

!

"#!

D#D#b!!!!2>&?8@&A&>% . B&8>&. ) ?2%CD6DE&8E% . D@?8@%2F2@?6!" "A!

3<08.687!H81/.!9;!/8.81/>2!1<7!B9<8H!69!7808-9: !28/!3<08<639<E!1<7!628/8;9/8!  
.29?=7!08!/8F1/787%!! \ 3629?6!628!: /9. :8>6!9;! B9<863@3<5!6283/!3<08.6B8<6E!  
3<08<69/.!3V8! - .%!421516!F9?=7!>81.8!69!3<<90168%!! ' 23. !3. !8Q1>6-H!F216!628!  
+<3687!G6168.!: 168<6! .H.68B! .88V. !69! 10937%!! , 9<5/8. !/81=3@87!6216! cd6b9!  
:/9B968!628!K/95/8. .!9;!G>38<>8Ee-!3<08<69/.!<88787!1<!3<>8<6308%!! ' 2?.E!  
, 9<5/8. !5/1<6. !3<08<69/.! !3B3687!B9<9: 9-H!9<6283/!3<08<639<!3<!/86?/<!;9/!  
73.>9.3<5!6283/!73.>908/H!69!628!: ?0=3>!031!628!: 168<6! .H.68B%<sup>X</sup>!

[9/! 628! +<3687! G6168.!: 168<6! .H.68B! 69! 08! 8;;8>6308E! 628! : 168<6!  
>9BB?<36H!<887. !1!>=81/! ?<78/.61<73<5!9;!628! : 168<6103=36H!/8f?3/8B8<6.%!!  
+<;9/6?<168=HE!628!G?: /8B8! , 9?/6g. !/8>8<6!78>3.39<!3<!D' 'G+% ,9\$% 69!#531/!\$%



D#D#b!!!2>&?8@&A&>% . B&8>&. )?2%CD6DE&8E% . D@?8@%2F2@?6!""!

>28B3>1=>9B:9?<7!08>1?.8!628!1: :>3>1<6!737!<96!V<9F!628!8;;8>6.!9;!628!  
>9B:9?<7E!1<7!69!5/1<6!1! : 168<6!9<628!>9B:9?<7!F9?<7!c0<9>V!9;;!F29=8!  
1/81.!9;! .>38<63;3>! 7808=9: B8<6E! F3629?6! >9B:8<.163<5! 08<8;36! 69! 628!  
: ?0<3>e<sup>D</sup>!! '28! : 168<6! .H.68B! 3.! : 8/:86?1=H! 809=03<5! 69! 01=1<8! 628.8!  
>9B:863<5!>9<.378/1639<.e<sup>DL</sup>!

, =%2/(3(9\$I%B#X3\*\$#O#+( '%/+7%?Y5#N(\*9+ '%

] <1<3<08<69/! B?.6! .163.;H! 01/39?!.! .616?69/H! /8f?3/8B8<6.!69! 90613<1! 1!  
: 168<6!! '28!B9.6!<9610=8!.8>639<.!9;!628! : 168<6! .616?69/H!>978!1/8!G8>639<.!  
A#Ae<sup>DM</sup>!A#De<sup>D1</sup>!1<7!A#""<sup>DP</sup>!!G8>639<!A#A!B1<7!168.!6216!628!3<08<639<!08! : 168<6!  
8=3530=8!.?0'8>6!B1668/1<sup>D</sup>-!G8>639<!A#D!/8f?3/8.!628!3<08<639<!08!c<908=le<sup>DX</sup>!1<7!  
G8>639<!A#""! /8f?3/8.!628!3<08<639<! 08! c<9<C90039?.!e<sup>#</sup>!! '28.8! .616?69/H!  
.8>639<.!1/8!/8;8//87!69!1.!c: 168<6!03=36He!/8f?3/8B8<6."A!

