

A Uk i b`6YUWX`?i hU`@ca Vc_`
? CA D@9HH9F`GHF 5B 8: , < F 9F

A Uk i b`6YUWX`?i hU`@ca Vc_`]gh`Y]bYf`XYf`a U`Yf]gW`ghYb
GhfÅbXYžX]Y`G]Y`Ui ZXYf`]bXcbYg]gW`Yb`ϕgY``@ca Vc_`]bXYb
k YfXYb``8]YgYf`Ui W`U`g`DUbhU]`A Uk i b`VY`UbbhY`GhfUbX`]gh
Y]bY`VfY]hY`6i W`h`a]h`k`Y»Ya`GUbXž`X]Y`]b`h]YZgž
[YgW`ØhnhYg`hØf_]gZUfVYbYg`K UggYf`UVZÄ``h``: Øf`X]Y`Yb][Ybž
X]Y`bUW`Y]bYa`Yd]gW`Yb`GhfUbX`gi W`Ybž`i`a`XYa
K U`bg]bb`j`cb`?i hU`@ca Vc_`ni`YbhZ]Y`Ybž`gW`bUddYb`G]Y
g]W`≠fY`nk`Y]F`ÅXYf`i`bX`ZU`fYb`G]Y`ni`a`A Uk i b`6YUWX`
?i hU`@ca Vc_`5bZU`fh`ni`a`A Uk i b`6YUWX`?i hU`@ca Vc_`
A Uk i b`6YUWX``]Y[h`Yhk`U`&\$`A`]bi`hYb`j`ca`<YfnYb`j`cb`?i hU
@ca Vc_`YbhZYfbh``8Yf`VYghY`K`Y[ž`i`a`Y`Yf`Yf`ni`[Y`Ub[Ybž
]ghž`Y]b`A`chc`ff`UX`]b`?i hU`@ca Vc_`/`Ua`d`^`Y``]d/

A Uk i b`6YUWX`?i hU`@ca Vc_`]gh`Y]bYf`XYf`a U`Yf]gW`ghYb`GhfÅbXYž
X]Y`G]Y`Ui ZXYf`]bXcbYg]gW`Yb`ϕgY``@ca Vc_`]bXYb`k`YfXYb``
8]YgYf`Ui W`U`g`DUbhU]`A Uk i b`VY`UbbhY`GhfUbX`]gh`Y]bY`VfY]hY
6i W`h`a]h`k`Y»Ya`GUbXž`X]Y`]b`h]YZgž`[YgW`ØhnhYg`hØf_]gZUfVYbYg
K UggYf`UVZÄ``h``

: Øf`X]Y`Yb][Ybž`X]Y`bUW`Y]bYa`Yd]gW`Yb`GhfUbX`gi W`Ybž`i`a`XYa
K U`bg]bb`j`cb`?i hU`@ca Vc_`ni`YbhZ]Y`Ybž`gW`bUddYb`G]Y`g]W`
≠fY`nk`Y]F`ÅXYf`i`bX`ZU`fYb`G]Y`ni`a`A Uk i b`6YUWX`?i hU`@ca Vc_`

5bZU`fh`ni`a`A Uk i b`6YUWX`?i hU`@ca Vc_`

A Uk i b`6YUWX``]Y[h`Yhk`U`&\$`A`]bi`hYb`j`ca`<YfnYb`j`cb`?i hU
@ca Vc_`YbhZYfbh``8Yf`VYghY`K`Y[ž`i`a`Y`Yf`Yf`ni`[Y`Ub[Ybž`]ghž
Y]b`A`chc`ff`UX`]b`?i hU`@ca Vc_`ni`a`]YhYb`i`bX`gY`Vgh`Y]Yf`Yf`ni
ZU`fYb``K`]f`Y`UVYb`)`\$`\$`\$`\$`F`i`d]U`d`f`c`HU[`ZØf`Y]bYb`[`i`hYb`F`c``Yf
j`ca`ZFY`i`bX`]W`Yb`6Yg]hYf`i`bgYfYf`;`UghZUa`]Y`VYnU`h``

