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$Q *<1+, "O * 15, +(\%' \&'" \; ; \; (\&\; 1\; (\&\&+,\&"+\%7" H55\; . \; +,\&"*9" \; ; \; (\&\; 1\; (\&\&+,\&") \; )))$	\F
Q*<1+,"0*15,+(%'&"J(@%.7"P2"O(B(,"C(@?'&"D">(',."\$E"O**<7(%+'*<	

# :9-&'&+&'7946!; 46+\$-/!87<<+9'&=!''>?\$%&4&'79-/!49@!A7&'%\$!7#!A79B C'-%D'<'94&'79!

 $> ?(\&"G*,(62"5<*?(P('\&"+,,"9*<1 \&"*9"7(\&6<(1 (\%+'(*\%"*<"?+<+&&1 .\%""*\%"'? ."P+&(\&"*9"&.4"](\%6,)7(\%@"\&.4" \&'.<.*'25 .&'' &.4" 6?+<+6' .<(&'(6\&''5<.@%+\%62/"5 .<6 .(B .7"5<.@%+%62/"6?(,7P(<'?/"P<.+&'9 ..7(\@/"+\%7" <..,+'.7" 1 .7(6+,"6*\%7('(*%&'/"<.5<*7)6'(B ."?.+,'?"7 .6(&(*%:1+Z(\%@"](\%6,)7(\@"'?.")&."*9"+\%2"$ 

## 3E\$!8766\$,\$F-!8'('6!G',E&-!H!3'&6\$!: I!877D@'94&7D!!

 $>?.."0(B(,"C(@?'\&"D">(',.."\$E"0**<7(\%+'*<"6**<7(\%+'.\&"+\%7"1+\%+@.\&"'?.."0*,,..@.A\&"6*15,(+\%6.."I('?">(',..."\$E"+\%7"<..,+'.7"5<**B(\&(*%\&"*9"'?.."0,..<2"H6'"]+&"+1..%7.7"P2"-HdH^\b">?.."0(B(,"C(@?'\&"D">(',..."\BE"0**<7(\%+'*<"*B.<&..&"'?.."0*,,..@.A&"6..\%'<+,(e.7"<.&5*\%&."'*"+,,"<.5*<'&"*9"G<*?(P('.7"0*\%7)6'"'*".\%\&)<..."6*\%&(&'.\%'"(15,.1..\%'+'(*\%"*9"'?(\&"G*,(62"+\%7"6*15,(+\%6.."I('?"9.7.<+,"+\%7"&'+'...",+Ib">?..."0(B(,"C(@?'\&"D">(',..."\BE"0**<7(\%+'*<"+\%7"7..&(@\%+'.7"&'+9)"I(,,/"+1*\%@"*'?.<"'?(\@&\%")")$ 

- g 0\*11)%(6+'." I ('?" 1.1P.<&"\*9"'?." 0\*,,.@."6\*11)%('2"<.@+<7(%@"+55,(6+P,.",+I"+%7" 5\*,(62"+%7"5<\*B(7."(%9\*<1+'(\*%"+P\*)'"<.5\*<'(%@"+%7"&)55\*<'"\*5'(\*%&b"
- g C.B(. I " +55,(6+P,." 0\*,,.@." 5\*,(6(.&" '\*" .%&)<." (%&'(')'(\*%+," 6\* 15,(+%6." I ('?" +55,(6+P,." 9.7.<+,"+%7"&'+'.",+ I b"
- g T \*%('\*<" '?." 0\*,,..@.A&" +7 1 (%(&'<+'(\*%" \*9" ('&" \* I %" +55,(6+P,.." 5\*,(6(.&/" (%6,)7(%@" <.6\*<7" Z...5(%@/"+7?..<..%6."'\*"'(1.9<+1.&/"+%7"\*'?..<"5<\*6.7)<+,"<.L)(<.1.%'&b"
- $g = 0*\%7)6'"' < +(\%(\%@"<.@+<7(\%@">(',."\$E/"<.,+'.7"5<*B(\&(*%\&"*9"'?."0,.<2"H6'"]+&"+1.\%7.7"P2" \\ H d H^/"+\%7"G<*?(P('.7"0*\%7)6'"+&"7.9(\%.7"(\%"'?(\&"G*,(62b"))) \\$

> H, .4+%7<+"Q),6?.<" H\_0"C\*\*1"!!!" ]\#\^"#FY:!\\R" +9),6?.<h \*42b.7)"

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 $>?."0*, ..@."(\&"6*1\ 1\ (''.7"'*"'?."5<.B.\%'(*\%"*9"G<*?(P('.7"0*\%7)6'"'?<*)@?"1+\%7+'.7/"<.@),+</"+\%7"*\\ *\%@*(\%@".7)6+'(*\%"+\%7"+I+<.\%.\&\&"5<*@<+1\ \&b" $\%6*1 (\%@"\&')7.\%'\&"+\%7"\%.I".15,*2..\&"<.6.(B."5<(1+<2"5<.B.\%'(*\%"+\%7"+I+<.\%.\&\&"5<*@<+1 1 (\%@"+&"5+<'"*9"'?.(<"*<(.\%'+'(*\%"+\%7"<.')<\%(\%@"&')7.\%'&"+\%7"6)<<..\%'".15,*2..&"<.6.(B."*\%@*(\%@"'<+(\%(\%@"+\%7"<..+'.7".7)6+'(*\%b"")$ 

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## L%7?\$!7#!J76'%=!

 $> ?(\&"G*,(62"+55),(.\&"'*"+,,"<.5*<'\&"*9"G<*?(P('.7"0*\%7)6'"<.6.(B.7"*%"*<"+9'.<"'?.".99.6'(B."7+'."*9"'?(\&"G*,(62)"\$9"'?."+,,...@.7"G<*?(P('.7"0*\%7)6'"*66)<<.7"P.9*<."'?.".99.6'(B."7+'."*9"'?(\&"G*,(62)"+55,(6+P,..."7.9(%('(*%&"*9"1(&6*\%7)6'"(%"0*,...@."5*,(6(.&"(%".4(&'.%6."+'"'?."'(1."*9"'?."6*\%7)6'"I(,,"P.")&.7"'*"'?.".4'.%'"'?+'"'?.2"6*%9,(6'"I('?"7.9(%('(*%&"*9"'.<1&"(%"'?(&"G*,(62)">?."_<(.B+\%6."G<*6.&&.&")\%7.<"'?(&"G*,(62)"I(,,"P.")&.7"'*"(&B.&'(@+'."+\%7"<.&*,B."+,,"<.5*<'&"1+7."*<"'?+'"+<."5.%7(%@"*%"*<"+9'.<"'?."'?.".99.6'(B."7+'."*9"'?(&"G*,(62)"<.@+<7...&&"*9"I?.%"'?."'?."'?."'(%6(7.%')&^**66)<<.7b"$ 

>?(&"G\*,(62")&.&"'?."'.<1&"6\*15,+(%+%'/"<.&5\*%7.%'/"'?(<7"5+<'2/"+%7" I ('%.&&"+&"9\*,,\* I &\""

- g <u>! "#\$%&'(&()</u>\" H%" (%7(B(7)+," I ?\*" (&"<.5\*<'.7" '\*" ?+B." .45.<(.%6.7" 6\*%7)6'" '?+'" 6\*),7" 6\*%&'(')'. "G<\*?(P('.7"0\*%7)6'/".B.%"(9"'?.2"7\*"%\*'"5+<'(6(5+'."(%"+%2"<.,+'.7"5<\*6.&&b"
- $g = \frac{*+,\$''(-+())}{6*\%'(')'} + \frac{1}{8}(\%7(B(7)+,"I?*"?+\&"P...\%"<.5*<'.7"'*"?+B.".\%@+@.7"(\%"6*\%7)6"''?+'"6*),7"}{6*\%'(')'."G<*?(P('.7"0*\%7)6'b"}$
- g . &/)01. &/)'+,\""H"6\* 15,+(\%+\%'"\*<"<.&5\*\%7.\%'"5+<'(6(5+'(\%@"(\%"+"<.&\*,)'(\*\%"5<\*6.&&\)"
- $g \frac{2 \ ')(+,\cdot)}{1} \ H\%'' (\%7(B(7)+,'' \ I ?*'' \ 1+2'' ?+B.'' (\%9*<1+'(*\%''<.,\cdot B+\%''' '*'' +'' <.5*<''' *9'' G<*?(P('.7'' 0*\%7)6'b''H'' I ('%.&&" 1+2"P."+"&')7.\%'/"+\%'' . 15,*2../"*<"+"'?(<7"5+<'2b'' )$

