

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

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

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

! . / 0 1 2 3 - 4 5 6 7 8 -  
9 9 - 6 - ; + , ' - < 4 = 8 > ? 2 8 - ' ) ' ' -  
% 2 6 5 @ 6 / 0 -  
# 2 / 3 / 5 6 7 - A - 6 5 3 7 6 / 0 -

!! !

; -4( 8 9\$'&!

- ! "#\$%&'()\*#\$%\*\$+' , #' - (\$ . //O'IJ-
- 2&+ +"3&-(-780-</00:0/1/:50-0821/585180-<8-76- " :5N851/:5-<80-\$61/:50-P5/80-0L2-78-<2:/1-<8-76->82J-5:16>>851-7Q: ?7/361/:5-<8-02:14382-81-<8-024082N82-78->/7/8L->62/5J-
- 40\*3)5-&-(\$76-54=800/14-<8-28008=182-7Q4RL/7/?28-<80-<2:/10J-: ?7/361/:50-81-/5142S10-=:506=24-062-76- " :5N851/:5J-
- 60-#(&(&-(-76-54=800/14-<8-7L1182J-<8->65/T28-=:U428518-81-=: :04261/N8J-=:5128-76-08218-<8-?/:</N820/14-81-76-<4326<61/:5-<80-4=:0V01T>80-<8-7Q:=465-<L80J-5:16>>851J-6L9-=U6538>8510-=7/>61/RL80J-W-76-0:77L1/:5-81-W ~~76-0L28907:/461/:5-708907:/161/:5-5:5-<L26?78J-~~
- 40\*3)5-&-(-76-54=800/14-<8-M6/28-85-0:218-RL8-78-243/>8->:5</67-85=6<28->/8L9-

\$ ~~./(&/=,"#\$ W- 76- 2467/061/:5- <L- <,#)'"\*##\$ <8- 02:~>:LN:/2- 78\$ <4N87:008> 851- <L26?78J-~~

\$ . #+) '& - (\$W-6118/5<28-7Q: ?Y8=1/M-<QL58-0621/= /061/: 5-L5/N8208778J-

\$ 40- (\$/0->"- \*"#-<8-8-RL/-0L/1- -

! ; (-\*2&!<!<br>=23 , #32\*2#) 3!>4) 4- ('&3!

! >&+\*(1')9&' / \*'&)<br>? / 91"\* )3'6)+ '& / '6)

! [ L9-M/50-<L-0240851- [ ==: 2<-A-

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

!

~~:-L<8 76 24041/1/:5 <650 78 18> 00 <Q6=1/N/140 0/> /76/280J V =: > 02/0 780 =U6538> 8510~~

-#,-!  
!

!!"#!\$\$%



- k8- 0240851- [ ==: 2<- 006007/RL8- 6L9- X: 580- 58- 2878N651- 060- <8- 76- YL2/</=1/: 5- 561/: 5678k-

!

>&+\*(1')B)!"#)

C / / - #\*+% )6" - . ' &0\*# ' )

!

- k8- 0240851- [ ==: 2<- 58- 006007/RL8- 5/- 6L9- 56N/280- <8- 3L8228J- 5/- 6L9- 642: 58M0- >/7/16/280- : L- 56N/280- 6L9/7/6/280k-m- 7Q89=801/: 5- <8- 06- 0621/8- `J- /7- 58- 006007/RL8- 060- 6L9- 6L1280- 56N/280- : L- 642: 58M0- 60062185651- W- L58- +621/8- : L- 8907: /140- 062- 8778- 7: 20RL8- =8778B=-/780- L1/7/08J- 6L- >: > 851- =: 50/<424J- 89=7L0/N8 > 851- W- <80- M/50- <8- 082N/=8- OL ?7/= 5: 5- =: > > 82=/6780k- " 8085<651J- =U6RL8- +621/8- 0285<- <80- > 80L280- 6002: 02/480- 5Q6MM8=1651- 060- 780- : 04261/: 50- : L- 76- =606=/14- : 04261/: 558778- <80- 56N/280- : L- 642: 58M0- 7L/- 60062185651- : L- 8907: /140- 062- 8778- <8- M6@: 5- W- =8- RL8- =8L9B=-/63/00851J- 6L1651- RL8- M6/28- 08- 08L1J- <QL58- > 65/T28- =: > 061/?78- 6N8=-78- 0240851- [ ==: 2<k-

!

>&+\*(1')D)

- 6E- k8-02/5=/08-<L-0:77L8L2B06V8L2-i--
- ]?E- k8-02/5=/08-<8-0612/> :/58-=: > >L5-<8-7QUL>65/14-i\_-

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

!

7:20RLQ8778-0621/=08-6L9-<4=/0/:50-RL/-0:51-02/080-6L-1/128-<8-=81-6L128-/5012L>851-:L-  
=6<28-:L-6L-08/5-<8-=81-:23658k--

(k- k80- +621/80- M6N:2/0851-76-=: :04261/:5- /5182561/:5678-85- >61/T28-<8-28=U82=U8-  
0=/851/M/RL8->62/58-81-78-<4N87:008>851-81-78-12650M821-<8-18=U5/RL80->62/580-<650-78-

>&+\*(1')N  
>(+\*.\*+%6)&'10+\*.'6)0-G)&'66''-&('6),%#%+\*8-'6)/0&\*#'6))  
3'6)='#'6)#')&'1'.0#+)906)3')10)7-&\*3\*(+\*''#)#0+\*''#01')

!<br>!,k- o:L180-780-+621/80J-RL8778-RL8-0:/1-78L2-0/1L61/:5-34:3260U/RL8J-81-780-0820:5580-  
OUV0/RL80-81->:26780-0L2-780RL87780-87780-8982=851-78L2-YL2/</=1/:5-81-78L2-=:512e78-  
08LN851->8582-<80-6=1/N/140-28761/N80-6L9-2800:L2=80-34541/RL80->62/580-<80-X:580-58-  
2878N651-060-<8-76-YL2/</=1/:5-561/:5678J-=:5M:2>4>851-6L-0240851-[==:2<k--

'k- k80-+621/80-02:>8LN851-76-=:04261/:5-<650-780-6=1/N/140-28761/N80-6L9-2800:L2=80-  
34541/RL80->62/580-<80-X:580-58-2878N651-060-<8-76-YL2/</=1/:5-561/:5678k--

!-(k- ]k06==T0-)-\$#)/(\*\$6L9-]k6-=:778=18-)-\$#)/( \*-<8 -k-:20RL8 <80-2800:L2=80-34541/RL80-  
>62/580-<650-780-X:580-58-2878N651-060-<8-76-YL2/</=1/:5-561/:5678-

