2018-2019

UNDERGRADUATE ACADEMIC CATALOG

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./# H#&$!0!% Q#2+'$8#)#!(#$ >HQ)? +::#$2 A+(/ +! 8&5J'2 &!" +!*0!# &8&"#508 2'JJ+$(:+$ &88#*#$&(#" *#&$!0!% 2('"#!(2, ./# H#&$!0!% Q#2+'$8#)#!(#$02 /+'2#" &((/# -#\'+! 8&5J'2, M+'$2 +: +J#$&(0+! &$# -+!"&3] 7$0"&3` aZbb &, 5, ] ^Zcb J, 5, 7+$ 5+$# 0!:+$5&(0+!` J*#&2# 8&** EYE E^c EYEc +$ 2#!" &! #5&0* (+ 2R*$8 o 8'R,#"' >2R*$8 o) L,#"'?,

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488#*#$&(#" *#&$!0!% 2('"#!(2 /&1# (R+ +J(0+!2 (+ '(0*0U# 0! (/# L$0(0!%)#!(#$, ./#3 8&! 5&V# 0! J#$2+! &JJ+0!(5#!(2 &((/# -#\'+!)&5J'2 &!"X+$ (/#3 8&! 2'A50((/#0$ R+$V +!*0!#(/$+'%/) L72 ;!*0!# L$0(0!% H&A>; LH?, ./# ; LH02 5&0!(&0!#" A3 ($&0!0!% L$0(0!%)#!(#$ 2(&::, L$0(0!%)+!2'*(&!(2 +::#$ 8+!2($'8(01# 8+5 5#!(2 &A+'(2('"#!(J$+F#8(2, ./# ; LH 2(&:: $#10#R2 #22&32 &!" &2202(2 2('"#!(2 R0(/ A$&0!2(+$50!%` $#2#&$8/0!%` :+$5&((0!%` &!" $#1020!%, .+ 2'A50( &! #22&3 (+ (/# ; LH` 1020(RRR,8'R,#"'X; LH, 488#*#$&(#" *#&$!0!% 2('"#!(2 &$# &*2+ R#*8+5# (+ 1020((/# L$0(0!%)#!(#$:+$0! J#$2+! 8+!2'*(&(0+!2, ./#$# &$# (R+ *+8&(0+!2 +! (/# -#\'+!)&5J'2` +!#0! (/# H#&$!0!% Q#2+'$8# )#!(#$ >H'(/#$ Ebb?` &!" +! 0! Q0!8V#$ -#5+$0&* H0A$&$3, L$0(0!%)#!(#$)+!2'*(&!(2 R+$V R0(/ 2('"#!(2 &(&!3 2(&%# +: (/# R$0(0!% J$+8#22, .+ 5&V# &! &JJ+0!(5#!(:+$ &! 0! J#$2+! 8+!'*(&(0+!` J*#&2# 1020(('(+$($&8,8'R,#"' +$ 8&** EYE E^c EYEc,

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488#*#$&(#" *#&$!0!% 2('"#!(2 &$# R#*8+5# (+ 1020((/# -&(/ K$+J 9! K#2V *+8&(#" +! (/# -#\'+! 8&5J'2 0! (/# H#&$!0!% Q#2+'$8#)#!(#$ >H'(/#$

* (ʃ#$ -_K# ; L+)+ - þ`Þ - =

9 [9 ° [+) J ° °` P`•

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./# <8/++' +: 4$(2 &!" <8@#!8#2 #"'8&(#2 5#! &!" R+5#! (+ A# (/+'%/(:'' &!" &$(@8''&(# J#+J'# +: :&@(/ R/+` $++(#" @! (/# 'A#$&' &$(2` 8+!($A'(# @! 5#&!@!%:'' R&32 (+ (/#@$:& 5 0'@#2` 8+5 5 '!@(@#2` &!" 8''('$#2,_ 9("+#2 (/&2 @! (R+ J$@5&$3 R&32,_ 7@$2(` (/# <8/++' +::#$2 +1#$ (/@$(3 J$+%$& 5 2 +: 2('"3` @!8''"@!% (/# &$(2` 8+5 5 '!@8&(@+!` 8+5 J'(#$ 28@#!8#` (/# /' 5&!@(@#2` (/# !&('$&' 28@#!8#2` &!" (/# 2+8@&' 28@#!8#2, _B&8/ J$+%$& 5 :+8'2#2 +! #"'8&(@!% (/# R/+'# J#$2+! A3 "#1#'+J@!% 2V@''2 !#8#22&$3 :+$ :'('$# 8&$##$2 &!" J$+1@"@!% @!2%/(2 (/&( 2/&J# )/$@2(@&! 8@(@U#!2 :+$ & %'+A&' 2+8@#(3,_ <#8+!"` (/# <8/++' +: 4$(2 &!" <8@#!8#2 /+'2#2 (/#)+$#)'$@8''' 5` R/@8/ J$+1@"#2 & :$& 5#R+$V :+$ 8+!(@!''#" '#&$!@!%` "#1#'+J5#!(` &!" %$+R(/ @! & '@:#'+!% J'$2'@( +: f+8&(@+!,_ ./$+'%/ & 2('"3 +: (/# '@A#$&' &$(2` (/#)+$# +::#$2 2('"#!(2 & A$+&" '!"#$2(&!"@!% +: (/#@$ J'&8# @! (/# R+$'"` &!" @2 & 5#&!@!%:''` '!@:3@!% @!:''#!8# :+$ &'')+!8+$"@& %$&"'&(#2,

!<7

./# 4$(K#J&$(5#!(&( )+!8+$"@& !@1#$2@(3 L@28+!2@! +::#$2 & R@"# $&!%# +: 5&F+$2 &!" 5@!+$2 :+$ 2('"#!(2 R/+ R&!((+ J'$2'# & 1+8&(@+! @! (/# 1@2'&' &$(2 +$ R/+ 2@5 J'3 #!F+3 &$(&!" R+''" '@V# (+ #!/&!8# (/#@$ V!+R'#"%# &!" 2V@''2,_ O'@'('J+! &)/$@2(@&! '@A#$&' &$(2 :+'!"&(@+! 8+'$2#2 @! (/# "#J&$(5#!("#1#'+J A+(/ 5&!'&' &!" "@%@(&' 2V@''2,_)&$##$ J$#J&$&(@+! @!8''"#2 R+$V R@(/ &$#& 8'@#!(2 &!" #N(#!2@1# J$#J&$&(@+! +: & J$+:#22@+!&' J+$(:+'@+,

28_5<4

- 4$(B"'8&(@+! >C DE? -&F+$ >J,_E[?
- 4$(-&F+$ >J,_E[?
- I$&J/@8 K#2@%! -&F+$ >J,_EY?
- 9''2($&(@+! -&F+$ >J,_Ee?
- 9!(#$@+$ 4$8/@(#8('$# &!" K#2@%! -&F+$ >J,_Ea?
- 9!(#$@+$ K#2@%! -&F+$ >J,_Ea?
- 6/+(+%$&J/3 -&F+$ >J,_Ed?

23365<4

- 4$(-@!+$ >G+! H@8#!2&A'#? >J,_EY?
- I$&J/@8 K#2@%! -@!+$ >J,_Ee?

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./# 4$(B"'8&(@+! -&F+$ 8+!2@2(2 +: d[DbD 8$#"@(/+'$2 +: 8+'$2# R+$V` "#J#!"#!( 'J+! R/#(/#$ (/# 2('"#!( 8/++2#2 & J'A'@8 28/++' +$ H'(/#$&! #"'8&(@+! :+8'2,9! A+(/ 8&2#2 8+'$2#R+$V A'#!"2 2('"@+ &!" #"'8&(@+! 8+'$2#2 (+ :'''3 J$#J&$# 2('"#!(2 :+$ & $#R&$"@!% 8&$##$ @! &$( #"'8&(@+!, J+! 2'88#22:'' 8+5 J'#(@+! +: &'' 8+'$2#R+$V` @!8''"@!% & 2#5#2(#$ +: 2('"#!((#&8/@!%` &$( #"'8&(@+! 5&F+$2 #&$! :''' '@8#!2'$# A3 (/# <(&(# +: L@28+!2@! (+ (#&8/ &$( &( (/# #'#5#!(&$3 &!" 2#8+!"&$3 '#1#'2 >C DE?, 6$+%$& 5 $#\'@$#5#!(2@!8''"# J'$8/&2# +: & -&8 '&J(+J >&1&@'&A'# &( $#"'8#" J$@8#2 1@& 53,8'R,#"'?, 9! &""@(@+! (+ $#\'@$#5#!(2 :+$ C DE B"'8&(@+!` &$(#"'8&(@+! 5&F+$2 8+5 J'#(# (/# :+''+R@!% $#\'@$#" 8+'$2#R+$V@! (/# &$#&2 +: &$(` &!" &$(#"'8&(@+!,

EY___ *:$(J4!+$BT+! G49#!6&E'#C*

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D _7+$ ($&!2:#$ 2(' '"#!(2` J'#&2# 2## (/# 4"1&!8#" .$&!2:#$)+$# >J,_Ec?,

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!%0	P&2-0	^!,$)
Q0Z,&$0% !,$)0)`	!"#!$%&' '68,)a	
IK_DDb	I$&J/08 K#2%! 9	c
IK_DDD	I$&J/08 K#2%! 99	c
4Q._D^[		

D=575?<8G=B 28_5<

./# !"#"$%&'!( )&'"%2 #&$!#" A3 8+ 5 J'#(0!% #&8/ +: (/# 8'&22#2 +! (/02 '02(,

!%0	P&2-0	^!,$)
)+$# Q#\'0$# 5#!(2 >J,_EE? D		^[
<'_!$ Q0Z,&$0 6 0"2)		[a
9·0#2&:0)		De
.+(&' M+'$2		DEb

D _7+$ ($&!2:#$ 2('"#!(2` J'#&2# 2## (/# 4"1&!8#" .$&!2:#$)+$# >J,_Ec?,

<#'#8(+!# +: (/# :+''+R0!%Z	c
.M.Q_Dbb	)''('$&' BNJ#$0#!8# ./$+'%/ K0$#8(#" .$&1#' <('"3
.M.Q_Dbc	O&20 8 K&!8#
.M.Q_ED[	f+08# @ <J##8/ :+$ (/# 48(+$
.M.Q_EE[	;!)&5#$& 48(0!% @ 6$+"'8(0+!
.M.Q_E[^	6$+"'80!%)/0'"$#!12./#&($#
.M.Q_EYd	-'20 8&' ./#&($# &!" K&!80!%
.M.Q_cDb	./#&($# -%5(&!" <(&%# -%5(
.M.Q_ccD	<(&%# K#20%! 9
.M.Q_cYc	48(0!% 99Z 9!(#$5#"0&(# 48(0!%
<#'#8(+!# +: (/# :+''+R0!%Z	c
.M.Q_Ebc	)/+$#+%$&J/3 :+$ (/# <(&%#
.M.Q_cDD	K$&5& -0!02($3
.M.Q_ccc	
.M.Q_c^b	./#&($# 0! B"'8&(0+!
.M.Q_ceD	<(&%# K0$#8(0!%
.M.Q_caD	<(&%# -+1#5#!(@)+5A&(
.M.Q_cdc	H+!"+! .+'$
.M.Q_^bb	<J#80&' .+J082 0! ./#&($#
.M.Q_^^b	6'&3R$0(0!%
.M.Q_^Yc	48(0!% 999Z 4"1&!8#" 48(0!%

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)+5J'(#$ 280#!8# &!" 0!:+$5&(0+! (#8/!+'+%3 &$# (/# :+'!"&(0+!2 +: ED2(8#!('$3 (#8/!+'+%3, 7$+5 &!05&(0+! (+ 5'20 8` :$+5 &'(+5+A0'#2 (+ 10$('&' $#&'0(3 :$+5 &!&'3(082 (+ 0!:+$5&(082` :$+5 &'%5#!(#" $#&'0(3 (+ $+A+(082` 8+5J'(#$ 280#!(02(2 &!" 0!:+$5&(0+! (#8/!+'+%02(2 8$#&(# &!" &JJ'3 (/# (#8/!+'+%3 (/&(#5J+R#$2 2+80#(3,

)+5J'(#$ 280#!8# &!" 0!:+$5&(0+! (#8/!+'+%3 :+8'2 +! $#&' R+$'" J$+A'#5 2+'10!%, ./#2# J$+%$&52 &$# !+(F'2(:+$%##V2,)< &!" 9. &$# :+$ 8$#&(01# J#+J'# R/+ '+1# (+ 05&%0!# J+220A0'+$81# ȷ® ȝ 1+# 8$J F'22+# 0!2208/! 28':+ʉA'#:+:# ֍ - = - }ȷ+$ 8$+'ȷ ȝ ȷ - 28 ~+$3906A9 m ' 3(! <
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)<)_E[b	)+5J'(#$ <80#!8#` ./$3X6$8(9	c
)<)_cbb	)+5J'(#$ <80#!8#`./$3X6$8(99	c
)<)_c[[	I&5# 6$+%$&5 5 0!% D	c
)<)_ceb	<+:(R&$# B!%0!##$0!%	c
)<)_^[[	I&5# 6$+%$&5 5 0!% E	c
.+(&' M+'$2		Da

D <('"#!(2 2/+''" 8+!20"#$ (&V0!%)<) D[b (+ 2&(02:3 (/#)+$# -&(/#5&(082 $#\'0$#5#!(20!8#)<) D[b 02 (/# J$# $#\'020(# :+$)<) Ebb,

/6F5<:87356 9A=65E5?B 28_5<

./# O< "#%$## J$+%$&5 0! 9!:+$5&(0+! .#8/!+'+%3 02 "#20%!#" :+$ 2('"#!(2 R/+ &$# 0!(#$#2(#" 0! 2J#80:30!%` 5&!&%0!%&!" &JJ'30!% (#8/!+'+%3 :+$ (/#0$ +$%&!0U&(0+!, 4! 9. %$&"'&(# $#2J+!"2 (+ (/# J$&8(08&*` +!%+0!% "#5&!"2 +: &A'20!#22 :+$ 8+5J'(0!% $#2+'$8#2, O#8&'2# &'' +$%&!0U&(0+!2 '(0'0U# (#8/!+'+%3` (/# 9. %$&"'&(# 2+'1#2 J$+A'#52 A3 2'JJ+$(0!% (/# +$%&!0U&(0+! &!" +(/#$ #5J'+3##20! (/#0$ \'#2(:+$0!:+$5&(0+!,

./02 J$+%$&5 J$#J&$#2 2('"#!(2 :+$1+8&(0+!2 2'8/ &2 232(#5 &"50!02($&(+$` !#(R+$V &"50!02($&(+$` 8+5J'(#$2'JJ+$(#!%0!##$` (#8/!+'+%02(` 0!:+$5&(0+! 232(#5 ($&0!#$ (#8/!08&' 5&$V#(0!% J$+:#220+!&*` 8+5 5 '!08&(0+!2 #!%0!##$ (#'#8+5 5 '!08&(0+!2 2J#80&'02(` 8+5J'(#$ +J#$&(0+!2 &!" "&(& 8#!(#$ "0$#8(+$,

!%0	P&2-0	^!,$)
!$0 Q0Z,&$0 6 0"2) >J,_EE? D		^[
<'_!$ Q0Z,&$0 6 0"2)		^c
9·0#2&:0)		cE
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D _7+$ ($&!2:#$ 2('"#!(2` J'#&2# 2## (/# 4"1&!8#" .$&!2:#$)+$# >J,_Ec?,

28_5< ,9T@3<9:9674

!%0	P&2-0	^!,$)
Q0Z,&$0% !$0 !,$)0)		
<)9_Ee[	)+25+%+!3 >$#\'0$#" :+$ M'5&! O#0!%2 &!" O#0!% M'5&!?	
-&(/#5&(082 $#\'0$#5#!(D		
/$!N0))&!"'· !$0 !,$)0)		
6M9H_EDD	B'#5#!(&$3 H+%8	c
Q0Z,&$0% !,$)0)		
)<)_D[b	7+'!"&(0+!2 +:)+5J <80#!8#	c
)<)_De[	9!:+$5&(082	c
)<)_Dab	Q#&"0!%2 0! 9. ;H	c
)<)_Ebb	7+'!"&(0+!2 +: 6$+%$&5 0!%	c
)<)_E[b	)+5J'(#$ <80#!8#` ./$3X6$8(9	c
)<)_cDc	./# 9. BNJ#$0#!8#	D
)<)_ceb	<+:(R&$# B!%0!##$0!%	c
)<)_^Db	f+8&(0+! &!" B(/08&')+5J'(0!%	c
)<)_^cb	K&(&A&2# @9!:+ -&!&%#5#!(	c
)<)_^dD	<#!0+$ <#50!&$ 99	c
<'_!$ 9·0#2&:0)		
<#'#8(& 50!05'5 +: DE 8$#"0(2 E		DE
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D 9. 5&F+$2 8&!!+('2#)<)_!!%

!>:3443561 5 =9 D<5?<8:

./# -&2(#$ +: <8@#!8#@! 4(/'#(@8 .$&@!@!% J$+%$& 5 @2 & 2#'#8(@1# J$+%$& 5 (/&(&88#J(2 &JJ$+N@5&(#'3 (R#!(3 2('"#!(2 #&8/ 3#&$_ ./@2 &" 5@22@+! J$+8#22 &!" '@5@(#" 8'&22 2@U# J$+5+(#2 \'&'@(3 #"'8&(@+!` J$+1@"#2 (/# 2('"#!(2 R@(/ +JJ+$('!@(@#2 :+$ /&!"2 +! '#&$!@!%` &!" 5&@!(&@!2 8+5 J'@&!8# R@(/)44.B &88$#"@(&(@+! 2(&!"&$"2,_ 6$+2J#8(@1# &(/'#(@8 ($&@!@!% 2('"#!(2 R@** :+$5&*'3 &JJ'3 (+ (/# -<4. J$+%$& 5 "'$@!% (/# 2J$@!% 2#5#2(#$ +: (/#@$ =$2(3#&$ +: 8+'$2#R+$V,_ <('"#!(2 R@(/ /@%/#$ &8&"#5@8 2(&!"@!% +$ ($&!2:#$ 2('"#!(2 5&3 &JJ'3 &!" R@** A# %@1#! #\'&' 8+!2@"#$&(@+!i (/#2# 2('"#!(2 R@** !##" (+ :+$5&*'3 &JJ'3 &!" %+ (/$+'%/ (/# -<4. J$+%$& 5 8'$@8''5 &( )+!8+$"@& !@1#$2@(3 L@28+!2@!` &JJ'@8&!(2 5'2(5##((/# :+*'+R@!% 5@!@5'5 $#\'@$#5#!(2 (+ A# 8+!2@"#$#" :+$ &"5@22@+! (+ (/# -<4. J$+%$& 5Z

D, B&$! &)'5''&(@1# I$&"# 6+@!(41#$&%# +: E,e[@! &** 8+'$2# R+$V >;1#$&**)I64?,

E, B&$! &)'5''&(@1# I$&"# 6+@!(41#$&%# +: c,bb @! &** 5&F+$ 8+'$2# R+$V>4.)I64?, >O9;_DdD M'5&! 4!&(@6/32 9` O9;_DdE M'5&! 4!&( @6/32 99`_-<4._DD[-#" .#$5 :+$ M#&'(/ 6$+:#22@+!` -<4._Dcb 4"1&!8#" L#@%/( .$&@!@!%` -<4._DeE 4(/'#(@8 .$&@!@!% 7+'!"&(@+!2` -<4._Eb[ 7@$2( 4@" @B5#$ 6$+8#" @H&A` -<4._EeE 9!($+ 4(/'#(@8 .$&@!@!%X -<4._Eec 4(/'#(@8 .$&@!@!% H&A?,

c,)+5J'#(# (/# -<4. 6$+%$& 5 4JJ'@8&(@+! A3 (/# 2J#8@=#" "&(#` @!8''@!% & A&8V%$+'!" 8/#8V,

^, <'A5@((R+ -<4. J$+%$& 5 #1&'&(@+!2` :$+5 (R+ J#$2+!&' $#:#$#!8#2,

[, 9!(#$1@#R R@(/ (/# -<4. J$+%$& 5 4"5@22@+!2)+5 5@((##,

Y,)+5J'#(# &!" J&22 (/# :+**+R@!% 8+'$2#2Z

&, O9;_DdD M'5&! 4!&(@6/32 9Z R@(/ & %$&"# +:) >E,b? +$ /@%/#$

A, O9;_DdE M'5&! 4!&(@6/32 99Z R@(/ & %$&"# +:) >E,b? +$ /@%/#$

8, -<4._DD[-#" .#$5 :+$ M#&'(/ 6$+:#22@+!Z R@(/ & %$&"# +: O >c,b? +$ /@%/#$

", -<4._Dcb 4"1&!8#" L#@%/(.$&@!@!%Z R@(/ & %$&"# +: O >c,b? +$ /@%/#$

#, -<4._DeE 4(/'#(@8 .$&@!@!% 7+'!"&(@+!2Z R@(/ & %$&"# +: O >c,b? +$ /@%/#$

:, -<4._Eb[7@$2(4@" @B5#$ 6$+8#" @H&AZ R@(/ & %$&"# +: O >c,b? +$ /@%/#$

%, -<4._EeE 9!($+ 4(/'#(@8 .$&@!@!%X_-<4._Eec 4(/'#(@8 .$&@!@!% H&AZ R@(/ & %$&"# +: O >c,b? +$ /@%/#$

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;!8# &"5@((#" (+ (/# -<4. J$+%$& 5` &** 4(/'#(@8 .$&@!@!% <('"#!(2 5'2(5&@!(&@! (/# :+**+R@!% Q#(#!(@+! <(&!"&$"2Z

D, -&@!(&@! &)'5''&(@1# I$&"# 6+@!(41#$&%# +: E,e[@! &** 8+'$2# R+$V >;1#$&**)I64?,

E, -&@!(&@! &)'5''&(@1# I$&"# 6+@!(41#$&%# +: c,bb @! &** 5&F+$ 8+'$2# R+$V>4.)I64?, >O9; DdD` O9; DdE` Bv6M ^eb` MM6 c^E` &** -<4. 8+'$2#2` &!" B'#8(@1# 8+'$2#2?,

c, -'2(J&22 &** 6$&8(@8'5 8+'$2#2>-<4._EdD 4(/'#(@8 .$&@!@!% 6$&8(9`_-<4._EdE 4(/'#(@8 .$&@!@!% 6$&8(@8'5 99` -<4._cdD 4(/'#(@8 .$&@!@!% 6$&8(@8 999` -<4._cdE 4(/'#(@8 .$&@!@!% 6$&8(@8 9f` -<4._^dD 4(/'#(@8 .$&@!@!% 6$&8(@8'5 f` &!" -<4._^dE 4(/'#(@8 .$&@!@!% 6$&8(@8'5 f9? R@(/ & %$&"# +: O >c,b? +$ /@%/#$,

^, -'2(&"/#$# (+ (/# -<4. 6$+%$& 5 M&!"A++V,

[, -&@!(&@! $#\'@$#" &!" 28/#"''#" 8'@!@8&' #NJ#$@#!8# /+'$2, -'2(5&V# #1#$3 &((#5J((+ 28/#"''# &** 8'&22#2 J$@+$ (+ EZbbJ5 @! +$"#$ (+ 8+5J'#(# 8'@!@8&' $+(&(@+!2,

Y, -'2(J&22 &** $#\'@$#" &(/'#(@8 ($&@!@!% 8+'$2#2` @! 2#\'#!8#` @! +$"#$ (+ J$+%$#22 @! (/# 4(/'#(@8 .$&@!@!% 6$+%$& 5, 9: & 2('"#!("+#2 !+(J&22 & 8+'$2# "'$@!% & J&$(@8''&$ 2#5#2(#$ (/&(2('"#!(8&!!+(J$+%$#22 @! (/# J$+%$& 5 '!(@* (/# 8+'$2# /&2 A##! $# (&V#! &!" (/# 2('"#!(/&2 J&22#" (/# 8+'$2#, ./@2 R@** @V#'3 8&'2# & +!# 3#&$ "#'&3 @! (/# 8+5J'#(@+! +: (/# -<4. J$+%$& 5, <('"#!(2 R/+ "+ !+(J&22 &! &(/'#(@8 ($&@!@!% 8+'$2# "'$@!% (/# =$2(&((#5J(5&3 $# (&V# (/&(8+'$2# +!# &"'"@(@+!&' (@5#@! &! #::+$((+ J&22 (/# 8'&22, <('"#!(2 R@** !+(A# &**+R#" (+ (&V# &!3 &(/'#(@8 ($&@!@!% 8+'$2# 5+$# (/&! (R+ (@5#2,

DE9849 499 7=9 '56A5<>38 *63J9<437B ;34A56436 28479< 5F)A396A9 36 !7=E973A <83636? H9W4379 F5< :5<9 36F5<:87356V 4@A= 84\ 9A=63A8E)786>8<>4 F5< !>:3443561V +9?<99 '5:GE97356 ,9T@3<9:9674V '5:::@63A8WE9 +3498494V !AA<9>3787356)787@4V "%' $X8: D844 ,879V @37356 86> &994V 86>)A=5E8<4=3G4

.3475<B

2(2#3#@2 (]h6GJ3192(]=9@A<

!4

J$+1ø"#2 ($&ø!ø!%ø! "ø2(ø!8(ø1#'3 8'&22ø8&' J$ø!8øJ'#2 +: ø!2($'8(ø+! &!"
5#(/+"2 +: '#&$!ø!%, _<(' '"#!(2 &'2+ /&1# (/# +J(ø+! +: 8+5 J'#(ø!%
& 5&F+$ø! 4$(2 @ <8ø#!8#2 >2'8/ &2 5&(/#5&(ø82` 28ø#!8#` B!%'ø2/
+$ Mø2(+$3?,_)+!8+$"ø&ll2 J$+%$&5 ø2 "#2ø%!#" 2J#8ø=8&''3 (+ J$+1ø"#
(#&8/#$2 :+$ A+(/ H'(/#$&! &!" +(/#$)/$ø2(ø&! 28/++'2 (/&(/&1# &"+J(#"
&)'&22ø8&' 8'$$ø8'' ' 5, I$&" ' '&(#2 +: (/# J$+%$&5 &$# #'ø%øA'# :+$ $+2(#$ø!%
Rø(/ø! (/# H) - <` A'(&" 5ø22ø+! ø2 +J#! (+ 5#5A#$2 +: &!3)/$ø2(ø&!
"#!+5ø!&(ø+!,

D<5?<8 : ,9T@3<9 : 967 4

D,)'&22ø8&' 6#"&%+%3 5ø!+$ >EE E^ 8$#"ø(2?

E,)'&22ø8&' <(' '"ø#2 5&F+$ >cY 8$#"ø(2?_;Q
4$(2 @ <8ø#!8#2 5&F+$ >cY [Y 8$#"ø(2? 4GK)'&22ø8&' <(' '"ø#2 5ø!+$
>Da ED 8$#"ø(2?[redacted]

```
   B'$+J#&! M@2(+$3
      ,<, +$ G+! L#2(#$!XI'+A&' M@2(+$3
;;;L Q=I3&646 4! S'+E&' P46(+$7
   G+! L#2(#$!XI'+A&' M@2(+$3
```

QBH_ceY	)/$02(0&! B(/082
QBH_^Db	L+$'" Q#'0%0+!2

>34'+6+I37

<#'#8(+!# 6M9H 8+'$2# 0! (/# Ebb cbb $&!%#	c

T&('$&' @94#!9#

<#'#8(+!# +: (/# :+''+R0!%Z c	c ^
O9;_E[Y	B!10$+!5#!(&' <80#!8#
O9;_D^D	I#!#$&' O0+'+%3 9
O9;_cYe	B8+'+%3 +: (/# .$+J082
6MS<_Dbe	42($+!+53
<)9_D[D	6/3208&' <80#!8#
<)9_Dd[	-#(#+$+'+%3
<)9_E^Y	;8#&!+%$&J/3

@+94&' @94#!9#

<;)_Ebc	)+!(#5J <+80&' 6$+A'#52 c

@#!4+$ @#=4!&$

<#'#8(& 2#!0+$ 2#50!&$ 0! 2#'#8(#" "0280J'0!#	c

.+(&' M+'$2 [Y [e

D -'2(0!8''"#&('#&2(+!# R$0(0!%8'&22

E 4!3 QBH 8+'$2#2 +(/#$ (/&! (/# A&208 8+'$2#2 0! A0A'08&' 8+!(#!(+$ "+8($0!#>0,#,` +(/#$ (/&! QBH_Dbb ./# O0A'#` QBH_DDb)/$02(0&! 7&0(/` QBH_EbD ;'" .#2(&5#!(` QBH_Ebc G#R .#2(&5#!(` QBH_Eb^ O0A'08&' ./#+'+%3?` &!" R0(/+'(p"+'A'# "0JJ0!%q R0(/ (/# (/0$" 8+$# (/#+'+%3 8+'$2#,

c <)9_Dbb 9!(#%$&(#" <80#!8# :+$ 8+$#,

#3F9 86> $8<7=)A396A94

./# %+&' +: (/# K#J&$(5#!(+: H0:# &!" B&$(/ <80#!8#2 &()+!8+$"0& !01#$20(3 L028+!20! 02 (+ "#1#'+J 8+5J#(#!(28 0#!(02(2 R0(/ &)/$02(0&! R+$'"10#R,_ ./# %$&"'&(#2 +: (/02 J$+%$&5 R0'' J+22#22 (/# 8'$$#!(280#!(0=8 V!+R'#"%# &!" $#2#&$8/X"&(&0!(#J#(&(0+! 2V0''2 2+ !#8#22&$3 :+$#!(#$0!% 280#!(0=8 +$ 5#"08&' 8&$##$20! 0!"'2($3` &8&"#50&` +$ %+1#$!5#!(,_ -+$#05J+$(&!('3` (/#3 R0'' A# J$#J&$#" (+ J$+10"# &)/$02(0&! 0!:''#!8# &!" #(/08&' J#$2J#8(01# (+ (/# "#A&(# +! (/# 280#!8# $#'&(#" J$+A'#52 :&80!% (/# R+$'" (+"&3,

28_5<4

- g O0+'+%3 -&F+$>J,_^b?
- g O0+5#"08&' <80#!8#2 -&F+$>J,_^D?
- g B!10$+!5#!(&' M#&'(/&!" L&(#$P'&'0(3 -&F+$>J,_^E?
- g B!10$+!5#!(&' <('"0#2 -&F+$>J,_^c?
- g M+$(08''('$# -&F+$>J,_^^?
- g G&('$&' <80#!8#2 -&F+$>J,_^[?

G2&65<4

)/++2# & 5@!@5 ' 5 +: D^ 8$#"@(2 +: (/# :+''+R@!%Z E		D^
O9;_D^E	I#!#$&' O@+'+%3 99	^
+$_O9;_D[E	7'!8(@+!&' M'5&! O@+'+%3 99	
O9;_D[Y	B!1@$+!5#!(&' <8@#!8#	^
O9;_DdD	M'5&! 4!&(@6/329	^
O9;_DdE	M'5&! 4!&(@6/3299	^
O9;_Ea[	6&(/+J/32@+'+%3	c
O9;_cbD	4"1&! 7'!8 4!&(+53@6/32@+'+%	^
O9;_cED	)#'' O@+'+%3	^
O9;_c[D	95 5 '!+'+%3	c
O9;_cYe	B8+'+%3 +: (/# .$+J@82	c
O9;_cYa	B8+'+%3 +: (/# .$+J@82 H&A	D
O9;_ceb	;$!@(/+'+%3	^
O9;_caD	M@2(+'+%3	c
O9;_cdd	O@+'+%3 9!(#$!2/@J	

^^___

) , !"#$%$&"'&(#)&(&'+% -./0 -./1 ____ ^[

^Y___ *J&(3#=&(496 J&N+$*

_ 6+22ⱥA'# 8&$##$ +JJ+$(' !ⱥ(ⱥ#2 ⱥ!8' ' "#Z 2(&(ⱥ2(ⱥ8ⱥ&! ` A ' 2ⱥ!#22 8+!2 ' '(&!(`
=!&!8ⱥ&' +$ 2#8 ' $ⱥ(ⱥ#2 &!&'32(` &8( ' &$3` &! " 28ⱥ#!(ⱥ=8 $#2#&$8/#$,

28_5<4

28_5< ,9T@3<9 : 9674

!%0 P&2-0 ^!,$)

Q0Z,&$0% !,$)0)

<64G_EbD

^a___ *J'649 J4!+$*

- <_E^b	-'208 ./#+$3 9	c
- <_E^D	-'208 ./#+$3 99	c
- <_E^E	-'208 ./#+$3 999	c
- <_E^c	-'208 ./#+$3 9f	c
- <_EeD	-'208 M02(+$3 9	c
- <_EeE	-'208 M02(+$3 99	c
- <_Eec	-'208 M02(+$3 999	c
- <_E[b	O#%0!!0!%)+!"'8(0!%	c
- <_c[D	4"1&!8#")+!"'8(0!%	c
+$_- <_^^[	)+5 J+20!%&!" 4$$&!%0!%	
- <_^dd		

+$_))B_DEb L#2(#$! ./+'%/(@ L+$'"1⓪#R

Q0Z,&$0% !,$)0)

6M⑨H_EbD)#!($&' .#N(2 +: 6/⓪'+2+J/3 c

6M⑨H_EDD B'#5#!(&$3 H+%⓪8 c

6M⑨H_E[b -+$&' 6/⓪'ZQ⓪%/(@ L$+!% c

6M⑨H_cE[ )/$⓪2(⓪&! 4J+'+%#(⓪8⑨ c

QBH_Ebc G#R .#2(&5#!(E c

6M⑨H_^dD <#!⓪+$ <#5⓪!&$ D D

6M⑨H_^dE <#!⓪+$ <#5⓪!&$⑨⑨ c

6M⑨H_^bb 4!8⓪#!(6/⓪'+2+J/3 c

6M⑨H_^Db -#"⓪#1&' 6/⓪'+2+J/3 c

6M⑨H_^[b -+"#$! 6/⓪'+2+J/3 c

<'_!$9·0#2&:0)