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g <u>3994!&#\$5,6!"(-57)</u>\"0\*%7)6'"'?+'"\*66)<&"\*99:6+15)&"+%7"?+&"6\*%'(%)(%@"+7B.<&.".99.6'&" \*%/"\*<"6<.+'.&"+"?\*&'(,.".%B(<\*%1.%'"9\*</"+%2"1.1P.<"\*9"'?."V66(7.%'+,"6\*11)%('2"\*%:6+15)&"\*<"(%"+%2"0\*,,..@.".15,\*21.%'"\*<".7)6+'(\*%"5<\*@<+1"\*<"+6'(B('2b"

V66(7.%'+,"0\*,,.@."I(,,"'+Z."<.+&\*%+P,."&'.5&"'\*"<.&5\*%7"'\*".+6?"(%6(7.%'"\*9"G<\*?(P('.7"0\*%7)6'"(%B\*,B(%@"(%7(B(7)+,&"&)Pc.6'"'\*"'?."0\*,.@.A&"5\*,(6(.&"'?+'"\*66)<"(%"6\*%.6'(\*%"I('?"+%2")a))))))))))

 $G+<'(.\&"\ 1+2"<.L).\&""<.+\&*\%+P,."+66*\ 1\ 1*7+'(*\%\&"\ 9*<"7(\&+P(,('(.\&""""?."\ 0)(B(,"C(@?'\&"\ D">(',."\$E"\ 0**<7(\%+'*<""+'""+\%2"\ 5*(\%'""<.,+'(\%@""*""?."\ (1\ 5,.\ 1\ .\%'+'(*\%""*9""?(\&"\ G*,(62/"\ (\%6,)\ 7(\%@"\ 1+Z(\%@""+"\ 7(\&6,*\&)<."*<'.5*<'/"+\%7"(\%('(+'(\%@"+"@<(.B+\%6."5<*6.7)<.b"H66*\ 1\ 1*7+'(*%\&"\ I\ (,,"P."@<+\%'.7"(9""?\ .2"+<."<.+&*\%+P,."+\%7"7*"\%*'"9)\%7+1\.\%'+,,2"+,'.<"'?."5<*6.7)<.&".&'+P,(&?.7"P2"'?(\&"G*,(62)"G,.+&."\%*'"+9)(<1+'(B.,2"5<*B(7)."7(\&+P(,('2"+66*\ 1\ 1*7+'(*\%"'?+'"?+B."\%*'"P..\%'\&5.6(9(6+,,2"<.L).\&'.7"P2"'?."5+<'(.\&''.B..\%" I?.<."'?."5+<'(.\&''.B..\%" I?.<."'?."5+<'(.\&''.B..\%")")$ 

d ('?"'?."6\*%&.%'"\*9"'?."(15+6'.7"&')7.%'"\*<".15,\*2../"'?."0(B(,"C(@?'&"D">(',."\$E"0\*\*<7(%+'\*<"I(,,"I\*<Z"6\*,,+P\*<+'(B.,2"I('?";(&+P(,('2"J.<B(6.&"]&')7.%'&^"\*<"S)1+%"C.&\*)<6.&"'\*".%&)<."'?+'"+55<\*B.7"<.+&\*%+P.."+66\*11\*7+'(\*%&"]7(&+P(,('2:<..,+'.7^"+<."(15,.1.%'.7b"

## \*%4@\$<'%!PD\$\$@7<!49@!PD\$\$@7<!7#!L?\$\$%E!

#### JD7E'5'&\$@!879@+%&!49@!C\$#'9'&'79-!

 $\$\%"7.'.<1 \ (\%(\%@"I?.'?.<"<.5*<'.7"6*\%7) 6'"B(*,+'.\&"'?(\&"G*,(62/"'?."0*,...@."I(,,"6*\%\&(7.<"'?."'*'+,('2"*9"'?."9+6'\&"+\%7"6(<6) 1 \&'+\%6.\&"(\%B*,B.7"(\%"'?."'(\%6(7.\%'/"(\%6,)7(\%@"'?."\%+')<."*9"'?."<5*<'.7"6*\%7) 6'" +\%7"'?."'6*\%'.4'"(\%"I?(6?"('"*66)<<.7\%'\%7(B(7)+,&"*9"+\%2"&.4"*<"@.\%7.<"6+\%"6*1 1('"+\%2"*9"'?."'G<*?(P('.7"0*\%7)6'"7.9(\%.7"(\%"'?(\&"G*,(62/"+\%7"('"6+\%"*66)<"P.'I..\%"(\%7(B(7)+,&"*9"'?."\&+1."\&.4"*<"@.\%7.</"\*''*\%0.<\%"*<"\%1.\%''\%1.\%'\%1.\%'\%1.\%'\%1.\%''\%1.\%''\%1.\%''\%1.\%''\%1.\%\%1.\%'\%1.\%'\%1.\%'\%1.\%'\%1.\%'\%1.\%'\%1.\%'\%1.\%'\%1.\$ 

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- H%"3 1 5,\*2 . . "6\*%7('(\*%&"'? . "5<\*B(&(\*%"\*9"+%"+(7/"+"P . % . 9('/"\*<"+"& . <B(6 . "\*%"+%"(%7(B(7)+, A&" 5+<'(6(5+'(\*%"(%")) % I .,6\* 1 . "& .4)+, "6\*%7) 6'"](b . b/" : 5'-6 . / "6 : 5 ""& .4)+, "?+<+& 1 . %'^/" I ('?(%" '? . "X%(' . 7"J'+' . &i"\*<"
- H"J')7.%'/"315,\*2../"\*<">?(<7"G+<'2".%@+@.&"(%")%I.,6\*1."6\*%7)6'"\*%"'?."P+&(&"\*9"&.4"'?+'"I\*),7"P."7.'.<1(%.7"P2"+"<.+&\*%+P,."5.<&\*%"'\*"P."&\*"&.B.<./"5.<B+&(B./"+%7"\*Pc.6'(B.,2" \*99.%&(B."'?+'"('".99.6'(B.,2"7.%(.&"+%\*'?.<"5.<&\*%".L)+,"+66.&&"'\*"'?."0\*,,.@.A&"5<\*@<+1&" \*<"+6'(B('(.&/"(%"'?."X%('.7"J'+'.&i"\*<""
- H" J')7.%'/" 3 15,\*2../" \*<" >?(<7" G+<'2" .%@+@.&" (%" J.4)+," H&&+),'/" ; \* 1 .&'(6" (\*,.%6./" ; +'(%@" (\*,.%6./"\*<"J.4)+,"+%70\*<"\_ .%7.<:P+&.7"J'+,Z(%@"+&"7.9(%.7"P.,\* I i"+%7"
  - >?."+...@.7"6\*%7)6'"I+&"5.<5.'<+'.7"+@+(%&"+"5.<&\*%"(%"'?."X%('.7"J'+'.&i"+%7"
  - >?."6\*%7)6'"'\*\*Z"5,+6." I ('?(%"'?."0\*,..@.A&"5<\*@<+1&"+%7"+6'(B('(.&b"

 $0 * \% 7) 6'''' + Z. \&"5, +6." I ('?(\%''?."^*) 0 *, ... @. A\&"5 < *@ < +1 \&"+\%7" + 6'(B('(.\&a" I ?.\%'''? + '"6 *\%7) 6''"*66) < \& W"] !^" (\%"+", *6+'(*\%"+"+\%".B.\%'/"*<'(\%"+"6(<6) 1 \&'+\%6." I ?.<."'?."0 *, ... @.".4. < 6(\&.\&"\&) P&'+\%'(+, "6*\%' < *, "*B. <'' P*'?''?." < ... & 5*\%7. \%''+\%7"'?."6*\%'. 4'''(\%" I ?(6?"'?."6*\%7) 6''"*66) < & i"*<"] #^\"(\%"+\%2"P) (,7(\%@"* I \%.7"*<'' 6*\%'<*,... 7"P2"+\%') 7. \%'''*<@ + \%(e+'(*\%"<.6*\@%(e.7"P2"'?."0 *, ... @.\%"3B. \%'&"'?+'"*66) < "*99"6+15) &"*<'' (\%", *6+'(*\%" I ('?"\%"6*\%.6'(*\%"'*"'?."0 *, ... @."+<.") \%,(Z.,2"'*"P."6*\%.(7.<.7"+"0 *, ... @."5<*@<+1"*<"+6'(B('2\%"0 *\%7) 6''''?+'"7*. & "\%*'" 1 ... ''''?(\%"6*\%'(')''. & "G<*?(P('.7"0 *\%7) 6'''+\%"9) < '?.<"7.9(\%.7"P.,* I \%" G<*?(P('.7"0 *\%7) 6''') < ''' ? ... ''' 1... '''' ? ... ''' 1... '''' ? ... ''' 1... '''' ? ... ''' 1... '''' ? ... ''' 1... '''' ? ... ''' 1... '''' ? ... ''' 1... '''' ? ... ''' 1... '''' ? ... ''' 1... '''' ? ... ''' 1... '''' ? ... ''' ?$ 

