

UCL Migration Research Unit

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UCL Migration Research Unit Working Papers

No. 2019/2

An explorative ethnography in the super-diverse Wilmslow Road

Urban sociality and the recontextualization of shisha and food

Elena Damiano



Migration Research Unit

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Abstract 1

Acknowledgements 2

Table of Contents 1

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&' ; 0!) *+, (#*' \$! :\$. #4!+. \$!) *#1=()6 *+, (#! *#4! 6 *)R\$+,<*+, (#! (=! A *# /' *+ (7#!,#! >*1+!
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:2+! . * -\$!+. \$! ,#='2\$#; \$!+(!1+\$ \$)!2): *#!&' *##,# /!)\$ /\$#\$) *+, (#!&) (Z\$; +! ,#+\$#4\$4!+(!) *#4!
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#;)\$ *1,# /! ,#\$) *#+, (#*'!+(2),1 6! *#4!\$; (# (6 ;! /) (7+ . !0, : ,4PT! ? * 6 , *# (IDEFI *VP!

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4\$1;), : ,# /! ; 2'+2) *!' [2*)+\$)1! *!1*!)\$12'+! (=! *!#\$ (' :\$) *'X! ; *! ; 2'+2, -\$! *#4! ,#1+26\$#+*!

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DP!K\$. (4(' /0!

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*!6 * &! (=!K * #; . \$1+\$)!0b=, ; \$!=(!)! c *+, (#*'!@+*+,1+,; 1!*#4! b)4#*#; \$!@2)-\$0!DEFSVP!J. \$!
 4*+*1\$!

7 *1!21\$4!=(!)!;\$*+,#/*!*!6 * &! (=!+ . \$!9Y!0b=, ; \$!=(!)! c *+, (#*'!@+*+,1+,; 1!*#4! b)4#*#; \$!
 @2)-\$0!DEFaVP!J. \$!/\$ (/)*&.,; *!4*+*!7\$)\$!*#*'01\$4!*#4!-,12*',1\$4!7,+!.!. \$!1 (=7*)\$!
 8@+24,(P!!

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 !

Table 1. K\$+. (4(' /0!,#!)\$' *+, (#!+(!+ . \$!)\$1\$*); .!(:Z\$;+, -\$1!

!(!(

Objectives	Data collection
<p>J (!2#4\$)1+*#4!+. \$! .,1+()0!*#4!&(';;,\$1! +. *+!1 . * &\$4!+. \$! &)\$1\$##!; . *)*+;\$)! (=!+ . \$! 5,'61'(7! 8 (*4!0=(;21!(#! 62'+;2'+2)*',16! *#4!2): *#!1&*;\$V!</p>	<p>Interviews</p> <p>3! F!1\$6,31+2;+2)\$4!,\$+)\$-,\$7!7,+.!*:21,#\$11!1+*==H(7#\$)!! 3! F!1\$6,31+2;+2)\$4!,\$+)\$-,\$7!7,+.!*:21,#\$11!1+*==H(7#\$)! 3! _!,\$=()6 *!,\$+)\$-,\$7!7,+.!*:21,#\$11!1+*==H(7#\$)!1! 3! F!7 *'R,#/*!' (#/!,\$+)\$-,\$7!7,+.!*:21+(6\$)H)\$1,4\$#+! 3! F!7 *'R,#/*!' (#/!,\$+)\$-,\$7!7,+.!*:21+(6\$)H)\$1,4\$#+! 3! F!1\$6,31+2;+2)\$4!,\$+)\$-,\$7!7,+.!*:21(\$&)\$1\$#*+,-\$!)=(6!M(2#;,'! 3! F!1\$6,31+2;+2)\$4!,\$+)\$-,\$7!7,+.!*:21M(2#;,'^1!)=(#!,\$\$1!1+*==!</p> <p>Collection of secondary sources !</p> <p>3! # \$71&* &\$)1!*); .,-\$1!*#4!'(; *!. ,1+()0!: ((R1! 3! 1+*+,1+,; *!4*+*! 3! &(';;,\$1! !</p>

DPDP!>#+) * #; \$!,#+ (!+ . \$!=\$,\$'4!

!

@+*)+,#/#!+. \$!=\$,'47 ()R! * #4!=\$,4,#/#!,#+\$)' (;2+())1! . * 1!: \$\$#!*!; . * '\$#/#/#!& . * 1\$!(=!
+ . ,1!)\$1\$*); . P!#! . * 4!=\$ 6 ,',*) ,+0!7 ,+ . !+ . \$! 5 , '6 1'(7!8 (* 4X! . (7\$-\$)X!#!4,4!#(+!&\$)1(#*"0!
R#(7!*#0(#\$!7 ()R,#/#!())! , - ,#/#!(#!+ . ,1!) (* 4P!#!&' * ##\$4!+(! * &&) (* ; . !&\$ (&\$!7 ()R,#/#!,#!
1 . (&! * #4!)\$1+*2) * #+1! ()!)\$1,4\$#+1! (#!+ . \$!1+)\$ \$! * #4! * 1R,#/#!+ . \$ 6! , =!+ . \$0!7 (2'4! ,R\$!+(!
&*)+, ; , & * +\$!,#! 6 0!)\$1\$*); . P!M(#1,4\$),#/#!+ . * ! * 1R,#/#!1+) * #/\$)1!+)21+! * #4! . \$&! , 1!1 (; , * "0!
* 7R7 *)4X!#!+ . (2/ . +!+ . * ! * 1R,#/#!42),#/#!*!= * ; \$3+(3= * ; \$!\$#; (2#+\$)!7 * 1!6 ()\$!+) * #1&*)\$#+!
+ . \$#!1\$#4,#/#!*#!\$6 * ,!()!6 * R,#/#!*!+\$&& . (#\$!; * "P!Q(7\$-\$)X!+ . ,1! * &&) (* ; . !)\$[2,)\$4!*!
)\$=\$;+ , (#! (#! 6 0!&(1,+ , (# * ',+OX!,P\$P!]+ . \$!=\$,'41! (=!&(7\$)!+ . * +! ; (##\$; +!+ . \$!=\$,'4!)\$1\$*); . \$)!
* #4!&*)+, ; , & * #+1!0 p V!0Y * +<!F I I _C!U I V P!!

J . \$!=\$,)1+!&) (: '\$ 6!7 * 1!+ . \$!=() 6 * ',+0! * #4!+\$ 6 & () * ',+0! (=! 6 0! * &&) (* ; . P! ")) * #/#/#!

!

1!#!(2+1,4\$)!*#4!#(#316(R\$)X!W!4,4!#(!R#(7!*#0+.,#/!*:(2+1.,1.*!#4!,+1!,6&*;+!
(#!5,'61'(7!8(*4P!
!

J.\$!#\$7!+(&,;!(!1.,1.*!*#4!1(6\$!,#=()6*+,(#!/*+.\$)\$4!*)(2#4!/\$#4\$!)('\$1!
,#+) (42;\$4!*!#\$7!6\$+. (4('(/,; *!; . *"\$#/\$!)\$'+\$4!+(!&(1,+,(#*',+0P!" +!+. \$!:\$/ ,##,#!/(=!
+. \$!)\$1\$*); .X! *1! *!-\$6*\$!\$+. #(/)*&.\$)X!W!7*1!*7*)\$!+. *!W! ; (2'4! . *- \$! . *4!1(6\$!
&): '\$61! (!* ; ; \$11!42\$!+(!60!/\$#4\$)!*#4!1\$%X! :2+!W!7*1!#(+!2'0!*7*)\$! (!+.\$!
5,'61'(7!8(*4^1!/\$#4\$)!; (#;\$&+2*',1*+, (#1P!"=)\$!1(6\$!,#+, *! ,#+\$)-,\$71X! . (7\$-\$)X!W!
1+*)+\$4!+(!2#4\$)1+*#4!+. *!&2:;',!1&*;\$X!\$1&\$; ,*'0!*) (2#4!1.,1.*!:*)1X!7*1!6*\$3
4(6,#*+\$4!*#4!+. ,!6*4\$1(6\$!7(6\$#!-\$!\$!2#; (6=(+)*:\$P!" +!+. \$!&\$)1(#*!\$-\$'X!W!7*1!
#(+!=\$\$',#!2#1*-\$X!W! (:1\$)-\$4!K21',6!*#4!#(#3K21',6!7(6\$#!7*R,#!/(#!+.\$!)(*4!
*!(#P!Q(7\$-\$)X!W!2#4\$)1+(4!+. *!=(!)1(6\$!,#4,-,42*!1!*#4!,#!;\$)+*#!1&*;\$1!+. \$!
&)\$1\$#;\$! (!*!7(6*#!*(#P!;\$; (2'4! . *- \$! :\$\$#! (44P! \ (!)!. *!)\$*1(#X!,#!42:,(21!
1,+2*+, (#1X!60!6*\$!&*)+\$)! :\$; *6\$!60! (; ; *1, (#*!=\$'4!*#4!=(4,\$!; (6&*#, (#P!W#!*!
1,6,*!)!=\$*1., (#X!N,*!" :23N2/ . (4!7*1!.\$&\$4! :0!+. \$!&)\$1\$#;\$! (!.\$!)!=\$+. \$)!7.\$#!
* ; ; \$11,#!/*6 (#/!A\$4(2,#1,#!>/0&+!0DEFUC!FD3F`VP!
!