@#'#9(!⁴!# 9$#"⁴(6 +< (3# <+''+K⁴!%ᵂ H 1

6M⑨H vvv

BGI_c[b)'&22⓪8&' @ -+"#$! Q/#(+$⓪8

BGI_^e[H⓪(#$&$3)$⓪(⓪8⓪25

6;H<_^Db 7&⓪(/ &!" 6+'⓪(⓪82

QBH_ccc 4 <'$1#3 +:)/$⓪2(⓪&! ./+'%/(

QBH_caa f&$⓪#(⓪#2 +: O#'⓪#:

<)⑨_Ee[ )+25+%+!3

.+(&' M+'$2 ce

D 9! #N8#J(⓪+!&' 8⓪$8'52(&!8#2` 2('"#!(2 5&3 J#(⓪(⓪+! (/# 6/⓪'+2+J/3 K#J&$(5#!(:+$ &JJ$+1#" 8+'$2# 2'A2(⓪('(⓪+!2,

E _.+ 8+5 J'#(# (/# J&⓪$ R⓪(/ QBH_EbD ;'" .#2(&5#!(⓪! (/# 8+$#

C -&F+$2 5&3 2'A2(⓪('(# +!# +: (/# :+''+R⓪!% &JJ$+1#" c 8$#"⓪(!+! 6M⑨H 8'&22#2 R⓪(/ +(/#$ &JJ$+1#" 8+'$2#2 $#'#1&!((+ (/# 2('"#!(⓪2 2J#8⓪&' &$#& +: ⓪!(#$#2(⓪! J/⓪'+2+J/3 >#,%, & $#'#1&!(/⓪2(+$3 8+'$2# ⓪: (/#3 &$# ⓪!(#$#2(#" ⓪! J/⓪'+2+J/3 +: /⓪2(+$3` & $#'#1&!(28⓪#!8# 8+'$2# ⓪: ⓪!(#$#2(#" ⓪! J/⓪'+2+J/3 +: 28⓪#!8#?,

D=3E545G=B 2365<

2365<,9T@3<9:9674

!%0 P⓪2-0 ^!,$)

Q0Z,&$0% !$0 !,$)0)

QBH_EbD ;'" .#2(&5#!(>O⓪A'#)+!(#!(? D

QBH_Eb^ O⓪A'⓪8&' ./#+'+%3>)/$⓪2(⓪&! K+8($⓪!#? D

QBH vvv ./#+'+%3 #'#8(⓪1# D

6M⑨H_DbD 6/⓪'+2+J/3⓪ ./#+$3 @ 6$&8(⓪8# D

+$_))B_DEb L#2(#$! ./+'%/(@ L+$'"1⓪#R

Q0Z,&$0% !,$)0)

6M⑨H_EbD)#!($&' .#N(2 +: 6/⓪'+2+J/3 c

6M⑨H_EDD B'#5#!(&$3 H+%⓪8 c

+$_6M⑨H_cE[ )/$⓪2(⓪&! 4J+'+%#(⓪8⑨

6M⑨H_E[b -+$&' 6/⓪'ZQ⓪%/(@ L$+!% c

QBH_Ebc G#R .#2(&5#!(E c

<#'#8(+!# +: (/# :+''+R⓪!%⓪ c

6M⑨H_^bb 4!8⓪#!(6/⓪'+2+J/3

6M⑨H_^Db -#"⓪#1&' 6/⓪'+2+J/3

6M⑨H_^[b -+"#$! 6/⓪'+2+J/3

<&"!$9·0#2&:0)

@#'#9(6⁴Y 9$#"⁴(6 +< (3# <+''+K⁴!%ᵂ H 0

6M⑨H vvv

BGI_c[b)'&22⓪8&' @ -+"#$! Q/#(+$⓪8

BGI_^e[H⓪(#$&$3)$⓪(⓪8⓪25

6;H<_^Db 7&⓪(/ &!" 6+'⓪(⓪82

QBH_ccc 4 <'$1#3 +:)/$⓪2(⓪&! ./+'%/(

QBH_caa f&$⓪#(⓪#2 +: O#'⓪#:

<)⑨_Ee[ )+25+%+!3

.+(&' M+'$2 ED

D 9! #N8#J(⓪+!&' 8⓪$8'52(&!8#2` 2('"#!(2 5&3 J#(⓪(⓪+! (/# 6/⓪'+2+J/3 K#J&$(5#!(:+$ &JJ$+1#" 8+'$2# 2'A2(⓪('(⓪+!2,

E .+ 8+5 J'#(# (/# J&⓪$ R⓪(/ QBH_EbD ;'" .#2(&5#!(⓪! (/# 8+$#,

C -⓪!+$2 5&3 2'A2(⓪('(# +!# +: (/# :+''+R⓪!% &JJ$+1#" c 8$#"⓪(!+! 6M⑨H 8'&22#2 R⓪(/ +(/#$ &JJ$+1#" 8+'$2#2 $#'#1&!((+ (/# 2('"#!(⓪2 2J#8⓪&' &$#& +: ⓪!(#$#2(⓪! J/⓪'+2+J/3 >#,%, & $#'#1&!(/⓪2(+$3 8+'$2# ⓪: (/#3 &$# ⓪!(#$#2(#" ⓪! J/⓪'+2+J/3 +: /⓪2(+$3` & $#'#1&!(28⓪#!8# 8+'$2# ⓪: ⓪!(#$#2(#" ⓪! J/⓪'+2+J/3 +: 28⓪#!8#?

D=B43A8E)A396A94

./#&⓪5 +: (/# "#J&$(5#!(+: 6/32⓪8&' <8⓪#!8#2⓪2 (+ J$#J&$# 3+' :+$ & 8&$##$⓪! (/# 8/#5⓪8&'⓪!"'2($3 +$ (+ J'$2'#%$&"'&(# 2('"⓪#2 (+ #&$! & 6/K` &! -K` +$ & 6/&$5K, BNJ#8((+ A# 8/&''#!%#" +! & $#%'+&$ A&2⓪2, ;'$ J$+:#22+$2 /&1# "#2⓪%!#" & $⓪%+$+'2 8'$$⓪8'' 5 (+ /#'J 3+' &"1&!8# &2 & 28⓪#!(⓪2(&!" "#1#'+J &!&'3(⓪8 $#&2+!⓪!%,) L⓪2)/#5⓪2($3 J$+%$&5 5##(2 (/# $#\'⓪$#5#!(2 :+$ &! 45#$⓪8&!)/#5⓪8&' <+8⓪#(3 8#$(⓪=#" "#%$##` &! ⓪5J+$(&!("⓪2(⓪!8(⓪+! :+$ &!3)/#5⓪2($3 J$+%$&5,

Majors

g)/#5⓪2($3 -&F+$>J,_[b?

g 6/&$5&8#'(⓪8&' <8⓪#!8#2 -&F+$>J,_[D?

2365<4

g)/#5⓪2($3 -⓪!+$>J,_[D?

'=9:347<B 28_5<

)+!8+$"⓪& +::#$2 & 8/#5⓪2($3 5&F+$(/&(5##(2 (/# $#\'⓪$#5#!(2 :+$ 8#$(⓪=8&(⓪+! A3 (/# 45#$⓪8&!)/#5⓪8&' <+8⓪#(3, ./⓪2 5&F+$⓪!8''"#2 ^Y 8$#"⓪(2 +: 8/#5⓪2($3&!" DY 8$#"⓪(2 +: 2'JJ'#5#!(&$3 8+'$2#R+$V >J/32⓪82&!" 5&(/#5&(⓪82?, 4 2('"#!(2##V⓪!%& "#%$## ⓪!)/#5⓪2($3 5'2((&V#Z

!%0 P⓪2-0 ^!,$)

!$0 Q0Z,&$0 6 0"2)>J,_EE? D ^Y

!%0	P&2-0	^!,$)
Q0Z,&$0% !$0	!,$)0)	
)MB-_D^D	I#!#$&')/#5@2($3 9 >H&A <8@#!8# ^8$#"@(2?	
-4.M_EbD	)&'8''2 9 >-&(/#5&(@82 ^8$#"@(2?	
Q0Z,&$0%	!,$)0)	
)MB-_D^E	I#!#$&')/#5@2($3 99	^
)MB-_E^D	;$%&!@8)/#5@2($3 9	^
)MB-_E^E	;$%&!@8)/#5@2($3 99	^
)MB-_EE[	4!&'3(@8&')/#5@2($3	^
)MB-_Ec[	K#28$@J(@1# 9!+$%&!@8)/#5@2($3	^
)MB-_c^D	6/32@8&')/#5@2($3 9	^
)MB-_c^E	6/32@8&')/#5@2($3 99	^
)MB-_^E[	O@+8/#5@2($3	^
)MB-_^db	)/#5@2($3 <#!@+$ <#5@!&$ >D 8$#"@(J#$ 2#5#2(#$?	E
-4.M_EbE	)&'8''2 99	^
6MS<_DeD	!@1#$2@(3 6/32@82 9	^
6MS<_DeE	!@1#$2@(3 6/32@82 99	^
<#'#8(&('#&2(a	8$#"@(2 +: (/# :+''+R@!%	a
)MB-_cdd	)/#5@2($3 9!(#$!2/@J >D ^8$#"@(2?	
)MB-_^EY	4"1&!8#" O@+8/#5@2($3 >^ 8$#"@(2?	
)MB-_^c[	4"1&!8#" ;$%&!@8)/#5@2($3 >^ 8$#"@(2?	

```
  IQC_EbD      I$##V9>)'*('$#?
  IQC_EbE      I$##V99>H&!%'&%#?
Q0Z,&$0%  !,$)0)
4G.M_EbD
```

QBH_cDb Q#'0%0+! 0! 4 5 #$08& .+"&3 c

<&"!$ 9-0#2&:0

4!3 cbb '#1#' +$ ^bb '#1#' 8'&22 0! /02(+$3` (/#+'+%3` +$ J/0'+2+J/3, c

.+(&' M+'$2 ED

D <($+!%'3 $#8+5 5#!"#"7 & 8+'$2# 0! /02(+$08&' (/#+'+%3` 2'8/ &2
QBH_ccc 4 <'$1#3 +:)/$02(0&! ./+'%/(,

+3<9A75< 5F '=@<A= 2 36347<394 "8A=9E5< 5F !<74

+3<9A75< 5F '=@<A= 2 36347<394 D<5?<8 :

./02 J$+%$& 5 #\'0J2 5#! &!" R+5#! (+ 2#$1# &2 & K0$#8(+$ +:)/'$8/ -0!02($0#2 0! 8+!%$#%&(0+!2 R/#$# (/# 8/'$8/ R+$V#$ 2+'0808(2` ($&0!2 &!" "#J'+32 '&3 J#+J'# R0(/0! (/# 8+!%$#%&(0+! (+ 2#$1# 0! & 1&$0#(3 +: 2#$1008# 8&J&80(0#2, ./# K0$#8(+$ +:)/'$8/ -0!02($0#2 O,4, "#%$## $#\'0$#2 & (/#+'+%3 5&F+$ &!" (R+ 5 0!+$2i (/# =$2(& 5 0!+$ 0! 8/'$8/ 5 0!02($0#2 &!" (/# 2#8+!" & 5 0!+$ 0! !+! J$+=(5&!&%# 5#!(, L 0(/0! (/# 8/'$8/ 5 0!02($0#2 5 0!+$ (/# 2('"#!(8/++2#2 (+ 2J#80&'0U# 0! +!# +'(+: =1# J+220A'# 5 0!02($3 &$#&27 #1&!%#'02 5` 5 0220+!2` J&$02/ (#&8/0!%` 3+'(/ 5 0!02($3` &!" J$# "#&8+!#22X2+80&' 5 0!02($3 >:+$ 5#!` &!" :+$ R+5#! R/+ 0!(#!" (+ #!$+'' 0! (/# "#&8+!#22 J$+%$& 5 2 &(#0(/#$ +: ./# H'(/#$&!)/'$8/] -022+'$0 <3!+" 2#5 0!&$0#2?, O3 8&$#:'' '2# +: #'#8(01#2 2('"#!(2 8&! &"" & 2#8+!" 2J#80&'0U&(0+!, O#8&'2# +: (/# !&('$# +: (/02 R+$V &'' K0$#8(+$ +:)/'$8/ -0!02($0#2 O,4, 2('"#!(2 5 '2("#5+!2($&(# %++" /'5&! $#'&(0+!2 2V0''2 &!" & '0:# R+$(/3 +:)/$02(0&! #N&5 J'#, I$&"'&(#2 &$# 2+'#5 !'3 8&''#" (+ J+20(0+!2 0! 8+!%$#%&(0+!2 +$ $#8+%!0U#" 2#$1008# +$%&!0U&(0+!2 +: (/# 8/'$8/ &!" &$# #'0%0A'# (+ A# $+2(#$#" 0! ./# H'(/#$&!)/'$8/] -022+'$0 <3!+" R0(/ (/# "#20%!&(0+! p-0!02(#$ +: Q#'0%0+!)+5 5022 0+!#"] H&3 -0!02(#$q)+!8+$"0& !01#$20(3 L 028+!20! 02 (/# +!'3 23!+" 28/++' &(R/08/ (/02 J$+%$& 5 02 +::#$#", 4JJ'08&(0+! 0!1+'1#2 2(#J2 0! &""0(0+! (+ &JJ'08&(0+! (+ (/# '!01#$20(3, 4JJ'08&!(2 :+$ (/# K0$#8(+$ +:)/'$8/ -0!02($0#2 O,4, 2/+''" 8+!(&8((/#)/'$8/ -0!02($0#2 +:=8# :+$ &JJ'08&(0+! 0!:+$5&(0+!,]

!%0	P&2-0	^!,$)
!$0 Q0Z,&$0 6 0"2) >J,_EE? D		^[
P;0!-!+. <'_!$ `)00 P;0!-!+. N!$ 6'_!$ $0Z,&$0 6 0"2)a		cb
;,$#; <&"&)2$&0) <&"!$		Ec
5!" /$!U2 <'"'+0 6 0"2 <&"!$ `)00 c,)&"0)) N!$ 6&"!$ $0Z,&$0 6 0"2)a		Da
9-0#2&:0)		Db

.+(&' M+'$2 DEY

D _7+$ ($&!2:#$ 2('"#!(2` J'#&2# 2## (/# 4"1&!8#" .$&!2:#$)+$# >J,_Ec?,

'=@<A= 2 36347<394 2 365<

!%0	P&2-0	^!,$)
Q0Z,&$0% !,$)0)		
); - -_EbD	9!(#$J#$2+!&')+5 5 '!08&(0+!	c
MM6_Ebd	70$2(40" &!")6Q	E
QBH_Ecc	)+5 5 '!08&(0!% O0A'# -#22&%#2	c
QBH vvv ./#+'+%3 B'#8(01# 9		c
QBH vvv ./#+'+%3 B'#8(01# 99		c
@I#94&'4]&(4+! B6## I$+%$&= "4$#9(+$ <+$ "#(&4'6C		
B'#8(01# 9		c

B'#8(01# 99		c
B'#8(01# 999		c

.+(&' M+'$2 Ec

5!204 =00 P;0!-!+. >J,_Yb? N!$ 2;0!-!+. 6'_!$ $0Z,&$0 6 0"2) '"%)00 c,)&"0)) N!$ "!" 8$!U2 6&"!$ $0Z,&$0 6 0"2)

+3<9A75< 5F '=@<A= 2 36347<394 %6E369 '9<73KA879

./# +!'0!# K0$#8(+$ +:)/'$8/ -0!02($0#2)#$(0=8&(# 02 & !+! "#%$## 8#$(0=8&(# 8+!2 02(0!% +: 2#1#!(##! 8+'$2#2` &'' A'( (R+ +: R/08/ &$# (&V#! +!'0!#, 4JJ'08&(0+! (+ (/# 8#$(0=8&(# J$+%$& 5 0!1+'1#2 2(#J2 0! &""0(0+! (+ &JJ'08&(0+! (+ (/# '!01#$20(3, )+'$2#2 &$# +::#$#" 0! & 8+/+$( 5+"#'` R0(/ & !#R 8+/+$(A#%0!!0!% #1#$3 W'!#, B&8/ 8+'$2# 02 #0%/(R##V2 0! '#!%(/` &''+R0!% :+$ 2('"#!(2 (+ (&V# (/$## 8+!2#8'(01# 8+'$2#2 #&8/ 2# 5 #2(#$, ./# =$2(8+'$2#_>QBH_Db[ )/'$8/ H#&"#$2/0J <# 5 0!&$? &!" (/# (R#':(/ 8+'$2# >QBH_^d[K0$#8(+$ +:)/'$8/ -0!02($0#2 <# 5 0!&$? &$# (&V#! (/$+'%/ (R+ (/$## "&3 $#20"#!80#2 +! 8&5 J'2, 9! +$"#$ (+ A# 8#$(0=#" 2('"#!(2 5'2(/&1# & O&8/#'+$ +: 4$(2 "#%$##, -+2(2('"#!(2 #!(#$ (/# +!'0!# J$+%$& 5 &'$#&"3 J+22#220!% (/# "#%$##, <('"#!(2 8&! (&V# &""0(0+!&' 8+'$2#2 (/$+'%/ (/# +!'0!# 4"''('#&$!0!% ./#+'+%3 -&F+$ &!" %&0! & A&8/#'+$2 "#%$##, 4JJ'08&!(2 :+$ (/# +!'0!# K0$#8(+$ +:)/'$8/ -0!02($0#2)#$(0=8&(# 2/+'" 8+!(&8((/# ;:=8# +:)+!(0!'0!% &!" K02(&!8# B"'8&(0+!,