 $*9"?."0*,..@."(\%"?."X\%('.7"J'+'.\&b"8*\%:>(',.."\$E"T(\&6*\%7)6'"I(,,"9*,,*I""?."7(\&6(5,(\%+<2"<.\&*,)'(*\%"5<*6.7)<.\&"*)',(\%.7"(\%"\frac{H55.\%7(4"[b"J)6?"6*\%7)6'"(\&"7.9(\%.7"9*<"5)<5*\&.\&"*9"'?(&"5*,(62"+\&\""$ 

# F', 7/'#'(&)'"(6"(6)I+6J&, ',6"96>+?6

## i)(7"G<\*"i)\*"S+<+&&1.%"

 $\begin{array}{l} j \ ) (7"\ 5 < *"\ L) *"\ ?+< + \& \& 1\ .\%"\ *66) < \&"\ I\ ?\ .\%"\ \&*1\ .*\%."\ 9 < *1"\ *<"\ (\%"\ '?\ ."\ I\ *< Z"\ *<"\ .7)\ 6 + '(*\%+,"\ \&\ .''(\%@/"\ (\%6,)\ 7(\%@"+\%"\ .1\ 5, *2\ .\ ./"+@\ .\%'/"*<"'?\ .''5 < &*\%"+) '?*< (e\ .7"P2"'?\ ."< .6(5(\ .\%"'"*"5 < *B(7\ ."+\%"+(7/"P\ .\%\ .9('/"\ *<"\ .45,(6('\ .2"\ *<"\ (1\ 5,(6('\ .2"\ +6')\ +,\ .2/"\ +''\ .1\ 5'\&"'*"*<"5) < 5*< '\&"'*"5 < *B(7\ ."+\%7"6*\%7('(*\%"+\%"+(7/"P\ .\%\ .9('/"*<"\&\ .45,(6('\ .2"*<"(1\ 5,(6('\ .2"*+6')\ +,\ .2/"\ +'''\ .5< *@<+1"*<"+6'(B('2"*9"'?\ ."0\ *,\ ..@\ ."*\"+\"(\%7(B(7)\ +,\ A\&"5+<'(6(5+'(*\%"(\%")\ )\%\ I\ .,6*1\ ."\&\ .4)\ +,"\\ 6*\%7)6'/"\ I\ ?(6?"(\%6,)7\ .\&"P)'"(\&"\%*'",(1('\ .7"'*/")\%\ I\ .,6*1\ ."\&\ .4)\ +,"+7B+\%6\ .\&''< .L)\ .\&'\&"9*<"\&\ .4)\ +,"\\ 9*B*<&/"+\%7"*'?\ .<"B\ .<P+,/"B(\&)+,/"*<"5?2&(6+,"6*\%7)6'"*9"+&\ .4)\ +,"\"+')< ./"(\%6,)7(\%@")\%7\ .<"+\%2"*9"'?\ ."\\ 9*,,*\ I\ (\%@"6*\%7('(*\%\&"")")$ 

g J)P1(&&(\*%"'\*"'?."6\*%7)6'"(&".45,(6(',2"\*<"(15,(6(',2"1+7."+"'.<1"\*<"+"6\*%7('(\*%"\*9"(662("2.5049-72.5049))))))

0+,(9\*<%(+"J.4:

#### >+?5&%L?\$%"')&)'"(6

>+Z(%@"&.4)+,"+7B+%'+@."\*9"+%\*'?.<"5.<&\*%"9\*<"'?."P.%.9('"\*9"+%2\*%."\*'?.<"'?+\"'?+\"'5.<&\*\"I('?\*)\"''\"+\"5.<&\*\%\&"+99(<1+\('B."6\*\&.\)\'/\('\)\%6,)7(\(\%\)\'P)\'"\\\*'",(1('.7"'\*/"+\\2"\*9"'?."9\*,,\*I(\\@"+6'\&\"'')\"

- g >?."5<\*&'(')'(%@"\*9"+%\*'?.<"5.<&\*%i"
- g > ? . " ' < +99(6Z(%@"\*9"+%\*'?.<"5.<&\*%/"7.9(%.7"+&"'?."(%7)6.1.%'"\*9"+"5.<&\*%"'\*"5.<9\*<1"+"6\*11.<6(+,"&.4"+6'/"\*<",+P\*<"\*<"&.<B(6.&/"'?<\*)@?"9\*<6./"9<+)7/"\*<"6\*.<6(\*%i"
- g >?."<.6\*<7(%@"\*9"(1+@.&/"(%6,)7(%@"B(7.\*"\*<"5?\*'\*@<+5?/"\*<"+)7(\*"\*9"+%\*'?.<"5.<&\*%A&" &.4)+,"+6'(B('2"\*<"(%'(1+'."5+<'&/"I('?\*)'"'?+'"5.<&\*%A&"+99(<1+'(B."6\*%&.%'i"
- g >?."B(. I (%@"\*9"+%\*'?.<"5.<&\*%A&"&.4)+,"+6'(B('2"\*<"(%'(1+'."5+<'&/"(%"+"5,+6." I ?.<."'?+'" \*'?.<"5.<&\*%" I \*),7" ?+B."+"<.+&\*%+P,.".45.6'+'(\*%" \*9" 5<(B+62/" I ('?\*)'" '?+'" 5.<&\*%A&" +99(<1+'(B."6\*%&.%'/"9\*<"'?."5)<5\*&."\*9"+<\*)&(%@"\*<"@<+'(92(%@"&.4)+,"7.&(<.b"

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 $3B.\%''(9"+\%".15,*2..."*9"'?."0*,,.@."].46,)7(\%@"\&')7.\%'".15,*2..\&^"7*.\&"\%*"?*,7"+"5*\&('(*\%"*9"+)'?*<('2"*B.<"+\&')7.\%''+\&2"&.4)+,"*<"<*1+\&'(6"<..,+'(*\&?(5"P.'I...\&"+\%".15,*2..."+\%7"+\%".7.\%""*9"'?."0*,,.@."6*),7"c.*5+<7(e."'?."(\%'.@<('2"*9"'?."+6+7.1(6"+\%7",(B(\@".\%B(\%"1.\%"*9"'?."V66(7.\%'+,"6*11)\%('2"+\%7"7+1+\@."'?."\&')7.\%'\b">?.<.9*<./"\&.4)+,"*<"<*1+\%'(6"<..,+'(*\&?(5\%"P.'I...\&"+\%"1.15,*2..."+\%7"7+1+\@."'?."\&')7.\%'\b">?.<.9*<./"\&.4)+,"*<"<*1+\%'(6"<..,+'(*\&?(5\%"P.'I...\&"+\%"+\%"'?."\&')7.\%'\b")>?.<.9*<./"\&.4)+,"*<"<*1+\%'(6"<..,+'(*\&?(5\%"P.'I...\&"+\%"+\%"'?."\&')7.\%'\b")>?.<.9*<./"\&.4)+,"*<"<*1+\%'(6"<..,+'(*\&?(5\%"P.'I...\&"+\%"+\%"'?."\&')7.\%'\b")>?.<.9*<./"\&.4)+,"*<"<*1+\%'(6"<...+'(*\&?(5\%"P.'I...\&"+\%"')"?.\&?(5\%"P.'I...\&"+\%"')*("\&.4)+,"*<"<*1+\%'(6"<...+'(*\&?(5\%"P.'I...\&"+\%"')"?.\B(\%")"?.\B(\%"")*("\%"+\%"+\%")"?.\B(\%"")*("\%"+\%"+\%")"?.\B(\%"")*("\%"+\%"+\%"")*("\%"+\%"+\%"")*("\%"+\%"+\%"")*("\%"+\%"")*("\%"+\%"")*("\%"+\%"")*("\%"+\%"")*("\%"+\%"")*("\%"+\%"")*("\%"+\%"")*("\%"+\%"")*("\%"+\%"")*("\%"+\%"")*("\%")*("\%"\%"+\%"")*("\%"")*("\%"\%"+\%"")*("\%"")*("\%"\%"+\%"")*("\%"")*("\%"\%"")*("\%"\%"")*("\%"\%"")*("\%"\%"")*("\%"\%"")*("\%"\%"")*("\%"\%"")*("\%"")*("\%"\%"")*("\%"")*("\%"")*("\%"")*("\%"\%"")*("\%"")*("\%"\%"")*("\%"$ 

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## QE. F6RQ'', 6E(8+%+,6."%'7+6F+\$&/)#+()S6

HB+(,+P,."'\*"<.&5\*%7"'\*"+%2"<.5\*<'&"\*9"6<(1."\*<"B(\*,.%6./"(%6,)7(%@"G<\*?(P('.7"0\*%7)6'b"Q\*<"31.<@.%6(.&"Y!!"