G8>639<!A#A!.6168.!6216!1<3<08<69/!B1H!90613<!1! : 168<6!;9/!c1<H!<8F!1<7!  
?.8;?=: />9>8.!E! B1>23<8E! B1<?;1>6?/8E! 9/! >9B:9.3639<! 9;! B1668/e<sup>D1</sup>!  
]>>9/73<5=H!G8>639<!A#A!/8f?3/8.!628!3<08<639<!08!?.8;?<1<7!08!F3623<628!  
;38=7!628! : 168<6! .H.68B!F1.!78.35<87!69! : /968>6E!<1B8=H!1! : /9>8.!E!B1>23<8E!  
1/63>=8!9;! B1<?;1>6?/8E! 9/!>9B:9.3639<! 9;! B1668/e<sup>#</sup>!! \$<! ;1>6E! 628!G?:/8B8!  
,9?/6!21.! .61687E!cm1<H623<5! ?<78/!628! .?<!6216!3.! B178!OH! B1<ge!21.!628!  
: 968<631=69!08! : 168<6!8=3530=8"<sup>L</sup>!

G8>639<!A#D!e!c<908=6HEe!/8f?3/8.!628!3<08<639<!08!<8F"<sup>M</sup>!!\$<!9628!/F9/7.E!  
9<8!>1<<96!90613<!1! : 168<6!9<68>2<9=95H!1=/817H!3<18Q3.68<>8%!! ]<3<08<639<!  
6216!798.!<96! .163.;H!623.!/8f?3/8B8<6!3.! .137!69!08!c1<63>3: 1687e<sup>I</sup>!! [9/!1<!  
3<08<639<69!c1<63>3: 1687e!628! : /8039?.!68>2<9=95H!W/8;8//87!69!1.!c: /39/!  
1/6e!B?.6!>9<613<!808/H!8=8B8<6!9;!628!3<08<639<!083<5!>=13B87"<sup>P</sup>!

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! D"%! 4/8<<8/!0! - 1<.9<E!"\_ "+%G%IMAXE!M"L!WAXI!Y%!  
% DL=% 6 /I9E!M!I!+ %G%!16!XD!  
! DM%! "M!+%G% , %h!A#A!WD#ADY%!  
! DI%! &7=%h!A#D!  
! DP%! &7=%h!A#"!  
! D\_%! &7=%h!A#A!  
! DX%! &7=%h!A#D!  
! "#%! &7=%h!A#"!  
% "A=% ?<H=E!+<3687!G6168.!0%! ] 71B.E!"\_ "+%G%"XE!L\_!WAXI!Y%!  
! "D%! "M!+%G% , %h!A#A!  
% ""=% &7=!  
! "L%! \*31B9<7!0%!, 21V/101/6HE!LLP!+%G%"#"E!"#X!WAX\_#Y%!  
! "M%! "M!+%G% , %h!A#D!  
! "I%! ,8=8/361.! '8>2. %R67%!0%! (>VF8=!!\$<6g=!, 9/:%E!AM#[ "%7!A"MLE!A" IA!W [ 87%!, 3/%!AXX\_!Y%!  
% "P=% &7=!

""L! 2UT@V! ?2@?B8%)D! %B?W&?!! di9=!!LX!

G8>639<!A#"!/8f?3/8.!6216!628!3<08<639<!<9!08!c90039?.%e"-!! ] <l3<08<639<! 3.! c90039?.e! 3;! 1! :8/.9<! 9;! c9/73<1/H! .V3=e

D#D#b!!!

""I! 2UT@V! ?2@?B8%)D! %B?W&?!! di9=!!LX!

69!=851=1!<1=H.6!j1B8.! , 9.5/908E<sup>MX</sup>!628!<?B08!/9;!G8>639<!A#A!/8`8>639<.!3<!

D#D#b!!!2>&?8@&A&>% . B&8>&. ) ?2%CD6DE&8E%. D@?8@%2F2@?6!" "P!

