!

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

2(4;\$)4860!K4;6/8!*4;>\$6!1%&//-!/.!G&4/-/=C!';!\$6!5(45'(4)!6/!7/?4!6/!Q/;6/8!,/--4=40!\FFE_ \FFR! ! 34'80!K4;6/8!*4;>\$6!1%&//-!/.!G&4/-/=C0!"DRO_"DRE+!

!

@528677123/;'92.1601674'

"

#4?\$;/(!/.!6&4!84W!-\$6>(=\$%'-!6('8;-'6\$/8!/.!6&4!.\$?4!V//X;!/.!6&4!2486'64>%&!'8)!6&4\$(!8/64;!\F\"_ \F\\0!W\$6&!#/V4(6!3\$!b\$6/+! !

```
 e b 4(; \$/8; 0!, '6\&/-\$%0f! - 0U"1) '0\& \$\&0'0\& Z2" 9 *3' *\%) 6\& + "\%, "A0" 4 *5/0! H9'; \&?\$-4^!NV\$8=) / \$!2(4;; 0! \FFDJ!S+EOD+! 
! ep '5\&/80!M/>860f! - 0U"1) '0& \$&0'0& Z2" 9 *3' *\%) 6\& + "\%, "A0" 4 *5/0! H9'; &?\$-4^!NV\$8=) / \$!2(4;; 0! \FFDJ! S+DO \+! 
! eZ/>(!, &'--48=4;! 6/!6& 4!2(/.4;; \$/80f!B%) M0& 26' *\%) 2! 9 / !!OS! H15(\$8=! \FFDJ!D_" \+! ! 
! e#4') \$8=!2(/?4(V;!"F_\ 0f"1) '0& \$&0'6' *\%) 'LO! H \FFDJ! \a SO+!! ! 
! eN!84W!; %&//-!\$8!6& 4!9, : N^!6& 4!Q/; 6/8!, /--4=4!1 %&//-!/.!G& 4/-/=C!'8)! M\$8\$; 6(C+f!>0E*) 6& +" : %(&) 6/""S! H \FFDJ!ED_R \+! ! !
```

!

 $e^{\}/>(!N66486\$/8!2-4';4r!A44)\$=!6\&4!2(/?4(V;0f'':\%(\&)6/'',\%\&'''A0''>'(?+''\%,''A0''\#/?''C02'6E0)''' \ |134\%47V4(!\FaJ!''SS_L0+!)$

!

e]484;\$;!OR^![6;!, /86(\$V>6\$/8!6/!6&4!*'%/V!16/(C0f!*CA0"B6'A%/*3"4*5/*36/"c(6&'0&*/+"LL!H\FFaJ! S"D_0\+!

!

 $eG4Y6; !'8) !G('8; -'6\$/8; !\$8!G48; $/80f! \$!D26/E2"*) "B\% EE()*'+!": 0U*2A"6) ?"BA \&*2'*6) "C0T'(6/=" .*'(\&<*36/="6) ?"N\&'*2'*3"C\&6?*'*\%) 2!H4) +!A'(/-)!N66(\$) = 4!'8) !M'(=/6!Z';; -4(P!<4\$) 48^!Q(\$-0!\FFaJ! OSD_La+!$

!

 $eG\&4!:Y/)>;!\$8!6\&4!, \&(\$;6\$'8!Q\$V-4^!6\&4!, ';4!./(!nZ\$=>('-0!#4')\$8=0f!CA0\%/\%<*36/">'(?*02"L0+\! H\FF\J!0aS_L"+!!$

!

 $\begin{aligned} & \text{eG\&4!] / }! \text{K\&/!M'X4;!24/5-4!K\$;4^!G\&4!K\$;) / 7! <\$64('6>(40f!\$8!CA0"Q\%\&<\%''0)"^\%?!"CA0"^\%?" \\ & \%,":02(2"BA\&^2'"*)" - 0U"C02'6E0) '"CA0\%/\%<+!"7226+2"*)" \\ & 8\%)\%\&''\%, "D6(/":;"N3A'0E0*0\&''\%)"'A0" \\ & \# 3362*\%)"\%,"8*2">0M0)'+6Q*,'A"4*\&'A?6+"H4)+!N+!N+!3';!'8)!Z+!*+!M'64('^!</>$;?$--40!d`^! \\ & \text{K4;67}\$8;64(!*/\&8!d8/Y0!\FF\J!SE_Ea+!) \end{aligned}$

!

