6(5&<<,!; 2,!M).#f,!C2!O2,!d !H: /(: (=,!
"2!; 2!ZKLO [2!@: /!/<</>.3!&<!(1./T.I>/5./)/!*!\$#./)(>7!>9))#>9\$9=!<&!3.9*/5.3! ' #. :!
#5./\$\$/>.9(\$!*#3(G#\$#.72!BA\$"#. 3%(G) <"%3-(7)"(Y%*\$-\$.*<3-(3%&(? \$: \$-)@A\$%*3-(? # ' 34#-##\$ 'I
TXKI(YXYIYEY2!(*&#^OL2OUVKROEYYIXVV \ IOKU2V2YXY!

!
A#5*&,!P2!"2,! g /#3/),!O2,!H: /(: (=,!"2!; 2,! d ! \$((+.0)&1) * 1!ZKLOX[2!O/5/<#3!&<3!)9>.9)/*!(<./)I
3>: &&\$!\$#./)(>7!9.&)#58!G7!95#6/)3#7!3.9*/5.3!<&!3.)988\$#58!/\$/ = /5. (7!)/ (* /)32!E\$3&#%I(
3%&(C "#*#%I(Z<3"*\$"-5R(Q: \$")A#%I(=\$3""%#%I(? #7# . <-\$*\$ 'I(KJ,!00XIOU,!*&#!
OL2OL \ LROLVXUVFE2KLOX2OUVXOVF2!

!
+!\$M.(#G(,!B2,!A(W/,! - 2!P2,!B>(>)G&)&98: :! c 2,!+\$\$&),!"2,! d !H()/W/),!B2!ZKLOF[2! ;)/?()#58!
G/8#55#58!)/(*#58!./(>: /)3!<&!c IU^!@/(>: /)?)/?()(.#&5!#5!: #8: /)!/*9>(.#&52!
2\$"'@\$. #: \$ '()%(=3%I<3I\$(3%&(=#*\$"3. 5IjXI(KVIUK2!

!
A/= &53,!H2!"2,!+\$\$&),!"2!%2,!+!\$M.(#G(,!B2,!A/" /95/,!A2!C2!ZKLOF[2!@/5!)/3/(>: IG(3/*!.#?3!<&)!
/5: (5>#58!\$#./)(>7!#53.)9>.#&5!<&)!>: #5*)/5!(5*!(*&\$ /3>/5.3! ' #. :!#5./\$\$/>.9(\$!*#3(G#\$#.72!
L\$3. +#%I(DN. \$@*#)%3-(6+#+-&"\$%I(JPI(O \ IUL2!

!
B.&W/3,!A2,!d ! \$((+.0)&1) * 1)ZKLOF[2!+! ?& ' /)! (5(\$73#3!<&)!<#*/\$#.7! = / (39)/ = /5. !3(= ?\$ /!3#f /!
/./) = #5(.#&52!2 '5. +) -) I# . 3-(> \$+) & ',!XTZO[,!UVIYF2!
*&# : ...?^RR*T2*#&2&)8ROL2OLUXR = / .LLLLLF!

)
\$((+.0)&1) * 10) C (.: /3,!; 2,!N&G/).3,! c 2,!H: /(: (=,!"2!; 2,! d !+!\$M.(#G(,!B2!ZKLOY[2!D3!3># /5.#<#>(\$\$7I
G(3/*!)/(*#58!\$#53.)9>.#&5!/<</>.#6!/!<&)!3.9*/5.3! ' #. :!O/\$&' I +6/)(8/!De 3k!DN. \$@*#)%3-(
6+#+-&"\$%,!W-I. 32Td(*./.) = #5<&) ! #0/EL%\$0Tj0 /> ZY3Tj/TT3ITf-13. 1623Tj? Tc7. 9200L3 > #YLZY3Tj/
!Z/>&3! ' 8!#/T* 13.f(DN.\$@*#)%3- 8.8486/)(8(?# - *\$')T. 16Td8.8486&"\$%)Tj/T

! "#\$!%& '()*+\$\$&,-.#./!V!
!"#\$%&'()*+,,
\$((+.0)&1)*1,!H:(=?\$#5,!@2!C2,!a#<&)*,!12!O2,!d!C(:/3,!;2!a2!ZKLOL[2!C/:.&*3!<&!)#5>)/(3#58!
.: /!#5./53#.7!&!)/(*#58!#53.)9>.#&5!<&!)3.9*/5.3! '#.:!#5./\$\$/>.9(\$!*#3(G#\$#. #/32!D&<.3*#)%
3%&(L"3#%#%I(#%B<# 'A(3%&(?\$:-)@A\$%*3-(?# '34#-##\$ 'I(JMIVLLIV002!!
)
\$((+.0)&1)*1,!C(:/3,!;2!a2,!N&G/).3,!!"2!c2,!H:/(.:(=,!!"2!; ,!d!H:(=?\$#5,!@2!C2!ZKLOL[2!
H&=?)/:/53#6!/)/(*#58!#53.)9>.#&5!<&!)3.9*/5.3! '#.:!#5./\$\$/>.9(\$!*#3(G#\$#. #/3!Q#5*#583!
<)&=!:./!<#)3!.:)/!7/()3!&!(!&58#.9*#5(\$!3.9*72!2 '5.+)-)I5(#%(*+\$(;.+))- 'I(JV,!YYVIYFF2!!
)
\$((+.0)&1)*1,!C(:/3,!;2!a2,!!"&5/3,!Q2!a2,!H:(=?\$#5,!@2!C2,!d!H:/(.:(=,!!"2!;2!ZKLOL[2!
D5*#6*#9(#f/*!)/3/()>:IG(3/*!)/(*#58!#53.)9>.#&5!<&!)3.9*/5.3! '#.:!#5./\$\$/>.9(\$!
*#3(G#\$#. #/32!LDB6 [Y\ O(DN. \$@#)%3-(6+#+-\$%I(JXI(FIOK2!
)
\$((+.0)&1)*1,!C(:/3,!;2!a2,!N&G/).3,!!"2!c2,!!"&5/3,!Q2!a2,!d!H:(=?\$#5,!@2!C2!ZKLOL[2!@/(>:#58!
3.9*/5.3! '#.:!&*/)(./!#5./\$\$/>.9(\$!*#3(G#\$#. #/3!.&!)/(*^!+5!/T?/)#=/5.(\$!/T(=#5(.#&5!<&!(!
>&=?)/:/53#6!/)/(*#58!#5.)6/5.#&5!D&<.3*#)%3%&(L"3#%#%I(#%B<# 'A(3%&(?\$:-)@A\$%*3-(?# '34#-##\$ 'I(JMI(UIKK#!
!
\$((+.0)&1)*1,!C(:/3,!;2!a2,!H:(=?\$#5,!@2!C2,!d!H:/(.:(=,!!"2!;2!ZKLE[2!N/3/()>:IG(3/*!
./>:5#J9/3!&!)!/(>:#58!/()\$7!)/(*#58!3W#\$\$3!&!3.9*/5.3! '#.:!#5./\$\$/>.9(\$!*#3(G#\$#. #/32!
D&<.3*#)%3%&(L"3#%#%I(#%B<# 'A(3%&(?\$:-)@A\$%*3-(?# '34#-##\$ 'I(JJI(UVFIUFF#!
!
C&&5/7,!;2,!C>H(./),!c2!B2,!B>:(6/5,!!"2,!%#5.f./,!!"2!C2,!C&&5/7,!P2,!A(5*#7,!12,!H&\$>\$&98: ,!@2,!
a(53\$/,!c2!+2,!1/557,!N2!c2,!a)(5*3.(<<IO/>W/)3,!a2!O/55/),!a2!!"2,!d!\$((+.0)&1)*1!
ZKLL\ [2!Q9).:/!6*#5>!&<!&!)(\$!)/(*#58!\$9/5>7i3!9.#\$#.7!#5!?)/*#.#58!3.(/ '#*/!3.9*/5.!
)/*#58!?)&<#>5>72!Y%\$"%3*#)%3-(G)<"%3-()7(2 '5.+)-)I5R(B(2 '5.+)').#3-(B@")3.+I(X,!
OKOIOYF2!
!
O/55/),!a2!!"2,!_/\$3&5,!!"2!N2,!\$((+.,!"2!%2,!C&&5/7,!;2,!d!1 (#,!@2!ZKLL\ [2!+>(*/=#>!?)&>/33#58!
3?//*!/=/*#(./3!.: /!#5<\$9/5>!&<!G&.:/T./)5(\$#f#58!G/:(6#&!)(\$!*#3(G#\$#. #/32!D&<.3*#)%3%&(L"3#%#%I(#%B<# 'A(3%&(?\$:-)@A\$%*3-(?# '34#-##\$ 'I(JJI(UVFIUFF#!
(>(*/=#>!3W#\$\$3!&<3.9*/5.3! '#.:!/=&.#&5(\$!*#3.9)G(5>/2!G)<"%3-()7(, \$+3:#)'3-(D&<.3*#)%I(
TVI!FUIX\2!!
!
O/55/),!a2!!"2,!\$((+.0)&1)*2,!d!C&&5/7,!;2!ZKLL\ [!+5!#56/3.#8(.#&5!&<!.:/!(>(*/=#>!?)&>/33#58!
3?//*!&<3.9*/5.3! '#.:!/=&.#&5(\$!*#3!G/:(6#&!)(\$!*#3&*)/3!3/6/*!#5!9G#>!3>:&&\$!
3/..#5832!D&<.3*#)%3%&(L"\$3*A\$%*()7(6+#+-\$%I(KTULXIUKH(
!
\$((+.0)&1)*1,!H://W,!P2,!B=#.: ,!;2,!d!B>:&)f=(55,!P2!ZKLLF[2!H&53#*/)#58!9.&)3i!/?/3?/>.#6/3^!
D=?\$#>(.#&53!<&!)3.988\$58!)/(*!)32!E\$3#%I(3%&(C"#%#%I(Z<3"*\$"-5R(Q:\$".)A#%I(
=\$3"%#%I(?#77#. <-*# \$ 'I(XXI(UVXIUXY2!!
(
\$((+.0)&1)*1,!a(53\$/,!c2!+2,!d!1/557,!N2!c2!ZKLLF[2!@:/!B.&?!(5*!a&!a(=/^!@:/!/<</>.3!&<!
=&*/\$58!?)(>#>./!(5*!<//*G(>W!&5!?:&5/=#>!(')/5/33!3/8=/5.(#&5!.(3W32!2 "\$:\$%#%I(
;.+))-(!3#<"\$I(MUI(KUIUL2!!
)

! "##\$!%& ' () *! +\$\$&),! - #. (/!!F!
! "#\$!&#(!)&' +, ++

\$(+.0&1)*1,!d!C>H(.:)/5,!N2!O2!ZKLLY[2!@:/!/<<#>(>7!&<!(5!/())\$7!\$#./)(>7!9.:!?)&8)(=!
#=?\$=/5./!*G7!>&\$\$/8!/3.9*/5.32!=\$3""%#%I(?#'34#-##\$'(E\$'\$3".+(3%&(2"3.#.\$I(TPI(OOFI
OKE2!!

\$(+.0&1)*1,!d!C>H(.:)/5,!N2!O2!ZKLLU[2!1/6/\$&?#58!/=/)8/5.!\$#./)(>7!3W##\$3!.:)&98!:3.&)7G&&W!
)/(*#582!Y%*\$":\$%*#)%(#%(;.+))-3%&(6-#%#.I(KP!ZK!,!XKIXE2!!

\$(+.0&1)*1!ZKLLU[2!IN/6#/ '!&<!.:/!G&&W!=\$#"\$3"5@("3.#.\$'(3'(').#3-(3.*'m2!B%*+"))@-)I5(3%&(D<.&3#%)(Z<3""\$"-5I(KJ!ZO[2!N/.)#/6/*!B/?./=G/)!F,!KLLU,!<)&=!
:..?^RR ' ' ' 2((5/.2&)8R>(/R(/JRG)R\$/ '#3K2:..=!

