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

!"# \$%!&'()

&'()*+, -./)\$((+.0)%/12!&'()

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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! '#. :!*#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!
!"#S!&#(!)&'+,++

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

+9893.,!KLKL!.&! ?)/3/5.))
!))
! ! !
(((

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))
! ! !
(((

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))
! ! !
(((

=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!))
! ! !
! ! !
(((

\$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))
! ! !
(((

\$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! !
! ! !
!

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

C(7,!OEEF! ! .&!"9\$7,!OEEF! !
! ! !
! ! !
! ! !
! ! !

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

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(#% (B<# '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(\$!*#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 TTVVSTUWVKMVOTWVOXVJP!

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

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*!(*&\$ /3>/5.3! ' #. :!
#5./\$\$/>.9(\$!*#3(G#\$#.72!L\$3. +#%I(DN. \$@*#)%3-(6+#+&"\$%I(MUI(KKLIKUK2!

)
\$((+.0)&1)*10 a#<<&)*,! 12!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)*1ZKLOX[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(?#77#. <-\$*\$'I(KJ,!0OXIOU,!*&#!
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*!(*&\$ /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)*1ZKLOF[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(JMI(VLLIV002!!
)
\$((+.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(
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! "##\$!%& ' () * ! + \$\$ & , ! - # . (/ ! ! 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 (= # 5 8 ! . & !) / (* # 5 8 ! * / 6 / \$ & ? = / 5 . 2 ! = \$ 3 " % # % I (? # ' 3 4 # - # * 5 (Z < 3 " * \$ " - 5 2 ! K V , ! Y X I V X 2 ! n K L L L ! + ' () * ! < & !) M 9 . 3 . (5 * # 5 8 ! N / 3 / () > . , ! @ : / ! H & 9 5 > # \$! < & ! A / () 5 # 5 8 ! 1 # 3 (G # \$ # . # / 3 2 ! ;) / 3 / 5 . / * ! (. ! : / ! D 5 . /) 5 (. # & 5 (\$! H & 5 < /) / 5 > ! / 5 ! A / () 5 # 5 8 ! 1 # 3 (G # \$ # . # / 3 , ! M > . & G /) , ! K L L L 2 ! !

C>H(.:)/5,!N2!O2,!d!\$(+.0&1)*1!ZKLLK[2!43#58!3.&)7G&&W3!' #. : ! ?) / 3 > : & & \$! > : # \$ *) / 5 ^ ! P 5 : (5 > # 5 8 ! \$(589(8/!(5*!\$#./)(>72!]) < % I (D N . \$ @ * #) % 3 - (6 + # - & " \$ % I (M ^ J _ ! U I O L 2 ! !

\$(+.0&1)*1,!Q9>:3,!12,!d!C(./3,;!2!a2!ZKLL0[2!1&3.9*/5.3!' #. : ! (5 * ! ' # . : & 9 . ! \$ / T # > (\$!) / .) # / 6 (\$! ' / (W 5 / 3 3 / 3 !) / 3 ? & 5 * ! * # < < /) / 5 . \$ 7 ! . & ! # 5 3 . 9 > . # & 5 k ! G < " % 3 - () 7 (= \$ 3 " % # % I (? # ' 3 4 # - # * \$ ' I (K J , ! K F Y I K X V 2 ! !

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 . /) ! (3 3 # 3 . / * ! # 5 3 .) 9 > . # & 5 ! # 5 ! ? : & 5 & \$ & 8 # > (\$ (' () / 5 / 3 3 2 ! B A \$ " # . 3 % (D & < . 3 * #) % 3 - (E \$ ' \$ 3 " . + (G) < " % 3 - I (K W , ! U X O I Y O L 2 ! !

C(./3,;!2!a2,!a)/W,!C2!A2,!*+ , - . / 0 & !) P 1 , ! O (G 7 (W , ! + 2 ! P 2 , ! d ! + \$ \$ / 5 , ! B 2 ! % 2 ! Z O E E E [2 ! ; / /) I + 3 3 # 3 . / * ! A / () 5 # 5 8 ! B .) (. / 8 # / 3 ! < &) Q #) 3 . I a) (* ! N / (* /) 3 ^ ! + ! . & & \$! < & ! ?) / 6 / 5 . # 5 8 ! / () \$ 7 !) / (* # 5 8 ! < (# \$ 9) / 2 ! = \$ 3 " % # % I (? # ' 3 4 # - # * \$ ' (E \$ ' \$ 3 " . + (3 % & (2 " 3 . # . \$ I (T J Z O [, ! V L I F L 2 ! ! n g # 5 5 /) ! & < ! . : / ! B (= 9 / \$! c #) W ! + ' () * ! Z < & ! . : / ! G / 3 . !) / 3 / () > : I . & I ?) (> # > / ! () . # > \$ / ! # 5 ! = \$ 3 " % # % I (? # ' 3 4 # - # * \$ ' (E \$ ' \$ 3 " . + (3 % & (2 " 3 . # . \$! < & !) O E E E [, ! (' () * ! * ! G 7 ! . : / ! H & 9 5 > # \$! < & !) P T > / ? . # & 5 (\$! H : # \$ *) / 5 , ! 1 # 6 # 3 # & 5 ! & < ! A / () 5 # 5 8 ! 1 # 3 (G # \$ # . # / 3 2 ! !