- 6E- k6-561L28-81-780- : ?Y8=1/M0- <L-02 : Y81- <650-78- =6<28- <LRL87-76- =: 778=18- 801- : 04248J-V- =: > 02/0J-78- =60-4=U4651J-78- : L-780-02 : 326 > > 80- < : 51-7- M6/1-0621/8-i-
- ?E- ~~k80-2800-L2=80- =: 5-825480-k0 : ?Y81- <80-126N6L9- <8-28=U82=U8- : LJ-0/- =8118- /5M : 2> 61/ : 5- 801- =: 55L8J- 780- 2800 : L2=80- > 62/580- 34541/RL80- N/0480- : L- <8N651- S128- =: 778=1480-81-780-M/50-6L9RL87780-87780-082 : 51- =: 778=1480-i-~~
- =E- k80-X : 580-34 : 3260U/RL80- : ^-76- =: 778=18-0826-8MM8=1L48-i-
- ~~- <E- k80- <6180-024NL80- <8-76-028> /T28-622/N48-81- <L- <825/82- <40621- <80-56N/280- <8-28=U82=U8- : L- =87780- <8-7Q/50167761/ : 5-81- <L-28126/1- <L- > 6142/87- <8-28=U82=U8J-087 : 5-78- =60-i-~~
- ~~8<E- P5-240L > 4- <8-76- > 41U : <8-81- <80- > : V850-RL- /082 : 51-L1/7/040-0 : L2-76- =: 778=18J- V- =: > 02/0-78- 5 : > J-78- 1 : 55638J-78- 1V08-81-76- =6143 : 2/8- <80- 56N/280J- L5- <80=2/01/M- <L- > 6142/87-0= /851/M/RL8- : L- <80- > 41U : <80- <Q41L- <8-8 > 07 : V40J-81- <8-1 : L18- =: 512/?L1/ : 5- M6/18- W- <80-02 : 326 > > 80- / > 0 : 216510-i-~~
- ~~8E- k80- <6180-024NL80- <8-76-028> /T28-622/N48-81- <L- <825/82- <40621- <80-56N/280- <8-28=U82=U8- : L- =87780- <8-7Q/50167761/ : 5-81- <L-28126/1- <L- > 6142/87- <8-28=U82=U8J-087 : 5-78- =60-i-~~
- ME- k8- 5 : > - <8- 7Q/501/1L1/ : 5- : L- <80- /501/1L1/ : 50- 0612 : 55651- 78- 02 : Y81- <8- 28=U82=U8-81- <L-2800 : 506?78- <L-02 : Y81-i-
- 3E- k80-0 : 00/?/7/140-0 : L2-780-0= /851/M/RL80- <8-1 : L0-780-Z1610J-85-0621/ =L7/82- =8L9- <QZ1610-85- <4N87 : 008 > 851J- <8-0621/ =/082- : L- <QS128-600 : =/40-6L-02 : Y81-i-
- UE- k6- > 80L28- <650- 76RL8778- : 5- 801/ > 8- RL8- 780- Z1610- RL- /- : 51- ?80 : /5- 81- <8 > 65 <851- W- ?454M= /82- <QL58-600/0165=8-18=U5/RL8J-85-0621/ =L7/82-780- ~~06V0-Z1610-85- <4N87 : 008 > 851J-0 : L226/851-0621/ =/082-6L-02 : Y81- : L-08- M6/28-28024085182~~-
- ~~(a<- p/-780- /5M : 2> 61/ : 50- =: > > L5/RL480-6L- =85128- <Q4=U6538- : 51- M6/1-7Q : ?Y81- <QL58-~~

076=8-6L-=85128-<Q4=U6538-780-6==T0- "?\$#)( \*-81-780-6==T0-6L9-<:55480-81-/5M:2>61/:50-  
=:558980-RL/-:51-8L-7/8L-085<651-76-042/:<8k--

Fgk-

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

!

---

>&+\*(1')00)

2)#, -!  
!

!!"#!\$\$%



~~(k80 > 8 > ?280 <L > 4=65/0 > 8 < : /N851 6N : /2 780 RL67/M/=61/ : 50 28RL/080 <650 780  
< : > 6/580 2878N651 <8 76 = : > 04185=8 <8 =87L/B=A [ M/5 <8 082 > 81128 6L > 4=65/0 > 8  
< 08982=82 080 M : 5=1/ : 50 8MM/=6=8 > 851J 780 + 621/80 <40/35851 <80 =65 </ <610 <8 76 07L0  
U6L18 = : > 04185=8 81 <8 76 07L0 U6L18 /51432/14J 6V651 <80 RL67/M/=61/ : 50 <650 780  
< : > 6/580 0821/58510k -~~

~~(a k8 > 4=65/0 > 8 08L1-M6/28 <80 28 = : > > 65 <61/ : 50 W-76 - " : 5M4285=8 <80 +621/80 0L2-  
780-RL801/ : 50 08-2600 : 21651-W-76 02408518 0621/8J-V = : > 02/0 = : 5=825651 -A-~~

~~6E- . 80-2T3780J- <80- 02/5 = /080- </28=18L20- : L-L5- = : <8- <8- = : 5 <L/18- 082 > 811651-  
< 085=6 <282-76 = : 778=18-) - \$#)( \*- <8-2800 : L2=80-34541/RL80- > 62/580J-7Q6==T0- "?\$#)( \*-W- <80-~~

<80-+621/80-08L1-780-M6/28-0/85580J-0L2-76-?608-<8-080-126N6L9J-81-780-L1/7/082-=: >> 8-7/3580- </28=12/=80- :L- > 8/778L280- 0261/RL80- =: 5=825651- 780- 6=1/N/140- 28761/N80- 6L9-2800 :L2=80-34541/RL80-> 62/580-<8-X : 580-58-2878N651-060-<8-76-YL2/</=1/: 5-561/: 5678k-

'k- k6- 1265006285=8-=: 5=825651- 78- 0621638- <80- 6N6516380- <4=: L7651- <80- 6=1/N/140-28761/N80-6L9-2800 :L2=80-34541/RL80-> 62/580-<8-X : 580-58-2878N651-060-<8-76-YL2/</=1/: 5-561/: 5678-81-76-126@6?/7/14-0 : 51-600L2480-062-76-5 : 1/M/=61/: 5-6L-=85128-<Q4=U6538k-

