! "#\$%&'#()*+,*-+.(/*01+*

2#@P!Q\$!R&'&(\$!''-,+,-=*J,!.,/J#,-+!B,/-1*1D!.O!.,/J#!/1C!C,=,BOW*1D!.,/J#,-!*C,1.*.>!*1!/!.,/J#,-!*C,1J>\$!.541%6\$+7(23'''%1-\$.+<(@JRESP!&);F&NZ\$!

#..W+4XXCO*\$O-DX('\$('N'X('YH)&('\$&'&'\$(H&Y;EY!!

 $2\#@P!Q\$!R\&'(;\$\$!O\#/.!/-,!.\#,>!./B8*1D!/\\ \setminus 0@.!T\#,1!.\#,>!./B8!/\\ \setminus 0@.!,_@*.>U!6!JO1.,1.!/1/B>+*+!O?!,\\ \cdot _@*.>!W-*1J*WB,+!/1C!W-0=*+*O1+!*1!+./.,!I=,->!:.@C,1.!:@JJ,,C+!6J.!WB/1+$!23"%1-$.+($

9/;1***I**J1*K!O,,,3+P!6\$!R&'&&P!9/-J#\$\$!

- O / 1DP! O \$P!K! **9** / ;1* **I** J!R& ' (;P!6 W-*B\$\$! IE. +, . #, (. >(\$+34E4+34+-(-41%64#(E#4E1#1-\$. +(E#.7#1', A(M(+4-W.#V(1+1&L,\$,\$!g0@1C./\B,!W/W,-!W-,+,1.,C!/.!.#,!&'(;!63,-*J/1!IC@J/.*O1/B!g,+,/-J#!6++OJ*/.*O1!611@/B!9,,.*1DP![0-01.OP!2/1/C/\$!
- 9 /; 1* I JP! K! O / 1DP! O \$!R&' (; P! 6 W-*B\$\$!5. W1#3, (1(%"&-"#1&&L(, ", -1\$+\$+7('4+-.#,6\$E(>.#(%"&-"#1&&L(3\$N4#,4(>1%"&-L('4';4#,(\$+(6\$764#(43"%1-\$.+C!"/W,-!W-,+,1.,C!/.!.#,!)E\$\\$!611@/B!
 201?,-,1J,!0?!.#,!203 W/-/.*=,!/1C!L1.,-1/.*01/B! I C@J/.*01!: OJ*,.>P!:/1!A-/1J*+JOP!26\$!
- ^ /@aP!V\$P!g*C, /@aP![\$P!K!**9** / ;1***I**J!R&' (NP! 9 />\$\$!M3N1+%+7(,-"34+-,(.>(%. &.#(, "%%4, ,A(: +34#, -1+3\$+7(%. +-#\$;"-\$. +,(.>(#1%1&&L(1+3(4-6+\$%1&&L(3\$N4#,4(-41%64#(E.E"&I-\$.+,(\$+(d.#-641,-(9."\$,\$I+I\$!"0+.,-!W-,+,1.,C!/.!.#,!E(#!!611@/B!V/.*01/B!201?,-,1J,!01!g/J,!K! I.#1*J*.>!*1!63,-*J/1!k*D#,-!IC@J/.*01P!V,T!j-B,/1+P!G6\$!
- ^ /@aP!V\$P!**9** / ;1* **I** J!R& ' (NP!5/1@/->S\$!54# ' \$+1-\$+7(-4+"#4[-#1%V('L-6, Λ (O4>&4%-\$.+,(>#. ' (#4%4+-&L(6\$#43(-4+"#4[-#1%V(E#.>4,,.#,C!"/W,-!\w-,+,1.,C!/.!.#,!()!"!611@/B!k/T/**!\L1.,-1/.*\01/B!201?,-,1J,!\01!IC@J/.*\01P!k\01\0B@B@P!k\\$!
- O / 1DP! O \$P!K!9 / ;1* I J!R&' (HP! 6 W-*B\$\$!K#. >4, ,\$. +1&(\$34+-\$-L(34N4&. E'4+-(...)("+\$N4#, \$-L[; 1,43(-41%64#(43"%1-.#,(\$+(!6\$+1\$!"/W,-!W-,+,1.,C!/.!.#,!&'(H!63,-*J/1!IC@J/.*01/B!g,+,/-J#!6++0J*/.*01!611@/B!9,...*1DP!:/1!61.01*0P![f\$!

