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./2/-1./2.----- - 3456'!(5#7-8*-95((8"!5:-;8<"%=5&:-95((8"!5-
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#\$'-9&#\$'%?(->'A&!#%'4#--

././1./D-X-./E1./O-- ;+V+-Y&<Z'!-I'458!-T5G\$I?88<,M&((&":-F&\$&%&(!
B-#&"G\$#-%&#\$'%?&<-?84#4#R54?<"(56'-8*-H<G'=!&:-S'8%'#17:-
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- "JV"EX!J7!"<)<E":U!!

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!'('&!?\$-(!&4, (-?84(5, '!-8#\$\$-N!5##'4-&4, -'4&?#', -?"!5?"<"%+L\$'-54#!'<#', -(#!&4, (:-
?84(5, '!(#\$'-54*<"'4?'-8*-\$'-N!5##'4-?"!5?"<"%-R#']#=#88Z(U:#\$'-4&#"!'-'8*-\$'-'4&?#', -
?"!5?"<"%:-&4,-54,565, "&<(\-A'!(A'?#56'(-&4,-='<5'*(-&=8"#-\$'5!-&=5<5#7#8-'4G&G'-54-!'&(8454G-
&4,-A!88*!;

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8!-\$'-3456'!(5#7-8-I8"#-\$-P<8!5, &-R(54?'-84<7-84'-A!8A8(&<-5(-
&<<8N', -A'!-54(#5#"#584+!L\$'-G8&<(-*8!-\$5(-A!8A8(&<-5(-#8-R2U-!'?!"5#-
&4,-!'#&54-&-%8!'-,56'!(-'#!&4(*!'-(#" , '4#=#,7-54-ILJ9-A!8G!&%(-

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: ""#8, ; %5., !\$. **', - &). # / &)%\$0, 9388%\$3'3 / , &), <& / " &, =8#"&8&)*8>,
!\$. **?, L&%A&:-P<8!5, &+---L\$ '-!' ('&!?'\$ '!(-&!'-V"#\$\$%&' -I'&!:(-
I&4G\$884-@&!Z:-&4, --9 5<' -b !&c?' '6(Z5+-B-('!6' -&(-#\$' -<'&, -?84(" <#&4#-
#8-!' 65' N-#\$' 5!-(? \$88<-%&#\$' %?(-?'! !5?"<"%+-L\$' #8#&<-*"4, ', -5(-
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9 *''&@*8&)%A#, 6#0#&8\$. B, C))&%+%+5, ID\$#''#+\$#, !#\$*+2&8>,
- &). # / &)%\$0, 9 %+%\$&', ID"#8%#+\$#0, E%). , &, F#+0, *, IG3%)>
L\$(-MIP1B3 I J-G!&4#-N5<<='<', --7-> !+ 9 &!5<74-I#"#?'\$ '4(-!*8%-
H"="!4-3 456'!(5#7:-> !+V"#\$\$%&' -I'&!(-!*8%-3 456'!(5#7-8*-I8"#-\$-
P<8!5, &:-&4, -T8N&! , -S 8=(#'54-*!8%-\$' -H((8?5Ɉ-8*=@"=5?-&4, -
Q&4, 1G!&4#-3 456'!(5#5'(-RH@Q3U+-L\$(-A!8c' ?#N5<<']&%54' -#\$' -
4&#"! '-8*?-545?&<']A' !5'4?' (-54-.D- "456'!(5#5' (-54-\$' -3 45#', -I#&# ' (-
N5#\$-&4-&##' 4#584-A<&?' , -84-A!'1('!65?' -#&'&'\$'!(d- '_"5#&=<' -
5%A<' % '4#Ɉ-8*-\$' - 9 &#'\$ %?(-L'&'? \$54G-@!&'?5?' (-R 9 L@ (U-
RMɈ&<- ; 8"4?5<-8*-L'&'? \$'!(-8*- 9 &#'\$ %?(-eM ; L 9 f:- /2DU+-
L\$' -#8#&<-*"4, ', -&%8"4#-5(-` 2:WOK: / .0+--L\$' -&%8"4#-&<8?&#', -*8!-
3 IP-5(-` ^OK:0 .K+!