(k- k80-+621/80-0:L> 811851-J1:L0-780-650\_-J1:L0-780-<8L9-650\_-J042/;</RL8> 851\_-6L->4=65/0>8- <Q6==T0- 6L9- 2800:L2=80- ?/:7:3/RL80- 81- <8- 0621638- <80- 6N6516380- <80-2600 :210- 28761/M0- W- 7Q6007/=61/: 5- <80- </00:0/1/: 50- <8- 76- 02408518- 0621/8-28761/N8-W-7QL1/7/061/: 5- <80- 2800:L2=80- 34541/RL80-> 62/580- <80- X: 580- 58- 2878N651- 060- <8- 76- YL2/</=1/: 5- 561/: 5678- 81- 6L- 0621638- <80- 6N6516380- 85- <4=: L7651k- " 80-2600:210-0:51-0:L>/0-0627Q/5182> 4</6/28- <QL5-=: 22800:5<651-561/: 567<40/354-062=U6RL8+621/8k- >4=65/0>8- <Q6==T0-6L9-2800:L2=80- ?/:7:3/RL80-81-<8-0621638-<80-6N6516380-896>/58- =80-2600 :210-81-M6/1-<80-28=: >> 65<61/: 50-W-76- " : 5M4285=8-<80-+621/80k- " 8778B=-/08L1-6< : 0182-780-28=: >> 65<61/: 50-RL8-7L-/M6/1-78-> 4=65/0> 8-0 : L2-M6=7/182-76->/08-85-j LN28-<8-76-02408518-0621/8k-

ak- n5- =60 <8-=: >> 82=/67/061/: 5- <8- 02: <L/10-/00L0- <8- 7QL1/7/061/: 5- <8- 2800:L2=80-34541/RL80-> 62/580- <8- X: 580- 58- 2878N651- 060- <8- 76- YL2/</=1/: 5- 561/: 5678J-780-+621/80- =: >> L5/RL851- 6L- =85128- <Q4=U6538- 780- /5M:2> 61/: 50- 0L2- =8118- =: >> 82=/67/061/: 5- RL087780- :51-28@L80- <80-0820:5580-OUV0/RL80- :L-> :26780-2878N651- <8- 78L2-YL2/</=1/: 5- :L- <8- 78L2-=: 512e78k-

JaKk- k6- " : 5M4285=8- <80- +621/80- 4N67L8- 81- 896>/58- 243L7/T28> 851-76- RL801/: 5- <8- 76- =: >> 82=/67/061/: 5- <80-02: <L/10-/00L0- <8- 7QL1/7/061/: 5- <8- 2800 :L2=80-34541/RL80-> 62/580- <8- X: 580- 58- 2878N651- 060- <8- 76- YL2/</=1/: 5- 561/: 5678k- pQ/7- <4=: L78- <8- =8118- =: >> 82=/67/061/: 5- <80- 6N6516380- > : 5416/280-1653/?780-81-/>0: 216510J-76- " : 5M4285=8- <80-+621/80-41L</826-780-0: 00/?/7/140-RL/-0Q: MM2851-6M/5-<8- <4182>/582-780-02: =800L0-780-07L0-6002: 02/40-85- =8- RL/-=: 5=8258-780-=: 512/?L1/: 50-M/565=/T280-=: 22800 : 5<65180k- -

JKFk- k6- " : 5M4285=8- <80- +621/80- M/98- 780- 02/5=/080- </28=18L20- W- 0L/N28- 0: L2-7Q6007/=61/: 5- <L-0240851-621/=78J-RL/-1/855851-=: >018-<80- =606=/140-561/: 56780-81-<8-76-0/1L61/: 5- <80-+621/80k- -

; (-\*2&!<<<!  
A \$\*2'3! / &!>&3\*2#)!, (-!:#) &B!C!1# 8 , -23!'&3!(2-&3!!  
8 (-2) &3!, -#\*4>4&3B!&\*( \$\*-&3! 8 &3\$-&3!

>&+\*(1')OD)  
A57' (+\*\$6)

- k80- : ?Y8=1/M0-<8-76-02408518-0621/8-0: 51-780-0L/N6510-A-

- 6E- " : 5082N82-81-L1/7/082-<8- > 65/T28-<L26?78-780-X: 580-W-02: 14382J-5: 16>> 851-062-76->/08-85-076=8-<QL5-0V01T> 8-37: ?67-<Q: L1/70-<8-3801/: 5-062-X: 58-=: >0285651-<80-24086L9- <Q6/280- > 62/580- 02: 143480- 4=: 7: 3/RL8> 851- 28024085161/N80- 81- ?/85- 287/480-85128-87780-i-

285M:2=82-78L2-240/7/85=8-6L9-M6=18L20-<8-012800J-V=: >02/0-=8L9-7/40-6L9-=U6538>8510-  
=7/>61/RL80J-W-7Q6=/M/=61/:5-<80-:=4650-81-W-76-O:77L1/:5->62/58-i-

- <E- " :5=:L2/2- W- 76- 04=L2/14- 67/>8516/28- 81- W- <Q6L1280- :?Y8=1/M0-  
0:=/:4=:5 :>/RL80J-V=: >02/0-76-02:18=1/:5-<80-N678L20-=L71L287780-i-

- ]8E- [ /<82-780-Z1610-+621/80-85-<4N87:008>851J-85-0621/=L7/82-780-06V0-780->:/50-  
6N65=40J- 780- 06V0- 85- <4N87:008>851- 0650- 7/11:267J- 780- Z1610- 34:3260U/RL8>851-  
<406N6516340J-780-081/10-Z1610-/50L76/280-85-<4N87:008>851J-780-Z1610-=e1/820-<Q [ M2/RL8-

>&+\*(1')0L)5\*6)  
Q&"9"6\*+\*"#6)

,k- k80-02:0:0/1/:50-28761/N80-~~W~~-76-=2461/:5-<Q-~~16L9-~~:L1/70-<8-3801/:5-062-X:58J-V-  
=:>02/0-780-6/280->62/580-02:143480J-N/040-<650-76-02408518-0621/8-0:51-0:L>/080-6L-  
08=24162/61-062-780-+621/80-63/00651-/5</N/<L8778>851-:L-=:778=1/N8>851k--

'k- k80-+621/80-=:776?:2851-6N8=-780-0621/80-028565180-=:5=825480J]-V-=:>02/0-780-  
Z1610J-~~81-~~780-:236580->:5</6L9J-243/:56L9J-0:L0B243/:56L9-81-08=1:2/870-~~81-78L20-~~  
~~>8>?280J-~~6/50/-RL8-76-0:=/414-=/N/78J-76-=:>>L56L14-0=/851/M/RL8J-780-08L0780-  
6L1:=U1:580-81-780-=:>>L56L140-7:=6780J]-W-76-M:2>L761/:5-<8-02:0:0/1/:50J-  
=:5M:2>4>8

0821/58510- 81- 062- <80- :236580- > :5</6L9J- 243/:56L9J- 0:L0B243/:56L9- 81- 08=1:2/870-  
0821/58510-i-

- YE- ~~k8=60-4=U465H-474>8510-~~ :512/?L1/:50-0=/851/M/RL80-0821/58510-81J-78-=60-  
4=U4651J- =:556/0065=80- 126</1/:5587780- 0821/585180- <80- 08L0780- 6L1:=U1:580- 81- <80-  
=: >>L56L140-7:=6780J-78=~~60-4=U465H-~~