@.,1.*!*#4!(!&21.\$4!6\$!+(!6(-\$!)=(6!+. \$!+(&,;!(!&)(42;+, (#!+(;! ; (#126&+, (#X!
:\$; *21\$W! . *4!* ; ; \$11!+(!1.,1.*!; (#126\$)1!)*+.\$)!+. *#!&)(42;\$)1P!c\$7!,#+\$)-,\$71!*#4!
&21.\$4!6\$!+(;! ; (#1,4\$)!+. \$!+. \$()\$+; ,*!+(&,;1!(=)2:.*#1(; ,*,+0!,#!)\$'+, (#!+(;! ; (662#,+0!
; (. \$!, (#!*#4!0(2+. P! \ (!)!. *!)\$*1(#X!W!4\$; ,4\$4!+(;! ; (#* ; +!*#(+.\$!)&\$)1(#!7()R,#!/7,+.!
0(2#/!&\$(&\$!,#!+. \$!)*\$X!7.(! ; (2'4!:\$!; (#1,4\$)\$4!*!]&*)*3\$+. #(/)*&.\$)1^!0Q('6\$1!
#4!K); 21!DEEGC!D`UfaX!,#!A\$)/!*#4!c(7; ; R*!DEF!C!SVP!W#!*!-\$)0!\$%&'()*+,-\$!6*##\$)X!
W!7*1!=(('7,#!/*#!,#+\$#+, (#*!)+.\$()\$+; ,*!1*6&,#/!^!0L '*1\$)!*#4!@)*211!F!I!I!C!_SV!*#4!
* ; R#(7*\$4/ ,#/!)+.\$4,*(/ , ; *!#*+2)\$!(=)\$1\$*); .^!0>#/'*#4!F!I!I!C!_IG_VP!
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DP`P!W#+\$)-,\$71!*#4!\$+.,;1!

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"1!J*:\$!F!1.(71X!+. \$!)\$1\$*); .!7*1!; (#42;+\$4!:0!21,#!/!+.)\$\$!+0&\$1!(=,#+\$)-,\$7!
+\$; . #, [2\$1P! \,)1+0X!1\$6,31+2; +2)\$4!,#+\$)-,\$71!7\$)\$! :*\$1\$4! (#! *!' ,1+ (! [2\$1+, (#1P!
Q(7\$-\$)X!+. \$1\$! [2\$1+, (#1! ; . *#/\$4! 4\$&\$#4,#!/(#!+. \$! &\$)1(#!,#+\$)-,\$7\$4P! \ (!
,#1+*#;\$X!W! *1R\$4!+(!*'!)\$1+*2)*#4!6*#*/\$)1! [2\$1+, (#1!)\$'+\$4!+(!+. \$.)!)\$1+*2)*#4!
1+()0X!+. \$!=(4!(=\$)\$4X!+. \$!)(*4!*#4!+. \$! ; (662#,+0X! :2+!,#!\$* ; .! ; *1\$X!W! . *4!+(!
2#4\$)1+*#4!4,=\$)\$#4!*1&\$; +1!)\$'+\$4!+(!+. \$.)! ; 2,1,#\$1X!\$P/P!W! *1R\$4! [2\$1+, (#1!* : (2+!
.26621!+(!*!K,44'\$!>*1+\$)#!6*#*/\$)!*#4! [2\$1+, (#1!* : (2+!N*. ())\$^!=(4!+(!*!
!

B*R,1+*#,!(#\$P!

@\$; (#4'OX! 7 *'R,#/!,#+\$)-,\$71!7\$)\$! ; (#42;+\$4!7,+.!+7 (!;21+(6\$)1H)\$1,4\$#+1P!W!
+. (2/ .!+(!21\$!+. ,! 6\$+. (4! *1!+. \$!#*+2) *!\$#- ,)(#6\$#+! (=!+. \$! ;21+(6\$)1!,1!+. \$!)(*4!
,+1\$'=P! ?2),#/!+. \$!\$! ,#+\$)-,\$71! W! '\$!+. \$! &\$)1(#! 1&\$*R! =)\$X!+. \$! 4,1;211,(#! 7 *1!
1+,62'*\$+4! :0!+. \$! \$#- ,)(#6\$#+! *#4!+. \$,)! 6\$6 (,\$!)*+. \$)!+. *#! 60! [2\$1+,(#! 01\$\$!
b^c\$,'!\$+! DEFIVPJ.,!16\$+. (4!*'' (7\$4!+. \$!,#+\$) (;2+!)1!+(!\$*1,'0!+*R!* : (2+!+. \$!.,1+!)0!
(=!+. \$!)(*4!*#4!+. \$!:21,#\$11\$1P!

J.,)4'OX!+. \$!,#=()6 *!,#+\$)-,\$71!7\$)\$!#(+!)\$; ()4\$4X! :2+!W!+((R!#(+ \$! 7 ., '\$!+. \$!
,#+\$)' (;2+!)1!7\$)\$!+*R,#/X!+. \$#!W!\$%&*#4\$4!+. \$!#(+ \$! *1!1 ((#! *1!&(11,: '\$! *+)\$)!+. \$!
\$#; (2#+\$)P!W!=(' (7\$4!1&\$; ,-, ;!+ (&, ;1!*#4! [2\$1+, (#1!+. *+!W! . *4!,#! 6, #4! ()! :), \$='0!#(+ \$4!, #!
60!#(+ \$: ((RP!Q(7\$-\$)X)!+. \$!6 *Z(),+0!(=!+. \$!; (#-\$)1*+, (#1!7\$)\$!2#1+)2; +2)\$4P!W!=\$'+!+. *+!
&\$ (&'!7\$)\$!62; .!6 ()\$!*!\$*1\$!7,+ .!+. ,1!+0&\$! (=!6\$+. (4P!

J. \$!)\$; ()4\$4!,#+\$)-,\$71!7\$)\$!) *#1;), :\$4!7,+ .!+. \$! \S!& (/) * 6 6\$X! *#4!+. \$#!
#'01\$4!*#4!; (4\$4!7,+ .!cd,- (!B) (!FDP!J. \$!,#=()6 *!,#+\$)-,\$71!7\$)\$! *'1 (!; (4\$4!7,+ .!
cd,- (X! 7 . \$)\$*1!#(+ \$! *#4! &. (+ /) * &. 1X!)\$12'+, #/! =)(6! (: 1\$) - *+, (#1! (#! 5, '61' (7!
8 (*4!*#4!42),#/!+. \$!\$-\$#+! 7\$)\$!*#*'01\$4!:0! . *#4P!

"!+. \$!,#+\$)-,\$71!7\$)\$!; (#42;+\$4!7,+ .! ,#=()6 \$4!; (#1\$#+P!W! 7 *1*7 *)\$!+. *+!W! . *4!
+(!* - (,4! *1R,#/!1\$#1,+,-\$! [2\$1+, (#1X!=()!\$%* 6 &'X! (#!\$+. #, ; ,+0! *#4!) * ; \$X!, '\$/ *', +0! *#4!
1\$#1,+,-\$!4\$+*, '1! * : (2+!&\$)1 (#*'!1+ (), \$1P!W! 7 *1* '1 (!)\$6, #4, #/!+. \$!&*+), &*#4!+(!1+ (&
+. \$!4,1;211,(#!,=!+. \$0!=\$'+!2#; (6=() * : '\$P! ?2),#/!1 (6\$!,#+\$)-,\$71X!,#+\$)' (;2+!)1!+(2; . \$4!

`P!K*#;. \$1+\$)^1!JM2))0!K,'\$^!

!

`PFP!J.\$!;,+0^1!&*1+!*#4!&)\$1\$#+!

!