\$(+.0&1)*1!ZKLLK[2!@:/!)/\$(.#&53:#?3!&<!?:&5/#=>!(' ()/5/33!(5*!)(?#*!5(=#58!.&!)/(*#58!
/6/\$&?=/5.2!=\$3""%#%I(?#'34#-##5(Z<3""\$"-52!KV,!YXIVX2!nKLLL!+ ' ()!<&!)M9.3.(5#58!
N/3/())>:,!@:/!H&95>#&!<&!)A/()5#58!1#3(G#\$.#/32!;)/3/5./!*(.!.:/!D5./)5(.#&5(\$!
H&5</)/5>!&5!A/()5#58!1#3(G#\$.#/3,!M>.&G/),!KLLL2!!

C>H(.:)/5,!N2!O2,!d!\$(+.0&1)*1!ZKLLK[2!43#58!3.&)7G&&W3! ' #.:!?)>:&&\$!>:#\$*)/5^!P5:(5>#58!
\$(589(8/!(5*!\$#./)(>72!])<%I(DN.\$@*#)%3-(6+#+-&"\$%I(M^J_I!UIOL2!!

\$(+.0&1)*1,!Q9>:3,!12,!d!C(./3,;!2!a2!ZKLL0[2!1&3.9*/5.3! ' #.:!(5*! ' #.:&9.!\$/T#>(\$!)/.)#/6(\$!
' /W5/33/3!)/3?&5*!#<</)/5.\$7!.&!#53.9>.#&5k!G)<'%3-()7(=\$3""%#%I(?#'34#-##\$'I(KJ,!KFYI
KXV2!!

C(./3,;!2!a2,!@&)8/3/5,!2!c2,!d!\$(+.0&1)*1!ZKLL0[2!@:/!/<<#>.3!&<!/!)!+33#3./!*A/()5#58!
B.)(/8#/3!<&!)Q#3.Ia)(*!N/(*!)/3! ' #.:!(5*! ' #.:&9.!(**#.#&5(\$!>&=?9./)!(33#3./!*
#53.9>.#&5!#5!?:&5&\$&8#>(\$!(' ()/5/332!BA\$""#.3%(D<.&3#%)%3-(E\$'\$3".+(G)<'%3-I(KW,!UXOI
YOL2!!

C(./3,;!2!a2,!a)/W,!C2!A2,!*+ , -./0&1)P1,!O(G7(W,!+2!P2,!d!+\$\$/5,!B2!%2!ZOEEL[2!; //)I+33#3./!*
A/()5#58!B.)(/8#/3!<&!)Q#3.Ia)(*!N/(*!)/3^!+!.&&\$!<&!)?/6/5.#58!/()\$7!)/(*#58!<(#9)/2!
=\$3""%#%I(?#'34#-##\$'(E\$'\$3".+(3%&(2"3.#.\$I(TJZO[,!VLIFL2!n g #55/)!&<!.:/!B(=9/!c#)W!
+ ' ()!Z<&!)!./!G/3.1)/3/())>:I.&I?)(>#>/!)#>!/!#5!=\$3""%#%I(?#'34#-##\$'(E\$'\$3".+(3%&(2
2"3.#.\$!<&!)OEEE[,!(' ()!*/!*G7!./!H&95>#&!<&!)PT>/?.#&5(\$!H:#\$*)/5,!1#6#3#&5!&<!&<
A/()5#58!1#3(G#\$.#/32!!

C(./3,;!2!a2,!*+ , -./0&1)P1,!d!+\$\$/5,!B2!%2,!d!Q9>:3,!12!ZOEEL[2!; //)I+33#3./!*A/()5#58!
B.)(/8#/3!<&!)Q#3.Ia)(*!N/(*!)/3^!N/3?&5*#58!.&!.:/!5// *3!&<!#6/3/!\$/()5/32!E\$3&#%I(
E\$'\$3".+(Z<3""\$"-5I(KK,!FKIEY2!!

)
=G-C?D.E)B)%/'?D/)F++QEL9B('BD)
)

\$(+.0&1)*10!c/()53,!12,!M).#f,!C2,!d!H&55/),!H2!ZKLLK[2!+5!/T(=#5(.#&5!&<!.:/!./T.!
>:()>./)#3.#>3!&<!(5!/())\$7!)/(*#58!G&&W!3/)#/3^!;)&6#*#58!#5./53#6/!?)>.#>/! ' #.:!
>&55/>./!*!./T.2!D5!C2!@ (5W/3\$)/7,!O2!a2!H&&W,!d!@2!"2!A(5*)9=!ZP*32[.!? \$-#:\$"#%I(
Y%*\$%#:#.\$I(Y%#&:#&<3-# \$&(Y%*\$%":\$%*#)%('*)(6+#+-&"\$%3%&()<*(F#*+(\$3""%#%I(3%&(

!

! "#\$%!%& '()*+\$\$&),!-#.(!/!X!
!"#S!&#!(!)&*+,++

, \$+3:#)"3-(?#'34#-##\$'!ZB&:3%.\$'(#%(\$3"%#%I(3%&(, \$+3:#)"3-(?#'34#-##\$'I(8)-H(KXI(@@H(
TKTaTMX_I(O#58\$/7,!4 c ^!P= /)(*\$?!:..?3^RR* &#?&)8ROL2OOL\RBLXUVILLY] KLKLLLLLLUKLL\!

!

!

+\$!M.(#G(,!B2,!\$((+.0)&1)*10!d!B./ ' (),!"2!ZKLKK

!

! "#\$!%&'()*+\$\$&,-.#./!\|
!"#\$%&'()*+,,

8AR('EGD/)=A..'>A(-)-B/)6D-/D.E)

!

\$(+.0&1)*1,!H:/(: (=,! "2! d!+\$!M.(#G(!B2!ZKLOXIKLKK[2! ! "#\$%&'()*+\$(, -) ./#!N#>:() *3&5,!@] ^!
Q)#/5*3!&5! : /!O\$&>W2!ZA/6/\$3!OUIOY!(**/*!#5!KLKLj!)/6#3#&5!&<!KL!G&&W3!(5*!)/\$(./ *!
=(./)#(\$3!#5!KLKK[)

)

O(W/),! 1 2!A2,!\$(+.0&10! d! C#5*/5IH9??,!H2!ZKLOF[2!O&&W3: &?!Q&5o.#>(!a)(*&! c 2! _ / ' ! h&)W,!
_ h^! C&5*&2!

!

O(W/),! 1 2!A2,!\$(+.0&10! d! C#5*/5IH9??,!H2!ZKLOF[2!O&&W3: &?!Q&5o.#>(!;)# = /) ! a)(*&! _ / ' !
h&)W,! _ h^! C&5*&2!

)

\$(+.0&1)*1,! d! C (./ : /3, !; 2! a 2!ZKLOK[2!D3"-5(#%*\$": \$%#%)% '(#%/"\$3&#%IR(=\$: \$-(b2!H&\$9=G93,!M%!
BN+RC>a)(' I%#\$2! !

)

\$(+.0&1)*1,! d! C#5*/5IH9??,!H2!ZKLE[2!,) /'+)@(2+)%#. '(Y%*\$": \$%#%)%2! _ / ' ! h&)W,! _ h^!
C&5*&2!

!

\$(+.0&1)*1,! d! C#5*/5IH9??,!H2!ZKLLX[2!,) /'+)@(2+)%#. '(7) "(b#%&\$"I3""*\$%2! _ / ' ! h&)W,! _ h^!
C&5*&2!!

!

\$(+.0&1)*1,! d! C#5*/5IH9??,!H2!ZKLLX[2!,) /'+)@(2+)%#. '(7) "(!#"*(O"3&\$2! _ / ' ! h&)W,! _ h^!
C&5*&2!!

!

C (./ : /3, !; 2! a 2,! d! \$(+.0&1)*1ZKLL0[2!L\$3. +\$ "a ?#"\$\$. *\$&(2B=; R(23*+ '(*)(B. +#\$:#%I(=#*\$"3.5(
<.. \$' #!A&58=&5.,!HM^!B&?)#3! g /3.2!!

!

C (./ : /3, !; 2! a 2,!@&)8/3/5,! "2! c 2,!+\$\$/5,!B2!%2,! d! \$(+.0&1)*1ZKLL0[2! !#" *a O"3&\$ (2B=; R(2\$ \$"a
B' #'*\$&(=#*\$"3.5(; *3*\$I# \$!A&58=&5.,!HM^!B&?)#3! g /3.2!

)

F; 9OL! ; 9O)

!

\$(+.0&1)*1ZKLE[2!B/?./=G/)!O\ [2! g : (.!&! *!#<!Dp=!3.9>W!(5*! ' : /5!.&! =&6/!&5^!%&' !.&!./(>:!
(57&5/!.&!)/(*!(5*!:(6/!<95! ' : #\$/!*:!#.q!H93.&=#f#58!(5*!?(>#58!#53.)9>.#&5!#5!A/6/\$3!
OIU2!Q)#/5*3!&5! : /!O\$&>W2! : ..?3^RR ' ' ' 2<)#/5*3&5. : /G\$&>W2>&=R?&3.R ' : (.I.I* &I<I#I=I
3.9>WI(5*I ' : /5I.&I=&6/I&5I: &' I.&I./(>:I(57&5/I.&I)/(*I(5*I: (6/I<95I ' : #\$/I* :I#.,!
: ..?3^RR ' ' ' 27&9.9G/2>&=R ' (.:k6rK; e _90QEI>C!

)

\$(+.0&1)*1ZKLE[2!+9893.!F[2!P(\$7!G&&W!)/(*#58!(5*!>&=?)/ : /53#&5^!%&' !.&!./(>:!(57&5/!.&!&
)/*!(5*!:(6/!<95! ' : #\$/!*:!#.q!Q)#/5*3!&5! : /!O\$&>W2!
: ..?3^RR ' ' ' 2<)#/5*3&5. : /G\$&>W2>&=R?&3.R / (\$7IG&&WI)/(*#58I(5*I>&=?)/ : /53#&5I: &' I.&I
./(>:I(57&5/I.&I)/(*I(5*I: (6/I<95I ' : #\$/I* :I#.,!
: ..?3^RR ' ' ' 27&9.9G/2>&=R ' (.:k6r g K>%7 e f7Q3 e!

)

\$(+.0&1)*1ZKLE[2! "9\$7!UO[2!%#8: I<)/J9/5>7I#)/89\$(! ' &)*3!Z3#8: .! ' &)*3[^!%&' !.&!./(>:!(57&5/!
.&!)/(*!(5*!:(6/!<95! ' : #\$/!*:!#.q!Q)#/5*3!&5! : /!O\$&>W2!
: ..?3^RR ' ' ' 2<)#/5*3&5. : /G\$&>W2>&=R?&3.R: #8: I<)/J9/5>7I#)/89\$(I ' &)*3!Z3#8: .I ' &)*3I

!

! "\$\$!%&'()*+\$\$&),-#.(/!!E!
!"#S!&#(!)&'++,++

:&' I.&I./(>:I(57&5/I.&I)/(*I(5*I:(6/I<95I':#\$/I*#58I#,!
:..?3^RR' ' ' 27&9.9G/2>&=R' (.>:k6r ;5h@%I" 4 C 8D!

)

)

\$((+.0)&1)*1ZKLKO,! "9\$7!KK[2! ;:&5/=#>!(')/5/33^!%&' !.&!./(>:!(57&5/!.&!)/(*!(5*!:(6/!<95!
' :#\$/!*:!#.q!Q)#/5*3!&5!.: /!O\$&>W2! :..?3^RR' ' ' 2<)#/5*3&5.: /G\$&>W2>&=R?&3.R?:&5/=#>I
(')/5/33I:&' I.&I./(>:I(57&5/I.&I)/(*I(5*I:(6/I<95I':#\$/I*#58I#.,!
:..?3^RR' ' ' 27&9.9G/2>&=R' (.>:k6r80IYe 1 F9H+ e!

)

\$((+.0)&1)*1ZKLKO,! "9\$7!OL[2!A/..!)!3&95*3^!%&' !.&!./(>:!(57&5/!.&!)/(*!(5*!:(6/!<95!':#\$/!
*:!#.q!Q)#/5*3!&5!.: /!O\$&>W2! :..?3^RR' ' ' 2<)#/5*3&5.: /G\$&>W2>&=R?&3.R\$/..!)I3&95*3I
:&' I.&I./(>:I(57&5/I.&I)/(*I(5*I:(6/I<95I':#\$/I*#58I#.,!
:..?3^RR' ' ' 27&9.9G/2>&=R' (.>:k6r>P\`cTPcC ; 4!