Kk- k80-=2/1T280-/5</=61/M0-L1/7/040-6L9-M/50- ]<8-7Q/<851/M/=61/:5-<8-187780- 6/280- - ]<8-

- ?E- k80-:236580-2440-85-N821L-<80-/5012L>8510-81-6<280-1L2/</RL80-0821/58510-81-780-:236580- >:5</6L9J-243/:56L9J-0:L0B243/:56L9-81-08=1:2/870-0821/58510-0:51-/5M:2>40-81-/5N/140-W-=: >>L5/RL82J-85128-6L1280-A--
- /E- k8L20-NL80-0L2-78-M:5<-<8-76-02:0:0/1/:5-i-
- //E- o:L180-6L1280-/5M:2>61/:50-0=/851/M/RL80-~~J0L0074>8516/280-~~0821/585180-i-
- ///E- .80-/5M:2>61/:50-0L2-1:L180->80L280-N/0651-76-X:58-=:5=82548-:L-<80-X:580-6<Y6=85180- RL8- =80- /5012L>8510J- =6<280- :L- :236580- 0:L226/851- 6N:/2- <4YW-6<:01480-i-
- /NE- k8L20-NL80-0L2-1:L1-6008=1-<80->80L280-81-<80-6L1280-474>8510-<L-0765-<8-3801/:5->851/:5540-<650-76-02:0:0/1/:5-RL-/287TN851-<8-78L2-=: >04185=8-i-
- NE- k8L20- NL80- 0L2- <Q4N851L87780- >80L280- 0L0074>8516/280- 0821/585180- RL/-287TN851-<8-78L2-=: >04185=8-i--
- N/E- o:L180-6L1280-/5M:2>61/:50-0821/585180-i-
- =E- k80- 08L0780- 6L1:=U1:580- 81- 780- =: >>L56L140- 7:=6780- 0:004<651- <80-=:556/0065=80-126</1/:5587780J-76-=: >>L56L14-0=/851/M/RL8J-76-0:=/414-=/N/78-81-780-6L1280-0621/80-028565180-0821/585180-0:51-/5N/140-W-=: >>L5/RL82J-85128-6L1280-A-
- /E- k8L20-NL80-0L2-78-M:5<-<8-76-02:0:0/1/:5-i-
- //E- o:L180-6L1280-/5M:2>61/:50-0=/851/M/RL80-~~J0L0074>8516/280-~~0821/585180-i-
- ///E- k80-=:556/0065=80-126</1/:5587780-0821/585180-<80-08L0780-6L1:=U1:580-81-<80-=: >>L56L140-7:=6780-i--
- /NE- o:L180-6L1280-/5M:2>61/:50-0821/585180-k-
- (k- k80-=:512/?L1/:50-28@L80-85-6007=61/:5-<L-06263260U8- '-0:51-0L??/480-062-78-08=24162/61-]6N8=-78-=:508518>851-<8-78L20-6L18L20\_k--
- a k- k:20RL8-780->80L280-02:0:0480-1:L=U851-<80-08=18L20-=: >07T18>851-851:L240-062-780-X:580-4=:5:>/RL80-89=7L0/N80- <QZ1610J-780-6L18L20- <8- =80- 02:0:0/1/:50-A-\_-6/E-1/855851-<80-=:50L7161/:50-=?7480-81-02:6=1/N80J-6N8=-5:1/M/=61/:5-024676?78J-6N8=-=80-Z1610-i-?/?E-896>/5851-780-NL80-81-: ?082N61/:50-<8-80-Z1610-0L2-780->80L280-02:0:0480J-V-240:5<851J-004=/M/RL8>851J-062-4=2/1J-81-24N/0851-85-=:504RL85=8J-0Q/7-V-6-7/8LJ-780->80L280-02:0:0480k-
- K k- kQ6L18L2- <8- 76- 02:0:0/1/:5- 896>/58- 780- =:512/?L1/:50-28@L80- 6L- =:L20- <8- 76-

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

!

---

>&+\*(1')ON  
Q&\*6')3')3%(\*6\*"#6

)+#, -!  
!

!!'#!SS%l



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

!

---

<80-2802408516510-02408510-81-N:16510J-RL8-1:L0-780->:V850-<8-062N85/2-W-L5-=:50850L0-

))#,-!  
!

!!"#!\$\$%



76-2467/061/:5-<8-78L20-: ?Y8=1/M0-81-W-M:L25/2-<80-6N/0-81-<80-28=: >>65<61/:50-W-76-  
" :5M4285=8-<80-+621/80k-

Kk- m-70/00L8-<8-81-896>85J-76- " :5M4285=8-<80-+621/80-0285<-<80-<4=/0/:50-:L-M6/1-  
<80-28=: >>65<61/:50J-6L1651-RL8-<8-?80:/5J-0L2-7Q:00:21L5/14-<8-> :</M/82J-02:2:382-  
:L-<8-0L002/>82-780-:L1/70-<8-3801/:5-062-X:58J-V-=: >02/0-780-6/280->62/580-02:143480J-  
81-1:L18->80L28-=:55898J-RLQ8778-6-6<:0140J-85-0Q600LV651-0L2-780-474>8510-81-780-  
/5M:2>61/:50-0=/851/M/RL80-780-07L0-M/6?780- <:51- :5- </00:08- 81J- 7:20RLQ87780-  
89/01851j6/50/-RL8- 0L2-780-=:556/0065=80-126</1/:5587780-0821/585180-<80-08L0780-  
6L1:=U1:580-81-<80-=: >>L56L140-7:=6780J-=: >018-41651-185L-<8-76-54=800/14- 1<8-  
024=6L1/:50-81- <Q6007/RL82-L58-6002:=U8-4=:0V014>/RL8-181J-85-=60-<8-2/0RL80-<8-  
<: >>6380-326N80-:L-/224N820/?780J-<8-58-060-08-082N/2-<8-7Q6?085=8-<8-821/1L<8-  
0=/851/M/RL8-6?0:7L8-=: >>8-02418918-0:L2-28>81128-W-07L0-162<-7Q6<:01/:5-<8->80L280-  
<8-024=6L1/:5\_k--

!

; (-\*2&!<D!

E\*\$ / &3! / 02 8 , (1\*!3\$ -!'0&) %2-#) ) & 8 & ) \*!

!