8Yf`VYghY`K Y[ž`A Uk i b`6YUW`ni`Z]bXYbž`VYghY`h`XUf]bž`Y]bZUW
DUbhU]`A Uk i b`cXYf` A Uk i b`6YUW` `]b` ; cc[`Y`A Udg
Y]bni [YVYb`i bX`g]W`j cb` ; cc[`Y`Xcfh\]b`ZØ`fYb`ni`UggYb`"8Yf
9]bZUW`Y]h`\U`VYf`\UVY`]W`i bhYb`Y]bY`A Uk i b`6YUW`@ca Vc_!
? UfhY`VY][YZØ[h`

@9G9B`G⇒`A 9<F.`%&`69GH9`GHF`ÿB89`B`89F`Bÿ<9`JCB`?| H5
@CA 6C?

J cb`?`i hU`@ca Vc_`bUW`A Uk i b`6YUW`

⇒`6Yni [`Ui ZX]Y`_UfY`F]W`hi b[`j cb`?`i hU`@ca Vc_`bUW`A Uk i b
6YUW`a ØggYb`G]Y`bi f`a`]h`XYa` : U`fYb`Ui Z`>`VY[`]bbYb`"A Uk i bž
XUg`G]Y`Ub`XYf`?`fYi ni b[`bYVYb`XYa` H`Y`@j`]b[`Fcca` <cghY`Ui Z
XYf`<`Ui dhfYghUi fUbha`Y]`Y`j cb`?`i hU`@ca Vc_`Z]bXYb`"8]YgY
Ugd`U`h]Y`fhY`GhfU`»`Y`]gh`n]Ya` `]W`[i`h[YdZY[h`i bX`k`Y]gh`bi f
k`Yb][Y`GW`U[`ØW`Yf`Ui Z`X]Y`Yg`ni`j`Yfa`Y]XYb`[`]`h`

J cb`\
]Yf`Ui`g[Y`h`Yg`k`Y]hYf`X]Y`k`]bX][Yb`6Yf[ghfU`»`Yb`\
]bUi Z`
j`cfVY]`Ub`Y]b][Yb`5i`gg]W`hgd`i b`_hYb`i bX`XYf`?`i hU`@ca Vc_!
: `YXYfa`Ui`g`Ø`Y`f`b`Ub[`_Ub[`!<`Ø`Y`ž`VYj`cf`G]Y`Ui Z`A`YYfYg`Ø`Y
\
]bUVghY][Yb`ž`k`c`G]Y`Y]b`_`Y]bYg`GW`]`X`gY`Yb`ž`XUg`Ui Z`XYb
A Uk i b!GhfUbX`\
]bk`Y]gh`

A Uk i b!GhfUbX!9]bhf]hgg_UfhY`

K]Y`X]Y`a`Y]ghYb`Ghf`Å`bXY`]b`XYf`I`a` [YVi`b[`j`Yf`Ub[h`A Uk i b
6YUW`?`i hU`@ca Vc_`Y]bY`_`Y]bY`9]bhf]hgg[YVØ`f`j`cb`%\$`\$\$\$
F`i`d]U`\
d`f`c`A`c`h`c`f`f`U`X`"8`Ug`]gh`Ui Z[`Ub`n`Y`f`@]b]Y`n]Ya` `]W`G`h`U`b`X`U`f`X`

A Uk i b`GhfUbX`@ca Vc_`?`UfhY`

CVk`c`\
`Yg`n]Ya` `]W`Y]bZUW`]ghž`]\
b`gY`V`gh`ni`Z]bXYbž`\
UVY`]W`
Y]bY`A Uk i b`6YUW`@ca Vc_`!`?`UfhY`Ub[Y`Y`Z`h`Y`h`ž`i`a` `⇒`b`Y`b`ni
\
Y`Z`Y`b`ž`X]Y`[YbUi`Y`@U[Y`XYg`GhfUbXYg`ni`Z]bXYb`"