 $Q^*<"6^*\%6.<\%(\%@"\&(')+'(*\%\&/"6+,,"7(\&5+'6?"+'"]RMM^"HJU:nHG;"r]RMM^:\#MF:F\#M\sb"$ 

## $QE \cdot F6K''/)I+\&, 06F'A', '''(6)$

 $\begin{array}{l} 0<&(1\ (\%+,"(\%B.\&'(@+'(*\%\&"\ 1+2"P.")\&.9),"(\%''?."@+'?.<(\%@"*9"<..,B+\%'''.B(7.\%6./"5+<'(6),+<,2"9*<..\&\&(6").B(7.\%6.b">?..&'+\%7+<7\&"9*<"9(\%7(\%@"+"B(*,+'(*\%"*9"6<(1\ (\%+,",+\ I"+<."7(99.<..\%''9<*\ 1"'?."&'+\%7+<7\&"9*<"9(\%7(\%@"+"B(*,+'(*\%"*9"'?(\&"G*,(62b"0*\%7)6'"\ 1+2"6*%&'(')'."G<*?(P('.7"0*\%7)6'")\%7.<"'?(\&"G*,(62"0.8",62"0.8")) \\ & .B.\%''(9",+\ I".\%9*<6.1.\%''+@.\%6(.\&",+6Z"\&)99(6(.\%'''.B(7.\%6."*9"+"6<(1."+\%7"7.6,(\%."'*"5<*&.6)'.b"") \\ & .B.\%''(9",+\ I".\%9*<6.1.\%''+@.\%6(.\&",+6Z"&)99(6(.\%'''.B(7.\%6."*9"+"6<(1."+\%7"7.6,(\%."'*"5<*&.6)'.b"") \\ & .B.\%''(9",+\ I".\%9",+\ I".\%9$ 

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$$\begin{split} HB+(,+P,."+\&"+"9(&\&"*5'(*\%""*"<.5*<""+\%2"(\%6(7.\%""*9"6<(1."*<"B(*,.\%6./"+\&"I.,,"+\&"+\%2"(\%6(7.\%"*9"6<(1."*<"B(*,.\%6./"+\&"I.,,"+&"+\%2"(\%6(7.\%"*9"6<(1."*<"B(*,.\%6./"+\&"I.,,"+&"+\%2"(\%6(7.\%"*9"6+\%"0.**)). \\ (\%6(7.\%'\&"(\%B*,B(\%@"G<*?(P('.7"0*\%7)6'b"H,\&*"5<*B(7.\&"+\%".\&6*<'"\&.<B(6."*\%"6+15)\&"'*+\%2"&**+\%2" \\ \&')7.\%'"+\%7"6+\%''<.+6?"'?."; .+\%"*\%"; )'2"+'"+\%2"'(1.b"HB+(,+P,."#="?*)<\&"+"7+2/"M"7+2&"+" \\ I...Zb"0+15)\&"J+9.'2"I(,,"9*<I+<7"+\%2"<.5*<'&"(\%B*,B(\%@"5*'.\%'(+,"G<*?(P('.7"0*\%7)6'"'*"'')). \\ '?."0(B(,"C(@?'\&"+\%7">(',."$E"V9)66.b"). \\ \end{split}$$

- Q+6(,('(.&"T+%+@.1.%'"[)(,7(%@"
  - <u>I I I b\*42b.7)0\*99(6.&:&.⟨B(6.&06+15)&:&+9.'2"</u>

1\#\^"#FY:#FYY"19<\*%'"7.&Z^"

#### @5#&(6\*+,"5/7+,6)

$$\begin{split} HB+(,+P,." *\%" & I ... Z7+2\&" ~7)<(\%@"<.@)~,+<" *99(6." ?*)<\&" '*" <.6.(B." 6* 15,+(\%'\&"<.,+'.7" '*" .15,*2...&"*9"'?." 0*,,.@./"(%6,) 7(%@"9+6),'2b"S) 1+%"C.&*)<6.\&" I (,,"9*< I +<7"+%2"<.5*<'&" (%B*,B(%@"5*'.%'(+,"G<*?(P('.7"0*%7)6'"'*"'?."0(B(,"C(@?'&"+%7">(',."$E"V99(6.b" H 0"O(<&'"0,**<"$$

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$$\begin{split} HB+(,+P,."*\%"\ I\ .\ .Z7+2\&"7)<&(\%@"<.@)\ ,+<"*99(6."?*)<\&b"\ H66.\&\&"'*"\ ;\ .+\%"*\%"\ ;\ )'2"\#="?*)<\&"+"\\ 7+2"\ P2"\ 6+,,(\%@"\ 0+15)\&"\ J+9.'2"\ +'"\ ]\backslash\#/^"\ \#FY:\#FYYb"\ 0+\%"\ +\&\&(\&''\ I\ ('?"<.+\&*\%+P,."\\ +66*\ 1\ 1*7+'(*\%\&"9*<"?*)\&(\%@/"+6+7.\ 1\ (6"9,.4(P(,('2/"+\%7"\ 8*"0*\%'+6'"n.''.<\&b">?."\ ;\ .+\%"*9"\ J')7.\%'\&"\ I\ (,,"9*<I+<7"+%2"<.5*<'\&"(\%B*,B(%@"5*'.\%'(+,"G<*?(P('.7"\ 0*\%7)6'"'*"'?."\ 0(B(,"C(@?'\&"+\%7">(',."$E"V99(6.b") [..<Z)\&"S+,,"] ]) ]) ]$$

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XbJb"; .5+<'1.%'"\*9"37)6+'(\*%"V99(6."9\*<"0(B(,"C(@?'&/"J+%"Q<+%6(&6\*""

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 $\begin{tabular}{ll} [ \ \ )<.+ \ )"9*<"G<(B+'."G*\&'\&.6*\%7+<2"37)6+'(*\%"" \\ \#F\F"0+5('*,"V+Z\&";<(B./"J)('."=NN"" \\ J+6<+1.\%'*/"0H"YFR\\" \\ ]Y!K^"=\ !:KY\#="" \\ I I I bP55.b6+b@*B" \end{tabular}$ 

#### A#9%.&; %<3.#"1F&B31/"7%.,#"31/&

## ;'#+%'(+,,6&(-6Q''7&)'''(6''96<(7'-+()6)

 $0*15, +(\%+\%'\&''+\%7'')?(<7:5+<'2"\ I\ ('\%.\&\&.\&''+<.".\%6*)<+@.7"'*"<.5*<'"G<*?(P('.7"0*\%7)6''+\&''\&**\%''+\&''')<0*,...@.A\&''+P(,('2"'*"<.\&5*\%7"5<*15',2"+\%7".99.6'(B.,2b">>?." 0*,...@.A\&''+P(,('2"'*"<.\&5*\%7"5<*15',2"+\%7".99.6'(B.,2b">>?." 0*,...@.7*.\&''\%*''/?*\ I.B.</'',(1('''?."'(1."9<+1."9<+1."9*<"<.5*<'(\%@b"$9"'?."<.&5*\%7.\%'''(\&''\%"+"+"1.1P.<"*9"'?."V66(7.\%'+,"6*11)\%'('2'''?."0*,...@."I(,,\%'(,,\%.Z"'*"+Z.\%'.5\%"*".\%7"'?."?+<+&&1.\%'/"5<.B.\%''' ('\&"<.6)<<.\%6./"+\%7"+77<.&&" ('\&".99.6'\&/"P)'' ('\&"+P(,('2"'*"'+Z."7(\&6(5,(\%+<2"+6'(*\%"+@+(\%\&'''?."<*\%5*\%7.\%'''1+2/"\%9"6*)<\&./"P.",(1('.7b"H\%'(\%6(7.\%''7*.\&'\%*''"?+B."'*"66)<"\%"6+15)\&"'*"P."<.5*<'.7" '*"'?."0*,...@.b"''$ 

#### E#(+,)069''/6E%7''I''%6''/63)I+/6F/586U,+6''/63)I+/6!''(-57)6G'''%&)'''(,6)

## $\&) < B(B^* < +7B^*6 + '. h^*42b.7)$ ""

]\#\^"#FY:!\FY"

## 399'7+69"/6\*+%'8'"5,6T6>\$'/')5&%6Q'9+6

G<\*B(7.&"&5(<(')+,"@)(7+%6."+%7"(%"'?."6\*%'.4'"\*9"\*<7+(%.7"6,.<@2/"6\*%9(7.%'(+,"&)55\*<'b") S.<<(6Z"\$%'.<9+('?"0.%'.<"

I I I b\*42b.7)0&')7.%':,(9.0<.&\*)<6.&:&)55\*<'0\*<&,"

]\#\^"#FY:#K#!"

