"#\$%&'(\$%)!*(+!,%-.%#/%!"""! 0123!4565!!! 7289:!4;<;=>!4?@A=!! !

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7B#\$(/\$!"#CB'D(\$EB#:!

<u>%&6.7(\$%&&.89:-;&.</u>

"#\$!%&'()&*!+\$!, -./0#! ! ! 120&32..0!142.52&6!7))8!9:;!! ! <=:>?!=@9A:;B>!

<u>-C-./0#D4.8\$054</u>!! ! ! !

!

<****90(\$=&6.7**

E))8!%FF)2&'80&'G!H#0I0##05! J)&5-*GK!9A@!F\$8\$! ,05&0G5-*GK!9A@!F\$8\$! L40G5-*GK!M!-\$8\$A:9!F\$8\$! L(4#G5-*GK!M!-\$8\$A:9!F\$8\$! !

<u>%&6.7(\$>:7;.60;&.7</u>

"#\$!+-4#0.!N-8F)6&-#)! =:>A=@9A:;9:!! G-8F)6&-#)D4.8\$054! 120&32..0!:;01! ! "#\$!L2PP!Q-R)PG! =:>A=@9A:>:=! \$-R)PGD4.8\$054!

@BB!LOT-G!N'\$U!N42'0!:BBB!

N(000.24T.92cm(!5037:>?-678Tm/TT41Tf[(@!F\$8)0.2(\$)]TJETQ198794;679.077/T) &BT18854\$

! " #\$!QOII!V3-&G! =:>A=@9A:>:B! <u>\$03-&GD4.8 \$054</u>! @BB!L0T-G!N'\$U!N42'0!:BB@! N(#030F)#' 9\$9\$0!%FF.*!G'-&5-#56U!64250.2&0GU!P0G'!F#-R'2R0GU!-&5!0G'-P.2G(05!F#)R0G606!#0.-'05!')!G-I0! -&5!0II0R'230! 8 052R-'2)&!460!

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- =\$:\$:!\50&'2I*!-&5!50I2&0!'(0!F#28-#*!F#)P.08!
- =\$:\$9!"0I2&0!6)-.G!-&5!-.'0#&-'230!6)-.G!

=\$:\$W!\8F.080&'!'(0!8)G'!32-P.0!G).4'2)&U!2&R.452&6!8)&2')#2&6!F-#-80'0#GU!')!80-G4#0!!!!!!! 2&'0&505!-&5!4&2&'0&505!R)&G0]40&R0G!

=\$9\$\!%5-F'!2&G'#4R'2)&!-&5!50.230#!')!'(0!2&'0&505!-4520&R0!

=\$9\$0!%GG0GG!-4520&R0!R) 8 F#0(0&G2)&!

=\$0\$9!%R'230.*!.2G'0&!-&5!-G/!-FF#)F#2-'0!)F0&!-&5!R.)G05A0&505!]40G'2)&G!')!6-'(0#!

G)4&5!-&5!G-I0!I)#!F-'20&'!4G0\$![-.R4.-'2)&!)I!F-'20&'AGFOR2I2R!&4'#2'2)&-.!-&5!5#46! 5)G2&6`50.230#*!#0]42#080&'G\$!

- <u>H(-#8-R04'2RG`12)F(-#8-R04'2RG!!</u>
 - H(*G2R)R(082R-.!F#)F0#'20G!)I!5#46GU!0TR2F20&'GU!-&5!5)G-60!I)#8G!28F)#'-&'!')!
 '(0!#-'2)&-.!50G26&!-&5!8-&4I-R'4#0!)I!G'0#2.0!-&5!&)&AG'0#2.0!F#)54R'G\$!
 %FF.2R-'2)&!)I!F(*G2R-.!R(082G'#*!-&5!5)G-60!I)#8!

