



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

·
>

!

\$

l=c \ / 61+?!A/ ; -!
=c Q)25(, ,123/!V(,B23,191+10?-!!
=lc &)*,0,!/34!H,0/0(!

!(
(C]!7)(410,!25!(FB()1(301/!+(/)313. !
5C]!7)(410,!25!9/!)B(B!72*), (!

!LSM /0!+(/,0!]%!25!0' (, (!7)(410!' 2*),!, ' /++9(!13!72*), (, !0' /0!)(G*1)(4! /00(34/37(!13!)(. *+ /)+?! ,7' (4*+(4!
7+/, ,)22 6! , (, ,123, !2!)4!)(70!5/7*+0?!13,0)*70!23^!LE((!0' (! _ 13! 6 * 6! ` * 69()!25!@+ /, ,)22 6!@)(410, !
, (70!23!+27/0(4!13!0' 1, !' /34922: M!!
L%M 72 6B+(0(!0' (!B)2S9232!)(G*1)(6 (30^!LE((!0' (!Q)2!X232!V(G*1)(6 (30, !+27/0(4!13!0' 1, !' /34922: M!!
L[M B/14! /++9/ +/37(, !2 ; (4!02!0' (!@2+(. (!25!A/ ; !/34!</7: ,23=1++(!>3!=(,)0?^!
LJM 320!' /=((!/B(34!13. !' 232)!724(-!7234*70!724(-!2)!7)1 6 13 /+!7/ , (!/34!
LaM 320!9(!, *90(70!02!0' (!)*+(, !25! /7/4(6 17!4! , 6! , , /+ /, !, !0/0(4!*34!)!bR7/4(6 17!Q)29/0!23! /34!
J1, 6! , , /+c!!

3" 4 '*') &) -5 &) 6\$(- / . -# \$7&81(89- : ; < \$2&8\$2 =81 , , (/ /) - = (\$2' + , - # \$% & ' (\$2- . / (-0(12&1+' / *--
U3! /772)4/37(! ; 10' !R 6 ()17/3!X/)!R, ,271/0!23! ,0/34/)4, -!25!0' (!NO!7)(410, !)(G*1)(4!52!)! .) /4* /0!23-! ,0*4(30, !
B*), *13. !/!<*!)1, !J 2702)4(.)((! 6 * ,0!72 6B+(0(!/! 6 13! 6 * 6 !25!]!7)(410, !25!72*), (; 2) : !13!72*), (, !0' /0!)(G*1)(!
/00(34/37(!13!)(. *+ /)+?! ,7' (4*+(4!7+/, ,)22 6! , (, ,123, !^ 20! /++7)(410!' 2*), !, 0*4(30, !6 /? !0/ : (!02 ; /)4, !0' (!NO!
7)(410, !)(G*1)(4!52!)! .) /4* /0!23! ; 1++72*30!02 ; /)4, !0' (!@+ /, ,)22 6!@)(410, !)(G*1)(6 (30C!@)(410, !0' /0! ; 1++320!72*30!
02 ; /)4, !0' (!] %S7)(410!)(G*1)(6 (30!137+*4(!7)(410, !(/)3(4!0')2* . '!72S7*)!17*+ /, !L+ / ; !)(=1(; -! 6 220!72*)0-! 6 27 : !
0)1/ +M-! /72*), (!13! /3? !20')!4(.)((!B)2.) / 6 !/0!</7: ,23=1++(!>3!=(,)0?-12)!(F0()3, ' !B!2)!7+13!7!d*(, !0!23, !/ , !02!
; ' (0' (!/!B/)0!7*+ /!72*), (!72*30, !02 ; /)4!0' (!@+ /, ,)22 6!@)(410, !)(G*1)(6 (30!, ' 2*+4! ,B(/ : ! ; 10' !0' (!R, ,271/0(!
J (/3!25!R7/4(6 17!R55/1), !2)!0' (!V(. 1, 0)/)C!E0*4(30, !6 * ,0! , *9 6!0!02!0' (!R, ,271/0(!J (/3!25!R7/4(6 17!R55/1), !/3!
RBB+17/0!23!02!E0*4? !/0!R320' ()!U3, 0!0*0!23!13! /4= /37(!25!(3)2+13. !13! /3? !72*), (, !2*0, !4(10' (!</7: ,23=1++(!
>3!=(,)0? !@2+(. (!25!A/ ; C!& ' (!R, ,271/0(!J (/3! ; 1++14(0) 6 13(! ; ' (0')!0' 2, (!7)(410, !, ' 2*+4!72*30!02 ; /)4!0' (!<C J C!
B)2.) / 6! /34e2)!0' (!@+ /, ,)22 6!@)(410, !)(G*1)(6 (30C!!
!

= " >?@\$('\$*+' 18-A\$1(*' *7-=(\$2' + - # \$% & ' (\$) \$*+ , -
E0*4(30, !6 * ,0!72 6B+(0(!/! 6 13! 6 * 6 !25!]!7)(410!' 2*), !25!72*), (, !4(, 1. 3/0(4! /, !)(FB()1(301/!+(/)313. !72*), (, C\$\$
!

B" = < 1(1 ; + \$(-1*2-C'+* \$, , -
& ' (!@2+(. (!25!A/ ; !)(,)=(, !0' (!)1. '0!02! ; 10' ' 2+4! /4(.)((!7235()) /+ ; ' (3(=())!0! /BB(/, !0' /0!0' (!7' /) /70()!2!
7234*70!25! /, 0*4(30-!2)!0' (!G*+ /10? !25!0' (! ; 2) : !72 6B+(0(4-! ; 1++B)=(30! /77(B0/9+!) (B)(, (30/0!23!25!0' (!@2+(. (!
2)! ; 1++72 6B)2 6! , (!0' (!+ (. /+!B)25(, ,123C!H/7' !, 0*4(30! ; ' 2! 6 ((0, !0' (! (, 0/9+! , ' (4! .) /4* /0!23!)(G*1)(6 (30, ! ; 1++
/ *02 6 /0!7 /++? !9(!)(72 6 6 (34(4!9? !0' (!5/7*+0? !02!)(7(1=(!0' (!/BB)2B)1/0(14(.) (C!!
!

> " 4 1?') &) -D') \$+ / -> 1(*-B\$7(\$\$-
E0*4(30, !72 6B+(0!3. !0' (!<*)!1, !J 2702)4(.)((!B)2.) / 6!23! /!5*+!S0! 6 (19/ , 1, !6 * ,0!72 6B+(0(!0' (!B)2.) / 6!25!, 0*4? !
; 10' !3!a#! 6 230' , !25!, 0/0!13. !7+ /, , (, C!& ' (!@2+(. (!25!A/ ; !R7/4(6 17!E0/34/)4, !@2 6 6 100((! 6 /? ! ; /1=(!0' 1, !0! 6 (!
B()!24!13!(F0)/2)4!3/)?!7!7)7* 6 ,0/37(, C!R3?! ,0*4(30! ; ' 2!+ /=(, !0' (!@2+(. (!25!A/ ; !32! 6 2)(!0' /3!0 ; 2! ? (/), !5) 2 6 !
0' (!+ /, 0!4/0(!0' (!/00(34(4!7+/, , (, !6 /? !B(0!0!23!0' (!@2+(. (!25!A/ ; !R7/4(6 17!E0/34/)4, !@2 6 6 100((!02!) (0*)3!02!
72 6B+(0(!' 1, !2)! ')!4(.) (C!
!

C" E(-3 / * / - # \$% & ' (\$) \$*+ , -
E0*4(30, !/)(!)(G*1)(4!02!72 6B+(0(!, !F0?!L]OM!' 2*), !25!B)2!9232! ; 2) : -! *B!02!0' 1)0?!25! ; ' 17' !6 /? !9(!323S+(. /+!
B*9+!7!,)=17(!=2+*30(C)! ; 2) : C!!
!