+ =63B168=HE!628! , 9?/6!28=7!6216!628! ( 23@903?B!01>68/31!B3Q6?/8!F1.!<96!  
:168<6!8=3530=8! .?0`8>6!B1668/%<sup>I</sup>-!! ' 28! , 9?/6g.!1<1=H.3.!F1.!>8<68/87!1/9?<7!  
628!>9<68<639<!6216!S1=9!\$<9>?=1<6!F1.!1668B :63<5!69! : 168<6!1!c : 28<9B8<1!9;!  
<16?/8e!08>1? .8!628!/8. ?=61<6!>9B03<1639<!737!<96! : /97?>8!1!<8F! : /9 : 8/6H!9;!  
628!01>68/31!<sup>IX</sup>!!G35<3;3>1<6=HE!628! , 9?/6! .61687T!

' 28! f?1=3638. !9; !628. 8!01>68/31E! =3V8!628!2816!9; !628! .?<E!8=8>6/3>36HE!9!/628!  
f?1=3638. !9; !B861=.E!1/8! : 1/6!9; !628!.69/829? .8!9; !V<9F=8758!9; !1=!B8<3! ' 28H!  
1/8! B1<3;8.61639<.! 9; ! =1F.! 9; ! <16?/8E! ;/88! 69! 1=! B8<1<7! /8.8/087!  
8Q>=? .308=H!69!<9<8%!Z8!F29!73.>908/ .!1!23628/69!?!<V<9F<! : 28<9B8<9<!9;!  
<16?/8!21. !<9!>=13B!69!1!B9<9 : 9=H!9; !36!F23>2!628!=1F!/8>95<3@8. <sup>P#</sup>!

] 773639<1=HE!628! , 9?/6! : =1>87! .35<3;3>1<8!9<!628! : /3<3 : =8!6216! ;9/!1!  
73.>908/H!69!08! : 168<610=8E!c36!B? .6!>9B8! ;/9B!628!1 : : =3>1639<!9; !628!=1F!9;!  
<16?/8!69!1!<8F!1<7!?.8; ?=!8<7e<sup>PA</sup>!

""\_!

2UT@V! ?2@?B8%)D! %B?W&? ! !

di9=!!LX!

7868>63<5! B?61639<.! 3<! 628! 58<8.! 1<7!>9?=7! 801=?168! 628! : 1638<6g.! /3.V! 9;  
7808=9:3<5!0/81.6!1<7!901/31<!>1<>8/%PM!

' 28! - H/317! : 168<6.! 628B .8=08.!>=13B! 6F9! 6H: 8.! 9;! 789QH/309<?>=83>!  
1>37! W\* & ] Y! .8f?8<>8.T! 3.9=1687! 58<9B3>! \* & ] ! 1<7!>9B : =8B8<61/H! \* & ] !  
W>\* & ] Y%P! !\$.9=1687! 58<9B3>! \* & ] ! /8;8/ .! 69! 628! \* & ] ! .>38<63.6. ! 8Q6/1>6! ;/9B!  
>8=. ! ? .3<5! F8=! V<9F<! =109/169/H! B86297.%PP! ! \$.9=1687! 58<9B3>! \* & ] !  
>9<613<. ! 1<378<63>1= ! <?>=896378!. 8f?8<>8! 1. ! F9?=7! 08! ;9?<7!



"L#!

2UT@V! ?2@?B8%)D! %B?W&?! !

di9=!!LX!

:1>V158! 628! /8. ?=6.%<sup>A#L</sup>! ! +.3<5! 628! =953>! ;/9B! A3+L% , \$9( "#\$ 'E! 628! , 9?/6!  
/81.9<87!36!F1.!<9!1>6!9;!3<08<639<!;9/! - H/317!69!9>168!628!4 ( , ]!58<8.!1<7!  
.8: 1/168!628!58<8.!;/9B!36.! . ?//9?<73<5! B 168/31=<sup>A#M</sup>!! \$6! F1.!1! B8/8!1>6!9;!  
73.>908/H!3<. ?;;3>38<6!69!/8<78!/628!>9B : 9.3639<!9;!B 1668/! : 168<6!8=3530=8<sup>A#1</sup>!!  
' 2?.E!`?.6!=3V8!628!>=13B.!3<!A3+L% , \$9( "#\$ 'E! - H/317g.!>=13B.!c;8=!.f?1/8-H!  
F3623<!628!=1F!9;!<16?/8!8Q>8 : 639<%<sup>A#P</sup>!