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6 *@#8), H* > \$#, : ! I, ! \$. *' &80. %", =8*58& / , J*8, ! \$ % # + \$ #, - & k *80
L\$(-A!8c' ?#N&(-*"4, ', -*8!-` 2:2KK:OD^-*!8%- /2D-1. /2K+L\$' -
A!54?5A&<-546' (#5G!*8!-\$' -G!&4#-5(-> !+H<&4-P'<, %&4+B-('!6' -&(-
&-?81A!54?5A&<-546' (#5G!*8!-\$' -G!&4#-&<84G-N5#\$-> !+S' !!7-
9 5' ('<(- 9 !+Q&!!7-@&4Z:-&4, - 9 !+Q" &44&-@!' 68(#+-L\$' -A"!A8(' -8*-
#\$' -G!&4#-5(-#8-A!865, '-(? \$8<&!(\$5A(-#8-^E-(#", '4#(-N\$8-%&c8!(-54-
=58<8G7:-?'\$ %5(#!7:-G'8(?'5'4?' (-%&#\$' %?(-&4, -A\$7(5?(-#8-
?8%A<'# ' -&- 9 &(#' !(-8*-H!#(-54-L' &'? \$54G-R 9 HLU-, 'G!' ' -N5#\$-
' !#5*5?Ɉ-54-(' ?84, &!7-(?'5'4?' -8!-%&#\$' %?(-+--

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a&4" &!7- /20-----

: 0%+5, - &+% "3'&)%A#0, &+2, 9&' \$3'&)*80,)*, I&\$%&)%&#)!,

a&4"!7-. //K-1->'?'%='!-. /22!9* / "&8%+5, T")%*+0,%+,!#\$*+2&8>, - &). # / &)%\$0B,,
,P+A#0)%5&)%+5, 9388%\$3'3 / ,R9 T! - P9S,
B-&((5(#', -N5#\$-, &#&-&4&<7(5(:-N!5#54G-!'(' &!?\$-A&A!'(:-&4, -
'84*'!'4?'-A!'('4#Ɉ(-!'<8' -#8-%&#\$'%?(-#'&?\$'!(\-'(' -8*
#5%':-8AA8!#"45#7-#8-<'&!4-54-%&#\$'%?(:-&4, -?'!5?"<"% -5% A&?#
84-(#" , '4#(-' &!454G+!

I 'A#'%'='!-. //01-9 &7-. //K-- 6#0#&8\$. % +5, ! \$%# + \$#, & +2, - &). # / &)%\$0, <#&\$. #8, F#&8+ % +5, % +,
C')#8+&)%A#, 9#8)%J%\$&)%*+, - *2#, R6 I! - C6U<S-
B-?8, ', -, &#&:-?84, " ?#', -%] - _ " ' !5' (-" (54G-# \$' -Mh568-(8*#N&!':-
N!8#'-A!8*5<'(-8*-A&!#5?A&4#(:-&4, -65, '8-!'?8!, ', -?&((!88%-65(5#(+--

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- 0] @ \$: E ? \$ J T) !
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" (6*((9!E*\$2=8(+! - *21\$(9,!S1! - *(+,!5*!E==(>) \$(9!