J.\$!,6&(1,#/!'(;(6(+,-\$1!'(;*+\$4! ,#!+. \$! @;,\$#;\$! *#4! \#421+)0! K21\$26! (=!
K*#;. \$1+\$!)\$6,#41! -,1,+()1! (=!+. \$! ;,+0^1!&*1+!,#421+),*! 4\$-\$'(&6\$#+!0@;,\$#;\$! *#4!
\#421+)0! K21\$26X! Q0'+(#! DEFUX! ,%VP! K*#;. \$1+\$)X! *! ;,+0! ,#!+. \$! c()+. 7\$1+! (=! >#/'*#4!
0\,/2)\$!FVX!. *1!: \$\$#!=* 6(21!=())!+. \$!&)(42;+,(#!(=!+\$%+, '\$1,#;\$!+. \$!F_+3FU+!;\$#+2)0!*#4!
,#!+. \$!F!+!;\$#+2)0!:\$; * 6\$!+. \$!/'(: *! *#4!,6&\$),*!; * &,+*!(=!(+(#!)*4\$!0K\$'())!F!G_0!
F3DE!,#! 5\$):#\$)!F!I!E*X! @;,\$#;\$! *#4! \#421+)0! K21\$26X! Q0'+(#! DEFUC! ,%3%! *#4! DaVP!
?2),#/!+. ,1!.,1+(),; *!&. *1\$!(=!,#421+),*! *#4!\$; (#(6,;!4\$-\$'(&6\$#+X!
\$(8(!)-162(*F1()-4.7)-4(6)-7(,)2(;!)-41.716T)-4(+16(!**7(')')

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Figure 1. K * # ; . \$ 1 + \$) ! , # ! + . \$! 9 # , + \$ 4 ! Y , # / 4 (6 ! 0 D E F a V !

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M (# + * , # 1 ! b @ ! 4 * + * ! * # 4 ! c * + , (# * ! @ + * + , 1 + , ; 1 ! 4 * + * ! r ! M) (7 # ! ; (& 0) , / . + ! * # 4 ! 4 * + * : * 1 \$!) , / . + ! i D E F a j ! 1 \$ \$!

!

Figure 2. e!(=! 5 .,+!A),+1.!)\$1,4\$#+1!,#!K *#; . \$1+\$)!0K@b " 1X!DEFFV!

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D`

`PDP!J.\$!W#4,*#^!\$%(+;!b+.\$)!

!

@(2+.! "1,*#!,66,/) *#+1X! 6 *,#'0!)=(6!B*R,1+*#X! 1+*)+\$4!+(!&(&2'+\$! *#4! (&\$#!
:21,#\$11\$!#!5,'61'(7!8(*4!42),#/!+. \$!F!SE13UE1!0A*)\$+!*#4!K;>-(0!DEEUVP!K*#0!
(=!+. \$!,#+\$)'(;2+()1!:\$,\$-\$4!+. *+!@(2+.! "1,*#!:21,#\$11\$!(&\$#\$4!=(!)!+. \$!#\$\$41!(=!+. \$!
;(662#,+0! *#4! +.\$! ,66,/) *#+! &(&2'+, (#P! W#! +.\$! GE3!E1X! .(7\$-\$)X! +.\$!)(*4!

!

D_

)\$1+*2)*#1!(#15,'61'(7!8(*4!*)\$!)2#!:0!B*R,1+*#,#X!7.(6!4(!#(+!4),#R!'!';(.('!,=!+. \$0!
=("(7!W1'*6P!J.\$!7()4!]#4,*#^!,R\$!]M2))0!,1!&*)! (=! *#! \$%(+,;! :)*#4,#/! 1+)*+\$/0!
)\$&)\$1\$#+,#/#! *!=*'1\$! *2+. \$#+,;,+0P! J.,1!+0&\$! (=! (,)\$#+'*,1+!)\$&)\$1\$#+'*+, (#! (=! 5,'61'(7!
8(*4!,1!)\$6,#,1;\$#+!(=!+. \$!; ('(#,*!\$)*P!\ (),#1+*#; \$X!>','<* :\$+. !A2\$++#\$)!0DEEGV!*)/2\$4!
+. *+!+. \$!; (#126&+, (#!(=!]#4,*#^!=((4!)\$&)(42;\$1X!) *+.\$)!+. *#!\$)*1\$1X!) * ; , *!*#4!=()6\$)!
; ('(#,*! 2#\$[2*! &(7\$)!)\$*+, (#1.,&1P! ?\$1&,+ \$! +.,1X!]#4,*#^!)\$1+*2)*#1! 7\$)\$! 1+, '!
12;; \$11=2'X!*#4!+(!+. ,1!4*0!1(6\$!(=!+. \$!-,)1!]#4,*#^!)\$1+*2)*#1!(=!]M2))0!K,'\$!1+, '!\$%,1+!
#4!106: ('1\$!+. \$!. 0&\$!(=!]#4,#^!=((4!,#A),+*,#P!

!

`P`P! "#\$7!\$)*X!#\$7!6,/) *+, (#! =' (71X!#\$7!:21,#\$11\$1!!

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"'+.(2/.!*1!,/#!*+!+. \$!\$#)*#; \$!(=! 5,'61'(7!8(*4!1+*+\$1!]5\$';(6\$!+(!+. \$!M2))0!
K,'\$X!]#4,*#^!)\$1+*2)*#1! *)\$!#(7!*! 6,#(),+0! *6 (#/!+. \$! :21,#\$11\$1! (#!+. \$!)(*4P!
";;()4,#/!+(! 60! ,#+\$)'(;2+()1X! 1(6\$!(=!+. \$!)\$1+*2)*#1! ;'(1\$4! 4(7#!=()! 4,=\$)\$#+!
)\$*1(#1X!,#;'24,#/C!+. \$!2#7,',#/#\$11!(=!0(2#//A),+1.!B*R,1+*#,#!+(!; (#,#2\$!+. \$!=\$6,'0!
:21,#\$11X!+. \$!,#* :',+0! (=!+. \$!)\$1+*2)*#1!+(!)\$#\$7!+. \$,)!(=\$)X!+. \$!,#;)\$*1,#/!* :',+0! (=!
;21+(6\$)1!+(!; ((R!*+!. (6\$X!*!;0; ,#/'!*#\$!; (#1+2;+\$4!:0!+. \$!M(2#; ,!+. *+!)\$42;\$4!+. \$!
&*)R,#/!1&* ;\$X!* ;R!(=!*! :21,#\$11!*11(; ,*+, (#!+. *+!; (2'4!2#+\$!+. \$!)(*4X!*#4!,#;)\$*1\$4!
;(6&\$+,(#!*#4!; (1+1!\$1&\$; ,*'0!42\$!+(!)\$#+,#;)\$*1\$X!*!&

((:(\$)-4(1),2(#)-4(\$)-4(11X)-4(11X)P(!)

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_P! @ .,1 . *!

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_PF!]5\$!4(#^+!',R\$!1.,1.*^!6\$4,*!#4!\$-\$)04*0!4,1;(2)1\$1!(#!
1.,1.*!

!

@.,1.*!:*)!*)\$!(#\$!(=!. \$!6(1+!;(#+)(-\$)1,*!;. *#/\$!!(=5,'61'(7!8(*4P!"#!
,#+\$#1\$!4,1;211,(#!7,+.!K,;. *\$'X!7.(!/) \$7!2&!(#!+.,1!)(*4X!*#4!#(7!.\$!,1!1+)2//',#/#!(!
R\$&&*!,-\$!.,1!=*6,'0!:21,#\$11X!6*4\$!6\$!2#4\$)1+*#4!+. *+!#!;(2'4!#(+,/#(\$!+.\$!+(&;P!
Q\$!7*1!\$*+,#/!*#!* &&'\$!:\$.,#4!.,1!;(2#+\$)!7.,'\$!\$%&)\$11,#/!. ,1!4,1;(#+\$#+!7,+.!+.\$!
1+*+21!(=!. \$!)(*4P!Q\$!&(#+\$4!+(!*!;(&0!(=!. \$!K*#;. \$1+\$)!>-\$#,#/!c\$71P!#!'((R\$4!*+!
+.\$!+,\$X!,+!7*1!*:(2+!1.,1.*P!Q\$!1*,4C!J.*+,1!1!(6\$+.,#/#!+. *+!#!4(!#(+!',R\$!(=!. ,1!)(*4C!
+.\$!1.,1.*!:*)1P!N*+\$)!(#X!#!*1R\$4!.,6!,=!. \$)!\$!,1!*!1\$#1\$!(=!;(662#+0!*#4!.\$!
#17\$)\$4!JOPPPV!J.\$)!)\$!6*#0! =,/. +1X!*#+,31(;,*!:\$.*-, (2)!OPPPV!4,4!0(2!1\$\$!+.,1g!
0FUPEUPF!V!*#4!.\$!&(#+\$4!+(!+.\$!*),; '\$!*/ *#!*1!,=!. \$!7*#+\$4!+(!7*RS!6\$!2&P!#!)\$3
'((R\$4!*+!. \$!#\$71&* & \$)!*#4!1+*)+\$4!+(!)\$*4!,+!&(&\$)'OP!J.\$)!*,; '\$!4\$1;),:\$4!+.\$!
, '(12)\$!(=!*!1&\$;=,;!1.,1.*!:*)!42\$!+(!+.\$!:) \$*; .! (=!. \$!16(R,#/! : *#X!*#+,31(;,*!
:\$.*-, (2)!*#4!;),6\$!0@;.\$\$).(2+!DEF!V!P!c\$/ *+,-\$!;(66\$#+1!*:(2+!1.,1.*!:\$;*6\$!
; (66(#!42),#/#!+. \$!\$#+,\$!=\$'47()RP!\ (!),#1+*#;\$X!*=\$)!\$*+,#/!*!+*1+0!6\$*'X!#!*1R\$4!+.\$!
)\$1+*2)*#+!6*#*/\$)!+(!4,1;211!*:(2+!. \$!)(*4X!=(4!*#4!+. \$!)\$1+*2)*#+P!Q,1!*#17\$)!
7*1C!]5\$!4(!#(+!',R\$!1.,1.*^!0EGPEaPF!VX!.\$!7\$#+1+)*,/. +!+(!+.\$!&(#+P!!