C(./3,;!2!a2,!*+ , - . / 0 & !) P 1 , ! d ! + \$ \$ / 5 , ! B 2 ! % 2 , ! d ! Q 9 > : 3 , ! 1 2 ! Z O E E \ [2 ! ; / /) I + 3 3 # 3 . / * ! A / () 5 # 5 8 ! B .) (. / 8 # / 3 ! < &) Q #) 3 . I a) (* ! N / (* /) 3 ^ ! N / 3 ? & 5 * # 5 8 ! . & ! . : / ! 5 / / * 3 ! & < ! * # 6 / 3 / \$ / () 5 / 3 2 ! E \$ 3 & # % I (E \$ ' \$ 3 " . + (Z < 3 " * \$ " - 5 I (K K , ! F K I E Y 2 ! !

=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 !) / (* # 5 8 ! G & & W ! 3 /) # / 3 ^ ! ;) & 6 # * # 5 8 ! # 5 . / 5 3 # 6 / ! ?) (> . # > / ! ' # . : ! > & 5 5 / > . / * ! . / T . 2 ! D 5 ! C 2 ! @ (5 W /) 3 \$ / 7 , ! O 2 ! a 2 ! H & & W , ! d ! @ 2 ! " 2 ! A (5 *) 9 = ! Z P * 3 2 [, ! ? \$ - # : \$ " # % I (Y % * \$ % ' # : \$ I (Y % # - # & < 3 - # \$ & (Y % * \$ " : \$ % # %) % (*) (6 + # - & " \$ % (3 % & (J) < * + (F # + (= \$ 3 " % # % I (3 % & (

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TKTaTMX_I(O#58\$/7,!4 c ^!P= /)(*\$2! :..?3^RR* &#?&)8ROL2OOL\RBLXUVILLY] KLKKLLLLLUKLL\!

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

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Q)#/5*3!&5!./!O\$&>W2!ZA/6/\$3!OUIOY!(**/*!#5!KLKLj!)/6#3#&5!&<!KL!G&&W3!(5*!)/\$(./*!
=(./)#(\$3!#5!KLKK[)

)

O(W/),!12!A2,!\$((+.0)&10!d!C#5*/5IH9??,!H2!ZKLOF[2!O&&W3:&?!Q&5o.#>(!a)(*&!c2!_/'!h&)W,!
_h^!C&5*&2!

!

O(W/),!12!A2,!\$((+.0)&10!d!C#5*/5IH9??,!H2!ZKLOF[2!O&&W3:&?!Q&5o.#>(!;)#=/'!a)(*&!_/'!
h&)W,!_h^!C&5*&2!

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\$((+.0)&1)*1,!d!C(./3,!;2!a2!ZKLOK[2!D3"-5(#%\$":\$%#)%'(#/"\$3&#%IR(=\$:\$-(b2!H&\$9=G93,!M%!
BN+RC>a)('I%#\$2! !

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\$((+.0)&1)*1,!d!C#5*/5IH9??,!H2!ZKLE[2!,)/+')@(2+)%#. '(Y%\$":\$%#)%2!_/'!h&)W,!_h^!
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\$((+.0)&1)*1,!d!C#5*/5IH9??,!H2!ZKLLX[2!,)/+')@(2+)%#. '(7)"(b#%&\$"I3""\$%2!_/'!h&)W,!_h^!
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\$((+.0)&1)*1,!d!C#5*/5IH9??,!H2!ZKLLX[2!,)/+')@(2+)%#. '(7)"(!#""*(O"3&\$2!_/'!h&)W,!_h^!
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;<..\$'!A&58=&5.,!HM^!B&?)#3!g/3.2!

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C(./3,!;2!a2,!@&)8/3/5,!2!c2,!+\$\$/5,!B2!%2,!d!\$((+.0)&1)*1ZKLL0[2!!"#'"*aO"3&\$2B=;R(2\$"\$a
B'"#*\$&(=#*\$"3.5(;*"3*\$I#'\$!A&58=&5.,!HM^!B&?)#3!g/3.2!

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(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!

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\$((+.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

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:&'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"4C8D!

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' :#\$/!*#58!#.#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 1F9H+ e!

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\$((+.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!':#\$/!*#58!#.#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&!

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\$((+.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!

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\$((+.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' #. :I7&9)I>:#\$*I<95I(5*I/<</>. #6/!

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\$((+.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/*!

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\$((+.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>/TT01TfQ)#/5*3!&5!#,/I.#?3I55\$I#<I=7I>:#\$*I#

! "#\$!%& '()*!+\$\$&),!-#.(/!00!
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;#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\IKLLK2!+??)&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!