A Uk i b`6YUW`Hci`f`i`bX`HfUb`gdc`fh`

C V k c \ ` Y g ` X Y Z [b] h j ` a Ò [`] W X `] g h ž ` U ` Y ` G h f Å b X Y ` j c b ` ? i h U ` @ c a V c _
U i Z Y [` Y b Y ` : U i g h i n i ` Y f _ i b X Y b ž ` _ Ò b b Y b ` G] Y ` Y] b Y ` ? i h U ` @ c a V c _
7 i ` h i f Y ` U b X ` 6 Y U W X Y g ` H c i f `] a ` j c f U i g ` c b `] b Y ` V i W X Y b ž ` k Y b b ` G] Y
Y] b Y ` d f] j U h Y ` G h f U b X h c i f ` V Y j c f n i [` Y b ` " 8] Y g ` V Y] b \ U ` h Y h ` Y] b Y b
[U b n h Å [`] [` Y b ` 5 i g Z i [` n i ` Y] b] [` Y b ` X Y f ` V Y g h Y b ` <] [` \ `] [` \ h g ` j c b ` G Ø X !
@ c a V c _ ž Y] b g W X `] Y » `] W X ` A U k i b ` 6 Y U W X "

K Y b b ` G] Y `] b ` Y] b Y f ` ; f i d d Y ` f Y] g Y b ž ` _ Ò b b Y b ` G] Y ` U ` h Y f b U h j ` U i W X ` Y] b
5 i h c ` a] Y h Y b ž i a ` X] Y ` [` Y g U a h Y ` ð g Y ` ` @ c a V c _ U i Z Y [` Y b Y ` : U i g h i n i
Y f _ i b X Y b ` " ? `] W _ Y b ` G] Y ` \] Y f ž i a ` X] Y ` V Y g h Y b ` A] Y h k U [` Y b U b [` Y V c h Y `] b
@ c a V c _ X] f Y _ h j c a ` : ` i [` \ U Z Y b ` c X Y f ` j c b ` ? i h U ` @ c a V c _ U i g i n i
j Y f [` Y] W X Y b "

H ð D . ` K Y b b ` G] Y ` j c a ` : ` i [` \ U Z Y b ` U b f Y] g Y b ž ` Y a d Z Y ` \ ` Y `] W X ` ` ð b Y b ž
Y] b Y b ` j c f U V ` j Y f Y] b V U f h Y b ` d f] j U h Y b ` H f U b g Z Y f `] b ` X] Y ` G h U X h i n i
V i W X Y b ` " 8] Y g ` Y f g d U f h ` ð b Y b ž ` Å W X Y f `] W X Y ` D f Y] g Y ` n i ` n U ` \ ` Y b ž ` X] Y ` U i g
X Y a ` H c f ` _ c a a Y b "

U h 1 ` A 5 K I B ` G H F 5 B 8 ` G , 8 ! @ C A 6 C ? ž ? I H 5 ` @ C A 6 C ? ` G H F Ÿ B 8 9 2

J 9 F ; @ 9 ÷ < 9 B ` G ð 8 ð ; , B G H ð G H 9 B ` : @ ; 5 B ; 9 6 C H 9 ` J C B ` I B 8
B 5 7 < ? I H 5 ` @ C A 6 C ?

K U g ` G] Y ` U a ` A U k i b ` 6 Y U W X ` ? i h U ` @ c a V c _
= b X c b Y g] Y b ` Y f k U f h Y h

6 Y] ` ð f Y f ` 5 b _ i b Z h ` \ U V Y b ` G] Y ` a Y ` \ f Y f Y ` A Ò [`] W X _ Y] h Y b ž ` k c ` G] Y ` ð f
A c h c f f U X ` U V g h Y ` ` Y b ` _ Ò b b Y b ` " G i W X Y b ` G] Y ` g] W X ` Y] b ` g W X U h h] [` Y g
D ` Å h n W X Y b ` i b X ` [` Y \ Y b ` G] Y ` \] b i b h Y f ` n i a ` G U b X g h f U b X ` " 9 g ` [`] V h ` Y] b
d U U f ` K U f i b [` g ž ` X] Y ` ð b Y b ` [` Y f b Y ` ð f ` A c h c f f U X ` _ c g h Y b ` c g ` d U f _ Y b
` U g g Y b ž ` X U ` G] Y ` V Y f Y] h g ` % \$ ` \$ \$ \$ ` F i d] U \ ` 9] b h f] h h g [` Y V Ø \ f ` V Y n U \ ` h
` \ U V Y b "

