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# Be Di e a ion P i e Winne

*MSc Regulation 2019/20*



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,16A=HH98 6M @ =G5 5FH9G=

/ &5GH9FG[ 8=GG9FH5H=CB

295F

0CF8 7CIBH

(897')99 DC@=H=75@ =B89D9B89B79 C: F9;I@5HCFM 5;9B7=9  
;CJ9FB5B79 5B8 H<9 ACGH GHI8=98 :95HIF9 C: F9;I@5HCFG  
:FCA BIA9FCIG H9BG=CBG 5B8 5A6=9I78B99DHHA96B5C#B7H<9  
57589A=7G <5J9 9LDF9GG98 G79DH=7=GA CJ9F H<9 75D57=H  
F9;I@5HCFM =B89D9B89B79 HC =HG DF57H=79 G#B79D89F-49C I  
@=B;9F=B; ;5D 69HK99B H<9 H<9CFM 5B8 DF57H=79 C: =B89  
GH5;B5H=CB CF 897@=B9 " 5F;I9 H<5H F97CB79DHI5@=G=B;  
H<9 :=9@8 DFCJ=898 H<5H 78C B#5B95CB5 @65B8CAB9B=GBG :5  
9A698898 H<9CFM C: =B89D9B89B79;K<G-9<5B8 KCF? K=H<  
=BH9F57H=CBG 5B8 7<5@ @9B;9G H<5H F9;I@5HCFM=5;;9B7=90  
DC@=H=75@ 57HCFG

#./8 6' - + /8 2+,9 ;52:49'7/2> (2'41

#! \$ # # ! # \$ ! ! % &  
# ! ( # \$ ( " "  
,95F7<=B; :CF 7CAACB ;FCIB8G  
5H5 5B8 A9H<C8  
+9GI@HG 5B8 5B5@MG=G  
=G7IGG=CB  
! # # # ! ( ! #  
"B89D9B89B79 =G ACF9 H<5B 5B =BGH=HIH=CB5@ DFC79  
"B89D9B89B79 5G 5B 5A6=;ICIG F95@=HM  
#& " # # ! \$ % # # # ! (  
#" ! # \$ " #  
-<9 GI779GG9G 5B8 G<CFH7CA=B;G C: H<9 G7<C@5FG<=  
-CK5F8G 5B 9A698898 H<9CFM C: =B89D9B89B79  
\$"  
  
& #  
!"  
  
' # !% &" # ( # "  
' ' # # \$ (" "

#./8 6' -+ /8 2+,9 ;52:49'7/2> (2'41

! ! " #

G C: G H<9 9L<5IGH=CB C: H<9 YDCG=H=J9Z K9@:5F9 GH  
=B DI6@=7 A5B5;9A9BH <5G 9@=7=H98 5 DFC:CIB8 G<=:H =B;  
FCK=B; ;CJ9FBA9BHG =B IFCD9 DF=J5H=G98 :CFA9F@M G  
F97CIFG9 HC 7CBHF57HI5@=G5H=CB 5B8 89@9;5H98 9LH9B  
GD97=5@=G98 6C8=9G 0<=@9 8=G5;;F9;5H<C5B5BB;9DC7=H@  
DI6@=7 ;CJ9FBA9BHG 5B8 -5@6CH 5 89@9;5H:HCBOOK:FB9JC  
7CAD9H9B79G HC =B89D9B89BH CF EI5G= =B89D9B89BH 6C8=  
5;9B7=9GZ K<=7< ;5J9 F=G9 86>KB9 YF9;I@5HCFMIGH89@9;5  
F9;I@5HCFM DCK9@GAK=9F98 =HG=H75C@AM=7 A5HH9FG F9;I@5H  
GDF958 69MCB8 H<9G9 6CIB85F=9G +9;I@5HCFM 5;9B7=9G 5  
58>I8=75H=CB FI@9A5?=B; 5B89BFC5G79H9B8B899=FF=B  
H<9A HC 697CA9 5 YH<=F8 :CF79Z =B H<9 F9;I@5HCFM 5F9B5  
=B8IGHF<59G<9F -<9 GDF958 C: + G <5G H<IG 699B 5 7  
F9;I@5HCFM GH5H9 5B8 H<9=F =B89D9B89B79 =G F97C;B=G98  
( . \$ CJ9FBA9BH G D#17G G=GB Y/49+74'9/54'2 57-  
7+)533+4\* /9 '-+4)/+8 8++1 /9 -5;+743+498 8:66579 /9 '4\*  
=B89D9B89B79 GH5B8G 5G CB9 C: H<9 ACGH GHI8=98 HCD=7C

-<9 G7<C@5FG<=D <5G :C7IG98 AI7< C5HC<9GYK=8825BB89B99Y  
5F9 :=FGH 6CH< :IB7H=CB5@ 5B8 7CBH9LHI5@ F95GCBG :CF  
HC =B89D9B89@H=5C8=9G<5H7<9@9;5H=CB K5G ACH=J5H98 6M  
5GGIADH=CB H<5H 89DC@=H=7=G=B; A9>I@F5HCFM5BG5B99I6DM9  
KCI@8 GC@J9 H=A9 =B7C8G79G H9B7<9GB588DC@@@;=75@B8CA  
&7&9B5A=B =@5F8= %9JM 5B8=7D=5@@@9F@GC <C@97  
H<9 DC@=H=75@ F9GDCBG=6=@=HM :CF H<9 A5B5;9A9BH C:  
HCK5F8G F9;I@5HCFM<5;9B7=9GHCB9 ,K99H CBH9LHI5@  
9GH56@=G<A9BH C: F9;I@5HCFM 5;9B7=9G =B7@I8=B; 5 D  
#CF85B5 %9J= 5IF 5B8 = &5FTB %9J= 5IF +I::=B  
7I@HI29G=@?5;=H 5B8 5B8GJ9B=99B=9G G5F75=D5B75=@<5B8 I=

09 5@GC ?BCK AI7< 56CIH <CHK98-BH9DQB8;5B-7998=GM, F5  
5;9B7=9G B 9LH9BG=J9 @=H9F5HIF9 <5G :C7IG98 CB A95GIF  
5;9B7=9G = 9 H<9 8=GDCG=H=CBG 9BGIF=B; H<9=F =B89D9  
CFF=;5B 5B8 +9J9GN =@5F8= !5BF9HHM 5B8 \$CCD  
"H =G 7CBG9BGI5@ =B H<9 @=H9F5HIF9@H&5H9FA&B5BHC  
Y89 :57HC =B89D9B89B79CZ A5B9D9B89B79FCA<9 G7<C@5FG<=D  
K95@H<C: BCB @9;5@ 89H9FA=B5BHG C: =B89D9B89B79 =B7  
BIA69F C: J9HC D@5M9FG H<9 7<5F57H9F=GH=7G C<9H<9 CF;  
D5FH=7=D5H=CB C: H<9 5;9B7M =B B9HKCF?G C: F9;I@5HCFG  
DC@=H=75@ H=9G C: A5?9F9B7M&9N897&5F=CB #CF85B5 5B8  
!5BF9HHM 5B8 \$CCD "B;C@8 /5FCB9 5B8 ,HC?A5B  
0CFG<5A 5B8 =GB9F +CAA9@ 5B8 /9F<C9GH J5B -<  
29G=@?5;=H '9J9FH<9@9GG H<9 7CBB97H=CB 69HK99  
=B89D9B89B79 =G BCH 7@95F BCF 7CBG9BGI5@ 0<=@9 GCA  
=ADCFH5F9B9BH9F &5;;9HH= CH<9FG 5F;I9 H<5H :CF  
89H9FA=B=B; H<9 @9J9@ C: =B89D9B89B795HIM95I85\$IC  
/9F<C9GH 9H 5@ &CF9 F979BH@M H<9;F97A;57MH=C  
&5>CB9 K<=@9 DCH9BHH<9@7C9M575H4B;HC Y7@5K657?Z D  
DC@=H=75@9A55B9F9F<569@98 HC 5 F97C;B=H=CB C: H<9 B9  
7CBHFC@ H<CI;<&59H 7CBHFC@@I98M C: =B89D9B89B79 <5G  
CF=9BH98 HCK5F8G H<9 =GGI9 C: 65@5B7EB; 7CBH5FC5@N5B8  
<F=GH9BG9B 5B8 %V;F9=8 %C8;9 5B8 ,H=FHCB /9F<  
  
-<9 G7<C@5FG<=D CB =B89D9B89B79 <5G<HG<5GG6197B IDFK9@9F  
F9A5=BG :5F :FCA 7@95F K<5H =B89D9B89B79 A95BG 9L57H@  
GI6GH5BH=5@ 89:=B=H=CB C: =B89D9B89B7949\*B-79-4\*B-84)5/G/8A5B\*M,(K)  
)54897:)9 95 )54)+69:'2/8+ '48F56B+7'9/54-298F9Z5F9 5@GC @=B;  
H<9 @=H9F5HIF9 5FCIB8 H<9 7CB79DH C: =B89D9B89B79 &5  
Y=B89D9B89B79Z F9:9FF=B; HC75@;@@8H-CF89D59BB9B9IG559B7=  
=B89D9B89BH 5;9B7=9GZ =H7589G=BF9 HC<59B@'M+7F> /4\*+6+4\*  
/4+=')9 :489'(2+ '4\* ;'7/+99H9F54)-@9ZCH<9FG F9:IH9 H<9 H9F





89:=B=H=CB C: =B89D9B89B79 HC 5GG9GG H<9=FCBL=6A9B79  
=B89D9B89B79 -<9 7CB79DH C: =B89D9B89B79 H<IG :5=@ G I  
F9;I@5HCFMB5F9B7=9KG B; 7F=H=75@@M H<9 @=H9F5HIF9 CB =  
=BH9@@97HI5@ 5B8 A9H<C8C@C;=75@ F=7<B9GG H<9 G7<C  
B5A9@M 9L79GG=J9 ;9B9F5@=G5H=CB 58G=5G85;D9B69BD@5  
K=H< H<9 H<F95H C: 897@=B9 CF GH5;B5H=CB " 5F;I9 H<5H  
CDDCFHIB=HM :CF F9>IJ9B5H=CB -C 69 :FI=H:I@ GI7< F97C  
A9BH=CB98 5GGIADH=CBG 5B8 6=5G9G HC 89:=B9 5B 9A69  
F97C;B=G9G 5B8 KCF? K=H< H<9 D9FA956=@=HM 5B8 @=A=H  
5;9B7=9G 5B8 CH<9F GH5?9<C@89FG " H<IG <CD9 H<5H 6M  
H<9 @=H9F5MCFH9ABH=7 K5M 5B8 =89BH=:M=B; 5B8 9LD@5=B=  
7CBHF=6IH9 HCB7<A@89CB;=B5B9FGH5B8=B; C: H<9 =B89D9B8  
5;9B7=9G -<9 8=GG9FH5H=CB =G CF;5B=G9875B98C@@@HK<9  
7CB79DHI5@ 5B5@MG=G C: =B89D9B89B79 -<9 H<=F8 G97H=  
DF57H=79 5B8 IB7CJ9FG H<9 @=A=H5H=CBG C: H<9 H<9CF9H.  
DFCGD97HG C: H<9 G7<C@5FG<=D CB =B89D9B89B79 69HK9  
8F5KG GCA9 D9FGD97H=J9G HC F97CB79DHI5@=G9 =B89D9B8

% ! %

-C =BJ9GH=;5H9 <CK =B89D9B89B79 <5G 699B 89:=B98 5B8 GI  
" F9@M CB 5 BCJ9@ A@B7CB@5@;@5B598M6M=\$C%DC5;B85B68;9  
\$CCD -<=G A9H<C8C@C;M 5@@CKG A9 HC :C7IG CB H<9 5  
@=H9F5HIF9 -<9 5GGIADH=CB =G H<5H H<9 K5M G7<C@5FG  
F9DF9G9BH5H=J9 C: H<9=F 7CB79DHI5@=G5H=CB C: =B89D9B  
8=G5;F9H@989H=B9 H<9 7CB79DHI5@ 8=A9BG=CBG " K=@@ =B  
G95F7< 5B8 =89BH=:M 57589A=7 5FH=7H@5@5B5@MG=G C 7.

0<=@9 =B89D9B89B79 =G CB9 C: H<9 ACGH GHI8=98 7CB7  
7<5F57H9:FHG9=F79;I@5HCFM GH5H9 =H =G :5F :FCA 7@95F K  
=B89D9B89B79 HC 697CA9 )C@A5;H7 5B87!9D9Z FC58@M  
@=H9F5HIF9 5;F99G H<5H =B89D9B89B79 =G 56CIH GCA9 ?=B  
5B8 DC@=H=7G H<CI;< H<9 :CFA6CHG+G:AHM9H9?9JF5FHMFK=89  
5G DF9J5=@=B; 6M 89;F99 H<CI;< H<9 A9F=75B @=H9F5HIF9  
C: =B89D9B89B79 5F9 <CK9J9F 5F95G C: 8=G5;F99A9BH K<=  
H<5H " K=@@ =BJ9GH=;5H9 -<9G9 8=A9BG=CBG 7CB79FB H  
=B89D9B89B79 5B8 H<9 8=GH5B79 C: H<9 F9@5H=CBG<=D

&CGH HF58=H=CB5@@M =B89D9B89B79 =G G99B 5G 5B =BG  
77CF8=B; HC H<=G J=9K =B89D9B89B79 =G 5B =BGH=HIH=  
IB=@5H9F5@@M 89@9;5H9 H5G?G 5B8 DCK9FG HC =B89D9B  
9@9;5H=CB C: =B89D9B89B79 5B8 =A5M=A5BG=CBG H<9 GH5HIG C  
5B8 H<9 6C5F8 A9A69FG H<9 8=GDCG=H=CBG 7CB79FB=B; H<  
5B8 D5F@=5A9BH H<9 9LH9BH C: :=B5B7=5@ 5B8 CF;5B=  
7CAD9H9B7=9G ;F5BH98 HC H<9 F9;I@5HCF =@5F8=  
K=89GDF958 =B H<9 @=H9F5HIF9 D9F<5DG D5FH@M :CF DF57  
!5BF9HMM 5B8 \$CCD !CK9J9F A5BM 5IH<CFG <5J9 D  
D9FGD97H=J9 9G=89G H<9 56G9B79 C: 7C9BG9B G5B F9BHMM 95  
\$CCD =HG 9LC;9BCIG 5B8 HCD 8CKB 7<5F57H9F =G EI9G  
H<9=F =B89D9B89B79 69MCB8 K<5H K5G =BH9B898 6M 9@97H  
:=L98 =B H=A9 5B8 F5H<9FC59=B; H@MH89MBCA@7H5=775@ 5B8 F9