./# +!'0!# K0$#8(+$ +:)/'$8/ -0!02($0#2)#$(0=8&(# 02 #2J#80&''3 /#'J:'' :+$ (/# J#$2+! &'$#&"3 R+$V0!% 0! & 8+!%$#%&(0+! R/+ '&8V2 (/# ($&0!0!% &!" 8$#"#!(0&' (+ A# #'0%0A'# :+$ & 8&'' 0! ./# H'(/#$&!)/'$8/] -022+'$0 <3!+", ./# +!'0!# J$+%$& 5 02 &'2+ &1&0'&A'# :+$ '&3 J#$2+!2 "#20$0!% (+ "0% "##J#$ 0!(+ (/#+'+%3 &(& 8+''#%0&(# '#1#' R0(/+'(!#8#22&$0'3 2##V0!% 8#$(0=8&(0+! &2 & "0$#8(+$ +: 8/'$8/ 50!02($0#2, H&3 J#$2+!2 &$# R#'8+5 # (+ (&V# &2 5'8/ +: (/# J$+%$& 5 &2 (/#3 "#20$#, 7+$ (/&($#&2+! (/# 2#\'#!8# +: 8+'$2#2 &$# &$$&!%#" &2 :+''+R2,

'9<73KA879 D<5?<8 : ,9T@3<9 :9674

!%0	P&2-0	^!,$)
Q0Z,&$0% !,$)0)		
G#5#' / 8+'!"&(4+!6 <+$ @#$549# B)#$(4A9&(# 4! 23#+'+%49&' 8+'!"&(4+!6C		
QBH_Db[ )/'$8/ H#&"#$2/0J <# 5 0!&$ >+! 8&5 J'2?		D
QBH_EbD		

QBH_^b^	H'(/#$&!)+!:#220+!2	c
QBH_^Eb	)/'$8/ -0!02($0#2 9!(#$!2/0J	c

.+(&' M+'$2 ^e

DE8A9:967 86> '9<73KA8736

./# J'&8#5#!(J$+8#22 :+$ +!'0!# 8#$(0=8&(# 2('"#!(202 (/# 2&5# &2 :+$ (/# :+'$ 3#&$ %$&"'&(#2, H&3 -0!02($3 O&8/#'+$ +: 4$(2 2('"#!(2 &!" ;!'0!#)#$(0=8&(# 2('"#!(2 $#8#01# (/# 2&5# 8#$(0=8&(0+!,

+3<9A75< 5F '=@<A= 2363473<394 '9<73KA8736 H37=,9E879> 28_5<4

'=@<A= 2363473<394 2365< F5<,9E879> 28_5<4

<('"#!(2 R/+ /&1# :''='#" & 5&F+$ 0! & =#'" 8+5 J&(0A'# R0(/ 8/'$8/ 50!02($0#2` 2'8/ &2 J&$02/ 5'2080` J&$02/ !'$20!%` &!" 2+80&' R+$V` &!" R/+ R02/ (+ A# 8#$(0=#" :+$ ./# H'(/#$&!)/'$8/ -022+'$0 <3!+" 5&3 A# 8#$(0=#" &:(#$ 8+5 J'#(0!% (/#)/'$8/ -0!02($0#2 -0!+$:+$ Q#'&(#" -&F+$2,

-0!+$ Q#\'0$#5#!(2

!%0	P&2-0	^!,$)
Q0Z,&$0% !$0 !,$)0)		
QBH_EbD	;'" .#2(&5#!(	
QBH_Eb^	O0A'08&' ./#+'+%3	
QBH vvv ./#+'+%3 B'#8(01#		
Q0Z,&$0% !,$)0)		
QBH_Ebc	G#R .#2(&5#!(	c
QBH_cDE	;:=8# 6$+:#220+!&')/$8/ L+$V	c
QBH_^b^	H'(/#$&!)+!:#220+!2	c
QBH_^Eb	)/'$8/ -0!02($0#2 9!(#$!2/0J	c
<&"!$ 9-0#2&:0)		
Q#'0%0+'2 B"'8&(0+! B'#8(01#		c
<#'#8(+!# +: (/# :+'+R0!%Z		
QBH_EEd	Q#' B"'8 S+'(/@4"''(2	
QBH_Ecc	)+5 5'!08&(0!% O0A'# -#22&%#2	
BK_cbY	.#&8/0!% (/# 7&0(/	
BK_cYE	7(/ K#1 S!%)/"7<($&( )/'" <J	
QBH_cDb	Q#'0%0+! 0! 45#$08& .+"&3	c
+$_QBH_^Db	L+$'" Q#'0%0+!2	
QBH vvv ./#+'+%3 B'#8(01#0! ;'($#&8/ >0,#,` #1&!%#'0250` 5022 0+!2?		c
QBH vvv O0A'# B'#8(01#Z &!3 &"1&!8#" ;. +$ G. 8+'$2#		c

QBH_^Db L+$'" Q#'0%0+!2 c

<&"!$9·0#2&:0)

BGI_E^Y)$#&(01# L$0(0!%>-&3 A# 8+'!(#"0! 8+$#?

BGI_c[b)'&2208&' @ -+"#$! Q/#(+$08

6/0'+2+J/3X H0(#$&('$# B'#8(01# C c

.+(&' M+'$2 cb

D QBH_ccc 4<'$1#3 +:)/$02(0&! ./+'%/($#8+5 5#!"#",

E B0(/#$ S+'(/ -0!02($3 9` Q#', B", +: S+'(/ @ 4"''(2` 74 -_^cb
7+'!"&(0+!2 +: S+'(/ -0!02($3 ` 74 -_^cD S+'(/ )''('$#` 74 -_^cE
S+'(/ -0!02($3 4"50! $#8+5 5#!"#",

c _B0(/#$ 6M9H EDD B'#5#!(&$3 H+%08` 6M9H E[b -+$&' 6/0'+2+J/3`
6M9H cE[ )/$02(0&! 4J+'+%#(0820 ;Q 6M9H c[b O0+#(/08&' K0'#5 5&2
$#8+5 5#!"#",

Ã`` €Pp

=95E5?3A8E #86?@8?94 28_5<

!%0 P&2-0 ^!,$)

!$0 Q0Z,&$0 6 0"2) >J,_EE? D ^[

<'_!$ Q0Z,&$0 6 0"2) cd

9·0#2&:0) `#$0%&2) X&·· :'$. %080"%&"+ !" <'_!$`)a '"% <&"!$ ^E
)0·0#20%a

-&F+$ 6$# <#50!&$3 <('"0#2

-0!+$;J(0+!&'

.+(&' M+'$2 DEY

[redacted]($&!2:#$ 2('"#!(2` J'#&2# 2## (/# 4"1&!8#" .$&!2:#$)+$# >J,_Ec?,

28_5< ,91@3<9:9674

!%0 P&2-0 ^!,$)

Q0Z,&$0% !$0 !,$)0)

QBH_EbD ;'" .#2(&5#!(

QBH_Eb^ O0A'08&' ./#+'+%3

<;)_DbD 9!($+ (+<+80+'+%3

6<S_EbD 9!(#$J#$2+!&')+5 5 '!08&(0+!

BGI_E^[4"1&!8#" L$0(0!% I$###£ , I

[redacted]_E^Y)$#&(01# L$0(0!%

IQC_EbD I$##V 9

Q0Z,&$0% !,$)0)

;!#+: (/#'&!%'&%# 8+'$2#2>!+$5&''3 IQC_EbD I$##V 9? 02 8+'!(#"
0! (/# 8+$#` !+(0! (/# 5&F+$?

IBQ >^ 8$#"0(2?XH4. H&!%'&%# B'#8(01# 9 c

IBQ >^ 8$#"0(2?XH4. H&!%'&%# B'#8(01# 99><#8+!" 2#5#2(#$+:
#"0(2?XH4. Hμ

QBH vvv ./#+'+%3 B'#8(01#		
Q0Z,&$0% !,$)0)		
QBH_Ebc	G#R .#2(&5#!(	c
23#+'+%7R>34'+6+I37 Q'#9(45#		
<#'#8(+!# +: (/# :+''+R0!%Z		c
QBH_^b^	H'(/#$&!)+!:#220+!2 >:+$ &'' 8/'$8/ R+$V 2('"#!(2 ?	
QBH_c^e	H&RXI+2J H0:# 0!)/'$8/	
QBH_ccc	4 <'$1#3 +:)/$02(0&! ./+'%/(	
6M9H_cE[	)/$02(0&! 4J+'+%#(08 9	
6M9H_cc^	)/$02(&!")''('$#	
?<A9# +<)3'$93 , +$[#$ Q'#9(45#		
BK_^DD	6$+:#220+! @ B(/082 .#&8/0!% >:+$ #"'8&(0+! 2('"#!(2?	c
+$_QBH_cDE	;:=8# 6$+:#220+!&')/$8/ L+$V	
;!(#$!634I Q'#9(45#		
<#'#8(+!# +: (/# :+''+R0!%Z		c
QBH_^Eb	)/'$8/ -0!02($0#2 9!(#$!2/0J	
BK vvv <('"#!(.#&8/0!% >:+$ #"'8&(0+! 2('"#!(2?		
\#'4%4+'6 Q"'9&(4+! Q'#9(45#		
<#'#8(+!# +: (/# :+''+R0!%Z		c
QBH_EEd	Q#' B"'8 S+'(/ @ 4"''(2	
QBH_Ecc	)+5 5 '!08&(0!% O0A'# -#22&%#2	
BK_cbY	.#&8/0!% (/# 7&0(/	
BK_cYE	7(/ K#1 S!%)/"Z<($&( )/'" <J	
)+=I&$&(45# \#'4%4+! Q'#9(45#		
QBH_cDb	Q#'0%0+! 0! 45#$08& .+"&3	c
+$_QBH_^Db	L+$' Q#'0%0+!2	

r72 22 á ³°NÃÜ@ à p @ Ps'•@ì ½ à p @ Pt72 HB ±4 ýRÀ J 4 % Ss! @™ :Þ Ñ ý I 4 Ü@ À @ =Ä ýRÌ 4À †UP

D 6$#$#\'2(# 6<S_DbD I#!#$&' 6238/+'+%3

E H'(/#$&! (#&8/#$2 R/+ /&1# (&V#! BK_cbY .#&8/!% (/# 7 5 (&M

"! $,2!( )'.%%# %& "*)/($))

./# (R+ "0102+!2 (/#$#0! &$# (/# O'20!#22 K0102+! &!" (/# W'2(08# &!" 6'A'08 6+'083 K0102+!,9! &""0(0+!`(R+ &22+80&(# "#%$## J$+%$&52&!" & 2J#80&' 8++J#$&(01# J$+%$&5 #N02(,

"@436944 +3J34356

!%0	P&2-0	^!,$)
T5 TQ7R@	T<<T5 TQ9	Da
QBH_Dbb	./# O0A'#	
QBH_DDb	)/$02(0&! 7&0(/	
))B_DDb	L#2(#$!)''('$# @ L+$'"10#R	
))B_DEb	L#2(#$! ./+'%/(@ L+$'"10#R	
))B_Dcb	)/$02(0&!)0(0U#!	
))B_D^b	<80#!8# @ M'5&!0(3	
H9OBQ4H 4Q.< K9-BG<9;G<		Ee
749.M @ H97B		c
<#'#8(& QBH &A+1# Eb^		
<;)9B.S @) H. QB		c
B);G_EEE	-&8$+#8+!+502	
G4. Q4H L;QHK O <_cD[+$ -4.M_Eb[:+$ 48('&$0&' <80#!8# -&F+$2		e
O <_cD[	O'20!#22 <(&(02(082 D	
-4.M_Eb[	<(&(02(082 9	
<80#!8# R0(/ & '&A		
);--G9)4.9;G @ H4GI 4IB>);--_EbD +$);--_Db[?		Y
);--_EbD	9!(#$J#$2+!&')+5 5'!08&(0+!	

!A7@8<38E)A396A9 2365<

2365< ,9T@3<9:9674

!%0	P&2-0	^!,$)
4)).Ebc	70!&!8&' 488+'!(0!%	c
79G_cbb	6$0!80J'#2 +: 70!&!8#	c
79G_cDb	O&280 9!1#2(0!%	c
79G_cD[	6$0!80J'#2 +: 9!2'$&!8#	c
79G_cED	70!&!8&' -&(/ :+$ 48('&$0#2	c
-4.M_cEE	6[illegible]A&A0'0(3 :+$ 48('&$0#26$+A&?Ľ[illegible]È	

D@WE3A , 9E873564 28_5<

!%0 P&2-0	^!,$)
!$0 Q0Z,&$0 6 0"2) >J¡_EE? D	^[
< '_!$ Q0Z,&$0 6 0"2)	eb
9·0#2&:0)	[

_____

ea___

) , !"#$%$&"'&(#)&(&'+% -./0 -./1

BK_^Ee	<('"#!(.#&8/ B)XC"%	a
@_BK_^Ea	&!" <('"#!(.#&8/ B)X6$0 5&$3 >rK'#')#$(0=8&(0+! 2('"#!(2 2## !+(# A#'+R? E	
>,2;0$'" `> <= <0 6?0$)a P0'#;0$ 7&8·! 6 ' Q0Z,&$0 6 0"2)		
BK_cYE	7(/ K#1 S!%)/"Z<($&( )/'" <J E	c
QBH_^b^	H'(/#$&!)+!:#220+!2	c
;$&)2&'" P0'#;0$ 0$2&U#'2&!" Q0Z,&$0 6 0"2)		
<#'#8(+!# +: (/# :+''+R0!% c 8$#"0(8+'$2#2Z		
QBH_^b^	H'(/#$&!)+!:#220+!2	
QBH_c^e	H&RXI+2J H0:# 0!)/'$8/	
QBH_ccc	4 <'$1#3 +:)/$02(0&! ./+'%/(	
6M9H_cE[	)/$02(0&! 4J+'+%#(08 9	
;Q		
6M9H_cc^	)/$02(&!")''('$#	
<#'#8(&!+(/#$ c 8$#"0(8+'$2#Z		
BK_cbY	.#&8/0!% (/# 7&0(/	
;Q		
BK_cYE	7(/ K#1 S!%)/"Z<($&( )/'" <J E	

D <)9_DDb 9!($+ H0:# @ 6/32 <80_$#8+5 5#!"#"

E)+'$2# $#\'0$#2 'JJ#$ "0102+! 2(&('2

c _)+'$2#2 :+$)+!(#!(I64

2365<4 5< !<984 5F '56A967<8736

./# :+''+R0!% 50!+$2` >&JJ$+N05&(#'3 Da ED 8$#"0(2? &$# &88#J(&A'#, <## (/# B'#5#!(&$3X - 0"'"'# B"'8&(0+! 2#8(0+! >J,_dc? :+$ "#(&0'2, O+(/ (/# 4"&J(01# B"'8&(0+! &!" B!%'02/ &2 & <#8+!" H&!%'&%# 50!+$2 &$# '08#!2&A'# &((/# B&$'3)/0'"/++" '#1#',

- g 4"&J(01# B"'8&(0+!
- g 4$(
- g 4(/'#(08)+&8/0!%
- g O0+'+%3
- g)+5J'(#$ <80#!8#
- g B!%'02/XH&!%'&%# 4$(2
- g B!%'02/ &2 <#8+!" H&!%'&%#
- g B!10$+!5#!(&' <80#!8#
- g I#$5&!
- g M#&'(/ B"'8&(0+!
- g M02(+$3
- g -&(/#5&(082
- g -'208
- g 6238/+'+%3
- g <80#!8# B"'8&(0+!
- g <+80&' <('"0#2
- g <J&!02/
- g <J##8/)+5 5'!08&(0+!2
- g ./#&(#$
- g $A&! B"'8&(0+!