Q)2!9232!/34!B*9+17!, ()=17(!=2+*30()!'2*),!6*,0!9(!72 6 B+(0(4!B)12)!02!0' (!4(/4+13(!9?!; '17'!/++!)/4*/0123!
) (G*1)(6 (30,!/)(!02!9(!72 6 B+(0(4!R++! ; 2):!6*,0!9(!B)(S/BB)2=(4-!/34!'2*),!6*,0!9(!)(.*/+)?!,*9 6 100(4!02!0' (!
R,,1,0/30! J (/3!25!E0*4(30! J (= (+2B 6 (30!T!Q)/7017(C!!

!
A(. /+!)(+/0(4!B)2!9232! ; 2):!137+*4(,!B)2!9232! ; 2):!52)!0' (!134! . (30-!B*9+17!/. (371(,-!B)!/=0(!+(. /+!B)/7017(!23!//!
7/, (!9(13. !7234*70(4!23!//!B)2!9232!9/,1,-!/34!*34()!0' (!, *B()=1,123!25!//!</7: ,23=1++(!>3!=(),10?!5/7*+0?! 6 (6 9()!
; '2!! ,!7234*7013. !0' (! ; 2):!23!//!B)2!9232!9/,1,C!` 23S+(. /+!B*9+17!, ()=17(!=2+*30()! ; 2):!6 /?!137+*4(!
=2+*30()!3. !/0!/3?!323SB)25!0!2). /3!Z/0!23!/34!(3. / . 13. !13! . (3()/+!72 6 6 *3!0?! , ()=17(! ; 2):C!!

!
E0*4(30,! ; '2!/)(! (3)2+(4!13!(F0()3, '1B!7)(4!0,!/)(!320!(30!0+(4!02!B)2!9232!'2*),!52)! ; 2):!72 6 B+(0(4!/,!/
) (G*1)(6 (30!25!0' (! (F0()3, '1B!U5!,0*4(30,! ; 1, '!02!(/)3!B)2!9232!'2*),!2)!72 6 6 *3!0?! , ()=17(!5)2 6 !0' (!, / 6 (!
(F0()3, '1B!5! (+4!25517(!/50()!0' (!) (G*1)(6 (30,125!0' (! (F0()3, '1B!7)(4!0!/) (! 6 (0-!,0*4(30,! , /++) (G*(,0!B() 61, ,123!
5)2 6 !0' (! (F0()3, '1B!B)25(, ,2)!/34!, *B()=1,2)!15!B() 61, ,123!1,!.)/30(4!0' (!,0*4(30! 6

/3?10*10123!)(5*34!)(+/013. !02!0' /0!72*), (C!

!

= " B',+1*;\$->2&;1+/'*-! ++\$*21*;\$-E/8';9-

&'1,!B2+17?!/BB+1(,!02!/3?!72*), (!/0!0' (!@2+(. (!25!A/ ; !255() (4!B)l 6 /)1+?!0')2*. '!41,0/37(! (4*7/0123!E0*4(30, f!
7+/, ,!/00(34/37(! ; 1++!9(!4(0() 6 13(4!(/7'! ; ((:!9?!0' (!,0*4(30, f!4213. !0' (!52++2 ; 13. K!!!

!

L"M)(/413. !/34!B)(B/)13. !/++!/, ,1. 3 6 (30, !. 1=(3!9?!0' (!72*), (!B)25(, ,2)!!
L#M ; /07' 13. !/3?!+(70*)(, !2)!20' (!B)(, (30/0123, !B)2=14(4!23!0' (!41,0/37(! (4*7/0123!, 10(!
LSM B/)0171B/013. !23!0' (!41,0/37(! (4*7/0123!, 10(!/, !)(G*1)(4!9?!0' (!72*), (!13,0)*702)!/34!!
L%M 72 6 B+(013. !/3?!20' (!72*), (!)(G*1)(6 (30, !25!0' (!13,0)*702)C!!

\ /1+*)(!02!B/)0171B/0(!13!/3?!41,0/37(! (4*7/0123!72*), (!13!23(!72*), (! ; ((:! 6 /?!23+?!9(! (F7*, (4!9?!0' (!B)25(, ,2)!
52)!0' (!72*), (-!13!723, *+0/0123! ; 10' !0' (!R, ,271/0(! J (/3!25!R7/4(6 17, C!U5!0' (!5/1+*)(!02!B/)0171B/0(!, ! (F7*, (4-!0' (!
,0*4(30! 6 /?!9(!)(G*1)(4!02!72 6 B+(0(!/44!0123/! ; 2): !02! 6 / : (!*B!52)!0' (!/9, (37(12)!0' (!,0*4(30f, !.)/4(! 6 /?!9(!
) (4*7(4!9?!0' (!B)25(, ,2)!52)!0' (!/9, (37(-!920' !13!0' (!13,0)*702)f, !41, 7)(0123!R!,0*4(30! ; ' 2, (!5/1+*)(!02!B/)0171B/0(!
13!/3?!41,0/37(! (4*7/0123!72*), (!52)!23(!5*+! ; ((:!1, !320!(F7*, (4! ; 1++!9(!. 1=(3!/!.)/4(!25!b I g c!13!0' (!72*), (-!

!

Y0' (!)723,14()/0123,152)!/4 61,,123!137+*4(!7' /+(3. (, !0' /0! 6 /?!' /=(!1 6 B/70(4!B)12)!B()52) 6/37(-!(00(),!25!
) (72 6 6 (34/0123-!.) /4*/0(!,7' 22+12)!20' (!)B)25(, ,123/+!0)/1313. -!/34!20' (!)1352) 6 /0123!0' /0!4(6 23,0)/0(, !/3!
/BB+17/30f,!B)(B/)/0123!/34!B20(301/+C!

-
3" ! 2) ' , , ' / * , - # \$ % & ' (\$) \$ * + , -
R++/BB+17/30, !02!0' (!@2+(. (!25!A/ ; ! 6 * , 0! , *9 6 10K!
!

- @2 6 B+(0(4!/BB+17/0123!
E\$(, / * 18-, +1\$) \$ * + -
\$, &) \$ - / (- = & (' ; & 8 &) - L ' + 1 \$ -
DK / - 8 \$ + \$ (, - / . - (\$; /)) \$ * 21 + ' / * -
= < 1 (1 ; + \$ (- 1 * 2 - C ' + * \$, , - \$ F 1 8 & 1 + ' / * -
G . . ' ; ' 1 8 - A 1 K - ; < / / 8 - ! 2) ' , , ' / * , - D \$, + M A : ! D N - , ; / (\$ -
G . . ' ; ' 1 8 - (1 * , ; (' @ + , - . / (- 1 8 8 - ; / 8 8 \$ 7 \$, - 1 * 2 - & * ' F \$ (, ' + \$, - 1 + \$ * 2 \$ 2 -

! @ @ 8 ; 1 * + , -) 1 9 - @ (/ F ' 2 \$ - 1 2 2 ' + ' / * 1 8 -) 1 + \$ (' 1 8 , - * ; 8 & 2 ' * 7 - 1 2 2 \$ * 2 1 0 - 0 # > - : ; / (\$, 0 - 1 * 2 - A : ! D - K (' + * 7 -

9C R!.)/4(!25!b@c!L320!@SM!2)! '1. ' (!) !6*,0!9(!(/)3(4!52)!0)/3,5(!25!7)(4!0c!@2*), (, !0/ : (3!
B/, ,e5/1+! ; 1++!320!9(!/ ; /)4(4!7)(4!0c!
7C @)(4!0, ! ; 1++!9(!/BB+! (4!02!0' (!G*! =/+ (30!</7: ,23=1++(!>3! =()),10?!@2+(. (!25!A/ ; !72*), (L,Mc!
4C R!E0*4(30! 6 /?!/BB(+! /!0)/3,5(!25!7)(4!0!4(7! ,123!13! ;)!0!3. !02!0' (!R, ,27! /0(!J (/3C!
(C &)/3,5(!)(4!72*), (, ! ; 1++!320!5/702)!1302! /!,0*4(30f, !</7: ,23=1++(!>3! =()),10?!@2+(. (!25!A/ ; !
PQRc!!@2*), (, ! ; 1++!9(!)(72)4(4! ; 10' !/!.)/4(!25!b&Vc!
5C @)(4!0, !(/)3(4! "0! ?(/), !2)! 62)(!5)2 6 !0' (!0! 6 (!25!(3)2+ 6 (30! ; 1++!320!9(!/77(B0(4C!
!

