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

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

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3455\$67)

!)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.!).#>\$/!#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!)

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

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.!0E\\! ! 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) *1ZKlKO[2! g : (./ (> : /)3!
W5& ' !(G&9.! / (> : #58!)/ (*#58!.&!3.9*/5.3! ' #. : ! #5./\$\$/>.9(\$!(*#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) *1ZKLKL[2!C9\$.#?\$/!\$(589(8!/T?&39)/!<&!)> : #5*/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(\$!(*#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".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&)#) "ISTUHITTVVSTUWWMVOTWVOXVJP(
!

! "#\$!%& '()*+\$\$&),!-#.(/!!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!(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(?#77#. <-\$*\$'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. 5!JXI(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(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!

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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#&!) (5*!\$(589(8/!3W#\$\$3!&5!.: /!
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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(\$! (5*!G/:(6#&!) (\$!*#3&*)/3!3/)6/*!#5!9G#>!3>: &&\$!
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=&*/\$58!?)(>#>./!(5*!<//*G(>W!&5!?:&5/=#>!(' ()/5/33!3/8=/5.(#&5!.(3W32!2 "\$:\$%#%I(
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= ?\$ / = /5. / *! G7! > &\$ / 8 /! 3.9 * / 5.32! = \$3 "%#% I (? #' 34#-##\$ '(E\$ '\$3" . +(3%&(2"3. *#.\$I(TPI(OOFI
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/ (*#582! Y%\$ "\$: \$%#%)% (#% ; . +)) - (3%&(6 - #%# . I(KP!ZK[,! XKIXE2!!

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C>H(. :)/5,! N2! O2,! d! \$(+.0)&1 *1! ZKLLK[2! 4 3#58!3.&)7G&&W3! ' # . : ! ?) / 3 > : & & \$! > : # \$ *) / 5 ^ ! P 5 : (5 > # 5 8 !
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' / (W 5 / 3 3 / 3 !) / 3 ? & 5 * ! * # < < /) / 5 . \$ 7 ! . & ! # 5 3 . 9 > . # & 5 k ! G < " % 3 - () 7 (= \$ 3 "%#% I (? #' 34#-##\$ ' I (K J , ! K F Y I
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2"3. *#.\$I(&!)OEEE[,!(' () * / * ! G 7 ! . : / ! H & 9 5 > # \$! < & !) P T > / ? . # & 5 (\$! H : # \$ *) / 5, ! 1 # 6 3 # & 5 ! & < !
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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*!)/\$(./*!
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O(W/),! 1 2!A2,!\$(+.0)&10! d! C#5*/5IH9??,!H2!ZKLOF[2!O&&W3: &?!Q&5o.#>(!a)(*&! c 2! _ / ' ! h&)W,!
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O(W/),! 1 2!A2,!\$(+.0)&10! d! C#5*/5IH9??,!H2!ZKLOF[2!O&&W3: &?!Q&5o.#>(!;)#=/)a)(*&! _ / ' !
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\$(+.0)&1)*1,! d! C (./3,!; 2! a 2!ZKLOK[2!D3"-5(#%*\$":\$%#)%'(#%/"\$3&#%IR(=\$:\$-(b2!H&\$9=G93,!M%!
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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! 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!

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\$(+.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* & #58I#.,!
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)/*!(5*!: (6/!<95! ' : #\$/!*:!#.q!Q)#/5*3!&5! : /!O\$&>W2!
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./(>:I(57&5/I.&I)/(*I(5*I: (6/I<95I ' : #\$/I* & #58I#.,!
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.&!)/(*!(5*!: (6/!<95! ' : #\$/!*:!#.q!Q)#/5*3!&5! : /!O\$&>W2!
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' :#\$/!*:!#.q!Q)#/5*3!&5!.: /!O\$&>W2! :..?3^RR' ' ' 2<)#/5*3&5.: /G\$&>W2>&=R?&3.R?:&5/=#>I
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*:!#.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#.,!
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:(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
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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
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Q)#/5*3!&5!.: /!O\$&>W2! :..?3^RR' ' ' 2<)#/5*3&5.: /G\$&>W2>&=R?&3.R3#=?\$/I.#?3I<&)I=(W#58I
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>&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*!#5I)/(*#58I3 :&9\$*I#IG/I>&5>/)5/*!

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#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#

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!"#\$%&'()*+\$(, -)./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,!KLKLI"95/,!KLKV[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>/3,12")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/,!KLKL2!Q95*#58^!S0,VLL,LLL2!

!

;#5>#?(\$!D56/3.#8(.&)^!D53.#.9./!&<!P*9>(.#&5!B>#/5>/3,12")c\$. *(Y%*\$%#*#5R(L+\$(
? \$: \$-)@A\$%*()7(3(; < @-\$A\$%*3-(= # * \$ " 3 . 5 (2 ") I " 3 A (? \$ ' # I % \$ & (*) (2 ") : # & \$ (DN * \$ % # ' : \$ (2 " 3 . # . \$ (F # + (< < * # @ - \$ a 6 " # * \$ " # 3 (L \$ N (7) " (; * & \$ % * '(F # + (Y % * \$ % - \$. * < 3 - (? #' 34#-#*# \$ ' H! " 9 \$ 7 , ! K L O U I " 9 5 / , ! K L O \ 2 ! @ & . (\$!
Q95*#58^!S0,VLL,LLL2!