## L#\$%"0++6E,,',)&(7+6./"8/&#6

 $V66(7.\%'+,"0*,,.@. \&\&"315,*2..."H\&\&(\&'+\%6."G<*@<+1"]3HG^"(\&"7.\&(@\%.7"'*"?.,5"1+4(1(e.".15,*2...\&A"?.+,'?"+\%7".99.6'(B.\%.\&\&"+'"?*1."+\%7"+'"I*<Zb"H71(%(&'.<.7"P2">?.."J'+\%7+<7"'?.."3HG"*99.<&".15,*2...&"6*\%9(7.\%'(+,/"5.<&*\%+,"&)55*<'"9*<"+"I(7."<+\%@."*9"(&&).&/"9<*1" .B.<27+2"6*\%6.<\&"'*"&.<(*)&"5<*P,.1&b">?.."315,*2..."H&&(&'+\%6."G<*@<+1"(&"+B+(,+P,."'*" .15,*2...&"+\%7"'?.(<"9+1(,2"1.1P.<&"+'"\%*"6*&'b"$ 

I I I b?.+,'?+7B\*6+'.b6\* 1 0&'+%7+<7\"

 $]RRR^"#Y : KY=R"$ 

L##"(,6>)5-+()62+%(+,,6!+()+/V66

# I I I b<+(%%b\*<@"

]RNN^"KFK:=KM\"

# <u>K&)'"(&%F"#+,)'76G'"%+(7+6@")%'(+6</u>

$$\begin{split} HB+(,+P,." \#=&0M" \ '*" \&5.+Z" \ 6*\%9(7.\%'(+,,2" \ I \ ('?" +\%2*\%." \ .45.<&(.\%6(\%@" \ 7*1 \ .\&'(6" \ B(*,.\%6./" \& ..Z(\%@"<.\&^*)<6.\&"*<"(\%9*<1+'(*\%/"*<"L) .\&'(*\%(\%@")\%?.+,'?2"+\&5.6'&"*9"'?.(<"<.,+'(*%&?(5b")) ) ] ... \end{split}$$

#### QE6! "5()01U > !6P + - '7&% ! + () + /6

 $G<*B(7.\&" \ 1.7(6+," \ '<.+' \ 1.\%'" \ +\%7" \ 9*<.\&\&(6" \ .4+1\&" \ 5.<9*<1 \ .7" \ P2" \ J.4)+," \ H\&\&+),'" \ 8)<\&." \ 34+1(\%.<\&b"n*\&"H%@.,.\&"0*)%'2"7.\&(@%+'.7"JHC>"0.%'.&" \ HN!N"u*%+,"HB.b"" \ n*\&"H%@.,.\&/"0+,(9*<%(+"YNN\\"" \ ]\#\^"##K:\YK!"$ 

#### \*&\$+6;/+&)#+()6!+()+/6&)6>&()&6P"('7&4U!OE6P+-'7&%!+()+/6

G<\*B(7.&"9<..."'<.+'1.%'"9\*<"&.4)+,"+&&+),"'&)<B(B\*<&'"(%6,)7(%@"#=:"?\*)<".1.<@..%62"1.7(6+,"6+<.."+%7"9\*<...&(6".4+1&"5.<9\*<1.7"P2"J.4)+,"H&&+),'"8)<&."34+1(%.<&'"6\*)%&..(%@"+%7"5&26?\*'?.<+52/"+7B\*6+62/"+%7"+66\*15+%(1.%'"&.<B(6.&b"n\*&"H%@.,.&"0\*)%'2"7.&(@%+'.7"JHC>"0.%'.&b"!#FN"J(4'...%'?"J'<...'"

J+%'+"T\*%(6+/"O+,(9\*<%(+"YN=N=""]=#=^"#FY:M#NR"]#=:?\*)<"?\*',(%.^"

## K77"#"31, %A14B, 0 < +/&S&A>>4B, 0 < +/&; %/3+.6%/&

#### ./"D+7)6>EOL6R>+.25%6E, , &5%6O/++6L(A'/"(#+()S6)

H%" \*%:6+15)&" 5<.B.%'(\*%" +%7".7)6+'(\*%" &)55\*<'" 5<\*@<+1 " 7.7(6+'.7" '\*".%7(%@" &.4)+," B(\*,.%6."\*%"6+15)&"'?<\*)@?"<.&\*)<6.&/"+7B\*6+62/"+%7".7)6+'(\*%+,"5<\*@<+1 1 (%@b" J'.I+<':

#### Q'', 6E(8+%+, 6QZJ; 6!+()+/6

 $\begin{array}{l} G<^*B(7.\&^n\&)\,55^*<'''+\%7''+7B^*6+62''\&.<B(6.\&^n9^*<''n\_[>^n6^*1\ 1\ )\%('2''1\ .\ 1\ P.<\&b'''\\ !\,K\#F''\,8\,b''\,J\,6?<+7\ .<''[\ ,B7b'''\\ n^*\&''H\%@.\,,.\&'''0+,(9^*<\%(+"YNN\#R''),+,@P'6.\%'\,.<b*<@'''\\ ]\,V\#\^nYY\ :M=NN''' \end{array}$ 

## ! &\"9"/('&62"#+([,6Q&M6!+()+/6R!2Q!S6

 $>?.."0 \ dn 0"?+\&"+''*<\%.2\&"+B+(,+P,."'*"\&.4B."+\&"+"<.\&*)<6.0+7B(\&*<"'*"V66(7.\%'+,"0*,...@."6*15,+(\%+\%'\%'')(\%6,)7(\%@"P*'?"1.\%"+\%7"I*1.\%'"I?*"+<."9(,(\%@">(',."$E"\&.4)+,"+&\&+),'/"?+<&\&1.\%'\"*<"@.\%7.<"7(\&6<(1(\%+'(*\%"6*15,+(\%'\&"+\%7"@*(\%@"'?<*)@?"'?."V66(7.\%'+,"0*,...@."<.\&*,)'(*\%"5<*6.\&\%"tG,.+\&.\\%*'./"?*I.B.</"'?+'"'?."0*,...@.\"7*.\&\\%*''.\\%7*<\&.\\**<".\&"**<".6\&\%"+\%"[**-(\%"]*<"'.(\%"+\%7"?*+\%7"'?+'"'?."*<\@+\\%(e+'(*\%"1+Z.\&"+\%"(\%7.5.\%7.\\%""7.6(\&(*\%"+P*)'"'?.\"6+\&.\&"'?+'"("I(,,"+66.5'"+\%7"'?."'.<1\&"\%"?"?.\"6+\&.\&\\"+'(*\\%\)"\\KN"8*<'?"G+6(9(6"0*+\&'"S(@?I+2/"J)('."#NMN/"3,"J.@)\%7*/"0H"YN#=F"?"''5\&\\%1.5\&\%1.5\&\%1.6\&\\%"\)$ 

1\#\^"YF!:!N=!"

## Q(\$D('\$K!7#!G\$-76+&'79!Q?&'79-!

>?.."5<\*6.&&.&")%7.<""?(&"G\*,(62"+<."&.5+<+'."+%7"7(&'(%6'"9<\*1"0+,(9\*<%(+A&"6<(1(%+,"5<\*6.7)<.&b")))) <\*6...7(%@&")%7.<""?(&"G\*,(62"1+2"P."6+<<(.7"\*)'"5<(\*<"'\*/"&(1),'+%.\*)&.2"I('?/"\*<"9\*,,\*I(%@"6(B(,"\*<"6<(1(%+,"5<\*6...7(%@&"\*99:6+15)&b"8.('?.<"+"7.6(&(\*%"P2",+I".%9\*<6.1.%'"<.@+<7(%@"5<\*&.6)'(\*%"%\*<"'?."\*)'6\*1."\*9"+%2"6<(1(%+,"5<\*6...7(%@"I(,,"P."6\*&(7.<.7"7.'.<1(%+'(B."\*9"I?.'?.<"+"B(\*,+'(\*%"\*9"'?(&"G\*,(62"\*66)<<..7b""))'))