] 'k- pL2-76-?608- <80-621/=780- ')a-W- ')F- <8-76- " :5N851/:5J-780-+621/80-02855851-780-  
>80L280-743/0761/N80J-6<>/5/01261/N80- :L-<8-0:7/1/RL8-34542678J-087:5-RLQ/7-=:5N/851J-  
RL/-0:51-54=8006/280-0:L2- >81128-85- j LN28- J780- </00:0/1/:50- <8-76-02408518-0621/8-  
J81-1:L180- 6L1280- >80L280- J28761/N80- W- 76- =:5<L/18- <80- 41L<80- <Q/>06=1- 0L2-  
7Q85N/2:558>851\_-6<:01480-062-76- " :5M4285=8-<80-+621/80\_k\_--

' 2 ; <=2 > ='A'



YL2/</=1/:5-561/:5678-50801-28RL/08-<T0-7:20-RL8-0/-]76-+621/8-RL/-8982=8-06-YL2/</=1/:5-  
:L- 0:5- =:512e78- 0L2- 7Q6=1/N/14- ]85N/06348\_- ]02:0:048\_

- =E- b8/778-W=8-RL8-1:L0-780-2600:210-0:/851-285<L0-OL?7/=0-<8-76->65/T28-024NL8-  
<650-76-02408518-0621/8&\_-

Fig P58-+621/8-RL/-6->854-L58-41L<8-<Q/>06=1-0L2-7Q85N/2:558>851-024NL8-062-L5-  
/5012L>851-:L-L5-=6<28-YL2/</RL8-0821/5851-:L-L5-:23658->:5</67J-243/:567J-0:L0B  
243/:567-:L-08=1:2/87-0821/5851-0:L2-L58-6=1/N/14-85N/06348-16V651-<80-/>06=10- <650-  
<80-X:580-58-2878N651-060-<8-76-YL2/</=1/:5-561/:5678-N8/778-W=8-RL8-OL?7/878-2600:21-

- ?E- \*/ORL851- <Q85126\582- L58- 0:77L1/:5- />0:216518- :L- <80- >: </M/=61/: 50-  
=: 50/<426?780-81-5L/0/?780-<L- >/7/8L- > 62/5J-87780-J02: =T<851\_-]M: 51-02: =4<82\_J-<650-76-  
> 80L28-<L-0: 00/?78J-W-L58-4N67L61/: 5-<80-8MM810-RL8-80-6=1/N/140-0: L226/851-6N: /2-0L2-  
=8->/7/8L-81-0: L> 811851-780-240L71610-<8-8118-4N67L61/: 5-<8-76-> 65/T28-024NL8-<650-76-  
02408518-0621/8k-

- **2#3%1, '5**-A- " : 5M: 2>4> 851-W-7Q621/=78- ' )F-<8-76- " : 5N851/: 5J-7: 20RLQ87780-: 51-<8-  
042/8L080-26/0: 50-<8-085082-RL8-<80-6=1/N/140-~~185N/063480-102:0:0480-~~2878N651-<8-78L2-  
YL2/</=1/: 5- :L- <8- 78L2- =: 512e78- <650- <80- X: 580- 58- 2878N651- 060- <8- 76- YL2/</=1/: 5-  
561/: 5678- 2/ORL851- <Q85126\582- L58- 0:77L1/:5- />0:216518- :L- <80- >: </M/=61/: 50-  
=: 50/<426?780- 81- 5L/0/?780- <L- >/7/8L- > 62/5J- 780- +621/80J- ]/5</N/<L8778> 851- :L-  
=: 778=1/N8> 851J\_- <650- 76- > 80L28- <L- 0: 00/?78J- 4N67L851- 780- 8MM810- 0: 1851/870- <8- =80-  
6=1/N/140-0L2-8->/7/8Lk'

'k- **1**k80- 4lL<80- <Q/>06=1- 0L2- 7Q85N/2: 558> 851- 6L9RL87780- /7- 801- 02: =4<4- 85-  
6007/=61/: 5- <L- 0240851- [ ==: 2<- 0: 51- > 85480- =: 5M: 2>4> 851- 6L]9\_- 08L/7]0\_- 81- 6L9-

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

!

---

\*+

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



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

!

187780- >80L280- =: >02855851- 70896>85-76 <4#54/:5 <Q6=1/N/140- 6L1280- RL8-  
7Q6=1/N/14- 85N/06348 85N/06348-102:0:048- 2878N651-<8-78L2-YL2/<=/1/:5-:L-<8-78L2-  
=:512e78-i--

- //E- k8=60-4=U465IJ-780-+621/80-N8/77851-W-=-8-RL8-=80->80L280-0:/851-/51432480-

4\*++')7, \$"(\$\$\*#)0, \$&>"/\$3;d'()/3"\$RSS', >)#, [-

4\*++4(7)BB

4\*++')7, \$"(\$\$\*#)0, \$&>"/\$3;d'()/3"\$RSS', >)#, [-

''#\$%&'()\*#)+)\*#)

<80-28=1/M=61/:50-W 76-+621/8k-k6-+621/8-08LH-W 1:L1->:>851J<8>65<82-W 7Q#23658-0=/851/M/RL8-81-18=U5/RL8-<8-#6/28-L58-28=:>>65<61/:5-W 76-":5M4285=8-<80-+621/80k-

Fk- k80- 2600:210- <Q41L<8- <Q/>O6=1- 0L2- 7Q85N/2:558>851- ~~0L??/40~~-<4M/5/1/M0- 0:51-896>/540-81-4N67L40-062-7Q#23658-0=/851/M/RL8-81-18=U5/RL8J-0L2-76-?608-<80-0261/RL80J-02:=4<L280- 81- =:556/0065=80- 6<>/080- <650- 78- 0240851- [ ==:2<J- 7Q: ?Y8=1/M- 41651-<Q476?:282-<80-7/3580-</28=12/=80J-V=: >O2/0-<8-28=85082-780->8/778L280-0261/RL80k-

gk- P58- 0478=1/:5- <80- /5M:2>61/:50- 0L??/480- L1/7/0480- 6L9- M/50- <L- =:512e78-0247/>/56/28-N/04-6L9-621/=780- ' a-81- ( )-0:L2-<4=/~~<82-0Q/7-V-6-7/8L-<8-02:=4<82-W-L58-41L<8- <Q/>O6=1- 0L2- 7Q85N/2:558>851- 801- 43678>851- 896>/548- 042/: </RL8>851- 062-7Q#23658- 0=/851/M/RL8- 81- 18=U5/RL8- 0L2- 76- ?608- <80- 0261/RL80J- 02:=4<L280- 81- =:556/0065=80-6<>/080-<650-78-0240851- [ ==:2<J-7Q: ?Y8=1/M-41651-<Q476?:282-<80-7/3580-</28=12/=80J-V=: >O2/0-<8-28=85082-780->8/778L280-0261/RL80k-~~

!

>&+\*(1')BK

!

4\*++')7, \$"(\$8\*#)0- , \$&>"/\$3;&'()/3"\$SRMS',>)#, E-

!

>&+\*(1')BL

!

4\*++')7, \$"(\$8\*#)0- , \$&>"/\$3;&'()/3"\$SRMS',>)#, E

!

>&+\*(1')BM

Q&\*6')3')3%(\*6\*''#6)

!

,k- 2#3%1,'4-





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

!

!