[#2'2R-.!-&-.*G2G!-&5!-FF.2R-'2)&!)I!#0.03-&'!(0-.'(!GR20&ROG!.2'0#-'4#0!-&5!)'(0#!
 2&I)#8 -'2)&!#0G)4#ROG!')!-&GCO#!GFOR2I2R!F-'20&'AR-#0!-&5`)#!5#46A#0.-'05!
]40G'2)&G!-&5!F#)3250!03250&ROAP-G05!'(0#-F04'2R!#0R) 8 8 0&5-'2)&G!')!(0-.'(R-#0!
 F#)3250#G!)#U!C(0&!-FF#)F#2-'0U!'(0!F4P.2R\$!!

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J 052R-'2) &! " 2GF0&G2&6U! " 2G'#2P4'2) &!-&5!%582&2G'#-'2) &!!

• H#0F-#-'2)&U!52GF0&G2&6!-&5!-582&2G'#-'2)&!)I!F#0GR#2F'2)&GF72(#2)0.27504501(#-)0.0#=!)'(0#!

, 00/.*!.-P)#-')#*!0T0#R2G0G!-&5!-G26&80&'G!C2..!-RR)4&'!I)#!;Wd!)I!'(0!I2&-.!.-P!6#-50\$!! e 42aa0G!R)&R0#&2&6!-G26&05!F#0A.-P!0T0#R2G0G!-&5`)#!#0-52&6!8-'0#2-.G!8-*!P0!6230&!-'! -&*!'280!'(#)46()4'!'(0!G080G'0#!-&5!C2..!P0!R)4&'05!-G!F-#'!)I!'(0!C00/.*!.-P!6#-50\$!!\'! 2G!0T'#080.*!28F)#'-&'!')!F#0F-#0!I)#!C00/.*!.-P)#-')#*!0T0#R2G0GU!-G!'(0*!-RR)4&'!I)#!'(0! 8-\$)#2'*!)I!'(0!')'-.!.-P!6#-50\$!!!

! %!j!>M\$W!k!:BB!
! 1!j!;M\$W!k!>M\$@!
! [!j!OM\$W!k!;M\$@!
! '!j!WM\$W!k!OM\$@!
! _!j!1!WM\$@!
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! "#\$%&%'#(')\$*+,#-)\$%+*&%'#\$.*/,00*1\$*23.)\$#*3"-0, "\$*43%*.)(#\$").*)3*5,\$/*5, '*6'""\$%7* 8,#-)\$%+*&%'#\$.*, "#,9')\$*'*.)(#\$"):.*.)')(.*')*+,#-.\$+\$.)\$%*3"0;*'"#*#3*"3)*, "#,9')\$*)<\$*4,"'0*2\$%43%+'"9\$*3()93+\$*34*'*.)(#\$")7**

_ !"##\$%&&' ' ' ()*+(, -)&\$"./+.01&0)//,2#3("#+*!

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H#)IOGG)#G! G(-..! -RROF'! -&!)II2R2-.! b&230#G2'*! OTR4G0\$! , 2'(! '(0! I)..)C2&6! OTROF'2)&GU! F#)IOGG)#G! -#0! ')! 50'0# 8 2&0! C(0'(0#! -PG0&ROG! -#0! OTR4G05!)#! 4&0TR4G05K!:?!%PG0&ROG!-#2G2&6!I#) 8 !-4'()#2a05!'#2FG!-C-*!I#) 8 !'(0! b &230#G2'*!)#! I#) 8 !GF0R2-.!54'2OG!-'!'(0! b &230#G2'*!G(-..!PO!OTR4G05\$!9?!%PG0&ROG!-#2G2&6!I#) 8 !-! G'450&'^G!R)&I2&0 8 0&'!2&!-!()GF2'-.!)#!)'(0#!2&A

[0&G4#0G!<H0&-.'20G?!