)

\$((+.0)&1)*1ZKLKO,! "9\$7!U[2!C&)/!*/. (#3!&5!8/..#58!3.()./*^!%&' !.&!./(>:!(57&5/!.&!)/(*!(5*!
:(6/!<95!':#\$/!*:!#.q!Q)#/5*3!&5!.: /!O\$&>W2!
:..?3^RR' ' ' 2<)#/5*3&5.: /G\$&>W2>&=R?&3.R8/..#58I3.()./*I:&' I.&I./(>:I(57&5/I.&I)/(*I
(5*I:(6/I<95I':#\$/I*#58I#.,! :..?3^RR' ' ' 27&9.9G/2>&=R' (.>:k6rHgD/c - .A6h&!

)

\$((+.0)&1)*1ZKLKO,! "95!/KV[2! a /..#58!B.()./*^!%&' !.&!./(>:!(57&5/!.&!)/(*!(5*!:(6/!<95!':#\$/!
*:!#.q!Q)#/5*3!&5!.: /!O\$&>W2! :..?3^RR' ' ' 2<)#/5*3&5.: /G\$&>W2>&=R?&3.R8/..#58I3.()./*I
:&' I.&I./(>:I(57&5/I.&I)/(*I(5*I:(6/I<95I':#\$/I*#58I#.,!
:..?3^RR' ' ' 27&9.9G/2>&=R' (.>:k6rB+s - cOEXKc e d.rFX3!

)

\$((+.0)&1)*1ZKLKO,! "95!/OL[2!B#=?\$!/..#?3!<&!)=(W#58!)/(*#58!' #.:!7&9)!>:#\$*!<95!(5*!/<</>. #6/#!
Q)#/5*3!&5!.: /!O\$&>W2! :..?3^RR' ' ' 2<)#/5*3&5.: /G\$&>W2>&=R?&3.R3#=?\$/I.#?3I<&)I=(W#58I
)/(*#58I' #.:!7&9)!>:#\$*I<95I(5*I/<</>. #6/!

)

\$((+.0)&1)*1ZKLKO,! "95!/U[2!%&' !*#&!D!W5&' !#<! =7!>:#\$*!#3!G/:#5*!#5!)/(*#58k!B :&9\$*!D!G/!
>&5>/)5/*k!Q)#/5*3!&5!.: /!O\$&>W2! :..?3^RR' ' ' 2<)#/5*3&5.: /G\$&>W2>&=R?&3.R:&' I*#I#I
W5&' I#<I =7I>:#\$*I#3IG/:#5*!I#5I)/(*#58I3 :&9\$*I#IG/I>&5>/)5/*!

)

\$((+.0)&1)*1ZKLKO,! C (7!KX[2!%&' !#3!Q)#/5*3!&5!.: /!O\$&>W!G&.:!(\$#85/*!' #.:!.: /!3>#/5>/!(5*!
#55&6(.#6/k!Q)#/5*3!&5!.: /!O\$&>W2! :..?3^RR' ' ' 2<)#/5*3&5.: /G\$&>W2>&=R?&3.R:&' I#3I
<)/5*3I&5I.:/; &5I.: /Tj(9<H3 - 1.16Td.R:&')T&:(5>#/5>/TT01 TfQ)#/5*3!&5!#,/I.#?3I55\$I#<I =7I>:#\$*I#

! "##\$!%& '()*+,\$%&,-.#./!0L!
!"#\$%&'()*+,-,++

\$(+.0&1)*!ZKLKL,!C(>: !K0[2!C/33(8/!<)&=!1)2!"##\$!+\$\$&#)Q)#/5*3!&5!.: /!O&\$>W!h&9@9G/!
H: (55/\$2!:. .?3^RR ' ' 27&9.9G/2>&=R' (.:k6r+?? a s*s/h# ' d.rU3)

)

)
)
%S#%6: \$;)<4: 2": O)
)

;#5>#?(\$!D56/3.#8(.&)^!D53.#.9./!&<!P*9>(.#&5!B>#/5>/3,!DN3A#%#%I/*+\$Y%#*#3-(D77#.3.5())7(
!"#\$%&'()*+,\$(-)./R(B%(Y%*\$%#':\$D3"-5(Y%*\$%":\$%#%)(7)"(D-\$A\$%\$*3"5(;*&\$%*'F##+(Y%*\$%--\$. *<3-(
3%&(? \$: \$-)@A\$%\$*3-(? #'34#-#*5(^2")c\$. *(Y%*\$%#*5_H!Z"9\$7,!KLLKI"95/,!KLV[2!Q95*#58^!SU,ULL,LLL!
:..?3^RR#/32/*28&6R<95*#58R8)(5.3/(>:R*/.(#32(3?kd1 rYYYYO!

!

H&I;#5>#?(\$!D56/3.#8(.&)^!D53.#.9./!&<!P*9>(.#&5!B>#/5>/3,!2")c\$. *(!Q69;R(DN@-)"#%I(
ELY(#A@-\$A\$%\$*3#%)(F##+(3(!). <'%)%(*&\$%*'E\$. \$#: #%I(L#\$"(K(3%&(;@\$. #3-(D&<.3#%)%2!;D;!
B./?: (5#/#+!\$!M.(#G(2!"9\$7,!KLOFI"95/,!KLLK!Q95*#58^!S0,VLL,LLL!

!

;#5>#?(\$!D56/3.#8(.&)^!D53.#.9./!&<!P*9>(.#&5!B>#/5>/3,!2")c\$. *(Y%*\$%#*5R(L+\$(
? \$: \$-)@A\$%\$*3#%)(7(3(;<@-\$A\$%\$*3-(=#*\$"3.5(2")I"3A(? \$'#I\$%&(*) (2"):#&\$DN*\$%#':\$(2"3.#.\$(F##+(
><-*#@\$-6"#\$%"#3(L\$N(7)"/(*&\$%*'F##+(Y%*\$%--\$. *<3-(? #'34#-#*5^!H!"9\$7,!KLOUI"95/,!KLO\2!@&.(\$!
Q95*#58^!S0,VLL,LLL!

!

g / :G7,!2,!A/ =&53,!H2"2,!Q9>: 3,!12!d!Q9>: 3,!A2B2!ZKLOVIKLOE[2!_(.#&5(\$H/5./)&5!
A/(*/)3:#?#5!D5./53#6/!D5./)6/5.#&5!Z_HADD[2!M<<#>!/!&<!B?/>#(\$!P*9>(.#&5!;)&`/>.3,!42B2!
1/?(). =/5.!&<!P*9>(.#&5!ZSX,VLL,LLL[2!N&\$/^!Q/\$\$&' 2!

!

D55&6(.#6!/!/(>:#58!a)(5.!<)&=!1 (\$\$(3!1 &' 5!B75*)&= /!a9#*\$!ZKLOV[2!@/>: 5&\$&87!.&!
B9??&).!D5./53#6/!N/(*#58!D53.)9>.#&5!<&!)B.9*/5.3! ' #: !1 &' 5!B75*)&= /!ZSVLL[2!;D3!B./?: (5#/
+\$!M.(#G(!d!"##\$!+\$\$&2)!!

!

H&I;#5>#?(\$!D56/3.#8(.&)^!D53.#.9./!&<!P*9>(.#&5!B>#/5>/3,!9 '#%I(YA@\$"7\$. *(!#&\$-#*5(
>\$3'<'\$(*) (YA@"): \$(, *3#*#.#. 3-(Y%*\$%\$. \$'(34)<(D&<.3#%)%3-(Y%*\$%":\$%#%)'!KLEIKLOO2!@&.(\$!
Q95*#58^!SYUO,\KU2!

!

;#5>#?(\$!D56/3.#8(.&)^!42B2!1/?(). =/5.!&<!P*9>(.#&5,!> 3N#A#`#%I(=#*\$"3.5(=\$3"%#%I(
3A)%I(6+##&'\$(F##+(>#-&(*) (>)&\$"3*(>\$%\$3-(E\$3"3*#)%I!KLLVIKLE!Z>&I?)#5>#?(\$!
#56/3.#8(.&)!KLLVIKLOL[2!@&.(\$!Q95*#58^!SK,EYO,L\F2!

!

H&I;#5>#?(\$!D56/3.#8(.&)^!A&9#3#(5(!1/?(). =/5.!&<!P*9>(.#&5!(5*!. : /!A&9#3#(5(!O&()*!
&<!N/8/5.3,!)= <#'#3%3(E\$3&#%I(Y%*\$%":\$%#%)(2")I"3A2!KLLUIKLLF2!+??)&T#=(./!@&.(\$!Q95*#58^!
SXLL,LLL!

!

H&I;#5>#?(\$!D56/3.#8(.&)^!A&9#3#(5(!1/?(). =/5.!&<!P*9>(.#&5!(5*!. : /!A&9#3#(5(!O&()*!
&<!N/8/5.3,(2")c\$. *(=Y6D \ ;DR(=) <#'#3%3d'(Y%%) : 3*#:\$ (6\$"*#7#. 3*#)%()7(D&<.3*)" (# \ (;@\$. #3-(
D&<.3*#)%!OEEEEIKLL02!+??)&T#=(./!@&.(\$!Q95*#58^!SULL,LLL!

!

! "#\$!%& '()*!+\$&&),!-#.(/!00!
! "#\$!%&'()*!+\$&&),!-#.(/!00!
!"#\$%&'()*!+\$&&),!-#.(/!00!

;#5>#?(\$!D56/3.#8(.&)^!A&9#3#(5(!1/?).=/5.!&<!P*9>(.#&5!(5*!. :/!A&9#3#(5(!O&()*!&<!N/8/5.3,!BA\$"#.3(E\$3&'!OEE\IKLL02!+??)&T#=(./!@&.(!Q95*#58^!SOVL,LLL2!

! ;#5>#?(\$!D56/3.#8(.&)^!42B2!1/?).=/5.!&<!P*9>(.#&5!2")c\$.*(83-<\$R(83-#&I(B&<-*a>\$*\$&!(=#*\$"3.5(Y% '*"<. #)% (F+#. +(#' (9 '\$7<-3%&(D77#. #5%*!OEE\IKLL2!+??)&T#=(./!@&.(!Q95*#58^!SKKV,LLL2!

)
\$ 6%\$3)9<)6%3%\$ 6 = *) : # % 6%3#)

! P<</>.#6!/(/)\$7!#./(>7!#53.)9>.#&5!&<!)8/5/)(!/*9>(.#&5!(5*!3?/>#(!/*9>(.#&5!3.9*/5.32!
D=?/=/5.(#&5!&<!)3/(>:IG(3/*!?)(>.#>/3!G7!8/5/)(!(5*!3?/>#(!/*9>(.&)32!
;)/?)(.#&5!(5*!?)&</33#&5(\$!*/6/\$&?=/5.!&<!)8/5/)(!(5*!3?/>#(!/*9>(.&)32!
P(\$7!)/(*58!./T.2!

)
)
8 6%3% : # \$ "# 9 : 3) \$ #) 8 6 9 < % 3 3 " 9 : \$;) = 9 : < % 6 % : = % 3) \$: 2) 5 % % # " : O 3)

! \$((+.0)&1)*1Z+?)#,\$!KLKK,!#56#./*[2!=#*\$"3.5(#% '*"<. #)% (7) "'*&\$%*(F#+(&\$:-)@A\$%*3-(
&# '34#-##\$R(C+3*(&)(F\$(/%)F(3%&(+)F(&)(F\$@<*(#%*)@'3. #\$. \$e(M5.())&!+33>#(.#&5!
&&!)1/6/\$&?=/5.(!P*9>(.#&5,!M5.())&,!H(5*(2!

! H&55&),!H2,!a#<&)*,!12,!&5/3,!Q2!"2,!d!\$((+.0)&1)*1ZC(>:;!KLKO[2!9 '#%I(3%()4 '\$":3#%(*))-(*)(
3 '\$ ' ("3&#%I(.)A@ "\$+\$% '#)% (7) "'*&\$%*(F#+(&# '34#-##\$R(+559(\$!H&95>#&!&&!)
PT>/?.#&5(\$!H:#\$*)/5!H&56/5.#&5,!6#).9(\$2!