)+!8#!($&(0+!2 >Da 8$#"0(2? 0! 4"50!02($&(0+! 0! B&$'3)/0'"/++"')$#&(01# 4$(2 >&$(` 5'208` (/#&(#$?` 7&50'3 <('"0#2` &!" H&!%'&%# 4$(2X)+5 5'!08&(0+!2 &$# &1&0'&A'#,)+!2''((/#)/&0$J#$2+! +: (/# B&$'3)/0'"/++" K#J&$(5#!(+$ 3+'$ &"102+$ <('"#!(2 5&3 &'2+ J'$2'# &! &""0(0+!&' 50!+$ 0! ./#+'+%3,

$8<EB '=3E>=55> ,9?@E8< 86>)G9A38E $>@A8736 +@8E '9<73KA8736 D<5?<8 :

c&$2; 2! @+0 J

!%0	P02-0	^!,$)
!$0 Q0Z,&$0 6 0"2) >J,_EE? D		^a [D
<'_!$ Q0Z,&$0 6 0"2)		ee ac
9·0#2&:0)		
-0!+$% -		

$!,#1 './#+.%%+ ,$-*#!,U)D$'/!# $+*'! /%('*,,/'*#*2

!%0	P&2-0	^!,$)
9'$·. ;&·%;!!% Q0+,·'$0=80#&'· 9%,#'2&!" ,$$&#,·,6		
23#+$#(49&')+=I+!#!(		
6<S_EED	)/0'" K#1#'+J5#!(C	c
BK_Ecb	G&('$# +: BN8#J(0+!&')/0'" >$#%02(#$ R0(/ BK_EDc?	c
BK_EcD	)/0'"$#!2 H0(#$&('$#	c
BK_Ee[	M'5&! H#&$!0!% >$#%02(#$ R0(/ BK_EDD?	c
BK_^DD	6$+:#220+! @ B(/082 .#&8/0!% E	c
Q"'9&(4+! @#=4!&$6 &!" @#=4!&$)+=I+!#!(6 BI&66R<&4'C		
BK_Dbb	6$# "2	b
BK_Ebb	6$# K<	b
BK_cbb	K< <#50!&$	b
BK_EDD	I#!#$&')'0!08&' 9 BNJ#$0#!8# >$#%02(#$ R0(/ BK_Ee[?	b
BK_EDE	-''(08''('$&')'0!08&' 99 BNJ$ >$#%02(#$ R0(/ BK_Dbc?	b
BK_EDc	<J#80&' B"'8)'0!08&' 999 BNJ$ >$#%02(#$ R0(/ BK_Ecb?	b
BK_E^[	<#$108# BNJ#$0#!8#)'0!08&'2	

G;.B)/#8V R(/ (/#)/&$ +: (/# <J#8&' B"'8&(+! K#J&$(5#!(:+$ J+22A'# 8/&!%#2 ! (/2 5&F+$,

'5<9 '@<<3A@E@: cO dN '<9>374

)+!8+$"&))+5 5+!)+$# Da ED)$#"(2

!%0	P&2-0	^!,$)
./#+'+%3 6'A'8 B"'8&(+!		
QBH_Dbb	./# OA'#	c
QBH_DDb	)/$2(&! 7&(/	c
./#+'+%3 H'(/#$&! >H.K? @)/$2(&! >).)?		
QBH_EbD	;'" .#2(&5#!(	c
QBH_Ebc	G#R .#2(&5#!(	c
QBH_Eb^	OA'8&' ./#+'+%3	c

!%0	P&2-0	^!,$)
))B_Dcb	)/$2(&!)(U#!	c
))B_D^b	<8#!8# @ M'5&!(3	c
))B_DDb	L#2(#$!)''('$# @ L+$'"1#R	c
))B_DEb	L#2(#$! ./+'%/(@ L+$'"1#R	c
HA#$&' 4$(2 K5#!2+!2 cb)$#"(2		
BGI_Db^	9!($+ (+ L$(!%	c
);--_^Yb	)$+22)''('$&')+5 5'!8&(+! >+$ & G+! '(#$! H&!%'&%# 8+'$2#?	c
7&(/ &!" H:# B'#8(1#Z 4!3 8+'$2# R(/ QBH J$#=N +(/#$ (/&! QBH_Dbb` DDb` EbD` Ebc` Eb^		c
BK_DbE	7+'!"&(+!2 +: B"'8&(+!	c
MM6_Dbb	<(#R&$"2/J +: (/# O+"3	D
MM6 48(1(3)+'$2#		D
M'5&!)$#&(1(3 &!" BNJ$#22+!Z 4$(` -'2 8` ./#&(#$ H(#$&('$# +$ I$&J/8 K#2%! &8(1(3 8+'$2#		c
-4.M_DDd	G'5A#$ <#!2#Z .#&8/!% 6$# C d c	c
-4.M_DEb	K&(& @ <J&8#Z.#&8/!% 6$# C d	c
<)9_DDb	9!($+ H:# @ 6/32 <8 >+$ H:# <8#!8# &!" 6/32 8&' <8#!8# R(/ &('#&2(+!# '&A?	^
BK_Dbc	M'5&! Q#'&(+!2 :+$.#&8/#$2 >$#%2(#$ R(/ BK_EDE?	c
G+(#Z .R+) L &JJ$+1#" R$(!% !(#!21# 8+'$2#2 &$# $#\'0$#" :+$ %$&"'&(+!,		c Y

D <('"#!(2 5'2((&V# &('#&2(+!# 28@#!8# 8+'$2# R@(/ & '&A,

E)+'$2# Q#\'@$#2 JJ#$ K@1@2@+! <(&('2,

C _)+'$2#2 :+$)+!(#!(I64

)9A56>8<B $>@A873 56 Z-<8>94 S NL[#3A9648WE9)@W_9A7 !<98 28_5<4 ` 23 65<4

)+!8+$"@& 8'$$#!('3 +::#$2 (#&8/@!% 5&F+$2 :+$ I$&"#2 Y DE >#&$'3 &"+'#28#!8# (/$+'%/ &"+'#28#!8#? &2 &JJ$+1#" A3 (/# L@28+!2@! K#J&$(5#!(+: 6'A'@8 9!2($'8(@+! &!" '#&"@!% (+ & L@28+!2@! '@8#!2# @! (/# :+''+R@!% 2'AF#8(&$#&2Z O@+'+%3` O$+&"=#'" <8@#!8#` B!%'@2/` M@2(+$3` -&(/#5&(@82` &!" <+8@&' <('"@#2 >A$+&"=#'"?, ./#+'+%3 @2 +::#$#" &2 & !+! '@8#!2&A'# 5&F+$,

G+(# (/&($#\'@$#5#!(2 &$# 2'AF#8((+ 8/&!%# &88+$"@!% (+ !#R 2(&(# %'@"#'@!#2 <## (/#)/&@$ +: <#8+!"&$3 B"'8&(@+! :+$:'$(/#$ "#(&@' +! (/#2# 5&F+$2 &!" :+$ $#\'@$#5#!(2 :+$ (#&8/@!% 5@!+$2,

G;.BZ <('"#!(2 5'2(2#'#8(&('#&2(+!# '@8#!2&A'# 2'AF#8(&$#& 5&F+$ 9! &""@(@+!` 2('"#!(2 &$# #!8+'$&%#" (+ &"" & 2'AF#8(&$#& 5@!+$,

=95E5?B 28_5< 86> 23 65<

./# (/#+'+%3 5&F+$ &!" 5@!+$ &$# !+('@8#!2&A'# 2'AF#8(2 @! (/# 2(&(# +: L@28+!2@!, <## $#\'@$#5#!(2 &2 '@2(#" @! (/# <8/++' +: 4$(2 &!" <8@#!8#2 >J,_[^? 2#8(@+!,

a NL #3A9648WE9)@W_9A7 !<98 28_5<4 86> 23 65<4

)+!8+$"@& 8'$$#!('3 +::#$2 (#&8/@!% 5&F+$2 :+$ I$&"#2 C DE >&JJ$+1#" A3 (/# L@28+!2@! K#J&$(5#!(+: 6'A'@8 9!2($'8(@+! &!" '#&"@!% (+ & L@28+!2@! '@8#!2#? @! (/# :+''+R@!% 2'AF#8(&$#&2Z 4$(#"'8&(@+!` O'2@!#22 #"'8&(@+!` I#$5&! #"'8&(@+!` -'2@8 %#!#$&'X8/+$&' -'2@8 ]%#!#$&'X @!2($'5#!(&' 6/32@8&' #"'8&(@+!` &!" <J&!@2/ #"'8&(@+!, 4 2('"#!(5&3 &'2+ 8+5 J'#(# &!3 &""@(@+!&' 5&F+$2 +$ 5@!+$2 :$+5 (/# 2#8+!"&$3 #"'8&(@+! J$+%$& 5 2#8(@+! @! &""@(@+! (+ & C DE 5&F+$,

#3A9648WE9)@W_9A7 !<98 28_5<4 ` 23 65<4

- g 4"&J(@1# B"'8&(@+! -@!+$>J,_a^?
- g 4$(B"'8&(@+! -&F+$>J,_a^?
- g 4(/'#(@8)+&8/@!% -@!+$>J,_a[?
- g O@+'+%3 B"'8&(@+! -&F+$>J,_a[?
- g O@+'+%3 B"'8&(@+! -@!+$>J,_a[?
- g O$+&" 7@#'" <8@#!8# B"'8&(@+! -&F+$>J,_a[?
- g O$+&" 7@#'" <+8@&' <('"@#2 B"'8&(@+! -&F+$>J,_aY?
- g O'2@!#22 B"'8&(@+! -&F+$>J,_ae?
- g)/#5@2($3 B"'8&(@+! -@!+$>J,_ae?
- g B"'8&(@+!&' <('"@#2 -@!+$>G+! H@8#!2&A'#?>J,_ae?
- g B!%'@2/ B"'8&(@+! -&F+$>J,_ae?
- g B!%'@2/ B"'8&(@+! -@!+$@J,_aa?
- g B<HZ B!%'@2/ &2 & <#8+!" H&!%'&%# -@!+$>J,_aaJ,_
- g

4Q._Ea[	4$(M02(+$3 9	c
4Q._EaY	4$(M02(+$3 99	c
4Q._caD	4#2(/#(082	c
Q0Z,&$0% @$2 9%,#'2&!" !,$)0)		
4B_Ec[	B'#5#!(&$3 4$(B" ./$3X6$&8(	E
4B_cc[	<#8 -#(/+"2 4$(B"	c
4B_c^b	)'$$8 K#20%! 0! 4$(B"	c
.+(&' M+'$2		^D

!7=E973A '58A=36? 2365<

2365< ,9T@3<9:9674

!%0	P&2-0	^!,$)
Q0Z,&$0% !$0 !,$)0)		
O9;_D^Y	B22#!(0&'2 4!&(@ 6/32 >2&(02=#2 8+$# '0:# 280#!8# $#\'0$#5#!(?	
Q0Z,&$0% !,$)0)		
MM6_EeE	9!($+ 4(/'#(08 .$&0!0!%	c
MM6_Ee[	4"50!02($&(0+! &!" ;$%&!0U&(0+! +: <J+$(	c
MM6_Eab	6238/'+%3 +: <J+$(	c
MM6_ceD	BN#$802# 6/320+'+%3	c
MM6_Ebd	70$2(40" &!")6Q >+$ 8'$$#!(70$2(40" @)6Q 8#$(0=8&(0+!?	b E
MM6_cec	-+(+$ K#1#'+J5#!(	c
MM6_ce[	O0+5#8/&!082	c
MM6_^db	)+&8/0!% 6$&8(08'5 D	D c
<&"!$9·0#2&:0)		
<#'#8(+!# +: (/# :+''+R0!%2		E
MM6_EaD	./$3@.#8/)+&8/<:(A&''XO&2A&''	
MM6_EaE	./#+$3X.#8/)+&8/0!% OO	
MM6_Ea^	./#+$3X.#8/)+&8/0!% 7O	
MM6_EaY	./#+$3 @ .#8/)+&8/ .$&8V	
MM6_Eae	./#+$3 @ .#8/)+&8/ <+88#$	
MM6_Eaa	./#+$3 .#8/)+&8/ f'3A'	

) , !"#$%$&"'&(#)&(&'+% -./0 -./1

BK_ce^	)'$$@ - #(/X - &(/ <#8 [D]	c
.+(&' M+'$2		Eb

[D])+'$2# Q#\'0$#2 JJ#$ K01020+! <(&('2,

2@43A 28_5< -969<8EU'=5<8E Za NL[28_5<,9T@3<9:9674

!%0	P&2-0	^!,$)
Q0Z,&$0% !$0 !,$)0)		
- <_^dd	Q#80(&' >J$0!80J&' &$#& &!" 2&(02=#2 8+$# M'5&!)$#&(010(3 &!" BNJ$#220+! $#\'0$#5#!(?	
- <_EbD	4JJ'0#" 60&!+ ><&(02=#2 8+$# M'5&!)$#&(010(3 &!" BNJ$#220+! $#\'0$#5#!(?	
Q0Z,&$0% !,$)0)		
- <_bab	)+!8#$(XQ#80(&' 4((#!"&!8# >#&8/ 2#5#2(#$ 5'2(J&22 e 2#5#2(#$2?	b
- <_E^b	-'208 ./#+$3 9	c
- <_E^D	-'208 ./#+$3 99	c
- <_E^E	-'208 ./#+$3 999	c
- <_E^c	-'208 ./#+$3 9f	c
- <_E[b	O#%0!!0!%)+!"'8(0!%	c
- <_EeD	-'208 M02(+$3 9	c
- <_EeE	-'208 M02(+$3 99	c
- <_Eec	-'208 M02(+$3 999	c
- <_cD[	.#8/ +: .#&8/0!% f+08#	D
- <_c[D	4"1&!8#")+!"'8(0!%	c
4JJ'0#" -'208 [D]		DD
B!2#5A'# [E]		^
BK_ced	)'$$X-#(/ -'208 B" [C]	E
BK_^bc	B'#5 I#!#$&' -'208 -#(/+"2 [C]	E
.+(&' M+'$2		^e

[D] <('"0+0!2($'8(0+! 0! 1+08#` J0&!+` +$ +$%&! -0!05'5 ^ 2#5,&(E 8$,X 2#5,0! J$0!80J&' &$#& &!" ^ 2#5,&(D 8$,X2#5,0! 50!+$ &$#&,

[E] B!2#5A'# J&$(080J&(0+! $#\'0$#" 0:0$.)060)20$&" $0)&%0"#.` >50!05'5 ^ 2#5#2(#$2 :+$ 8$#"0(? 4'' +(/#$ #!2#5A'# J&$(080J&(0+! 8&! A# &'"0(#",

[C])+'$2# Q#\'0$#2 JJ#$ K01020+! <(&('2,

2@43A 28_5< -969<8EU/647<@:9678E Za NL[28_5<,9T@3<9:9674

!%0	P&2-0	^!,$)
Q0Z,&$0% !$0 !,$)0)		
- <_^dd	Q#80(&' >J$0!80J&' &$#& &!" 2&(02=#2 8+$# M'5&!)$#&(010(3 &!" BNJ$#220+! $#\'0$#5#!(?	
- <_EbD	4JJ'0#" 60&!+ ><&(02=#2 8+$# M'5&!)$#&(010(3 &!" BNJ$#220+! $#\'0$#5#!(?	
Q0Z,&$0% !,$)0)		
- <_bab	)+!8#$(XQ#80(&' 4((#!"&!8# >#&8/ 2#5#2(#$ 5'2(J&22 e 2#5#2(#$2?	b
- <_E^b	-'208 ./#+$3 9	c
- <_E^D	-'208 ./#+$3 99	c
- <_E^E	-'208 ./#+$3 999	c
- <_E^c	-'208 ./#+$3 9f	c
- <_E[b	O#%0!!0!%)+!"'8(0!%	c
- <_EeD	-'208 M02(+$3 9	c
- <_EeE	-'208 M02(+$3 99	c
- <_Eec	-'208 M02(+$3 999	c
- <_c[D	4"1&!8#")+!"'8(0!%	c
- <_c[Y	.#8/ +: O$&22	D
- <_c[e	.#8/ +: .#&8/0!% L++"R0!"	D
- <_c[a	.#&8/ .#8/Z6#$8'220+!	D
- <_c[d	<($0!%2Z .#8/ .#&8/0!%	D
4JJ'0#" -'208 [D]		DD
B!2#5A'# [E]		^
BK_ced	)'$$X-#(/ -'208 B" [C]	E
BK_^bc	B'#5 I#!#$&' -'208 -#(/+"2 [C]	E
.+(&' M+'$2		[b

[D] <('"0+0!2('5#!(&'0!2($'8(0+! -0!05'5 ^ 2#5,&(E 8$,X2#5,0! J$0!80J&' &$#& &!" ^ 2#5,&(D 8$,X2#5,0! 50!+$ &$#&,

[E] B!2#5A'# J&$(080J&(0+! $#\'0$#" 0:0$.)060)20$&" $0)&%0"#.`

MM6_Eae	./#+$3 @ .#8/)+&8/ <+88#$
MM6_Eaa	./#+$3 .#8/)+&8/ f'3A'
MM6_Edb	./#+$3X.#8/ L$#2('0!%

.+(&' M+'$2 ca

D)+'$2# Q#\'0$#2 JJ#$ K01020+! <(&('2,

D4BA=5E5?B $>@A8736 2365<

2365< ,9T@3<9 : 9674

dE___

^ <#'#8((/#)'$88'''5 @ - #(/+"2 8+'$2# &88+$"0!% (+ 3+'$ 5&F+$ &!"X+$ 50!+$,

98A=9< '5EE5T@B D<5?<8 : Z#'2)[

./# .#&8/#$)+''+\'3 02 "#20%!#" :+$ 5#5A#$2 +: (/# -022+'$0 <3!+" R/+ /&1# $#8#01#" (/#0$ (#&8/#$ ($&0!0!% &(&!+! <3!+"08&' 8+''#%# &!" R+''" '0V# (+ A# 8#$(0=#" :+$ (#&8/0!% 0! 28/++'2 +: (/# <3!+", ./# J$+%$&5 02 &1&0'&A'# +!'0!# (/$+'%/ (/#)+!8+$"0& !01#$20(3 B"'8&(0+! G#(R+$V` ) B!#(>RRR,8'#!#(,#"' >/((JZXXRRR,8'#!#(,#"'??, 7+$ 5+$# 0!:+$5&(0+!` 8+!(&8((/#) B!#("0$#8(+$ &(D abb Eca cbce +$ R$0(#) B!#(` c^[ )3A#$ K$01#` O#!"` ;$#%+! deebE, ./# J$+%$&5 (3J08&''3 8+!202(2 +: E^ 8$#"0(/+'$2,