#### '1"#",\$&K//%//0%1#&

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- g '?."0\*,,.@."?+&"<.6.(B.7"+"<.5\*<'"'?+'"'?.2"1+2"?+B.".45.<(.%6.7"1(&6\*%7)6'i"
- g <. '+, (+'(\*%" 9\*<" 9(,(%@" +" 6\* 1 5, +(%'" \*<" 5+<'(6(5+'(%@" (%" +" 6\* 1 5, +(%'" 5<\*6. &&/" \*<" P\*'?/" (&" 5<\*?(P(' .7i"
- g '?."6\*)%&.,(%@"<.&\*)<6.&"+B+(,+P,."+'"'?."0\*,,.@."\*<"(%"'?."6\*11)%('2i"
- g '?+'/" I ?.%"+"6<(1." 1+2"?+B."\*66)<<.7/"'?.2"?+B."'?."<(@?'"'\*"<.5\*<'"'?." 1+''.<"'\*",+ I ".%9\*<6.1.%'i"
- g '?."<(@?'"'\*"&..Z"1.7(6+,"'<.+'1.%'i"
- g '?."0\*,,.@.A&"(%B.&'(@+'(\*%"5<\*6.7)<.&i"
- g 5\*'.%'(+,"(%'.<(1"1.+&)<.&"'?+'"+<."+B+(,+P,.i"
- g '?."(15\*<'+%6."\*9"5<.&.<B(%@".B(7.%6.i"
- g +"<.L).&'"9\*<"'?."6\*15,+(%+%'"'\*"1...'" I ('?"'?."0(B(,"C(@?'&"D">(',."\$E"V99(6."'\*"7(&6)&&" \*5'(\*%&"9\*<"<.&5\*%7(%@"'\*"'?."<.5\*<'i""
- g '?."<(@?'"'\*"P."+66\*15+%(.7"P2"+%"+7B(&\*<"\*9"6?\*(6.i"+%7"
- g '?." I+2"'?." 0\*,,.@."<.&5\*%7&"'\*"<.5\*<'&"\*9" 1 (&6\*%7)6'"+%7"+"7.&6<(5'(\*%"\*9"5\*'.%'(+,"7(&6(5,(%+<2"6\*%&.L).%6.&b"

H&"5+<'"\*9"'?."(%('(+,"+&&.&&1.%'/"'?."O(B(,"C(@?'&"D">(',."\$E"V99(6."I(,,))"))))))

- g +&&.&&"'?."%+')<."+%7"6(<6) 1 &'+%6.&"\*9"'?."<..5\*<'i""
- g +77<.&&"(1 1 .7(+'."5?2&(6+,"&+9.'2"+%7".1\*'(\*%+,"I.,,;P.(%@i""
- g 6\* 1 1)%(6+'."%.6.&&+<2"7.'+(,&"\*9"'?."<.5\*<'"'\*"0+15)&"J+9.'2"'\*".%'.<"'?."<.5\*<'"(%'\*"'?." 0\*,...@.A&"7+(,2"6<(1.",\*@"(9"<.L)(<.7"P2"'?."0,..<2"H6'i""
- g 5<\*B(7." '?." 6\*15,+(%+%'" I('?" +%" .45,+%+'(\*%" \*9" '?." 5<\*6.7)<+," \*5'(\*%&/" (%6,)7(%@" ; (&6(5,(%+<2"C.&\*,)'(\*%"+%7"H7+5'+P,."C.&\*,)'(\*%i""
- g 7(&6)&&" '?." 6\* 15,+(%+%'A&" 5<.9.<.%6." 9\*<" 1+%%.<" \*9" <.&\*,)'(\*%" +%7" +%2" P+<<(.<&" '\*" 5<\*6..7(%@i""
- g 7(&6)&&"'?."5<\*6.&&"9\*<"9(,(%@"+"9\*<1+,"6\*15,+(%'i"
- g +&&.&&"9\*<"+%2"5+''.<%"\*9"6\*%7)6'"P2"'?."<.&5\*%7.%'i"+%7"
- g 7.'.<1(%."+@."\*9"'?."6\*15,+(%+%'i"+%7"(9"'?."6\*15,+(%+%'"(&"+"1(%\*<"\*<"I+&"+"1(%\*<"+"'!?." '(1."\*9"'?."+,,.@.7" G<\*?(P('.7" 0\*%7)6'/" 1+Z."'?."+55<\*5<(+'."%\*'(9(6+'(\*%&" '\*" &'+'." +@.%6(.&b""

H'"'?."6\*%6,)&(\*%"\*9"'?."(%('(+,"+&&.&&1.%'/"'?."0\*,,.@."I(,,"5<\*6..7"I('?"\*%."\*9"'?."9\*,,\*I(%@"\*5'(\*%&"""))))))

g

- $g \quad H"6*15, +(\%+\%'"\%*'(9(.\&"'?."0)(B(,"C(@?'\&"D">(',."$E"0**<7(\%+'*<"(\%"I<('(\%@"'?+'"'?.2"I*),7",(Z."'*"I('?7<+I"'?."9*<1+,"6*15,+(<math>\%'"*<"+\%2"+,...@+'(\%\&"'?.<..(\%i")) ) ) ) )$
- g >?."<.&5\*%7.%'"(&"%\*",\*%@.<".%<\*,,.7"+'"\*<".15,\*2.7"P2"'?."0\*,,.@.i"\*<"
- g J5.6(9(6"6(<6) 1 & +%6. & 5<. B.%'"'?."0\*,,.@."9<\* 1 "@+'?.<(%@".B(7.%6."&)99(6(.%'"'\*"<.+6?"+"7.'.<1 (%+'(\*%"+&"'\*"'?."9\*<1+,"6\*15,+(%'"\*<"+,,.@+'(\*%&"'?.<.(%b"

9"+"9\*<1+,"6\*15,+(%'"(&"7(&1(&&.7"P2"'?."0\*,..@."

g >?."+@."+%7"<..,+'(\*%&?(5"\*9"'?."5+<'(.&/"(%6,)7(%@"I?.'?.<"'?."C.&5\*%7.%'"(&"+%".15,\*2.." \*9"'?."0\*,..@.i""""

g

<.5<.&.%'+'(B."'<+%&9.<"+,,"(%9\*<1+'(\*%"@+'?.<.7"+%7"<.,+'.7"9(%7(%@&"'\*"'?."0(B(,"C(@?'&"+%7">(',." \$E"V99(6."'\*"7.'.<1 (%."I?.'?.<"9)<'?.<"(%B.&'(@+'(\*%"(&"%.6.&&+<2"))%7.<"'?(&"G\*,(62b")

#### >)&(-&/-6"96LA'-+(7+6

#### K''6!''(9%'7)6''96<()+/+,)6''/6J'&.6

$$\begin{split} &H\%2"(\%7(B(7)+,"6+<<2(\%@"*)'''?.\&."5<*6.7)<.\&"1)\&'"P."9<..."9<*1"+\%2"+6')+,"6*\%9,(6'"*9"(\%'.<.\&'"*<"P(+\&"'?+'"I*),7"(15+6'"'?."?+\%7,(%@"*9"'?(\&"1+''.<b"J?*),7"'?."0(B(,"C(@?'\&"D"><',...$E"0**<7(\%+'*<"?+B."+"6*%9,(6'"*9"(%'.<.&'/"'?."0(B(,"C(@?'&"D"><',.."$E"0**<7(\%+'*<"(\&"'*"(11.7(+'.,2"\%*'(92"'?."G<.&(7.\%'"*9"'?."0*,...@./"I?*"I(,,"+55*(%'"+"0*,...@."+71(%(&'<+'*<"'*"&.<B."+&"H6'(%@"0(B(,"C(@?'\&"D"><',...$E"0**<7(\%+'*<"'*"&.<B."+&"H6'(%@"0(B(,"C(@?'\&"D"><',...$E"0**<7(\%+'*<"'*",...$B."+&"H6'(%@"0(B(,"C(@?'&"D"><',...$E"0**<7(\%+'*<"'*",...$B."+&"H6'(%@"0(B(,"C(@?'&"D"><',...$E"0**<7(\%+'*<"'5,...$B.")+&"H6'(%@"0(B(,"C(@?'&"D"><',...$E"0**<7(\%+'*<"'5,...$B.")+&"+6*%'+6'"'?."V99(6."*9"'?."G<.&(7.\%'")*"'?."G<.&(7.\%'")*"$$

#### P''-9'7&)'''(6''96./''7+,,+,6)

>?.."0\*,..@."I(,,"9\*,,\*I"'?."G<\*6.&&.&"7.&6<(P.7"?.<.(%"P+<<(%@".46.5'(\*%+,"6(<6)1&'+%6.&b"%"<+<."(%&'+%6.&"?\*I.B.</"'?."0\*,..@."1+2"P."<.L)(<.7"'\*"+7+5'"\*<"1\*7(92"'?."G<\*6.&&.&"](%6,)7(%@"'(1...(%.&"\*".%&)<."5<\*15'"+%7".L)('+P..."<.&\*.)'(\*"\*9"+"<.5\*<'"\*

 $>?(\&"5*,(62"7.\&(@\%+'.\&"<.+\&*\%+P,2"5<*15'"'(1.9<+1.\&"9*<"?."1+c*<"\&'+@.\&"*9"'?."(\%B.\&'(@+'(*\%"+\%7"<.\&*,)'(*\%"5<*6.\&\&"]'25(6+,,2"\&.'"9*<'?"(\%"P)\&(\%.\&\&"7+2&^/"P)'"'?."0*,,.@."1+2".4'.\%7"+%2"'(1.9<+1."(\%"'?(\&"5*,(62"9*<"@**7"6+)&.b"H\%".4'.\&(*\%"1+2"P."<.L)(<.7"9*<"@**7"6+)&."'*".\&\&)<./"9*<".4+15,./"''?."(\%'.@<('2"+\%7"'?*<*)@?\&.&\"*9"'?."(\%B.&'(@+'(*\%i"'*"6*15,2"I('?"+"<.L).&\""P2",+I".\%9*<6.1.\%'i"$ 

=!"