Males, L., Lawler, B. (2020). *Equity and justice in the preparation of secondary mathematics teachers.* B4-LS' -H((8?5Ɉ-8*- 9 &# \$ '%?(-L'&?\$'!-J, " ?!(-RH 9 L J U-
@!8*' ((584&<' , 5# ' , -=88Z-(' !5' (:-- Y + -S + - 9 &!#54:-F + -V + -Q &N <' !:-H + -J + -Q5(? \$Z&:-X Y + 9 + -
I %5# \$ -R J , (U+ - &). # / &)%\$0, <#&\$. #8, 123\$&)%*+, =&8)+#80. %", <. #, = *E#8, *J, &, H#)E*84#2,
P / "8*A# / #+, 9* / / 3+%)> ,)*, <8&+0J*8 / , !#\$*+2&8>, - &). # / &)%\$0, <#&\$. #8, =8#"&8&)%*+i+ -
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- I # ! " # ? \$ ' 4 (: - 9 + J + : -) (' * + , ! " . ! X - j ' < Z8N (Z5 - R . / . / U + - P / " 8 * A % + 5 , 9 " % + % \$ & ' , I D " # 8 % # + \$ # 0 , J * 8 ,
!#\$*+2&8>, - &). # / &)%\$0, <#&\$. #8, 9&+2%2�+-B4-LS' -H((8?5Ɉ-8*- 9 &# \$ '%?(-
L'&?\$'!-J, " ?!(-RH 9 L J U-@!8*' ((584&<' , 5# ' , -=88Z-(' !5' (:-- Y + -S + - 9 &!#54:-F + -V + -Q &N <' !:-
H + -J + -Q5(? \$Z&:-X Y + 9 + -I %5# \$ -R J , (U+ - &). # / &)%\$0, <#&\$. #8, 123\$&)%*+, =&8)+#80. %", <. #,
= *E#8, *J, &, H#)E*84#2, P / "8*A# / #+, 9* / / 3+%)> ,)*, <8&+0J*8 / , !#\$*+2&8>, - &). # / &)%\$0,
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I # ! " # ? \$ ' 4 (: - 9 + J + : - J ! 5 ? Z (8 4 : - > : -) (' * + , ! " . , - X - j ' < Z8N (Z5 : - a + R . / . / U + ; < 5 4 5 ? & < - J J A ' ! 5 ' 4 ? ' (- * 8 ! -
I ' ? 8 4 , & ! 7 - 9 & # \$ ' % & # 5 ? (- L ' & ? \$ ' ! - ; & 4 , 5 , & # ' (+ - B 4 - L S ' - H ((8 ? 5 & # 5 8 4 - 8 * - 9 & # \$ ' % & # 5 ? (-
L'&?\$'!-J, " ?!(-RH 9 L J U-@!8*' ((584&<' , 5# ' , -=88Z-(' !5' (:-- Y + -S + - 9 &!#54:-F + -V + -Q &N <' !:-
H + -J + -Q5(? \$Z&:-X Y + 9 + -I %5# \$ -R J , (U+ - &). # / &)%\$0, <#&\$. #8, 123\$&)%*+, =&8)+#80. %", <. #,
= *E#8, *J, &, H#)E*84#2, P / "8*A# / #+, 9* / / 3+%)> ,)*, <8&+0J*8 / , !#\$*+2&8>, - &). # / &)%\$0,
<#&\$. #8, =8#"&8&)%*+i+ - ; \$&!<8##' :-M ; g--B4*8!%Ɉ-HG' -@=" <5?Ɉ(+

Grady, M., .. Stone, J., & Biagetti, S. (2020). Using co-planning and co-teaching strategies to transform secondary mathematics clinical experiences. B4-LS' -H((8?5Ɉ-8*- 9 &# \$ '%?(-L'&?\$'!-J, " ?!(-RH 9 L J U-@!8*' ((584&<' , 5# ' , -=88Z-(' !5' (:-- Y + -S + - 9 &!#54:-F + -V + -Q &N <' !:-H + -J + -Q5(? \$Z&:-X Y + 9 + -I %5# \$ -R J , (U+ - &). # / &)%\$0, <#&\$. #8, 123\$&)%*+, =&8)+#80. %", <. #, = *E#8, *J, &, H#)E*84#2, P / "8*A# / #+, 9* / / 3+%)> ,)*, <8&+0J*8 / , !#\$*+2&8>, - &). # / &)%\$0, <#&\$. #8, =8#"&8&)%*+i+ - ; \$&!<8##' :-M ; g--B4*8!%Ɉ-HG' -@=" <5?Ɉ(+

b ! & c ? ' 6 (Z5 : - 9 + : - X -) (' * + , ! " . - R . / 2 K U + ; 8 % % 8 4 - 6 5 (" & < - ! ' A ! ' (' 4 # & # 5 8 4 (- & (- & (- 8 " ! ? ' - * 8 ! -
%5(?84?'A#584(-8*-A!'('!65?'# '&?\$'!(-54-&-G'8%'#17-?844'?#584-?8"!('+-P+)#8+&)%*+&',
V*38+&',J*8, - &). # / &)%\$0, <#&\$. % +5, & +2, F#&8+ % +5W, UXR2U?, H6&5&=<' -84-54' -
\$#A(gkkNNN+?5%Z(N) -0. 200 s ccNk-

&4,-5%A<'%'4#Ɉ-'**'?#(-84-\$5G\$1(?\$88<-(#" , '4#(\-%&#\$'%?(-&!454G-*!8%-?'!5?"<&-
!'A!'('4#54G-?84#4#8!G&45[Ɉ-8*#N8-#7A'(+V*38+&',J*8,6#0#&&8\$.,%+, - &).#/&)%\$0,
123\$&)%*+:-aaR.U:-D2E1DE^+----

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E*\$2=8(+!#19(*!*(3!D!!