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"B F9GDCBG9 HC H<9G9 @=A=H5H=CBG G7<C@BBG;9BC9GF;I  
8MB5A=7 5B8 6CHHCA ID =BGH=HIH=CB5@ DFC79GG -<=G  
H<FCI;< =BGH=HIH=CB5@ @9BG9G 6IH :C7IG9G CB H<9 9::97H  
=BGH=HIH=CBG "B89D9B89B79 H<IG 9LH9B8G 6A MB-BG HFCMA  
F9@5H=CBG<=D "B89D9B89B79D=69758G99BICIG5B8H5H@HH:FCA  
=H F=G9G :FCA H<9 9LH9FB5@ 9BJ=FCBA9BH C: F9;I@5H  
D@5M 5B 57H=J9 FC@9 =B 89:=B=B; H<9 H9FAG C: H@97F =B89  
5FD9BH9F \_D5J98 H<9 K5M :CF H<=G D9FGD97H=J9 6M  
5;9B7=9G 75B 57EI=F9 ACF9 5IHCBCAM H<5B =BH9B898 CF ;  
89J9@CD=B; H<9=F F9DIH5H=CB 5B8 6I=@8=B; 5B@GKCF?;G98B  
H<5H H<9 7F95H=CB C: 5 F9;I@5HCFM 5;9B7M =G :C@@CK98  
F9@5H=CBG<=DG 69HK99B F9;I@5HCFG 5B8 DC@=H=7=5BG 5  
89@9;5H=CB -<9 B9K F9@5H=CBG<=D A5M 9JC@J9 =B ACF9  
89D9B8=B; CB H<9 DF9:9F9B79G 5B8 GHF5H9;=9G C: 9@97H  
D9FGD97H=J9 A5=B@M 89J9@CD98 =B H5G @ @H9F=5H9IF 5 CB B6H  
=BH9F9GH =B H<9 G7<C@5FG<=D &5;;9HH= 5B8 /9F<C9GH

9D5FH=B; :FCA H<9 =BGH=HIH=CB5@ B5HIF9 C: =B89D9B89  
7C;B=H=J9 DFC79GG "B89D9B89B79 9L=GHG 6975IG9 C: 5  
IB89FGH5B8=B; C: K<5H Y69=B; =B89D9B89BHZ A95BG :CF 5  
B5HIF9 75FF=98 CIH 6M =B89D9B89BH 6C8=9G :=FGH A97<5  
=BH9F57H=CBG C: F9;I@5HCFM GH5?9<C@89FG H<FCI;< K<=  
5;F99A9BHG +9;I@5HCFM 7CBJ9FG5H=CBG 5@ @GK6GH7H?9JC@  
IB89FGH5B8=B; C: H<9 A95B@57C: =B89D9B89B89A97<5B=GA  
H<9 @=H9F5HIF9 CB 79BHF5@ 65B?G 5B8 F9@=9G CB 7CBJ9B  
H<5H =G G99B 5G A5B85HCFM G /HFA9I @;9B7=9G K<=7< A5M  
=B89D9B89BH A5M GH=@@ 69 =B89D9B89BH =B DF57H=79 697  
DC@=H=75@ 57HCFG :FCA 5HH9ACD85B; 57H =JBH9B9FC9: 5B 15<  
57HCFG KCI@8 F9:F5=B :FCA IG=B69H59G9 B9MG<59H -BCHK9FFB  
H<=G =G BCH 5DDFCDF=5H9 CF 6975IG9 H<9M 9LD97H 5 65  
A5>CF=HM H<5H F9;I@5HCFM 5;9B7=9G G<CI@8 69 =B89D9B

5;9B7M A5M BCH 69 F=578H=79B 89B 5IGB DH =G K=89@M IB89FGH  
5;9B7M G<CI@8 69 F9GDCBG=J9 HC H<9 DC@=H=75@XDCK9F  
CF 69X=CBA5@ DFCJ=G=CBG 5B8 =BGH=HIH=CBG 6975IG9 C:  
7C@@@97H=J9 IB89FGH5B8=B;G 5B8 9LD97H5H=CBG

CIF A5>CF 577CIBHG C: =B89D9B89B79 <5J9 H<F=J98 =B H  
GI6GH5BH=5@ 89:=B=H=CBG C: =B89D9B89B79 <5J9 H<F=J98 =B H  
577CF8=B; HC =HG DF57H=75@ 7CBG9E19B79G -<9 :=FGH 5  
G9D5F5H=CB 69HK99B F9;I@5HCFM 5;9B7=9G 5B8 DC@=H=75  
:FCA H<9 7F98=6@9 7CAA=HA9BH <MDCHA5B5;9A6B7H9F+05KB@  
57H=J=H=9G 77CF8=B; HC H<=G J=9K H<9 F9;I@5H=CB C: =A  
A5>CF=H5F=5B 5B8 9LD9FH =BGH=HIH=CBG -<=G K6HCFM=B7H  
F9;=A9G 6M 9BGIF=BFG5G9H 8CB79GDCBK 7CBG=89F5H=CBG F5  
-<9 G9D5F5H=CB C: =BH9F9GHG F9GCB5H9G K=A5>GBCHH5F9F5B  
=BGH=HIH=CBG G<CI@8 :C7IG CB DC@=7M =AD@9A9BH5H=CB  
&5>CB9 6 0=@57BCIBH H<=G DCFHF5MG F9;I@5HCF  
5DC@=H=75@ =BGH=HIH=CBG -<9=F =;BCF5B79 5B8 IBF9GDC  
7CBGH=HIH9 H<9&F@@-9FCB 8[SHFG97CB8 577CIBH 7CB79DHI  
5IHCBCAM CF YH<9 9LH9BH HC K<=7< H<9 5;9B7M 75B 897=8  
/9F<C9GH 9H 5@ "H 7CAD,F@5HCFMk5;9B7M7HICMA5C9 5H  
5B8 57H 577CF8=B; HC H<9A K=H<CIH 9LH9FB5@ 7CBGHF5=B  
GHFI7HIF5@ CF =BH9FJ9BH=CB5@ B5HIF9 -<9 H<=F8 577CIB  
F9@=5B79 B =B89D9B89BH 5;9B7M =G CB9 H<5H <5G 7CBHF  
DFCH97H=CB :FCA 8=GA=GG5@ KKBFC#B 75IG9-<9H@5:GHF5G7CF  
5K5M :FCA H<9G9 GHFI7HIF5@ 89:=B=H=CBG 5B8 7CBG=89F  
69<5J=CIF K<=7< F9:9FG HC ACF5@ E15@=H=9G GI7< 5G  
HFIGHKCFH<=B9GG CF 9L5AD@9 HBB=88:9B9B89BH579BHF5@  
+C;C:: 0=H< F9;I@5HCFM 5;9B7=9G =B89D9B89B79 A5M 69  
9J=89B79 65G9&59F5J=CIFGG9;9 ,5GFH9@9F 5G =AD5FH=

:5=FB9GG "B89D9B89B79 =G H<9B ACF9 H<5B 5 GHFI7HIF5 @  
HC H<9G9 J5@19G -<9G9 89:=B=H=CBG C: =B89D9B89B79 CJ9  
HC 5HH5=BK5=HHCBIAM9@: F9@=5B79 5G 5B 5;9B7M H<5H :95  
897=G=CBG HC 5@=;B K=H< H<CG9 =B 7CBHFC@ C: =HG G  
5IHCBCAM CJ9F@5DG K=H< 5 G9D5F5H=CB C: =BH9F9GH5B79  
:FCA DC@=H=75@ =BH9F9GHG !CK9J9F H<9 CJ9F@5D =G BC  
5;9B7M BCH HC 69 6CIB8 6M DC@=H=75@ =BH9F9GHG F9;  
F9GDCBG=J9 HC DC@=H=75@ DF9:9F9B79G 5B8 =GGI9G 5B8 G  
F9GDCBG=J9 K5G =HG CKB "B =B89D9B89B79 5G 5 GHF=7H G  
ACF9 H<5B IB6CIB8 6M DC@=H=75@ =GGI9G 5B8 DF9:9F9B79G  
G<CI@6C6@9@M 65G98 CB 9LD9FH CD=B=CB 5B8 BCH YDC  
"B89D9B89B79 5G 5 G9D5F5H=CB C: =BH9F9GHG H<IG ;C9G :I

.@H=A5H9@M 7CB79DHIB@HGG B; 7B89D9B89B79 B9=CB C: H<  
F9;I@5HCFG 5B8 DC@=H=75@ 57HCFG K=89GDF958 EI5@=:  
5B8 DC@=H=75@ 57HCFG;5=B DIB@95F5@<5BGM@BGI@CB  
8=7H=CB5F=9G 89:=B9 =BGI@5H=CB 5G H<9 EI5@=HM C: 69=F  
5@GC 7CA9G :FCA H<9 @5H=B Y/48:2'9:8Z K<=7< A95BG YHC  
5F9 =BGI@5H98 :FCA DC@=6C75@H<5B;C:FGA5M=H<IDFA95B7H9  
57HCFG HC 69=B; 7CAD@9H9@M G9D5F5H98 =GC@5H98 :FC  
GIDDCFH =B H<9 @=H9F5HIF9 +9;I@5HCFG 69B9:=H :FCA 5BI  
DC@=H=75@5FBCKI9B79 )5F8CK GI7< 5G DFCH97H=CB  
G7<C@5FG<=D <5G H<9CF=G98 5B8 7CAA9BH98 CB H<9 GHF=  
AIGH 9L9HK99B F9;I@5HCF 5B86DC@=BGF75@F5:7HCF9CBH 89G  
F9;I@5HCFG[ F9@5H=CBG<=D HC DC@=H=75@ 57HCFG =G Y5I  
IG98 HC F9:9F HC H<9 8=G5;;F9;5H98 7<5F!57CB9 C: 55@B7C+9  
J5B -<=9@ 5B8 20B+@?59=BF HC 5 @9GG 8=GH5BH F9@5  
5B8 DC@=H=7=5BG 57?BCK@98;=B; H<9 9L=GH9B79 C: =BH9

577CIBH56=@=HM 5B8 CJ9FG=;<H A97<5B=GAG CB F9;I@5HCF  
/9F<C9GH 9H 5@

" GHI8M H<9 IG9 C: H<9G9 7CB79DHI5@ 8=A9BG=CBG CB 57  
G7=9B79 DI6@=7 58A=B=GHF5H=CB @5K 97CBCA=7G A5B5  
096 C: ,7=,7=9B79G "B89L 5B8 G95F7< :CF H<9 H9FAG  
5B8 YF9;I@5H Z CF YBCB A5>CF=H5F=5BZ CF Y5;9B7MZ =E  
9B7CAD5B8=CB99? HC 75DHIF9 J5F=5H=CBG C: 7CB79DHI5@CBG  
HC 5IHCBCAM 5G K9@@ 5G J5FM=B; H9FAG IG98 HC F9:9F H  
KF=HH9B =B B;@=G< =B H<9 56CJ9 A9BH=CB98 57589'A=7 :=  
7<CCG9 HC GH5FH H<9 G95F7CB8=CB HC H<9 56CJ9 A9BH=CB98 57589'A=7 :=  
., -<9 DF57H=75@ =AD57H C: H<9G9 6CIB85F=9G =G <CK9J9I  
F9@M CB 95F@=9F DI6@=75H=CBG HC GIGH5=B H<9=F 5F;IA9

-<9 G95F7< <5G =89BH=: =98 9A C5J9H5F7K@=97G@ 9FC A BK 5 =7B; "KE H< C  
=B89D9B89B79 GH5H9 5IHCBCAM CF F9;I@5HCFM 5IHCBCAM  
5;9B7=9G F5H<9F H<5B CB =B89D9B89BH F9;I@5HCFM 5;9B7=9G  
9L7@IG=J9@M CB =B89D9B89BH F9;I@5HCFM 5;9B7=9G -<=G  
HC " 8C BCH D9F:CFA :IFH<9F G9@97H=CB 5B8 F9@M CB H  
" 5GG9GG <CK H<9 5IH<CF 7CB79DHI5@=G98' <589D-9B89CB8979  
56CJ9 -C =BJ9GH=;5H9 957< 8=A9BG=CB " <5J9 F9@=98 CB 5  
EI9GH=CBG " <5J9 89:=B98 HC 5GG9GG K<9H<9F H<9 G7<C@5I  
-56@9 DF9G9BHG H<9 8=A9BG=CBG 5B8 H<9 EI9GH=CBG " IC

-56@9 CB79DHI5@ 8=A9BG=CBG 5B8 EI9GH=

=A9BG=CE \*I9GH=CBG

'9:7+ 5, "G =B89D9B89B79 7CB79DHI5@ =B98 5B 9I  
/4\*+6+4\*+4)BGH=HIH=CB5@ DFC79GG

"G =B89D9B89B79 7CB79DHI5@ =G98E  
=BGH=HIH=CB5@ DFC79GG

"G =B89D9B89B79 7CB79DHI5@ =G98 5G 5 7C;

)5:49 5, "G =B89D9B89B79 89:=B98 =B H9FAG C: 5 G9D  
/4\*+6+4\*+4)"G =B89D9B89B79 89:=B98 =B H9FAG C: 5IHC

"G =B89D9B89B79 89:=B98 =B H9FAG C: G9@:  
"G =B89D9B89B79 89:=B98 K=H< 69<5J=CIF5@

/89'4)+ 5 "G H<9 F9@5H=CBG<=D 69HK99B DC  
7+2'9/548.56G =BGI@5F

"G H<9 F9@5H=CBG<=D 69HK99B DC  
5G 5FA[G @9B;H<

-<9 A9H<C8C@C;M DF9G9BHG HKC A5>CF @=A=H5H=CBG -<9  
5B8 A5M H<IG A=GG =B:@I9BH=5@ 6CC?GK5B9F6 @C=?A 7H9B H59F  
5FH=7@9G K9F9 89F=J98 :FCA 6CC?G CF F9@=98 CB 5F;IA9B  
B;@=G< KF=HH9B 5FH=7@9G A5M 5@G G D 95?F=C8I7@= 5I 96-55G FH  
G5AD@9 C: 5FH=7@9G K9F9 89F=J98 :FCA 6CC?G CF F9@=98 CB 5F;IA9B  
GD95?=B; 7CIBHF=9G 9 ; ,75B8=B5J=5 -IF?9M %5H=B A9F  
ACGH =ADCFH5BH CB9 =G H<5H :9K 5IH<CFG 89:=B@9GD @=7:  
=H 577CF8=B; HC H<9 8=A9BG=CBG " <5J9 =89BH=:98 " <5J9  
<5J9 699B HC <5J9 5BCH<9F F9G95F7<9F @CC? H<FCI;< H<9  
7CAD5F9 H<9 F9GI@HG 5B8 =89B5H=9M D'CH<CBK9=J9@ A@57?5 H9C  
=AD@9A9BHG H9F9B76-99B-GH9B7M 5B8 577IF57M " <5J9 89G=;

89:=B98 DF97=G9@M H<9 A95B=B; C: 957< 8=A9BG=CB 5B8  
5A6=;l=HM -<=G =B89L =G DF9G9BH98 =B DD9B8=L K=H< 9  
5@CB; H<9 F9G95F7< C: H<9 >IGH=:75H=CBG C: AM 7C8=B;  
5B8 7<97? H<9=F 7CBG=GH9B7M " 5@GC =BHFC8#7B9&<=YA=G C  
" K5G IB56@9 HC =B:9F A95B=B;:l@@M :FCA H<9 KCF8G C: H<  
H<=G GCFH K=@@ BCH 8C >IGH=79 HC H<9 GI6H@9H=9G 5B8  
:CF =H -<9 GHI8M K=@ @<F9 @-5H@ 6F@CF@ 5B@B@GA9BG=CBG C:  
=89BH=:M 5B CJ9F5F7<=B; 7CB79DHI5@=G5H=CB C: =B89D9E  
7CB79DHI5@ 5B5@MG=G K=H< 5B =B 89DH< F958=B; C: 57589  
H<9 H<9CF9H=75@ 7CB79DHI5@=G5H=CB C: =B89D9B89B79 K