! H&55&),!H2,!\$((+.0)&1)*1,a#<&)*,!12,!+!\$M.(#G(,!B2!+2!ZC(>:;!KLKO[2!6)A@ "\$+\$% '#:\$ ("3&#%I(
#%*\$":\$%#)% (7) "'*&\$%*(F#+(B; ?(3%&(.)I%#:#:\$(&# '34#-##\$R(!). <')% ("3&#%I(
)A@ "\$+\$% '#)%!+559(\$!H&95>#&!&&!)PT>/?.#&5(\$!H:#\$*)/5!H&56/5.#&5,!6#).9(\$2!

) \$((+.0)&1)*1Z"(59()7,!KLKO,!#56#./*[2!L\$3. +#%I('*&\$%*(F#+(#%*\$--\$. *<3-(3%&(&\$:-)@A\$%*3-(
&# '34#-##\$R(Y'(#("3--5(3%5(M\$"\$%*(+3%(*\$3. +#%I())+\$"'*&\$%*(("3&e!H/5./)!
<&!)N/3/(>:;!&5!.:/!H:(\$\$/58/3!&<!)>J9#)58!A(589(8/!(5*!A#./)(>7!1#3.#589#3:/*!
A/>.9)!B/#/32!a /&)8#(!B.(/!45#6/3#).72!

(+!M.(#G(,!B2,)B./ ' (.),!"2,!O(W/),!c2,!\$((+.0)&1)*10!d!H&55/),!H2!ZQ/G)9()7,!KLKL[2!DN@-)"#%I(
'.)-a#A@-\$A\$%*\$&(ELYR(!#%&#%I'(7"))A(3%3#)%3-('*&5H(+559(\$!H&95>#&!&&!)
PT>/?.#&5(\$!H:#\$*)/5!H&56/5.#&5,!; &).\$(5*!,MN2!!

! +!M.(#G(,!B2,!\$((+.0)&1)*10)O(W/),!c2!B./ ' (.),!"2,!H&55/),!H2,!d!C/\$\$(*&!*/!(H)9f,!-2!
Z_&6/=G/),!KLOE[2!; '*<. *<"\$&(-#*\$"3.5(3@@")3. +\$'(7) "(+)%\$A#.(3F3"\$%\$ '\$(3%&(F)"&
"\$3&#%I!N/(*58,!)

!

! "\$\$\$!%& '()*!+\$\$&),!-#.(/!!OK!
!"#\$%&'()*&'+,++

\$((+.0)&1)*10)c/()53,!12,!+!\$!M.(#G(!B2,!M).#f,!C2!O2,!d!H&55/),!H2!ZQ/G)9()7,!KLOE[2!YA@"):#%I(
+\$(f\$N*(&#\$*g()7(\$3"-5(3%&('*"<11-#%I("\$3&\$"R(; \$-\$.*#%I(3%&(3&3@*%I(*\$N*(+559(\$!
H&95>#&!<&!)PT>/?.#&5(\$!H:#\$*)/5!H&56/5.#&5,!D5*(5(?&\$#3,!D_2!!

)

\$((+.0)&1)*2!Z"(59()7,!KLOE[2!L\$3. +#%I('*&\$%*(F#+(#%*\$-\$.*<3-(&# '34#-#*5(*)("\$3&(<'#%I(!"#%&'(
)%(*+\$(, -)./I(3(.)A@ "\$+\$% '#:\$I(*\$N*a.\$%*\$"\$&(<""#.<-<A#(D5./)5(.#&5(\$!H&5</)/5>/!&5!
+9.#3=,!D5./\$\$/>.9(\$!1#3(G#\$#.7!(5*!1/6/\$&?= /5.(\$!1#3(G#\$#. #/3,!C(9#!%D2!

)

\$((+.0)&1)*1!ZM>.&G/),!KLO\,!#56#./*[@/T(3!>&58)/33#&5(\$!./3.#=&57!<&!)N&95*(.G\$/!&5!);/ c!#5!
@/T(32!1(\$\$(3,!@]2!

!

\$((+.0)&1)*1,!+!\$!M.(#G(!B2!d!H&55/),!H2!Z"9\$7,!KLO\[2!D:#&\$%. \$(7)"(3(-#*\$"3.5(#%*\$":\$%*#)%7)"(
'*&\$%*(F#+(#%*\$-\$.*<3-(3%&(&\$:\$-.)@A\$%*3-(&# '34#-#*5(*)!+559(\$!C//.#58!&!.:!/!B&>#/.7!
<&!)!./!B>#/.5.#<#>!B.9*7!&N/(*#58,!O)#8:.&5,!4 c2!

!

H&55/),!H2,!O(W/),!c,!\$((+.0)&1)*1)d!+!\$!M.(#G(!B2!Z"9\$7,!KLO\[2!b\$5(.+3"3.*\$"'*#. '())7(3%(\$3"-5(
-#*\$"3.5(#%*\$":\$%*#)%7)"('*&\$%*(F#+(#%*\$-\$.*<3-(3%&(&\$:\$-.)@A\$%*3-(&# '34#-#*5(*)!+559(\$!
C//.#58!&!.:!/!B&>#/.7!&!)!./!B>#/.5.#<#>!B.9*7!&N/(*#58,!O)#8:.&5,!4 c2!

!

+!\$!M.(#G(!B2,!\$((+.0)&1)*10)O(W/),!c2,!A(5,!;2,!N#6(3,!O2,!d!h&6(5&<<,!;2!ZQ/G)9()7,!KLO\[2!
>\$3'<'#%I(*\$3.+ \$"d(/%)F-\$&I\$(34)<*(ELVH(+559(\$!H&95>#&!<&!)PT>/?.#&5(\$!H:#\$*)/5!
H&56/5.#&5,!@ (=?(,!QA2!!

)

\$((+.0)&1)*10)

! "##\$!%& '()*!+\$\$&),!-#.(/!OY!
!"#\$%&'()*&'++

)
\$((+.0)&1)*!ZB/?./=G/),!KLOV[2!L+\$(O)-&#-./'(2"#%.#@-\$R([)F(*)(\$-\$.*L\$N*(+3*(#'(fG<'*(
E#I+*g(7)"(D3"-5(E\$3&\$"'^Y%:#\$&(b.\$5%)\$ _#(N/8#&5!] DDD!Q(\$\$! 1 73\$/T#(!H&5</)/5>/2!
+93.#5,!@] 2!

)
\$((+.0)&1)*!ZB/?./=G/),!KLOV[2! [)F(*)(\$-\$.*L\$N*(+3*(#'(fG<'*(E#I+*g(7)"(D3"-5(E\$3&\$"'^
^Y%:#\$&(\$' '#)%_#(N/8#&5!] DDD!Q(\$\$! 1 73\$/T#(!H&5</)/5>/2!+93.#5,!@] 2!

)
\$((+.0)&1)*!ZB/?./=G/),!KLOV[2!D77\$. *#:\$(:*"3*\$I#\$(7)"(L\$3. +#%I(E\$3&#%I(*)(\$&#%*(F#*+
Y%\$--\$. *<3-(?#'34#-#*5R(6<""\$%*(E\$'\$3". +(3%&(YA@-#. 3*#)%'(7)"(Y%'*"<.#)%(^Y%:#\$&
C)"/'+)_#(N/8#&5!] DDD!Q(\$\$! 1 73\$/T#(!H&5</)/5>/2!+93.#5,!@] 2!

)
\$((+.0)&1)*10)C>a //,!C2,!P58/\$3,!1 2!Z+9893.,!KLOV[2! 1 #3. (5>/!P*9>(.#&5! u !BC 4 2!BC 4 !
@/(>:#58!P<</>.#6/5/33!B7=?&3#9=,!1 (\$\$(3,!@] 2!!

!
\$((+.0)&1)*1,!+\$!M.(#G(!B2,!h&6(5&<<!,!2,!H:/(:=(,!2,!a#<&)*,!1 2,!A/67,!1 2,!M).#f,!C2,!
B(5*#6(\$,!+2!d!"&5/3,!Q2!Z"9\$7,!KLOV[2!L+\$(D77\$. *()7(3L\$N*a6\$%*\$"\$&(\$<@-\$A\$%*3-
6<""#<-<A(7)"(\$&#%*(F#*+(Y%\$--\$. *<3-(?#'34#-#*5R(6<""\$%*(E\$'\$3". +(3%&(YA@-#. 3*#)%'(7)"(Y%'*"<.#)%(^Y%:#\$&
.: /!B#>/5.#<#>!B.9*7!&<!N/(*58,!c&5(!,%D2!

)
\$((+.0)&1)*!Z"(59()7,!KLOV_#(YA@"):#%I(E\$3&#%I(7)"(Y%&#:#&<3-'(F#*+(?)F%(;5%&")A\$R(Y% '#I+*(
7")A(E\$'\$3". +/Z#56#./[*!,!1 &' 5!B75*)&= /!a9#*#,!1 (\$\$(3,!@] 2!

)
\$((+.0)&1)*!ZM>.&G/),!KLOY[2!Y%*\$%#':\$L#\$(K(E\$3&#%I(Y%'*"<.#)%R(6<""\$%*(E\$'\$3". +(D:#&\$%. \$#!
HPH! 1 #6#3#&5!&!)A/()5#58! 1 #3(G#\$.#/#3!B7=?&3#9=,!1 (\$\$(3,!@] 2!

!
+\$!M.(#G(!B2,!H#9\$\$&,!B2,!g : (\$&5,!c 2,!\$((+.0)&1)*2,!M).#f,!C2,!; ()W/),!+2!H#9\$\$&,!B2!Z+?)#,\$!KLOY[2!
Y%*\$I"3*#)%3%&(6)--34)"3*#)%(*);<@@"*(*;"<11-#%I(E\$3&#%I'(Y%.-<#%I(E\$3&\$"'(F#*+
?'34#-#*5R(6<""\$%*(E\$'\$3". +(3%&(YA@-#. 3*#)%'(7)"(Y%'*"<.#)%(^Y%:#\$&C)"/'+)_#(N/8#&5!] DDD!Q(\$\$! 1 73\$/T#(!H&5</)/5>/2!+93.#5,!@] 2!

)
\$((+.0)&1)*10!d!+\$!M.(#G(!B2!ZQ/G)9()7,!KLOY[2!?'#I%#%I(Y%*\$%#':\$(\$<@-\$A\$%*3-(Y%*\$%#':\$%#%#)%
7)"(\$&#%*(F#*+(Y%\$--\$. *<3-(?#'34#-#*5R(6<""\$%*(E\$'\$3". +(3%&(YA@-#. 3*#)%'(7)"(Y%'*"<.#)%(^Y%:#\$&C)"/'+)_#(N/8#&5!] DDD!Q(\$\$! 1 73\$/T#(!H&5</)/5>/2!+93.#5,!@] 2!

)
\$((+.0)&1)*10!+\$!M.(#G(!B2,!d!H:/(:=(,!2,!2!Z_&6/=G/),!KLOU[2!E\$'\$3". +/)%6+3"3. *\$"'#*#.'()7(
D3"-5(E\$3&#%I(L\$N*(3%&(YA@-#. 3*#)%'(7)"(2"3. #\$. \$#!@:/!D5./)5(.#&5(\$! 1 73\$/T#(!
+33&>#(.#&5!+559(\$!H&5</)/5>/,!_ / ' !M)\$/(53,!A+2!

!
\$((+.0)&1)*2,!H:/(:=(,!2,!2!g /#3/),!O2,!d!+\$!M.(#G(!B2!Z_&6/=G/),!KLOU[2!8)-<%*\$%#'(>3/#%I(
3(?'77\$"%.\$(7)"(*;"<11-#%I(E\$3&\$"R(? \$A)%'"3*#%I(+3*(*;"<.*"\$&(L<*)"#3-(YA@"):\$
E\$3&#%I(2\$"7)"A3%. \$#!@:/!D5./)5(.#&5(\$! 1 73\$/T#(!+33&>#(.#&5!+559(\$!H&5</)/5>/,!_ / ' !
M)\$/(53,!A+2!