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)('*,!'"---j'<Z8N(Z5:-a+:-J,N&!,(:-F+:-Y&<<'!:-@+:-;84N&7:-F+:-1<8**1Q'N5(:-a+:-a"48!-;<&!Z':-@+:-
I#84':-a+:-X-I&='<<&:-Q+-R34,'!-V'65'NU-P&?5<5#6G-;<545?&<-J]A'!5'4?'(-14<54'->!"!54G-&-
&4,'%5?g-34A&?Z54G-@!8G!&%%?-J**8!#(:-@8<5?5'(:-&4,-P&?#8!(-#\$&#-I\$8"<,-='-' ;84(5,'!',i+!

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Y ([!]85;+!

@54, '!:- ;+!) ('*+,!' ,,!X-F"#<'!:-b+R. /20U+- 7 *840''&\$#B,C+, *+ '%+#,&00#00 /#+),). &),'*E0,
%+)#8 / #2%&#,&'5#@8&,0)32#+)0,)*,0. *E,). #8,E*84?-V '#!5'6' ,-*!8%-
\$#AgkkNNN+A '&!(84' ,+?8%kN8!Z(A&?'154# '!% ' ,5&# '1&<G'='!&1(#" , '4#(k--

L8!!' (:H+!) ('*+,!' ,,!T8A*:-P+:- Y 5<<5&% (: - ;+!R. /20U+!< . #,@#+#J%)0, *J,%+)#82%0\$%''%+&8>,
\$*+A#80&)%*+0,%+,)8&+0J*8 / %+5, / &). # / &)%\$0,\$*380#0--V '#!5'6' ,-*!8%-
\$#AgkkNNN+A '&!(84' ,+?8%k' , "?ᛑ=<8Gk?846' !(Ɉ(1%&# \$ '%?(1(#" , '4#1
A '!*8!%&4?'k--

) ('*+,!' ,,-T8A*:-P+:-L8!!' (:H+:-X-b !&c'6(Z5:- 9 ?,R. /2EU+, :)%''(%+5, - > - &). <#0),)*,#+038#,
"8#0#8A%\$#,0#\$*+2&8>,)#&\$. #80,&8#, "8#" &8#2,J*8,0)&#,\$#8)%J%\$&)%*+,#D& /0+-V '#!5'6' ,-*!8%-
\$#AgkkNNN+A '&!(84' ,+?8%k' , "?ᛑ

)('*,!''.,-X- ; \$&6'[: -1+R. /2W:-P'="&!7:-D10U+-I#", '4#(-8*-#N81?"!!5?"<"% -#7A'(-A'!*8!%&4?'-
84-&-A!88*-*8!-?84G!"'4#-#15&4G<'(+ =8*\$##2%+50, *J,). #-H%+)., 9*+58#00, *J, 138*"#&+,
6#0#&8\$. ,%+, - &). #/ &)%\$0, 123\$&)%*+, R; JV 9 J-KU+-@!&G"':-; ['?\$-V'A"=<5?+--
b&!&, '45[: -B+:-)('*,!''+:-X- ; 8<&Z:-H+R. /2^:-P'="&!7-D1

; &7#84:- ; +:-S!&, 7:-9 +:-@!'(#84:-V+h+:-) ('*+,!'.,-1<8**1Q'N5(:-a+:-X-F!8(4&4:-@+R. /20:-1 ?#8='!-
W1

F"#<'!:-b+:-X-)('*+.!''!.R. /2W:-P'='!&!7-.E1.OU.-L'?\$48<8G7-54-54#!%' ,5&#'-&<G'='!&g--J**'?#(-84-
&4]5'#7-&4,-8AA8!#"45#7-#8-<'&!4+--=8*\$##2%+50,*J). #,6#0#&8\$. ,9*3+\$%,J*8, - &). # / &)%\$0,
F#&8+%+5-RV ; 9 QU+-Q&(-h 'G&(:-Mh+--



Y J "Z) U J -) ! E T / ! - " <) < T ? E ? S J T) !!

S 1 \$ (* 1 ' \$ 2 5 1 ' 8 !