@.,1.*!16(R,#/!,1!*#!*+,-+0!+. *+!:\$;*6\$!&(&2'*)!(-\$)!+.\$!'*1+!0\$*)!1!(#!
5,'61'(7!8(*4X!*1!,#!+.\$!)\$1!!(= >2)(&\$P!"!1.,1.*!16(R\$)!+('4!6\$!+.*!)\$;\$#+!
,66,/) *+, (#!=(6!+. \$!K,44'\$!>*1+!&*0\$4!*!)('\$!,#!, #;)\$*1,#/#!+. \$!&(&2'*)+0!(=!. \$!(:Z\$;+P!
>-\$)0+.,#/#!+*)+\$4!=(6!=\$6,'0!:21,#\$11\$1X!:2+##(7!5,'61'(7!8(*4!,1R#(7#!*1!])1.,1.*!

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; (6 6 (4,=; *+, (#! (=!1 .,1. *! *#4!1.,1. *!: *)1!(#! 5,'6 1'(7!8 (* 4!@ .,1. *!,1!4,-,4,#/!+. \$!

12:1+*#;\$X!:2+!+\$#4!+(!&(#+!(2+!+. *+!1 .,1 . *!,1!#(+!+. \$!(#'0!2#. \$*'+. 0!12:1+*#;\$!,#!(2)!

1(;,\$+0!8*- ,!+('4!6\$C!

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]o\$* .X!W!+. ,#R!,+!,1!2#. \$*'+. 0X!:2+!,+!4\$&\$#41!(#!. (7!(#\$!4\$=#\$!2#. \$*'+. 0P!

o(2!;(2'4!\$*+!+((!62; .!; ,##* 6 (#!*#4!4,\$P! "#0(#!#\$\$41!* ;+,-,+,\$1!+(!; ., '!)

(2+X!+. ,!1! . \$'&,#/! 6\$!+(!/) (2#4! 601\$=X!W! * 6! . \$)\$! *' (#\$X! *#4!W! ; *#! . * -\$!

1(6\$!

1(6\$!&\$(&'\$!1*0!+. *+!0(2!; *#^+!4(!,+!OPPPV^!OFGPEUPF IVP!

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h*;R!.\$&\$4!6\$!+(!;'*),=0!+. ,1!&(#+!=2)+.\$)C!

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JOpV!,#+,*"0!+. \$!,4\$*(=! ,R\$!16(R,#/X!7.\$#!+. \$!1; . ('*)1!-,)1+!4,1;211\$4!+. ,1X!
'(#/!+,6\$!*/(X!+. \$0!4,4!#(+!2#4\$)1+*#4!+. \$!,6&' ; *+,(#!(!16(R,#/X!+. \$!
)\$*1(#!,+!7*1! X!+. *+!,+,1!]4,1',R\$4^X!,+,1!: \$; *21\$!(=!+. \$!16\$!"PJ.\$)\$!,1!
*!&)*OX!(#!*\),4*OX!7.\$#!7\$!/(!(!;(#/)\$/*+,(#*!&)*OX!+. *+!7\$!1.(2'4!#(+!
\$*+!',R\$!1+)(#/!=(4X!',R\$!(#,(#!*#4!/)*',!:\$; *21\$!+. \$!16\$"!;(2'4!&2+!&\$(&\$!
(=P!OpV!@(!+. \$0!&2+!,+,#+(!+. ,1!; *+\$/())OX!:2+!#(7!:\$; *21\$!(=!"!+. \$!)\$1\$*); .!
*:(2+X!:\$+7\$#\$!16(R,#/X!'2#/#!4,1\$*1\$!1*#4!; *#; \$)1X!6(1+!1; . ('*)1!(=!+. \$!
7(')4!1*0!+. *+!,+,1! ^P^!OFGPEaPF IVP!

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W#!*#0!;*1\$X! !7.,; .!)\$&)\$1\$#+1 *!/)0!)*\$*!:\$+7\$#\$#! !*#4 X!,1!1+,!"
21\$4!:0!+. \$!K21',6!1.,1.*!16(R\$)1!7.(6W!\$#;(2#+\$)\$4P!

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_P`P!J.\$!6*)R\$+,<*+,(#!(=!1.,1.*!

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@.,1.*!16(R\$)1! \$%&* ,#4!+. *+! 7,+.! +,6\$! 1.,1.*!16(R,#/! :\$;*6\$! -\$)0!
;(66\$);,*',1\$4!*#4!+. ,1!,6&',\$4!*!6*+)\$,*!+)*#1=()6*+,(#!(=!1.,1.*!#4!1.,1.*!:*)1P!
W#1+*/)*6!&*0\$4!*#!,6&()+*#+)('\$!,#!+. ,1!&)(;\$11!01\$!\$!*1(!J*\$':!\$+! DEFGWX!=(!)
,#1+*#;\$X!"7*,1.*!+(4!6\$C!

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JOpV!7.\$#W!1+*)+\$4!+(!16(R\$!,#N(#4(#X!,+!7*1!#(+!',R\$!+. *+X!+. \$)\$!7\$)\$!1(6\$!
1,6&'\$!&'*\$;\$1X!',R\$!1\$6,3(2+4(())7,+.!&'*1+; !+ \$#+1P!J.\$#X!,+!1+*)+\$4!+(!
4\$-\$'(&)*#4!:\$;(6\$!1(6\$+. ,#/!6())^X!*#4!'*+)\$!1.\$!*44\$4!J0(2!; *#!1\$!\$!
+. *+!+. \$1\$!&'*\$;\$1!*)\$!)\$*"0!&)\$+OX!+. \$0!6*RS!+. \$6!k,#1+*/)*66*:'\$!OPPPV^!
ODIPEUPF IVP!

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@.,1.*!:*)1!*)\$!4\$!,/#\$4!=(!) *&&\$* ,#/#!+(! ;21+(6\$)1X!=(!) ,#1+*#;\$C!1(6\$! . *-\$!
'2%2),(21!*)/\$!*#4!1.,#0!1(=*1!*#4!*)6; . *)1X!*#4!1(6\$!1\$)-\$!4),#R1!,#!*'+\$)#*+,-\$!
.,&1+\$)!6*1(#!Z*)1P!K())\$(-\$)X!1.,1.*1!. *-\$!4,=\$)\$#+'(R1!*#4!*)\$!4(#\$!7,+. !4,=\$)\$#+!

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6 *+\$),*1X! :2+! 6 (1+! ,6 &()+*#+'0! +(: * ; ; (! ; *#! . * -\$! 4,==\$)\$#+! ,#+\$#1,+,\$1! *#4! =)2,+0!
='* - (2)1P! 8 * -,! \$%&'* ,#\$4!]0(2! ; *#! . * -\$! \$-\$)0+ . ,#/X!) *1& : \$))OX! * &&\$X! ; (; R+ * ,! 6 ,%!
0DDPEUPF I VX! *#4!' *+\$)!1 . (7\$4!6\$!'!7 . ('!=\$)1 . !&,\$# * &&'\$! (#!+ . \$! . \$*4! (=!*1 . ,1 . *X!],+!
,1!'!' * : (2+!6 *)R\$+,#/X!*#4!,+!,1!*!7*0!(=!,#),/2,#/!&\$ (&'\$!0DDPEUPF I VP!J . ,1!,1!*!&)(; \$11!
(=!6 *)R\$+,<*+, (#!*#4!+)*#1=() 6 *+, (#!+ . *+! . *!*'1 (!:\$#\$!4 (; 2 6 \$#+\$4! : 0!c *RR*1 . ! \$!
0DEFFV!,#!N\$: *# (#P!

Q (7\$-\$)X!1 . ,1 . *!* ; [2,)\$1!4,==\$)\$#+=() 6 1!,#!4,==\$)\$#+!&' * ; \$1P!8 * -,!*'1 (!*44\$4C!