!
+\$!M.(#G(!B2,!\$((+.0)&1)*2,!M).#f,!C2,!; ()W/),!+2!H#9\$\$&,!B2!Z+?)#,\$!KLOU[2!Y%*\$I"3*#)%3%&(6)--34)"3*#)%(*);<@@"*(*;"<11-#%I(E\$3&#%I'(Y%.-<#%I(E\$3&\$"'(F#*+
?'34#-#*5R(6<""\$%*(E\$'\$3". +(3%&(YA@-#. 3*#)%'(7)"(Y%'*"<.#)%(^Y%:#\$&C)"/'+)_#(N/8#&5!] DDD!Q(\$\$! 1 73\$/T#(!H&5</)/5>/2!+93.#5,!@] 2!

!

!

"#\$\$!%& '()*+\$\$&),!-#.(/!!OV!
!"#S!&#!(!)&*'+,++

\$((+.0)&10)+\$!M.(#G(!B2,!h&6(5&<<,;!;2,!N&G/).3,!c2!d!M).#f,!C2!Z

! "##\$!%& '()*!+\$&&),!-#.(/!!OF!
!"#S!&#(!)&'+,++

\$(+.0)&1)*10!d!H:(=?\$#5,!@2!C2!Z"(59()7,!KL0L[2!>\$*+)&'(7)"(Y%. "\$3'#%I/*+\$Y%*\$%#*5()7(
E\$3&#%I(Y%'*#<. #)%7)"(;<&\$%*(F##+(?#'34#-##\$'H(D5./)5(.#&5(\$!H&5</)/5>/!&5!H&85#. #6/!
1#3(G#\$#. #/3,!+9.#3=,! (5*!&. : /)! 1 /6/\$&? = /5. (\$! 1#3(G#\$#. #/32! C (9#,!%D2!

\$(+.0)&1)*10!d!H:(=?\$#5,!@2!C2!Z"(59()7,!KL0L[2!L\$3. +#%I(;<&\$%*(F##+(Y%*\$--\$. *<3-(?#'34#-##\$'(*
) (L"3%"7\$"(D3"-5(E\$3&#%I(/#-'(6)%%\$. *\$&(L\$N*H(D5./)5(.#&5(\$!H&5</)/5>/!&5!
H&85#. #6/! 1#3(G#\$#. #/3,!+9.#3=,! (5*!&. : /)! 1 /6/\$&? = /5. (\$! 1#3(G#\$#. #/32! C (9#,!%D2!

N&G/).3,! "2! c2! \$(+.0)&1)*1!d!C (. /3,! ;! 2! a2!Z"95/,!KLLE[2!>\$3'<"\$A\$%*(;)-<#)%'(7)"(6)%%#<)<'(
2")I"\$'(>)%#%I(7);<&\$%*(F##+(Y%*\$--\$. *<3-(?#'34#-##\$'H!+559(\$!C//.#58!&<!. : /!
B&>#/.7!&<!)! : /!B>#/5.#<#>!B.9*7!&<!N/(*#58,!O&3.&5,!C +2!

\$(+.0)&1)*1!Z"95/,!KLLE[2!L\$3. +#%I(;<&\$%*(F##+(Y%*\$--\$. *<3-(?#'34#-##\$'(*)(E\$3&R(B%(
DN@#\$"A\$%*3-(DN3A#%3#)%7(3(6)A@ "\$+\$%#': \$(E\$3&#%I(Y%*\$": %\$%#)%H(D53.#.9./!&<!
P*9>(.#&5!B>#/5>/3!N/3/(>):!H&5</)/5>/,! g (3: #58.&5,! 1 2H2!

\$(+.0)&1)*1!d!H:(=?\$#5,!@2!C2!Z+?)#,\$!KLLE[2!E\$'@)%'\$*)(E\$3&#%I(Y%*\$": %\$%#)%45(;<&\$%*(
F##+(=)F(YZ' H!+559(\$!H&95>#&!&<!)PT>/?.#&5(\$!H: #5*)/5!H&56/5.#&5,!B/(. ./,! g +2!

\$(+.0)&1)*1!d!H:(=?\$#5,!@2!C2!Z+?)#,\$!KLLE[2!D77\$. #: \$(E\$3&#%I(Y%'*#<. #)%7)"(;<&\$%*(F##+(
Y%*\$--\$. *<3-(?#'34#-##\$'H!+559(\$!H&95>#&!&<!)PT>/?.#&5(\$!H: #5*)/5!H&56/5.#&5,!B/(. ./,!
g +2!

C (. /3,! ;! 2! a2,! d)\$(+.0)&1)*1!ZM>.&G/),!KLL\ [2!2"3. #. 3-I(E\$'\$3". +a, 3'\$&(2"3. #. '\$(7)"(
L\$3. +#%I(;<&\$%*(F##+(Y%*\$--\$. *<3-(?#'34#-##\$'(*)(E\$3&H!+559(\$!H&5</)/5>/!&<!)! : /!
@/(>:/)!P*9>(.#&5! 1#6#3#&5!&<!. : /!H&95>#&!&<!)PT>/?.#&5(\$!H: #5*)/5! 1 (\$\$(3,!@] 2!

\$(+.0)&1)*1!ZM>.&G/),!KLL\ [2!2"3. #. 3-I(E\$'\$3". +a, 3'\$&(L\$. +#%i<'(7)"(L\$3. +#%I(;<&\$%*(F##+(
Y%*\$--\$. *<3-(?#'34#-##\$'(*)(E\$3&H!D5./)5(.#&5(\$!H&5</)/5>/!&5!H&85#. #6/! 1#3(G#\$#. #/3,!
+9.#3=,! (5*!&. : /)! 1 /6/\$&? = /5. (\$! 1#3(G#\$#. #/32!B(5! 1#8&,!H+2!

"&5/3,!Q2! a2! d!\$(+.0)&1)*1!Z+?)#,\$!KLL\ [2!L\$. +#%i<'(7)"(L\$3. +#%I(E\$3&#%I(*);<&\$%*(F##+(
Y%*\$--\$. *<3-(?#'34#-##\$'H!+559(\$!H&95>#&!&<!)PT>/?.#&5(\$!H: #5*)/5!H&56/5.#&5,!O&3.&5,!
C +2!

\$(+.0)&1)*1!d!N&G/).3,! "2! c2!Z+?)#,\$!KLL\ [2!E\$'<-'(7")A(3(=)%I#<&#%3-(E\$3&#%I(Y%*\$": %\$%#)%(
; <&5(F##+(; <&\$%*(F##+(Y%*\$--\$. *<3-(?#'34#-##\$'H!+559(\$!H&95>#&!&<!)PT>/?.#&5(\$!
H: #5*)/5!H&56/5.#&5,!O&3.&5,!C +2!

\$(+.0)&1)*1!ZC(>):,!KLL\ [2!>3N#A#`#%I(=#\$"3. 5(Q<*.)A\$'(7)"(;<&\$%*(F##+(6)I%##: \$(
?#'34#-##\$'R(E\$'\$3". +(;<&5(!%&#%I'(7")A(*+\$(!#'*(LF)(J\$3"')7(3(=)%I#<&#%3-(
Y%*\$": %\$%#)%(<&5H! ; (?/)!?)/3/5./!*(!. : /!+559(\$!C//.#58!&<!. : /!+ = /)#>(5!P*9>(.#&5(\$!
N/3/(>):!+33&>#(.#&5,! _ / ' !h&)W,! _ h2!

H: / (. (=,!"2! ; 2,! \$(+.0)&1)*1!d!N&G/).3,! "2! c2!ZQ/G)9()7,!KLL\ [2!>3N#A#`#%I(=#\$"3. 5(Q<*.)A\$'(7)"(
; <&\$%*(F##+(>\$%*3-(E\$3"3&3#)%H(; (?/)!?)/3/5./!*(!. : /!+559(\$!C//.#58!&<!. : /!
B&9. : ' /3.!P*9>(.#&5(\$!N/3/(>):!+33&>#(.#&5! _ / ' !M)\$/(53,!A+2!

! "##\$!%& '()*!+\$&&),!-#.(/!OX!
!"#\$%&'()*+,,
!
\$((+.0)&1)*10)d!C(.:/3,!;2!a2!Z"(59()7,!KLL\ [2!>3N#A#`#%I(=#*\$"3.5(Q<*.)A\$'(7)"/(;*<&\$%*(F#*+(
6)I%#*#:\$ (?#'34#-##\$'R(\ 3*#)%3-(B&:#')"5(,)3"&(9@&3*\$H!+559(\$!C//.#58!&!N/(*#58!(5*!
C/5.(\$!N/.)*(.#&5!+*6#3&)7!O&()*,!H:())\$&..!/_H2!
)
\$((+.0)&1)*1!Z"95/,!KLLX[2!>3N#A#`#%I(=#*\$"3.5(Q<*.)A\$'(7)"/(;*<&\$%*(F#*+(6)I%#*#:\$
?'#34#-##\$'R(!%&#%I'(7"))A(*+\$;\$.)%&(J\$3'')7(3(=)%I#*<&#%3-(;*<&5H!D53.#.9.#&5!&<!<
P*9>.(#&5!B>#/5>/3!N/3/())>:!H&5</)/5>/,!g (3:#58.&5,!12H2!
)
\$((+.0)&1)*1,!d!"&5/3,!Q2!a2!Z+?)#,\$!KLLX[2!>3N#A#`#%I(=#*\$"3.5(Q<*.)A\$'(7)"/(;*<&\$%*(F#*+(
6)I%#*#:\$ (?#'34#-##\$'R(E\$'\$3". +(;*<&5(!%&#%I'(7"))A(*+\$(!#" '* (LF)(J\$3'')7(3(
=)%I#*<&#%3-(Y%*\$":\$%*#)%/;*<&5!+559(\$!H&95>#&!<&!)PT>/?.#&5(\$!H:#\$*)/5!H&56/5.#&5,!<
A&9#36#\$\$/,!c h2!
)
\$((+.0)&1)*1,!d!"&5/3,!Q2!a2!Z"(59()7,!KLLX[2(D:#&\$%. \$(, 3'\$&(2"3.#.\$'(7)"/(=#*\$"3.5(Y%'<".#)%<
7)"/(6+##&"\$%(F#*+(6)I%#*#:\$ (?#'34#-##\$'R(>\$*+))'(3%&(E\$'\$3". +H!D5./)5(.#&5(\$!
H&5</)/5>/!&5!H&85#.#6/!1#3(G#\$.#./3,!+9.#3=,! (5*!&.: /)!1/6/\$&? =/5.(\$!1#3(G#\$.#./32!
c&5(!,!D2!
!
\$((+.0)&1)*1)ZB/?./=G/),!KLLF[!D56#./!*c/75&./!B?/(W/)!2!2"\$:\$%*#%I(E\$3&#%I(!3#-<"\$R(
2)'#4#-##\$' (3%&(, 3""#\$""H! a /&)8#(N/(*#58!Q#)3!.B.)988\$#58!N/(*/)3i!H&5</)/5>/2!
+.\$(5.(,!a +2!!
!
\$((+.0)&1)*1!ZC(7,!KLLF[2!L\$3. +#%I(2+)%\$A#. (BF3"\$%\$' '(F#*+(3(03A\$R(Y*(63%(C)"/H(
D5./)5(.#&5(\$!N/(*#58!+33&>#(.#&5!H:#>(8&,!DA2!
!
\$((+.0)&1)*1,!&5/3,!Q2!a2!d!C(.:/3,!;2!a2!Z+?)#,\$!KLLF[2!>3N#A#`#%I(=#*\$"3.5(Q<*.)A\$'(7)"/<
;*<&\$%*(F#*+(>\$%*3-(E\$*3"&3*#)%R(E\$'\$3". +(;*<&5(!%&#%I' H!+559(\$!H&95>#&!<&!)<
PT>/?.#&5(\$!H:#\$*)/5!H&56/5.#&5,!B(\$!A(W/!H#.7,!_ - 2!
!
\$((+.0)&1)*1!C(.:/3,!;2!a2,!d!"&5/3,!Q2!a2!Z+?)#,\$!KLLF[2!6+##&"\$%(F#*+(>\$%*3-(E\$*3"&3*#)% (63%<
=\$3'"/(*)(E\$3&R(; \$*#%I(3%&(B. +#\$:#%I(0)3-'H!+559(\$!H&95>#&!<&!)PT>/?.#&5(\$!H:#\$*)/5!
H&56/5.#&5,!B(\$!A(W/!H#.7,!_ - 2!
!
\$((+.0)&1)*1!ZQ/G)9()7,!KLLF[2!?\$A)%"*3*#)%/7(3%(D3"-5(=#*\$"3.5(03A\$(? \$'H!%\$&(7)"/<
Y%&#:#&<3-(L<*)"#%I(45(23"3@")7\$' '#)%3-'H!D5./)5(.#&5(\$!A/())5#58!1#3(G#\$.#./3!+33&>#(.#&5!
H&5</)/5>/,! (">W3&56#\$\$/,!QA2!
!
\$((+.0)&1)*1)ZQ/G)9()7,!KLLF[2!Y%. "\$3'/%I(2+)%\$A#. (BF3"\$%\$' 'R(B%(B%3-5'#')7(3(L<*)"#%I(
Y%*\$":\$%*#)% (F#*+(B*aE#' / (b#%&\$"I3"*%\$""H(D5./)5(.#&5(\$!A/())5#58!1#3(G#\$.#./3!+33&>#(.#&5!
H&5</)/5>/,! (">W3&56#\$\$/,!QA2!
!
\$((+.0)&1)*1!C(.:/3,!;2,!&5/3,!Q2,!O)&'*/),!12,! (5*!B/6>#W,!N2!Z"9\$7,!KLLV[2!L\$3. +#%I(;*<&\$%*(
F#*+(>\$%*3-(E\$*3"&3*#)%/(*)(E\$3&R(6<""\$%*(=3" I\$a; .3-\$ (E\$'\$3". +(2")c\$. *'H(45#./!*B.(./3!
M<<#>/!&<!B?/>#(\$!P*9>.(#&5!;)&8)=(3!;)&/>.!1#)/>.&)3i!H&5</)/5>/,!g (3:#58.&5,!12H2!!
!