)('*,!''.-X-@54, '!:- ;+-R. /2K:-HA!5<DU+---C))#+2%+5,)*, IG3%)>,%, - &). # / &)%\$OB, =*%\$%#0W,
=8&\$)%\$#0,&+2,O#"%#J,!>0)# / 0+--@!'('4#', -&#-#\$'-MɈ&<- ; 8"4?5<-8*-L'&?\$'!(-8*-
9 &#\$'%?(-RM ; L 9 U-H44"&<- 9 ' '#54G+-I&4->5'G8:- ; &<5*8!45&+--
)('*,!''+:- 1 <8**1Q'N5(:-a+:-V5GG(-Q+:-F!8(4&4:-@+:-S!&, 7:- 9 +:-X-I#84' :-a+-R. /2K:-P'="&!7-01KU+--
C))#+2%+5,)*,#G3%)>,%, \$%+%\$&',#D"#8%#+\$#0,A%&,\$*N"'&+ +%+5,&+2,\$*N)#&\$. %+5,0)8&)#5%#0?--
@!'('4#Ɉ-&#-#\$'-&44"&<-%' '#54G-*8!-#\$'-H((8?5Ɉ-8*- 9 &#\$'%?(-L'&?\$'!-
J, "?!(+- 1 !&4, 8:-PQ+--
I#!"#?\$'4(:- 9 +:-X-)'*,!''!R. /2K:-a&4"&!7-22U+--H##&5454G-']?'<<'4?'-54-('?84, &!7-%&#\$'%?(-
<545?&<- ']A'!'5'4?'(-N5#\$-&<'4(-84-'_'5#7+--@!'('4#Ɉ-&#-#\$'-a854#- 9 &#\$'%?(-
9 ' '#54G(-*8!- 9 HH-&4, -H 9 I+-F&<#5%8!' :- 9 >+--
)('*,!''.-X-a"48!-1

)('*,!"!"+-X-@54, '!: - ; +R. /20:-M86'%='!-K12.U+-- : 0%+5, 7 *840"&\$#,)*, : + "&\$4,!)32#+)0L, - &)., I88*80,&+2, =8* / *)#, 6#&0*+%+5L?, -@!' ('4#Ɉ-&#-\$'-H 9 HL s ; -H44"&<- ; 84*!'4?'+I&4->5'G8-:- ; H+---

)('*,!"!"+-X-@54, '!: - ; +R. /20:-HA!5<-20U+ 3 (54G-9 7Q&=(@<"(- Y 8!Z(A&?' #8-"4A&?Z-(#" , '4#(\-%&#\$'%?&<'!!8!(-&4, #8-, '6'<8A-!' &(8454G-(Z5<<(+- Y '=54&!-*8!-@'&!(84-T5G\$'!-J, "?Ɉ+-V'#!5'6' , -*!8%-

)(*+,!".,-S!&,7:-9+:-;&7#84:-;+:-F!8(4&4:-@+:-I545?!8A':-V+:-@!'(#84:-V+:-X-I#"#?\$'4(-9+--

&4,-B4_"5!7-F&(',-Q'&!454G-?84*!'!4?'+H"#54:-Lv+-V'#!5'6',-!*18%--

)('*,!" :-F&((5<&:-H+:-X-F"#<'!:-b+R. /2E:-a"<7-.EU+- : 0%+5,HC!C,8#0*38\$#0,)*,"8*/*)#,%+G3%8>,
@&0#2,'#&8+%+5?,@!'('4#Ɉ-&#'\$'-P<8!5,&-H((8?5Ɉ-*8!- ;&! ' '!-&4,-L '&?\$'!-J , "?Ɉ-
R