"

GG9GG=B; H<9 5FH=7@9G =H HIFB98 CIH H<5H 5FH=7@9  
C: =B89D9B89B79 HC D@F5:CFB;:H@9@MB5"@MLG@G898 H<9G9 5FH=  
F98I7=B; H<9 G5AD@9 HC 5FH=7@9G -56@9 89G7F=69G H  
89:=B98 :CIF 8=:9F9BH F9GDCBG9 75H9;CF=9G 5 M@G K<9E  
8=A9BG=CB 6 A5M69 K<9B H<9 5IH<CF 8=8 BCH 9B;5;9 9LD  
7@I9G H<5H H<=G K5GX=BSIHH<CFHK@FBGH<HB?GB7;5H9;CFM A95E  
BC K<9B H<9 5IH<CF F9>97H9F@ -5H99GD:@=7=9H@HM7@F9K<9B5HK  
H<9 H<=B?=B; 5B8 8 A=GG=B; K<9B =H =G =ADCGG=6@9 HC  
=H9A



-56 @ 9 ,H5H=GH=7G D9F 7CB79DH15@ =H9A

=A9BG=CBG 5B8 =H9 29G &5M6 'C &=GG  
7CIBH

'9:7+

"BGH=HIH=CB5@ LC

"BGH=HIH=CB5@ B8

C;B=H=J9

)5:49

,HF=7H G9D5F5H=CB

IHCBCAM

,9@F:9@=5B79

&CF5@ 9<5J=CIF

/89'4)+ 5, 7+2'9/

"BGI@5H=CB

FA[G @9B;H<

,H5FH=B; K=H< H<9 B5HIF9 C: =B89D9B89B79 H<9F9 =G I  
=B89D9B89B79 =G C: =BGH=HIH=CB5@ B5HIF9 -<9 ACGH 7CA  
HCD 8CKB DFC79GG H<FCI;< K<=7< DC@=H=7=5BG ;F5BH =B8  
6CIH <5@: C: H<9 G5AD@9 F97C;B=G98 H<5H =B89D9B89B79  
DFC79GG H<FCI;< K<=7< + G 57H=J9@M G99? HC A5B5;9 H  
=B89D9B89B79 69MCB8 K<5H =G =BH9B898 CF ;F5BH98 6M 9@  
G5AD@9 9LD@=7=H@M 9B;5;98 K=H< H<=G D9FGD97H=J9 -<9  
=BGH=HIH=CB5@ B5HIF9 C: =B89D9B89B79 5B8 8=GF9;5F898  
H<9 F9:9F9B79G HC H<9 7C;B=H=J9 GCIF79G C: =B89D9B89B  
,7<C@5FG A5M F9:9F HC =H 6M <=;<@=;<H=B; H<5H =B89D9

5DDFCDF=5H9B9GG 7@CG9 H<5H<9ACF5@=BF=B7DD@9HK<7=75B<E  
=B5DDFCDF=5H9 HC =BH9A59F=55B=H< + -GF @975G 5BBF&C BHCM  
DF5;A5H=7 75@7I@5H=CB H<FCI;< K<=7< DC@=H=7=5BG =BH9  
CB F9;I@5HCFG[ =B89D9B89B79 BBG9F #989B5GH=? -<5

-IFB=B; HC H<9 577CIBH C: =B89D9B89B79 C: H<9 G5AD@  
C: =BH9F9GHG 69HK99B DC@=H=7G 5B8 F9;I@5HCFG 5B8 H<9  
8=8 BCH =B7@I89 H<5H 577CIBH C: =B89D9B89B79 "B H<=G  
=B89D9B89B79 5G 5IHCBCAM CF 5FH=7@9G K<=7< F9>97H98  
G9D5F6H=BB9F9GHG 6M 5F;I=B; H<5H F9;I@5HCFM 5;9B7=9C  
=GGI9G 5B8 57HCFG @@ H<9 5FH=7@9G 5@GC 89:=B98 =B8  
GC 9LD@=7=H@M 5B8 8=8 GC =AD@F974HF@M 6MC5F9;L5AD@9  
@5F;9 5B8 9L7@IG=J9 DCK9FG CF H<9 =B75D57=HM :CF 9@9  
"B89D9B89B79 =G 5@GC F9:9FF98 HC 5G G9@: F9@=5B79 CF  
!CK9J9F 5@ACGH <5@: C: H<9 5FH=7@9G K<=7< F9:9FF98 HC  
=B 5B =AD@=7=H CF D5FH=5@ K5M :CF 9L5AD@9 6M <=;<@=  
F9ACJ5@ CF 7CBHFC@ CJ9F H<9=F :F@B7B7@ 5B8H<I&5B K98  
@9GG 9LD@=7=H 577CIBH C: =B89D9B89B79 K<9B 7CAD5F98  
A=BCF=HM C: 5FH=7@9G =B7@I898 69<5J=CIF5@ :95HIF9G =B  
A5=B 8=::=7I@HM K5G H<5HH49G@ C: H5B=CB7@5HFFK<9H<9F9 D  
C: 69=B; =B89D9B89BH 5B =BDIH CF =: H<9M 5F9 5 7CBG9EIS  
=H K5G 7@95F@M 5B =BDIH " 7C898 YM9GZ K<9B =H K5G 5C  
K<9BK5B DF9G9BH 6IH IB7@95F K<9H<9F =H K5G 5B =BDIH CF  
5FH=7@9G =B7@I898 69<5J=CIF5@ EI5@=H=9G HC 89:=B9 =B8  
5F9 9LD9FH=G9 =AD5FH=5@=HM 5B8 HF5BGD5F9BH 69<5J=CIF

+9;5F8=B; H<9 8=GH5B79 C: H<9 F9@5H=CBG<=D 69HK99B F9;  
H<5B <5@: C: H<9 5FH=7@9G EI5@=:98 H<9 F9@5H=CBG<=D  
IG9 H<9 H9FA 5H 5@@ CF F9>97H98 =H:9BB@H<74H@MGI@5FI@  
6CH< HC 5 DFCH97H=CB 5B8 5 G9D5F5H=CB :FCA DC@=H=75C

G5AD@9 EI5@=:9G H<9 F9@5H=CBG<=D 69HK99B F9;I@5HC  
@9B;H<Z 5B8 8=8 BCH IG9 H<9 H9FA 5H 5@@ CF F9>97H98

"B ACGH 75G9G H<9 @=H9 5CHGF97FCFG @5H=J9BGM5B8A8G;9B=  
7CB79DHI5@=G5H=CB C: =B89D9B89B79 H<CI;< 79FH5=B 8=:  
DC@-G7=75B@9 5B8 DI6@=7 58A=B=GHF5H=CB 5F9 DF9DIFGCFG  
=BGH=HIH=CB5@ DFC79GG CF 5G 5 7C;B=H=J9 DFC79GG (H<  
5B8 A5B5;9A9BH KCI@8 F9@M CB 5 AC F=9 8HFD8B8H9=CB95 @G 5B  
8CKB =BGH=HIH=CB5@ DFC79GG 0<9H<9F =B89D9B89B79 =G  
G9D5F5H=CB C: =BH9F9GHG 5@GC G99AG HC 89D9B8 CB H<9  
GC7=C@C;M G7<C@5 5GK@M 8H959HCB9M H<5B CH<9FG 0  
G=;B=:75BH 8=:9F9B79 7CB79FBG H<9 EI5@=:75H=CB C:  
C::=7=5@G -<9 A9F=75B G7<C@5FG<=D B95F@M GMGH9A5H=  
5B8 =;BCF9G H<9 H9FA Y5FA[G @9B;H<Z -<9 GEBD9DB G<9 5F  
IFCD95B @=H9F5HIF9 IG9G 6CH< H<9 H9FAG Y=BGI@5H=CBZ  
69HK99B + G 5B8 9@97H98 C::=7=5@-B8=7A9=5HHC5B HG9M 9B  
GI6GH5BH=5@ 8=:9F9B79 69HK99B H<9A

-<9 F9GI@HG C: H<9 7CB79DHI5@ 5B5@MG=G H9@@ IG H<  
=B89D9B89B79 =B H<9 @=H9F5HIF9 89GB79DHZB89D9B89B79  
5 7CAACB IB89FGH5B8=B; =B H<9 @=H9F5HIF9 C: K<5H =B89D  
9L7@IG=J9@M G99B 5G C: =B89D9B89B79 5B8 5IHCBCAM

-<9 G7<C@5FG<=D =G IB5B=ACIG HC 7CBG=89F =B89D9B89B79  
7C;B=H=J9 B5HIF9 @@ G7<C@5FG <5J9 7CB79=J98 C: =B89D  
K<=7< H<9 F9;I@5HCFG C6H5=B 5 8D;F@9HC=75@89D9B89B79  
@9;=G@5H=J9 -<9 ACGH 65G=7 7CB79DH=CB =G H<5H =B89D  
DCK9F H<FCI;< :CFA5@ DFCJ=G=CBG &5BM GHI8=9G 57?BC

9BJ=FCBA9BH 5B8 =BGH=HIH=CB5@ =BH9F57H=CBGK5M9 ;F5B  
=BGH=HIH=CB5@ DFC79GG =B K<=7< AI@H=D@9 57HCFG =B7  
H<9 :CFA5@ 5B8 57HI5@ =B89D9B89B79<H<B;H5B8;I\$F5DCR@ 6  
"B;C@8 /5FCB9 5B8 ,HC?A5B +CAA9@ 5B8 /9F<C9GH  
M <=;<@=;<H=B; H<5H =@B9:DFCBA8KB7H<7B B =698\$D9B89B7  
CB@M 5B 9LC;9BCIG 5B8 HCD 8CKB =BGH=HIH=CB5@ DFC79  
6CHHCA ID DFC79GG "B :C7IG=B; CB H<9 =BGH=HIH=CB5@  
@5F;9@M CJ9F@CC?98 H<9 7C;B=H=J9 B5HIF9 C: =B89D9B89  
7CAACB IB89FGH5B8=B;G 9LD97H5H=CBG 5B8 HF58=H=CBG =  
@=H9F5HIF9 5B8 =HG GHI8M 79BHF9G CB 79BHF5@ 65B?G -5

IFH<9FA@5FG 9L7@IG=J9@M 89:=B9 =B89D9B89B79 K=  
69<5J=CIF5@ CB9G -<9 J5GH A5>CF=HM C: G7<C@5FG F9:9F  
G9@9@=5B79 HC 89:=B9 =B89D9B89B79 -<IGB KKG=B89DA9B89GB  
=B H<9 @=H9F5HIF9 G9D5F5H=CB C: =BH9F9GHG 5B8 5IHCB  
D9F<5DG H<9 ACGH HF58=H=CB#5.@ \$'77C'VBH5.C;)7+B\$94D9B489B7  
'-+4)/+8 /8 95 /48:2'9+ '-+4)/+8 ,753 4573'2 652/9/)8Z 5F?C  
=AAIB9 HC BCFA5@ DC@=H=7G 5B8 A5M A5?9 H<9=F 897=G=C  
F5H<9F H<5B G<CFH H9FA DC@=H=7G "B89D9B89B79 =G Y9.  
'-+4)/+8 '7+ <59.5#9 9.+ /49+7,+7+4)+ 5),565/2/97)9/58 '5,\* 652/9  
67+ ,+7+4)+8Z !5BF9HHM 5B8 \$CCD -<=G =G HC 9B  
3'1+ \*+ )/8/548 </9.5:9 \*+897:)9/;+ /49+7;+49/5485 (742+)99+ \* 5  
\*+6'793+\$08Z7=7 5B8 0=B9FA5B "B89D9B89B79 5G 5 G9D  
GHI8=98 5B8 CD9F5H=CB5@=G98 =B H<9 @=H9F5HIF9 =B HKC  
K<=7< + G 5F9 GHFI7HIF5@@M G9D5F5H98 :FCA A=B=GHF=9  
:IB7H=CB5@ G9D5F5H=CB =B K<=7< + G 5F9 F9GDCBG=6@  
=AD@9A9BH5H=CB K<=@9 DC@=H=7G @B=6B89DC5B@79M5AC7C=B9  
9@97H98 C::=7=5@G K=H< H<9 =ADCFH5BH DF97=G=CB H<5H  
=B H<9 A=GG=CBG C: H<9 CH<9F -<IG 5 7CAACB 89:=B=H=C  
'4\* 7+86548/(/2/9> -/;+4 :4\*+5776:428)9254'22>)8+8'7'9+\* ,753 3/4  
/8 4+/9.+7 +2+)9+\* 457 \*/7+)92> Z'4'@+;\*=9> +2+#C+F\*85B,5)/%29J=

= &5FTB %9J= 5IF -<5H7<9F 6 IHCBCAM =G H<  
-<FCI;< H<9 F958=B;G =H HIFB98 CIH H<5H =B89D9B89B79 5G  
=B89D9B89B79 5G 5IHCBCAM 5G =H =G <5F8@M =A5;=B56@9  
897=G=CBG 5B8 57H=CBG K<=@9 :95F=B; 9CF5#HHGBGAFM=5J58@G9  
F9@=5B79 K<=7< " 5@GC 7<CGGG9FH8B=:CF H<9F976@ @: 5H4  
5G H<9 75D57=HM HC A5?9 CB9[G CKB 897=G=CBG 5B8 HC 57  
=B8=J=815@ :F998CA 5B8 G9@: 89H9FA=B5H=CB &5;;9HH= 5F  
(+ '(2+ 95 97'482'9+ 54+C8 5<4 67+,+7+4)+8 /495 ':9.57/9'9/;+  
5B8 89:=B98 =B89D9B89B79 5G Y' 9.+ 8+2, \*+9+73/4'9/54 5,  
' :95453> 9.75:-.5:9 9.+ :8+ 5, 7+-:2'957> )536+9+4)/+8Z 9.'9 /8  
&5;;9HH= 'CF8@=B;9F -<9 IG9 C: 5IHCBCAM HC  
5A6=;ICIG =B H<9 @=H9F5HIF9 IHCBCAM A5MK5F8G GMBBCB  
05J9FA5B BBG9F #989B5GH=? 05KGH@5BH<9FFG5B7C  
A5?9 5 8=GH=B7H=CB 6M 89:=B=B; 5IHCBCAM 5G 5 :CFA C: 8  
=B89D9B89B79 =G ACF9 H<5B 5 GHFI7HIF5@ G9D5F5H=CB C  
&5;;9HH= "B H<=G G9BG9 =B89D9B89B79 5G 5IHCBCA  
F9@5H=CBG GC H<5H 5IHCBCAM C::9FG 5B 9LH9B898 ACF9 8  
=B89D9B89B79 "B;CGF899LH5D@9 89:=B9 =B89DBB=89BH9H6M=700  
5B8 F9@5H=CB5@ D9FGD97H=J9 CB =B89D9B89B79 -<9M GH5  
5 B9HKCF? C: 57HCFG K<C A5M =B:@19B79 CF 7CBGHF5=B H<9  
A5H9F=5@ CF F9DIH5H=9CB5@9J9HC 9L9G#HGHHGB:@:19-B7:@19B79  
B9HKCF? H<=F8 D9FGD97H=J9 G99G 5IHCBCAM 5G 5 @9GG  
+CAA9@ 5B8 /9F<D9GH HH Y'29.5:-. 9.+ 459/54 5, /4\*+6+4\*+4)  
7+-:2'957> '-+4)/+8 <+ 67+,+7 95 :8+ B':95453>C '8 54+ 3/- .9  
'4 +=97+3+ )'8+ 5, \*+ )/8/54 3'1/4- ':95453> <.+7+'8 ':95453> 7  
' 357+ -+4+7/) 57-'4/8'9/54'2 ,+'9:7+Z