!

g / : G7,! " 2 , ! A / = & 5 3 , ! H 2 " 2 , ! Q 9 > : 3 , ! 1 2 ! d ! Q 9 > : 3 , ! A 2 B 2 ! Z K L O V I K L O E [2 ! _ (. # & 5 (\$! H / 5 . /) & 5 !
A / (* /) 3 : # ? ! # 5 ! D 5 . / 5 3 # 6 / ! D 5 . /) 6 / 5 . # & 5 ! Z _ H A D D [2 ! M << # > / ! & < ! B ? / > # (\$! P * 9 > (. # & 5 ! ;) & ` / > . 3 , ! 4 2 B 2 !
1 / ? () . = / 5 . ! & < ! P * 9 > (. # & 5 ! Z S X , V L L , L L L [2 ! N & \$ / ^ ! Q / \$ \$ & ' 2 !

!

D55&6(.#6/!/ / (> : #58! a)(5. ! <) & = ! 1 (\$\$(3! 1 & ' 5! B75*) & = ! a 9#*\$!ZKLOV[2!@ /> : 5&\$&87!.&!
B9??&).!D5./53#6/!N/(*#58!D53.)9>.#&5!< &) ! B . 9 * / 5 . 3 ! ' # . : ! 1 & ' 5 ! B 7 5 *) & = / ! Z S V L L L [2 ! ; D 3 ! B . / ? : (5 # / !
+ \$!M. (#G(! d ! "#\$\$! + \$\$&)!!

!

H&I;)#5>#?(\$!D56/3.#8(.&)^!D53.#.9./!&<!P*9>(.#&5!B>#/5>/3,19 '#%I(YA@\$"7\$. *(! #& \$ - # * 5 (
> \$ 3 ' < ' \$ ' (*) (Y A @ ") : \$ (; * 3 # ' * # . 3 - (Y % \$ " % \$. \$ ' (3 4) < (D & < . 3 # *) % 3 - (Y % \$ " : \$ % # *) % ' ! K L L E I K L O 0 2 ! @ & . (\$!
Q95*#58^!SYU0, \ KU2!

!

;#5>#?(\$!D56/3.#8(.&)^!42B2! 1 / ? () . = / 5 . ! & < ! P * 9 > (. # & 5 , ! > 3 N # A # ` # % I (= # * \$ " 3 . 5 (= \$ 3 " % # % I (
3 A) % I (6 + # - & " \$ % (F # + (> # - & (*) (>) & \$ " 3 * \$ (> \$ % * 3 - (E \$ * 3 " & 3 # *) % ! K L L V I K L L E ! 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 " 3 A 2 ! K L L U I K L L F 2 ! + ? ?) & T # = (. / ! @ & . (\$! Q 9 5 * # 5 8 ^ !
SXLL,LLL2!

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 % 3 d '(Y %)) : 3 # * : \$ (6 \$ " * # 7 # . 3 # *) % () 7 (D & < . 3 *) " (# \ (; @ \$. # 3 - (
D & < . 3 # *) % ! O E E E I K L L 0 2 ! + ? ?) & T # = (. / ! @ & . (\$! Q 9 5 * # 5 8 ^ ! S U L L , L L L !

!

! "#\$!%& '()*!+\$\$&),!-#.(/!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\IKLL0!+??)&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)*1)Z+?)#,\$!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)*1)ZC(>:;!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@ "\$+\$%'#)%H!+559(\$!H&95>#&!<&!)PT>/?.#&5(\$!H:#\$*)/5!H&56/5.#&5,!6#).9(\$2!

\$((+.0&1)*1)Z"(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*H(+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)<*(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%)\$ _h(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%:#\$&(\$' '#)%_h(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)"/'+)@_h(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!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#<&)*,!12,!A/67,!12,!M).#f,!C2,!
B(5*#6(\$,!+2!d!"&5/3,!Q!Z"9\$7,!KLOV[2!L+\$(D77\$. *()7(3(L\$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(\$! 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+?)#\$,!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#\$#.3/3,!+9.#3=,! (5*!&.:/)!1/6/\$&?=/5.(\$!1#3(G#\$#.3/32!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#\$#.3/3,!+9.#3=,! (5*!&.:/)!1/6/\$&?=/5.(\$!1#3(G#\$#.3/32!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,!12H2!

\$(+.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#\$#.3/3,
+9.#3=,! (5*!&.:/)!1/6/\$&?=/5.(\$!1#3(G#\$#.3/32!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&>#(.#&52!_ / ' !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!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\$(? \$'#!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" 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!!

!

! "##\$!%& '()*!+\$\$&),!-#.(/!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"*\$%\$"'2!+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-'2!+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>#D55&6(.&!)
+ '()*<&!)M9.3.(5*#58!P*9>(.&!)#5!(!H&\$\$/8/!&!)45#6/)3#.72!

! KLLL!+ '()*<&!)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!

! 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!&<!&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>#&!)PT>/? .#&5(\$!H: #*)/5,!1 #6#3#&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*!1 /6/\$&? =/5.!C/5.(\$!N/.)*(.#&5!N/3/(>: !:
@)(#5#58!1 &>.&)(!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#.-'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,!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:&?!?&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!

!)

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

!

! "#\$!%& '()*+\$\$&),!-#.(!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>(.#&52!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>(.#&52!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%''*<.#)#%(/)"(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%''*<.#)#%(/)"(<*&\$%*(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:#!<&!)!_&5IBC 4!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!
DN.\$@#)%3-(6+#+-\$%I(XUTVI(XUTPI(XUT!
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(

!

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

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!

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!

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

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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!

!