LSM



;)100(3!)(G*(,0!02!0'(!R,,271/0(!J (/3!25!R7/4(617!R55/1),!/34!4(623,0)/0(!.224!7/*,(! ; '?!0'(!
) (G*(,0!, '2*+4!9(!.) /30(4C!&'(!R,,271/0(!J (/3f,14(71,123!6/?!320!9(!/BB(/+(4!02!0' (!5/7*+0?!2)!/3?!
5/7*+0?!72 6 6100(C!!

!

E0*4(30,!(3)2++(4!13!(FB()l(30l/+!(/)313.!7)(4!0,!, '2*+4!723,*+0! ; 10'!0' (!4!)(702)!2)!5/7*+0?!/4=1,2)!
52)!0' /0!,B(71517!B)2.) / 6!9(52)(!, *9 610013.!/!) (G*(,0!02! ; 10'4)/ ; !02!0' (!R,,271/0(!J (/3C!!

!

R50()!0' (!)(+ (= /30!4)2Be/44!B()124-!9*0!4*)13.!0' (!, (6(,0()!13! ; '17'!/,0*4(30!(FB(70,!02!.) /4*/0(-!/
,0*4(30!6/?! ; 10'4)/ ; !5)26!/3?!72*), (!320!3((4(4!02!5*+51+!/.)) /4*/0!23!)(G*1)(6(30-!13!/772)4/37(!
; 10'!0' (!52+2 ; 13.!.*14(+13(,K!

!

/C

!

!

!

!

"#

R!,0*4(30!6*,0!0/:(!)(G*1)(4!72)(!72*),(!,19(52)!) (.1,0()13.!52)!(+(70!=(,0!X?!)(.1,0()13.!52)!(+(70!=(,-!/,0*4(30!
) (B), (30,!02!0'(!@2+(.(!0'/0!0'(?!726B+(0(4-!2)!1,!7237*)) (30+?!)(.1,0()(4!13-!/++!)(6/13!3.!)(G*1)(4!72)(!72*), (,0!
>BB()\$(=(!,0*4(30,!; '2!' /=(!320!?(0!726B+(0(4!*BB()!+(=(!)(G*1)(4!(+(70!=(,!6*,0!42!,2!/0!0'(!(/)+!(,0!B2,,19+(!
2BB2)0*3!0?C!
!

R!,0*4(30!6/?!(3)2++!13!/!72*), (!52)!7)(4!0!23+?!/50()!0' (?!726B+(0(!/+!B)() (G*1,10(,!52)!0'/0!72*), (^!'2; (=()-!/
B/)0!7*+!)!B)() (G*1,10(!6/?!9(!; /1=(4!52)! .224!7/*, (19?!0' (!R,,271/0(!J (/3!25!R7/4(6!17!R55/1),-!/50()!723,*+0!3.!
; 10'!0' (!72*), (!B)25(,,2)C!!
!

L#M > :k8)1-+4\$1''#3*80)#<#J8#+'#A!

L#M

> : ? +-)10&1- , #M0*9)A!E0*4(30, !/)(!(FB(70(4!02!/00(34!0' (!51),0S7+/, ,!, (, ,123!25!(/7' !72*), (!52)!
; '17' !0' (?!/)(!)(.1,0)(4C!R!,0*4(30! ; 1++!9(!/*02 6 /017/++?!4)2BB(4!5)2 6 !0' (!72*), (!15!0' (?!5/1+!02!
/00(34!0' (!51),0S7+/, ,!, (, ,123!*3+(, ,!0' (!,0*4(30!51),0!320!51(4!0' (!5/7*+0?! 6 (6 9())!25!0' (1)!/30!7!B/0(4!
/9, (37(C!U5!/ .))((4!*B23!9?10' (!V(.1,0)/)!/34!0' (!B)25(, ,2)-!/,0*4(30!4)2BB(4!5)2 6 !/!72*), (!13!0' 1,!
6 /33()! 6 /?!9(!)(S/44(4!15!0' (!,0*4(30!7/3!,0!++! 6 ((0!0' (!/00(34/37(!)(G*1)(6 (30, !52)!0' (!7+/, ,!/34!0' (!
72*), (!42(, !320!' /=(!/,! ; /10!+1,0C!U5!0' (!72*), (!' /, !/,! ; /10!+1,0-!0' (!,0*4(30! ; 1++!9(!B+7(4!/0!0' (!34!25!
0' /0!+1,0!/34! ; 1++!23+?!9(!/44(4!15!,B/7(!/+2 ; ,C!!!

!!!

LSM

=09#0-#+1-&.\$6#&0+-+4\$30#:-1)A!&' (!+/,0!4/?!/,!,0*4(30! 6 /?!4)2B!/3!(FB()1(30!/+!(/)3!3 .!7)(4!0! ; 1++!
9(!B)(,7)19(4!13!0' (!FB()1(30!/+!(/)3!3 .!/BB+17/0!23!/34!B2+17!(,C!R!,0*4(30! 6 /?!320!/44!2)!4)2B!/3!

A/ ; !E7' 22+!P)/4(, ! i !Q/., e\ /1+, 7/+(!
E!LE/01,5/702)?M!L/!,0*4(30! ; ' 2!(/)3, !/3!E!, !723,14() (4!02! ' /=(!(/)3(4!/0!+(/, 0! /!#CO!23!0' (!
</7: ,23=1+(!>3!=(, 10?!%CO!, 7/+(!2)! /!@!23!20' (!, 7' 22+f, !.) /4!3.!, 7/+(, M!!
ES!LE/01,5/702)?! _13*, M!!
>!L>3, /01,5/702)?M!!
!

A/ ; !E7' 22+!P)/4(, !RBB+!7/9+(!02!0' (!%CO! /34!0' (!Q/., e\ /1+!E7/+(!
U!LU372 6B+(0(M!!
I !L I 10' 4)(; M!!
I g!LHF7(, ,1=(!R9, (37(, !2)! \ /1+*)(!02!@2 6B+(0(!V(G*1)(4! I 2):M!!

!

LSM **L0& :#N*-+1\$> , #0&4#A!R!, 0*4(30k, !.) /4(!B2!30! /=(/ . (!52)! /3?! . 1=(3!B()!24! , !4(0() 6!3(4!9?!
4! =!4!3. !0' (!020/ +!G* /+!0?!B2!30, !(/)3(4!9?!0' (!3000!3!%CO0'3!4!3(4!9?!**

!

"]

!"

!

"a

; '(3!0' (!R,,271/0(!J (/3!1,!320!/= /1+9+(C!!
!

L%M

<18:#+1\$N0*'#:80#A!U5!/!,0*4(30!,((: ,!/3!/772 6 624/0!23!52)!,(=(!41,0)(,,!9(52)(!2)!4*)!3.!0'(!