(J9F5@@ H<9 5B5@MG5-CC IHH9 @ @G8DG= BKKC=BB=B;G= B89D9B89  
F9J95@G H<5H B95F@M 5@@ G7<C@5FG 7CB79DHI5@=G9 =B  
5IHCBCAM 9J9B H<CI;< H<9G9 HKC 577CIBHG A5M <5J9 699  
7CB79DHI5@=G5H=CB#G7C.G@BBB@GB7<CB@9FG <5J9 H9B898 HC

CB9 H<9A9 H<5B H<9 CH<9F =B8=75H=B; 8=:9F9BH HF9B8G  
J9FM A17< 699B 89:=B98 =B CDDCG=H=CB HC DC@=H=75@ 57  
A=FFCF =A5;9 C: BFC97F9CB 5B8 G9DXF<5HACB9:F=BAIDC5@9B  
DC@=H=7G H<9 ACF9 =B89D9B89BH -<=G GIDDCFHG H<9 J=9  
=G 7@CG9 HC H<5H C: 69=B; 5DC@=H=75@ -C96HCHDIO@M=HB8  
=GGI9G 5B8 57HCCKBHC9:89F:9B79B<5B8 57H IDCB H<9A K<=7<  
H<9 5GGIA9895609B7@C=:B:@I9B79 "B H<9 :C@@CK=B; G97H  
7CB79DH15@=G5H=CB C:57B18-9D9B89=BB89DHCB819-B79F5B8 DC=BH  
H<9CFM 5B8 DF57H=79

%

!5J=B; =89BH=:98 =B 5 GMGH9A5H=7 K5M <CK =B89D9B89B7  
7CB:FCHHC H<9 DF57H=79 C: =B89D9B89B79 HC =BJ9GH=;5H9  
5@=;B98 -<9 DF57H=79 C: =B89D9B89B79 =G 89F=J98 :FCA 5  
:CIF =BH9FJ=9KG 7CB817H98 K=H< DF57H=79 F9J95@G HKC A5>CF ;5DG CB9 7  
DF57H=79 C: =B89D9B89B79 F9J95@G HKC A5>CF ;5DG CB9 7  
CH<9F H<9 89:=B=H=CB C: =B89D9B89B79

,H5FH=B; K=H< H<9 B5HIF9 C: =B89D9B89B79 F9G=AC99=  
=BGH=HIH=CB5@ DFC79GG "B89D9B89B79 5@GC 9L=GHG H<  
5B8 EI5@=H=9G G9D5F5H=CB C: =BH9F9GHG 5B8 5IHCBCAM  
F9;I@5HCF CB817H=B; :=9@8 F9G9587k<5#579GKB9B 5B8  
F9GDCB99D9G=75@ 57HCFG F9;I@5B7CG89B86G<5J?C<F@9E  
H<9=F 89:=B=H=CB C: =B89D9B89B79 F9G9587k<5#579GKB9B 5B8  
5 F9;I@5HCFM 6C8M H<5H :5=@G HC G<CK :5=FB9GG =BH9;F  
5@GC 9J=89B79 H<5H F9;I@5HCFM 5;9B7=9G <5J9 5 89J9@CD  
HC 89ACBGHF5H9 5B8 A5=BH5=B H<9=F =B89D9B89B79 @@  
7CB7CA=H5BF5K=69<5J=CIFG G =BH9FJ=9K99 DIHG =H Y,

/36'79/'2/9> '7+ 6'79 5Z 7+9G29557&[CB JC@IBH5FM 577CIBH56=  
F9;l@54509G=89BH=:98 5B8 7CAD@=98 K=H< 5GH@CA=71C5DDI  
9B8CFG9 J5@19G C: CD9BB9GG 5B8 HF5BGD5F90C7DM 69MCB8  
"B89D9B89B79CGB=H=J9 DFC79GG 5G 89H5=@98 =B H<9 56  
9L=GH 6975IG9 C: 5 7C@@@97H=J9 5B89HGH5BM=C<CC@9L6D9F9  
5B=B89D9B89BH F9;l@5HCF -<9G9=5DD9FK5HF=5B9 KCFI@8@5PH  
HC =BH9F:9F9 =B F9;5@5B;CFM@5879?7=G=CB5B /9FA9I@9  
=BH9FJ=9K99G 5@@ F97C;B=G98 69B9:=H=B; :FCA H<=G ?=  
D5FH=7IA@5F9@MH=@=H=9G9F99;4@5HC=CB@ 5B8 7C;B=H=J9 B5HI  
<5G H699BB89FGHI8F98F59B9B9DC5BHC=9MF=7< CIF IB89FGH5  
=B89D9B89B79 ,95F7<=B; H<9G9 5F95G 7CI@8 <9@D IG 69HH  
CF 897@=B9 69MCB8 :CFA5@ F9EI=F9A9BHG 5B8 CA5M< 69<5  
GIDDCFH CF IB89FA=B9 =B89D9B89B79

"

-IFB=B; HC H<9 89:=B=H=CB C: =B89D9B89B79 =H HIFBG CII  
75DHIF9 H<9 F95@=HM C: H<9 7CB8=H=CB C: F9;l@5HCFM 5  
IBF9@55H@BCAM =G 5B =AD9F:K7HI@9 606FGHH 7F9D59F5=5CB C  
HCH5@@@M IBGH56@9 CB9 ,H5FH=B; K=H< 5IHCBCAM H<9 @  
89@9;5H=CB =G =B=H=5H98 5B8 A5=BHM=B99 6M 9@974998F G:B  
!169F 5B8 ,<=D5BH =H Y<.+4 652/9/)'48 .';+ 7+'854 95 8:86+)  
) .558+ 652/)> 5:9)53+8 9.+> \*/82/1+ 9.+8+ 652/9/)'48 </22 45  
;'-: + 2+-/82'9/54 (:9 7'9.+7 </22 \*+9275:9+ 8677)5,4) \*28)-782/5/45  
9GG9B79 5 89@9;5H=CB C: DCK9FG 75BBCH 69 9EI5H98 K=H  
B5HIF5@ 5B8 GI6GH5BH=5@ @=A=HG HC H<9 8=G7F9H=CB 5B  
9L9F7=G9 C: H<9=FHD@KH9F89GDAF95;8 DF9GGIF9 DC=BHG DC@  
F9;l@5HCFM 5;9B7=9G 5F9 5DDC=BHA9BHG:IB89B9 5B895889F  
H<5H DC@=H=75@ 5IH<CF=H-A5G 95FDG 09BB @9GK<?909 8D979:9F9  
H<9=F 6BB9F #989B5GH=? %9K=G 5B8 9J=BG -<5H  
YDCK9F C: H<9BDIFB9Z9B:CF79 H<9=F DF9:9F9B79G 6M =B7F9

F9GCIF79G CF 6M 95FH< A5F?=B;9B8C9H9IB8GADGR5F8@ 6D97  
GI;;9GHG H<5H 6I8;9H A5B=DI@5H=C25B3@99 YAC&K F99;97B9F  
DC@=H=75@ 5IH<CF=H=9G A5M IG9 H<9 58A=B=GHF5H=J9 DI  
:C@@CK HC F98I79 =B:CFA5H=CB 5GMAA9HF=9G 5B8 :57=@=  
9BJ=FCBA9BH C: DC@=H=75@ 5IH<CF=H=9G 6M 8=G7@CG=B;  
5;9B7M HC DC@=8775@=B99865@?@ 5B8 09=B;5GH "B D  
5;9B7=9G 5F9 GI6A=HH98 HC <=;< HF5BGD5F9B7M GH5B85F  
F9DCFH=B; C6@=;5H=CBG -F5BGD5F9B7M =FB=EB; 5889BCHGA5@J=  
HF5BGD5F9B7M :57=@=H5H9G 59LGH9FB5@B7CBBHF@: @9H7H5=CCB  
9LDCGIF9 HC 9LH9FB5@ BCFMAG9588A9LD:77H5H9=CCB9B 5B8 !5E  
7F17=5@ :CF F9;I@5HCFG HC 69 5HH9BH=J9 5B8 DGH9BH=5@  
DF9G9FJ9 H<9=F F9DIH5H=CB 5 ?9MIHC7H588= %08;99F 5B8 GI

@@ H<9G9 DF9GGIF9 DC=BHG DFCJ=89 DC@=H=75@ 5IH<C  
5;9B7=9G -<CI;< H<9 @=H9F5H5B99<5B8808A98BH<9C9H9C@  
=B7CAD5H=6@9 K=HKG+BC9D9B88B7;99HH= "B;C@8H<9M8 5/5FC  
K=89GDF958 5B8 IH=@=G98 =B DF57H=79 -<9 5IHCBCAM C: F  
9LH9BH CB H<9 7CAA=HA9BH C: DC@=H=75@ 5IH<CF=H=9G H  
=BH9FJ=9K99 DIHG =H Y9.+ <.52+ 8>89+3 9.'9 <+ .';+ 8+9 /8  
<.5 .';+ 8+9 /9 :6 85 /9 /8 '8 ;:24+7'(2+ 95 ).'4-+ 54 ' 652/9/)  
)54897:)9 9.'9 652/9/)'48 .';+ 8+9 :6Z -<9 9L=GH9B79 5B8 GH  
5;9B75=99B G<F=B98 =B CF8=B5FM @5KG H<9 5A9B8A9BH 7CB8  
AD=F=75@ F9G95F7< GI;;9GHG H<5H DC@=H=75@ 5IH<CF=H  
F9EI=F9A9BHG HC H9FA=B5H9 5B 5;9B7M GC H459K5C@5F;9 BI  
H<F95H C: @9;=G@5H=J9 7<5B;9 75B =B :57H HF=;;9F 5 GI6C  
9L5AD@9 :C@@CK=B; H<9 :=B5B7=5@ 7F=G=G =B H<9 (6  
5;9B7M H5G?98 K=H< 7CBGIA9F DFCH97H=CB =B :57H HF5BG  
H<9 98 <58 699B @5F;9@M =B57H=J9 =B 7CBGIA9FG DFCH97  
=B H<9 =GGI9 5B8 F5=G98 =HG9@: 5G H<9 69GH D@5798 5;9B  
=B 5 G<=:H =B H<9 98[G F<9HCF=7 5B8 5 G<5FD =B7F95G9 =  
A5M H<9B 7CB7@I89 H<5H H<9 5IHCBCAM C: F9;I@5HCFM 5;



7CB8=H=CB5@ F9;I@5HCFM 5;9B7MCK9M G9IG=CG 10 5B8 50L9=F7G  
@95GH 7CAD5H=6@9 K=H< DC@=H=75@ DF9:9F9B79G -C 9BC  
DCH9BH=5@@M F9GDCBG=J9 HC DC@=H=75@ DF9:9F9B79G

-<9 @=A=H5H=CBG CGI5;9B7MCK9M G9IG=CG 10 5B8 50L9=F7G  
DC@=H=75@ 57HCFG 5B8 =GGI9G A5M BCH 69 5G 7@95F 5G H  
5B8 DC@=H=7G :=B8G GCA9 GIDDCFH =B DF57H=79 @@ H  
G9D5F5H=CB C: =BH9F9GHG 5B8 DCK9FG 69HK99B F9;I@5HC  
DC@=7M =AD@9A9BH5H=CB "B A5BM 75G9G ;CJ9FBA9BHG 8C  
5B8 ;I=89@=B9G K<=7< F9;I@5HCFG AIGH H5?9 =BHC 577CIB  
9L5AD@9G K=H< H<9 89D@CMA9BH C: H<9 :=6F9 6M (::=79 C  
F9:CFA C: H<9 F5=@K5M =AD@9A9BH98 6M H<9 (::=79 C: +5  
H<9 .\$ '5H=CB5@ "B:F5GHFI7K9B9H 50A:5G G5=CB D16@=G<=B; 5  
F9G=@=9B79 C: =B:F5GHFI7HIF9G 8B:KB97<HGHDF50@9F 9BH79G C  
GH5B86F8G@5HCA@9A9BH H<9A !CK9J9F H<9 =BH9FJ=9K99C  
6CIB85F=9G 69HK99B F9;I@5H=CB 5B8 DACD@9A9BH5HG=CB7MA  
6@IFF98 =B DF57H=79 G =BH9FJ=9K99 DIHG =H Y9.+7+ 8  
+'). )'4 56+7'9+ </9.5:9 7+-'7\* 95 9.+ 59.+7 /8 :47+'2/89/) '4\* \*  
(5:4\*'7/+8 >5: \*5 459 ,/4\* 9.+ 6:7/9Z 5,=0A5-8@5/F5@ M 4 59 .7+9B-H/F88C  
C: H<9 ( F9DCFH CB H<9 DF57H=79 C: =B89D9B89B79 =G H<  
69HK99B DC@=H=75@ =GGI9G 5B8 A=GG=CBG 5B8 F9;I@5HC  
( -<9G9 6@IFF98 5F95G 5F9 GMGH9A5197F=F50H<CFB H<  
G9D5F5H=CB @5F;9@M =BCD9F5BH "B DF57H=7@=B1E7G=H=7=

(B H<9 G=89 C: DC@=H=75@ 57HCFG GCA9 =GGI9G 5F9 GC  
=B5DDFCDF=5H9 :CF 9@97H98 C::=7=5@G HC 5JC=8 H<9A (B9  
C: H<9 =B89D9B89BH F9BI@5B79B9C:9FH M@=H=79G 5F9 F9;I@5H  
F9;I@5HCFM H<9 CAA=GG=CB 89 +R;I@5H=CB 89 @[ B9F;=9  
CJ9F =H A=8 H<9 Y;=@9H >5IB9GZ 7F=G=G K<=7< K5G H  
CAA=G89=GB;I@5H=CB 89 @[ B9F;=9 DFCDCG98 5 G<5FD =B7F  
F9B7< CJ9FBA9BH EI=7?@M F957H98 5B8 7@5=A98 HC :F99F