T8A*:-P+:-X-) ('*+,!' .--R. /2^:-M86'%='!-2KU+-- : ! I, ! - C6<, '&@B,C+,#D& / "'#, *J,J%""'+5,). #,
\$'&008**/,30%+5,5**2,"8&\$)%\$#0+@!' ('4#Ɉ- &#-\$'-3456'!(5#7-8*-I8"#-\$-P<8!5, &-H?&, '%7-
*8!-L'&?\$54G-&4, -Q'&!454G-J]?'<<'4?'-RHLQJU- Y 8!Z(\$8A+-L&%A&:-PQ+--
T8A*:-P+:-) ('*+,!' +:-L8!!' (:H+-X- 9 &\$'!:- 9 +R. /2^:- 1 ?#8='!-2E120U+--! - C6<, '&@B,=8*A%2%+5,
*""*8)3+%)#0,J*8,0)32#+)0,)*, &\$.%#A#,03\$\$#00,%,+ / &). # / &)%\$0+--@!' ('4#Ɉ- &#-\$'-P<8!5, &-
; 8"4?5<-8*-L'&?\$'!(-8*- 9 &#'\$%'?(-H44" &<- 9 ' '#54G+- 1 !&&4, 8:-PQ+--
b &!&, '45[: -B+:-X-) ('*+,!' -R. /2^:- 1 ?#8='!-2E120U+<8&+0J*8 /,). #,)#&\$.%+5, &+2, '#&8+%,+5, *J,
0\$%#+\$#W,)#\$. +*'*5>, &+2, / &). # / &)%\$0,R!<I - S,30%+5,M**5'#,!4#)\$., : "'?@!' ('4#Ɉ- &#-
#\$'-P<8!5, &- ; 8"4?5<-8*-L'&?\$'!(-8*- 9 &#'\$%'?(-H44" &<- 9 ' '#54G+- 1 !&&4, 8:-PQ+--
) ('*+,!' +R. /2^:- 1 ?#8='!-2E120U+P+\$8#&0%+5,0)32#+)0L,*""*8)3+%)#0,)*,#+5&5#,%,+8#&0*+%,+5, &+2,
"8**J,%,+. %5.,0\$. **/, / &). # / &)%\$0,\$'&008** / +@!' ('4#Ɉ- &#-\$'-P<8!5, &- ; 8"4?5<-8*-
L'&?\$'!(-8*- 9 &#'\$%'?(-H44" &<- 9 ' '#54G+- 1 !&&4, 8:-PQ+--
) ('*+,!' +R. /2. :-M86'%='!-2EU+--9* / @&)%+5,). #, \$. &'#+5#0, *J,#+&\$)%+5, "8**J,) &040?-@!' ('4#Ɉ-
&#-\$'-3456'!(5#7-8*-I8"#-\$-P<8!5, &- 9 &#'\$%'?(-J, "?Ɉ- ; 8<<8_ "5"%+L&%A&:-PQ+--
) ('*+,!' +R. /2. :- 1 ?#8='!-201. /U+--8**J0,%,+5#* / #)8>,)#D)@**40B,<&04,J#&)38#0, &+2, '#A# '0, *J,
\$*5+%)%A#,2# / &+2?--@!' ('4#Ɉ- &#-\$'-P<8!5, &- ; 8"4?5<-8*-L'&?\$'!(-8*- 9 &#'\$%'?(-
RP ; L 9 U-H44" &<- 9 ' '#54G+- 1 !&&4, 8:-PQ+--
) ('*+,!' .-

1 ?#8='!-. .:./2E--

P<8!5, &-H((8?5Ɉ-8*- 9 \$' %?(-L' &?5\$' !-J, "?!(-RPH 9 LJUI-- 9 \$' %?(-L' &?5\$' !-J, "?!-8*#5\$' -s' &!-HN&!, -. /2E-

9 &!?\$-20:-. /2W--

3 456'!(5#7-8*-I8"#5-P<8!5, &d(-; \$&A# '!-8*#5\$' -MɈ&<- ; 8"4?5<-8*- M'G!8- Y8% '4-1F<&?Z-S5!<(-V8?Z-T848!' '--

!
!
!

) : U J @ E ") U S -) ! E T / ! 7 < @ @ J Y) U S -) !

-a"4'-. / ./ --

MIP1*"4, ', -H(A5!' -H<<5&4?' \(-B4(#5#"#584&<- ; \$&4G' -M'#N8!Z- RB ; \$&4G' U-BH(A5!' -Q' &, '!(5A-H?&, '%7w- B-N&((-r('<'?#', -&(-84' -8*#5\$' -5G\$<7-_"&<5*5', -&AA<5?&4#(-?58('4- *!8% -&!8((#5\$' -3 45#', -I#&#(' -#8-#&Z' -A&!#-54#5\$(-#1&4(*8!%8' - <'&, '!(5A-, '6'<8A% '4#-']A' !5'4?' iRV8?5\$' <<' -I&AA:-a"4' -O:./ ./ -/ - J%&5<U+-B-&% -&*' <<8N-8*#5\$' -(' ?84, -?8\$8!#--

>'?'%='!-. /2K--

MɈ&<- ; 8"4?5<-8*-L' &?5\$' !(-8*- 9 \$' %?(-RM ; L 9 U-1--MɈ&<- I?5'4?' -P8"4, Ɉ-RMIPU-#!&6'<-G!&4#-&N&!, -*8!-#5\$' 2D#5- B4# ' !4Ɉ&<- ; 84G!' ((-84- 9 \$' %?&<-J, "?Ɉ-RB ; 9 J12DU-54- F'5c54G- ; \$54&-Ra"<7-2212K:-. / ./ /U+-L5(-&N&!, -A!865, '(-` .:OW/- #8N&!, (-5\$' -?8(#-8*-8!-'! G5(#!Ɉ:-&5!*&!':-<8, G54G:-&4, -% ' &<(-

!