>&+\*(1'D0)!"#)

\*0#, -!  
!

!!"#!\$\$%

0621=L7/T28J-85-=:50L7161/:5-:L-85-=:776?:261/:5-6N8=-780</10-/5012L>8510J-=6<280-81-  
:236580J-=:5M:2>4>851-W-7Q621/=78-'(J-06263260U8-~~at~~-

>&+(1')D0)%&' )

**X.01-0+\*'#6)6+&0+%,\*8-'6)'#.\*&'##' / '#+01'6)**

~~2#3#1,'4~~ k80 +621/80J-08L780 :L-85-=:04261/:5-780-L580-6N8=-780-6L1280J-63/00651-  
062-7/5182>4</6/28<8-76"-:5M4285=8<80+621/80J-N8/77851-W=8-RL8<80-4N67L61/:50-  
0126143/RL80-85N/2:558>8516780-0:/851-8M8=L480-0:L2-780-X:580-58-2878N651-060<8-76-  
YL2/</=1/:5-561/:5678

~~2#3#1,'5'9~~ k80 +621/80J-08L780 :L-85-=:04261/:5-780-L580-6N8=-780-6L1280J-08LN851-  
02:=4<82-W-L58-4N67L61/:5-0126143/RL8-85N/2:558>851678-0:L2-780-07650-81-02:326>>80-  
28761/M0-W<80-6=1/N/140-2878N651<8-78L2-YL2/</=1/:5-:L<8-78L2=:512e78-] >85480-<650-  
780-X:580-58-2878N651-060<8-76-YL2/</=1/:5-561/:5678J-<T0-7:20-RL8=80-6=1/N/140-  
240:5<851-6L9-08L/70-W/940-W-7Q621/=78-'at

~~at~~-k80- +621/80J- 08L780- :L- 85- =: :04261/:5- 780- L580- 6N8=- 780- 6L1280J- 108LN851-  
=:5<L/28 - ]=:5<L/0851 - ]85N/063851- <8- =:5<L/28 - L58- 4N67L61/:5- 0126143/RL8-  
85N/2:558>851678-0:L2-780-07650-81-02:326>>80-28761/M0-W<80-6=1/N/140-2878N651-<8-  
78L2-YL2/</=1/:5-:L<8-78L2=:512e78-] <8N651-S128->85480-<650-780-X:580-58-2878N651-

- =E- \*85M:2=82-780- =606=/140-0=/851/M/RL80- 81-18=U5/RL80- >62/580- <80- +621/80J- V=: >02/0- 85- >61/T28- <8- 28=U82=U8J- 85- 0621/=L7/82- =87780- <80- Z1610- +621/80- 85- <4N87:008>851J- 85- =8- RL/- =: 5=8258- 76- =: 5082N61/: 5- 81- 7QL1/7/061/: 5- <L26?78- <8- 76- ?/: </N820/14- >62/58- <650- 780- X: 580- 58- 2878N651- 060- <8- 76- YL2/</=1/: 5- 561/: 5678J- 5:16> >851-062-7Q6==T0-<80-Z1610-+621/80-85-<4N87:008>851-6L9-18=U5/RL80->62/580-81-78-12650M821-<8-80-18=U5/RL80-W-80-Z1610-i-
- <E- [ ==2:\128J- </MML082- 81- 06216382- 780- =: 556/0065=80- 0L2- 76- =: 5082N61/: 5- 81- 7QL1/7/061/: 5- <L26?78- <8- 76- ?/: </N820/14- >62/58- <80- X: 580- 58- 2878N651- 060- <8- 76- YL2/</=1/: 5-561/: 5678-i--
- 8E- +7L0- 004=/M/RL8>851J- 6/<82- 780- Z1610- +621/80- 85- <4N87:008>851J- 85-



(k- k8-12650M821-<8-18=U5/RL80->62/580-0Q8MM8=1L8-<650-78-28008=1-<8-1:L0-780-/5142S10-743/1/>80J- V=: >02/0J- 85128- 6L1280J- 780- <2:/10- 81- :?7/361/:50- <80- <418518L20J- <80-M:L25/008L20-81-<80-6=RL428L20-<8-18=U5/RL80->62/580k-

ak- k80- 18=U5/RL80- >62/580- 12650M42480- 6L- 1/128- <8- 76- 02408518- 0621/8- 0:51-6002:02/480J- 0821/585180- 81J- <650- 1:L18- 76- >80L28- 0:00/?78J- M/6?780J- <QL5- =: ;1-6?:2<6?78J- > :<82580J- 28008=1L8L080- <8- 7Q85N/2:558>851-81J- </00:5/?780- 0:L0- L58-M:2>8- 6==800/?78- 6L9- Z1610- +621/80- 85- <4N87:008>851J- =: >018- 41651- 185L- <8- 76-0/1L61/:5-0621/=L7/T28-<80-081/10-Z1610-/50L76/280-85-<4N87:008>851k-

!  
!

>&+\*(1')DK

024085148-W-70655898-`RL08778-896>/58J-4N67L8-81->: </M/8-042/: </RL8>851-087:5-RL8-  
<8-?80:/5-



06263260U8-(-<L-0240851-621/=78-81-<8-70621/=78-,C-@)#-<L-0240851- [ ==:2<J-780-<4=/0/:50-  
81-28=: > > 65<61/: 50-<8-76- " : 5M4285=8-<80-+621/80-0: 51-6<: 0148002/080-062-=: 50850L0t-  
p/-1: L0-780-8MM: 210-85-NL8-<Q6?: L1/2-W-L5-=: 50850L0-2801851-N6/50J-780-<4=/0/: 50-81-780-  
28=: > > 65<61/: 50-<8-76- " : 5M4285=8-<80-+621/80-0L2-780-RL801/: 50-<8-M: 5<-0: 51-6<: 01480-  
02/080-W-76-> 6Y: 2/14-<80-<8L9-1/820-<80-+621/80-024085180-81-N: 165180-81-780-<4=/0/: 50-0L2-



!

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



! ; (-\*2&!D<<!  
? &33#\$-1&3!F2) () 12H-&3!&\*! 8 41() 23 8 &! / &!F2) () 1& 8 &)\*!  
!  
>&+\*(1')J@  
^\*#0#(' / '#+)

!  
!&-





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

!

,k- `7-801-=244-L5->4=65/0>8-0:L2-M6=/7/182-81-896>/582-76->/08-85-j LN28-<L-0240851-

.)#,-!  
!