Q\$!2#@! ! 2@--*J@B@3!^*./,! 6

- $2\#@P!Q\$!R\&'(ZP!6W-\$B\$\$!*+-4\#+1-\$.+1\&(299(\%.\&\&474(,-"34+-,(\%.+,-\#"\%-(\$34+-\$-\$4,(1,(W\#\$-4\#,(-6\#."76(1(W\#\$-\$+7(\%.+)+4\#4+\%4(E\#.7\#1'\$!g0@1C./\B,!W/W,-!W-,+,1.,C!/.!.\#,!\&'(Z!63,-*J/1!IC@J/.*01/B!g,+,/-J\#!6++0J*/.*01!611@/B!9,,.*1DP!2#*J/DOP!LG\$!$
- 2#@P!Q\$!R&'(ZP! 9 /-J#\$\$! Y6.,4(V+. W&4374(\$,(N1&"43Z(M(%#\$-\$%1&(1+1&L,\$,(...)(-64(#4E#4,4+-1-\$..+(...)(4-6+\$%('\$+.#\$-\$4,(\$+(!6\$+4,4(,...)(1...)(-4X-;...V,\$!"/W,-!W-,+,1.,C!/.!.#,!Z;!"!611@/B!201?,-,1J,!0?!.#,!203W/-/.*=,!/1C!L1.,-1/.*01/B!IC@J/.*01!:0J*,.>P!O/+#*1D.01!%\$!2\$!

@?NCFG6H*

- O , , 3+P!6\$P!K!9/; 1* I J!R& '&(P!VO=, 3 \ ,-\$\\$!94N4#17\\$+7(K[Fh(E1#-+4#,6\\$E,(1+3(1(\\ W(J."#(^W+(W+W+W+W+W+W-')-'4+-('.34\(-.(\\$+\)\#41,4(1+3(3\\$N4\),\\$)L(-64(-41\)\64\(W.\)\\$V\.\#\\4\\$!"\\ V_-!\ V_-,+,1.,C!\.!.\#,!\ Z''"!611@\B!9 , ,.*1D!O?!.\#,!9 *CF: O@.\#!IC@J\.*01\B!g ,+,\-J\#!6++OJ*\.*01P!V , T!j-\B,\/1+P!G6\\$!
- 2#@P!Q\$!R&' (NP!VO=, $3 \setminus .-$ \$\$! 0.4+-..#\$+7(E#1%-\$%4,(...\('.4+-..#(-41%64#,(\$+(1(L41#[&.+7(-41%64#(#4,\$34+%L(E#.7#1'\$!"/W,-!W-,+,1.,C!/.!.#,!YH!"!611@/B!9,,.*1D!O?!.#,!9*CF:0@.#!IC@J/.*01/B!g,+,/-J#!6++OJ*/.*01P!",1+/J0B/!7,/J#P!AG\$!
- 9 , 1DP!% \$P!501 , +P!2 \$P! "*1D- ,>P! 1 P! h *@-J/P! 9 \$P!**9** / ;1* **I** JP!K!2 / 3 W\ ,BBP!G\$!R&' (ZP! j J.O\ ,-S\$! O4>&4%-\$+7(.+(#4>&4%-\$+7A(Y61-e,(-64(N1&"4(.>(#4>&4%-\$N4(W#\$-\$+7(\$+(W#\$-\$+7(-"-.#(34N4&.E'4+-Z!"/1,B!+>3 W0+*@3!C,B*=,-,C!/.!.#,!&' (Z!50*1.!201?,-,1J,!0?!.#,!"/J*?*J! V0-.#T ,+.!O-*.*1D!2 ,1.,-!6++0J*/.*01!/1C!.#,![T0FQ ,/-!20BB,D,!I 1DB*+#!6++0J*/.*01!0?! .#,!"/J*?*J!V0-.#T ,+.P!: W08/1,P!O 6\$!!
- $2\#@P!Q\$!R\&'(\&P!A, \-@/->S\$!j''4, -\$. +[1, V\$+7(;461N\$. \#(.\times(!6\$+4, 4(7\#13"1-4(,-"34+-,(\$+(1+(M''4\#\$\%1+("+\$N4\#,\$-LA(M(\%1,4(,-"3L\$!"/W,-!W-,+,1.,C!/.!.\#,!EZ!"!611@/B!9,,.*1D!O?!.\#,!:0@.\#T,+.!IC@J/.*01!g,+,/-J#!6++OJ*/.*01P!V,T!j-B,/1+P!G6\$!$