!

 $e2(/?4(V^{1B8!<}V(/!B8^{((10f!)}))) = (0.26)^{(10f!)} = (0.26)^{$

!

$$\begin{split} & eG\&4!T(\$=\$8!'8)!: '(-C!34?4-/57486!/.!G\&474;!/.!N5/\%'-C56\%f!\$8!6\&4!7)3+3/\%\$0?*6''\%,'' \\ & N\$\%36/+\$'*3*2E''H0!?/->74;P!4)+!*+!*+!, /--\$8;!46!'-+P!94W!`/(X^!, /86\$8>>70!''DDRJ!''+0_OR+! \\ & 14-4\%64)!VC!6\&4!4)\$6/(!6/!V4!(45(\$864)!\$8!6\&4!/84_?/->74!'V(\$)=7486+! \end{split}$$

!

 $eTV;4(?'6^{8};!/8!6&4!G4Y6;!'8)!b4(;^{8};!/.!2(/?4(V;0f!^{8}"O^{2}?^{6}E"e^{6}("6\&0"R+">*2'0\&"H\#/-'8)!M>(5\&C!?/->74P!, '6\&/-$^{9}!Q^{V-}'-!h>'(64(-C!M/8/=('5\&!14(^{4};P!K';^{8})=6/8^{1}, '6\&/-$^{9}!Q^{V-}'-!h>'(64(-C!M/8/=('5\&!14(^{4};P!K';^{8})=6/8^{1}, '6\&/-$^{9}!Q^{V-}'-!h>'(64(-C!M/8/=('5\&!14(^{4};P!K';^{8})=6/8^{1}, '6\&/-$^{9}!Q^{V-}'-!h>'(64(-C!M/8/=('5\&!14(^{4};P!K';^{8})=6/8^{1}, '6\&/-$^{9}!Q^{V-}'-!h>'(64(-C!M/8/=('5\&!14(^{4};P!K';^{8})=6/8^{1}, '6\&/-$^{9}!Q^{V-}'-!h>'(64(-C!M/8/=('5\&!14(^{4};P!K';^{8})=6/8^{1}, '6\&/-$^{9}!Q^{V-}'-!h>'(64(-C!M/8/=('5\&!14(^{4};P!K';^{8})=6/8^{1}, '6\&/-$^{9}!Q^{V-}'-!h>'(64(^{4};V'-1))))]$

e]484;\$;!"\S0f!\$8!CA0"-0U":0&%E0"4*5/*36/"B%EE0)'6&+"H:8=-4W//)!,-\$..;^!2(486\$%4 A'--0! "DRDJ!R $\R+!$ e: Y/ >; f! 8!CA0" - 0U": 0 6% E0" 4*5/*36/"B% EE0) '6 4" 8=-4W/ /)!, - 3..; 2(486% 4 A' - 0!" DRDJ! aa)LF+! e[; '\$'&!aF_LLs!\$8!86&\$0&Z2"4*5/0"B%EE0)'6&+"H"^{#\$}!4)+P!1'8!Z('8%\$;%/^!A'(54(0!"DRRJ!SE"_DL+! e, (4'6\$/8!\$8!6&4!A4V(4W!Q\$V-40f"DA+2*32="DA*/%2%\$A+="6)?"CA0%/%<+"H4)+!#+!*+!#>;;4--!46!'-+P! 9/6(4!3'74^!9/6(4!3'740!"DRRJ!"S"_"EF+! e]484;\$;!"_0^!24(7\$;;\$/8!6/!:Y5-/\$61f!CA0"4*5/0"C%?6+!\L!H"DRRJ!"00_0E+!! eM/6![8?\$64;!Q''-!6/!'!Z4';6^!TV;4(?'6\$/8;!/8!'!3\$..\$%>-6!B='(\$6\$%!G4Y6!H,GN!S+"!I!dGB!"+S+"Jf! \$8!*O*%&*P**)<"*U**'*A*" - %"96'6!"CA%E62". 6E5?*)"*Q*02'23A&*, "H3'?\$)!]/->7 V0!4)+P!K\$8/8'!<'X4^! :\$;48V('>8;0!"DRLJ+! eG&4!A4V(4W!1%(\$56>(4;!'8))6&4!G&4/-/=C!/.!, (4'6\$/80f!CA0%/%<*36/">'(?*02"aL!H"DRSJ!SFE_\0+! e, /;7/=/8\$4;!\$8!6&4!B='(\$6\$%!G4Y6;!'8)!\$8!6&4!Q\$V-40f!#&*0)'6/*6!SO!H"DRaJ!"RO_\F"+!