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

\$((+.0)&1)*1,!a(53\$/,!c2!+2,!d!1/557,!N2!c2!Z+?)#\$,!KLLV[2!Y%. "\$3'#%I(2+)%\$A#. (BF3"\$%\$' 'R(B%(
B%3-5'#')7(3(L<*)"#%I(Y%*\$":\$%*#)%(F#*+(B*aE#'/(/b%#&\$"I3"*\$%\$"'?)+559(\$!H&95>#!<&!)!
PT>/?.#&5(\$!H:#\$*)/5!H&56/5.#&5,!O(\$.#=&)/,!C 12!

\$((+.0)&1)*1,!a(53\$/,!c2!+2,!1/557,!N2!c2,!d!C&&5/7,!;2!Z+?)#\$,!KLLV[2! ? \$A)%'*3#%)()7(3%(
D3"-5(=#*\$"3.5(O3A\$(? \$'#I%\$&(7) "(Y%&#:#&<3-(L<*)"#%I(45(23"3@")7\$' '#)%3-'?)+559(\$!
H&95>#!<&!)PT>/?.#&5(\$!H:#\$*)/5!H&56/5.#&5,!O(\$.#=&)/,!C 12!

O/55/),!a2!"2,!\$((+.0)&1)*1,!d!O/(9*#5,!c2!Z_&6/=G/),!KLLY[2!L+\$(Y%7-<\$%. \$()7(2") . \$' '#%I(
;@\$\$&)(%(*+\$(;). #3-(B&c<'*A\$%*(3%&(B.3&\$A#. (2\$"7)"A3%. \$()7(;*&\$%*(F#*+(DA)#)%3-(
3%&(, \$+3:#)"3-(?'#')"&\$"'/#!K\^!+559(\$!H&5</)/5>/!<&!)@/(>:/)P*9>(&)3!<&!)H:#\$*)/5!
' #:!O/:(6#&)(!1#3&)*3,!@/= ?/,!+ s2!!

\$((+.0)&1)*1,!d!C>H(.:)/5,!N2!O2!Z+?)#\$,!KLLY[2!;*"3*\$I#\$'(7)"(B.+#\$:#%I(E\$3&#%I(!;<.. '\$' '
^;LBE;_R(B(;*"<.*<"\$&(L<*)"#%I(2")I"3A2!_ (.#&5(\$!H&95>#!<&!)PT>/?.#&5(\$!H:#\$*)/5!
H&56/5.#&5,!_ / ' !M)\$/(53,!A+2!

\$((+.0)&1)*1,!d!C>H(.:)/5,!N2!O2!Z+?)#\$,!KLLY[2!L+\$(\$77#.3.5()7(3%(\$3"-5(-#*\$"3.5(*<*)"#%I(
@")I"3A(#A@-\$A\$%*\$&(45(.)--\$I\$('*<&\$%*'#!_ (.#&5(\$!H&95>#!<&!)PT>/?.#&5(\$!H:#\$*)/5!
H&56/5.#&5,!_ / ' !M)\$/(53,!A+2!

A(>:5/7,!N2!d!\$(+.0)&1)*1!ZM>.&G/),!KLLK[2!B&<-*aA\$*\$&("\$3&#%I(#%'"*"<.*#)%7)"(I"3&\$'(K(
*+)"<I+(M2!KY^!D5./)5(.#&5(\$!H&5</)/5>/!&5!A/()5#58!1#3(G#\$.#/#3,!1/56/),!HM2!

\$((+.0)&1)*1!ZQ/G)9()7,!KLLK[2!L+\$(D77#.3.5()7(3%(D3"-5(=#*\$"3.5(L<*)"#%I(2")I"3A(YA@-\$A\$%*\$&(45(6)--\$I\$;
&\$%'R(B(;<AA3"5()7(!#%&#%I'7")A(L+"\$\$DN@\$"#A\$%*'2!;(>#<#>!H&(3!
N/3/)>:!H&5</)/5>/,!A("&\$\$(,!H+2!

\$((+.0)&1)*1!ZB/?./=G/),!KLL0[2!L#I\$"(23-'R(L<*)"#%I(;*"<11-#%I(!#" '*aO"3&\$E\$3&\$"2!;)/3>:&&\$!
(5*!;)#=()7!a)(*3!H&5</)/5>/!3?&53&)/!*!G7!.:/!A&9#3#(5(!1/?().=/5.!&<!P*9>(&5,!
O(&5!N&98/,!A+2!

\$((+.0)&1)*1,!d!B/.\$#<<,!12!ZQ/G)9()7,!KLL0[2!B' '\$' '#%I(D3"-5(=#*\$"3.5(9'#%I(6)%#%<)<'(
2")I"\$' '(>)%#*)"#%I2!K0^!+559(\$!A&9#3#(5(!B9?/)>&5</)/5>/!&5!B?/>#(\$!P*9>(&5,!
O(&5!N&98/,!A+2! !

\$((+.0)&1)*1!Z"9\$7,!KLL0[2!L#aOEEEE(2B=;(^Yj'(L#A\$(*) (O\$*(E\$3&5(3%&(E\$3&I(E\$3&I(E\$3&R(L+\$(
D77\$. #:#\$%\$' '()7(6)--\$I\$(;*&\$%*(L<*)"#%I(!#" '*O"3&\$"2!42B!1/?().=/5.!&<!P*9>(&5!
;)&`/>!.1#)/>.&)3!C // .#58,!g (3:#58.&5,!12H2!

\$((+.0)&1)*1!ZM>.&G/),!KLLL[2!L+\$(E\$-3*#)%'+#@'()7(2+)%\$A#. (BF3"\$%\$' '(3%&(E3@#&(\ 3A#%I(*)(
E\$3&#%I(? \$:-\$)@A\$%*2!D5./)5(.#&5(\$!H&5</)/5>/!&5!A/()5#58!1#3(G#\$.#/#3,!+93.#5,!@]2!
Zg #55/)!&<!.:/!H&95>#!<&!)A/()5#58!1#3(G#\$.#/#3!KLLL!+ ')!*&!)M9.3.(5*#58!N/3/)>:![

)

!

! "#\$%!&'()*+\$\$&),!-#.(!/!!OE!
!"#S!&#!(!)&'+,++

\$((+.0&1))*1

! "#\$\$!%& '()*!+\$\$&),!-#.(//!!KL!
!"#\$%&'()*&'++

Q9>:3,!12,!1/= ?3/7,!B2,!*+ , -./0)&1)P1!d!A&>W/,! g 2!Z"(59()7,!0EEY[2!!2\$34)&5a>\$")(E\$#%\$1"3#)%(2")c\$. *2!!;)/3/5./*(!.:!/'!.!H&5</)/5>/,!_ (3:6#\$\$/,!@_2!

Q9>:3,!12,!1/= ?3/7,!B2,!*+ , -./0)&1)P1,!19.W(!B2,!d!A&>W/,! g 2!Z"(59()7,!0EEU[2!E\$'@)%'#4-\$(E\$#%\$1"3#)%(7(;&\$%*(F#+(>#-&S>)&\$'3*(?# '34#-##\$'R(6)--34)"3#)%(, \$*F\$\$\$(2\$34)&5S83%&\$"4#-(3%&(+>\$")a\ 3'+:#--\$(2<4-#.(;.+))- '2!A/(*)/3:#?H&5</)/5>/!&5!A/(3.!N/3.)#>.#6!/P56#)&5=/5.,!_ (3:6#\$\$/,!@_2!

)
* 9 : 9 6 3)

! KLK0!N/3/(>: !PT>/\$\$/5>/!+ '()* ,!BC 42!

! KLKL!45#6/)3#.7!1 #3.#589#3:/*!;)&</33&),!BC 42!

! KLOE!a/)(*\$!"2!Q&)*!N/3/(>: !Q/\$\$& '3:#?,!BC 42!

! KLOF!N&.95*(!M9.3.(5*#58!;)&</33&)!+ '()* ,!BC 42!

! KLOK!D5./)5(.#&5(\$!C9\$.#3/53&7!B.)9>.9)/!*A(589(8!/P*9>(.#&5!H&95>#5!D55&6(.&)+ '()*&!)M9.3.(5*#58!P*9>(.&)!#5!(!H&\$\$/8/!&!)45#6/)3#.72!

! KLLL!+ '()*&!)M9.3.(5*#58!N/3/(>: ,!H&95>#5!&!)A/()5#58!1 #3(G#\$#. #/32!;)/3/5./*(.!:./!D5./)5(.#&5(\$!H&5</)/5>/!&5!A/()5#58!1 #3(G#\$#. #/3,!M>.&G/),!KLLL2!

! KLLL!M9.3.(5*#58!h&958!B/>&5*()7!P*9>(.&2!;)/3/5./!*G7!.:!/O(&5!N&98/!"(7>/!3!#5!)/>&85#. #&5!&5!&9.3.(5*#58!\$/(*)/3:#? ,!_ &6/=G/),!KLLL2!

! OEEE! g #55/)!&<.:!/O/3.!+).#>\$/!#5!A/()5#58!1 #3(G#\$#. #/3!N/3/(>: !(5*!;)(>.#>/,!(')*/!*G7!.:!/H&95>#5!&!)PT>/? .#&5(\$!H: #5*)/5,!1 #6#3#&5!&5!&A/()5#58!1 #3(G#\$#. #/32!

! C(./3,;!2!a2,!a)/W,!C2!A2,!*+ , -./0)&1)P1,!O(G7(W,!+2!P2,!d!+\$\$/5,!B2!%2!ZOOEE[2!; //)I+33#3./!*A/()5#58!B.)(/8#/3!<&!)Q#3.Ia)(*/!N/(*)/3^!+!.&&\$!<&!)?)/6/5.#58!/(\$7!)/(*#58!<(#9)/2!=\$3""%#%I(?# '34#-##\$'(E\$'\$3".+(3%&(2"3. *. \$I(TJZO[!VLIFL2!!

! N/>#?#/5.,!N/89\$()P*9>(.#&5!RB?/>#(\$!P*9>(.#&5!"#5.!B.#?/5*,!A/()5#58!1 #3(G#\$#. #/3!+33&>#(.#&5,!Q/G)9()7,!OEEE2!!