D U b h U] A U k i b `] g h ` Y] b Y ` k Y] h Y ` 6 i W X h ` a] h ` h] Y Z V ` U i Y a ` K U g g Y f ž ` X U g
g] W X ` d Y f Z Y _ h i n i a ` G W X k] a a Y b ` Y] [` b Y h ` 8 U ` X] Y ` 6 i W X h ` X i f W X ` X] Y
@ U b X n i b [` Y b ` n] Y a ` `] W X ` [` Y g W X Ø h n h] g h ž ` [`] V h ` Y g `] b ` X Y f ` A] h h Y ` k Y b] [`
K Y ` ` Y b [` U b [` " 5 ` ` Y f X] b [` g ` [`] V h ` Y g ` U b ` X Y f ` Ò g h `] W X Y b ` G d] h n Y ` b c W X
Y] b Y b ` G d c h i n i a ` G i f Z Y b ` f K U n i ` g d Å h Y f ` a Y ` \ f Ł "

≡W`k Uf`Y`f`]W` [YgU[h'gW`cW_]Yfh`XUfØVYfž`k]Y`YYf`A Uk i b`6YUW`
k Uf`"5V[YgY`Yb`j cb`Y]b`dUUf`?]bXYfbž`X]Y`5fa V`AbXYf`
j Yf`_Ui ZhYbž`i bX`Y]b][Yb`À`hYfYb`Y]b`Y]a]gW`Yb`8Ua Ybž`X]Y`]b`
XYb`K Ufi b[g`UfVY]hYhYbž`k Uf`]W`X]Y`Y]bn][Y`GY`Y`Ua`GhfUbX`"

HUhg`AW`]W` ghY`hY`]W`ZYghž`XUgg`X]Yg`a Y]bY`U`[Ya Y]bY`
9fZU`fi b[`k Ufž`U`g`]W`@ca Vc`_VYfY]ghY`"GcVU`X`k]f`b]W`h`k Yb][Yf`
U`g`) `A]bi hYb`j ca` <Ui dhgW`U[`YbhZYfbh`k UfYbž`ÖZbYhY`g]W`X]Y`
[YgUa hY`≠gY`ZØf`Y]b`fc`Ygž`c`_U`Yg`FY]gYYf`YVb]g`
U`h1` A 5K I B`GHF 5B 8`? I H5`@CA 6C?`≠B 8CB 9G`9B` 2 @99F 9F`
GHF 5B 8` `A 5K I B`GHF 5B 8`

@9G9B`G`9` , 69F`A 9≠9B`@`96`@B; GGHF 5B 8`≠`@CA 6C?`A 9? 5? =`
6957<`GCI H<`@CA 6C?`

D`Ugh]_j YfgW`a i hni b[`]b`≠XcbYg]Yb`

9]b`fY[Y`a`À`][Yf`C`fh`Ub`]bXcbYg]gW`Yb`Ghf`AbXYb`g]bX`<Ui ZYb`
j cb`D`Ugh]_a`Ø`"9g`]gh`Y]b`i b]j YfgY`Yg`DfcV`Ya`ž`XUg`j]Y`Y]W`h`
Xi fW`X]Y`_cbhfUghfY]W`Y`GW`Öb`Y]h`X]YgYg`k i bXYfgW`ÖbYb`C`fhYg`
bcW`j Yfgh`Àf`_h`k i fXY`"6Yj cf`]W`a]W`Ui Z`XYb`K Y[`a UW`hYž`Y]b`
dUUf`GW`bUddgW`ØggY`ni`a UW`Yb`i bX`X]Y`8fc`bY`ni`Z]Y[Ybž`
k i fXY`]W`i bk Y][Yf`]W`j cb`Y]bYa` - !`À`f][Yb`5fa V`UbXj Yf`_Ai ZYf`
Ub[Ygd`fcW`Ybž`XYf`Z]Y`» YbX`9b[`]gW`ž`6U`UgUž`GdUb]gW`i bX`
≠XcbYg]gW`gdfUW`"≡W`ØVYfnYi [hY`]bž`a]f`VY]a`GUa`a`Y`b`j`cb`
nk Y][fc`» Yb`D`Ugh]_hØhYb`ni`Y`ZYbž`i bX`_Ui ZhY`]a`]a` ; Y[Ybni [`
Y]b`5fa V`UbX`ZØf`&`\$`\$`\$`F i d]U`"
U`h1` A , @@G5A A 9@B`A`H`9`B`<9`A`≠G7<9B`?`≠B 89FB`5A`A 5K I B`
6957<`ž`? I H5`@CA 6C?` 2`