\$<!1773639<!69!73.>? . .3<5!:/8>878<6E!628! , 9?/6!28=7!628!3.9=163<5!:/9>8. .!  
36.8=;!798.!<96!/8B908!628!3.9=1687! \* & ]! .85B8<6!;/9B!628!=1F!9;!<16?/8!  
8Q>8:639<%<sup>A#</sup>! ! G: 8>3;3>1=HE! 628! ;1>6! 6216! 628! 3.9=163<5! :/9>8. .! /8. ?=6.! 3<!  
.808/87!>28B3>1!09<7.!628/80H!>/8163<5!1! :/97?>6!6216!798.!<96!9>>?/!3<!  
<16?/8!3.!3<. ?;;3>38<6!69;!3<7!628! :/97?>6! : 168<6!10=8! .?0`8>6! B 1668/%<sup>A#X</sup>!! ' 28!  
, 9?/6! /81.9<87! 6216! - H/317! F1.!>9<>8/<87! F362! 628! 58<863>! 3<;9/B 1639<!  
/1628!/621<!628!.6/?>6?/1=>21/1>68/3.63>.%<sup>A#</sup>!!\$;!623.!F8/8!28=7!69!08! . ?;;3>38<6E!  
1!cF9?=7C08!3<;/3<58/e!>9?=?!B 8/8=H!3.9=168!628!8<63/8!4 ( , ] A!1<7!4 ( , ] D!  
58<8.!F362!1<!1773639<1=!<?>=896378!69!10937!3<;/3<58B8<6<sup>AAA</sup>!!\$<!793<5! 9E!628!  
\* & ]! .85B8<6! F9?=?! 68>2<3>1=H! 08! 1! 73;;8/8<6! .6/?>6?/8E! 0?6! 628! 58<863>!  
3<;9/B 1639<18<>9787!3<!628! \* & ]! F9?=?!08!378<63>1=<sup>AAD</sup>!! ' 2?.E! 7##! O\*+\*O\*!  
.6/?>6?/1=>21<58.!>9?=?!<96!H38=7!628!3.9=1687! \* & ]! : 168<6!8=3530=8<sup>AA</sup>!

[9=9F3<5! 628! 73.>? . .39<! 9;! 3.9=1687! \* & ] E! 628! , 9?/6! :/9>88787! 69!  
73.>? . .!628! : 168<6!>=13B.!73/8>687!16!> \* & ] <sup>ALL</sup>!! ' 28! , 9?/6!28=7!>\* & ] F1. !  
: 168<6!8=3530=8! ?<78!/G8>639<!A#A<sup>AM</sup>!! ' 28! , 9?/6! .61687E!c628!=10!68>2<3>31<!  
?<f?8.639<10=H!>/8168.! .9B8623<5!<8F!F28<!>\* & ] !3.!B178!e<sup>AA1</sup>!!Z9F808/E!  
628! , 9?/6!>=1/3;387!6216!>\* & ] !6216!F1.!B8/8=H!1!c.29/6!.8/38.!9;! \* & ] e!F362!

D#D#b!!!!2>&?8@&A&>% . B&8>&. )?2%CD6DE&8E% . D@?8@%2F2@?6!"LA!

>=%A3+L%, \$9("#\$'%/+7%6I\$/7!\*+>9+;I\*5(

'28!29=73<5!;/9B!6I\$/7!6216!>\*&J!3.! :168<6!8=3530=8! . ?0`8>6! B1668/!  
>9<;-3>6.! F362! 628! 29=73<5! ;/9B!