eG&4!G475-4!'8)!6&4!A/-C!M/>86'\$80f!\$8!*CA0"C0E\$/0"*)"N)'*a(*'+"*H4)+!G(>7'8!M');48P!2(/?/^!)-0.2(")Dj**E(DQNSE#D17E3)#588/D5224HWBCISDIEDIRD 2919 2473586/92E21HT6**00**E**015"*3*7.9995-74291m/TT21Tf[(C)-0.2("

$$\begin{split} \mathbf{M} & \text{M} & \text{M}$$

 $\begin{aligned} & CA0"B6E5\&^{?}<0"B\%E\$6)*\%)"'\%"CA0"805\&0U"4*5/0l\#/?"C02'6E0)'+!:)\$64)!VC!1645\&48!Q+!, \&'57'8!\\ & '8)!M'(?\$8!N+!1W4484C+!, '7V(\$)=4!, /75'8\$/8;!6/!#4-\$=\$/8+!94W!`/(X^!, '7V(\$)=4!B8\$?4(;\$6C!2(4;;0!\F''L+!CA0\%\%<*36/">'(?*02+!./(6\&\%/7\$8=+')))) \end{aligned}$

 $1645\&48! K4; 64(\&/-7!'8)! M'(6\$8! K4; 64(\&/-7"@06?*) <">63\&0?">3\&*\$'(\&0!"d\%*302", \&\%E"'A0"8*2'\%\&+"" \%, "4*5/*36/"1)'0\&\$\&0'6'*\%); "!]('8)! #'5\$); 0! M[^!:4()7'8; 0! \F''L+!CA0\%/\% <*36/">'(?*02"ER! H \F''EJ! \\L_\E+!$

!

 $2464(!Q/>6484..0!40<*))*)<2!"N)3*0)""BA\&*2'*6)"@06?*)<2"\%,"'A0"4*5/*36/"B\&06'*\%)"-6\&\&6'*M02="CA0\%/%<*36/">'(?*02"EF!H\FFDJ!E\D+!$

!

$$\begin{split} \mathsf{N8}(4';&!1\%\&w-40!\,9\,0\&''D\&\%\%<&!?0\&''A05\&m^{*}23A0\,)"4^{*}50/!"?0\&''/*'0\&6\&G''(\,\,)?"'A0\%/\%<&!0<023A^{*}3A''*3A0'' \\ 9^{*}2P(\&2''?0\&\,j\&<023A^{*}3A'0''h^{\circ}0\,)02^{*}2''FGFFJ0!1\,)'0\&\&&0'6''*\%\,)"L\,\,\mathbb{H}\ \mathsf{FFRJ!O}\ \mathsf{F}_{\mathsf{L}}\ +''' \end{split}$$

d '6&4(84!34--0!CA0"4%P", "D&%MO&52"*) ">%3*6/"6) ?"CA0%/%<*36/"B%) '0T'="7T\$%2*'%&+"C*E02!" "R! H\FFEJ!OOR+!

!

3'?\$)!G;>7>('0!*B*&06'*%)"6)?"902'&(3'*%)!"N"@06\$\$&6*26/"%,"'A0"*B*A6%2P6E\$,"*)"'A0"#/?"