! H&IN/>#?#/5.!&<.:!/OEEE!M9.3.(5*#58!;)&9*!;)&`/>.!G7!.:!/A/()5#58!1 #3(G#\$#. #/3!+33&>#(.#&5!&<!+ =)/#>(2! *+ , -./0)&1)P1,!Q9>:3,!12,!d!C(./3,;!2!a2!ZOOEE[2! g :(.!#3!\$/T#>(\$!)/.)#/6(\$!5*! ' :7! =#8: .!#.!G/!# = ?&).(5.k!D5!@2!P2!H#.)&ZP*2[2!23""\$%#%I(*+\$ (6+#+&(F#+(3(= \$3""%#%I(?# '34#-##\$R(L+\$DN@\$"*'(;@ \$3/!Z? ?2!XXI\K[2! g /3.&5,!C +^!A/()5#58!1 #3(G#\$#. #/3!+33&>#(.#&5!&<!C (33(>: 93/..32!!

! _(.#&5(\$!D53.#.9./!&<!H: #5!%/(\$.:!(5*!1 /6/\$&? =/5.!C/5.(\$!N/.)*(.#&5!N/3/(>: !@)(#5#58!1 &5.&5!(\$!Q/\$\$& '3:#? ,!- (5*/)G#\$!.!45#6/)3#.7,!0EEY!OEEV2!

)
)

!

! "#\$!%& '()*!+\$&),!-#.(/!!K0!
!"#S!&#!(!)&'+,++

38%="\$;)#6\$":":O)\$:2)869<%33"9:\$;)2%!%;985%:#)

UG-?)U+.QE)=(D-'BKG+AED)6DJ'D,D.)=D.?'@>-'+B)#.-'B'BK0)&A(I)VWXY)

@)(#5#58!#5! g g H!)/6#/ ' !3.(5*() *3!<&!)a)&9?! 1/3#85!ZN(5*&=#f/*!H&5.)&\$!@)#(\$3!(5*!e9(3#I
PT?/)#=/5.(\$!1/3#85[2!Q&>93/*!/T?\$#>#.\$7!&5!./! g g H!/6#*/5>/!3.(5*() *3!(5*!:&'!./!7!(??\$7!
.&!) /3/(>:!* /3#85,! = / . : &* &\$ &87,! (5*!(5(\$73#32!

!

869<%33"9:\$;)2%!%;985%:#)U96P3*983L#6\$":":O)ZED(D>?D/[)

!!

\$((+.0)&1)*!d!M).#f,!C2)Z+?)#\$,!KLKL[2!"#\$%& /5-I

! "#\$!%& '()*!+\$\$&),!-#.(!/!KK!
! "#\$!%&#(!)&'++

! \$((+.0)&1)*1Z"9\$7,!KLLY!!"(59()7,!KLLV[2!)=<#'#3%3(E\$3&#%I(!#"'*(C)"/'+)@'2!B:)/6/?&).!(5*!
+\$/T(5*)#(!A+2!(

! \$((+.0)&1)*1Z"9\$7,!KLLK[2!2\$\$"(B'#'*\$&(;*'3*\$I#\$'(7)"(O"3&\$'(Ta0!"95#?/)!a()*/53!H:#\$*)/5i3!
;)&^/;>.,!c(53(3!H#7,!cB2!!

! \$((+.0)&1)*1Z+9893.,!KLL0[2![\$-@#%I(L\$3.+\$\$'(F#*+(;*'<11-#%I(E\$3&\$"'R(!)'*\$\$#%I(*+\$(9'\$()7(T'"
O"3&\$'(2B=;(^2\$\$"aB'#'*\$&(=#*\$"3.5(;*'3*\$I#\$'_(3%&(L\$3.+\$\$"a?#"\$. *\$&(2B=;(^23*+'*)(
B.+#\$.#%I(=#*\$"3.5(;<..\$!'_#!;9?##!+??)(#3(\$!B9= =/)!D53.#.9./,!B.(./!&<!A&9#3#(5(2!

! \$((+.0)&1)*1Z_&6/=G/),!KLLL[2!E\$3&#%I(B.i<#'#%#)%R(L+\$YA@)"*3%. \$()7(L\$3.+#%I(C)"/&
E\$.)I%#%#)%! g &)W3:&?!?)/3/5./!*!.&!%#8:\$(5*!P\$/ =/5.()7!(3!?)!.&<!?)&</33#&5\$(!
*/6/\$&? =/5.!?().5/3:??!' #.:!A&9#3#(5(!B.(./!45#6/)3#72!

! *+ , -./0)&1)P1!ZM>.&G/),!OEEXIC(7,!OEE\ [2!9'#%I(2\$\$"aB'#'*\$&(=\$3"%#%I(;*'3*\$I#\$'(3'(23"*)(7(
3(,3-3%. \$&(=#*\$"3.5(6<"#.#.<-<A2!B)/#/3!&<! ' &)W3:&?!?)/3/5./!*!.&!8/5/)(!(5*!3?/>#\$(!
/*9>(&)3!(.!.:/!\$/ =/5.()7!\$/6/\$,!e9#5>7,!QA2!

! *+ , -./0)&1)P1!ZM>.&G/),!OEEX[2!2+)%\$A#. (BF3"\$%\$'(L"3#%#%I(7)"(b#%&\$"13"\$%\$(;*&\$%* '2!
e9#5>7,!QA2!

! *+ , -./0)&1)P1!Z"9\$7,!OEEX[2!2<#%#%I(E\$3&#%I(E\$'\$3"'+(#%*)(2"3.#.\$2! g &)W3:&?!3?&53&)/!*!G7!
Q\$&)*#*(!B.(./!45#6/)3#7!(5*!Q\$&)*#*(!+dC!45#6/)3#7!N/8#&5(\$!HB; 1!(5*!Q\$&)*#*(!
1#(85&3.#>!(5*!A/)5#58!N/3&9)>/3!B73./ =,!e9#5>7,!QA2!

! *+ , -./0)&1)P1!Z"95/,!OEEX[2!2\$34)&5(2\$\$"aB'#'*\$&(=\$3"%#%I(;*'3*\$I#\$'2!;)/3/5./!*!(.!.:/!
Q\$&)*#*(!B.(./!45#6/)3#7!N/8#&5(\$!HB; 1!B9= =/)!N/(*#58!D53.#.9./,!% (6(5(!QA2!

! Q9>:3,!12,!1 / = ?3/7,!B2,!B#/8/\$,!+2,!*+ , -./0)&1)P1,!d!A&>W/,! g 2!Z"(59()7,!OEY[2!6-3' 'F#&\$(
2\$\$"aL<*)"#%I!Z#53/)6#>!/./(>:/)!.(#5#58[2!!_ (3:6#\$\$/,!@_2!

! Q9>:3,!12,!1 / = ?3/7,!B2,!B./ ' ().,!C2,!*+ , -./0)&1)P1,!d!A&>W/,! g 2!Z"(59()7,!OEY[2!6-3' 'F#&\$(
2\$\$"aL<*)"#%I!Z#53/)6#>!/./(>:/)!.(#5#58[2!!_ (3:6#\$\$/,!@_2!

! Q9>:3,!12,!1 / = ?3/7,!B2,!B./ ' ().,!C2,!*+ , -./0)&1)P1,!d!A&>W/,! g 2!ZM>.&G/),!OEEX[2!2\$34)&5a
>\$"')(E\$#%*\$I"3#%)(2")c\$. *(Z#53/)6#>!/./(>:/)!.(#5#58[2!!_ (3:6#\$\$/,!@_2!

!)

= 9 ; ; %O%)#% \$ = * " : Ol348%6 !"3"9 :)

Doctoral Students

Charlotte Showalter (chair). began program Fall of 2021.

Carlin Conner. (chair) Ph.D. awarded in 2020.

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!"#S!&#(!)&'++,

Jennifer Stewart. (committee member) Ph.D. awarded in 2020.

Miriam Ortiz. (committee member). Ph.D. awarded in 2017.

Diane Gifford. (co-chair with Dr. Paul Yovanoff). Ph.D. awarded in 2013.

Long “Michael” Luo. (committee member; statistics doctoral student). Ph.D. awarded in 2012.

Jose’ Ramos. (committee member) Ph.D. awarded in 2012.

Holly Stovall. (committee member; statistics doctoral student). Ph.D. awarded in 2012.

Laura Minze. (committee member; psychology doctoral student). Ph.D. awarded in 2012.

Jennifer Cheatham. (chair) *Practicing Independent Reading with Decodable Texts: A Comparison Study of Texts with Second Graders*. Ph.D. awarded in 2010.

Lisa Guidry. (chair) *A Phonological Awareness Intervention for at-Risk Preschool Children Continuing Independent Reading with Text Support*

!

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! "#\$%&'()*+,\$-./:;K! !"#&#(')&'*,++

./!>: (>./)#3.#>3,/*9>(.#&5(\$!?)&8)(=3,!(5*/)/3&9)>/3!<&!./!/*9>(.#&5!(5*!39??&).!&<!/(/)5/)3!
'#. :!6(#&93!/T>/?.#&5(\$#. #/32!+\$3&!#5>\$9*/3!<#/*!/T?)/#5>/2!A&9#3#(5(!B.(./!45#6/)3#.72!

! L"\$%&'(3%&(Y''<\$'(#%(/;@\$. #3-(D&<. 3*#)%2!1 &>.&)(!3/=5(!*/6/\$&?/*!(5*!>&I.(98:!'#. :!
1)2!1 (6*%!%&9>:#532!1/3#85/*!.&!?)&=&./!(!G)&(*!95*/)3.(5*#58!&<!.)/5*3!(5*!#339/3!#5!3?/>#(\$!
/*9>(.#&5!KLLL!A&9#3#(5(!B.(./!45#6/)3#.72!!

! 2")4-\$A'(#%(/6<""#. <-<A(3%&(Y%''*<. #)%R(?).*)"3-(\$A#%3''(#%(/;@\$. #3-(D&<. 3*#)%2!@:#3!
3/=5(!)#3!(!>&5.#59(.#&5!&<w@)/5*3!(5*!D339/3!#5!B?/>#(\$!P*9>(.#&5x!'#. :!3?/>#<#>/=?:(3#3!&5!
#5I*/?.. :!>#.#J9/!&<!)3/(>:#5!3?/>#(\$!/*9>(.#&5!KLL0!A&9#3#(5(!B.(./!45#6/)3#.72!

! L\$3. +#%I(B.3&\$A#.(;<4c\$. *'(*);*&\$%*(F#*+(>#-&\$>)&\$"3*\$(\$?'#34#-##\$'2!a)(*9(./!/6/\$!
=/. :&*3!>&9)3/,!OEEEEIKLL0!A&9#3#(5(!B.(./!45#6/)3#.72!

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>&9)3/,!OEEEEIKLL0!

! Y%*")&<. #)%/*)(DN. \$@#)%3-##\$'2!45*/)8)(*9(./!#5.)&*9>.&)7!39)6/7!>&9)3/,!B9 = = /),!
OEEEX2!Q&\$)*#(!B.(./!45#6/)3#.72!KLL0IKLLK2!A&9#3#(5(!B.(./!45#6/)3#.72!

! Y%&#:#&<3-#`\$&(Y%''*<. #)%/7)"(DN. \$@#)%3-(6+#-&"\$%2!45*/)8)(*9(./R8)(*9(./! = /.:&*3!
>&9)3/,!B?)#58,!OEEEX!(5*!OEE\2!Q&\$)*#(!B.(./!45#6/)3#.72!Z89/3.!\$/>.9)!&<!)!/(#58! = /.:&*3[!

! Y%*")&<. #)%/*)(=\$3''%#%I(?#34#-##\$'2!45*/)8)(*9(./!39)6/7!>&9)3/,!Q(\$\$,!OEEF!(5*!OEEEX2!
Q&\$)*#(!B.(./!45#6/)3#.72!

! ;<@\$'.'#')%(7(2"3. #.<A(;*&\$%*'SY%*\$''2!B?)#58,!OEEF!Z - (5*/)G#\$!.45#6/)3#.7[2!B?)#58,!
OEEEX!(5*!OEE\!ZQ&\$)*#(!B.(./!45#6/)3#.7[2!

! Y%''*<. #)%3-(2''%#.#@\$'(3%&(2"). \$&<"\$'(#%(/=3%I<3I\$(B''*(Y%''*<. #)%/7)"(;*&\$%*(F#*+
>#-&\$>)&\$"3*\$(\$?'#34#-##\$'2!a)(*9(./! = /.:&*3!>&9)3/,!Q(\$\$,!OEEV2! - (5*/)G#\$!.45#6/)3#.72!

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3%6!"=%)

45#6/)3#.7!B/)6#>!/!