69MCB8 H<9 CJ9FBA9BH[G DCK9FG 5B8 H<F95AHCUB996DH5<F9? 99;I  
GIFDF=G9 5B8 7CBAHDFCKA5FG9MB8B H<9 K569@5M98 -<9 CJ9FBA  
C6H5=B98 K<5H =H K5BH98 9MCB8 DC@=HCB3@H@M H<9@ 9=7G  
C::=7=5@G GI6GH5BH=5A@ @MA9B;559=BBDCB@57MCF9 BCFA5@ 6  
H<9 CJ9FBA9BH 5@GC =BHFC8I798 H<9 Y)F=B7=D@9G C: 7  
8CA=B5B79 C: ;CJ9FBA9BH5@ DC@=7M CJ9F DC@=7MA5?=B; 5  
GI6GH5BH=J9 ;I=89@=B9G HC F9;I@5HCFM 5B9B7M H<9 GC BCK 56FH  
GHF5H9;=7 5B8 7@95F ;I=85B79 K=H<CIH =BH9F:9F=B; K=H<  
F9;I@5HCFG 6IH =H =G IB7@95F <CK :5F ;CJ9FBA9BH 6C8=9G  
=BH9F:9F9B79 =H <5G IC=HF<9;H@95HB8;MID9FB897=99G "B89D9B89B7  
HIFB98 CIH HC 69 5B 9J9B B C=FB9 HEA;C@ 9:7CB=GHFG 7HE=EG9G 5  
DI6@=7 A5M 9LD97H CF 89A5B8 5 DC@=H=75@ =BH9FJ9BH=C  
F9;I@5HCFM 5;9B7M G=AD@M 8C9G BCH <5J9 H<9 @9;5@ D  
5DDFCDF=5H9 57H=CBG CF K<9B H<9 F9;I@5HCFM 5;9B7M  
=B89D9B89B79 =G <5F8@M H9B56@9CIBCF H9<55A DH@9 :=585-BB7=  
HF=;;9F98 5 KCF@8K=89 CJ9F<5I@ C: :=B5B7=5@ F9;I@5H  
=B89D9B89B79 CJ9FBA9BHG 5FCIB8 H<9 KICF@BH95J9B=9B7B9  
85M HC 85M F9;I@5HCFM A5B5;9A9BH K<9B 69:CF9 H<9 7F=C  
@=A=H98 HC 9A9F;9B7=9G !9 5F;I9G H<5H H<9 G<=:H 89:=B9  
F9;I@5HCFG 5B8 DC@=H=7=5BG =B K<=7< F9;I@5HCFM 5;9B7  
=B ;5H<9F=B; =B:CFA5H=CB 5B8 DFCJ=8=B; 58J=79 K<=@9 AC  
<5B8G C: DC@=H=7=5BG "B H=A9G C: 7F=G=G CF =B7B CFA5@  
DC@=H=7=5BG HC 7CAD@9H9@M=A B @D A9BHG5:HE@;B@5H=CB 5B

,=A=@5F@M =H <5G HIFB98 CIH =B:95G=6@9 HC 9LD97H F9;  
DC@=H=75@ 57HCFG 5B8 =GGI9G +9;I@5H\*5F 65ZC9B)8F=6BH5E  
9AD=F=75@ GHI8M :&B;89HH5H F9;I@5HCFM 5;9B7=9G 5F9 H<  
DC@=7MA5?=B; 69:CF9 DC@=H=7=5BG 7CAA=HH99G 5B8 CH  
H<9 IBDFC:9GG=CB5@=G5H=CB C: H<9 @9;=G@5HIF9 K<=7< E  
5B8 C: H<9 B998 HC 9B@=GH F9@ @DFHC 96H9 6FC@5MG GEC =5J CH<89 I  
=AD@9A9BH5H=CB D<5G9 +9;I@5HCFM 5;9B7=9G A5M H<IG Y

=B:@I9B79 =B DC@=7MA5?=B; +9;l@5HCFM 5;9B7=9G 5F9 5@  
A5B=DI@5H9 5B8 J9BA9=C;C: DC@=7M =GGI9G 5G H<9M 75B 57I  
DC@=H=75@ B5HIF9 C: H<9=F 5F;IA9B%G=HK+CN &CBB@BC? C:  
A5HH9FG H<9B 69MCB8 D5FH=7=D5H=CB =B DC@=7MA5?=B;  
DC@=H=75@ ACH=J5H=CBG F5H<9F H<5B B9IHF5@ 5B8 9LD  
F9;l@5HCFM 5;9B7=9G A5M <5J9 H<9=F CKB DF9:9F9B79G 5B  
H<9=F 5;9B85 5FD9BH9F K<C 89:=B9G 5IHCBCAM 5G H<9  
DF9:9F9B79G 5B8 5;9B85 HC =HG DC@=H=75@ DF=B7=D5@G  
7C5@=H=CB B9HKCF?G A5M 5@@CK 5B 5;9B7M HC 9B897H=J9  
75FFM CIH DC@=7M =BBCJ5H=CBG 5FD9BH9F "B  
58J=G=B; ;CJ9FBA9BHG CB GD97=:7 DC@=7M =GGI9G =HG  
DC@=H=7=5BG ACGH BCH56@M @CB;F9@FA95B8=G=BI:FGG(HJ9F  
DC@=H=7=5BG 7CI@8 B9J9F :l@@M GH9D CIH C: F9;l@5H=  
DC@=7MA5?=B; K=H< H<9=F CKB DC@=H=75@ =BH9F9GHG =  
DCK9FG 5DD95FG :F5;=@5K-@=95698CF57H=75@F57H9F C: H<  
=B89D9B89B79 K<5H GMBCH9AG C: GC7=5@ 7C@F89F5H=CB 5F  
F5K=B; 5 7@95F @=B9 69HK99B DC@=H=7G 5B8 F9;l@5H=CB  
DIHG =H Y9.+ 652/9/)8 '\*3/4/897'9/54 \*/).5953> '8 89'

"B GIAA5FM H<9F9 =G 5 ;5D 69HK99B H<9 H<9CFM 5B8 DF57  
B5HIF9 5B8 89:=B=H=CB C: =B89D9B89B79 -<9 7CB79DH C: =  
Y5@@ F9;l@5HCFM 5;9B7=9G 5F9 =B89D9B89BH 6IH BC F9;l@  
K<=@9 K9 EI5@=:M 5@@ H<9G9 5;9B7=9G 5G =B89D9B89BH  
@=H9F5HIF9 B9J9F 5@@CKG IG HC 7CB7@I89 H<5H 5 F9;l@5  
=B89D9B89B79 H<IG :5=@G HC 75DHIF9 H<9 F95@=HM C: H<  
=BH9F57H=CBG K=H< DC@=H=75@ 57HC:F@=5B8H=C@9;5D F@:A  
:FCA ;5=B=B; 5 69HH9F IB89FGH5B8=B; C: H<9 6CIB85F=9G 6  
5IH<CF=H=9G 5G K9@@ 5G H<9 8MB5A=7G C: H<9G9 6CIB85F  
H9B8G HC <=89 H<9 DC@=H=75@ 7<5F57H9F C: F9;l@5HCFM  
DC@=H=75@ 57HCFG =B F9;l@5HCFM =GGI9G H<IG 7F95H=B  
69 :5=F H<9F9 <5G 699B 95F@M 5K5F9B9GG =B 9HD49 @=H9F

=B89D9B89B79 Y%+ 8.5:2\* 459 5;+789'9+ 9.+ \*+-7+Z 5, /4\*+  
&5>CB9 Y#. + /\*+' 5, B/4\*+6+4\*+49 7+-:2'9578C .'8 +/9.+  
'8 </94+88 )548/\*+7'(2+ 4+:9+7/4- 7#.-:2'9578C-94)8+-+\*5945.99  
57 62'> ' 3+'4/4-,:2 752+ /4 9.+ 675)+88+8 5, 35\*+74 :756+'4 8  
7+67+8+49 @/4\*+6+4\*+4)+%AC579@':9545<3> Z=H9F5HIF9 CB 5IH  
D5FH F=G9B =B 5 6=8 HC F9:IG9 H<9 H9FA =B8F9D9B89B79  
F9;I@5HCFM 5;9B7=9G 5G YGC 75@ @98 =B89D9B89BH 5;9B7=9  
<5G H<=G 7CB79DHI5@=G5H=CB C: =B89D9B89B79  
6975IG9 =H 577CAAC85H9G HK<9C=B5B9F9G9HH99FF99H@75@FKCF  
:IFH<9F =B89D9B89B79 6 6975IG9 =H <9@DG DC@=H=7=5BG  
5B8 69B9:=H :FCA 7F98=6@9 7CAA=HA9BH K<=@9 A5=BH5=B  
F9;I@5HCFM 5;9B7=9G 5G YGC 75@ @98 =B89D9B89BH 5;9B7=9  
5B 9LH9BG=J9 5ACIBH C: F9G95F7< F9A5=BG-89B-975H9897HC=6  
F9:@97HG CB H<9 ;5D 69HK99B H<9CFM 5B8 DCF5G H:CF9 HC<9=  
G7<C@5FG<=D CB =B89D9B89B79

#

!"

!

-<9 DF9J=CIG G97H=CB <5G =89BH=:98 5 A=G5@=;BA9BH  
=B89D9B89B79 <=;<@=;<H=B; H<9 :5=@IF9 C: H<9 7CB79DH C  
7CB8=H=CB C: F9;I@5HCFM 5;9B7=9G 0<=@9 H<=G @=B;9F=B  
CF 897@=B9 F97CB79DHI5@=G=B; =B89D9B89B79  
D5J9 H<9 K5M :CF GI7< F97CB79DHI5@=G5H=CB " F9:@97H =  
=89BH=:M A=GD@5798 5GGIADH=CBG 5B8 6=5G9G K<=7< " 5  
9A698898 H<9CFM C: =B89D9B89B79

-<9F9 <5G 699B 5 7CBG=89F56@9 =BH9F9GH :FCA H<9 G7<C  
5;9B7=9G BCH=7956@9 GI779GG C: H<9MGM7CC@H5F8M=YD89<  
=B89D9B89B79Z CF Y57HI5@ =B89D9B89B79Z 5B8 ACJ9 69MCB  
5B8 H<9 J9FH=579@7M=FB9@5H9FCBG<=D ,HI8M=B; =B89D9B89B7  
F9@5H=CBG <5G 9LH9B8B895DBI59@FG7H9CBH<9: 7B18D95B89B79  
F9@5H=CB5@ DFC79GG -<=G 7CB79DHI5@ 9JC@IH=CB <5G H.  
K=H< 5B =B7F95G9 =B EI5@=H5H=J9 GHI8=9G 5B8 75G9 GHI8  
=B89D9B89B79 K=H< J5F=56@9G GI7< 5G DC@=H=75@ JI@B9  
-F=@@5G 5B8 &CBHCM5 +5A &C&5B=5@D859?9AF59B79B8 ,A=  
DC@=H=75@ 7QADADBG75HI=50@ 5B8 F9DIH@5H=/5B5B98 5B:8  
,HC?A5B -<9 @=H9F5HIF9 CB F9;I@5HCFM 5;9B7=9G[ =B  
5B8 =BBCJ5H=J9 CJ9F H<9 M95FG -<9F9 5F9 <CK9J9F 5 BIA  
5 A95B=B;:I@ F97CB79DHI5@=N5H=CB C: =B89D9B89B79

-<9 H<9CFM C: =7C89D95B89B79F99 A5>G9 G<FCFHH7CBA9-B; G 9L  
;9B9F5@=G5H=CB -<9 H9FA YF9;I@5HCFM 5/9B7F9HGZ <=85G5  
7@5GG=:K75H<C@958G G7<C@5FG HC A5?9 @=HH@9 8=:9F  
'9J9FH<9@9GG =B89D9B89B79 J5F=9G ;F9BB@M :FC,A@5B9C F6  
BCHCF=CIG@M ACF9 =B89D9B89BH H<5B GC7=5@ F9;I@5HC  
8=GH=B;I=G< 69HK99B 5 79BHF5@ 65B? 5B8 5<55G@=B;<M@MA  
8=:9F9BH A95B=B; 57FCG@ 7@CBHCFH75@B5B89D.B@H987,5H9C  
F9:9F ACF9 HC 5 G9D5F5H=CB :FCA D5FH=G5B BCFA5@ DC@  
5;9B7=9G 5F9 IGI5@@M =B89D9B89BH C: H<9 )F9G=89BH 6IH E  
,<5D=FC "B 7CBHF5GH GCA9 IFCD95-B78CIB5B-89GF5BB7  
H9B8 HC :C7IG CB CF;5B=G5H=CB5@ G9D5F5H=CB 5B8 5 GCA  
DC@=H57G<9F .G=B; 5 ;9B9F=7 H9FA Y=B89D9B89B79Z A  
H<9 8=J9FG=HM 5B8 GI6H@9HM C: H<9 F9@5H=CBG<=DG 69H

KCF?56@9 8=GH=B7H=CBG 577CF8=B;H085M5 6?B <CF7B5I9 ZC5B  
7CF9Z A=GG=CBG :CF 9L5AD@9 K=@ @ 5@ @CK :CF 5 :=B9F 1F

G97CB8 :IB85A9BH5@ G<CFH7CA=B; =G 5 6=5G 5;5=BGH  
=B89D9B89B79 <5G J9FM A17< 69F5H7CB5@D+G5@ =B 98D5B3GEB  
57HCFG K<=7< <5G 6FCI;<H 5 79FH5=B @9J9@ C: 56GHF57  
5GGIADH=CB ACGH@M 89F=J98 :FCA 97CBCA=7G =G H<5H D  
5B8 =B89D9B85B79 K6M9K 9BGIF9 H<5H F9;I@5HCFM 897=G=  
H9FA DC@=H=75@ 7CBG=89F5H87BC@ @B5HI9G7K C:2895 C> '9+H)E  
'7+ +89'(2/8.+\* 95 6:7/,> 9.+ 7+-:2'957> 675)+88 !+-:2'957> '  
,57 5(0+)9/;+ '4\* :4(/'8+\* '\*3/4/897'9/54 5= 8+4899C;F=8+855@ 8Z=  
7CB79DHI5@=G5H=CB C: =B89D9B89B79 G =BH9FJ=9K99 5F  
'/36579'49 9+).45)7'9/) \*+ )/8/548 <./). )'4 .';+ ' (/ - /4,2:+4)+ 54  
85 9.+> <'49 95 1/)1 652/9/)8 5:9 5, /9 9./4)15 45 37)+; /8 <8 539+ 9  
'4 /4)7+\*/(2+ \*+-7++ 5, 4'/;+9> 955 9 /8 0:9 /4'667567/'9+ 9  
652/9/)'2 )549+=9 #./8 /8 9.+ 7+'2/9> 5, 9.+ 8/9:'9/54 '4\* \*54  
<754- </9. /9A 09 AIGH F97C;B=G9 H<5H DC@=H=75@ 57HCF  
F9;I@5H=CB K=H< F9;5F8G HC 6CH< H<9 @9;=H=A57M 5B8 9  
:57H H<5H H<9 9L=GH9B79 C:GF9HI@5@ @F MCB;9BH+9GB5@B 8@ A7  
@9;=H=A57M /=69FH 5B8 9@97H98 C::=7=5@G 75BBCH  
5;9B7=9G <5J9 7F95H98 YH<9 @9;=H=A57M DFC6@9AGZ C: H  
A5BM 5IH<CFG DC=BH CIH F9;I@5HCFM C:5F95C;CGH=A57M 9B9:=

5G<CF9 " 5F;I9 H<5H H<=G =G BCH GI::=7=9BH HC  
5;9B7=9G K=H<=B CIF 9L=GH=B; 7CBGHGHIH<9CB5@C @FJ95B;BH  
9@97H98 C::=7=5@G =B H<9=F 57H=J=H=9G =G CB9 K5M HC  
5;9B7=9G 5B8 =G BCH<=B; @9GG H<5B 5DDFCDF=5H9 5B8 <9  
6@IFF98 @=B9G 69HK99B F9;I@5H=CB 5B8 DC@=H=7G A5M 5@  
<=;<@M G9BG=H=J9 G97HCFG GH5B8 =B 9HI@5H5B8GH<9AFK;H  
7CBG=89F5H=CB C: DC@=H=75@ F95@=H=9G 5B8 DF9:9F9B79  
B9HBC 89J9@CD H<9=F B9HKCF? 5B8 DC@=H=75@9B7M 5H<5CB  
955B89D9BKCB@ 8 GHFI;;@9 HC 69 =B:@I9BH=5@ =B DC@=7F