- $2\#@P!Q\$!R\&'\&\&P!VO=\$E'M\%, J\$!(\$\$!?.+\%4E-"I\&\$c\$+7(43"\%I-\$.+I\&(4b"\$-LC!L1+.*.@.,!O?!IC@J/.*O1!:J*,1J,+![,J\#1*J/B!O0-8*1D!h-0@W!^*-.@/B!9,,..*1D4!7,+.!"-/J.*J,+!/1C!2\#/BB,1D,+!?O-!I3\,CC*1D!I_@*.>!*1!IC@J/.*O1!g,+,/-J\#\$!$

Q\$!2#@! ! 2@--*J@B@3!^*./,! 7

<u>-#)''')7*%\$&'2'&'!.*</u> * * *

?O4?@G6H*

```
O,, 3+P!6$P!K!2#@P!Q$!R&'&($$!\#. W$+7(1+3(3$N4#,$\sigma\sum_\$\rm 7(-64(9."\$,\$1+1(-41\%6\$+7(W.\#V\>.\#\%4(1+3(3\$\rm 8))))
      -6#. "76(#4%#"$- '4+-<(6$76(,%6..&(-.(%.&&474(-#1+,$-$.+(,"EE.#-<(1+3(-41%64#(E#4E1#1-$.+(
      E\#.7\#1'(\#4-4+-\$.+(, "EE.\#-0!g, D*01+!2033@1*.>!I1D/D, 3, 1.!h-/1.!?@1C, C!\>!g, D*01+!
      AO@1C/.*O1$![O./B!/T/-C!m!(''P'''$''$!
!
      \%-\$!2\#@!+,-=,+!/+!.\#,!2 \text{ j } F"L!01!.\#^*+!D-/1.!.0!+@WWO-.!.\#,!-,J-@^*.3,1.!/1C!W-,W/-/.^*01!0?!
      J@B.@-/BB>!/1C!B*1D@*+.*J/BB>!C*=,-+,!.,/J\#,-+!*1!GO@*+*/1/!.\#-O@D#!#*D#!+J#OOB!.O!JOBB,D,!
      .-/1+*.*01!/1C!.../J\#,-!..C@J/.*01!/1C!-...1.*01!+@WWO-.$!R63>!O...3+P!"L$$!
O/.+O1P!: $P!K!k/18+P!6$!R&'&($$!: 90(K4317.7$%1&(1520(23"%1-$.+(K#.7#1'(k:90(K[152KHC
      : @\3*..,C!.0(V/.*01/B!:J*,1J,!A0@1C/.*01!L3W-0=*1D!<1C,-D-/C@/.,!: [ I 9!IC@J/.*014!
      IC@J/.*01!/1C!#@3/1!g,+0@-J,+!RL<: I4!kIg$$![0./B!-, @,+.,C!m!E''P'''$''$!!
      \%-\$!2\#@!+,-=,+!/+!:,1*0-!",-+011,B!01!.\#*+!W-0],J.!.0!W-0=*C,!J@B.@-/BB>!-,+W01+*=,!
      \mathbb{W}, \mathbb{C}/DOD>!.-/*1*1D!.0!: [I9!?/J@B.>!3,3\,-+!/.!.#,!<1*=,-+*.>!0?!GO@*+*/1/!901-0,!.0!
      #.BW!, J0103*J/BB>!C*+/C=/1./D, CP!?, 3 /B, P!/1C!3*10-*.>!+.@C, 1.+!*1!: [ I 9 !W-OD-/3+!.0!
      /J @*-,!+OJ*/BP!+J*,1J,P!/1C!J@B.@-/B!J/W*./B!JO1C@J*=,!.O!.#,*-!,C@J/.*O1!/1C!J/-,,-!
      C_{,=,BOW3,1.\$!R:/1C>!O/.+01P!"LS\$!}
١