9! Ddad` (/# 6$+102+!&' B!"+$2#5#!(:+$ H'(/#$&! .#&8/0!%>6,B,H, ., ? 6$+%$&5 R&2 "#1#'+J#" A3 (/# 8+''#%#2 &!" '!01#$20(0#2 &!" (/# &JJ$+J$0&(# A+&$"2 +: (/# H'(/#$&!)/'$8/ -022+'$0 <3!+", ./02 J$+%$&5 R&2 "#1#'+J#" 0! $#8+%!0(0+! +: (/# 5&!3 8&J&A'# H'(/#$&! (#&8/#$2 0!1+'1#" 0! (/# 50!02($0#2 +: (/# H) - < 6&$+8/0&' <8/++' <32(#52 R/+ R#$# !+! 23!+"08&''3 8#$(0=#",

./# 0!0(0&' 102+! R&2 (+ +::#$ (/#2# (#&8/#$2 &! &1#!'# (+ (&V# 2(#J2 (+R&$" (#&8/#$2 23!+"08&' 8#$(0=8&(0+! 10& (/# H) - <2 .#&8/#$2)+''+\'3 6$+%$&5 9(R&2 &! 0!0(0&' 2(#J A#8&'2# (/# 8&!"0"&(# 8+''" +!'3 :''='' 2+5# +: (/# 8+'$2# $#\'0$#5#!(2 10& (/# #N(#!20+! 5+"#', ./# 8&!"0"&(# (/#! /&" (+ 8+5 J'#(# (/# 8+''+\'3 8+'$2# $#\'0$#5#!(2 (/$+'%/ $#20"#!8# 8+'$2# R+$V &(+!# +: (/# 23!+"08&' 8+''#%#2 +::#$0!% & A&8/#'+$2 "#%$## 0! (#&8/#$ #"'8&(0+!, <0!8# (/# <3!+"08&')+!1#!(0+! 0! 60((2A'$%/ 0! DddE` 0(02 J+220A'# (+ (&V# (/# ##%/($#\'0$#" 8+'$2#2 (+ :''='' 8+'$2# R+$V $#\'0$#5#!(2 :+$ (#&8/ 8+''+\'3 10& (/# ./#+'+%08&' B"'8&(0+! A3 BN(#!20+! -+"#' L# /&1# 2#1#$&' #N(#!20+! '+8&(0+!2 0! "0::#$#!(J&$(2 +: (/# 8+'!($3,

;34A56436 +9G8<7 : 967 5F D@WE3A /647<@A7356 !GG<5J9> 2365<4

9·0 6 0"2'$.0<&%%·0 9%,#'2&!" `M$'%0) C Ja <&%%·0 ;&·%;!!%2;$!,+; 9'$·. @%!·0)#0"#0

B'#5#!(&$3 B"'8&(0+! 5&F+$2>-) B4? &$# $#\'0$#" (+ 8+5 J'#(# &('#&2(+!# 50!+$ +$ &! &""0(0+!&' '08#!2&A'# 5&F+$ <('"#!(2 &$# 2($+!%'3 #!8+'$&%#" (+ 2#'#8(+!# +: (/# :+''+R0!% 50!+$2Z

- g B!%'02/ >J,_d^?
- g B!%'02/ &2 & <#8+!" H&!%'&%#>J,_d^?D
- g -&(/#5&(082>J,_d[?
- g <80#!8#>J,_d[

)5A38E)7@>394 2365<

2365< , 9T@3<9 : 9674

!%0

)'.%%#%& .$!# .
D,%&$))/%( )

./# <8/++' +: M#&'(/ 6$+:#220+!2 /+'2#2 (/# :+''+R0!% '!"#$%$&"'&(#
> I?&!" %$&"'&(#>I? J$+:#220+!&' &!" J$# J$+:#220+!&' J$+%$&52Z

-)+55'!08&(0+! <80#!8#2 &!" K02+$"#$2> I?
- K0&%!+2(08 -#"08&' <+!+%$&J/3> I?
- ;88'J&(0+!&' ./#$&J3>I?
- 6/3208 0&! 4220 2(&!(<('"0#2>I?
- 6/3208&' ./#$&J3>I?
- 6$# 6/3208&' ./#$&J3> I?
- Q&"0+'+%08 .#8/!+'+%3> I?
- Q#/&A0'0(&(0+! <80#!8#2> IXI?
- <+80&' L+$V> IXI?
- -#"08&' 4220 2(&!(>)#$(0=8&(#?

"8A=9E5< 5F)A396A9 36 ,9=8W3E3787356
)A396A9 Z"),)[

)+!8+$"0& !01#$20(3 L028+!20! +::#$2 & O&8/#'+$ +: <80#!8# 0!
Q#/&A0'0(&(0+! <80#!8#>O<Q<? "#%$## R/08/ 8&! A# 8+5J'#(#" 0! c z
3#&$2, <('"#!(2 0! (/02 J$+%$&5 5&3 8/++2# (+ :+''+R +!# +: (/# ($&8V2
:+$ & 8+5A0!#" "#%$## 0! ;88'J&(0+!&' ./#$&J3 +$ 6/3208&' ./#$&J3,

-969<8E !A8>9:3A /6F5<:87356

./# O&8/#'+$ +: <80#!8# 0! Q#/&A0'0(&(0+! <80#!8#>O<Q<? "#%$## 02
0!(#!"#" (+ +::#$ 2('"#!(2 &! +JJ+$('!0(3 (+ $#8#01# & A$+&" A&2#"
#"'8&(0+! 0! $#/&A0'0(&(0+! 280#!8# R/0'# 5##(0!% (/# J$# $#\'020(#2 :+$
(/# -&2(#$ +: ;88'J&(0+!&' ./#$&J3>- ;.? "#%$##,

<('"#!(2 R/+%$&"'&(# R0(/ & O< 0! Q#/&A0'0(&(0+! <80#!8# /&1# &!
+JJ+$('!0(3 (+ #NJ'+$# & R0"# $&!%# +: #5J'+35#!(+JJ+$('!0(0#2 0: (/#3
8/++2# !+((+ J'$2'# (/# -;. "#%$##, <('"#!(2 R0(/ & O<Q< "#%$## 8&!
'2# (/02 "#%$## (+ R+$V 0! & 1&$0#(3 +: &$#&2 0!8''"0!%Z

-)+55'!0(3 J'A'08 /#&'(/
-)+55'!0(3 5#!(&' /#&'(/
- L#''!#22 J$+%$&52
- -&!&%#" 8&$# +$%&!0U&(0+!2
-)/0'" 8&$# :&80'0(0#2
- 4"''("&3 8&$# :&80'0(0#2
- 6/&$5&8#'(08&' 2&'#2
- -#"08&' 2&'#2
- 4220 2(01# '010!%X0!"#J#!"#!('010!% 8#!(#$2
- <J#80&'(3 4'U/#09m}[illegible]
- 4"'#22 J$+%$&52

Dbb___)+= = ' !49&(4+ ! @94# ! 9#6 &! " F46+$"#$6

"#%$## R0(/ &! &""0(0+!&' (/$## 2#5#2(#$2 +: "0"&8(08 8+'$2#R+$V &!"
(R+ H#1#* 99 70#*"R+$V J'&8#5#!(2` A+(/ '&2(0!% DE R##V2,

4JJ'08&!(2 5'2(5##(&** &"5022 0+!2 $#\'0$#5#!(2 &2 2/+R! 0! (/#
%$&"'&(# &"5022 0+!2 8&(&'+%` (/02 0!8*'&]!(2 /#L

vvv	-0!+$)+'$2#	c
vvv	H&!%'&%#)+$#	c ^
-	M+'$2	D[DY
e0'$ D 1'··		
)<K_EDb	4!&(@ 6/32 <J8/ @ M#&$0!% -#8	c
)<K_EEb	)'0!08&' 6/+!#(082	c
vvv	-0!+$)+'$2#	c
6MS<_D[D	I#!#$&' 6/3208 2 9	^
6<S_Ecb	H0:# <J&! K#1#'+J5#!	c
-	M+'$2	DY
=8$&"+		
)<K_Ecb	7+'!" +:)+%!0(0+! @ H&!%'&%#	c
)<K_E^b	<J##8/ &!" H&!% K#1#'+J5#!(	c
)<K_cbb	C0!#20+'+%3 @ -+(+$ H#&$!0!%	c
vvv	)0(0U#!2/0J)+$#	c
BGI_Dbc	)0100'0U&(0+! @ L+$'"10#R2Z H0(	c
MM6 Dvv	6/3 B" 48(0108(3)+'$2#	D
-	M+'$2	DY
e0'$ E 1'··		
)<K_E[b	M#&$0!% <808#!8#	c
)<K_EYb	<J##8/ H&!% K02+$"#$2)/0'"$#!	c
)<K_Eeb	-''(08''('$&' 6+J''&(0+!2	c
vvv	-0!+$)+'$2#	c
QBH_Dbb	./# O0A'#	c
-	M+'$2	D[
=8$&"+		
)<K_cDb	4'"0+'+%3	c
)<K_ccb	<J##8/ H&!% K02+$"#$2 4"''(2	c
)<K_cEb	<J##8/ <808#!8#	c
)<K_c^b	Q#2#&$8/ <#50!&$ >+J(0+!&'?	b D
QBH_DDb	)/$%2(0&! 7&0(/	c
vvv	)$#&(01# 4$(2)+$#	c
-	M+'$2	D[DY
e0'$ F 1'··		
)<K_^Db	4'$&' Q#/&A0'0(&(0+	c
)<K_^Eb	)'0!08&' -#(/+"2 @ ;A2#$1&(0+!	c
)<K_^cb	<#$108# K#'01#$3 @ B(/082	c
)<K_^^b	Q#2#&$8/ 6$&8(08'5	D c
vvv	-0!+$)+'$2#	c
vvv	Q#'0%0+! B'#8(01#	c
-	M+'$2	DY Da
=8$&"+		
)<K_^eb	G#'$+'+%08&' O&2#2 +:)+5 5	c

)<K_Dbb	9!($+ (+)+5 5 <8@ K2+$"#$2	c
_	M+'$2	DE
_	.+(&' M+'$2	ED

#9J9E36? D<5?<8:

./# H#1#'0!% 6$+%$& 5 02 0!(#!"#" :+$ 2('"#!(2 R/+ J+22#22 & A&8/#'+$2 "#%$## 0! & 5&F+$ +(/#$ (/&!)<K R/+ &$# 0!(#$#2(#" 0! \'&'0:30!% :+$ %$&"'&(# 2('"3 0! <J##8/ H&!%'&%# 6&(/+'+%3, ./# H#1#'0!% 6$+%$& 5 0! <H6 02 !&(0+!&''3 $#8+%!0U#" &2 & 5#&!2 +: 8+5 J'#(0!% (/# $#\'02(# #"'8&(0+! (+ J$#J&$# & 2('"#!(:+$ %$&"'&(# 2('"3 0! <H6, ./#) L H#1#'0!% 6$+%$& 5 $#\'0$#2 0!(#$#2(#" 2('"#!(2 (+ 8+5 J'#(# cb 8$#"0(/+'$2 >Db 8+'$2#2? 0! (/#)<K 5&F+$ 0! +!# 3#&$ +: 2('"3 J$0+$ (+ #!(#$0!% &6$fm}jjj0}]]ĵ H#1#'0!% 6$#? 0! U#1# !]

6$+%$& 5, 4JJ*08&(0+! :+$ 5 2 &$# &1&0*&A*# 0! (/# 4"1020!% ;:=8# &!" 2('"#!(2 &$# #!8+'$&%#" (+ 2##V &"1020!% &2 2++! &2 (/#3 &$# 8+!20"#$0!% (/02 5&F+$, J+! &JJ*08&(0+!`0!(#$10#R2 R0** A# 28/#"'*#" R0(/ (/# 2('"#!(2 &2 J&$( +: (/# 2#*#8(0+! J$+8#22, <('"#!(2 &JJ*30!% :+$ (/# I#!#$&*Xf&28'*&$ J$+%$& 5 &$# $#\'0$#" (+ 0!(#$10#R R0(/ (/# ) L J$+%$& 5 =$2(, 9: (/#3 &$# !+( 2#*#8(#" 0!(+ (/# ) L J$+:#2200+!&* J$+%$& 5` (/#0$ &JJ*08&(0+!2 R0** A# :+$R&$"#" (+ +'$ *+8&*` /+2J0(&* A&2#" &88$#"0(#" <+!+%$&J/3 &:=*0&(#2, <('"#!(2 &JJ*30!% :+$ (/# )&$"0&8X f&28'*&$ J$+%$& 5 R0** /&1# (/#0$ &JJ*08&(0+!2 :+$R&$"#" (+ +'$ *+8&*` /+2J0(&* A&2#" &:=*0&(#2 (/&(+::#$ (/&(8+!8#!($&(0+!,

@3736

<('"#!(2 0! (/# K0&%!+2(08 -#"08&* <+!+%$&J/3 J$+%$& 5 R0** J&3) L ('0(0+! "'$0!% (/# J$# J$+:#2200+!&* &!" J$+:#2200+!&* &2J#8(2 +: (/# J$+%$& 5, <('"#!(2 0! (/# J$+:#2200+!&* &2J#8(+: (/# J$+%$& 5 J&3 :+$ ^ 2#5#2(#$2 &!" "+ !+(/&1# (+ J&3 &!3 +1#$*+&" ('0(0+! 8/&$%#2, 9: (/# 2('"#!(02 &((#!"0!% &! &:=*0&(#"` /+2J0(&* A&2#"` J$+%$& 5` & J#$8#!(&%# +: (/# ('0(0+! R0** A# %01#! (+ (/&( J$+%$& 5, ./'2` 2('"#!(2 R/+ &$# $#8#010!% (/# B5#$0('2>:'**? <8/+*&$2/0J +$ &$# :'** (05#) L #5J*+3##2 >('0(0+! :$##? R0** !##" (+ J&3 ('0(0+! "'$0!% (/# J$+:#2200+!&* &2J#8(+: (/# J$+%$& 5,

28_5<4

g K0&%!+2(08 -#"08&* <+!+%$&J/3 O,<, >J,_Db^?

+38?6547 3A 29>3A8E)565?<8G=B "C)C

B::#8(01# :+$ 2('"#!(2 2(&$(0!% 7&** +: EbDY

!%0	P&2-0	^!,$)
!$0 Q0Z,&$0 6 0"2) >J,_EE? D		^[
<'_!$ Q0Z,&$0 6 0"2)		d[
9-0#2&:0)		
- 0!+$Z ;J(0+!&*		
.+(&* M+'$2		D^b

D _7+$ ($&!2:#$ 2('"#!(2` J*#&2# 2## (/# 4"1&!8#" .$&!2:#$)+$# >J,_Ec?,

28_5< , 9T@3<9 : 9674

!%0	P&2-0	^!,$)
!"#!$%&' ! 6 6 !" !$0 `CJ #$0%&2) "00%0%a		
QBH_Dbb	./# O0A*# >O0A*#)+!(#!(?	c
QBH_DDb	)/$02(0&! 7&0(/ >)/$02(0&! K+8($0!#?	c
))B_DDb	L#2(#$!)'*('$# @ L+$*"10#R	c
))B_DEb	L#2(#$! ./+'%/(@ L+$*"10#R	c
))B_Dcb	)/$02(0&!)0(0U#!	c
))B_D^b	<80#!8# @ M'5&!0(3	c

DbY___ >$# >376!9&' 23#$&I7 >$+%%& =

K - <_c[E	I#!#$&' @ f&28''&$)&2# Q#1 99	_
K - <_ce^	)'0!08&' 6$&8(08' 5 9999 D	c
K - <_^D^	<+!+%$&J/3 6$0! @9!2($ Q#10#R	D
K - <_^^c		

- &$# 8'$$#!(` :'** (05# 2('"#!( &( ) L +$ ) 44 R/+ R0** %$&"'&(# R0(/ & A&8/#'+$l2 "#%$## :$+5 ) L +$ ) 44`
- &((/# (05# +: 2'A50((0!% (/# &JJ'08&(0+!` &$# !+( 5022 0!% 5+$# (/&! +!# J$#$#\'020(# 280#!8# 8+'$2#`
- /&1# & 8'5 ''&(01# I64 +: &('#&2(c,bb`
- /&1# & %$&"# J+0!(&1#$&%# +: &('#&2(c,^[0! J$#$#\'020(# 280#!8# 8+'$2#2`
- 2'A50(&** &JJ'08&(0+! 5&(#$0&'2 A3 (/# 6.)4< B&$'3 K#8020+! "#&"'0!#` &!"
- 2'88#22:'**3 8+5 J'#(# & J#$2+!&' 0!(#$10#R,
- 5'2(8+5 J'#(# ^b /+'$2 +: +A2#$1&(0+! +: & "01#$20(3 +: J/3208&' (/#$&J3 J$&8(08# 2#((0!%2

4** J$#$#\'020(# 280#!8# 8+'$2#2 5'2(A# 8+5 J'#(#" &( ) LX) 44` &!" 8&!!+( /&1# A##! J$#10+'2'3 8+5 J'#(#" &( &!+(/#$ 0!2(0('(0+! 9: & ) LX ) 44 J$#$#\'020(# 280#!8# 8+'$2# 02 $#J#&(#"` (/# =$2(` +$0%0!&' %$&"# R0** A# 8+!20"#$#" R/#! "#(#$50!0!% R/#(/#$ +$!+((/# 2('"#!(02 #'0%0A'# :+$ J$0+$0(3 &"5022 0+!) LX) 44 2('"#!(2 R/+ 5##((/#2# $#\'0$#5#!(2 &$# $#\'0$#" (+ (&V# (/# IQB,

$67<86A9 , 9T@3<9 : 9674

4"5022 0+! (+ (/# #!($3 '#1#' K+8(+$ +: 6/3208&' ./#$&J3 J$+%$&5 02 8+5 J#(0(01#,)+!8+$"0& !01#$20(3 L028+!20! R0** &"5 0(+!# 8'&22 +: Ea :'** (05# 2('"#!(2 0! (/# :&** +: #&8/ &8&"#5 08 3#&$,

4"5022 0+! $#\'0$#5#!(2 0!8''"#Z

- O&8/#'+$l2 "#%$## 0! &!3 =#'" :$+5 & $#%0+!&**3 &88$#"0(#" 0!2(0('(0+!
- -0!05'5 c,b 8'5''&(01# I64
- -0!05'5 I64 +: c,b 0! &** $#\'0$#" 280#!8#2
- 4A0'0(3 (+ J#$:+$5 #22#!(0&' :'!8(0+!2 +: & J/3208&' (/#$&J02('02(#" &(RRR,8'R,#"'X"J(
- <'A50(IQB 28+$#2

<80#!8# 6$#$#\'020(#2 >) L 8+'$2# !'5A#$2 '02(#" 0! J&$#!(/#202?