!!"#!\$\$%

~~Q6=/M/RL8-<8-0:5=U:/9-L5-</MM4285<-0L23/00651-85128-8L9-W-02:0:0-<8-7Q/5182024161/:5-  
:L-<8-7Q6007/=61/:5-<L-0240851-[]==:2<k-~~

>&+\*(1')JD)!"#  
ES,1' / '#+)3'6)3\*\$\$%&'#36)

~~k80 +621/80 ==:0T2851 6M/5 <8 024N85/2 780 <MM4285<0k  
<, +3&/, \$" - \$(& - (\$D\*: &'()/3"\$MG\$6518k-~~

>&+\*(1')JD)%&' )  
U\*\$\$%&'#36)+'' - (20#+) - #'8 - '6+''#)+'(2#\*8 - ')

~~n5 =60-<8- </MM4285<-1:L=U651-L58-RL801/:5-18=U5/RL8J-780- +621/80-=:5=825480-  
08LN851- 06/0/2- L5- 32:L08- <Q8908210- 6<- U:=- =244- 062- 87780k- k8- 32:L08- <Q8908210-  
0Q851281/851-6N8=-780-+621/80-=:5=825480-81-0Q8MM:2=8-<8-243782-260/<8> 851-78-</MM4285<-  
0650- 28=:L2/2- 6L9- 02:=4<L280- :?7/361:/280- <8- 2T378>851- <80- </MM4285<0- N/0480- W-  
7Q621/=78-KK-<L-0240851-[]==:2<k-~~

>&+\*(1')JJ)  
Q&'(%3 - &'6)3')&S,1' / '#+)3'6)3\*\$\$%&'#36)

2 ; <=2 >'='A'

~~k80 </00:0/1/:50 28761/N80 6L 2T378>851 <80 </MM4285<0 45:5=480 <650 76  
0621/8 w b <8 76 " :5N851/:5 0Q6007/RL851-7\*(&())# \$ 7\*(& - 1)# W 1:L1 </MM4285<0:LN651-  
0L23/2- 85128 780 +621/80 6L 0240851-[]==:2<k80- </MM4285<0- 0L23/00651- W- 02:0:0- <8-  
7Q/5182024161/:5-:L-<8-7Q6007/=61/:5-<8=87L/B=/<L-0240851-[]==:2<8040:51J-0L2-<8>65<8-  
<8- 7QL58- RL87=:5RL8- <80- 0621/80- 6L- </MM4285<J- 0:L>/0- 85- NL8- <QL58- <4=/0/:5-  
=:5126/356518-=:5M:2>8-6L9- 02:=4<L280- <8- 2T378>851- <80- </MM4285<0- 024NL80- W- 76-  
0621/8- w b - <8-76-70-5T()2(>N)-1(L)-1(80)32(7-)-1(7)5TJETQ/0 . 24000 . 2418583 . 92cmBT0200424136 . 426-8266-m/TT~~

060-N/04-062-L58-<4=76261/:5-85-N/3L8L2k-[L9-W/50-<8-=:5=7/61/:5-81-<Q62?/12638J-  
=:5M:2>4>851-6L9-6558980-bJ-b``-81-b``-<8-76-":5N851/:5J=8118-+621/8-801-U6?/7/148-  
W-<40/3582-<80-=:5=7/618L20J-62?/1280-81-8908210J-RL-/082:51-/50=2/10-0L2-780-7/0180-N/0480-  
W-7Q621/=78-'<8-7Q655898-bJ-W-7Q621/=78-'<8-7Q655898-b``-81-W-7Q621/=78-'<8-7Q655898-b``-J-  
0:L2-78-2T378>851-<80-</MM4285<0-6L-1/128-<8-76-02408518-0621/8k--

-  
- 6E- k8-o2/?L567-/5182561/:567-<L-<2:/1-<8-76->82-i-  
- ?E- k6-":L2-/5182561/:5678-<8-xL01/=8-i-  
- =E- P5- 12/?L567- 62?/1267- =:501/1L4- =:5M:2>4>851- W- 7Q655898- b``- W- 76-  
" :5N851/:5-i--  
- <E- P5-12/?L567-62?/1267-004=/67-=:501/1L4-=:5M:2>4>851-W-7Q655898-b``-W-76-  
" :5N851/:5J-O:L2-L58-:L-07L0/8L20-<80-=6143:2/80-<8-</MM4285<0-RL/-V-0:51-004=/M/40k-

-  
Kk- o:L18-+621/8-6L-0240851- [ ==:2<-RL/-5Q801-060-0621/8-W-76- " :5N851/:5-81-RL/-5Q6-  
060-0L?7/4-<8-<4=76261/:5-801-240L148-6N:/2-6==8014-78->:V85-N/04-6L-06263260U8-a=E-  
<L-0240851-621/=78<8-7Q621/=78-KKk-p/-780-0621/80-85-7/1/38-5Q:51-060-6==8014-76->S>8-  
02:=4<L28-0:L2-78-2T378>851-<L- </MM4285<J- =87L/B=/- 58-08L1- S128-0:L>/0- RLQW-76-  
02:=4<L28-<Q62?/12638-024NL8-W-7Q655898-b``-W-76- " :5N851/:5J-W->:/50-RL8-780-0621/80-  
5Q85-=:5N/855851-6L128>851k-

Fk- o:L18- +621/8- 6L- 0240851- [ ==:2<- RL/- 5Q801- 060- 0621/8- W- 76- " :5N851



; (-\*2&!K<!
N#) )&!F#2!&\*!(9\$3!/ &!/-#2\*!

>&+\*(1')JL)
a''##')\$''\*)'+)05-6)3')3&''\*+)

k80-+621/80-28>07/00851-<8-?:558-M:/-780-:??/361/:50-RLQ87780-:51-600L>480-6L9-
182>80-<L-0240851-[ ==:2<-81-8982=851-780-<2:/10-RL/-V-0:51-28=:55L0-<QL58->65/T28-RL/-
58-=:501/1L8-060-L5-6?L0-<8-<2:/1k-

; (-\*2&!K<<!
=23 ,#32\*2#)3!F2) ('&3!

>&+\*(1')JM)( )%&)
U&''\*+)3').''+')

'k- "U6RL8- +621/8- 6L- 0240851- [ ==:2<- </00:08- <QL58- N:/9J- 0:L0- 24082N8- <80-
</00:0/1/:50-<L-06263260U8-'k-

'k- k80- :2365/061/:50- 243/:56780- <Q/5143261/:5- 4=:5:>/RL8- RL/- 0:51- 0621/80- 6L-
0240851- [ ==:2<- </00:0851J- 0:L2- 8982=82- 78L2- <2:/1-<8- N:18- <650- 780- <: >6/580- RL/-
287TN851- <8- 78L2- =: >04185=8J- <QL5- 5: >?28- <8- N:/9- 4367- 6L- 5: >?28- <8- 78L20- Z1610-
>8>?280-RL/-0:51-+621/80-W-7Q [ ==:2<k- n7780-5Q8982=851-060-78L2-<2:/1-<8-N:18-0/-7QL5-
RL87=:5RL8-<8-78L20-Z1610->8>?280-8982=8-78-0/85J-81-/5N8208>851k-