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]W!+ . ,#R!+ . \$)\$!,1! *! : ,/! [2\$1+, (#! 6 *)R!=()!K21',6 1P!@ . ,1 . *!,1!1+,!'! *!=() 6! (=!
,#+(% , ; *+, (#!*#4! ; (#+*,#1!# , ; (+,#\$P!@ (X!W! ; *#! : \$', \$-\$!+ . *+!1 (6 \$!&) * ; +, , (#\$)1!
7 (2'4!# (+!',R\$!,+P!J . *+,1!+ . \$!)\$*1 (#! 7 . 0!,#!+ . \$!K,44'\$!> *1!+ . \$)\$! *)\$!' \$11!
='* - (2)1X!*#4!,+!,1!'\$11! ; (6 6 \$) ; , * ,1\$4X!+ . \$0!4 (!# (+!7 *#+!+ . *+!0(2# /!&\$ (&'\$!
/\$! ,#+(% , ; *+\$4! *#4! /\$! (=P! W! : \$; * 6 \$! ; (6 6 \$) ; , * ,1\$4! *#4! + . \$! ='* - (2)1!
\$%&*#4\$4! ,#! (+ . \$!)&*)+! (=!+ . \$! 7 ()'4P!W! 7 *!1 (# ; \$! ,#! ? 2 : * ,! *#4! ,+!,1!# (+!
& (11 , : '\$!+ (!=#4!)=2,+1! (#!+ . \$!1 . ,1 . *P!0DDPEUPF I VP!

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J . ,1! 1\$#+\$#;\$! 1 . (7!1 . (7! 1 . ,1 . *! (#! 5 , '6 1' (7! 8 (*4! ,1! *! +) *#1=() 6 \$4! 6 *+\$) , *!
; (6 6 (4,+OX!*!-\$)0!*# ; , \$#+(: Z\$; +! : 2+) \$,#-\$#+\$4!01\$\$!M . * (2* ; . , IDEEaC!F` G3FS` VP! 8 * - ,!
*#4!" 7 * ,1 . *!*)\$! 7 *)\$! (=!+ . ,1!&)(; \$11X!*#4!=()!+ . *+!)\$*1 (#!4 (!# (+! ; (#1+)2 ; +!+ . \$!1 . ,1 . *!
*#4!1 . ,1 . *! : *)! *1! *2+ . \$#+ , ; ! () . 0 :) , 4P!

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_P_P! " !#\$7!12 : 3 ; 2'+2)\$!

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J .) (2/ . ! 6 (-\$ \$ \$ + X!1 . ,1 . *!4,4!# (+! (#'0!2#4\$) / (!6 *+\$) , *!6 (4,= ; *+, (#1! : 2+!*'1 (!

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_PSP!@ .,1 . *X!/\$#4\$)!*#4!/\$#\$)*+,(#*'!4,-,1,(#1!

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@.,1.*!16(R,#/!12)\$'0!#;)\$\$*1\$1!1(;,*:',+0X!:2+!);+,;1!(=1.,1.*!16(R,#/!7(2'4!
*)/2\$!+. *+!1.,1.*!4(\$1!#(+!,#;)\$\$*1\$!+. \$!1(;,*:',+0!(=\$-\$)0(#\$P!##!=* ;+X!1.,1.*!,1!
16(R\$4!6* ,# '0!:0!0(2#/!6\$#!*#4!=()!+. *+!)\$*1(#X!1.,1.*!:*)1!*#4!+. \$!)(*4!:\$; *6\$!
6\$#34(6,#*+\$4!1&*;\$1P! \ ()! ,#1+*#;\$X! "<)*X!1+\$11\$4!+. \$! ,#*:',+0!(=\$6*' \$1! *#4!
=*6,,\$1!+(!* ;;\$11!+. \$!)(*4!7,+.!; (#-,4\$#;\$C!]:\$; *21\$!(=1+. \$!1.,1.*!:*)1!,+!:\$;(6\$1!
R,#4!(=!*! +(!:\$!. \$)\$!*+!;\$)+* ,#1+,6\$1X!+. *+!1.(2'4!#(+!:\$!0FEPEUPFIVP!

5(6\$#!*)\$!'1(!&()+)*0\$4!*1!-,;+,61!(=1&(+ \$#+,*!'1.,1.*!16(R\$)1^,#*&&(&),*+\$!
:\$.*-, (2)1P!Y*:,)X!*!0(2#/!2#,-\$)1,+0!1+24\$#X!\$%&'*,#\$4!+. *+!1(6\$,6\$1!6\$#!= (" (7!
7(6\$#!*#4!.\$!:\$,\$-\$1!+. *+!+. \$!1(2);\$!(=1,#*&&(&),*+\$!;(2)+1.,&!&)*+,;,\$1!,1!+. *+C!

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]:*1,;'0!,#!+. \$!"1,*#!;2'+2)\$X!*#4!+,.,1!. *&&\$#1!,#!'(+1!(=1;2'+2)\$1!+. (2/.X!',R\$!
6\$#!*#4!7(6\$#!*)\$!+('4!+(X!',R\$!#(+1()!(=1+*0!+(/\$. \$)X!1(!7.*+!. *&&\$#1!,1X!
7.\$#!\$* ;.!(#\$!/\$+1!('4\$)X!+. \$!6\$#!*)\$!',R\$X!+. \$!6\$#!*)\$!+('4!:0!+. \$.)!=*6,'0C!
k/(!*#4!=#4!*!/,)'!#4!+. \$0!4(!#(+!R#(7!. (7!+(!4(!+. *+X!:\$; *21\$!=()!'!'+. \$.)!
'-\$!+. \$0!7\$)\$!+('4!#(+!(/ (!*+=\$)!/,)'1P!0FGPEUPFIVP!

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J.\$!1.,1.*!:*)1X!,#!=* ;+X!*)\$!#(+!; (#1,4\$)\$4!1&*;\$1!=()!7(6\$#!:0!1(6\$!(=1+. \$!);+,;1!
#4!'1(!:0!1(6\$!(=1+. \$!6\$#!16(R,#/P!@(;,*!'6%,#/!:\$+7\$\$#!(&&(1,+\$/#\$4\$)1!,1!#(+!
\$#;(2)*/\$4!:0!2'+)*3(+). (4(%!=())61!(=1!1'*6P!

c\$-\$)+.\$'\$11X!7.,'\$!#7*1!; (#42;+,# /!=\$'47(RX!#7*1!(:1\$)-,#/!/) (2&1!(=17(6\$#X!
;(2&'\$1!*#4!6,%\$4!/) (2&1!(=1&\$(&'\$!; (6,#/!(#!+. \$!)(*4!=()!16(R,#/!1.,1.*P!5(6\$#!
(#!5,'61'(7!8(*4!7\$)\$!=("(7,#/!4,=\$)\$#*! *#4!; (#+)*1+,#/!>('1P!5(6\$#!*)\$!\$,+. \$!)
&(+)*0\$4!*#4!=\$\$!-2'#\$)*:\$!()X!*1!,#!+. \$!; *1[. d[("#)-4!!

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SP! \ ((4!

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SPFP! " !]=* 6 , '03 () , \$ # + \$ 4 ^ !) (* 4!

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W= ! 1 . , 1 . * ! 4 , - , 4 \$! ! + . \$! ; (6 6 2 # , + 0 ! (= ! 5 , ' 6 1 ' (7 ! 8 (* 4 X ! = ((4 ! 2 # , + \$ 1 ! , + P ! b = ! ; (2) 1 \$ X !
 + . \$) \$! , 1 ! ; (6 & \$ + , , (# ! : \$ + 7 \$ \$ # ! * ' ! + . \$! : 2 1 , # \$ 1 1 \$ 1 X ! , # ; ' 2 4 , # / ! + . \$! (' 4 ! \$ 1 + * : ' , 1 . \$ 4 !] # 4 , * # !
) \$ 1 + * 2) * # + 1 X ! . (7 \$ - \$) X ! # (# \$! 1 & \$ * R 1 ! # \$ / * + , - \$ ' 0 ! * : (2 + !) \$ 1 + * 2) * # + 1 ! * # 4 ! = ((4 P ! W # ! = * ; + X !
 \$ * + , # / ! = ((4 ! (# ! 5 , ' 6 1 ' (7 ! 8 (* 4 ! , 1 ! \$ / * ' X ! , 1 ! ! * # 4 ! , 1 ! * ; ; \$ 1 1 , : \$! + (! & \$ (& \$! (= ! * ' ! * / \$ 1 X !
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) \$ 1 + * 2) * # + 1 ! *) \$! 1 & * ; \$! 7 . \$) \$! * ! 6 () \$! - , :) * # + ! * # 4 ! \$ 1 & \$; , * ' 0 ! 2 # [2 \$ 1 + , (# \$ 4 ! * # 4 ! =) \$ \$!
 6 , % , # / ! (= ! 6 2 ' + , & \$! 4 , - \$) 1 \$! & \$ (& \$! + * R \$! & ' * ; \$ P !