@9G9B`G`9`8`9`J C @@GHY`B 8`≠` 9`@GH9`8 9F`5? H`≠`≠Y`H9B`≠B`
@CA 6C?

A Uk i b!GhfUbXVfUbXi b[

K Ybb`G]Y`bUW`X`Yb`VYghYb`Gi fZghf`AbXYb`]b`GØX!@ca Vc`_gi W`Ybž`
]gh`A Uk i b`k U`fgW`Y]b`]W`b]W`h`X`Yf`f]W`h][Y`GhfUbX`ZØf`G]Y`"
5`YfX]b[g[]Vh`Yg`Ui Z`XYf`C`ghgY]hY`]b`XYf`B`À`Y`XYf`@UbXni b[Y`

Y]bYb`Gi fZVfYU_`Ua `A Uk i b`6YUW`"8Yf`Gi fZgdch`A Uk i b`6YUW`
]gh`bcfa U`Yfk Y]gY`b]W`h`XYf`VYghY`C`fh`ZØf`5b`Z`Äb[`Yf`z`XU`G]Y`Y]b
k`Yb][`ni`Y]bYa`F`YYZ`6fYU_`\\]bUi`gdUXXY`b`a`ØggYb`"K`Ybb`G]Y
`YXcW`Y]b`fi`\\[`Yg`D`Ä`hnW`Yb`gi`W`Yb`ž`c`\\b`h`g]W`Y]b`6Ygi`W`ž
VYgcbXYfg`k`Ybb`G]Y`VYfY]hg`ni`XYb`VY`_UbbhYfYb`Ghf`ÄbXYb`j`cb
A`Uk`j`cXYf`GY`cb[`6U`UbU_`i`bhYfk`Y[`g`g]bX`"
U`h1` A`5K`I`B`6957<`GI`F: `6F`95?`@CA`6C?
`B`8`C`B`9G`9B` 2`A`5K`I`B`GI`F: `F`99: `6F`95?`5I` : `8`9F`C`GHG9`#9
f@B?GŁ`J`C`B`D`5`B`H`5`=A`5K`I`B`

A`9<F`@CA`6C?`GHF`Y`B`8`9: `F`C`G`5`GHF`5`B`8`@CA`6C?`
?`CA`D`@`9`H`H`9F`GHF`5`B`8: `<`F`9F`

?`i`hU`@ca`Vc_`i`bhYf_`i`bZh`

K`c`j`b`?`i`hU`@ca`Vc_`ØVYfbUW`hYb`

A`9`B`9`I`B`H`9F`?`I`B: `H`i`6`Ub`Ub`U`<`ca`Y`gh`Um`Øf`~`-`d`f`c`B`UW`h`_`U`b`b`g`h
X`i`Y]b`8`c`d`d`Y`n]a`a`Y`f`a`j`h`?`]a`U`Ub`U[`Y`i`b`X`_`c`g`h`Y`b`c`g`Y`a
: `f`Ø`\\`g`h`Ø`W_`VY`_`ca`a`Y`b`"8`U`g`K`j]: `j`\\]Yf`]g`h`g`W`b`Y`"i`b`X`XYf`6`Y`g]h`n`Y`f
]g`h`g`Y`\\`f`Z`f`Y`i`b`X`]W`i`b`X`ni`j`c`f`_`ca`a`Y`b`X`"9`f`[`U`V`a`]f`Y`X`Y`b`H`U[
Y]b`Y`_`c`g`h`Y`b`c`g`Y`D`U`d`U`m`U`U`i`g`g`Y]b`Ya` ; `U`f`h`Y`b`"C`V`k`c`\\`Y`g`Y`h`k`U`g
U`V`g`Y]h`g`X`Y`f`<`U`i`d`h`g`h`f`U`»`Y`"Y[`h`ž`k`]f`X`X`Y`f`6`Y`g]h`n`Y`f`G]Y`a`j`h`Y]b`Ya
A`c`h`c`f`f`U`X`Z`Ø`f`)`\$`"\$`\$`\$`d`f`c`H`U[`U`i`g`g`c`f`h]Y`f`Y`b`"