-)/#502($3 .R+ 2#5#2(#$2 +: 2#\'#!8#" 8+'$2#2 R0(/ '&A2_ >)MB-_D^D I#!#$&')/#502($3 9&!")MB-_D^E I#!#$&')/#502($3 99?
- 6/3282 .R+ 2#5#2(#$2 +: 2#\'#!8#" 8+'$2#2 R0(/ '&A2 >6MS<_D[D I#!#$&' 6/32082 9&!" 6MS<_D[E I#!#$&' 6/32082 99?
- M'5&! 4!&(+53&!" 6/320+'+%3 .R+ 2#5#2(#$2 +::#$#" (/$+'%/ & O0+'+%3` 4!&(+53 +$ 6/320+'+%3 "#J&$(5#!(>O9;_DaD &!" O9;_DaE ?

;(/#$ J$#$#\'020(#2

- <(&(02(082 ;!# 2#5#2(#$
- 6238/+'+%3 ;!# 2#5#2(#$
- O#/&10+$&' +$ <+80&' <80#!8# ;!# 2#5#2(#$0! &""0(0+! (+ (/# 6238/+'+%3 $#\'0$#5#!(&A+1#

! GGE3A873 56 D<5A944

./# 6/3208&' ./#$&J3 K#J&$(5#!(&( )+!8+$"0& !01#$20(3 J&$(080J&(#2 0! (/# 6/3208&' ./#$&J02( )#!($&'0U#" 4JJ'08&(0+! <#$108#` V!+R! &2 6.)4<, 4JJ'08&!(2 :+$ (/# K+8(+$ +: 6/3208&' ./#$&J3 J$+%$&5 2/+''" &JJ'3 +!'0!# '20!% (/# 6.)4< &JJ'08&(0+!, .+'#&$! 5+$# &A+'( (/# 6.)4< &JJ'08&(0+! J$+8#22` J'#&2# 1020((/# 6.)4< R#A20(# &(RRR,J(8&2,+$% >/((JZXXRRR,J(8&2,+$%?,

<('"#!(2 5&3 &JJ'3 (+ (/# J$+%$&5 A#:+$# &** &"5022 0+! $#\'0$#5#!(2 &!" J$#$#\'020(#2 &$# 8+5 J'#(#"` A'( 5'2( A# 8+5 J'#(#" J$0+$ (+ A#%0!!0!% (/# K6. J$+%$&5, !"#$%$&"'&(# 2('"#!(2 2/+''" &JJ'3 (+ (/# K6. J$+%$&5 "'$0!% (/# 2'55#$ A#:+$# (/#0$ 2#!0+$ 3#&$, 4JJ'08&(0+!2 :+$ (/# K6. J$+%$&5 8&! A# 5&"# (/$+'%/ (/# 6/3208&' ./#$&J02( )#!($&'0U#" 4JJ'08&(0+! <#$108#` >6.)4<? &(RRR,J(8&2,+$% >/((JZXXRRR,J(8&2,+$%?,

2344356)7879 : 967

./#)+!8+$"0& !01#$20(3 L028+!20! 6/3208&' ./#$&J3 J$+%$&5 02

8&4(3 D G4<# BH 9$#"4(6C		H
QBH &A+1# Eb^		
@+94#(7 D) '*('$# BH 9$#"4(6C		
<;)_DbD	9!($+ (+ <+80+*+%3	c
T&('$&' , +$*" Bb 9$#"4(6C		
O9;_D^D	I#!#$&' O0+*+%3 9 D	^
- 4 . M_DEa	)+**#%# 4*%#A$& > - &(/# 5 &(082 ? D E	c
)+= = '!49&(4+! D G&!%'&%# BO 9$#"4(6C		
); - -_Db[	6'A*08 <J#&V0!%>)+5 5 '!08&(0+!2 ? D	c
BGI_Db^	9!($+ (+ L $0(0!%	c
P'=&! X#4!%6 D X#4!% P'=&! Ba 9$#"4(6C		a
MM6_Dbb	<(#R&$"2/0J +: (/# O+"3 >6/3208&' K#1#*+J 5 #!(?	
MM6 48(0102(3 >Db^ DYd?		
6238/+*+%3X6/0'+2J/3XH#%&' <('"0#2 2##)+$# ; J(0+!2		
P'=&!)$#&(454(7 D QYI$#664+! BH 9$#"4(6C		H
2##)+$# ; J(0+!2		
Q0Z,&$0% !,$)0)		
O9;_D^E	I#!#$&' O0+*+%3 99 D	^
+$_O9;_D[E	7'!8(0+!&' M' 5 &! O0+*+%3 99	
O9;_DdD	M' 5 &! 4!&(@ 6/32 9 D E	^
O9;_DdE	M' 5 &! 4!&(@ 6/32 99 D	^
Q<)_DbY	- #"08&' .#$ 5 0!+*+%3 D E	D
)<)_D[b	7+'!"&(0+!2 +:)+5 J <80#!8# D	c
.+(&' M+'$2		YD

D Q#\'0$#" 8+'$2#2 :+$ (/# Q. J$+%$& 5,

E - &(/` - #"08&' .#$ 5 0!+*+%3 &!" 4@6 9 !##" (+ A# 8+ 5 J*#(#" A3 (/# #!" +: (/# c$" 2# 5 #2(#$

g)' 5 '*&(01# c,b I64 $#\'0$#" (+ J$+%$#22 (+ (/# J$+:#2202+!&' J$+%$& 5, 4JJ*08&(0+!2 R0** !+(A# &88#J(#" 0: & 2('"#!("+#2 !+(/&1# & E,e[I64 &((0 5 # +: 2'A 5 0220+!,

g 6$#:#$#!8# :+$ 2('"#!(2 R0(/ & c,b I64 >O %$&"#? 0! 2808#!8# 8+'$2#2i !+ %$&"# A#*+R &) &88#J(#",

g </&"+R0!% +: &! Q. $#\'0$#" >5 0!0 5 ' 5 ^ /+'$2?

g 46 <8+$#2I +!*3 28+$#2 +: ^ +$ /0%/#$ R0** A# &88#J(#" &2 8$#"0(:+$ &** $#\'0$#" 2808#!8# 8+'$2#2 0! (/02 J$+%$& 5` & 28+$# +: c +$ /0%/#$ 02 &88#J(#" :+$ &** +(/#$ 8+'$2#R+$V,

)5A38E ;5<I

%J9<J39H

O&8/#*+$ "#%$##" 2+80&' R+$V#$2 >O< L ? "#1#*+J 2V0**2 (+ /#*J J#+J*# !&10%&(# 8+ 5 J*#N 232(# 5 2, ./#3 J$+10"# & R0"# 1&$0#(3 +: "01#$2# 1[redacted]#$2#

) , !"#$%$&"'&(#)&(&'+% -./0 -./1 ____ DDD

[,

<+8@&' R+$V#$2` R/+ 2'88#22:''*3 8+5 J'#(# (/# A&88&'&'$#&(# "#%$## $#\'0$#5#!(2 &( )+!8+$"0& !01#$20(3 L028+!20!`%$&"'&(#:$+5 & J$+%$&5 &88$#"0(#" A3 (/#)+'!8@' +: <+8@&' L+$V B"'8&(@+! &!" $#8#01# & O&8/#'+$ +: <+8@&' L+$V "#%$## >O< L?,

&39E> $>@A87356 Z/679<64=3G4[

+94A<3G7356

./# 8'$$08''' 5 "#20%! :+$ =#'" #"'8&(@+! 02 0!8+$J+$&(#" 0! (R+ 2#5#2(#$2 &!" 0!1+'1#2 (/# &88'5''&(@+! +: ^[b /+'$2 +: =#'"R+$V, 7@#'" #NJ#$@#!8# +::#$2 2('"#!(2 (/# +JJ+$('!0(3 (+ (#2(&!" "#5+!2($&(# (/#0$ &A@'0(@#2 &!" V!+R'#"%# 0! & 2'J#$1@2#" #"'8&(@+!&' 2#((0!%, <+8@&' R+$V 5&F+$2` R0(/ 'JJ#$ "01@20+! 2(&('2` &$# $#\'0$#" (+ #!$+'' 0! <L_cEe 7@#'" B" 9 &!" <L_^Ee 7@#'" B" 99, 9! 8+!F'!8(@+! R0(/ 7@#'" B"'8&(@+!` 2('"#!(2 &$# $#\'0$#" (+ #!$+'' 0! <L_cEa 7@#'" B" <#50!&$ 9&!" <L_^Ea 7@#'" B" <#50!&$ 99, 6&$(@80J&(@+! 0! (/# 2#50!&$ 02 (+ A# 8+!8'$$#!(R0(/ =#'" #"'8&(@+!, ./# 2#50!&$:+$5&(R0'' J$+1@"# :+$ (/# 0!(#%$&(@+! +: =#'" #NJ#$@#!8# R0(/ 8'&22$++5 '#&$!0!% (/$+'%/ "028'22@+! &!" &22@%! 5#!(2,

!GGE3A87356 D<5A944 F5< &39E> $>@A87356

<('"#!(2 &$# J'&8#" 0! & 1&$@#(3 +: &%#!8@#2` 8+5 5#!2'$&(# R0(/ (/#0$ #NJ$#22#" "#20$#2 &!" #"'8&(@+!&' !##"2, ./# J'&8#5#!(J$+8#22 A#%@!2 R0(/ (/# 8+5 J'#(@+! +: &! &JJ'08&(@+!, <('"#!(2 &$# $#\'0$#" (+ &JJ'3 :+$ =#'" 0! (/# =$2(2#5#2(#$ +: (/#0$ F'!0+$ 3#&$,

)5A38E ;5<I D<5?<8: '@<<3A@E@: 2365<

<+8@&' L+$V 5&F+$2 &$# $#\'0$#" (+ /&1# & 5@!+$ '!'#22 (/#3 /&1# & "+'A'# 5&F+$, ./# <+8@&' <8@#!8# -@!+$ 02 $#8+5 5#!"#" :+$ <+8@&' L+$V -&F+$2i /+R#1#$ 5&!3 +(/#$ +J(@+!2 &$# &1&@'&A'# @!8''"@!%` A'( !+( '05@(#" (+` J238/+'+%3` "0$#8(+$ +: 8/'$8/ 5@!02($@#2` <J&!02/` 5'2@8` A'2@!#22` #"'8&(@+! &!" J+'@(@8&' 28@#!8#, <## <8/++' +: 4$(2 &!" <8@#!8#2 >J,_E[?

,9T@3<9> '5<9 '5@<494

<('"#!(2@! (/02 J$+%$&5 5'2((&V# -4.M_Eb[<(&(02(@82 9,

,$$&#,·,64P!2'·FG $O%&2)

!FK<:873J9 !A7356U(56>34A<3:3687356

./# <+8@&' L+$V 6$+%$&5 &( )+!8+$"0& !01#$20(3 L028+!20! "+#2 !+("028$05@!&(# +! (/# A&202 +: $&8#` 8+'+$ %#!"#$ &%#` #(/!@8 +$!&(@+!&' +$@%@!` +$ J/3208&' "02&A@'0(3 0! (/# &$#&2 +: 2('"#!( &" 5022@+! (+ (/# J$+%$&5` &2 R#'' &2 /@$@!% +$ J$+5+(@+! :+$:&8''(3,

28_5<4

- <+8@&' L+$V -&F+$ >J,_DDc?
- <+8@&' L+$VX6238/+'+%3 K+'A'# -&F+$ >J,_DDc?

2365<4

- K@$#8(+$ +:)/'$8/ -@!02($@#2 -@!+$ R0(/ Q#'&(#" -&F+$2 >J,_DDE?
- <+8@&' <8@#!8# -@!+$:+$ <+8@&' L+$V -&F+$2?)>39

./# <+8@+

)5A38E ;5<I 28_5<

!%0	P&2-0	^!,$)
!$0 Q0Z,&$0 6 0"2) >J,_EE? D		^[
<'_!$ Q0Z,&$0 6 0"2)		^[
9·0#2&:0)		cY
-0!+$Z Q#\'0$#"		

.+(&' M+'$2 DEY

D _7+$ ($&!2:#$ 2('"#!(2` J'#&2# 2## (/# 4"1&!8#" .$&!2:#$)+$# >J,_Ec?,

28_5< ,9T@3<9 : 9674

!%0	P&2-0	^!,$)
Q0Z,&$0% !,$)0)		
<L_EE[	<+80&' L +$V @ <+80&' L #':&$#	c
<L_Ec[	9!($+"'8(0+! (+)/0'" L #':&$#	c
<L_cbY	<+80&' L #':&$# 6+' @ 6$+%	c
<L_cDb	Q#2#&$8/ -#(/+"2 9	c
<L_c^Y	M'5 O#/&1X<+8 B!1$ 9	c
<L_c^e	M'5&! O#/&10+$X<+80&' B!1 E	c
<L_^Db	Q#2#&$8/ -#(/+"2 99	c
<L_^db	<#!0+$ 9!(#%$&(01# <#5 0!&$	c
<L_cEe	70#'" B" 9	c
<L_^Ee	70#'" B" 99	c
<L_cEa		

DD^

)' .%%# %& (*,)/(-

./# <8/++' +: G'$2!% /+'2#2 (/# :+''+R!% '!"#$%$&"'&(# &!" %$&"'&(# J$+:#22+!&' J$+%$& 5 2

- .$&"(+!&' !"#$%$&"'&(# O&8/#'+$ +: <8#!8# >O<G? >J,_DD[?
- 488#'#$&(#" <#8+!" K#%$## O<G

G	Q<_^Yb	)''('$&' K01#$20(3 0! G'$20!%
G	Q<_^ee	9!($+ (+ 9!(#%$ @)+5 J'05 -#" >+J(0+!&'?
G	Q<_^d^	9!($+ (+ BCI >+J(0+!&'?

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<8>373568E &<94=:86)7@>9674

)+!8+$"0& !01#$20(3 J$# !''$20!% 2(''"#!(2 R/+ 5##('·· +: (/# :+''+R0!% 50!05'5 $#\'0$#5#!(2 &$# #'0%0A'# :+$ &"5022 0+! (+ (/# ($&"0(0+!&' '!"#$%$&"'&(# !''$20!% J$+%$&5, ./# !''5A#$ +: 2(''"#!(2 &88#J(#" 0!(+ (/# J$+%$&5 02 "#J#!"#!(+! &1&0'&A'# 8'0!08&' 2J&8# &!" (/# 2(''"#!(?2 $&!V0!% A&2#" +! (/# 8$0(#$0& A#'+R?