/C 1 2+*30/)?!A(/=(125!R9,(37(K!HF7(B0!/,!320(4!13!,*9,(70123!LRML"ML9M-!/=2+*30/)?!+(/=(125!
/9,(37(!,!!+(/=(!)G*(,0(4!9?!"(!,0*4(30C!
9C _1+10/)?!A(/=(125!R9,(37(K!R!61+10/)?!+(/=(125!/9,(37(!,!!+(/=(!0' /0!/,0*4(30!)(G*(,0,102!5*+51+!
61+10/)?!)20')!3/0!23/+S4(5(3,(!,)=17(!29+!./0!23,C!
7C @2+(.(SU3101/0(4!A(/=(125!R9,(37(K!R!72+(.(S13101/0(4!+(/=(125!/9,(37(!,!!+(/=(!0' /0!0' (!
@2+(.(125!A/;!)(G*1)(,10' /0!/,0*4(30!)/(14*(102!/#B20(301/+10')(/0!02!0' (!,/5(0?!2)!;(+5/)(125!0' (!
,0*4(30!2)!20')!6(69),!25!0' (!@2+(.(125!A/;!7266*310?C!R!,0*4(30!;'2!!,!B+/7(4!23!72+(.(S
13101/0(4!+(/=(!;1+!320!9(!B()6100(4!02!/00(34!7+/,,(,!)!02!9(!23!@2+(.(125!A/;!2)!>31=(,10?!
B)2B(0)?!;10' 2*0!B)12)!;100(3!B()61,,123!5)26!0' (!J(/3!2)!0' (!R,,271/0(!J(/3!25!R7/4(617!
R55/1),C!
!

L#M **E-1'' :0&7&A!R,!* , (4!13!0' 1, !B2+17?-!; 10' 4)/ ; /+! 6 (/3, !4)2BB13 .!/+! /7/4(617!7)(410, !13! /! .1=(3!
, (6(,0(0!2!))G*1)(4!, *66(0)!, (, ,123C! I 10' 4)/ ; 13 .15)26!0* ,0!/#B2)0!23!25!0' (!7)(410, !13! /! .1=(3!
, (6(,0(0!1, !72=(0)(4!9?!"(!, (B/)0(!B2+17?!0!0+ (4!@2*), (! I 10' 4)/ ; /+,C!R!,0*4(30!;'2! ' /, !; 10' 4)/ ; 3!
5)26!0' (!@2+(.(125!A/;!1, !32!+23 .)!723,14(0)(4! /!,0*4(30! /0!0' (!@2+(.(125!A/ ; C!
!**

LSM > : ? +-)10&1- ,#E-1'' :0&7&A!R,!* , (4!13!0' 1, !B2+17?-! /4 6131,0)/0!=(!; 10' 4)/ ; /+! 6 (/3, !/70123!0/ : (3!
9?!"(!@2+(.(125!A/ ; !/34e2)!0' (!>31=(,10?-123!10, !2 ; 3!13101/0!=(!02!; 10' 4)/ ; !/!,0*4(30!5)26! /+!
/7/4(617!7)(410, !13! /! .1=(3!, (6(,0(0)C!R!,0*4(30!;'2! ' /, !9((3! /4 6131,0)/0!=(+?!; 10' 4)/ ; 3!5)26!0' (!
@2+(.(125!A/ ; !1, !32!+23 .)!723,14(0)(4! /!,0*4(30! /0!0' (!@2+(.(125!A/ ; C!
!

3" >8'7'6'8'+9-1*2-='(;&) ,+1* ; \$, - I 1((1*+*7-A\$!F\$- /(- I '+<2(1K18-

L" M **S*.8+1&02\$6#& ,#5\$> ;)#+' #A!R!,0*4(30! 6 /? !/BB+?152)! /! =2+*30/)?!+(/=(125!/9,(37(C! 82 ; (=0) -! /!
,0*4(30!0?B17/+?! ; 1+!320!9(!+! .19+(152)! /!+(/=(125!/9,(37(!15!0' (? /)(113=(,0! . /0(4!52)! /3! ' 232)12!
7234*70!724(!=12+/0!23C!>3+(, ,! /!,0*4(30!1, !7/+ (4!02! /70!=(!61+10/)?!,)=17(-! /!)G*(,0!52)! /!+(/=(125!
/9,(37(!0?B17/+?! ; 1+!320!9(!723,14(0)(4!4*)13 .!0' (!+ /,0! ; ((:125!7+/, , (,!)0' (!) /413 .! /34!
(F/ 613/0!23!B()124,C!&' (!@2+(.(125!A/ ; !6 /? !.) /30! /! =2+*30/)?!+(/=(123+?!13!(F0)/2)413/)?!
71)7* 6,0/37(, -! /34!, *7' !.) /30!, ' /+!9(4(0) 613(4!9?!"(!J(/3!2)!0' (!J(/3f, !4(, .1.3/0(C! I ' (3!+(/=(
1,152)!0' (!, * ,0/13(4!1+3(, ,125! /!,0*4(30! /34!0' (!,0*4(30!1, !137/B/710/0(4!+(/=(14(0!1+, !; 1+!9(!
722)413/0(4!; 10' !0' (!,0*4(30f, !3(F0!25! :13!2)! /320')!B(),23! ; '2! ' /, !9((3!4(, .1.3/0(4!0')2* .! !+(. /+!
B)27(, ,! /, !)(, B23,19+(152)!0' (!,0*4(30f, !1/55/1),C!U30(0)3/0!23/+!,0*4(30, !/)(! /4=1, (4!0' /0!0' :13 .! /!
1 2+*30/)?!A(/=(125!R9,(37(! 6 /? !/55(70!0' (!),0*4(30! =1, /!,0/0* ,^!0' (?!, '2*+4!723, *+0! ; 10' !0' (!
V(.1,0)/f, !Y55!7(!9(52)!(, (:13 .!+(/=(C!
!**

L#M **T-.-1&02\$6#& ,#5\$> ;)#+' #A!R! _1+10/)?!A(/=(125!R9,(37(!,!!+(/=1+/9+(152)! /!,0*4(30! ; '2!!, !7/+ (4!2!
2)4(0)(4!02! /70!=(S4*0?!,)=17(! i !; ' (0')! =2+*30/)?!)!13=2+*30/)?! /34!137+*413 .!, *7' !,)=17(19?! /!
6(69(0)!25!0' (!` /0!23/+!P*/)4!2)!V(,)=(! i !13!0' (!>3!0(4!E0/0(, !R)6(4! \2)7(, !52)!62(10' /3!\$0!
4/? ,C! \2)B()124, !25!+(, ,10' /3!\$0!4/? , -!,0*4(30, !, '2*+4!7230/70!0' (!R,,271/0(!J(/3!25!R7/4(617!
R55/1),!02!4(0) 613(!15! /BB)2B)1/0(! /7726624/0!23, !7/3!9(!6/4(12)! ; ' (0')! /!A(/=(125!R9,(37(!, !
3(7(, , /)?C!
!**

LSM **3*..#4#CD+-1-&1# :\$6#& ,#5\$> ;)#+' #A!R' (!@2+(.(125!A/ ; !)(,)=(, !0' (!)1 . '0!02!13101/0(! /! 6 /34/02)?!
+(/=(125!/9,(37(!; ' (3!L/M! /!,0*4(30!B)(, (30, !/3!1 6 6(4! /0(14/3 .)!02!, (+5!2)!20') , !9?!"(!) /0(313 .!
/34e2)!135+17013 .1924!+?! ' /) 6!02!, (+5!2)!02!20') , -!2)!L9M! ; ' (3! /!,0*4(30f, !9(' /! =12)!1, !+! : (+?) (, *+0!13!
924!+?!2)!20')! , *9,0/30! /+! ' /) 6!02!, (+5!2)!20') , C!
!**