U`h1` 65B5B5`<`CA`9GH5M`B`?`I`H5`@CA`6C?`B`8`C`B`9G`9B` 2
69GH`J`5@`9`<`C`GH9@`A`Y`f`Y`b`X`Y`b[`<`c`g`h`Y`"K`Y`b`b`G]Y`<`c`g`h`Y`!
5`h`a`c`g`d`\\`Ä`f`Y`gi`W`Y`b`ž`X`U`b`b`g]b`X`G]Y`V`Y]a`A`Y`f`Y`b`X`Y`b[`<`c`g`h`Y`
[`Y`b`U`i`f]W`h][`":`Ø`f`b`i`f`*`~`d`f`c`B`U`W`h`_`Ø`b`b`Y`b`G]Y`g]W`Y]b`Y]b`Ya
]a`U`h]g]Y`f`h`Y`b`G`W``U`Z`g`U`U`a`j`h`K`@5B`i`b`X`6`]W_`U`i`Z`X`Y`b` ; `U`f`h`Y`b
k`j]Y`X`Y`f`Z]b`X`Y`b`"8]Y`i`b`h`Y`f`_`i`b`Z`h`"Y[`h`i`b`i`f`*`\$`\$`a`j`c`a`?`i`hU`6`Y`U`W`
Y`b`h`Z`f`b`h`i`b`X`j`b`X`Y`f`B`Ä`\\`Y`j`j]Y`Y`f`F`Y`g`h`U`i`f`U`b`h`g`ž`c`_`U`Y`f`K`U`f`i`b[`g
i`b`X`Gi`d`Y`f`a`Ä`f`_`h`Y`"

U`h1` A`9F`9B`8`9B; `?`I`H5`@CA`6C?`<`C`GH9@`2
?`I`H5`@CA`6C?` :`5`J`C`F`#`9`i`C`f][`]b`@ca`Vc_`C`f][`]b`j`Y`f`ZØ[`h`Ø`V`Y`f
Y]b`Y`b`G`k`]a`a`]b[`d`c`c`a`j`h`G`c`b`b`Y`b`h`Y`f`f`U`g`g`Y`g`c`k`j]Y`Ø`d`d][`Y` ; `Ä`f`h`Y`b
n`i`a`9`b`h`g`d`U`b`b`Y`b`"8]Y`g`Y`f`C`f`h]g`h`n`Y`b`h`f`U`"Y`Y`[`Y`b`i`b`X`j`Y`f`ZØ[`h`Ø`V`Y`f
Y]b`Y][`Y`b`Y`g`F`Y`g`h`U`i`f`U`b`h`A`j`h`G]W`X`Y`f`\\`Y]h`Y]b`Y`X`Y`f`V`Y`g`h`Y`b`D]W`g`]b
?`i`hU`@ca`Vc_`

'U`h1 <9F?I B: H?I H5`@CA 6C?`B8CB9G=9B 2
U`h1 @99F9F`GHF5B8`69=D5BH5=A 5K I B`?I H5
@CA 6C? 2 A 5K I B`6957<`@CA 6C?`B8CB9G=9B`GHF5B8`:_ F
I BG
U`h1 ?I H5`@CA 6C?`GHF5B89Z`A 5K I B`GHF5B8`G_ 8`@CA 6C? 2
U`h1 A 5K I B`GHF5B8`?I H5`@CA 6C?`B8CB9G=9B 2

'U`h1 A Uk i b!GhfUbX`@ca Vc_ 2
"

8YhU]`g

6Ygi WXYb`G]Y`i bg`Ui Z.`Y]bY!fY]gY"XY