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

, -*!./#!O1.!.\$22*%2#!+3*451.67!1.!'8!'6!9') -6!.%+O!16!1%#!9+9*%67!:\$6!'%.6*1;!+8!.%+O7!1!
5+2;!;4'<2*2*!8*2!.6*1;'2#7!-128(84+<*%!;4+=.!.=166*4'%)!+%6+!6-*!)4+\$%; >!
?+4!*+, "-.!, /0+7!O-+!O+4/*; !1.!1!4'5/.-1O!91%!O'6-'%!6-*!@1.6!A16*!; '.64'567!6-'.!; 1#!
O1.!6-*!2\$5/'*.6!-*!-1;!-1;!'%!B\$'6*!1!O-'2**!66!:*)1%!'%!6-*!9+4%'%)!O-*%!-*!*.5+46*;!
6-*!D91;19E!84+9!6-*!-+\$.*!154+..!6-*!.64**6!1.!814!1.!6-*!.64**6514!2'%*7!1==14*%62#!6+!
-*1;!'%.';*!6-*!5'6#!)16*!F6-+\$)-!6*5-%'512#7!6-16!O1.!.6'22!O'6-'%!6-*!)16*.6;!H86*4!6-167!
-+='%)!8+4!9+4*!814*.7!-*!2+'6*4*;!14+\$%;!6-*!.64**6514!.6+=7!51.6'%)!129+.6!=2*1;'%)!
)21%5*.!16!*15-!=1..*%)*4!.6*=='%)!+88*!?'%12#7!1!91%!'%!I*.6*4%!;4*..J2'/*2#!1!
6*15-*4J1./*;!8+4!1!4';*!6+!123445)34"6%.227"89:;

"*!*14%*; !6-'46#!L*+%!+%!6-*!8'4.6!64'=!1%; !8'86#!L*+%!+%!6-*!.*5+%; J 1%!1\$.='5'+\$.!.\$9!
8+4!.+!*142#!'%!6-*!; 1#>!C%!64\$6-7!2\$5/!O1.!O'6-!-'9>!?+4!%*142#!6*%!; 1#.7!-*!-1; !-14; 2#!21'; !

#.!+%!1%#!9+%*#>!M+!O-*%!5+'%. J 6*%(L*+%!%'5/*2.7!+4!.+9*6'9*.!1!8'3*(L*+%!5+'%J 8*22!

52'%/'%)!'%6+!-'.!=1297!-'.!*#*.!%*142#!: 4'99*; !O'6-!6*14.>!@3*%!: *66*47!6-*!*')-6#!L*+%!
6+612!-*!%+O!-*2; !O1.!'%312\$1: 2*>! '6-!6-16!19+\$%67!-*!5+\$2; !.++6-*!-'.!=145-*; !6-4+16!
O'6-!1!)21..!+8!5-*1=!4'5*!O'%*!'8!-*!2'/*; 7!: \$6!9+4*!'9=+461%62#7!-*!5+\$2; !: \$#!1!: +O2!+8!
>?277?234@)34!F+N(:+%*!.+\$=6!8+4!-'.!1'2'%)!O'8*>!