- g -0!05'5 #,6,·'2&:0 M/@ | E,e[
- g -0!05'5)#&0"#0 M/@ | E,e[R0(/ & 6&"&6,6 +$'%0 !N 0! (/# :+''+R0!% 8+'$2#2?
  - g -08$+A0+'+%3 >O9; D^d +$ /0%/#$ '#1#' 508$+A0+'+%3 8+'$2# R0(/ '&A 2#8(0+!?
  - g 4!&(+53@6/320+'+%3 9>O9; DdD +$ /0%/#$ '#1#' 508$+A0+'+%3 8+'$2# R0(/ '&A 2#8(0+!?
  - g 4!&(+53@6/320+'+%3 99>O9; DdE +$ /0%/#$ '#1#' 508$+A0+'+%3 8+'$2# R0(/ '&A 2#8(0+!?
  - g)/#502($3 >)MB- Db[+$ /0%/#$ '#1#' 508$+A0+'+%3 8+'$2# R0(/ '&A 2#8(0+!?
- g <&"&6,6 +$'%0 !N 0! 8+''#%# &'%#A$& +$ /0%/#$ '#1#' 5&(/ 8+'$2# >2(&(02(082` J$# 8&'8''2 +$ 8&'8''2? TQ
  - g L&01#$ R0(/ &! 46 28+$# +: ^ +$ [+! (/# 46)&'8''2 BN&5` TQ
  - g)HB6 8$#"0(2 :+$ 8+''#%# &'%#A$&,
- g B!%'02/ &2 <#8+!" H&!%'&%#` H&!%'&%# (#2(28+$#?
  - g .;B7H }e[;Q
  - g 9BH.< }Y,b

<864F9<)7g ; g"0#

g((D+: +")<H&!"0!% :$%(8+**#%# &(!"#&,
g"0*0%%)%"<!,b
g"0*0%%<$eb
g 0! 8+**#%# &*%#A$& +$ /0%/#$ *#1#* 5&(/ 8+'$2<$>2(&(02(082` J$#b

'%(/(*/(- $+*'! /%(

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;'$ J$+%$& 5 02 1#$3 5 '8/ (&0'+$#" (+ (/# !##"2 &!" '!0\'# 8&J&A0'0(0#2 +: (/# &"''('#&$!#$, 7+$ 0!2(&!8#` 8'&22#2 &$# +::#$#" &( '+8&(0+!2 !#&$ 2('"#!(2h /+5# +$ R+$V, )'&22#2 &$# +::#$#" 0! &! &88#'#$&(#" #1#!0!% :+$5&(, 9! &""0(0+!` 2('"#!(2 8&! #&$! 8$#"0(0! & 1&$0#(3 +: 5+"&'0(0#2 0!8''0!% (/# ($&"0(0+!&' 8'&22$++5 2#(0!%` (#'#8+'$2#2` &!" 8+''#%# '#1#' '#&$!0!% #NJ#$0#!8#2 +A(&0!#" +'(20"# (/# 8'&22$++5,

4"''(B"'8&(0+! "#'01#$2 8+'$2#2 &(#'#1#! +:: 8&5J'2 8#!(#$2 '+8&(#" 0! -022+'$0 &!" H+'02&!&` &2 R#'' &2 L028+!20!, ./# &1#$&%# &%# +: 2('"#!(2 &((#!"0!% (/# J$+%$& 5 02 c^` (3J08&''3 E[3#&$2 +'" &(& 5 0!0 5 '5` &!" 2('"#!(2 &$# $#\'0$#" (+ /&1# 2#1#$&' 3#&$2 +: R+$V #NJ#$0#!8#, 4 2#J&$&(# 8&(&'+% 02 J$+"'8#" :+$ &"''( #"'8&(0+! 2('"0#2` &!" 3+' &$# $#:#$$#" (+ 0(:+$:'$(/#$ "#(&0'2,

6/&$5 K </#!&!"+&/ !01#$20(3i O< !01#$20(3 +: -0!!#2+(&
4( )+!8+$"0& 20!8# EbDD

c!X6'"W ;$&)2&"0
42202(&!(6$+:#22+$ +: ;88'J&(0+!&' ./#$&J3
-<` K'\'#2!# !01#$20(3i O< <3$&8'2# !01#$20(3
4( )+!8+$"0& 20!8# EbDD

c$!#AW 3&--&'6 c
422+80&(# 6$+:#22+$ +: P'&!(0(&(01# O'20!#22
6/ K` O#!#"08(0!# !01#$20(3i -O4` B5+$3 !01#$20(3i OO4` I#+$%0&
)+''#%# @&5Ji<(&(# !01#$20(3
4( )+!8+$"0& 20!8# EbDY

c$!X"W <&#;'0·
6$+:#22+$ +: 6/&$5&83 6$&8(08#
422+80&(# K#&!
6/&$5 K` O< !01#$20(3 +: L028+!20! -&"02+!i ;(/#$ f4-) L0''0&5 <,
-0""'#(+! f#(#$&!2 M+2J0(&'&!")'0!082
4( )+!8+$"0& 20!8# Ebbd

c$.'"2W96&-.9
6/&$5 K` )+!8+$"0& !01#$20(3 L028+!20!i ;(/#$ 4'$+$& M#&'(/ )&$#`
-#($+ 9!8,
4( )+!8+$"0& 20!8# EbDe

c,#A·0.W9·&h'?02;
422+80&(# 6$+:#22+$ +: 6/&$5&83 6$&8(08#
6/&$5 K` O< !01#$20(3 +: L028+!20! -&"02+!
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c,··W c0$"'$%
422+80&(# 6$+:#22+$ +: B"'8&(0+! I$&"'&(#
f08# 6$+1+2(
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-4` )+!8+$"0& !01#$20(3 )/08&%+i O4`)+!8+$"0& !01#$20(3 L028+!20!
4( )+!8+$"0& 20!8# EbbY

c,".'"W =;0$& >
42202(&!(6$+:#22+$ +: 6/3208&' ./#$&J3
O< G+$(/#$! -08/0%&! !01#$20(3i ;(/#$ -&$\'#((# !01#$20(3i ;(/#$ <(,

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-&0$

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6/ K` <(, W+/!12 !ß1#$2ß(3i - 4` O4` - &$\'#((# !ß1#$2ß(3
4( )+!8+$"ß& 2ß!8# DddD

^$%&W &"%. <
422ß2(&!(6$+:#22+$+: <J##8/ @&5 Ji H&!%'&%# 6&(/+'+%3
- <` !ß1#$2ß(3+: Lß28+!2ß! - ß 4` O4`!]Hu(3ö!ß2Ş3i - 4` O4` ₴₴₴₴
4( )+!Öß& 2ß!8# DddD

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M₴₴₴ - ₴

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4( )+!8+$"0& 20!8# EbDE

i$0--W b&--
4220202(&!(6$+:#22+$ +: G'$20!% !"#$%$&"
KG6 -<` O<`)+!8+$"0& !01#$20(3

6$+%$&5 K0$#8(+$
6/K` !01#$20(3+: L9Z -0*R&'V##i;(/#$ -&$\'#((# !01#$20(3
4( )+!8+$"0& 20!8# Ddae

2

<'#i0··.W<'22;0X
42202(&!(6$+:#22+$+: W'2(08# @&5Ji6'A*08 6+*083
WK` -&$\'#((# !01#$20(3H&R <8/++*i O<` G+$(/K&V+(&<(&(# !01#$20(3i
;(/#$Q#%#!(!01#$20(3
4( )+!8+$"0& 20!8# EbDc

<'#'N00WP&6!2;.
42202(&!(6$+:#22+$+:)+55'!08&(0+!
6/K` !01#$20(3+: L028+!20! -&"02+!i -4`O4` !01#$20(3+: L028+!20!
-0*R&'V##
4( )+!8+$"0& 20!8# EbD^

<'%&"+0$W^&·'$.
42202(&!(6$+:#22+$+: G&('$&*<80#!8#
4( )+!8+$"0& 20!8# EbDa

<'A)20"&0A)W='"2'
6$+:#22+$+: G&('$&*<80#!8#
;(/#$.&$(' !01#$20(3`B2(+!0&
4( )+!8+$"0& 20!8# Ddd^

<'$2&"W@·0V7
42202(&!(6$+:#22+$+: G&('$&*<80#!8#
6/K`f0$%0!0& )+55+!R#&*(/ !01#$20(3iO<` !01#$20(3+: -08/0%&!
4( )+!8+$"0& 20!8# EbDY

<'))0WM'$.<
422+80&(# 6$+:#22+$+: 6/&$5&8#'(08&*@&5Ji4"50!<80
6/KO<` !01#$20(3+: L0!"2+$i;(/#$B1#$A''# .$&0!0!%HH)i;(/#$
!01#$20(3+: L#2(#$!;!(&$0+i;(/#$!01#$20(3+: L028+!20! -&"02+!
4( )+!8+$"0& 20!8# EbDY

<#M$'XWb!)08;9
422+80&(# 6$+:#22+$+: 6/&$5&8#'(08&*@&5Ji4"50!<80
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4( )+!8+$"0& 20!8# EbDb

<#M,&$0WQ&#;'$%@
6$+:#22+$+: <J##8/@&5Ji H&!%'&%# 6&(/+*+%3
K#J&$(5#!( )/&0$
6/KO+R*0!%I$##!<(&(# !01#$20(3i -4`O<` G+$(/#$! -08/0%&!
!01#$20(3
4( )+!8+$"0& 20!8# EbD[

<#i&""&)W<&#;'0·=
-4` )+!8+$"0& !01#$20(3L028+!20!iO<`4'A'$! !01#$20(3
4( )+!8+$"0& 20!8# EbDc

<#>',+;·&"W<'$+'$02<
422+80&(# 6$+:#22+$+: G'$20!% !"#$%$&"
6/KO4` !01#$20(3+: -08/0%&!iO<G`W+/!2M+JV0!2 !01#$20(3i;(/#$
W+/!2M+JV0!2O*++5A#$%<8/++*+: 6'A*08M#&*(/
4( )+!8+$"0& 20!8# EbDY

<#<&--'"W3&--&'6
6$+:#22+$+:)+5J'(#$<80#!8#
6/K`)&2# L#2(#$! Q#2#$1# !01#20(3i -<` -4`)&2# L#2(#$! Q#2#$1#
!01#$20(3i -O4` L&3!#<(&(# !01#$20(3iO4`)*#1#'&!"<(&(# !01#$20(3
4( )+!8+$"0& 20!8# EbDc

<00··W<'$&·."@
422+80&(# 6$+:#22+$+: B"'8&(0+! I$&"'&(#
BKK` !01#$20(3+: M+'2(+!i -<`B!0!A+$+<(&(# !01#$20(30! 64iO<`
B"0!A+$+<(&(# !01#$20(3+: 64i;(/#$<(#J/#! 7,4'2(0!<(&(# !01#$20(3
4( )+!8+$"0& 20!8# EbD[

<0"#;'#'W>!,&)@
6$+:#22+$+: -'208
K#J&$(5#!( )/&0$
6/K` -4`./#;/0+<(&(# !01#$20(3iO4`<(, -&$3?2 !01#$20(3+: <&!
4!(+!0+
4( )+!8+$"0& 20!8# DddE

<0",+0W@"+,)
6$+:#22+$+: 6/0*+2+J/3
K#J&$(5#!( )/&0$
6/K` -4` !01#$20(3+: L028+!20! -&"02+!iO4` !01#$20(3+: L&$R08Vi
;(/#$9!(#$!&(0+!&* 48&"#53+: 4J+*+%#(082`B1&!%#*0255&!" M'5&!
Q0%/(2
4( )+!8+$"0& 20!8# DddE

<&+'"W50'·9
6$+:#22+$+: B!%*02/
6/K`6'$"'# !01#$20(3i -4`O4` -08/0%&!<(&(# !01#$20(3
4( )+!8+$"0& 20!8# Ebb[

<&··0$W5'%&"09
9!2($'8(+$+: 6/3208 0&! 42202(&!(
K0$#8(+$+:)*0!08&*B"'8&(0+!
O<` L -&"02+!
4( )+!8+$"0& 20!8# EbDY

<!?·0.W=,)'"
6$+:#22+$+: M02(+$3
K#J&$(5#!( )/&0$
6/K` -4` !01#$20(3+: L028+!20! -&"02+!iO4` !01#$20(3+: ;V'&/+5&
4( )+!8+$"0& 20!8# Ddda

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422+80&(# 6$+:#22+$+: M02(+$3
6/K` -4` !01#$20(3+: L028+!20! -&"02+!iO4`f&!"#$A0*(!01#$20(3i
;(/#$9!"0&!& !01#$20(3i;(/#$!0(#" <(&(#2 -0*0(&$3 48&"#53
4( )+!8+$"0& 20!8# Ebbb

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422+80&(# 6$+:#22+$+: B"'8&(0+! I$&"'&(#
6$+%$&5 K0$#8(+$
6/K` !01#$20(3+: -0!!#2+(& .R0! )0(0#2i -4` !01#$20(3+: L028+!20!
Q01#$7&**2iO4` -0"'&!" H'(/#$&!)+**#%#
4( )+!8+$"0& 20!8# EbD^

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42202(&!(6$+:#22+$+: ./#+'+%3
4( )+!8+$"0& 20!8# EbDa

<!"2$0'·W=20:0"Q
6$+:#22+$+: <+80&*<80#!8#
K#&!
6/K` !01#$20(3L028+!20! -0*R&'V##i -4` -&!V&(+<(&(# !01#$20(3i
O4` !01#$20(3+: L028+!20! I$##! O&3
4( )+!8+$"0& 20!8# Ddd[

<!)06'""Wc&'"<

422⇩2(&!(6$+:#22+$ +: ./#+'+%3
;(/#$)+!8+$"⇩& <# 5⇩!&$3
4( )+!8+$"⇩& 2⇩!8# EbDb

BKK` G+1& <+'(/#&2(#$! !01#$20(3i - 4` M&5J(+! !01#$20(3i O4` O'':(+!
)+''#%#i ;(/#$ - &$2/&'' L3(/# <8/++' +: H&R`)+''#%# +: L0''0&5 @&5Ji
- &$3
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)

='-0)A'W P;!6') b
6$+:#22+$ +: G&('$&' <80#!8#
6/ K` !01#$20(3 +: L028+!20! - 0'R&'V##i - 4` !01#$20(3 +: M+'2(+!i O4`
)+!8+$"0& Q01#$ 7+$#2(i ;(/#$ <(, W+/!'2 H'(/#$&! W'!0+$)+''#%#
4( )+!8+$"0& 20!8# Dddc

='6,0-W >&"%'
6$+:#22+$ +: ;88'J&(0+!&' ./#$&J3
K#&!
6/ K` - &$\'#((# !01#$20(3i - <` O< !01#$20(3 +: L028+!20! - 0'R&'V##
4( )+!8+$"0& 20!8# Ddd[

='"?!$"W M'$. i
9!2($'8(+$ +: 488+'!(0!%` 70!&!8# @&5Ji B8+!+5082
O4` !01#$20(3 +: - 08/0%&! 7'0!(i ;(/#$ 45#$08&! 9!2(0('(# +:)#$(0=#"
6'A'08 488+'!(&!(2 49)64i ;(/#$ 45#$08&! 9!2(0('(# ;:)#$(0=#" 6'A'08
488+'!(&!(2 49)64
4( )+!8+$"0& 20!8# EbD[

=#;00-W '$$&0
6$+:#22+$ +: ;88'J&(0+!&' ./#$&J3
K#J&$(5#!( )/&0$
BKK` )&$"0!&' <($0(8/ !01#$20(3i - <` !01#$20(3 +: L028+!20! - 0'R&'V##i
O<` - +'!(- &$3)+''#%#
4( )+!8+$"0& 20!8# Ddd[

=#;088'W P&6!2;. =
422020(&!(6$+:#22+$ +: P'&!(0(&(01# O'20!#22
- <` ;(/#$ !01#$20(3 +: L028+!20! - 0'R&'V##i O<` !01#$20(3 +:
L028+!20! - &"02+!
4( )+!8+$"0& 20!8# Dddd

=#;6&2hW <'$A ^
4( )+!8+$"0& 20!8# EbDe

=#;6&2hW <&A'0-. P
- <` O<` - &$\'#((# !01#$20(3i - 4` L#2(#$! I+1#$!+$2 !01#$20(3i ;(/#$
!01#$20(3 +: L028+!20! - 0'R&'V##
4( )+!8+$"0& 20!8# EbDe

=#;"'A0W Q&#;'$% i
422+80&(# 6$+:#22+$ +: B"'8&(0+! I$&"'&(#
6/ K` - &$\'#((# !01#$20(3i - 4`)+!8+$"0& <#50!&$3i O<`)+!8+$"0&
.#&8/#$2)+''#%#i ;(/#$)+!8+$"0& W'!0+$)+''#%#
4( )+!8+$"0& 20!8# EbbD

=#;!-hW P;!6') Q
- O4` !01#$20(3 +: )/08&%+i OO4` !01#$20(3 +: L028+!20! - &"02+!
4( )+!8+$"0& 20!8# EbDY

=#;,-hW ;'$-0) Q
422020(&!(6$+:#22+$ +: ./#+'+%3
- 4` !01#$20(3 +: f0$%0!0&i - 4` L&2/0!%(+! !01#$02(3i - K01` ;(/#$
)+!8+$"0& <#50!&$3i O4`)+!8+$"0& !01#$20(3
4( )+!8+$"0& 20!8# EbbD

=#;,-hW M$0+!$. /
6/ K` - &$\'#((# !01#$20(3i K - 0!`)+!8+$"0& ./#+'+%08&' <#50!&$3
4( )+!8+$"0& 20!8# EbDc

=#;X0;6W b0NN0$. <
422+80&(# 6$+:#22+$ +: G&('$&' <80#!8#
6/ K` !01#$20(3 +: 4$V&!2&2i O<` <+'(/#&2(#$! H+'020&!& !01#$20(3
4( )+!8+$"0& 20!8# EbDc

=06W 7'"&0-
6$+:#22+$ +: 6/&$5&8#'(08&' @&5Ji 4"50! <80
K#&!
6/ K` L -&"02+!i WK` - O4` - &$\'#((# !01#$20(3i O<` L -0'R&'V##
4( )+!8+$"0& 20!8# EbDD

=0$X0W i'2$&"' <
422020(&!(6$+:#22+$ +: ;88'J&(0+!&' ./#$&J3
6/ K` .#N&2 L+5&!'2 !01#$20(3i - <` O< !01#$20(3 +: L028+!20!
-0'R&'V##
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