%R-5082R!52G()&0G'*!C2..!#0G4.'!2&!-!#0I0##-.!')!'(0!%R-5082R!N'-&5-#56!-&5! V'(2RG![)882''00\$!\I!'(0!G'450&'!2G!I)4&5!642.'*!)I!V'(2R-.!-&5!H#)I0GG2)&-.! 82GR)&54R'!P*!'(0!R)882''00U!'(0*!C2..!#0R0230!-!a0#)!I)#!'(0!-GG26&05!F)2&'G! <6#-505!-GG26&80&'!)#!'0G'?!-&5!4F!')!-&!f_g!2&!'(0!R)4#G0!I#)8!'(0!R)4#G0! R))#52&-')#!2&!-552'2)&!')!-&*!52GR2F.2&-#*!-R'2)&!#0R)880&505!P*!'(0!%R-5082R! N'-&5-#5G!-&5!V'(2RG![)882''00\$!!%R-5082R!52G()&0G'*!2&R.450GU!P4'!2G!&)'! .282'05!')U!'(0!4G0!)I!2&I)#8-'2)&!'-/0&!I#)8!)'(0#G^!C)#/!)#!250-GU!'(0!F#)32G2)&!)I!(0.F!')!)'(0#G!)&!&)&AR)..-P)#-'230!03-.4-'2)&G!<'0G'GU!]42aa0GU!0'R\$?U! R)..-P)#-'2)&!)&!'-/0!()80!0T-8GU!)#!'(0!4G0!)I!4&-FF#)305!2&I)#8-'2)&!)#! 0.0R'#)&2R!5032R0G!')!-GG2G'!2&!)P'-2&2&6!-&6CC0#G\$!!

!% '! 8 2&2 8 4 8 U!G'450&'G!-#0!0TF0R'05!')!R) 8 F.0'0!'(0!)&A.2&0!R)4#G0!03-.4-'2)&!-G!C0..!-G!-&*!03-.4-'2)&!-5 8 2&2G'0#05!2&!R.-GG!P*!'(0! [)..060!)I!H(-#8-R*\$!

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 $\label{eq:starting} $$ (1) = 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.060! \ | 1.0$

(I!*)4! - #0!(-32&6!F#)P.08G!C2'(!08)'2)&-.0!G)R2-.0!-&5`)#!P0(-32)#-.!2GG40G!

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)I!2&-RR0GG2P.0!R.-GG#)) 8 GU!FO# 8 2GG2)&!')!-452)'-F0!.0R'4#0GU!&)'0A'-/2&6! -GG2G'-&R0U!-&5!R)4#G0!G4PG'2'4'2)&G\$!

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 $\begin{array}{c} & \quad |\text{H.0-G0!\#0320C!'(0!0\ 8\ 0\#60\&R*!0GR-F0!F.-\&!2\&!'(0!\\ \text{R.-GG\#)\)\ 8\ 6!-\&5!(-..C-*G!\)\ I!'(0!\ 1\ 20\&32..0!P42.52\&6\$!!\ J\)\ 30!\]\ 42R/.*!-\&5!\)\ \#50\#.*!'\)!\\ & \quad '(0!-FF\#)F\#2-'0!G'-2\#CO..!-\&5!0T2'!'(0!P42.52\&6\$!L\ (0!\ 8\ 00'2\&6!F.-R0!I\)\ \#!'\ (2G!R.-GG!\ C2...!P0!'\ (0!I-\#!0\&5!\)\ I!'\ (0!\&)\ \#'\ (!F-\#/2\&6!.\)'!P0'C00\&!\ 1\ 20\&32..0!-\&5!\ I\ \#)\ -5\ 8\)\)\ \#!\\ & \quad 1\ .35\$!!\ b\ & 50\#!\&\)\ !R2\#R4\ 8\ G'-\&R0G!2G!'\ (0!0.03-')\ \#!'\)\ !P0!4G05!I\)\ \#!0\ 8\ 0\#60\&R^{*!}\\ & \quad 03\ -R4-'2\)\ \&\$!!\&\&8\ 052-'0.*\$!!\)\ \#!0\ 8\ 0\#60\&R20GU!R\ \&'-R'!\ b\ \&230\#G2'*!H\)\ .2R0!P^{*}!52-.2\&6!\ \ AM::\ !I\#)\ 8\ !\\ & \quad .-\&5.2\&0G!-\&5!\ I\ \ \#)\ 8\ !R0..!F(\)\&0G\$!!!\\ & \quad !\\ \end{array}$

J 00'2&6! " - '0G! n !L2 8 0GK! 8 3 "#'; I*Q\$#"\$.#'; *4%3+*LROO* '7+7*("),0*DORNO* '7+7*