"'.!O'8*!-1;!: **%!5+\$) -'%) !8+4!9+4*!6-1%!1!9+%6->!M'%5*!6-*#!O*4*!+86*%!8+45*;!6+!./'=!
3%!9*12.!+8!9'22*6!) 4\$*2!!6-*4*!O1.!5*461'%2#!%+!5-1%5*!+8!188+4; '%) !9*; '5'%*y
, *5-%'512#!!8!-*!-1; !4*12#!64'*; 7!-*!5+\$2; !-13*!91%1) *; !6+!: \$#!1!; +. *!+4!6O+7!: \$6!-*!
8'492#!: *2'*3*; !6-16!+%5*!#+\$!. *%; !9*; '5'%*!6+!; 4'3*!+\$6!1%!'22%*..7!6-16!'22%*..!L\$.6!) *6.!
1!61.6*!8+4!'6!1%; !/**=.!5+9'%) !: 15/3!?+22+O'%) !6-'.!=*4.+%12!54**; 7!-*!-1; !%*3*4!61/*%!
-*4!6+!1!; +56+47!..+!-*!-1; !%+!'; *1!O-16!-*4!; '.*1.*!9') -6!: *>!0\$6!L\$;)'%) !84+9!-+O!.-*!
%+O!21#!8216!+%!-*4!: 15/7!\$%1: 2*!*3*%!6+!6\$4%!+%6+!-*4!.'; *7!'6!O1.!52*142#!.*4'+\$...!, -*!
'22%*..!-1; !O+4.*%*; !1: +\$6!6*%!; 1#.!*142'*47!186*4!.-*!16*!.+9*!=++42#!5++/*; !9'22*6!1%; !
:*519*!: 1; 2#!5+%.6'=16*; >|P%!6-16!+551.'+%7!K'9!-1; !8'%12#!) +66*%!-+2; !+8!.+9*!
9+%*#7!: +\$) -6!1!. 912!. 15/!+8!9'22*6?!=2\$.11!: \$%; 2*!+8!5-*1=!8'4*O++; >|H55+4; '%) !6+!
-'97!D6-16!) ++; (8+4(%+6-'%) !O+91%7!12!841%6'57!: +'2*; !'6!'%!1!=+6E!, -*!8'4*!O1.!O*1/7!.-*!
O1.!'%!1!4\$.-7!1%; !6-*!9'22*6!; '; %6!=4+=*42#!5+/>!R*6!D6-16!; 19%*; !O+91%E!./'==*; !6-*!
.=++%!126+) *6-*4!1%; !) 41: :*; !-1%; 8\$2.7!.6\$89'%) !6-*9!'%6+!-*4!9+\$6-!.+!B\$'5/2#!'6!O1.!
1.!'8!.-*!8*14*; !.+9*+%*!O+\$2; !.%165-!'6!1O1#>!M-*!.6\$88*; !-*4.*28!\$%6'2!2\$9=.!=+==*; !
+\$6!+%!: +6-!5-**/.12'/*18'.6.*JO#!6-16!.19*!*3*%'0)7!.-*!O1.!) 4+1%'%) !6-16!-*4!5-*.6!-\$46!

1%; !-*4!.6+915-!8*26!6') -67!4+22'%) !-*4!*#*.!1.!'8!.-*!O*4*!'%!1!8'6>!
P\$641) *; 7!K'9!-1; !.-+\$6*; \$!

DT19%!#+\$7!O+91%U!R+\$!) *6!. '5/!84+9!%+6!*16'%) 7!#+\$!) *6!. '5/!84+9!*16'%) U!I -16!19!C! .\$==+.*; !6+!; +V!I -#!51%06!#+\$!+=*%!#+\$4!*#*.!=4+=*42#VE!

H%; !-*!.21==*; !6-*!5-**/!+8!6-*!O+91%!O-+!21#!6-*4*!) 4+1%'%) >!, -+\$) -!. -*!; '; !+=*%! -*4!*#*.!1!: '6!O'; *47!6*14.!O*22*; !\$=!'%!6-*9>!K'90.!+O%!*#*.!: \$4%*; !-+6!1.!O*22*!

H%; !#*67!*3*%!'%!-*4!5+%; '6'+%7!.-*!-1; $\%\%!2+.6!-*4!1==*6'6*\times!?+4!6-*!=1.6!6-4**!$; 1#.7!.-*!-1; !:*)) *; !-*4!-\$.: 1%; !8+4!.+9*!.*+2*+%) 61%) !: $4+6-\times!$

D, -'.!; 19%*; !O+91%J!R+\$!51%\6!*3*%!.6+915-!9'22*6!) 4\$*7\frac{1}{2}!1%; !#+\$!O1\6!.*+22*+\%) 61\%) V!
H4*!#+\$!)+'\%) !6+!*16!'6!1\%; !6-*\%!-13*!1\%+6-*4!8'6VE!

"*!.5+2; *; !-*4!6-16!O1#7!: \$6!'%.'; *7!'6!: +6-*4*; !-'9!6-16!-*!5+\$2; %\(\)6!188+4; !6+!: \$#!'6>!