D#D#b!!!2>&?8@&A&>% . B&8>&. )?2%CD6DE&8E% . D@?8@%2F2@?6!"L"

"!;166H!1>37.%"M!! - .%!421516g.!>=13B87!;9/B?=1639<!3.!/8:/8.8<616308!9;!628!  
>9<;=3>6! >/81687! OH! 6 I\$\*/7! 1<7! A3+L% , \$9("#\$'! 08>1?.8! 36! >9<613<.! 1!  
>9B03<1639<! 9;! <16?/1=: /97?>6.E! 1.! 3<! A3+L% , \$9("#\$'E! 1<7! 21.! >=13B!  
=3B361639<.! F23>2! :/90378! .6/?>6?/1=>21/1>68/3.63>.! 6216! 73.63<5?3.2! 628!  
;9/B?=1639<!;/9B!1!<16?/1=: /97?>6E!1. !3<!6 I\$\*/7!! ' 28!>9B03<1639<9!;<16?/1=  
:/97?>6.! 1/8! ;166H! 1>37.! 1<7! 628! >=13B! =3B361639<.! F23>2! 73.63<5?3.2! 628!  
;9/B?=1639<! ;/9B! ;166H! 1>37! >9B03<1639<.! ;9?<7! 3<! <16?/8! 1/8! 628! >=13B!  
8=8B8<6.! c79.158e! 1<7! c>1.3<5.! :/90373<5! >9<6/9=87! 78=308/H!e^A^1! ! ' 28!  
/8=801<6!>=13B!16!3..?8!3.!/8:/97?>87!08=9FT!

IM! ]!:=3:37C>9<613<3<5!;9/B?=1639<E!>9B:/3.3<5!1!79.158!9;!9B851CI!1<7!  
9B851C"! ;166H! 1>37.! 16! 1<! 9B851CI! 69! 9B851C"! /1639! 9;! LTA! 9!/ 5/8168/E!  
>9<613<87! 3<! 9<8! 9! B9/8! >9B : =8B8<63<5! >1.3<5.! :/90373<5! >9<6/9=87!  
78=308/H! 9;! 628! ;9/B?=1639<! 69! 1! .?0`8>6E! F28/83<! 16! =81.6! 9<8! >1.3<5!  
>9B:/3.8.!1<13<68/B3Q6?/8!9;!:=3:37.!;/9B!73;;8/8<6!.9?/>8.E!1<7!F28/83<!

WAY!9B851CI!;166H!1>37.!1/8!LCPM p!OH!F83526!9;!6961=!:=3:37.!1<7!9B851C"  
;166H!1>37.!1/8!#%AC"# p!OH!F83526!9;!6961=!:=3:37.!1/9!

WDY!9B851CI!;166H!1>37.!1/8!<96!B9/8!621<L#!5/1B.%"P!

' 28! [ 878/1=! , 3/>?36!1;;3/B87!628!K168<6! ' /31=!1<7! ] : : 81=!491/7g.!W628!  
c491/7eY!/8`8>639<.!9;!628!>=13B.!1.!083<5!1<63>3: 1687!1<7! : 168<6!3<8=3530=8!  
. ?0`8>6!B1668/!/?<78!/G8>639<!A#A%"-!! ) <=H!628!G8>639<!A#A!/8`8>639<1!<>6#42172038g

"LL!

2UT@V! ?2@?B8%)D! %B?W&? ! !

di9=!!LX!

;9?<7!3<!<16?/8%!! ' 28/8;9/8E!628!B8/8!;1>6!628!>=13B!/8f?3/8.!1!c79.158e!3<! c>1.3<5.e! .29?=7!/8<78!/628!>=13B! : 168<6!8=3530=8! .?0`8>6!B1668!/08>1?.8!1! 79.158!9;! .?>2!1!;9/B?=1639<!3<!1!>1.3<5!3.!>8/613<=H!<96!;9?<7!3<!<16?/8%!! \ 28628!/9!/<96! - .%! 421516g.!3<08<639<!3.! .35<3;3>1<6=H! B9/8!3.!3BB168/31= ?<78!/628! 6 I\$\*/7%1<1=H.3.%!