J : \$!) \$ * 1 (# ! 7 . 0 ! # \$ 7 !) \$ 1 + * 2) * # + 1 ! (& \$ # \$ 4 ! (# ! + . \$! 5 , ' 6 1 ' (7 ! 8 (* 4 ! , 1 ! * # ! , # , + , * !
 4 \$ 1 ,) \$! (= ! ; * + \$) , # / ! 6 \$ 6 : \$) 1 ! (= ! + . \$ 6 6 (/) * # + 1 ^ ! ; (6 6 2 # , + 0 ! * # ! " * / 9 (,) 2 (1 !) - 2 (*) - 4 (; ;) 0 !

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!=\$7!7\$R1!: \$=()\$X!Y : ,)!\$%&' * ,#\$4!+(!6 \$C!

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]5 . , '\$!/) (7, #/ !2&X! ,= !7\$! . *4!1&* / . \$+ , !: (' (/ # \$1\$! , + !7 * 1#^ !Z21+ !& * 1+ * !1 * 2; \$X!
. \$) : 1X! (!) 7 . *+ \$- \$)! 7 * 1! , + ! K0! 6 (6! 7 (2'4! & 2+! ; . , ' , X! /) \$\$#! ; . , ' , X! + 2) 6 \$) , ; X!
) \$4! ; . , ' , ! & (74\$) X! ; 2)) 0! & (74\$) X! + (! 6 * R\$! , + !) \$ * " 0! " 1 , * # 0! 0 p VP! " #4! , = ! W! 6 * 4\$!
, + X! W! 7 (2'4^ - \$! 6 * 4\$! , + ! O P P P V! , R\$!) \$ / 2 *) ! 7 * 0 X! * #4! 6 0! 6 (6! 7 (2'4! : \$! , R\$C! k Y * : ,) t!
W! , ! 1! - \$) 0! : ' * #4 X! # (! = ' * - (2) t! ^! 0 F G P E U P F I V P!

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J. \$! 7 () 4! (= ! Y * : ,) X! * ' 1 (!) \$ 6 , # 4 \$! 6 \$! (= ! * ! &) \$ - , (2! 6 \$ \$ + , # / ! 7 , + . ! " <) * X! 42) , # / ! 7 . , ; . !
1. \$! + (' 4! 6 \$! * : (2! . \$) ! 4 \$ ' , ; , (2! ! J M 2)) 0 ! N * 1 * / # \$ ^ ! J . \$! / \$ # \$) * ! 4 , \$ + ! (= ! + . \$! A) , + 1 . ! " 1 , * # 1!
7 . (6 ! W! 6 \$ + ! , ! - *) , (2! X! 6 , % \$ 4 ! * # 4 ! . 0 :) , 4 X! 1 , 6 , ' *) ! + (! + . \$!) \$ 1 + * 2) * # ^ ! 1 (= \$) P!

J. \$!) \$1+*2) * # + ! . * 4! (# \$! (= ! + . \$! 6 (1 + ! 4 , - \$) 1 \$! ; ' , \$ # + \$ \$! (# ! + . \$!) (* 4 X! : 2 + ! , + ! 7 * 1!
/ \$ # \$) * " 0 ! & (& 2 ' *) ! * 6 (# / ! A) , + 1 . ! " 1 , * # 1 X! 7 . , ' \$! + . \$! ' ; , \$ # 1 \$ 4 !] W # 4 , * # ^ !) \$ 1 + * 2) * # + 1 ! + . * +!
(& \$ # \$ 4 ! , # ! + . \$! G E 1 3 D E E E 1 ! *) \$! 6 () \$! & (& 2 ' *) ! * 6 (# / ! A) , + 1 . ! 5 . , + \$! ; 2 1 + (6 \$) 1 P! W = ! + . \$!
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K * 1 * ' ! , 1 ! + . \$! \$ % (+ , ; ! = (!) + . \$! A) , + 1 . X ! N * 1 * / # \$! , 1 ! + . \$! \$ % (+ , ; ! = (!) + . \$! " 1 , * # P! W + ! &) \$ 1 \$ # + 1 ! + . \$!
) \$ * ! . (6 \$! = ((4 ! (= ! + . \$! + . ,) 4 ! / # \$ \$) * + , (# ! (= ! A) , + 1 . ! " 1 , * # 1 ! ' , - , # / ! , # ! K * # ; . \$ 1 + \$) X! + . \$!
/) * # 4 ; . , ' 4) \$ # ! (= ! + . \$! =) 1 + ! B * R , 1 + * # , ! *)) , - \$ 4 ! , # ! + . \$! ; , + O P ! \ (!) + . * + !) \$ * 1 (# X! + . \$!
; (6 6 (4 , = , * + , (# ! (= ! N * 1 * / # \$! 4 (\$ 1 ! # (+ ! . , 4 \$! * ! = () 6 ! (= ! \$ % & ' (, + * + , (# ! (= ! + . \$! b + . \$!)) \$ * + \$ 4!
+ (! = () 6 \$) ! ; (' (# , * !) \$ * + , (# 1 . , & 1 P! J . , ! 1 , !) * + . \$) ! * ! / ((4 ! \$ % * 6 & \$! (= ! . (7 ! . 0 :) , 4 , + 0 ! ; * #!
; (2 # + \$) 3 * ; + ! & (7 \$) ! , # \$ [2 * ' , + , \$ 1 ! 0 A . * : . * ! F I I _ V P!

Q (7 \$ - \$) X! \$ - \$ # ! , = ! + . \$! A) , + 1 . ! " 1 , * # ! , 1 ! * ! 1 \$ ' = 3 4 \$; ' *) * + , (# ! (= ! . 0 :) , 4 , + 0 !) \$ / *) 4 , # / !
A) , + 1 . ! * # 4 ! " 1 , * # ! , 4 \$ # + , + , \$ 1 * # 4 ! = ((4 X! + . \$! 6 * + \$) , * ! . , 1 + () 0 ! (= ! + . \$! A) , + 1 . ! " 1 , * # ! N * 1 * / # \$!
1 . (7 1 ! + . \$! ' , 6 , + * + , (# 1 ! *) (2 # 4 ! + . \$ 1 \$! \$ 1 1 \$ # + , * , 1 + ! ' * : \$ ' 1 P! N * 1 * / # \$! , 1 ! * ! = ((4 ! ; ((R \$ 4!
\$ - \$) 0 7 . \$) \$ X! : 2 + ! , + ! ; (2 ' 4 ! : \$! ; (# 1 , 4 \$) \$ 4 ! * # ! W + * ' , * # ! 4 , 1 . P! " # ! W + * ' , * # ! 6 , /) * # + ! , # ! =) (# + ! (= ! *!
4 , 1 . ! (= ! A) , + 1 . ! " 1 , * # ! N * 1 * / # \$! 7 (2 ' 4 ! ; (6 & *) \$! , + ! 7 , + . ! + . \$!] * 2 + . \$ # + , ; ^ ! W + * ' , * # ! N * 1 * / # \$! (= !
+ . \$,) ! 6 (6 X! 6 * 4 \$! 7 , + . ! & * 1 + * ! ' 0 \$) 1 X!) * / 2 X! : q ; . * 6 \$! 1 * 2 ; \$! * # 4 ! B *) 6 \$ 1 * # P! Q (7 \$ - \$) X!
, # /) \$ 4 , # + 1 ! (= ! + . \$! N * 1 * / # \$! *)) , - \$ 4 ! , # ! W + * ' 0 ! + .) (2 / . ! / ' (: * ! & * 1 + ! . , 1 + () , \$ 1 ! (= ! ; (# # \$; + , (# 1!
+ . * + ! , # \$ - , + * : ' 0 ! 4 \$ 1 +) (0 ! + . \$! \$ 1 1 \$ # + , * , 1 + ! , 4 \$ * ! (= ! * # !]

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5,'61'(7!8(*4!2#4\$)7\$#;!1\$-\$)*!;.*#/\$1!(-\$)!+.\$!'*1+!0\$*)1P!#!+.\$!F!IE1!
*#4!DEEE1X!+,1!)(*4!7*1!R#(7#!*1!+.\$!]M2))0!K,'\$!:\$;*21\$!,+!(=\$)\$4!\$%(+;!]#4,*#!
;2)), \$1!+(!>#/'1.!;21+(6\$)1P!A2+!,#!*#!,#!)\$*1,#/'0!;(6&\$+,+,-\$!\$#-),(#6\$#+X!+.\$!
#26:\$)!(!]#4,*#!)\$1+*2)*#1!4\$;,\$#4P!J.,1!)(*4!,!:\$;(6,#/!=*6(21!=(!)!,+1!1.,1.*!
:*!)1P!J.\$1\$!;.*#/\$1!;()\$1&(#4!+(!+.\$!*)),-*!(=!#7!6,/)*#1!;(6,#/!=)(6!+.\$!K,44'\$!
>*1+X!"1,*X!"=);*!#4!>2)(&\$!+.*!#(7!'!-\$!+(/\$+.\$)!7,+!6\$6:\$)1!(=!*'!(#/3
\$1+*:',1.\$4!B*R,1+*#,!(662#+0P!J.\$!K*#;.\$1+\$)!M,+0!M(2#;,'!1!&)(24!(=!,+1!4,-\$)1,+0!
#4! ,61!(!;\$'\$:)*+\$!,+7.\$#\$-\$)!&(11,:\$P!J.\$!&\$(&\$!7()R,#/!*#4!,-,#/!(#!5,'61'(7!
8(*4!\$6:(40!+,1!*+,+24\$P!!