L%M **E-1'' :0&7&A!R!,0*4(30! 6 /? !; 10' 4)/ ; !5)26!0' (!@2+(.(125!A/ ; !/0! /3?!"016(19*0! 6* ,0!9(!13! .224!
,0/34!3 .C!R!,0*4(30! ; '2!!, !320!13! .224!,0/34!3 .! ; 1+!5! /+! *34(0)!0' (!J1, 61, , /+!B2+17?C!
!**

= " E(/;\$2&(\$,-./(-L/8&*+1(9-1*2-4'8'+1(9-A\$1F\$-./.-!6,\$*;\$-
Q)27(4*)(,!52)!0'(!=/)l2*,!0?B(,!25!(/=(!/)(!4(0/1+(4!9(+2 ; C! I 'l+(!/7'!7230(6B+/0(,!0' /0!0' (!,0*4(30!!,!/= /1+/9+(!
02!,*9 6 10!0' (!3(7(, ,/)?!B/B() ; 2):!/34!,(7*)(!0' (!3((4(4!,1.3/0*)(,!02!/BB)2=(!+(/=(-!0' (!@2+(. (!25!A/ ; !
) (72.3!Z(,!0' /0!(F0(3*/0!3. !7!7)* 6,0/37(,!6 /?!(F1,0! ; ')(!0' (!,0*4(30!!,!320!23!7/ 6B*,!2)!!,!20' () ; 1,(!
*3/= /1+/9+(!02!72 6B+(0(!/3?!)(G*1)(4!/70!23,!13!B(),23C!U3!,*7' !7!7)* 6,0/37(-!/34! ; 10' !0' (!/BB)2= /+!25!0' (!J (/3!
2)!0' (!R,,271/0(!J (/3!25!R7/4(6!7!R55/1),-!0' (!V(.1,0)/)!!,!(6B2 ;) (4!02!(55(70*/0(!/+0)3/0(!B)27(4*)(,!0' /0!

A(/=(-!0' (!R,,271/0(!J (/3!2)!R7/4(617!E0/34/)4,!@2 6 6100(!6 /?!)(G*1)(!427* 6 (30,!)(+1())58!4!0)-1(,)1())-1(0)-1

=C R!)(G*(,0!52!)+(1(5!L(F/ 6B+(,!25!)(G*(,0,!52!)+(1(5!/)(!02!)(7(1=(1/3!bEc!13!/!72*), (-!
02!)(7(1=(1/!,B(7!5!7!)/4(19/, (4!23! ; 2): !B()52) 6 (4!02!4/0(-!0' (!2B0!23!02!0/ : (1/3!
1372 6B+(0(!13!/!72*), (-!/34!/3?!20' (!)+(1(5!0' (!,0*4(30! ; 2*+4!+! : (!0' (!@2 6 6 100(!02!
723,14()MC!!

!
9C >B23!)(7(1=13. !/!B(0!0!23!, ((: !3. !72*), (17)(4!0-!0' (!R7/4(6 17!E0/34/)4,!@2 6 6 100(! ; 1+!
) (=1(; !0' (!B(0!0!23!/34!, ((: !13B*0!/34!)(72 6 6 (34/0!23, !5)2 6 !0' (!,0*4(30f, !B)25(, ,2), !/34!0' (!
R,, 271/0(!J (/3!25!R7/4(6 17!R55/1), C!&' (!@2 6 6 100(!' /, !0' (!/*0' 2)10?!02! / ; /)4!bEe>c!7)(4!0!
13!/.)/4(4!2!)323\$.)/4(4!72*), (-!/, B(7!5!7!)/4(19/, (4!23! ; 2): !/+)/(4?!72 6B+(0(4!13!0' (!
72*), (-!3!b!372 6B+(0(c!./)/4(-!2)!/3?!20' (!)+(1(5!4((6 (4!(G*10/9+(C!&' (!@2 6 6 100(!/+ ,2! / ,!
0' (!/*0' 2)10?!02!4(3?!0' (!B(0!0!23C!U5!0' (!B(0!0!23!1, !.)/30(4-!0*10!23!/34!5((!)5*34, i !15!/3?! i !
; 1+!9(19/, (4!23!0' (!/ 6 2*30!25!7)(4!0! / ; /)4(4!52)!0' (!, (6 (,0()C!\2)!(F/ 6B+(-!15!/!5*+!S0! 6 (!
,0*4(30!1, !/ ; /)4(4!72*), (17)(4!0!52)!"0!2)! 6 2)(17)(4!0! ' 2*), -!0' (!,0*4(30! ; 1+!320!)(7(1=(!/
0*10!23!2)15((!)5*34C!U5!0' (!@2 6 6 100(!/ ; /)4, !+(, ,!0' /3!"0! ' 2*), !25!7)(4!0!52)!/!5*+!S0! 6 (!
,0*4(30-!0' (!,0*4(30! ; 1+!)(7(1=(! /!B)2S)/0/!0*10!23!/34!5((!)5*34C!!

LWM N#1-1-*+\$!*\$L0& : 8&1# \$7-1''\$ T --1&02\$6#&, #A!U5!/!,0*4(30!1, !7/+(4!02!,)=17(! ; 10' 13!52*)! ; ((: ,!25!' 1, !
2)! ' ().)/4*/0!23!4/0(-!0' (!,0*4(30! 6 /? !B(0!0!23!0' (!5*+!5/7*+0?!02!9(!/+2 ; (4!02! .)/4*/0(!23!0! 6 (C!&' (!
B(0!0!23!, ' 2*+4!9(!, *9 6 100(4!02!0' (!R,, 271/0(!J (/3!25!R7/4(6 17!R55/1), -! ; ' 2! ; 1+!0' (3!B)(, (30!0' (!
B(0!0!23!02!=2013. ! 6 (6 9(), !25!0' (!5/7*+0?-/ ,!4(5!3(4!13!0' (!@2+(. (!25!A/ ; ! \ /7*+0?!X?+/ ; ,C!!

B" E(/ ; \$2&(\$, -./(-=/88\$7\$Q]*'+!1+\$2-A\$1F\$-./.-! 6, \$* ; \$-

L''M D+-1-&.\$M#'-)-*+A!&' (!J (/3!2)R,, 271/0(!J (/3!25!R7/4(6 17!R55/1), ! ; 1+! 6 / : (!0' (!5!13/+!4(7! ,123!
) (./)4!3. ! ; ' (0' (!)!/!,0*4(30! ; 1+!9(!B+/7(4!23! !/@2+(. (SU3!0!1/0(4!A(=/!25!R9, (37(!/50!)!723, *+0!3. !
; 10' !20' (!/BB)2B)1/0(!7/ 6 B*, !255!7!/, C!&' (!,0*4(30! ; 1+!9(1320!5!4!/92*0!0' (!4(7! ,123!1 6 6 (4!1/0(+?!
/34!13! ;)!0!3. !/34! ; 1+!9(!. 1=(3!/3!2BB2)0*3!0?!02!/44), ,!7237()3, ! ; 10' !0' (!J (/3!2)R,, 271/0(!J (/3C!!

L#M >99#&.\$*5\$3*..#4#CD+-1-&1# : \$6#&, #*\$5\$> ;)#+' #A!R50()!0' (!@2+(. (!13!0!1/0(, !/! 6 /34/02)?!+(/=-!0' (!
,0*4(30-! ; 10' 13!0' ((!, 7' 22+!4/? , -! 6 /?!13!0!1/0(!/3!/BB(/+!13! ;)!0!3. !02!0' (!R,, 271/0(!J (/3!25!
R7/4(6 17!R55/1), C!R3?!/BB(/+!, ' 2*+4!137+*4(!/3!(=/+*/0!23!9?!/!+!7(3, (4!B' ?, !7!1/3-!B, ?7' 1/0)1, 0-!2)!

