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&&H -<=32)&%)0C7?K)=5: =): @2), CLM2E=)=6)=52) (2=C@7)6B)0C7?K)D: 3EC3: =<67)

K)6-%!TU!'380, !#/%!, 3R%*6!6&!6L%!W%63/8!&'!+380!_#-*3-#6)&8!)8!6L%!&/0%!&'!6L%)!/%S3)/%0!/%63/8!# , !
'&--&< , 6!

+%0%/#-!4)/%*6!Z8, 3R,)0)`%0!>!

+%0%/#-!4)/%*6!. 3R,)0)`%0!>!

+%0%/#-!a/#03#6%!">Z. !

+%0%/#-!"#/#86!">Z. !>!!

+%0%/#-!"N>>!a/#86!

+%0%/#-!I/#S!#80!P'\$L#8), 6#8!. %/0)*%!a/#86!

+%0%/#-!. 355-%7%86#!N03*#6)&8#!(55&/638)6Q!a/#86!H+. N(ad!

+%0%/#-!K%#*L!a/#86!

&&H , =C?27=D3: KK) > <=5?@: A: 3)

KL%/!#/%!6< &!6Q5%, !&'!, 630%86!*-# , , !<)6LO/#<#-!6L#6!#/%!, 3R%*6!6&!6L%!W%63/8!6&!K)6-%!TU!HWAKCD!'%0%/#-!
*#-*3-#6)&8!/%\$3-#6)&8!# , !&--&< , V!

\$H /BB<E<: 3) > <=5?@: A: 3K!E!P!, 630%86!<)6LO/#< , !'/&7!#--!*&3/ , %, !RQ!*&86#*6)8\$!)6L%/!6L!
4%#8=6L%!)8#8*)#!P)O! (')*%=-23/ , #/=!&/!6L%!W%\$), 6/#/], ! (')*%!6&!)8)6)#6!#8!&'*)#-!
<)6LO/#<#-V!

NH *76BB<E<: 3) > <=5?@: A: 3!E!T!#!, 630%86!R%\$#8!#66%80#8*%#80!L# , !8&6!&'*)#--Q!<)6LO/#<8!
#80!#)- , !6&!%#/#8!#15# , ,)8\$!\$/#0%)!8!#6!-%# , 6!8%!*&3/ , %!&'%/!%0!&0%/#8!%86)/%!5%/)&0=6L!
Z8)0%/ ,)6Q!73, 6!# , , 37%='&!K)6-%!TU!53/5& , %, =6L#6!6L%!, 630%86!L# , !38&'*)#--Q!
<)6LO/#<8V!!KL%!Z8)0%/ ,)6Q!\$/#0)8\$!5&-)*Q!/%S3)/% , !'#*3-6Q!6&!O)'%/!%86)#6%!R%6<%%8!6<

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"#\$%J!&'!'
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%H ,=C?27=(2=C@7)6B)0C7?K!

.630%86,!<L&!#/%!/S3)/%O!6&!/%63/8!#!5&/6)&8!&!6L%)/!38%#/8%O!'%O%/#-!\$/#86,!<)-!/%*%)0%#!8&6)')*#6)&8!
'/&7!6L%!Z8)0%/,)6Q!80)*#6)8\$!6L%!#7&386!/S3)/%O!6&!R%!/63/8%O=KL%!Z8)0%/,)6Q!<)-!/%63/8!6L%!/S3)/%O!
'380,!&8!6L%!,630%86],!R%L#-'!6&!6L%!#55/&5/)#6%!'%O%/#-!5/&\$/#7H,D!RQ!*L#/\$)8\$!6L%!,630%86],!#**&386V!KL%!
,630%86!<)-!L#0%!CB!O#Q,!'/&7!6L%!O#6%!'!6L%!8&6)')*#6)&8!6&!/%)7R3/,%!6L%!Z8)0%/,)6Q!'&!6L%)/!5&/6)&8!&!
6L%!/63/8V!43/)8\$!6L%!CBEO#Q!5%)/&O!6L%!,630%86!/7#)8,!K)6-%!TU!%-)\$)R-%V!

PV .630%86,!,L&3-0!7#c%!6L%)/!*L%*c,!5#Q#R-%!6&!Y#0)/!Z8)0%/,)6Q!&!>P!#80!'&/<#/#O!6&!6L%!630%86!
P**&386,!(')*%=!6L%Q!#/%!5#Q)8\$!<)6L)8!6L%!CBEO#Q!5%)/&OV!

2V Z5&8!CB8(*2117I/π21c06(%)()Qcπ(0)506c#0%T21c#0%c(π)π(cπ(%)6(0)5111s50.2418583.92cBπ50005Tc5

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"#\$%!Q!&'!'
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PV KL%!23/, #/], !(') *%!0%6%/7)8%, !6L%!5%/*%86#%\$!&'!K)6-%!TU!#)O!6L%!, 630%86!%#/#8%O!RQ!6#c)8\$!6L%!
#-%80#/#!O#Q, ! & 7 5-%6%O!)8!6L%!5%/)&O!&'!%8/&-- 7%86!#8O!O)O)8\$!RQ!6L%!6&6#-! *#-%80#/#!O#Q, !)8!
6L%!5%/)&O!&'!%8/&-- 7%86!H%: *-3O)8\$!R/%#c, !&'!B!O#Q, !&'! 7 &/%!#8O!O#Q, !6L%!, 630%86!<# , !&8!#8!
#55/&O%O!-%#O%!&'!#R, %8*%D!
&!N: # 7 5-%6!