W+O7!6-+\$) -7!-*!8'%1\(2#!5+\$2; \dots!" *!5+\$2; !12.+!: \$#!=+44';)*!8+4!6-*'4!6-4**(#*14(+2; !.+%7!

A)?@@2347!O-+!O1.!-\$%) 4#!1%; !54#'%) !: *.'; *!-'.!.'5/!9+6-*4>!1 '6-!*') -6#!L*+%!'%!-'.!

-1%; 7!K'9!X-! 9(L'!8*26!O*22!+88!8+4!+%5*>!

O\$6!-'.!2\$5/!; '; !%+6!*%; !6-*4*\H.!-*!O'=*; !6-*!.O*16!1%; !; 4'<<2*!84+9!-'.!%*5/!O'6-!1!
) 4'9#!41) !6-16!5+\$2; !-14; 2#!: *!512*; !1!6+O*2!1%#9+4*7!-*!.6146*; !6+!2*13*!6-*!.5-++2!
) 16*\!M\$; ; *%2#7!.+9*+%*!512*; !+\$6!84+9!: *-'%; 7!DY'5/.-1OUE!K'9!.6+==*; !1%; 7!6\$4%'%) 7!
.10!1!.6\$; *%6!84+9!6-16!.19*!.5-++2!-\$44#'%) !6+O14; !-'9\!, -*!.6\$; *%6!: 2\$46*; \$!

D" +O!9\$5-!6+!) *6!6+!W19; 1*9\$%!M616'+%VE!

"*!O1.!=4+: 1: 2#!1!: +14; '%)!.6\$; *%6!-*1; '%)!: 15/!6+!-'.!-+9*6+O%!8+4!O'%6*4!: 4*1/½!" *!

9\$.6!-13*!=21%%*; !6+!2*13*!6-16!; 1#7!: \$6!6-*!41'%!O1.!812'%)7!-*!-1; !2\$))1)*7!1%; !-*!

O1.!16!1!2+..½, -*%!-*!.=+66*; !K'97!4\$.-*; !+\$6!'%!-128(O+4%!.-+*.7!.6'22!'%!-'.!6-4*1; : 14*!

1 *.6*4%!.\$'67!2*66'%)!6-*!41'%!.+1/!-'9½!

DR+\$!O1%6!6+!)+!6+!W19; 1*9\$%!M616'+%VE!

K'9!-*.'616*; !8+4!1!9+9*%6!T'; !-*!; '.2'/*!64\$;)'%)!.+!814!'%!6-*!41'%!O'6-!%+!41'%!) *14V!
P4!O1.!-*!124*1; #!.16'.8'*; !O'6-!6-*!6O+!814*.!-*!-1; !5+22*56*; !6-16!9+4%'%) V!W+7!%+6!16!
122!C6!O1.!9+4*!6-16!-*!8*26!1!81'%6!.*%.*!+8!; 4*1; 7!815*; !O'6-!.+!9\$5-!)++; !8+46\$%*!
5+9'%)!16!-'9!12!16!+%5*; H2.+7!-'.!O'8*0.!=2*1!*142'*4!6\$))*; !16!-'.!5+%.5'*%5*; !6-*%!
6-*!21; #!%*N6!; ++4!-1; !5+9*!6+!512!8+4!-'9!6-16!9+4%'%)7!-'.!O'8*J-*4!815*!4*; \$5*; !6+!
./'%!1%; !: +%*7!-*4!*#*.!6-*!+%*!4*91'%'%)!O*22!+8!3'612'6#7!214)*!1%; !; **=2#!.\$%/*%J-1; !
2++/*; !\$=!16!-'9!O'6-!1!=2*1; '%)!2')-6!'%!6-*9;!

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DT+%6!)+!+$6!6+; 1#>!Z2*1.*7!.61#!O'6-!9*!16!-+9*>!QQ9!.+!6*44': 2#!'22[E!
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M-*!-1; !9\$49\$4*; !'%!: 14*2#!1!O-'. = *47!-*4!: 4*16-'%) !41662'%) !'%!-*4!6-4+16>!T'. 9'...'%) !'6! 2') -62#7!K'9!-1; !.1'; \$!