0' /3!0 ; 2! ? (/), !15! .224!7/* , (!, !4(623,0)/0(4C!>3+(, !.)/30(4! /3!(F7(B0!23!9? !0' (!R7/4(6!7!E0/34/)4, !
@26 6!00((-! /! ,0*4(30! 6* ,0!72 6B+(0(! /++!4(.)(!) (G*!) (6(30, ! ; 10' !3!, !F!7/+(34/)! ? (/), -!72*30!3 . ! /++!
B()!24, !25!+(/=(!2)! ; 10' 4) / ; /+C!!

!
L[M **! 8-1-*+&\$+ :\$P##)**! ^ 2) 6 /+!) *+(, !)(. /)4!3 . !0*!0!23!) (5*34, ! / , !, 0/0(4! !3! </7 : , 23=1++(!>3!=(), 10? f, !E0*4(30!
\13/37! /+!E()=17(, !B2+!7!(, !0?B!7/++? ! ; 1++! /BB+?C!E0*4(30, ! ; 10' !, 7' 2+ /), ' !B, !, ' 2*+4!) (5()!02!0' (!7234!0!23, !
7230/13(4! !3!0' (!, 7' 2+ /), ' !B!320!5!7/0!23!52)!4(0/!+, !23!0' (! !6B/70!23!, 7' 2+ /), ' !B, C!R!, 0*4(30!7/3! /BB(/+!02!
0' (!&*!0!23!RBB(/+, !@26 6!00((!=! /!0' (!B)27(, , !2*0+!3(4! !3! </7 : , 23=1++(!>3!=(), 10? f, !B)27(4*) (, C!
!

L]M **E-1'' :0&7&.\$E-1''*8!\$F*1-5-'&1-*+!**U5! /!, 0*4(30!, 02B, ! /00(34!3 . !, 7' 22+ ! ; 10' 2*0!320!5? !3 . !0' (!@2++(. (!25!
A/ ; -!2)5/!+, !02!) (0*)3! /50()! /!+(/=(!25! /9, (37(-!0' (!, 0*4(30! !, !, *9D(70!02! /4 6!3! ,0) /0!=(! ; 10' 4) / ; /+ /, !25!
0' (!+ /, 0!4/0(125! /00(34/37(! /34! !, !32!+23 .) (!+! .19+(!52)! /3? !72*), (!7)(4!0C!!
!

LaM **P-+&+ '-&.\$>- :\$D? 9&'1a!\2)**B*)B2, (, !25!5!3/37! /+! /14! *34()!&10+(!U 1 -! /! ; 10' 4) / ; /+ ! ; 10' !2)! ; 10' 2*0!320!7(-!
) (G*!) (, !0' /0! /!) (0*)3!25!5*34, !7/ +7*+ /0!23!9(!B()52) 6(4! *34()!&10+(!U 1 C!E0*4(30, !, ' 2*+4!7230/70!0' (!Y55!7(!
25!\13/37! /+!R!4!B2+!7? !52)!4(0/!+, !23!0' (!) (0*)3!25!5*34, C!!

C" **!) \$*2) \$*+ / - ! @8' ; 1+ / *-**
R++!, 0*4(30, !) (0*)3!3 . !5)2 6!+(/=(!6* , 0!) (=!(; 10' (!R 6(34 6(30!02!RBB+!7/0!23!B2+!7? ! /34!B)2=14(/3? !*B4/0(, !02!
0' (!R, , 27! /0(!J (/3!25!R7/4(6!7!R55/1), ! /, !B/0!25!0' (!320!7(!25!130(30!02!) (0*)3C!!
!

O" **= / *2& ; + / (-H / * / (-= / 2\$-E(/ ; \$2' *7, -**
U5! /!, 0*4(30! !, ! /BB)2=(4!52)!+(/=(!2)! ; 10' 4) / ; , ! ; ' (3! /3! ' 232)!2)7234*70!724(!!3=(, 0! . /0!23!2)!B)27((4!3 . !, !
B(34!3 . -!0' (!J ! =1, !23!25!E0*4(30!R55/1), -!R, , 27! /0(!J (/3!25!R7/4(6!7!R55/1), -!2)!0' (!J (/3! 6 / ? !B+ /7(! /! 6(6 2! !3!
0' (!, 0*4(30f, !5!+(!!3!0' (!V(. !, 0))f, !Y55!7(!2*0+!3!3 . !0' (!7' /). (, ! /34!0' (!, 0/0* , !25!0' (!B)27((4!3 . , C!Q)27((4!3 . , ! ; 1++!
(10')!9(! (+4! !3! /9(? /37(!B(34!3 . !) (0*)3-!5! !3!0' (!7/ , (!25! /!+(/=(!2)! 6 / ? !7230!3* (!=(3! /50()! /!, 0*4(30!0' (, !
+(/=(!2)! ; 10' 4) / ; , C!
!

H" **D(1* , ; ('@+ -5 /+1+ / * , -**
-

L" M **6#&, # \$*5\$ > ;)# + # !R!**, 0*4(30! ; ' 2! !, !.) /30(4!2)!B+ /7(4!23! /! 1 2+*30/)? !2)! _ 1+!0/)? !A(/=(!25!R9, (37(-!
2)!B+ /7(4!23! /! !2++(. (!U3!0! /0(4!A(/=(!0' /0! !, !320! , *77(, , 5*+? ! /BB(/+(4-! /50()!0' (!5! , 0!4/ ? !25!7+ / , , !!3! /!
, (6(, 0()! !3! ; ' 17' !0' (!, 0*4(30! !, ! (3)2+(4! ; 1++!) (7(1=(!b I g c! .) /4(, !23!0' (!1)!0/3, 7)!B0C!&' (!0) /3, 7)!B0!
/+, 2! ; 1++!7230/13!0' (!320/0!23!bA(/=(!25!R9, (37(Cc!!
!

L#M **E-1'' :0&7&.\$E-1''*8!\$F*1-5-'&1-*+!**U5! /!, 0*4(30! ; ' 2! ; 10' 4) / ; , ! /50()!0' (!5! , 0!4/ ? !25! /!, (6(, 0()! !3! ; ' 17' !0' (!, 0*4(30! !, !
(3)2+(4! ; 1++!) (7(1=(!b I g c! .) /4(, !23!0' (!1)!0/3, 7)!B0C!&' (!0) /3, 7)!B0/+, 2! ; 1++!7230/13!0' (!320/0!23!
b I 10' 4) (; Cc! 82 ; (=) -!15!0' (!, 0*4(30! ; 10' 4) / ; , ! /50()! ' / =13 . !0/ : (3!23(!2)! 62) (!F/ 6!3/0!23, -!0' (!
.) /4(, !52)!0' (!F/ 6!3/0!23L, M! ; 1++!9(!B2, 0(4!23!0' (!, 0*4(30f, !0) /3, 7)!B0C!&' 2, (! .) /4(, !6 / ? !9(!
723=(0) (4!02! b I g c! 23+? !15! /!B(0!0!23! !, !, *9 6!00(4!02! /34! .) /30(4!9? !0' (!R7/4(6!7!E0/34/)4, !
@26 6!00((C!!

J1, 6! , , /+ /34!) /4 6! , , !23!4(7! , !23, ! ; 1++!72 6B+? ! ; 10' ! /BB+!7/9+(!, 0/34/)4, ! /34! . *14(+!3(, !25!0' (!R 6()17/3!X/)!
R, , 27! /0!23! /34!0' (!R, , 27! /0!23!25!R 6()17/3!A/ ; !E7' 22+, C!

!" **! ; 12\$) ' ; -B' ,) ' , , 18-**
L" M **3*+ : -1-*+) \$5*0\$M-) ? -) & !R!**, 0*4(30! ; 1++!9(! /7/4(6!7/++? !4! , 6! , , (4! /34! , *9D(70!0' (!) (/4 6! , !23!
B)27(4*) (, !*34()!0' (!52+2 ; 13 . !7!)7* 6 , 0/37(, K!
!