# \* ??\$9@'>!\*)!C'-%'?6'94D=!G\$-76+&'79!7#!4!SD'\$(49%\$!7#!3'&6\$!: I!L\$>+46! T4D4--<\$9&!!

H55.%7(4"H"\*)',(%.&"'?."'7(&6(5,(%+<2"<.&\*,)'(\*%"'5<\*6.7)<.&"'?."'0\*,,.@."'9\*,,\*I&"(%"<.&\*,B(%@"+,,.@+'(\*%&"'?+'"+"5.<&\*%"'?+&"P...%"&)Pc.6'.7"'\*">(',."\$E"J.4)+,"S+<+&&1.%''"(%"B(\*,+'(\*%"\*9"'?."'0\*,,.@.A&"J.4)+,"+%7"\$%'.<5.<&\*%+,"T(&6\*%7)6'"G\*,(62b""

## 23#"6%&3>&'1C%/#"F,#"31&

X5\*%""?."9(,(%@"\*9"+"Q\*<1+,"0\*15,+(%"

 $3+6?"5+<'2" \ I \ (,,"P."5<*B(7.7" \ I \ ('?"+\%"*55*<')\%('2""*"*99.<"<...B+\%" \ I \ ('\%.\&\&.\&"+\%7".B(7.\%6.b">?." \ \%B.\&'(@+'*<"I \ (,,"6*\%\&(7.<"+,,"<...B+\%"".B(7.\%6./"P*'?"(\%6),5+'*<2"+\%7".46),5+'*<2b'H,,"(\%9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*<1+'(*\%"9*))*]. \ (\%B.\&'(@+'*<" I \ (,,"\%*'"P."+,,* I \ .7" \ 7)<'(\%@"'?."?.+<'(\%@"'?."?.+<'(\%@"'(*\%9*<1+'(*\%"9*<1+'(*\%"1+\%*'"?."'?."'?."'?."'?."')*) \ (\%B.\&'(@+'*<"I \ (,,"\%*'"P."+,,* I \ .7" \ 7)<'(\%@"'?."?."** \ 1.867.\%1.86'(\%9*<1+'(*\%"1+\%"1+\%"1+\%")*'?."') \ (\%B.\&'(@+'*<"1+\%"1+\%"1+\%"1+\%")*'?."') \ (1."*9"'?."'(\%B.\&'(@+'(*\%)"\%9"\%). I".B(7.\%6."'\%"1*)*') \ (\%B.\%'(@+'*<"\%.\%7"'?."6+\%."P+6Z" \ '*"'?."\%B.\&'(@+'*<"9*<"9)<'?.<"9+6':@+'?.<'\%@''(\%"'?."\%*,."7(\%6<.'(*\%"*9"'?."S..+<'\%@"V99(6.<\"")") \ (\%B.\%'(\%"*9"'?."S..+<'\%@"V99(6.<\"")") \ (\%B.\%'(\%"*9"')") \ (\%B.\%'(\%"*9"')") \ (\%B.\%'(\%"*9"')") \ (\%B.\%'(\%"*9"')") \ (\%B.\%'(\%"*$ 

#### LA' - + (7 + 6 \* + A' + M6)

 $H'''?."6*\%6,)\&(*\%"*9"+,,"(\%'.<B(.I\&"+\%7"9+6'"@+'?.<(\%@/"+\%7"I?.\\"'?."'B(7.\%6."?+\&"P..\\"'@+'?.<.7/"'?."\\BA.\&'(@+'*<"I(,,,"5<*B(7.".+6?"5+<'2"'?."*55*<')\\('2"'*"<.B(.I"+,,"*9"'?.".B(7.\%6."?+\&"P..\\"'@+'?.<.7'"'?+'"'(\&"7(<.6',2"<.,+'.7"'*"'?."+,..@+'(*\%]\&\%')>?(\&"I(,,"(\%6,)7."P*'?"(\%6),5+'*<2"+\\7".46),5+'*<2".B(7.\%6.\\"-\\"'\B(7.\%6.\\"-\"'\B(7.\%6.\"'\B(7.\%6.\\"$ 

 $3+6?"5+<'2"\ 1+2"<.\&5*\%7"'*"'?."B(7.\%6."@+'?.<.7b"3+6?"5+<'2"\ I(,,,?+B."'.\%"]!N^"P)\&(\%.\&\&"7+2\&"(\%'') I?(6?"'*"<.\&5*\%7"'*"'?."B(7.\%6.b"3+6?"1+2"5<*B(7."+"<.\&5*\%\&."(\%''\ I<('(\%@"'*"'?."$\%B.\&'(@+'*<b">>?."$\%B.\&'(@+'*<b">>?."$%B.\&'(@+'*<b">>?."$%B.&'(@+'**\B).&''?."$%B.&'(@+'**\B).&''?."$%B.&'(@+'*\B).&''$??."$%B.&'(@+'*\B).&''$??."$%B.&'(@+''*\B).&''$??."$%B.&'(@+''*\B).&''$??."$%B.&'(@+''*\B).&''$??."$%B.&'(@+''*\B).&''$??."$%B.&'(@+''*\B).&''$??."$%B.&'(@+''*\B).&''$??."$%B.&'(@+''*\B).&''$??."$%B.&'(@+''*\B).&''$??."$%B.&'(@+''*\B).&''$??."$%B.&'(@+'*\B).&''$??."$%B.&'(@+'*\B).&''$??."$%B.&'(@+'*\B).&''$??."$%B.&'(@+'*\B).&''$??."$%B.&'(@+'*\B).&''$??."$%B.&'(@+'*\B).&''$??."$%B.&'(@+'*\B).&''$??."$%B.&'(@+'*\B).&''$??."$%B.&''$?."$%B.&''$??."$%B.&''$%B.&''$?."$%B.&''$%B.&''$%B.&''$?."$%B.&''$%B.&'$ 

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 $X5 * \%' < .6 . (5'"*9".+6?"5+<'2A\&'<.\&5*\%\&."'*"'?.".B(7.\%6."<.B(.I.7/"'?."$\%B.\&'(@+'*<"I(,,"7.'.<1 (\%."(9"+\%2"+77('(*\%+,"(\%B.\&'(@+'(*\%''(\&"\%..7.7)"$\%"+77('(*\%/".('?.<"5+<'2"1+2"*99.<"\%.I"I('%.\&\&.\&"*<"*'?.<"%.I".B(7.\%6.b">>?."$\B.\&'(@+'*<"I(,,"6*\&(7.<"'?."<.&5*\&.\&.\&"5<*B(7.7/"I(,,"5*\&."L).\&'(*\%\\"*"5+<'(.\&"**')"+\%7"'(\%'.\&("+*\%"+7"')"). \&(\%.\&("+*\%"+7"').\&("+*\%"+7"$ 

 $\begin{aligned} & H\%2".B(7.\%6.""*P."6*\%\&(7.<.7"P2"'?."S.+<(\%@"V99(6.<"1)\&"P."5<*B(7.7""*"'?."\%B.\&'(@+'*<"7)<(\%@"'?."9+6':@+'?.<(\%@"5*<'(*\%"*9"'?."(\%B.\&'(@+'(*\%b"\$\9*<1+'(*\%"'?+'"I+\%"\$'*'"5<*B(7.7"'*"'?."\$\%B.\&'(@+'*<"I(,,"\%*'"P."+,,*I.7"7)<(\%@"'?."?.+<(\%@"('&.,9/")\%,.&&"("6+\"P."6,.+<,2"7.1*\%&'<+'.7"'?+'"&\6?"(\%9*<1+'(*\%"I+\%"\$'"'<.+\&*\+P.2"Z\%*I\%"'*/"*<"+B+(,+P.."'*/"'?."5+<'(.\&"+'"'?."'(1."*9"'?.") \left) \end{aligned}$ 