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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(')("\$3&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\$%*\$&(ELYS(!#%&#%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#-#*# \$'#!+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#-#*# \$'#!+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)<*(ELV#(+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%)\$ _h(N/8#&5!]DDD!Q(\$\$!173\$/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%:#\$&(;\$' '#)%_h(N/8#&5!]DDD!Q(\$\$!173\$/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)"/'+)@_h(N/8#&5!]DDD!Q(\$\$!173\$/T#(!H&5</)/5>/2!+93.#5,!@]2!
)
\$((+.0)&1)*10)C>a//,!C2,!P58/\$3,!12!Z+9893.,!KLOV[2!1#3.(5>/!P*9>(.#&5!u!BC42!BC4!
@/(>:#58!P<</>.#6/5/33!B7=?&3#9=,!1(\$\$(3,!@]2!!
!
\$((+.0)&1)*1,!+!\$!M.(#G(!B2,!h&6(5&<<!,!2,!H:/(:=(,!2,!a#<&)*,!12,!A/67,!12,!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#-##5\$'#!+559(\$!C//.#58!&<!.:/!B#>/./7!<&!)
./!B#>/5.#<#>!B.9*7!&<!N/(*#58,!c&5(!%D2!
)
\$((+.0)&1)*!Z"(59()7,!KLOV_h(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,!c2,!\$((+.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#-##5\$'#!+559(\$!H&95>#&!&<!)PT>/?.#&5(\$!H:#\$*)/5!H&56/5.#&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#-##5\$'2!);>#>!H&(3.!N/3/(>):!H&5</)/5>/,!B(5!1#/#8&!,
H+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(\$!173\$/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(\$!173\$/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+?)#,\$!KLOY[2!Y%*\$I"3*#)%3%&(6)
--34)"3*#)%(*);<@@)"*(*;"<11-#%I(E\$3&#%I'(Y%.-<#%I(E\$3&\$"'(F#*+(?'34#-##5\$'#!
+559(\$!C//.#58!&<!.:/!D5./)5(.#&5(\$!N/(*#58!+33&>#(.#&5,!B(5!+5.&5#&!,!@]2!!

!

!

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

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

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

\$(+.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!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!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! 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!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!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-(;*&\$H!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!"\$: \$%*#%I(E\$3&#%I(!3#-<"\$R(
2)'#4#-##\$'R(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'#!+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-'#!+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\$(? \$'#!I%\$&(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"IA\$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!!
!

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

\$((+.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/)>: [!

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! "#\$%!& '()*+\$\$&),!-#.(/!!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)&5\$83%&\$"4#-(3%&(+>\$")a\ 3'+:#--\$(2<4-#.(;.+))-?A/(*)/3:#?H&5</)/5>/!&5!A/(3.!N/3.)#>.#6!/P56#)&5=/5.,!_ (3:6#\$\$/,!@_2!

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* 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&>.&)(!Q/\$\$& '3:#?!,!- (5*/)G#\$.!45#6/)3#.7,!OEEYIOEEV2!

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! "#\$!%& '()*!+\$&),!-#.(/!!K0!
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38%=" \$;)# 6 \$ " : " : O) \$: 2) 8 6 9 < % 3 3 " 9 : \$;) 2 % ! % ; 9 8 5 % : #)

U G - ?) U + . Q E) = (D - . ' B K G + A E D) 6 D J ' D , D .) = D . ? ' @ ' > - ? ' + B) # . - ' B ' B K 0) & A (I) V W X Y)

@) (#5#58!#5! g g H!)/6#/ ' !3.(5*() * 3 ! &) ! a) & 9 ? ! 1 / 3 # 8 5 ! Z N (5 * & = # f / * ! H & 5 .) & \$! @) # (\$ 3 ! (5 * ! e 9 (3 # I
P T ? /) # = / 5 . (\$! 1 / 3 # 8 5 [2 ! Q & > 9 3 / * ! / T ? \$ # > # . \$ 7 ! & 5 ! . : / ! g g H ! / 6 # * / 5 > / ! 3 . (5 * () * 3 ! (5 * ! : & ' ! . : / 7 ! (? ? \$ 7 !
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! \$((+.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)"(0"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'"
0"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,!OEEX\ [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,!OEEX[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,!OEEX[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!

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= 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 Preschoolers Continuing Independent Reading with Text Support*

!

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

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

./!>:()(>./)#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!KLLL2!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!

! L\$3.+#%I(;*<&\$%*(F#*+(=\$3"%#%I(3%&(, \$+3:#)"(2")4-\$A'2!a)(*9(./!/6/\$! =/.:&*3!
>&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!

)
)
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[!

N/3/(>):!;&\$#>7!H&=#.#./!ZKLOOIKLOU[!

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

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

! "#\$!%& '()*!+\$\$&),!-#.(/!!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(XUTX(
DN.\$@#)%3-(6+#+-\$%I(XUTVI(XUTPI(XUTX(
G)<"%3-()7(Y%*\$--\$. *<3-(3%&(?\$.:-)@A\$%*3-(?# '34#-##\$I(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#-##\$'I(XUTV(
L\$3.+\$"(D&<.3#)%3%&(;@\$. #3-(D&<.3#)%I(XUTV(

!

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

E\$'\$3". +(#%(?\$: \$-)@A\$%*3-(?#'34#-##\$'(XUTO(
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)

!

!

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

!