F9;I@5HCFM =BH9F9GHG )C@=H=75@M57BCF G=A5M@MCA5BGBB  
6MD5GG 5B 5;9B7M H<5H =G D9F79=J98 5G <CGH=@9 HC H<9  
CB79DHI5@=G=B; =B89D9B89B79 5G 5B =GC@5H=CB :FCA DC  
@9;=H=A57M 9::975H+9@HMM G5B8=J@@=A: F9;I@5HCFM 5;9B7  
:IB85A9BH5@ :@5K C: H<9 7CB79DHIB @HG5GDDBGC:H=CB9D9CB

-<9 H<=F8 5B8 :=B5@ G<CFH7CA=B; =G 5 6=5G HCK5F8G =B89  
GHI8=98 HCD=7G =B H<9 G7<C@5FG<=D CB F19;G@5HCFM .5/  
/4\*+6+4\*+4)+ /8 853+9/3+8 8++4 '8 ' 7+2/-/54 57 '9 2+'89 '8  
=B89D9B89B79 5G H<9 I@H=A5H9 7F=H9F=CB C: ;CC8 F9;I@5H  
=HG9@: HCC A17< 5HH9BH=CB <5G 699B ;F5BH98 HC =B89  
;CJ9FB5B79 5FF5B;9A9BHG GI7< 5G HF5BGD5F9B7M 577CIBH  
HC 7CBG=89F 5 @5F;9F 65@5B798 ;CJ9FB5B79 K=H< 5DDF  
=B89D9B89B79 A5M :IFH<9F =BGI@5H99F 5;I@5HCFM CB;A5B795  
H<9 89AC7F5H=7 89:=7=H IB85A9BH5@@M H<9G9 H<F99 G<C  
<5G H9B898 HC 69 7CB79DHI5@9G98I7-B 55B5B79DHI5@9G5H=C  
6CH< =B DCG=H=J99FAG 5CB8A55GJ9DF9J9BH98 IG HC IB89FG  
6CIB85F=9G 69HK99B F9;I@5H=CB 5B8 DC@=H=7G 5B8 DIHG  
GH5;B5H=CB CF 897@=B9

"

-C F9>IJ9B5H9H H<9H<9C@M C: =B89D9B89B79 \*A=GGH D9@=H=75  
=BGH=HIH=CB5@ 7CBH9LH K<=7< F9EI=F9G IG HC 5G? H<9  
K<9H<9F F9;I@5HCFM 5;9B7=9G 5F9 =B89B9B9B9BHK95 F9CII@  
5;9B7M G<CI@8 69 -<9 7CF9 =GGI9 =G H<9 5ACIBH C: =B89D  
5;9B7=9G HC <5J9 5G K9@@ 5G H<9 K5MG =B K<=7< =B89D9  
F9@5H=CBG<=DG 69HK99B F9;I@5HCFM 95;9B7=9K95B8CC@8956  
H<9 GHF=7H G9D5F5H=CB 69HK99B F9;I@5H=CB 5B8 DC@=H=  
=B CF89F HC 57?BCK@98;9 H<9 9L=GH9B79 C: 5B8 GHI8M H<  
=H9F5H=CBG 69HK99B@5F@CB9B G 5B8 -<9 GHI8M C: =B89D9B

H<9 CB9 C: H<9 ACJ=B; F9@5H=CBG<=DG 5B8 6CIB85F=9G  
=GGI9G 5B8 57HCFG "B H<5-G F9@5H=CBG<=DG 5B8 6CIB85F=9G  
9@97H98 C::=7=5@G 5B8CB9;I@5HCFGM@9;9B7=9G 5B8 AIH  
F9;I@5HCFG 5B8 DC@=H=7=5BG KCF? HC;9H<9F HC 57<=9J9  
CH<9F[G DC@=H=75@ GD579 5B8 5IHCBBCAM 0<=@9 H<9F9 5  
H9FA A5M BCH 75DHIF9 H<9 K<C@9 GHCFM ,16GH=HIH=CB 5B  
69HK99B F9;I@5HCFG 5B8 9@97H98 C::=7=5@G -<9 H9FA 7  
EI9GH=CB C: <CK :5F F9;I@5HCFM 5;9B7=9G 5B8=9H@9978-598; 9CF:  
H<9 =B89D9B89B79 CF 5IHCBBCAM C: H<9 :CFA9F

(J9F5K@ @H =G B5B9 89A8 9-88 98 H<9CFMKG:= 3-33BOK @888B KCF? G  
K=H< H<9 AI@H=D@9 =BH9F57H=CBG F9;5I@5HCFGM 5B8 57HCFG  
=B89D9B89B79 =G 7CBGH=HIH98 5B8 7<5@@@9B;98 H<FCI;< 9  
=B89D9B89B79F-8C9G: FCAH=BGI@5H=9B967H5D57H4MF HEC@IFD5  
9BJ=FCBA9BH 5B8 B5J=;5H9 =H 577CF8=B; H@9H9AFAFB5H=FC9B  
"B89D9B89B79 F9EI=F9G 5H ACGH 5 8=GH5B7=B; :FCA DC@=  
6CIB8 6M DC@=H=75@ BF9:GF9FB-79HG G9D5R9H=K85 -<9 DF9:9  
5;9B7=9G 5F9 7CBGH=HIH98 6M H<9=F AI@H=D@9 =BH9F57H=  
BCH 9B85B;9F H<9=F =B89D9B89B79 GC\*+@C3H4@8B F9F9F9B7B0  
C: F9;I@5HCFM 5;9B7=9G G =BH9FJ=9K99 5F;I9G Y5:7 <  
9.5:-.9 95 (7/4- '4 /4\*+6+4\*+49 6+786+)9/;+ '4\* 9'1+ +; /\*+4)-  
5;9B7=9G =BH9F57H K=H< 5@@ F9;I@5HCFM 5B8 5D9FG @89H6  
=B7@18=B; DC@=H=75@ CB9G 5B8 <A5A@FH<95-B @AK69 8J-99K G  
=B89D9B89B79 F9@C76+H9-G-B-68F9D5989F9B799FB5B79 5FF5B;9A9  
9B8G H<5H =H =G DIFGI=B; "B89D9B89B79H=95HBF99 9CG G;5FCM  
G =BH9FJ=9K99 DIHG =H Y/4\*+6+4\*+4)+ /8 3:29/ \*/3+48/54'  
'4 /4\*+6+4\*+49 7+-:2'957 )2'7/9> 5, 5(0'4'9/)))+8:49\*(/259\*8 4>  
8:)))+88,:2 7+-:2'957> 7+-/3+ </22 \*+,/4+ 9.+8+ 9.7Z+ /9+38  
"B89D9B89B79 G<CI@8 H<IG 69 D5FH C: 6FC589F 5B8 ACF9  
89:=B9 H<9 D@579 5B8 F9GDCBG=6=@=H=9G C: 957< =BGH=H  
DCK9FH9FB 5B8 !C@89F -17?9F "B89D9B89B79 G<CI



CD9F5H=CB5@=G98 =B 65@5B79 K=H< CH<9F 7FI7=5@ :CFA  
=B7@I8=B; 577CIBH56=@=HM HF5BGD5F9B7M 5B8 F9;I@5HCF  
699B HCH5@@M 56G9BH =B H<9 @=H9F5HIF9 5B8 G=B79  
CB =GGI9G F9@5H=B; HC 577CIBH56=@=HM HF5BGD5F9B7M  
577CIBH56=@=HM 5B8 =B89D9B89B79 5ACGH56:8F9CB95F7KCC9BH  
<CK9J9F F9A5=BG GA5@@ 7CAD5F98 HC H<9 KCF? CB =B89  
C:H9B GHI8=98 G9D5F5H9@M :FCA H<9G9 CH<9F ;CJ9FB5B79

!

-<9 8=GG9FH5H=CB <5G9 K L5BC8G5B5@ MFG=HG 7C5: @H F9 J@=H9F5HIF9  
=B89D9B89B79 -<9 5=A C: H<9 F9G95F7< K5G HC =89BH=:M  
DF57H=79 C: =B89D9B89B79 5B8 H<IG 7CBHF=6IH9 HC D5  
=B89D9B89B79 =FGH " <5J9 =BJ9GH=;5H98 H<9 A95B=B;  
D9F:CFA=B; 5 7CB79DHI5@ 5B5@MG=G CJ9F 57589A=7 5FH:  
GMGH9A5H=7 K5M H<5H H<9F9 =G =B H<9 @=H9F5HIF9 5 7C  
7FCGG9G B5H=CB5@ 5B8 8=G7=D@=B5FM 6CIB8DF9@M"B89  
=BGH=HIH=CB5@ DFC79GG K<=7< =BJC@J9G :CF F9;I@5HCFM  
@5F;9@M G9D5F5H98 :FCA DC@=H=75@ 7CG79DH5B@ 5G5HCFGB  
C: =B89D9B89B79 K<=7< " 89F=J98 :FCA G97CB85FM F9G95F7  
7CAD5F=GCB IB7CJ9F98 5 ;5D 69HK99B H<9 H<9CFM 5B8 DF5  
5B8 A95B=B; C: =B89D9B89B79 =G BCH A9F9@M 5B =  
5 69<5J=CIF5@ 5B8,977C;B8-HHJ9 7CB79DH<5G +B89D9B89B79  
DFC6@9A5H=7 5G =H @958G HC 5 G=HI5H=CB89D9B89B79 Y5@  
F9;I@5HCFM 5;9B7M =G =B89D9B89B79 -<9 ?9M :@5K C: H<9  
G9D5F5H=CB C: F9;I@5HCFM 5;9B7=9G :FCA DC@=H=75@ =GG  
89;F99 C: 56GHF57H=CB HC =B89D9B89B79 89B79C-B7XDDH5@=  
H<9 ACF9 G9D5F5H98 H(B9HA9F79C-BH85DF9B89BH8M=B; H<9 DF57  
<5G F9J95@98 H<9 9L=GH9B79 C: GMGH9A5H=7 =BH9F57H=CB  
-<=G ;5D <5G @5F;9 =AD@ 7C5B+H B65@H+<G B89D9B89B79  
B9IHF5@ 9LDC9FH5-KCCG:IFH<9F 5B89H89AC79@K=7 89:=7=H "H 5

:FCA IB89FGH5B8=B; H<9 F95@=HM G: 6D49K 59E 5HC=C-BG<7-5D@  
F9;I@5HCFM 5;9B7=9G " 5F;I9 H<5H H<=G @=B;9F=B; ;5D H<F  
GH5;B5H=CB+0FC89779@HB9@=G=H<IGB70A9B89BC7DIX0@H7ICA9HM H  
F9>IJ9B5H9 H<9 :=9@8 " 5F;I9 H<5H HC 8C GC 6I9K0-95B9G  
H<9CFM 5B@-D9F57AHG7H969 588F9GG98 B5A9@M 9L79GG=J9 ;9B  
5B8 5 6=5G HCK5F8G =B89D9B89B79? -H99GF<C@AICD-GH=ABG  
5K5M :FCA K<9H<9F F9;I@5HCFM 5;9B7=9G 5H958B89D9B;89E  
=B89D9B89BH H<9M G7<<C@8F69<=D AIGH 5@GC 6F95? K=H<56  
9A698898 H<9CFM C: =B89D9B89B79 K<=K<HF9=BCBHH9LHC5@=HC  
=BGH=HIH=CB5@ 9BJ=FCBA9BH B 9A698898 H<9CFM C: =B89  
H<5H =B89D9B89B79 8C9G BFC=BA915B6H5-6BH95D7@G-BH=75@ 5  
9BJ=FCBA9BH 6IH F5H<9F 5H<9;75D57C-HM<5E 9BJ=FCBA9BH =  
=H A5;B:=9G G9@: 89H9FA=B5H=CB 75D57=H=9G A698898 =  
=G F9@C75H98 K=H<=B 5 6FC589F ;CJ9FB5B79 5F7<=H97HIF9  
H<9 CB9 7F=H9F=CB C: D9F:CFA5B79 =B F9;I@5HCFM ;CJ9F  
;CJ9FB5B79 A97<5B=GAG GI7< 5G 577CIBH56=@=HM HF5BGD

#

" KCI@8 @=?9 HC 7<99F:I@@M H<5B? )FC:9GGCF 5B8 ,ID9I  
!9MJ59FH 5B8 C7HCF )5C@C 9@5F8=B9@@=:CF H<9=F 9BH<  
+9;I@5H=CB :5G7=B5H98 A9 69MCB8 AM@MBH9L5B79GH5H=HC89A  
5@GC @=?9 HC H<5B? H<9 =BH9FJ=9K99G :CF ;=J=B; H<9=F H  
7<5@@9B;98 A9 5B8 7CBG=89F56@M 9BF=7<98 H<9 8=GG9FH5

58F5B <A98 Y+9J=G=H=B; +9;I@5HCFM "B89D9B89B79  
CFA5@ 5B8 89 57HC "B89D9B89B79 C: H<(92/)M52V)5B -9@  
'4\* \*3/4/897'9/54 X  
5F?CK +57<9@ Y"BGI@5H=B; ;9B7=9G JC=8=B; 5DH  
#+='8 '< !+;/+< X  
@57? #I@=5 Y+9;I@5HCFM CBJ9FG5H=CBG Z 5:74'2 5  
@57? #I@=5 Y CBGHFI7H=B5B8B 877CB B H 6H=@=H%0;=BI=>A  
+9;I@5HCFM +9;=A9G Z !+ -:2'9/54 5;+74'4)+ X  
IGI=C7 &585@=B5 Y 77CIBH56=@=HM CBHFC@ 5B8 "B  
;9B7=9G Z :756+'4 '< 5:74'2 X  
IGI=C7 &585@=B5 5B8 &5FH=B %C8;9 Y+9DIH5H=CB 5E