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>?... 6\*15, +(%+%')'' < .&5\*%7.%''' +%7" '?... S. +<(%@" V99(6.<" +,," ?+B." '?... <(@?'" '\*" 6+,," I ('%.&&.&b" d ('%.&&.&" 1 )&'"?+B."(%9\*<1+'(\*%"<.,.B+%'"'\*"'?..."(%6(7.%')" 8\*"5+<'2" I (,,"P."5.<1 (''.7"'\*"6+,,"+&"+" I ('%.&&" +%2\*%." I ?\*" I +&" %\*'" (%'.&B(. I .7" P2" '?... \$%B.&'(@+'\*<" +&" 5+<'" \*9" '?... \$G<.,(1 (%+<2" %B.&'(@+'\*<" +&" 5+<'" \*9" '?... \*G<.,(1 (%+<2" %B.&'(@+'\*<" +&" 5+<'" \*9" '?... \*G<.,(1 (%+<2" %B.&''?+2" \*9" '?... \*G<.,(1 (%+<2" %B.&''?+2" \*9" '?... \*G<.,(1 (%+%2" %B.&''?+2" \*9" '?... \*G<.,(1 (%+%2" %B.)) (''' %''' '?... \*G<.,(1 (%+%2" %B.)) (''' %''' %''' '?... \*G<.,(1 (%+%2" %B.)) (''' %''

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 $\begin{array}{l} H55.\%7(4" \ ["*)',(\%.\&"'?." \ 7(\&6(5,(\%+<2"<.\&*,)'(*\%" \ 5<*6.7)<.\&"'?." \ 0*,,.@." \ 9*,,* \ I \&" (\%"<.\&*,B(\%@"+,..@+'(*\%\&"'?+'"+" \ 5.<&*\%" \ ?+\&" \ P...\%" \ \&) Pc.6'.7" \ '*" \ \underline{8*\%:>(',." \ $E" \ T(\&6*\%7)6'" \ P2" +" \ \&') 7.\%'' \ +7 \ 1 \ (\%(\&'<+'*</"\&'+99/"*<"9+6),'2" \ 1. \ 1 \ P.<"(\%" B(*,+'(*\%"*9"'?." \ 0*,,.@.A\&" \ J.4)+,"+\%7" \ \%'.<5.<&*\%+," \ T(\&6*\%7)6'"G*,(62b") \end{array}$ 

#### 23#"6%&3>&'1C%/#"F,#"31&



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- g >?."@\*+,"\*9"+7+5'+P,."<.&\*,)'(\*%"(&"'\*"+77<.&&"'?."G<\*?(P('.7"0\*%7)6'/"(7.%'(92"I+2&"'?+'" (%7(B(7)+,&"+%70\*<"'?."6\*11)%('2"?+B."P..%"?+<1.7/"+%7"7.B.,\*5"+"<.&\*,)'(\*%"+@<..1.%'" '\*"+77<.&&"'?."?+<1"+%7"5<.B.%'"9)')<."G<\*?(P('.7"0\*%7)6'i"

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g G+<'(6(5+%'&" (%" +7+5'+P,." <.&\*,)'(\*%" 5<\*6.&&.&" 1)&'" P." 5<\*'.6'.7" 9<\*1" &.6\*%7+<2" B(6'(1(e+'(\*%" +%7" \*'?.<" 5\*'.%'(+," ?+<1&/" (%6,)7(%@" '?." 5<.&&)<." '\*" 5<\*6..7" '?<\*)@?" +7+5'+P,."<.&\*,)'(\*%"(%&'.+7"\*9"9\*<1+,"<.&\*,)'(\*%b"

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>?."+7+5'+P,."<.&\*,)'(\*%"\*5'(\*%&"I(,,"P.".%+P,.7"P2"+"'<+(%.7"6\*\*<7(%+'\*<)">?."+7+5'+P,."<.&\*,)'(\*%"6\*\*<7(%+'\*<)">?."+7+5'+P,."<.&\*,)'(\*%"6\*\*<7(%+'\*<"1)&"P."(15+<'(+,"+%7"9<..."9<\*1"P(+&"\*<"6\*%9,(6'"\*9"(%'.<.&'b"\$9"'?."+7+5'+P,."<.&\*,)'(\*%"6\*\*<7(%+'\*<"?+&"6\*%6.<%&"'?+'"'?.2"6+%%\*'"9+6(,('+'."+"9+(<"\*<"))%P(+&.7"5<\*6.&&"'?."+7+5'+P,."<.&\*,)'(\*"6\*\*<7(%+'\*<"1)&''<.5\*<'"'?\*&."6\*%6.<%&"'\*"'?."0(B(,"C(@?'&"D"><',."\$E"0\*\*<7(%+'\*<"+%7"+"7(99.<.%'"+7+5'+P,."<.&\*,)'(\*"6\*\*<7(%+'\*<"I(,"P."+&&@%.7"b"J(1(,+<,2/"+"6\*15,+(%+%')"+"")))

#### K7,<#,:\$\%;\%0\%7\\%\&3.&\1\\%.C\%1\\\"31\&>3.&\\9\\&B3\\\\$\\F\\&B300+1\\\\@&

\$%" + 77('(\*%" '\*" (%' .<B .%'(\*%&" +55, (.7" '\*" '? ." < .&5\*%7 .%'/" +%7" < .@+<7, .&&"\*9" I?.'? .<" '? ." 0\*,, .@ ." 5) < &) .&" +"; (&6(5, (%+<2" C .&\*, )'(\*%" \*<" '+Z .&" \*'? .<" 9\*<1 +, "7(&6(5, (%+<2" +6'(\*%/" '? ." 0)B(," C(@?'&" D" >(', ."\$E"0\*\*<7(%+'\*<" 1+2"9(%7"('"? .,59),"\*<"% .6 .&&+<2"'\*" < .L) .&'"\*<" < .L) (< ."'? ." < .&5\*%7 .%'"\*<"\*'? .<&" '\*") %7 .<'+Z ." &5 .6(9(6"&' .5&" 7 .&(@% .7" '\*" .,(1 (%+' ."'? ." 1 (&6\*%7 )6'/" 5< .B .%'" ('&" < .6) << .%6 ./" +%70\*<" < .1 .72"('&" .99 .6'&b"34+15 , .&"(%6,)7 ./"P) '"+< ."%\*'",(1 (' .7"'\*/"'? ."9\*,,\* I (%@"" )\*") \$.

- g C.L).&'(%@"\*<"<.L)(<(%@"+"0\*,,.@.".%'('2"'\*"5<\*B(7."'<+(%(%@"9\*<"('&"&'+99"\*<"1.1 P.<&i")))))
- g C.L).&'(%@"\*<"<.L)(<(%@"'?."<.&5\*%7.%'"'\*"<.6.(B."'<+(%(%@i"
- g 0\*%'(%)(%@"+%2"\*9"'?."5<\*'.6'(B."+%7"&)55\*<'(B."1.+&)<.&"5<.B(\*)&.2".&'+P.(&?.7i")
- g \$7.%'(92(%@"'?."%..7"9\*<"+%2"+77('(\*%+,"\*<"\*%@\*(%@"1.+&)<.&/"&)55\*<'&"+%7"<.1.7(.&i"\*<"
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- $\begin{array}{l} '\cdot) \cdot "'? \cdot "9(\%7(\%@"+\&"'*" \ I \ ? \cdot '? \cdot <"'? \cdot "+, , @ \cdot .7"6*\%7) 6'"B(*,+' \cdot .7"'? \cdot " \ J \cdot .4) +, "+\%7"\$\%' \cdot .5 \cdot .& *\% +, " \\ T(\&6*\%7) 6'"G*, (62b">? \cdot "5+<'( \cdot \&" \ I (,, "?+B \cdot "'? \cdot "*55*<') \%('2"'*"\&) P 1 ('"+\%"$ 1 5+6'"J'+' \cdot 1 \cdot .\%'"'*" \\ '? \cdot "S \cdot +<(\%@" \ 0*1 \ 1 ('' \cdot . '' +\%7"'? \cdot "S \cdot .+<(\%@" \ 0*1 \ 1 ('' \cdot . " \ I (,, "< \cdot .B( \cdot I "'? \cdot "' 5+<'( \cdot \&A" \$ 1 5+6'" J'+' \cdot 1 \cdot .\%'\&'"+\%7"+, "*'? \cdot .<" \ 1 +' \cdot .<(+,\&"(\%"'? \cdot "' 6+& \cdot "]< \cdot .7+6' \cdot .7"+\&"\% \cdot .6 \cdot .\& +<2"+\%7"+55<*5<(+' \cdot .^/" (\%6,) 7(\%@"'? \cdot "S \cdot .+<(\%@"*<"\$\%B \cdot \&'(@+'(*\%"V)'6*1 \cdot "+\%7"+''+6? \cdot .7"+55 \cdot .\%7(6 \cdot \&''(\%"+\&\& \cdot \&\&(\%@"'? \cdot "' +55<*5<(+' \cdot ."&+\%6'(*\%"")") \\ \end{array}$
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