/C R!,0*4(30!' / ,!5/1+(4!02!/7 '1(=!/!7*6 *+/01=(!PQR!25!"C] [!/50!)!/00(6B013 .!/0!+(/ ,0!"0!7)(4!0!
'2*),! ; 1++9(!41, 61, ,(4!5)26!0' (!@2+(. (!25!A/ ; !/34!!,!,*90(70!02!0' (!)(/4 61, ,123!B)27(4*)(,!
2*0+13(4!3!0'1,!' /34922:C!C!
9C R!,0*4(30!' / ,!5/1+(4!02!/7 '1(=!/!613!6 *6!7*6 *+/01=(!PQR!25!#0!/50!)!/00(6B013 .!/0!+(/ ,0!\$0!
7)(4!0!' 2*),C!!!
7C R!,0*4(30!' / ,!) (7(1=(4!/3!b I gc!.) /4(!!3!0 ; 2!723, (7*01=(!, (6(,0),-!2)!/!723, (7*01=(!

90) (5+(70123,!/34!4(0/1+,!)(./)4!3.!(F/ 6!)(=1(; ,!,(, ,123,!'/4! ; 10'!/++!B)25(, ,2),!5)2 6! ; '2 6!

,*9,0/301/++?!02!72 6B+?! ; 10'!/3!/BB)2=(4!R7/4(6!7!Q+/3-!0' (?! ; 1++!320!5?!0' (!

'1,!2)! '(6 B+2? 6 (30!7 /3. (,C! 1 12+/0123!25!0 '1,!B2+17?! 6 /?) (, *+0!13!41, 7!B+13 /?)?! /70!23-! /3!13 /9!+10?!02! ; 2):!23!
0' (!</7: ,23=1++(!>3!=(, 10?!7/ 6B* ,! /34e2)! /!) (B2)0!02!0' (!@' /) /70!)! /34! \ 103(, ,!@2 6 6 100((!25!0' (!X2/)4!25!X!)!
HF/ 6!3(),C!
!

3" C'(,+0^\$1(-: +&2\$*+,-

L" M **6-? -1\$*+=\$? 9.*2? #+1A!\1),0S?(/)! ,0*4(30,! ; '2!/) (!3)2+(4!5*+501 6 (!! 6 /? !320! ; 2):! 62)(!0' /3!#0!
'2*),!13! /3?! ; ((: !C!U5!0' (!,0*4(30!, *9D(70!02!0' 1,!)(, 0)170!23!' / ,! 62)(!0' /3!23(! (6B+2?()-!0' (!
+! 6 10 /0!23, !/)(!7* 6 *+ /0! =(-! ; '17' !6 (/3, !0' /0! /! ,0*4(30!7/3320! ; 2):! 62)(!0' /3! /!020 /+!25!#0!' 2*),!B()!
; ((: C!
!**

L#M **N#1-1-*+\$*0\$=0' #91-*+A!&' (!@2+(. (!25!A/ ; !)(72. 3!Z(, !0' /0!0')(!/)(!, 10* /0!23, !13! ; '17' !, 0*4(30, !
6 /? !3((4!02!, ((: ! (6B+2? 6 (30!9(?234!#0!' 2*), !/! ; ((: !C!U3!0' (, (!13, 0/37(, -!0' (!, 0*4(30!, '2*+4!320!5?!
0' (!R, ,271/0(!J (/3!25!R7/4(6 17!R55/1), !/34!) (G*(, 0! /3!(F7(B0!23C!&' (!R, ,271/0(!J (/3!25!R7/4(6 17!
R55/1), !; 1++!723, !4(!), *7' !)(G*(, 0, -!, 2!+23. !/ ,!0')(!/)(!32! /7/4(6 17!2!)20')!7237()3, C!&' 1,!B2+17?!
/BB+!(, !02!(6B+2? 6 (30!23! /34!255!7/ 6B* ,! /34! /BB+!(, !02! /3?!0?B(!25!(6B+2? 6 (30!52)! ; '17' !/! ,0*4(30!
) (7(1=(, !)(6 *3() /0!23C!
!**

LSM **= ? 9.*2? #+1\$&1\$1''#3*..#4#5\$5&6&7A! I '1+(!0' (!+ 6 10 /0!23, !23! ; 2):!4(, 7)19(4! /92=(!42!320! /BB+? !02!
B()!24, !; ' (3!7+ / , , (!/)(!320!13!, (, ,!23-!, *7' !/ ,!9) (/ : ,!9(0 ; ((3!, (6 (, 0(), !2)! /! , * 6 6 ()!, (, ,!23! ; ' (3!
/!, 0*4(30!1, !320!(3)2+(4!13!7+ / , , (-!23\$7/ 6B* ,! (6B+2? 6 (30!9? !0' (!@2+(. (!25!A/ ; !!, !/ + ; /? , !+ 6 10(4!
02!#0!' 2*), !*3+(, !/4= /37(! /BB)2= /+!1, !290/13(4!5)2 6!0' (!R, ,271/0(!J (/3!25!R7/4(6 17!R55/1), C!
!**

+++, **6&\$7#.89"%%(* : 8"9()#"; < * = (8())&%5.%"\$"(#***
*

@2+(. (!25!A/ ; !, 0*4(30, !/)(! /B/)0!25!0' (!</7: ,23=1++(!>3!=(, 10?!72 6 6 *3!0?! /34!' /=(! /77(, ,!02!0' (!), 2*)7(, !25!
6 /13!7/ 6B* ,C!
!

\134!2*0! 62)(! /92*0!7/ 6B* ,!)(, 2*)7(, -! '00B, Kee ; ; ; CD*C(4*eB2)0/ +e7*) (30S, 0*4(30, CB' B!
!

</7: ,23=1++(!>3!=(, 10?! ,!72 6 6 100(4!02!7) (/013. !/34! 6 /130/1313. !/3!(4*7/0123 /+! /34!(6B+2? 6 (30!(3=1)23 6 (30!
5)(!25!, (F!41, 7)1 6 13/0123! /34!' /) / , , 6 (30-!13! /772)4/37(! ; 10' !&10+(!Ug !25!0' (!81. ')!H4*7/0123!R 6 (34 6 (30, !25!
"Na#C!</7: ,23=1++(!>3!=(, 10?!B)2' !9!0, !/++!52) 6, !25!, (F!41, 7)1 6 13/0123! /34!' /) / , , 6 (30! /34!, *7' !9(' / =12)! ; 1++!320!
9(102+)/0(4!E(F* /+! 61, 7234*70!1, !/!52) 6!25!, (F!41, 7)1 6 13/0123!B)2' !9!0(4!9?!</7: ,23=1++(!>3!=(, 10?! /34!&10+(!
UgC!</7: ,23=1++(!>3!=(, 10?! ; 1++!0/ : (!0! 6 (+?! /70!23!13!)(, B23, (102! /++! /++(. /0123, !25!, (F* /+! 61, 7234*70! /34!
' /) / , , 6 (30!02!(3, *) (!0' (!, /5(0?!25!</7: ,23=1++(!>3!=(, 10?! /34!B)2=14(! /3!(3=1)23 6 (30!5)(!5)2 6!, (F!
41, 7)1 6 13/0123C!
!

V(/4! 62)(!1352) 6 /0!23!23!</7: ,23=1++(!>3!=(, 10?!f, !72 6 6 10 6 (30!02!B)=(30!3. !41, 7)1 6 13/0123! /34! =1(; !0' (!5*+!
7/ 6B* ,!B2+17?-' 00B, Kee ; ; ; CD*C(4*e0!0+(1Fe!34(FCB' B!
!