" A '8;!Q'(;6')0!CA0"465+/%)*6)"B6\$'*M*'+"%,"'A0"4%%P"%,"126*6A!"_7T*/*3]":(?6A"6)?"'A0" D&%M0)6)30"%,"126*6A"oLGKK="4*5/*36!RF!H"DDDJ!"O"_0a+! ! T6&7 '(!d44-0!^%?2="^%??02202="6)?"1E6<02"%,"^%?"*)"N)3*0)'"12&60/="CA0%/%<*36/">'(?*02!LF! H"DDDJ!EaR_aD+!

"a

!

!

#4=\$8'!**M**+!1%&W'(6@0!

*/;45&!, '75V4--0!*CA0"R*+'*A**3*"1E6*<00!*4(//0'*)"%*, "'*A0"NE0&**36)*">3A%%*/2"%, "#&*0)'6/"@0206&3A="\\0! H"DESJ!ES_EL+!

 $\begin{array}{l} K & -6\&4(!p\$7~7~4(-\$)! \land \&(\) ?\&*22"?0\&"N/''02'6E0) '/*3A0) "CA0\%/\% < *0="B6'A\%/*3"4*5/*36/" c \ (6\&'0\&/+!OL! B"DEaJ!"SF_S"+! \end{array} \right. \\ \end{array}$

:+!<4?\$840!*CA0"N&6E6*3"d0&2*%)"%*, "@('A0!*B6'A%/*3"4*5/*36/"c(6&'0&*/+!OS!H"DEaJ!LFS_FL+! !

K'-)47'(!*'8@480!*R%(&)*)<"B&+"6)?"O%0"#&63/0"*HQ4\$&4.6!@>(!p4\$6;%&(\$.6!.w(!)\$4!'-664;6'7486-\$%&4!K\$;;48;%&'.6!"\SP!Q4(-\$80!"DE\J0!*4*5/*36"*H"DEOJ!DR "FF+!

!

] 4(&'()!?/8!#')0!*O**2?%*E*"*)"12&60/="CA0%/%<*36/">'(?*02"Oa!H"DEOJ!EFL_FE+"

#\$%&'()!K&\$6'X4(0!*N*"*B*%)*3%*&?6)*30*"%,"'*A0*"*j* <6&*'*3".*'0&6'(&00!*B6'A%/*3*"*4*5/*36/*"*c* (6&'0&/+"OS! H"DEOJ!a\"+!

*/;45&!N+!Z\$6@7C4(0!CA0"^0)02*2"N\$%3&+\$A%)"%,"c(E&6)"B6M0"F!"N"B%EE0)'6&+="B6'A%/*3" 4*5/*36/"c(6&'0&/+"Oa!H"DE\J!OSDLF!

N+!9+!]\$-X4;0!*CA0"1E\$63'"%,"'A0"906?">06">3&%//2="B6'A%/*3"4*5/*36/"c(6&'0&/+"\E!*H"DLSJ!OSD_LF+! !

] 4/(=!*4(47\$';0!90&".0A&0&"?0&"^0&03A'*<P0*'="B6'A%/*3"4*5/*36/" c (6&'0&/+"\L!H"DLaJ!" aa+!

, +! d+! K \$--\$' 7 ;0! CA0" - 0U"C02'6E0) '!"N" - 0U"C&6) 2/6'*%)
0! B6'A%/*3" 4*5/*36/" c (6&'0&/+"\L!H" DLaJ! \DO_Da+!

1 + !14)-0! $c (E \& 6) ! "7*) 0" R %) 3A2 < 0E0*) ?0"* E"N/'0) "4() ?= "B6'A % /*3" 4*5 /*36 / "c (6 \& '0 \& /+ " \L!H" DLaJ! aFS_FL+!$

! ! ! ! !