>&+\*(1')JM)
I\* ,#0+ - &' )

- k8-0240851-[ ==:2<-801-:LN821-W-76-0/3561L28-<8-1:L0-780-Z1610-81-<80-:2365/061/:50-
<Q/5143261/:5-4=:5:>/RL8-243/:5678-W=:>0182-<L-]<618\_-81-28018-:LN821-W-76-0/3561L28-
6L-p/T38-<8-7Q#2365/061/:5-<80-\$61/:50-P5/80J-W-\$8G-H:2IJ-YLORLQ6L-]<618\_k-

>&+\*(1')JN)
E0+\*\$\*(0+\*'')#F)099&'50+\*'')#F)0(('9+0+\*'')#)
'+)032%6\*'')#)

- k8-0240851-[ ==:2<-801-0:L>/0-W-76-261/M/=61/:5J-W-7Q6002: ?61/:5-:L-W-7Q6==80161/:5-
<80-Z1610-81-<80-:2365/061/:50-<Q/5143261/:5-4=:5:>/RL8-243/:5678k-`7-0826-:LN821-W-
7Q6<U40/:5-<80-Z1610-81-<80-:2365/061/:50-<Q/5143261/:5-4=:5:>/RL8-243/:5678-<T0-78-
785<8>6/5-<L- Y:L2- :^- /7- =800826- <QS128- :LN821- W- 76- 0/3561L28k- k80- /5012L>8510- <8-
261/M/=61/:5J- <Q6002: ?61/:5J- <Q6==80161/:5- 81- <Q6<U40/:5- 0:51- <40:040- 6L02T0- <L-
p8=2416/28-3454267-<8-7Q#2365/061/:5-<80-\$61/:50-P5/80k-

>&+\*(1')JN)!''#)
E#90&+\*'')#)3'6)(' / 9%+' # ('6)3'6)'& ,0#\*60+\*'')#6)34\*#+% ,&0+\*'')#)
%(''##' / \*8- ')&% ,''#01')'+)3')1' - &6)X+0+6) / ' / 5&'6)
)#)(')8-\*)(' # ('&#')1'6)8- '6+\*'')#6)&% ,\*'6)90&1')9&%6' #+)> (('&3)



>&+\*(1')KB  
E%6'&.'6)'+)G('9+\*"#6)

! !  
- k8-0240851- [ ==:2<-5Q6<> 81-5/-24082N80-5/-89=801/: 50k-

>&+\*(1')KB)!"#  
U%(10&0+\*"#6)

! !  
- kQ621/=78- F(- 5Q/5182</1- 060- W- L5- Z161- :L- W- L58- :2365/061/:5- <Q/5143261/:5-  
4=:5: >/RL8-243/:5678J-6L-> : >851-<8-76-0/3561L28J-<8-76-261/M/=61/:5J-<8-7Q6002: ?61/:5-  
:L- <8- 7Q6==80161/:5- <L- 0240851- [ ==:2<- :L- <8- 7Q6<U40/:5- W- =87L/B=/J- <8- M6/28- <80-  
<4=76261/:50J- RL870- RLQ85- 0:/851-78-7/?8774- :L- 76- <45: >/561/:5J- 5:16> >851-85- NL8-  
<QU62> :5/082- 080- 7:/0- 81- 2T378>8510- 6N8=- 78- 0240851- [ ==:2<J- W- =:5</1/:5- RL8- =80-  
<4=76261/:50-58-N/0851-060-W-89=7L28-:L-W-> : </M/82-7Q8MM81-YL2/</RL8-<80-</00:0/1/:50-<L-  
0240851- [ ==:2<-<650-78L2-6007/=61/:5-W-81-Z161-:L-W-8118-:2365/061/:5-<Q/5143261/:5-  
4=:5: >/RL8-243/:5678k-

>&+\*(1')KD

! !  
4\*++')7, E-

>&+\*(1')KJ  
> / '#3' / '#+)

! !  
, k- o:L18- +621/8- 08L1- 02:0:082J- 062- N:/8- <8- =: > >L5/=61/:5- 4=2/18- 6<280048- 6L-  
08=24162/61J- <80- 6>85<8>8510- 6L- 0240851- [ ==:2<k- k8- 08=24162/61- 12650>81- =8118-  
=: > >L5/=61/:5-W-1:L180-780- +621/80k- p/J- <650-780-0/9- > :/0- RL/-0L/N851-76- <618- <8-76-  
12650>/00/:5- <8- 76- =: > >L5/=61/:5J- 76- >:/1/4- 6L- >:/50- <80- +621/80- 240:5<851-



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

!

RL/-M:2>L7851-L58-2

,+#,-!  
!

!!"#!\$\$%





- //E- kQ6/<8-W-7Q476?:261/:5J-W-76->/08-85-j LN28-81-W-7Q6007/=61/:5-<8->80L280-743/0761/N80J-6<>/5/01261/N80-:L-<8-0:7/1/RL8-34542678-561/:56780J-V-=:>02/0-780-0280=2/01/:50-24378>8516/280J-0=/851/M/RL80-81-18=U5/RL80-=:558980-6L9-5/N86L9-561/:567J-0:L0B243/:567-:L-243/:567-i-
- ///E- kQ600L/-18=U5/RL8-W-76->/08-85-j LN28-<80-</00:0/1/:50-<L-0240851- [ ==:2<J-V-=:>02/0-85->61/T28-<8-0L2N8/7765=8-81-<8-=:>>L5/=61/:5-<80-<:55480-i-
- /NE- k80- >:V850- <8- 126<L/28- 780- <:55480- 81- 780- /5M:2>61/:50- 85- 0:7/1/RL80- 8MM/=6=80- 81- 8MM/=/85180J- 5:16>>851- 85- M6=/7/1651- 7Q6==T0- 6L9- =:556/0065=80- 54=8006/280-0:L2-4=76/282-780-<4=/<8L20-<80-Z1610-+621/80-85-<4N87:008>851-6/50/-RL8-7Q6=RL/0/1/:5-<8-80-=:556/0065=80-i-
- NE- k6- >/08-85-076=8- :L-78-285M:2=8>851-<80- =606=/140-/501/1L1/:5587780-<80-:2365/061/:50-81-/501/1L1/:50-561/:56780-81-243/:56780-=:>04185180-i-
- N/E- k6- =2461/:5- <8- =851280- 0=/851/M/RL80- 561/:56L9- 81- 243/:56L9J- 5:16>>851- 0:L0-M:2>8-<8-<40e10-<8-<:55480-i-
- N//E- k6- >/08-85-076=8-<8- =851280-<Q89=87785=8-243/:56L9-i-
- N///E- k6- >/08- 85- 076=8- <8- =851280- 243/:56L9- <8- <4N87:008>851- <80- =:>04185=80-i-

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

!

---

,-#,-!  
!

!!"#!\$\$%