_ (69(), !25!0' (!</7: ,23=1++(!>3!=(, 10?!72 6 6 *3!0?! /) (!FB(70(4!02!52, 0) /34!*B' 2+4!0' (!'1. ' (, 0!, 0/34/)4, !25!
'23(, 0?! /34!130(.)0? -! ; '17' !/)(!52*34/0123, !52)!0' (!130(+(70* /+!(34(/ =2), ! ; !(3. / . (!13C!
!

V(/4!0' (!5*+!</7: ,23=1++(!>3!=(, 10?!R7/4(6 17!U30(.)0?!Q2+17?-' 00B, Kee ; ; ; CD*C(4*e/7/4(6 17!130(.)10?e/7/4(6 17S
130(.)10?S 61, 7234*70SB2+17?CB' B!
!

&'(!Y5517(!25!J1,/9!+10?!E*BB2)0!E())=17(,!;2):,!;10'!<>!5/7*+0?!/34!,0/55!02!(3,*)(!0'/0!)(/,23/9+(!/7726624/0123,!/)(!6/4(!02!/++2;!0*4(30,!/3!(G*/+!2BB2)0*3!0?!02!+(/)3!13!0'(!7+/,,)226!/34!02!'!/(!77(,!,!02!/+!/))(/,!25!0'(!<>!7/6B*,0!

!
11(;!62)(!1352)6/0123!23!JEE-!'00B,kee ; ; ; CD*C(4*e4!,/9!+10?,())=17(,e!
!

</7: ,23=1+(!>3!=(,),10?!L<>M!(372*)/ .(,!) (,2+*0!23!25!52)6 /+!726B+/130,!13!/3!/062,B'()(!25!6*0*/+!)) (,B(70C!!R3?!52)6!25!)(0/+!0123!52)!9)13.13.152);/4!/!52)6 /+!726B+/130!;1+!320!9(!02+()/0(4C!&'(!52)6 /+! 726B+/130!B)27(,!,!BB+!(,!02!/+!,0*4(30,!/34!, '2*+4!9(!52+2; (4!13!/+!7/, (,!, ' (3!1352)6 /+!)(,2+*0!23!1!,!320! ,*55171(30!02!)(,2+=(!0' (!!, *C!

V(/4!0'(!5*+!@26B+/130!/34!P)l(=/37(!Q)27(4*)(,!'00B,kee ; ; ; CD*C(4*e.)((3B/.(,e*3!=(,),10?SB2+171(CB'B!
!

E0*4(30!\13/371/+!E())=17(,!,!2*!)!B)l6 /?)! (,2*)7(!52)! ,0*4(30!B/?6(30,-!/772*30!1352)6 /0123-!/34!513/371/+!14C!

11(;!62)(!1352)6/0123!/92*0!E0*4(30!\13/371/+!E())=17(,!'00B,kee ; ; ; CD*C(4*e5!3/371/+,())=17(,e!
V(/4!16B2)0/30!B2+171(,!) (+/0(4!02!,7'2+/,) '1B,!/34!513/371/+!14!13!0' (!<>!@/0/+2.-!
'00B,keeD*C,6/0)07/0/+2.1GC726e#0#"S#0##e#0#"S#0##SR7/4(617S@/0/+2.eP(3()/+SU352)6/0123eE7'2+/,)'1B,S/34S
 \13/371/+SR,,1,0/37(eI10'4)/; /+,S/34SV(5*34,!
!

</7: ,23=1+(!>3!=(,),10?!0*4(30,!/)(!FB(70(4!02!7230)19*0(!02!0' (14(=(+2B6(30!/34!,*,0(3/37(!25!/!7266*3!0?! 7' /)/70()IZ(4!9?!)(,B(70-!7/)13. !/34!'23(,0?C!&'1,!FB(70/0123!7/+,!52)!9('/=12)!; '17'!4(623,0)/0(,!0' (!5!=(! B)1371B+(,!25!,0*4(30!7234*70K!)(,B(70!52)!23(, (+5-!)(,B(70!52)!20' (, -!)(,B(70!52)!B)2B(0)?-!)(,B(70!52)!/*0'2)10?-! /34!'23(,0?C!

V(/4!0'(!5*+!</7: ,23=1+(!>3!=(,),10?!@24(!25!@234*70-'00B,kee ; ; ; CD*C(4*e.)((3B/.(,e724(S25S7234*70CB'B!
!

@2+(. (!25!A/ ;!,0*4(30,! /=(!77(,!,!02!72*3, (+13.!,) =17(,!0')2*. '!'! "#S-018&.\$3&0#L0*89\$, *BB2)0(4!9?!0' (! E0*4(30!@2*3, (+13. !@ (30!)!23!6 /13!7/ 6B*,0!&'1,! (F0()3/+!,) =17(!B)2=14(,!5)((!77(,!,!02!0' ()/B?!/34!72*3, (+13. ! ,) =17(,C!</7: ,23=1+(!>3!=(,),10?!13=(,0,!13!0' !1,!) =17(!02!9(00!)!6 ((0!0' (!, *BB2)0-!6 (30/+!' (/+0' -!/34!, 7' (4*+13. ! 3((4,!25!2*)!).) /4*/0(!,0*4(30!B2B*+/0123C!&2!. (0!,0/0(4-!7+17: !0' (!9*0023!9(+2; !/34!/701=/0(!?2*)!/772*30!,13. ! 0' (!13,0)*70123,!B)2=14(4C!

11(;!62)(!1352)6/0123!/92*0!0' (!E0*4(30!@2*3, (+13. !@ (30)-!'00B,kee ; ; ; CD*C(4*e72*3, (+13.e!34(FCB'B!
!

&'(!6!,123!25!@/6B*,!E(7*)10?!1,!02!B)2=14(!/!,/5(!/34!, (7*)(!7/6B*,!0' /0!(372*)/ .(,!/3!/062,B'()(!0' /0! /++2; ,!0' (!7/6B*,!7266*3!0?!02!/7'1(=(!4*7/0123/+!B)25(, ,123/+!34!13,010*0123/+!.2/+C!

11(;!62)(!1352)6/0123!/92*0!0' (!>3!=(,),10?!f,!@/6B*,!E(7*)10?-!'00B,kee ; ; ; CD*C(4*e7/6B*, (7*)10?e!34(FCB'B!
!

@2+(. (!25!A/ ; !E0*4(30,! ' /=(!/77(, ,!02!0' (!5*+!,)=17(,!255() (4!23! 6 /13!7/ 6B*,-!/,! ; (+!/,!0' 2,(!,B(71517/++?!
255() (4!/0!0' (!J 2 ; 302 ; 3!A/ ; !7/ 6B*,C!

!
11(; !6 2)(!1352) 6 /0!23!/92*0!@/ 6B*,!E0*4(30!E()=17(,-!'00B, Kee ; ; ; CD*C(4*e.) ((3B/. (.e7/ 6B*,S,0*4(30S
.()=17(,CB 'B
!

@2+(. (!25!A/ ; !,0*4(30,!/)(!)(G*1)(4!02!' /=(!(. *+!)!/77(, ,!02!+/B02B!0' /0! 6 ((0,!0' (!>31=()),!0?f,!0(7' 32+2. ?!
) (G*1)(6 (30C!!

E0*4(30,! ' 2*+4!)(=1(; !134! =14* /+!72*), (!, ?+/9!102!*34(),0/34!0' (!)(G*1)(6 (30,!/34!+1 6 10,!25!* ,13. !+(70)2317!
4(=17(,-!137+*413. !+/B02B,-!4*)13. !7+/ , , (,C!!

11(; !0' (!5*+!</7: ,23=1+(!>31=()),!0?&(7' 32+2. ?!V(G*1)(6 (30-!'00B, Kee ; ; ; CD*C(4*e/4 61.,,123,e0(7' 32+2. ?S
) (G*1)(6 (30CB 'B!!

-
!
!