W#!=*;+X!+,1!)(*4!,1!#(+1(;,*'0!4,-4\$4!:0!,112\$1!)\$'+\$4!+(!\$+.#,;,+0!*#4!)*;\$!:2+!
)*+.\$)!:0!+.\$!;(66(4,=,*+,(#!(=1.,1.*P!J.\$!1(;,(3;2'2)*!'*#*'01,1!(=!+.\$!\$-\$)04*0!
4,1;(2)1\$1!*#4!&)*;+;\$1!*)(2#4!+,1!*)+\$-*;+!)\$-\$*'4!.(7!;2'2)*!'4,-\$)1,+0!(#!
5,'61'(7!8(*4!+R\$1!=()6P!@.,1.*!4,-4\$1!+.\$!;(662#+0!:\$;*21\$!(=4,=\$)\$#+)!\$*1(#!
+.*!;*#!*1(!:\$!;(#!,4\$)\$4!+.\$!1(;,*!4,6\$#1,(#!!(=!+.\$!4\$:*+\$C!\$;(#!6,;!*#4!\$/*!
=*;+()1X!*1!7\$"!*1!,\$+\$)&\$*+,(#!!(=!;(#!26&+,(#!+*:(1X!/\$#4\$)!('\$!*#4!
/\$#\$)*+,(#*!#\$41P!J.\$!&(1,+(#,#!/*'(#/!+.\$1\$!&(#+1!,!#(+!)\$'+\$4!+(!+.\$!\$+.#,;!
:*;R/)(2#4!(=!*'!&\$)1(#!P!\()!+.*!)\$*1(#!X!#!=,#!,#!6()\$!*&&(&)*+\$!+(!4\$1;),:\$!
5,'61'(7!8(*4X!="(7,#/!@+-\$-#!d\$)+(-\$;!0DEEa:VX!*1!*!12&\$)34,-\$)1\$!)(*4!7.\$)\$!
4,=\$)\$#+!;2'+2)\$1!4(!#(+!#\$;\$11*),'0!;()\$1&(#4!+(!1&\$;=,;!6,/)*#1!/(2&1P!J.,1!#7!
=()6!(=!4,-\$)1,+0!*1(!)\$#4\$)1!+.\$!&(1+;('(#,*!;),+;,161X!7.,;.!;(#;\$&+2*',1\$!+.\$!
;(66(4,=,*+,(#!(=!;2'2)*!'4,-\$)1,+0!*1!*!=()6!(=!\$%(+;,16!)\$&)(42;,#/!#\$3;('(#,*!
)\$*+,(#!X!,\$)\$-\$*#!0\$P/P!.((R1!DEFST!A2\$++\$)!DEEGT!K*0!F!I!UVP!

J.\$!,#+)(42;+,(#!(=1.,1.*!1*7!+.\$!;)*+,(#!(=!*\$7!12:;2'+2)\$!(=!0(2#//!K21',6!
1.,1.*!16(R\$)1!7.(!+*\$#4!1.,1.*!:)1!=()!1(;,*!1,#/X!=#4,#/!*!&*)+\$X!)\$'%,#//!*#4!
;(#!26,#/!*!12:1+,+2\$!+(!*);(.'P!@.,1.*!;)*+\$!1!*1&*;\$!(=!1(;,*!,+0!*#4!;(#!,-,*!,+0!
7.\$)\$!1.,1.*!16(R\$)1!;*#!:\$!],#/\$/)*+\$4!,#!1(;,\$+0!*1!#(34),#R\$)1!;(#!26,#/!*!
[2\$1+,(#*:\$!12:1+*#;\$P!K()\$(-\$X)!1.,1.*!16(R\$)1!)*\$!*7*)\$!(=!+.\$!6(-\$6\$#+1X!
+)*#1=()6*+,(#!*#4!+.\$!6*)R\$+,*+,(#!(=1.,1.*X!#!=*;+X!+.\$0!4(!#(+;(#1+2;+!+.\$!
(:Z\$;+*1!.0:),4X!*2+.\$#+,;!()!\$-\$#!\$%(+;X!:2+)*+.\$)!*1!*!;(66(4,+0!+.*!;*#!1*+,1=0!
+.\$)!1(;,*!#\$41P!J.\$!;*1\$!(=1.,1.*X!+.\$)\$=(-)\$X!1.(71!+.*!+.\$!;(#!\$&+!(=!

!

c\$-\$)+.\$'\$11X!W!:\$',,\$-\$X!+. *+!+. ,1! 7 ()R!; *#!; (#+),:2+\$!+(! *! :)(*4\$)!4,1;211,(#!
)\$'+\$4!+(!&(';;0! *#4! ; (6 6 2#,+0! ; (.\$1,(#P! \ (! ,#1+*#;\$X!+. \$! ; (6 6 2#,+0! ; (.\$1,(#!
&(';;0!(=+. \$!Q(6 \$!b==;\$! *#4!

A, : ', (/) * & . 0!

!

" : 23N2/ . (4X! NP! ODEFUV! iF I GUj! C!
X!D#4!\$4,+ (#X! b *R' *#4X!M*',=()#,*C!9#,-\$)1,+0! (=!M*',=()#,*!B)\$11P!

!

" && * 42) * ,X! " P! 0\$4PV! OF I GUV!
X!M* 6 :),4/\$C!M* 6 :),4/\$!9#,-\$)1,+0!B)\$11P!

!

")1 . * 4X! " PX! K *+ . *) (X!hPX! ") 1 . * 4X! >PX! @ * 4 .) * X! @P@PX! c () + (#3 5 * # / = () 4X! 8PX! h * 7 * 4X! KP!
O DEF I V!] Y # (7 '\$ 4 / \$ X! * ++ , 24 \$ 1 X! * # 4 ! & \$) ; \$ & + , (# 1 ! + (7 *) 4 1 ! 7 * + \$) & , & \$! + (: * ; ; (! 1 6 (R , # / !
* 6 (# / 1 ! ; ('\$ / \$! () ! 2 # , - \$) 1 , + 0 ! 1 + 24 \$ # + 1 C ! * ! 1 0 1 + \$ 6 * + , ; !) \$ - , \$ 7 ^ X ! X!
F I X ! _ ` I C ! F 3 F D P !

!

" 1 . ;) (=+X! 8PJP! *#4!A\$- ,)X! KP! ODEFGV!] K 2 '+ , ; 2' + 2) * ' , 1 6 ! , # ! ; (# + \$ 6 & () *) O ! A , + * , # C ! & (' , ; O X !
' * 7 ! * # 4 ! + . \$ () O ^ X ! X! D F X !
F X ! F 3 D F P !

!

" - \$ 0 *) 4 X ! B P ! * # 4 ! h * ; R 1 (# X ! ? P ! O D E E G V !] 5 * + \$) & , & \$! 1 6 (R , # / ! , # ! 1 + 24 \$ # + 1 C ! &) \$ - * '\$ # ; \$ X ! , 1 R !
= * ; + () 1 X ! 1 0 6 & + (6 1 ! (= ! * 4 4 , ; + , (# ! * # 4 ! 1 6 (R \$! , # + * R \$ C ! \$ - , 4 \$ # , \$! =) (6 ! (# \$! A) , + , 1 . !
2 # , - \$) 1 , + 0 ^ X ! X ! G X ! F X ! F a _ P !

!

A *)) \$ + X ! L P " P ! * # 4 ! K ; > - (O X ! ? P ! O D E E U V !] J . \$! \$ - (' 2 + , (# ! (= ! K * # ; . \$ 1 + \$) ^ 1 ! M 2) O ! K , '\$ C ! =) (6 !
1 2 : 2) : * # ! 1 . (& & , # / ! 1 +) \$ \$ + ! (! \$ + . # , ; ! 4 \$ 1 + , # * + , (# ^ X ! , # ! ? P Q P ! Y * & ' * # ! * # 4 ! 5 P ! N , ! 0 \$ 4 1 V !
X ! N * # . * 6 C ! 8 (7 6 * # ! * # 4 ! N , + '\$ = , \$ ' 4 X ! F I ` 3 D E _ P !

!

A *)) O X ! A P ! O D E E F V ! X!
M * 6 :),4/\$C!B (' , + O P !

!

A * 1 2 X ! B P !

!

!