&5B5;=B; 77CIBH56=@=HM LD97H5(12#)CB\*3/H/8F9C7'9/549DIH  
!+;/+< X  
5FD9BH9F 5B=9@ #.+ 57-/4- 5, :7+' :)7'9/) :95453> !  
52/)> 445;'9/54 /4 =+):9/;+ -+4F/+B79HCB )F=B79HCB  
)F9GG  
5FD9BH9F 5B=9@ ) !+6:9'9/54 '4\* 5<+7 7-'4/?'9/54'2  
!+-:2'9/54 '9 9.+ )F=B79HCB )F=B79HCB .B=J9FG=HM  
5G5NN5 5J=8 Y%=69FHM +9EI=F9G 77CIBH56=@=HM  
;9B7=9G Z '7;'7\* 5:74'2 5, '<'4\* :(2/) 52/)> X  
5G<CF9 9B>5A=B Y)%9;J5H=AN57M-5B8CH<9J=FCBA9BH5@  
!CK 'CB ,H5H9 &5F?9H F=J9B ',& CJ9FB5B79 ,MGH9  
IH<CF=HM Z 5;+74'4)+ X  
O9H=B -5A9F & 35<=8 ,C657] 5B8 &9<A9H '5F;9@9Q9?9B@9  
77CIBH56=@=HM C: "B89D9B89BH +9;I@5HC:F7M6+'9B7=9G  
5:74'2 5, '<'4\* )5453/)8 X  
<F=GH9BG9B -CA 5B8 )9F %V;F9=8 Y+9;I@5HCFM ;9B7  
;9B7M IHCBCAM 5B8 )C@=H=75@ CBHFC@ Z 5;+74'4)+  
C9B 5J=8 5B8 8F=9BB9 !RF=H=9F !+/,4/4- !+-:2'957>  
<9@H9B<5A 'CFH<5ADHCB & 8K5F8 @;5F  
CFF=;5B )5HF=7? 5B8 +=7<5F8 % =G9C9G"89D9B89BH ;9B7=  
&571 \$4/;+78/9> !+;/+< X  
5H@5 \$=FH= 5B8 +=7<5F8 % +9J9GN Y 97CBGHFI7H=E  
L97IH=J9 ;9B7=9G Z 574+22 '<!+;/+< X  
KCF?=B 9F5@8 #.+ #.+57>'4\* 7')9/)+ 5, :95453> GH  
)F9GG  
8K5F8G 9C:: 5B8 %9CB5F8 05J9FA5B Y-<9 ::97HG C:  
+9;I@5HCFM "B89D9B89B79 CB +9;I@5HCFM (IH7CA9G ,  
-9@97CAAIB=75H=CBG Z 5:74'2 5, !+-:2'957> )5453/)8  
@;=9 +C69FH Y0<M C CJ9FBA9BHG 9@9;5H9 IH<CF=  
;9B7=9G -<9 5G9 C: "B89D9B89BH 8A=B=5G H74'4)+9 IH  
X  
@;=9 +C69FH 5B8 "5=B &7&9B5A=B Y F98=6@9 CAA=H  
)C@=7M CAD@9L=HM LD@5=B=B; /5F=5H-5G5G=H5FH5B  
"BGH=HIH=CBG =B F5B79 Z 7/9/8. 5:74'2 5, 52/9/)'2 ")/  
BBG9F #989B5GH=? %5IF9BN Y F98=6=@=HM /9FGIG C  
)5FH=G5B "B:@19B79 =B H38'799;I@5HCFM)'25H9/Z8  
BBG9F #989B5GH=? %5IF9BN Y-<9 )C@=H=7=N5H=CB C  
"B:@19B79 5B8 CFA5@5:"B489D9B89BH Z3/4/897'9/54 !+8+  
#.+57> X  
F=?G9B B8F95G Y)C@=H=75@ /!5@:299/54 "B8;9H79B4)9BH  
F9;C  
9BC +=7<5F8 # #.+ 5<+7 5, 9.+ :78+ 667567/'9/548  
%=HH@9 FCKB C  
9FBPB89N = &5FTB 15J=9F #57=BH #CF85B5 5B8 B8F95  
;9B7=9G "B89D9B89BH =B )F57H=79 J=89B7-92:'9C54 C5F  
5;+74'4)+ X

@MJ9F6CA &=?9@ %5FG -<W;9F <F=GH9BG9B 5B8 !5BG \$  
-F5BGD5F9B7MX)CK9F '9LIG (6G9FJ5H=CB'4@+5B49 +9;l@  
533:4/)'9/54 : '79+72> X  
58=B=G ,H5JFCG Y FCA "B89D9B89B79 H20,50@/=H=7G =  
'< !+;/+< X  
9<F=B; -<CA5G 5B8 ,965GH=5B \$F5DC<@ Y, IDF5B5H=C  
"B89D9B89B79 5B8 CBHFC@ -<9 & 5B8 H<9 IH<CF=N!  
IFCD95B ,=B;@9 &5F?9H Z 5:74'2 5, :756+'4 :(2/) 52/):  
=@5F8= 56F=N=C Y)C@=7M F98=6=@=HM 5B8 9@9;5H  
CAD5F5H=J9 AD=F-573@2+9G9:57564'Z :(2/) 52/)>  
=@5F8= 56F=N=C Y-<9 CFA5@ "B89D9B89B79 C: +9;l@  
CIBHF=9G 5B8 ,97HCFG Z "</88 52/9/X'2 ")/+4)+ !+;/+<  
15F8=5B7=7< ";CF 5B8 &5HH=5 l=8= Y CFA5@ "B89D9B  
/5F=9H=9G C: 55G-9H@="BAH=HIH=CB5@ CAD@9A9BH5F=I  
5B8 /C Z !+-:2'9/54 5;+74'4)+ X  
!5BF9HHM <F=G 5B8 <F=GH9@ \$CCD Y&95GIF=B; H<9  
;9B7=9G Z 5:74'2 5, :756+'4 :(2/) 52/)> X  
!5BF9HHM <F=G 5B8 <F=GH9@ \$CCD Y,<5@@ H<9 %5I  
7HI5@ "B89D9B89B79 C: +9;l@5HCFM ;9B7=9G CFA5@  
!+-:2'9/54 5;+74'4)+ X  
!CC8 <F=GHCD<9F Y )l6@=7 &5B5;9A9BH :CF @@ ,950  
X  
!l69F #C<B 5B8 <5F@9G + ,<=D5B +2/(+7'9+ /8)7+  
5:4\*'9/548 5, :7+' :)7'9/) :95453> GH 98 5A6F=8;9 .B=  
"B;C@8 \$5F=B FR8RF=7 /5FCB9 5B8 F5BG ,HC?A5B Y  
HC GG9GG 89 57HC+9B89D9B89B79 5974:296,Z:756+'4 :(2/  
52/)> X  
#57?GCB 5FC@MB Y-<9 )5F58CL C: A698898 "B89D9B8  
"B89D9B89BH +9;l@5HCFM ;9B7=9G =B H<9 ,C7=5@ )C@:  
,CIH< 05@9G  
#57?GCB 5FC@MB Y,HFI7HIF5@ 5B8 9<5J=CIF5@ "B89  
;9B7M "B89D9B89B79 5H49H<74'9/5@'82%9;J9@Z, \*3/4/897'9/  
X  
#CF85B5 #57=BH 5J=8 %9J= 5IF 5B8 15J=9F 9FBPB89N =  
+9;l@5HCFM ;9B7=9G <5BB9@G C: -F5B530'F'5B8 ,H5  
52/9/)'2 "9:\*'/+8 X  
\$CCD <F=GH9@ Y-<9CF=N=B; 5B8 LD:@2/3)B=B; /C@IBH5  
\*3/4/897'9/54 X  
\$CJ57=7 0=@@=5A 5B8 &5F7 0=B9FA5B Y-<9 989F5@  
"B89D9B89BH ;9B7M IHCB CAM %9;=H<A57M !+5;B< : :97  
X  
%9J= 5IF 5J=8 Y-<9 @C65@ =::IG=CB C: +9;l@5HCFM  
3+7/)'4 )'\*+3> 5, 52/9/)'2 '4\* "5)/'2X")/+4)+  
%9JM F=5B 5B8 )56@C - ,D=@@9F Y-<9 "BGH=HIH=CB  
CAA=HA9BH CAD5F5H=J9 B5@MG=G C: 59749ZC5A,AIB=  
'< )5453/)8 '4\* 7-'4/?'9/54 X



3+7/)'4 52/9/)'2 ")/+4)+ !+;/X<  
'CF8@=B;9F F=7 Y-5?=B;\$#\*←9781954H04;9F5=2C9G)@M Z "B  
+;+2563+49 CGHCB %=HH@9 FCKB C X  
'CH9 Y"B89D9B89B79 CB;F9GG=CB5@ 095?B9GG 5B8 -  
"AD57H C: CA6=B=B; 18;9H5FM IHCBCAM7;KZH<'←9ACJ5  
!+;/+< X  
( #.+ 5;+74'4)+ 5, !+ -:2'9578 ( <HHDG KKK C978  
=@=6F5FM CF; ;CJ9FB5B79 H<9 ;CJ9FB5B79 C: F9;I@5HCF  
( +/4- '4 4\*+6+4\*+49 !+<:12H95G KKK C978  
=@=6F5FM CF; ;CJ9FB5B79 69=B; 5B =B89D9B89BH F9;I@  
  
(GG9;9 <F=GHCDC Y F=J9B 6M LD9FH=G9 5B8 "BGI@5H  
+9;I@5HCFM ;9B7=9G Z 52/9/)8 '4\* 5;+74'4)+  
)5F8CK =9;C Y.B89FGH5B8=B; "B89D9B89B#75;@B7=9G  
LD9FH=G9 5B8 H<9 -97<BC7F5H[G ]5F58CL Z  
)C@@=HH <F=GHCDC9F 5B8 )9H9F !ID9 Y-5@?=B; 6CI  
CB79DHG Z :(2/) '4'-+3+49 !+;/+< X  
)C@@=HH <F=GHCDC9F 5B8 C@=B -5@6CH \$4(:4\*2+\*  
)IDD=G &5BI9@ 9H 5@ Y-<9 )C@=H=75@ CAIB=75H=CF  
;9B7=9G Z "</88 52/9/)'2 ")/+4)X !+;/+<  
\*I=BHMB &5F7 Y"B89D9B89BH ;9B7=9G &CF9 H<5B 5 <  
5B?G Z 5489/9:9/54'2 52/9/)'2 )5453> X X  
+5A &C<5B & ) \$ / CD5?IA5F 5B8 -MGCB ,A=H< Y'17  
+9;I@5HCFM "B89D9B89B79@ 9:9F9B79 -<9 5G9 C: H  
+9;I@5HCFM C5F8 C: "B8=5 Z \*3/4/897'9/54 "5)/+9>  
+=B;EI=GH J5B # #9:: 0CFG<5A 5B8 &5F7 @@9B =GB9F  
%9;=G @5H=J9 =F97H+CF5ICF579;9@5H6FM:(2/) \*3/4/897'9  
!+8+'7). '4\* #.+57> X  
+C;C:: \$9BB9H< Y-<9 (DH=A5@ 9;F99 C: CAA=HA9BH H  
-5F;9H Z #.+ :79+72> 5:74'2 5, )5453/)8 X  
+CAA9@ #5B 5B8 \$C9B /9F<C9GH Y LD@CF=B; ::97HG  
+9;I@5HCFG B9F;M +9;I@5HCF9/5B'29@;#1A Z5, \*3/4/8  
")/+4)+8 X  
+I::=B; J5 Y!CK HC 97CA9 5B "B89D9B89B#75;@B7=9G  
989F5@ '9HKCF? ;9B7M Z +73'4 52/9/)8 X X  
,7<F9:@9F %CFB5 Y-<9 .G5;9 C: ,7=9BH=:=7 \$BCK@98;9  
;9B7=9G Z 5;+74'4)+ X  
,9=:H9F &=F=5A Y.B89FGH5B8=B; /H.5H0 ;9B7=9G "B89D  
X  
,9@=B #9BB=:9F % Y0<5H &5?9G 5B ;9B7M "B89D9B89B  
3+7/)'4 5:74'2 5, 52/9/)'2 ")/+4)+ X  
,<5D=FC &5FH=B Y-<9 )FC6@9AG C: "B89D9B89BH ;9B7  
IFCD95B .B=CB Z 5:74'2 5, :756+'4 :(2/) 52/)> X  
,H9FB #CB Y-<9 F=H=G< .H=@=HM +9;I@5H=CB &C89@  
)FCGD97HG Z ! %571/4- '6+7 5  
,H9FB #CB 5B8 ,HI5FH !C@89F Y+9;I@5HCFM CJ9FB5B

)9F:CFA5B79 C: +9;l@554C5M ;N64+88G"Z.552 !+ -:2'9/54  
(/8):88/54 '6+7 "+7/+8 5 <HHD KKK GGFB 7CA 56GHF  
,J5F5 #5A9G ! Y-<9 )C@=H=7G 8A=B=GHF5H=CB =7<CH  
\*3/4/897'9/54 !+;/+< X  
,J5F5 #5A9G ! Y-<9 &MH< C: H<9 =7<CHCAM CAD@9A  
8A=B=GHF5H=CB =B H<9 )5GH 5B8 IH(2/9 C3/468@779/5A  
!+;/+< X  
-5@6CH C@=B Y-<9 ;9B7M "895 ,CA9H=A9G (@8 ,CA9  
,CA9H=A9G .B\$4F10\*Z+"B 5;+743+49 7/9/)'2 4'2>8/8 5, 9  
95 -+4)/+8 : '4-58 '4\* 5497')9:'2/8'9/54 %CB8CB 5B8 '9H  
-5B 5FC@=B9 0 Y0<5H H<9 989F5@ +9G9FJ9 C5F8 -9@  
"B89D9B89B79 Z +< &571 \$4/;+78/9> !+;/+< X  
-<5H7<9F &5F? 5 Y 9@9;5H=CB HC "B89D9B89BH +9;l@5  
5B8 CBH9LH15@ &98=5H=CB Z %+89 :756+'4 52/9/)8  
-<5H7<9F &5F? 6 Y+9;l@5H=CB 5:H9F 9@9;5H=CB "B89  
IFCD9 Z 5:74'2 5, :756+'4 :(2/) 52/)> X  
-<5H7<9F &5F? Y-<9 -<=F8 CF79 "B89D9B89BH+9;l@5  
)C@=H=7=5BG =B IFCD9 Z 5;+74'4)+ X  
-<5H7<9F &5F? Y+9;l@5HCFM ;9B7=9GF+H=9G,45H9 5B8  
CAD5F=GCB Z 5:74'2 5, :756+'4 :(2/) 52/)> X  
-<5H7<9F &5F? 5B8 @97 ,HCB9 ,K99H #.+ 52/9/)8 5,  
J5B -<=9@ ,5B8F5 5B8 \$IHG5@ 29G=@?5;=H Y C9G -5G  
GH56@=G<A9BH IHCBCAM 5B8 CBHFC@4@+7,4A#54'12CE  
!+;/+< 5, \*3/4/897'9/;+ ")/+X)+8  
-F=@@5G F5B7=G 5B8 &=;19@ &CBHCM5 Y-<9 9;F99  
"B89D9B89B79 &95GIF9A9/BH\*5B8(2/A)D586'-Z52 X  
-17?9F )5l@ #.+ \$42+)9+\* 5<+7 #.+ :+89 ,87 9++/9/3')>  
!+ -:2'957> "9'9+ )F=B79HCB )F=B79HCB .B=J9FG=HM )F9  
.\$ CJ9FBA9BH 9D5FHA9BH :CF IG=B9GG "BBCJ5H=CB 5B8 ,  
!+ -:2'9/54 %CB8CB  
.\$ '5H=CB5@ "B:F5GHFI7HIF9 CAA=GG=CB 49/)/6'9+ !+  
4,7'897:)9:7+ ">89+38  
/9F<C9GH \$C9B 9H 5@ :95453> '4\*CB80B52)5@;"9599 -+  
&57A=@@5B .\$.  
/9F<C9GH \$C9B IM )9H9FG 99FH CI7?59FH 5B8 F5A /9  
(F;5B=G5H=CB5@ IHCBCAM :C2/79D#354@89799/594K Z4  
+;+2563+49 X  
/9FA9l@9 8F=5B Y CBJ9BH=CB52C3(/;9B'ZM+;B89D9B89B  
X  
/9FG7<19F9 F5A Y-<9 +C@9 C: )16@=7 ;9B7=9G =B H<9  
J9FGIG +95@=HM Z :(2/) 52/)> '4\* \*3/4/897'9/54  
/=69FH F5B? #.+ !/8+ 5, 9.+ \$4+2+)9+\* 5A6F=8;9 )F9G  
/=69FH F5B? #.+ +< !+ -:2'957> "6')+ !+,7'3/4- +35)7'9  
@;5F  
/=69FH F5B? Y"B89D9B89BH ;9B7=9G 'C =L98 CIB85  
)'.22+4-+ =G7IGG=CB D5D9F '