*./,6A1.'@567630/01237'/3,'@/501.1:/01237'I:/501/;J'

e]484;\$;!_0^!3/!6&4!M/?\$8=!2'(6;!Z\$6!G/=46&4(1f!#4;4'(%&!#45/(6!'6!6&4!'88>'-!7446\$8=!/.!G&4! ,'6&/-\$%!Q\$V-\$%'-!N;;/\$%'6\$/80!#4=\$;!B8\$?4(;\$6C0!348?4(0!, T0!N>=>;6!\D0!\F''R+!

eQ//X!/.!2(/?4(V;0f!Z'%)-6C!N%')47%!, /8.4(48%40!K4;6/8!*4;>%!1%&//-!/.!G&4/-/=C0!15(\$8=!"DDa+!!")

!

 $eG\&4!G4Y6>'-!G(')\$

$$\begin{split} & eG\&4!Q//X!/.!2(/?4(V;!'8)!T>(!14'(\%\&!./(!K\$;)/7)f!2i(4!M'(g>4664!<4\%6>(4!\$8!G\&4/-/=C0!M'(g>4664!B8\$?4(;\%6C0!M\$-W'>X440!M'(\%\&!''DDO+!))) \end{split}$$

!

, '7V(\$)=40!M'(%&!\FFL+! eG&4!G&(44!:Y/)>;!M/7486;!/.!6&4!Q\$V-4fP!eG&4!2';;\$/8!'%%/()\$8=!6/!M4-!]\$V;/8!/(!6&4! 2'::\$/8!'%%/()\$8=!6/!16+!<>X40f!N88>'-!, -4(=C!:)>%'6\$/8!3'C:!\$8!2/(6-'8)0!M'\$84!3\$/%4:40! Q\$))4./()!'8)!T(/8/0!M'(%&!\FFL+! 2(4'%&4)!: \$=&6!3 'C!(46(4'6!=\$?48!6/!6&4!*4;>\$6;!'6!Q/;6/8!, /--4=40!*>84!"DDS+! eG&4!B;4!/.!1%(\$56>(4!\$8!6&4!, '6&/-\$%!, '64%&\$; 70f!16+!2'>-0;!2'(\$;&!<4%6>(4!14(\$4;0!Z'--!"DDa! $e_{1/\%}' - !*>;6\%4!$ 8!6&4! Q $V-40f!./(!6\&4!5';6/('-!5(/=('70!D\&063A^*)<"'A0":(2'"O\%\&?0!)$ (4%64)!VC!K'-64(!Q>(=&'())60!1+*+0!16+!*/&80;!147\$8'(C0!M'C!"DDa+!), />(;4!/8!]484;\$;!'6!A'(?'()_#')%-\$..4!16>)486!, 4864(0!T%6/V4(!'8)!9/?47V4(0!"DDF+! eG&4!A\$;6/(\$%'-!Q//X;!/.!6&4!Q\$V-40f!./(!Q>..'-/!Q\$V-\$%'-![8;6\$6>640!K\$--\$'7;?\$--40!94W!`/(X0! $Z4V(>'(C!F \setminus 0!"DRE+!K44X48)!/.!-4\%>(4;!(4\%/()4)!/8!\%';;4664!'8)!?)4/+!!$ eG&4!2';;\$/8!/.!*4;>;0f!<48648!<4%6>(4!14(\$4;0!G&4!*4;>\$6!, 4864(0!1>--\$?'8!1g>'(40!, &'(-4;6/W80! **MN**0!**M**'(%&!"F0!"DRE+! 16>)C!3 'C!./(!6&4!K/(%4;64(!3\$/%4;4!#4-\$=\$/>;!:)>% '6\$/8!16'..0!*'8>'(C!"DRE! 2'84-\$;6!/8!eG&4!Z>6>(4!3\$(4%6\$/8;!/.!Q\$V-\$%'-!16>)\$4;0f!94W!:8=-'8)!1/%\$46C!/.!Q\$V-\$%'-! <\$64('6>(4!'8)!, '6&/-\$%!Q\$V-\$%'-!N;;/%\$'6\$/80!N5(\$-!S0!"DEL+!

K (\$:6\$'8! d (\$:-4) N8'6/-5/; (1) K4; 6/8!*4; > (\$:6\$'8! $GK^{-1}/-1/2$) K4; 6/8!*4; > (\$:6\$'8!