f!HC?!* & 7 5-%6%O!O#Q, D!IH9@J!6&6#!-!O#Q, D!g!CXVB!5%/*%86!K)6-%!P)O!N#/#8%O!
2V KL%!23/, #/], !(') *%!0%6%/7)8%, !6L%!O--#/# 7 &386!&'!K)6-%!TU!#)O!6L%!, 630%86!%#/#8%O!RQ!
7 3-6)5-O)8\$!6L%!5%/*%86#%\$!&'!K)6-%!TU=MNP!#)O!#/#8%O!RQ!6L%!6&6#-!&'!6L%!K)6-%!TU!#)O!O), R3/, %O!
5-3, !6L%!K)6-%!TU!#)O!6L#6! * & 3-O!L#O!R%%8!O), R3/, %O!' & /!6L%!5%/)&O!&'!%8/&-- 7%86!
&!N: # 7 5-%6!

f!CXVB!5%/*%86!: !Hh9=@CJ!@#@!O), R3/, %O!i !hX=?99!@#@!6L#6!* & 3-O!L#O!O), R3/, %O!g!
hA=@?@!P)O!N#/#8%O!

_V T'!6L), !5%/*%86#%\$!), !\$/%#6%/!6L#8!F@!5%/*%86=6L%!, 630%86!%#/#8, !9@!5%/*%86!&'!6L%!O), R3/, %O!
K)6-%!TU=MNP! 380, !&'!#)O!6L#6!* & 3-O!L#O!R%%8!O), R3/, %O!

4V T'!6L), !5%/*%86#%\$!), !-%, , !6L#8!F@!5%/*%86=6L%8!6L%!5%/*%86#%\$!%#/#8%O!), !%S3#-!6&6L%!
*#- * 3-#6%O!O&--#/# 7 &386!%#/#8%O!

NV KL%!P)O!6&!R!/%63/8%O!), !%S3#-!6&6L%!38%#/#8%O!5%/*%86#%\$!H9@!5%/*%86!7)83, !6L%!"%/*%86!
%#/#8%O! 7 3-6)5-O)RQ!6L%!# 7 &386!&'!#)O!O), R3/, %O!6&<#/#O!)8, 6)636)&8#-! *L#/\$%, VIT'#!, 630%86!
%#/#8%O!-%, , !#)O!6L#8!<# , !O), R3/, %O=!6L%!Z8)0%/ ,)6Q!<& 3-O!R!/%S3)/%O!6&!/%63/8!#5&6)&8!&'!6L%!
'380, !#8O!6L%!, 630%86! 7 #Q!R!/%S3)/%O!6&!/%63/8!#5&6)&8!&'!6L%' 380, !P--!K)6-%!TU! 380!/%63/8, !
7 3, 6!R!* & 7 5-%6%O!8&!-#6%/!6L#8!CB!*#-%80#/#!O#Q, !# '6%/!6L%!O#6!6L%!23/, #/], !(') *%!0%6%/7)8%, !
6L#6!6L%!, 630%86!<)6LO/%<V!

+V +380, !#/%!/%63/8%O!6&!6L%!#55/&5)/#6%!'%O%/#-!5/&\$/# 7!R#, %O!&8!6L%!5%/*%86#%\$!&'!#)O!
%#/#8%O!#8O!6L%&!/O%!'&'!/%63/8!O)*6#6%O!RQ!6L%!ZV. !4%5#/#6 7%86!&'!NO3*#6)&8!

aV dL%8!K)6-%!TU=MNP! 380, !#/%!/%63/8%O=6L%!, 630%86! 7 #Q!&< %!#!R#-#8*%6&6L%!Z8)0%/ ,)6Q!

%,&H , =C?27=K) > 56) > <=5?@: A) > <=56C=-<32)&%)\$<?)

+&'! , 630%86, !<L&!L#O%!8&6!/%*%)O%O!#8Q!'%O%/#-!, 630%86!)8#8*)#-!#)O=6L%!'&--&<)8\$!Y#O)%!Z8)0%/ ,)6Q!
T8, 6)636)&8#-!5&-)*Q!#55-%), G!

! (2BC7?)6B)=C<=<67): 7?)B22K8)

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! ! ! . 630%86!d)6LO/#< , G!
! ! ! 2%'&/%!*-# , , % , !R%\$)8! ! ! ! 9@@j !
! ! ! d)6L)8!<%%c!9!! ! ! !!!!!!!!!!!!!!!!!?Bj !
! ! ! d)6L)8!<%%c!A!! ! ! ! !!!B@j !
! ! ! d)6L)8!<%%c!X!! ! ! !!!!!!!!!!!!!!!!!B@j !
! ! ! d)6L)8!<%%c!C!! ! ! !!!!!!!!!!!!!!!!!B@j !
! ! ! P'6%!/!<%%c!C! ! ! ! !!!!!!!!!!!!!!!!!@j !

(66R): 7?)N6: @?)D5: @S2K8)

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&'!/% 380!), !\$)0%8!&'!O&/7)6&/Q!/&& 7!*L#/\$%, V!!2&#/#O!*L#/\$%, !#/%!/%' 380%O!&8!#5&/#!O#)-Q!R# ,) , !
&'!9?<%%c, !5%!, % 7%, 6%V!

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"#\$%!'&'!'
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