Z9F808/E!628! 6 I\$\*/7!1<1=H.3.!>9<;=3>6.!F362!1!A3+L% , \$9("#\$'!1<1=H.3.%!! \$<! A3+L% , \$9("#\$'E! 628! 01>68/31! >9B03<1639<! F1.! 28=7! : 168<6! 3<8=3530=8! 08>1?.8!628!/8.?=6!<6!>9B03<1639<!737!<96!>/8168!1!<8F!>21/1>68/3.63>!9;!628! 01>68/31!;9?<7!3<!<16?/8%<sup>ALA</sup>!! ' 28!491/7!>9?=7!/8`8>6!628!>=13B.!9<!628!01.3.! 6216628!>=13B!<3B361639<.!79!<96!>/8168!1!<8F!>21/1>68/3.63>!9;!628!<3:37.!;9?<7! 3<!<16?/1=!.9?/>8.%<sup>ALD</sup>!!\$<!;1>6E!628!491/7!.61687E!c6216!628! ] : : =3>1<6!21.!<96! .29F<! 6216! 628! >=13B87! B3Q6?/8.! 1/8! 1! m6/1<.;9/B1639<g! 9;! 628! <16?/1= :/97?>6.E!9!/6216!628!>=13B87!B3Q6?/8.!2108!:/9:8/638.!<96!;9..8..87!0H!628.8! :/97?>6.!3<!<16?/8%<sup>AL</sup>!!&808/628=8..E!628!491/7g.!6168B8<6!35<9/8.! 6 I\$\*/7%!! G:8>3;3>1=HE! 628! 491/7! 908/=99V.! 6216! 6 I\$\*/7! 737! <96! /8f?3/8! c628! >=13B87



"LI!

2UT@V! ?2@?B8%)D! %B?W&?! !

di9=|LX!

:/9: 8/6H!9;!01>68/31!1<7!:1>V158!628!/8.?6.E<sup>AML</sup>!1<7!628/8;9/8!628!01>68/31!  
 >=13B!.!c;8=!.f?1/8=H!F3623<!628!=1F!9;!<16?/8!8Q>8:639<|e<sup>AMM</sup>!A3+L%, \$9("#\$ '!  
 3B: ?687!36.!3B:/9: 8/!>21/1>68/3@1639<!9;!628!: /97?>6.!9;!<16?/8!79>6/3<8!3<69!  
 628!6 I\$\*/7!29=73<5E!/8.?63<5!3<!>9<;?.39<|69!628!: 168<6!>9B B ?<36H%!  
 ' 2?.E!69!/8.9=08!628!B3.>21/1>68/3@1639<!9/353<163<5!;/9B!A3+L%, \$9("#\$ 'E!  
 628!G?: /8B8!, 9?/6!<887.!69!1>>8:6!1!c:/97?>6.!9;!<16?/8e!>1.8!;9/!>8/639/1/3!  
 1<7!>=81/=H!29=7!3<08<639<.!F23>2!8Q23036!:/9: 8/638.!:9..8..87!OH!628!: /97?>6!  
 ;/9B!F23>2!36!3.!78/3087!79!<9E!\*N'9%:/5(9E!;1=!!?<78!/628!: /97?>6.!9;!<16?/8!  
 8Q>8:639<E! 628/80H! 908//?<3<5!A3+L%, \$9("#\$ %! !G?>2! 1! 29=73<5! F9?=7! <96!  
 73.6?/0!628!. ?O`8>6!B 1668/!8=35303=36H!:/3<>3:=8.1;/9B! 6 I\$\*/7!1<7!1=803!68!628!  
 A3+L%, \$9("#\$ 'C 6 I\$\*/7!68<.39<!! ] .!1!/8.?6E! - .%! 421516g.!3<08<639<! F9?=7!  
 628<!>=81/=H!08!: 168<6!8=3530=8%!! ] 6!1!B3<3B?BE!628!. ?O`8>6!B 1668/! F9?=7!08!  
 : 168<6!8=3530=8!08>1?.8!628!>=13B87!>9B03<1639<!798.!<96!9>>?/!3<1<16?/8%

D#D#b!!!!2> & ? 8@&A&>% . B&8>&. ) ?2%CD6DE&8E% . D@?8@%2F2@?6!"LP!

:/97?>6.!9;!<16?/8%!! - .%!421516g.!>9<;?.39<!1.!69!F2H!28/!:168<6!F1.!.?0`8>6!  
B1668/!3<8=3530=8! .29?=7!2108!088<!1=8031687!OH!628!G?:/8B8! ,9?/6!OH!  
8Q:/8..=H!908//?=3<5!