DT19%!'6!127!O+91%7!612/'%) !%+%. *%. *>!C8!C!L\$.6!.'6!14+\$%; !-*4*7!O-+0.!) +'%) !6+!8**; !\$. VE!
" *!2*1=*; !\$=!6+!2*13*7!: \$6!. -*!O13*; !-*4!149.!8**: 2#7!1.!'8!64#'%) !6+!-+2; !-'9!: 15/>!

DT+%6!)+7!6-*%[!5+9*!-+9*!*142#!'8!#+\$!9\$.6!)+X!

M-*!-1; !5122*; !186*4!-'9!'%!1!5-+/'%) !3+'5*!1.!-*!0*%6!+\$6\!

W+O?!-*14'%) !6-*!.6\$; *%6!1./!6+!) +!122!6-*!O1#!6+!6-*!.616'+%?!K'9!.\$;; *%2#!.1O!1) 1'%!'%!
-'.!9'%; 0.!*#*!-'.!O'8*0.!64*9: 2'%) !-1%; .?!-*4!214) *!*#*.!: 4'99'%) !O'6-!6*14.>!

DM+7!-+O!9\$5-!6+!W19; 1*9\$%!M616'+%VE!

6-*!.6\$; *%6!1./*; !1) 1'%7!.+\$%; '%) !'9=16'*%6>!'' *!) 21%5*; !16!6-*!4'5/.-10!91%7!9\$66*4'%) ! 6+!-'9.*28\$!

DC!6-'%/!6-*!641'%!6+!C%5-*+%!2*13*.!16!*2*3*%7!6-*%!6-*4*0.!1%+6-*4!14+\$%; !%++%[E!DP%*!O+%!8'86#!L*+%7!=2*1.*\x!

, -*!O+4; .!.2'==*; !+\$6!+8!K'90.!9+\$6-!: *8+4*!-*!*3*%!4*12'<*; !'6>!@3*%!-*!O1.!.61462*; !16!
6-*!-*86#!.\$9!-*!-1; !L\$.6!%19*; >!C6!-1; !: **%!1!3*4#!2+%) !6'9*!. '%5*!-*!-1; !1./*; !8+4!
6-16!9\$5-!16!+%5*>!H6!6-167!-'.!*N5'6*9*%6!+3*4!91/'%) !9+%*#!8214*; !\$=7!: \$4%'%) !1O1#!
1%#!5+%5*4%!-*!-1; !8+4!-'.!O'8*>!M\$4*2#!.-*!O+\$2; %6!) *6!O+4.*!6+; 1#7!-*!6+2; !-'9.*28>!
W+!9166*4!O-16!-1==*%*; 7!-*!5+\$2; %6!) '3*!\$=!1!5-1%5*!8+4!1!814*!6-16!O1.!%+6!L\$.6!
B\$12!6+!-'.!8'4.6!6O+!64'=.!5+9: '%; !: \$6!*3*%!9+4*!6-1%!6-16>!

DP%*!O+%!8'86#[!6-160.!1!: '6!9\$5-\X!

, -*!.6\$; *%6!6'26*; !-'.!-*1; !; +\$: 68\$2#>!

DW+6!16!122×10#1; '.61%5*7!'60.!O*22!+3*4!8+46#!4'!84+9!-*4*>!H%; !+%!1!; 1#!2'/*!6-'.7!#+\$03*!) +6! 6+!=1#!1!: '6!*N641£!

K'9!.9'2*; !: 4+1; 2#>!" *!5+\$2; %\(6!-'; *!6-*!L+#!41; '16'\%) !\(84+9!-'. !\(815*>!\)

DH2!4') -6!C02!=1#!O-16*3*4!#+\$!O1%6J L\$.6!) *6!9*!6-*4*!B\$'5/2#\frac{1}{2}!

, -*!) *%*4+\$.!#+\$%) !5\$.6+9*4!2*86!6+!) 16-*4!-'.!5+16!1%; !2\$))1) *>!

13'%)!O'6-!6-!.6\$; *%6!+%!: +14; 7!K'9!X-!9(L'!8*26!1.!6-+\$)-!-'.!8**6!O*4*!1.!2')-6!1.!!