9 &!?\$-./2. -----

2.#5-B4# ' !4Ɉ&<- ; 84G!' ((-84- 9 \$' %?&<-J, "?Ɉ-RB ; 9 J1 2.U-L!&6'<-S!&4#-HN&!, :-N5?5\$-N&56', -5\$' -?84* ' !'4?' -!' G5(#!Ɉ- *' '-&4, -A!865, ', -`D//+//-*8!-#!&6'<-! '5%="!(%'4#---

./01./2. -----

; '4# ' !-8!-#5\$' -I#" , 7-8*- 9 \$' %?(-; " !5?"<"% -R ; I 9 ; U- P' <<8N(\$5A-HN&!, :-N5?5\$-A!865, ', -&-*8" !17' &!-G!&, "&#'- &((5(#&4#(\$5A-N5#5\$-#"5#584-N&56' !-\$' -3 456' !(5#7-8*- 9 5((8" !5+--

9 &7-. /22-----

b&AA&->'<#&-@51-T8<<5(-Q- ; &(N' <<->8?#8!&<-HN&!, :-N5?5\$-&N&!, ', - `D://+//+/#8-&((5(#-N5#5\$-']A'4('(-!'<8' #8-%7-, 5((!'Ɉ- (#", 5'(+--

./2/1./2. -----

3 456'!(5#7-8*- 9 5((8" !5- 9 \$' %?(-J, "?Ɉ-I?58&&!(5A:-N5?5\$- &N&!, ', -`W://-&44"&<<7:-*8!-#N8-7' &!(+--

./01./22-----

Q7*8!, - ; &7-P8"4, Ɉ-S!&, "&#'-I#

- B-('!6',-&(-&! '65'N'!*8!-#S'-, !&*#-(#&#'-(#&4, &!, (-*8!-%&#S'%?(-
*8!-?&<?"<"(:-G'8% '#!7:-&<G'=!&:-A!8=&=5<5#7-&4, -(#(#5?)(+L\$'-
,8?"%'4#-N&(-!'<'&(',-54-a&4"&!7-. / . /+--
-
HA!5<- ./2K1-@!'('4#-- 3456'!(5#7-8*-I8"#S-P<8!5, &-C- ;8<<'G'-8*-J, "?Ɉ-1-P&?"<#7-
@8<5?7- ;8"4?5<-
- B-N&(-'<'?'#',-#8-!'A!'('4#-#S'->'A&!#%'4#-8*-L'&?\$54G-&4, -
Q'&!454G+-B-&<(8-('!6'-&(-#S'-?S&5!-8*#S'-&, 1\$8?-?8% %5##' '-*8!-#S'-
P&?"<#7- ;84(#5#"#584- ;8% %5##' '-#8-("AA8!#-#S'-"456'!(5#7-
?84(8<5, Ɉ- '*8!#(+--
--
a"4'-. ./2K1-@!'('4#- F&7-h5'N-H<<5&4?'--
- B-('!6'-&(-#S'-3456'!(5#7-8*-I8"#S-P<8!5, &-V'A!'('4#8'-*8!-#S'-

a&4"&!7:-./2E-1-@!'('4#---- L\$'-3456'!(5#7-8*-I8"#-\$-P<8!5,&-ILJ JV-L!&4(*8!%Ɉ-
B% A<'%'4#Ɉ-Q'&,'!(\$5A-L'&%-RLBQLU+-
B-A&!#5?5A&#'-54-(#!&#G5?-A<4454G-*8!-#5'-'456'!(5#7-ILJ 9 -
' , "?Ɉ-545#58'(+--

-

9 &7-./2W-1-@!'('4#----- 9 &!(\$&<<-&#-3456'!(5#7-8*-I8"#-\$-P<8!5,&- ; 8%% '4?'%'4#-
; '!%'847-
B-&((5(#-N5#\$-#5'-(%88#\$-*<8N-8*-G!&,"&#'-N&<Z54G-&?!8((-#5'-(#&G'-
#8-8=#&54-#5'5!-,5A<8%&(+-

-

HA!5<-2-./2W-1-@!'('4#----- I#&#'-I?5'4?'-X-J4G54''!54G-P&5!-8*-P<8!5,&-----
B-(!'6'-&(-&-('458!-\$5G\$-%'(%?(-:&4,-=' \$&658!&<-(?'4?'(-:<'&,-
c",G'+-