BC 4!H& = #.. /3!(5*!M. : /)!B/)6#>!/!

H/5./)!&<!Q(#. :!(5*!A/())5#58!O&()*!C/=G/)!ZKLOFI?)/3/5.[!

B# = &53!1/(5!B/(>):!H& = #.. //!ZKLOFIKLOX[!

P. :#>3!(5*!@/59)!H& = #.. //!&<!. : /!Q(>9\$.7!B/5(./!ZKLOYIKLOX[!

+>(*/=#>!;/.#.#53!H& = #.. //!ZKLOYIKLOF[!

H@P!;(5/\$!C/=G/),!N&(*!.&!@/59)!ZKLOY,!KLOV[!

;)&6&3.i3!+*6&3&)7!H& = #.. //!&5!;)&=&.#&5!(5*!@/59)!ZKLOOIKLOY[!

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B&9. : /)5!+33&#(#.#&5!&<!H&\$\$/8/3!(5*!B>:&&\$3!N/(>>)/*#.(#&5!B./)#58!ZKLLEIKLOL[!

M<<#>!&<!N/3/(>):!+*#5#3.)(#&5!N/6#/'!H& = #.. //!ZKLLEIKLOL[!

! "#\$!%& '()*!+\$\$&),!-#.(/!!KX!
! "#\$!%&'()*!+\$\$&),!-#.(/!!KX!
!"#\$%&'()*!+\$\$&),!-#.(/!!KX!

C/5.&3:#!<&!)!_&5IBC4!B.9*/5.3!
8#.*)"#3(C+3-\$%I(2+H?H('*&\$%I(I"3%*(F"##%I(A\$%*)"'+#@I(3&:#')"R(?\$.#%(b\$3"%I(
9%#: \$"#5()7(6)%%\$.*#. <*(ZKLLK[(

+*6#3&!)Z?)&!G&5&[,!KLOXIKLOE!P6(\$9(.#&5!&<!B.)9>.9)/!*C/.: &*3!#5!A(589(8/!P*9>(.#&5!
ZBC#AP[^!+!;)&8)(=!H&=G#5#58!A#./)(>7!(5*!A(589(8/!1/6/\$&?=/5.!<&!)c vV!B.9*/5.3! '#.!:!
B#85#<#>(5.!H&85#. #6/!1#3(G#\$#. #/3!#5!_ hH#3!1#3.)#>.!XV2!DPB!a)(5.,!H()&\$#5!/!; ()W/),!; D2!

a9/3.!B?/(W/),!KLOXRKLO\!Z#56#./[*!+3W!./!PT?/).^!; :&5#>3!+??)&(>:/3!<&!)!B.9*/5.3! '#.!:!
D5./\$\$/>.9(\$!1#3(G#\$#.7,!a9/3.!B?/(W/)!#5!H:)#3.&?:/)A/=53i!3?/>#(\$!/*9>(.#&5!>&9)3/!(!
- (5*/)G#\$!.!45#6/)3#.72!

173\$/T#(!H/).#<#>(.#&5!PT(=!D./=!g)#./),!D5./)5(.#&5(\$!173\$/T#(!+33&>#(.#&5!ZKLOV[!

D53.#.9./!&<!P*9>(.#&5!B>#/5>/3!!

C/=G/),!N/(*#58!(5*!g)#.58!; (5/\$!ZKLOYIKLOX[!
H:(#),!N/(*#58!(5*!g)#.58!; (5/\$!ZKLOX[!
a)(5.!N/6#/ ' /),!N/(*#58,!g)#.58,! (5*!A(589(8/!; (5/\$!ZKLOY[!

PT./)5(\$!N/6#/ ' /)!<&!)!;)&=&. #&5! d!@/59)/!(.(5&.:/)95#6/)3#.7!ZKLOU,!KLOF[!

+*6#3&7!O&()*!,!;)&' />.!PNDH!D53.#.9./!&<!P*9>(.#&5!B>#/5>/3!a)(5.!ZKLOOIKLOY[!

PT?/).!H&539\$(5.,!BODN!a)(5.,!@:/!+..(#5=/5.!H&=? (57!ZKLOO[!

P*#.&#(\$!O&()*3!

(G)<"%3-()7(=\$3"%#%I(? #'34#-##\$'(^XUTVa@"\$'\$%*_ (((!).<'()%(B<#* 'A(3%&(Q*+\$"(? \$: \$-)@A\$%*3-(? #'34#-##\$'(ZKLOVI?)/3/5.[!
! D-\$A\$%*3"5(;.+))-(G)<"%3-(ZKLOKI?)/3/5.[!
! E\$3&#%I(3%&(C"##%I(Z<3""\$"-5R(Q:\$").A#%I(=\$3"%#%I(? #7#.<-*\$'(ZKLLEI?)/3/5.[!
(B%#3-'()7(? 5'-N#3(ZKLLEIKLOX[!

a9/3.!+33&>#(. /!P*#.&!)!

BA\$"#.3%(G)<"%3-(7)"(Y%*\$-\$.\$.*<3-(3%&(? \$: \$-)@A\$%*3-(? #'34#-##\$'(XUTPaXUT!

a9/3.!N/6#/ ' /)!

B%#3-'()7(? 5'-N#3I(XUTWI(XUT!
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G)<"%3-()7(Y%*\$-\$.\$.*<3-(3%&(? \$: \$-)@A\$%*3-(? #'34#-##\$'(XUXU(
E\$3&#%I(E\$'\$3".+(Z<3""\$"-5I(XUXU(
BA\$"#.3%(G)<"%3-(7)"(Y%*\$-\$.\$.*<3-(3%&(? \$: \$-)@A\$%*3-(? #'34#-##\$'(XUTOI(XUTW(
Y%*\$"%3#)%3-(G)<"%3-()7(;@\$. +a=3%I<3I\$(23#+)-)15I(XUTWI(XUTP(
B''\$'A\$%*(7)"(D77\$.*#:\$ (Y%*\$":\$%#)%I(XUTV(
Y%*\$"%3#)%3-(G)<"%3-()7(? \$: \$-)@A\$%*3-(? #'34#-##\$'(XUTV(
L\$3.+\$"(D&<.3#)% (3%&(;@\$. #3-(D&<.3#)%I(XUTV(

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G)<"%3-()7(Y%*\$--\$. *<3-(?#'34#-##5(E\$'\$3"'. +(KLOV,!KLOF!
E\$A\$-(3%&(;@\$. #3-(D&<. 3*#)%(KLOK,!KLOU,!KLOV,!KLOF!
23%(BA\$"#. 3%(Y%*\$"&#'. #@-#%3"5(6)%7\$"\$\$. !\$KLOV! !
6+##-(&(=3%I<3I\$(L\$3. +##%I(3%&(L+\$"3@5!KLOY! !
Y%*\$--\$. *<3-(3%&(?\$:-)@A\$%*3-(?#'34#-##\$'I(KLOO!
D&<. 3*#)%3-(2)-#. 5I(KLOO,!KLOK!!
E\$'\$3"'. +(3%&(2"3. *\$. \$(7)"(2\$"')%'(F#*+(; \$:\$\$"(?#'34#-##\$'I(KLOO!
D&<. 3*#)%3-(2)-#. 5!KLE!
; .#\$%#7#. (;<&#\$')7(E\$3&#%I(KLLX,!KLL\ ,!KLE(
D&<. 3*#)%3-(3%&(2'5. +)-)I#. 3-(>\$3'<"\$A\$%*I(KLL\!
BA\$"#. 3%(D&<. 3*#)%3-(E\$'\$3"'. +(G)<"%3-,!KLLV,!KLL\!
=\$3"%"%I(?#'34#-##\$'(Z<3"\$-\$"-5,!KLLV!
=3%I<3I\$(I(;@\$\$\$. +I(3%&([\$3"#%I(; \$":#. \$(#%(; . +) - ' ,!KLLV,!KLLX!

! B/>)/.()7,!A&9#3#(5(!@/(>:/)!P*9>(.#&5!1#6#3#&5!&<!. :!/H&95>#&(&!)PT>/?.#&5(\$!
H:#\$*)/52!ZKLLLIKLLK[2!

! N/6#/ ' /),!A&9#3#(5(!H&95>#&(&!)PT>/?.#&5(\$!H:#\$*)/5!K0!+559(\$!B9?/)>&5</)/5>/!&5!
B?/>#(\$!P*9>(.#&5!Z_&6/=G/),!KLLL[2!

! N/6#/ ' /),! g (*3' &). :! ; 9G\$#3 : #58!H&=? (572!Z+?)#\$,!KLLL[2!L\$3. +##%I(=\$3"%"\$"(F#*+(>#-&
?'#34#-##\$',!3/>&5*!/ *#. #&5,!G7!N2! C //3/2!

! H&= =95#.7!B/)6#>/!

! N#>: ()*3&5!D5*/?/5*/5.!B>: &&\$! 1 #3.)#>.,!@:)8&&*! C ()3: (\$\$!P\$/ =/5. ()7!ZKLOFIKLOX[,!
&58:!>539\$.#58!&5!* (.IG(3/*!#53.)9>.#&5(\$!*/>#3#&5!(= (W#58,!>)%&)!#=?\$/ =/5. (.#&5,! (5*!
! "\$\$%&')%(*+\$ (, -) . /!#=?\$/ =/5. (.#&5!

! N/(*)3!K!A/(*)3,!+*6#3&7!O&(*)!C / =G/)!ZKLOK!v!KLO\ [!

! ;\$(5&!D5*/?/5*/5.!B>: &&\$! 1 #3.)#>.!B.)(/8#>! ;\$(5!Q&>93!a)&9?;! ;\$(5&,!@/T(3!ZKLLX[!

! %/().!%&93!/ZKLLFIKLE,!1 (\$\$(3,!@] [2! ;)&6*/*!9.&)#58!?)&8)(=!(./)#(\$3j!(33#3./!*!#5!
&)8(5#f#58!(5*!.)(#5#58!>&\$\$/8/!3.9*/5.3!(3!)/(*#58!.9.&)3!<&)!%/().!%&93/!(.<./)!3>: &&\$!?)&8)(=2!

! @#8/)!@9.&)#58!ZOEIEIKLLYj!O(.&5!N&98/ ,!A+ [2!M)8(5#f/*,!.)(#5/*,! (5*!39?/)6#3/*!
>&\$\$/8/!3.9*/5.3!Z</ */)(\$! ' &)W!3.9*7!(5*!3/)6#>/!\$/ ()5#58[!(3!)/(*#58!.9.&)3!<&)!\$/ =/5. ()7!
3.9*/5.3! ' :&! ' /)!(.I)#3W!<&)!/(*#58!<(#9)/2!

! @c!C#5#3.#/3!ZOEIEVIOEEF,!_ (3: 6#\$\$/ ,!@ _ [2!M)8(5#f/*!(5*!.)(#5/*!6&\$95./ /)3!.&!>&5*9>.!
#5*#6*9(\$!.9.&)#58! ' #. :!(.I)#3W!3.9*/5.32!

! **869<%33"9 : \$;)\$<<" ; "\$#"9 : 3)**

!

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! "\$\$!%& '()*!+\$&),!-#.(/!!KE!
!"#S!&#!(!)&*'+,++

+ = /)#>(5!P*9>(.#&5(\$!N/3/())>: !+33&>#(.#&5!
H&95>#&5!<&!)PT>/?.#&5(\$!H:#\$*)/5!!

Z 1 #6#3#&5!&<!A/()5#58! 1 #3(G#\$#. #/3,! 1 #6#3#&5!&5!+9.#3 =!(5*! 1 /6/\$&? = /5.(\$! 1 #3(G#\$#. #/3,!
@/(>: /)!P*9>(.#&5,! (5*!N/3/())>: ! 1 #6#3#&5!

H&95>#&5!<&!)A/()5#58! 1 #3(G#\$#. #/3!

D5./)5(.#&5(\$!N/(*#58!+33&>#(.#&5!

D5./)5(.#&5(\$! 1 73\$/T#(!+33&>#(.#&5!

B&>#/.7!<&!)N/3/())>: !&5!P*9>(.#&5(\$!P<</>.#6/5/33!

B&>#/.7!<&!)!./!B>#/5.#<#>!B.9*7!&<!N/(*#58!

!