05GGIA &CF=HN 5B8 56F=N=C 9 F5B79G7C Y LD@5=E  
'9HKCF? ,97HCFG /5F=9H=9G5;G:74H4)@=HM +9;X@5H=CB Z  
0=@GCB OCC8FCK Y-<9 ,HI8M C: 8A=B=GHF5H=CB Z 5  
25B8@9 F179 Y+9;l@5HCFG %9;=G@(5H)CF.5/)5B8 18;9H  
X  
29G=@?5;=H \$IHG5@ 5B8 # <F=GH9BG9B Y"BGH=H  
)C@=H=75@ J9FGIG !=GHCF=75@:75B2 5l,@H(12/5 @\*3L4/@5B'5  
!+8+'7). '4\* #.+57> X  
29G=@?5;=H \$IHG5@ Y IF9517F5H=7 IHCBCAM (F;5B=N  
)C@=H=7=5BG 5B8 "B89D9B89BH 8A=B=G B/F45/B9799/548=9G  
"5)/+9> X  
29G=@?5;=H \$IHG5@ Y"BGH=HIH=CB5@ CAD@=5B79 I  
IF9517F5H=7 IHCBCAM C: '5H=CB55@7492;15@5H7C5FM'4IH:<(2F  
52/)> X



\$ # !% & " # (

"BH9FJ=9K <=9: L97IH=J9 :CF 5B 97CBCA=7 F9;I@5HCF =E  
"BH9FJ=9K 9B9F5@ CIBG9@ :CF 5B 97CBCA=7 F9;I@5HCF  
"BH9FJ=9K ,9B=CF 8J=GCF 5B8 C B 6 I @ + 0 5 B \$ H € B 9 I F B - A @ B H H = 9  
"BH9FJ=9K ,9B=CF 8J=GCF :CF 5B 97CBCA=7 F9;I@5HCF =E

-<9 =BH9FJ=9KG K9F9 G9A= GHFI7HIF98 5B8 7CB8I7H98 CB@  
=B'89+7/4- 9.+ "+3/ "97:)9:7+\* 49+7;/+< '4\* +>54\* 753 !+8+  
:(2/)'9/54 BB9 5@@9H5 '9K 2CF? .B=J9FG=HM )F9GG '9K

'CH9 F9;5F8=B; 9H<=7G

"B:CFA98 7CBG9BH :CF H<9 =BH9FJ=9KG K5G 7C@@@97H98  
7CBG9BH :CFA K<=7< 89H5=@98 H<9 DIFD C B M A = H M < 9 J € @ H B F  
D5FH=7=D5H=CB K=H<8F5K5@ 5H 5BM ACA9BH :FCA H<9 GHI  
@@ H<9 85H5 <5G 699B 5BCBMA=G98 5B8 GHCF98 577CF8=B  
HC H<9 %, %=6F5FM

\$ ' # # \$ ( " "

			!
'9:7+ 5, /4*+6+4*+4)+			
"BGH=HIH=0 9LC;9BCIG 8CKB DFC79GG	29G 5B8 HCD 9GG	LD@=7=H 7CB79D =B89D9B89B79 5G 9LC;9BCIG =BGH=H	-<5H7<9F =@5F8: 87 & 9 6 5 A 8 = 6 K B
	&5M69	"AD@=7=H 7CB79D =B89D9B89B79 5G 9LC;9BCIG =BGH=H	'C 9L5AD@9 5J5=@56@ 5 HCD 8CKB
	'C	-<9F9 =G BC 7@19 H =7CB79DHI5@=G98 9LC;9BCIG =BGH=HIH=CB5@ DFC79GG "B CH<9F KCF8G :CFA5@ 89@9;5H=CB 8C9G BCH A5HH9F	'C 9L5AD@9 5J5=@56@ 5G 5 HCD 8CKB HIH=CB5@ DFC79GG :CFA5@ 89@9;5H=CB
"BGH=HIH=0 9B8C;9BCIG 6CHHCA ID	29G 5B8 DFC79GG	LD@=7=H 7CB79D =B89D9B89B79 5G G H9FB5@ 9BJ=FCB A5HH9F +9;1@5H 7CBHF=6IH9 HC =B89D9B89B79	+CAA9@ 5B8 /9F<C9G 5 9 8 8 B C 9 A B C I H G < F C I ; < 5 F 9 @ A D 9 9 F H G 5 9 8 7 H 5 7 9 H C F I G I C B C A M C 7 F C B G H 5 F 7 I H 7 H 9 8 @ 6 M F 9 ; 1 @ 5 H 6 7 F @ 5 H B B ; 5 H < 8 A F 5 = B H 5 = B =
	&5M69	"AD@=7=H 7CB79D =B89D9B89B79 5G 5B8 6CHHCA ID DFC	%=J9FACF9 ;9 5A5 B 5 B ; 8 8 ; 9 H C H 5 ? 9 7 C B H F C 7 9 6 6 : = H 5 B 5 @ M G = G 5 B 8 6 M (" + G ' H ; 9 G H G = A D @ = =B89D9B89B79 A5M 69 5 DFC79GG 5G F9;1@5H C F G : F C A 7 9 F H 5 = B A 9 7 < 5 B = G H < C I ; < H < = G = G B C H 7 @ 9 D 5 F H C : H < 9 7 C B 7 9 D H =B89D9B89B79
	'C	-<9F9 =G B G 7 8 @ D 9 9 E =G 7CB79DHI5@= 9B8C;9BCIG 6CHHC	05GGIA H<=G =G G 9 5 8 G G I A G 7 6 B G = 8 9 F G H < A H O J B 6 6 7 9 G G 5 F 9 B C H G I =B89D9B89B79 5B8 H<5H 57HCFG 8C K=H< H<9= 5:H9FK5F8G A5HH9F :C =B89D9B89B79 !CK9J9F A9BH=CB H<5H F9;1@5HCF 6I=@8=B; H<9=F =B89D =G BC 7@19 C: 5 6CHHCA =B89D9B89B79

			,99 BBG9F #989B5GH G=A=@5F G=H15H=CB
C;B=H=J9	29G	LD@=7=H 7CB79D =B89D9B89B79 5G DFC79GG	,9=:H9F H<9F9 = 75@7@9BHH#99 BCFA 9B> 5IH<CF=H=9G HC F9GD97 C: 5;9B7=9G
	&5M69	-<9F9 5F9 7=@B89D9H =G 7CB79DH15 @ =G9 DFC79GG	-<5H7<9F 57?BC BC5@=H=75@B57HCFG A5M HC IG9 H<9=FCD79CFCH5K@ F9;I@5HCFG 6975IG9 =H CF BCH =B H<9HFBCBHIFFH A9BH=CB C: 5 7C;B=H=J9 <95FH C: =B89D9B89B7
	'C	-<9F9 =G BC 7@19 H A5M69 5 7C;B=H=J9	=@5F8= =B89D9B89B7 DFC79GGH15 @ =G98 5G 5 :C DFC79GG
))5:49 5, /4*+6+4*+4)+			
,9D5F5H=CB =BH9F9GHG	29G	"B89D9B89B79 =G 9 5G 5 G9D5F5H=CB DCK9F9GHK99B F9;I@5 DC@=H=7=5BG 9 A9A69FG GHF17HIF50C K=H< ;CJ9FBA9BH +=G 9LD9FH 65G98 897=CB H5?9 =BHC 577CIB@ DF9:9F9B79G	-5H7<9F 89G=BS GHF#BHH9F59G@M GF9D5F5H @5HCF=5@B8 YB9=H<9F 9@ A5B5;I89 @M79@97H98 C::= F50C DG59D5 F5BF=CBHM +=G CB@M5A579=HM C: F9; CB@CBG=CBG 8YKBCHKCIH 7 IB@ =HC=@5@=75@:9F9B79G
	&5M69	-<9F9 5F9 7@9D5H5 =BH9F9GHG =G 5 D C: =B89D9B89B79	=5B7I@@@= 9H 5@ 57@9CF@M9 89:=B9H=6B 5 =BH9F9GHG 5G H<9 5IH 5IHCBCAM 6IH H<9F9 5F G9D5F5H=CB C: =BH9F9G H<9=F 7CB79DH15@=G5H= G9D5F5H98 :FCA A=B=GHI H<9 :57H H<5H H<9M A5 897=G=CBG
	'C	-<9F9 =G BC 7@19 C: =BH9F9GHG =G C: =B89D9B89B79	"B;C@8 9H 5@ =B =B H9FAG C: 5IHCBCAM 5 =B:@19B79 CH<9F 57HCFC =B:@19B79 C: CH<9F 57HC =G 7@95F@M 7CB79DH15 5IHCBCAM 5B8 H<9F9 =G =B89D9B89B79 =G 7CB79 G9D5F5H=CB C: =BH9F
IHCBCAM	29G	"B89D9B89B79 =G 9 5G 5IHCBCAM	+CAA9@ 5B8 /9F<C9C 9LD@=7=H@M DF9:9F

			Y5IHCBCAMZ F5H<9F H 5G 5IHCBCAM F9:9FG I
	&5M69	-<9F9 5F9 7@19G H =G 89:=B98 5G 5IHCBCAMZ 9B; <=G =B89 L C <5J=B; @5F;9 DCK9 GI;;9GH=B; H<5H BCH 69= :CF DC@=H=7=5B GK=H<CIC 70CBHDFH9@ 8=B 897=G=CBG 9H7 =B89D9B89B79 -<=G =G 5IHCBCAM =A 58?9=7B;G=C	
	'C	-<9F9 =G BC 7@19 H =G 7CB79DHI5@=G9	'C 9L5AD@9 5J5=@56@
,9@F:9@=5B7	29G	"B89D9B89B79 =G 7CB79DHI5@=G9@8@56M =9 <5J=B; 7CBH F<B5BC+9@ 79M CIF79G = 5GD97HG C: GIFJ=C5@F9GIG < 5G DFCH97H=CB :FCA 8=GA=GG5@ GH5::	\$FI@M =B89D9B89 79DFCH97H=CB :FCA F<B5BC+9@ 79M CIF79G =
	&5M69	-<9F9 75@19G H<5H = =G 7CB79DHI5@=G9	!C@@=65I ;< =B8 &5J=6;9@FFH9@+5=CB9 :FCA GI;;9GHG H<5H G9@: F9@ 89:=B=H=CB9D9B89B79H<9 5IH<CF 8C9G BCH 9B;5;9 577CIBH
	'C	-<9F9 =G BC 7@19 H =G 7CB79DHI5@=G9	I@=7H 5@ 7CBH 55D9G9@:CF9@IF5B79@ =G C: =B89D9B89B79
&CF5@ 9<5	29G	9<5J=CIF5@ E15 9LD@=7=H@M D5FH =B89D9B89B79	%9K=G 5B8 ,9@=B CI:@H<9 D5F:HBGBBCB7CADC 5;9B7M 5B8 56G9B79 C: =BH9F9GH =B H<9=F =B89 "H =B8=75H9G H<5H =A =BH9;F=HM 5F9 D5FH C: =B89D9B89B79
	&5M69	-<9F9 5F9 7@19G H E15@=H=9G 5F9 D5F C: =B89D9B89B79	&C<5B <9 5GG9 HB89D9B89B79BKHH<BH<9 89:9F9B79 K<=7< KCI C: HFIGH 5B8 9LD9FH=G9 D9F79=J98 6M CIFHG "E H<IG DCH9BH=5@@M 89: HFIGH 5B8 9LD9FH=G9
	'C	-<9F9 =G BC 7@19 E15@=H=9G 5F9 D5F C: =B89D9B89B79	/5B -<=9@ Y ;9B7M 5IH 9HL D97H<98 89C=B=BG=CB H< 75FF=98 CIH =B 5B =B89D 5B8 9LD9FH A5BB9F C 5 HF5BGD5F9BH 5B8 9::= H<9 CH<9F <5B8Z 9<5J= 5F9 7@95F@M 5B 89B

			F5H<9F H<5B 5B =BD 89:=B=H=CB
/89'4)+ 5, 7+2'9/548./6			
"BGI@5H=C	29G	-<9 F9@5H=CBG<=D 9@97H98 C::=7=5@ Y=BGI@5H98Z	!5BF9HHM 5B8 \$CCD 5;9B7-89G7FD-595H9GIB89F 5DDC=BH98 F5H<9F H<5B 5B8 5F9 =BGI@5H98 :F DF9GGIF9Z K=H< BC EI5@=:75H=CB C: H<9
	&5M69	-<9F9 5F9 7@19G F9@5H=CBG<=D 69 9@97H98 C::=7=5@ 5Y=BGI@5H98Z "B G7<C@5F G99AG =B89D9B89B79 F9E G9D5F5H98 5B8 CF 9@97H98 C::=7=5@	8K5F8G 5B8 05J9FA5E HK99B @5H=CBG<=D GH<5F9CB79DH@5@G-9-85-19 D5EB77B@55G-5:1H<9FG =B HCJ9HF8-AB7BH<5HCA =BH9 F99IG@5H98 8697 =G=CB A5 DC9H97H98 :F@CG9F F9 ;CJ9FBA9BHG
	'C	-<9F9 =G BC 7@ F9@5H=CBG<=D 69 9@97H98 C::=7=5@ 5G Y=BGI@5H98Z	+1::=B; H<9 H9F HK99B B@H95B95F 5B8 H< 98=B<7CB79DBH5@57H=CBCG C::=7=5@G 5B8 + G
FA[G @9B;	29G	-<9 F9@5H=CBG<=D 9@97H98 C::=7=5@ Y5FA[G @9B;H<Z	IGIC=7 + G Y5G 6 5 G 6GH5@H=5@889CF9 J=FHI9 C: CD9F5H=B; 5H :FCA H<9 CAA=GG=CB
	&5M69	-<9F9 5F9 7@19G F9@5H=CBG<=D 69 9@97H98 C7C=77-5DHC59GK998 5G Y5FA[G @9B;H<Z H<9 G7<C@5F 8C9G 5B8 Y5FAG[ @9B;H<Z 6IGI;F999FE6; 5B 55FA[G @9B 7@CG9F F9@5H=CBG<=D 69HK99B DC@=H=7=5BG 5B8	I@=7< 9H 5@ Y5F HK99B9LHD@=7B8@M9@5HEC DC@=H=7=5BG 5 ZH<BMD5BH5;7I@5H<=H<9 65 5B8CIBIG9MH<7CB9FA@ 5B8 6IGI;F999FE6; 5B 55FA[G @9B 69HK99B
	'C	-<9F9 =G BC 7@ F9@5H=CBG<=D 69 9@97H98 C::=7=5@ Y5FA[G @9B;H<Z	=@5F8= B9J9F IG HK99BH5B 5B8DBF9:9FG Y 8C9G BIC@=A9DB8GCB-6H@9 7@CG9F F9@5H=CBG<=D 57HCFG 5B8 + G