                                   CG4?@G6H*
2\#@P!O\$!R\&'\&'F\&'\&E\$\$!94N4\#17\$+7(I\%6..\&[:+\$N4\#,\$-L[!..'''+\$-L(K1\#-+4\#,6\$E(-.(Q\$N4\#,\$)-L(-64(-64(-64\#)+44\#,64)))]))
      541%64#(Y.#V>.#%4(-6#."76(1(\#.W(]."#(^W+(K#4[23"%1-.#(K#4E1#1-$.+(K#.7#1')
      A@1C,C!\>!.#,!1*..>!%,h-,,!I1COT,C!"-0?,++0-+#*W!*1!IC@J/.*01!.#-0@D#!.#,!<1*=,-+*.>!
      0?!G0@*+*/1/!901-0,!A0@1C/.*01$![0./B!/T/-C!m!&(PN);$''$!!
2#@P!O$!R&'(HF&'&'$$!O4,$7+$+7(1+3(*'E&4'4+-$+7(1(541%64#(O4,$34+%L(K#.7#1'$!A@1C,C!\>!
      \#, \text{A-/1J}, +!\%/=*+! \text{k/3} \ 3 \ 01\text{C!"-0?}, ++0-+\#*W!*1! \ I \ C@J/.*01!.\#-0@D\#!.\#, !<1*=,-+*.>!0?!
      G0@*+*/1/!901-0,!A0@1C/.*01$![0./B!/T/-C!m!(;PH;H$'Z$!!
                                                                99999999999999
#)'2!,.'&8*&!%$6')7***
                        ! GCB?@2C4 I*FK*2F!4:*KHF@CD6*
IC$!%$!*1!IC@J/.*01/B!"-OD-/3!%,=,BOW3,1.!!
      ! GCB ? @ 2C4 I *FK*HF ! C2C6G6* 8 FG@ F ?*
IC$!%$!*1!2@--*J@B@3!/1C!L1+.-@J.*01!!
      no@/B*./.*=,!9,.#0C+!*1!IC@J/.*01/B!g,+,/-J#!!
```

```
9 /+.,-!0?!6-.+!*1![,/J#*1DM:,J01C/->!IC@J/.*01!!
   <1C,-D-/C@/.,![,/J#,-!IC@J/.*01!"-0D-/3!!
   n!20@-+, !g, C, +*D1, C!/1C! [ /@D\#.p!nnV, T!20@-+, !\%, =, BOW, C!/1C! [ /@D\#.!] \\
            ! GCB?@2C4 I*FK* - 62 : CGN4 FG1*2?644H?(
I.#1*J!%*=,-+*.>!/1C!IC@J/.*01!*1!2#*1/!k*+,-#"%-.#H(
9 @B.*F,.#1*J!:.@C*,+4! 9 ,.#OC+P!201.,1.P!/1C! 9 /.,-*/B+!k!.[*+,-#"%-.#I!
                                      !!!!*
g/J, 1/1C! 0=, -.>!*1!: J\#00B+1/1C!: 0J*, .>4!L 3WB*J/.*01+1?0-1[, J\#*1D!k541\%6\$+7(M, , \$, -1+-H!!!!!!!!!]
2@B.@-,P!h/.,8,W*1DP!/1C!G,/-1*1D!90-/B,!*1!IC@J/.*01/B!:,..*1D+!k541%6$+7(M,,$,-1+-H!)
.!,2'$!**
               2?@BC9?*4F*4:?*>@FK?22CFG*
```