? * 6 , * # (X! > P! 0DEFGV!]W!] , # + \$ /) * + , (# ^ ! * ! 21 \$ = 2 ' ! ; (# ; \$ & + ! = () ! + . \$ () , 1 , # / ! + . \$! , # ; () & () * + , (# ! (= ! 6 , /) * # + 1 g ^ X ! 9 # & 2 : ' , 1 . \$ 4 ! > 11 * 0 X ! ? \$ & *) + 6 \$ # + ! (= ! L \$ (/) * & . 0 X ! 9 # , - \$) 1 , + 0 ! M (' \$ / \$! N (# 4 (# P !

!

? * 6 , * # (X! > P! 0DEFI * V!]] > * + , # / ! + . \$! b + . \$) ^ g ! M) , + , ; * ' 0 ! \$ % * 6 , # \$! + . \$!) \$ ' * + , (# 1 . , & 1 ! : \$ + 7 \$ \$ # ! ; (# 1 2 6 & + , (# ! * # 4 ! 6 2 ' + , ; 2 ' + 2) * ' , 1 6 ! 4) * 7 , # / ! (# ! 1 (6 \$! 1 & \$; , = , ; ! \$ % * 6 & \$ 1 ^ X ! 9 # & 2 : ' , 1 . \$ 4 ! > 11 * 0 X ! 9 M N ! ? \$ & *) + 6 \$ # + ! (= ! L \$ (/) * & . 0 X ! 9 # , - \$) 1 , + 0 ! M (' \$ / \$! N (# 4 (# P !

!

? * 6 , * # (X! > P! 0DEFI : V!] \ ((4 ! &) * ; + , ; \$ 1 ! , # ! K * # ; . \$ 1 + \$) ^ 1 ! 6 2 ' + , ; 2 ' + 2) * ' ! M 2)) 0 ! K , ' \$ C ! ? , 11 \$) * + , (# ! B) (& (1 * ' ^ X ! 9 # & 2 : ' , 1 . \$ 4 ! &) \$ 1 \$ # + * + , (# X ! 9 M N ! ? \$ & *) + 6 \$ # + ! (= ! L \$ (/) * & . 0 X ! 9 # , - \$) 1 , + 0 ! M (' \$ / \$! N (# 4 (# P !

!

? *) 3 b 4 \$. X ! c P @ P ! * # 4 ! " : 2 3 Q * 6 6 * 4 X ! b P " P (') 2 (\$) - 4 \$ 6 I 6 N 4 (4) - 4 (!) - 4 2 * (?) 2 (\$) 1 (0 D E . ; . s 4 4 (!) - 4 3 T - 4 9) (6 - 4 0 (0) 5 4 (') 2 (4) + 2) (- 2) (2 2) 1 2 (E 4) S 0 (\$) - 0) 0 X (P 4 - 2) J 2 (\$) - 0 2) X (G ! N 3) ! \$

!

—

\ (#\$)X! cP!0DEEaV!Q (7!\$%;\$&+, (#*!,1!c\$7!o ()Rg!K,/)*+, (#!*#4!62'+,;2'+2)*',16!,#!+. \$!
\$6&,\$!;,+0^X! X!` EX!UX! I I I 3FED` P!

!

L '*1\$)X!APL P! *#4!@+) *211X! " PNP!0F I I IV!
D#4!\$4,+ (#

Y*)*(16*#(n'2X! ?P! 0DEF_V!]" 2+. \$#+,; *+\$4! 1&*;\$1! :'(//,#!/ 1\$#12*! \$%&\$),\$#;\$1! ,#!
J2)R,1 .!/) ,")\$1+*2)*#+1,#!N(#4(#P!
X!FaX!`X!DD_fD`GP!

!

Y*+<X!MP!OF I I _V!B' *0,#!/!+ . \$!=\$'4C! [2\$1+, (#1!(-!=\$'47 ()R!,#!/\$ (/)*& .0^X!
X!_UX!Ua3aDP!

!

Y\$,+ .X!KP!ODEESV! X!
N(#4(#C!8 (2+'\$4/\$P!

!

Y#\$*\$X!hP! *#4! ? 70\$)X!MP!ODEE_V!]M(#126&+, (#^X!,#!hP@P! ?2#; *#X! cPMP!h (.#1 (#X! 8PQP!
@; . \$,#X! KP "P! K *'4\$#! 0\$41PV! X! A*';R7\$"!
B2: ',1 . ,# /!N+TJTc 5 OT2(!)- 6 2(,)2(E)-4((C)-2)-4(')2(')2(!)J/TT0j/TT1144(?)2(2)C%F2;\$ (2^5 60

!

_U

M,+0!M(2#;,'!0777P6*#;.\$1+\$)P/(-P2RT!DD!"2/21+!DEFIVP!
!
K*#;.\$1+\$)!M,+0!M(2#;,'!0DEFGV!

X!N(#4(#C!M?8M!

0M(#126\$)!?*+*!8\$1\$*);.!M\$#)\$VX!*-*,*:'\$!*+C!
.++&1CHH4*+*P;4);P*;P2RH4*+*1\$+H;4);3DEFF3;\$#1214*+*3&*;R1=()3'(;*'3*2+. (.),+03!
4,1+),;+36*#;. \$1+\$)3\$EGEEEE`T!EU!K*0!DEFIPI!

!
b=,;\$!=(!)!c*+,(#*!@+*+,1+;,1X!c*+,(#*!8\$;())41!(=!@;(+*#4X!c()+.\$)#!W)\$*#4!@+*+,1+;,1!
#4!8\$1\$);.!" /\$#;0!0DEFaV!
X!*-*,*:'\$!*+C!.++&CHH4%P4(,P()/HFEPDSaH;\$#121H*//)\$/*+3\$DEFF3DT!EU!K*0!
DEFIPI!

!
b=,;\$!=(!)!c*+,(#*!@+*+,1+;,1!*#4!b)4#*#;\$!@2)-\$0!0DEFaV!
J,+;.,\$'4C!bc@!

L\$(/)*&.0X!b=,;\$!=(!)!c*+,(#*!@+*+,1+;,1X!*-*,*:'\$!*+C!
.++&CHH/\$(&()+*P1+*+,1+;,1P/(-P2RH4*+*1\$+H;(2#+,\$13*#432#+,*)03*2+. (.),+\$13!
4\$;\$6:\$)3DEFa3=2'\$3%+\$#3:(2#4*),\$13,#32Rg/\$(6\$+)0v3!
a_p`aeDM_UEFaeDMF_PaSF eDMU`p`_u&/\$vUC!*;;\$11\$4C!EU!K*0!DEFIPI!

!
b^c\$,"X!KPX!L,*[2,#+(X!AP!*#4!Q*1\$4w,xX!\P!0DEFIV!]K,/)*+,(#X!6\$6()0!*#4!&*;\$C!*)+1!
#4!7#R,#/!*1!;(#+,-,*!6\$+. (4('(/,\$1!,#&*)+;,;&*+()0!)\$1\$*);.!f!*!-,12*!\$11*0X!
,#!KPNP!A\$)/!*#4!KPIc(7,;R*!0\$41PV!
X!N(#4(#C!9MN!B)\$11X!IU3FFIPI!

!
B.,",&1X!"P!0DEEaV! B),#;\$+(#X!chC!B),#;\$+(#!
9#,-\$)1,+0!B)\$11P!

!
B(++,\$3@.\$)6*#X!oP!*#4!Q,\$:\$)+X!P!0DEFSV!]"2+.\$#+,;,+0!7,+.!*!:'*#/C!\$%&'(),#//!
12:2):*#!;2'+2)\$!*#4!6,/)*+,(#!+.) (2/ .!+. \$! # \$7! & . \$# (6\$# (#) (=!+. \$!
8,;. 6 (#4!c,/ .!+K*)R\$+X! X!SDX!`XIS`G3SS_P!

!
X!*-*,*:'\$!*+C!
.++&CHH777P'\$/,1'*+,(#P/(-P2RH2R&/ *HF!USHa`H&4=1H2R&/ *yF!USEEa`y\$#P&4=!
0*;;\$11\$4C!DE!"2/21+!DEFIPI!

!
X!*-*,*:'\$!*+C!
.++&CHH777P'\$/,1'*+,(#P/(-P2RH2R&/ *HF!UGHaFH\$#* ;+\$4!0*;;\$11\$4C!DE!"2/21+!DEFIPI!

!
8.013J*0'()X!"P!0DEF`V!]J.\$!\$11\$#;\$1!(=!62'+,;2'+2)\$C!*!1\$#1()0!\$%&'()*+,(#!(=!*#!
,##\$)3;,+0!1+)\$+\$!6*)R\$+X! X!DEC_X!`I`3_EUP!

!
82\$X!KPIOFI!DVI]M.),1+,*#1!*1!A\$,\$-\$)1^X!,#!hP!?*-,1!0\$4PV!
X!N(#4(#C!" ; *4\$6,;!B)\$11X!I3`FP!

!
@*,4X!>P!OFIaGV! X!N(#4(#C!B\$#/2,#P!
!