- [\$! 1 \$! k 0!R : @ 3 3 ,-!& ' &ESM I-"3L(.>(1(34N4&. E\$+7(E#.>4, ,\$. +1&(&41#+\$+7(%. ' ' "+\$-L(.>(4b"\$-L[' \$+343(43"%I-.#,(
- 1 \$! 2 \$! [O-/B\ /!R : W-*1D!& '&ESM O "&-\$%"&-"#1&(%. 'E4-4+%4(1+3(%"&-"#1&&L(#4, E.+,\$N4(-41%6\$+7(.)(1(-#1+,+1-\$.+1&(\"##\$\"\&" '(\$+(561\&1+3!
- 9 \$!2\$!70>.,!R:@33,-!&'&&\$M2X1'\$+\$+7(E#1%-\$-\$.+4#(1+3('4+-.#(-41%64#,¢E4#%4E-\$.+,(1;."-(-64(\$'E1%-(.\times(-1-4['1+31-43('4+-.\#\$+7!
- 9 \$!6\$!V/18*1!R:@3 3 ,-!&'&&\$M:+-1EE43(&4134#,6\$EA(2XE&.#\$+7(-64(>1%-.#,(-61-(%."&3(\$+>&"4+%4(21^9(-41%64#,d34%,\$.+,(-.(E"#,"4(1,,\$,-1+-(E#\$+%\$E1&(E.,\$-\$.+,(
- 9 \$! 9 \$! ^ /B, 1.*1!R: @ 3 3, -!& '&&\$M 91-\$+X(M ' 4#\$%1+(,-"34+-,(1+3(-64(29M(%"##\$\%"\" ' A(!."+-4#,-.#\$4,(1,(\"##\$\"\&1#(#4,E.+,4(
 - $O*11,-!0?!.\#,!\&'\&E!50\#1!G/+8/!j@.+./1C*1D!\%*++,-./.*01!6T/-C!*1!.\#,!\\2@--*J@B@3!J/.,D0->P!63,-*J/1!6++0J*/.*01!?0-![,/J#*1D!/1C!2@--*J@B@3($
- 2\$! I\$!G01C01!R: W-*1D!&' &&\$M 564(%IE\$-1&(>.#',(71EA(2X1'\$+\$+7(-64(#.&4(.>(:CIC(E''; &\$%(,%6...&\$+7(\$+(%.+-4'E.#1#L(3\$,E1#\$-\$4,(;4-W44+(6'''I+(%IE\$-1&(I+3(%IE\$-1&(.W+4#,(
- G\$!V/>0!RA/BB!&'&(\$MM(%1,4(,-"3LA(U.W(-64(",4(.\;')+3,(.\;')''+3,(.\;')V+.W&4374(W\$-6(''1-64''1-\$\%1\&L(7\\$)-43(1\&1\%V(1+3(91-\\$+X(,-"34+-,(\\$,(\\$+\\&"4+\%43(;L(E4.E\&4\(E.\\$\\$\\\$4,(1+3('''##\\$\)''\"''!
- G\$!Q0@1DF70T*,!R:W-*1D!&'&'\$M!"##\$\"\&"'(.>\(\%. 'E1,,\\$.+A\(K4#,E4\%-\\$N4,(.>\(-41\%64#,(I+3\(13'\\$+\\$,-#1-.\#,(.+\("-\\$\&\\$c\\$+7\(1\cdot H1'''\)I[,4+,\\$-\\$N4\(43''\%1-\\$.+\('.34\\dagge(!))
- 6\$!6B, a/1C, -!R: W-*1D!&'(; SM)

!

T Y

!

201.,1.!61/B>+*+!

9*a,C!9,.#0C+!g,+,/-J#!R:"::p!gp!96fo%6S!