-

1 ?#8='!-./2.-1-@!'('4#----- P<8!5,&-H((8?5Ɉ-8*-9 '%'?(-L'&?\$'!-J,"?!(-
B-N&(-<'?'#',-54-1 ?#8='!-./2D-&(-#5'-(?'!#&!7-*8!-#5'-8!G&45[Ɉ+-

-

H"G"(#-./2D-1-@!'('4#----- H%'!5?&4-J,"?Ɉ&<-V'('!&!?\$-H((8?5Ɉ---
B-!'65'N-&!#5?<'(-*8!-HJVH-&44"&<-%''#54G(-*8!-#5'-%'%'?(-
' , "?Ɉ-&4 , #'&?\$54G-&4 , #'&?\$'!-' , "?Ɉ-IA'?'5&<-B4#''!('#
S!8"A(-RIBS(U+-

-

H"G"(#-./2D-1-@!'('4#----- MɈ&<- ; 84*'!4?'-8*-L'&?\$'!(-8*-9 '%'?(-@"=<5?Ɉ(-
B-!'65'N-=88Z(-&4,-8#5'!-' , "?Ɉ&<-!'(8"!?'(-*8!-&-b12E-
%'%'?(-&" , 5'4?'+-

-

HA!5<-./2D-1-@!'('4#----- 9 '%'?(-L'&?\$'!-J,"?Ɉ-@&!#4'!(\$5A-R 9 LJ@U--
B-(!'6'-&(-#5'-'L&%A&-F&7-'!A!'('4#8':-&4,-#5'<'& , '!-8*-#5'-'("=1
G!8"A-'('!&!?\$-&?#584-?<('#!-, '68#', -#8-%'%'?(-?81#&?\$54G-
&4,-?81A<&4454G-, "!54G-?<545?&<']A'!5'4?'(+ ; "!'4#<7:-N'-\$&6'-
!'*54', -#!&5454G-%8, "<'(-*8!-?81#&?\$54G-&4,-?81A<&4454G-&4,-\$&6'-
("=%5##', -&4-MIP1-B3 IJ-G!&4#-A!8A8(&<+-H, ,5#584&<<7:-B-
A&!#5?5A&#', -54-#5'-' ; &!4'G5'-M'#N8!Z-P8"4 , Ɉ-B%A!86'%'4#-
; 8%% "45#7+--

-

9 &!?\$-./2D-1-@!'('4#-- P<8!5,&-h J v-V8=8#5?(-I#&#'- ; \$&%A584(\$5A-
B-c",G'-('?84 , &!7-(#" , '4#(-!8=8#5?(-("=%5((584(+--

-

P'='!&!7-./2D-1-@!'('4#----- T5<< (=8!8"G\$-V'G584&<-I?5'4?'-P&5!-

-

I'A#'%'='!-. /2.-1-a"4'-. /2D-- 9 &#\$'%'?(-J, "?Ɉ- ; 8<<8_"5"%--
B-*&?5<5&#&' ,-% 84#\$<7-% ' '#54G(-54-N\$5?-\$-*&?"<#7-&4, -(#" , '4#(-
,5(?)"(' ,-\$'5!-'(' &!?\$-545#58'(+

I'A#'%'='!-. /2.-1-HA!5<-. /20- 9 &#\$'%'?(-J, "?Ɉ-I '&!?\$- ; 8% %5##' '--
B-('!6'-84-#\$'-(?!' '454G-?8% %5##' '-#8-'!65'N-&AA<5?&4#(+--

H"G" (#-. /2.-1-@!' ('4#----- MɈ&<- ; 8"4?5<-8*-L' &?\$'!(-8*- 9 &#\$'%'?(-RM ; L 9 U-C--
V' ('&!?\$-@!'1'((584-
B-'!65'N-?84*!'!4?'-A!8A8(&<(-&4, -%&Z'-'!?'8% %'4, Ɉ(-&(-#8-
N\$!#\$'!-A!8A8(&<(-8"G\$#-#8='-&??' A#', -8!-'!c'?'#', +---H, ,5#584&<<7:-
B-A!'(5, ', -86'!-&-('((584-A'!#54'4#-#8-'! &(8454G-&4, -A!88*-&#-\$'-'
. /2^-%' '#54G+---

H"G" (#-. /2.-1-@!'

48%54' '-*8!- ; 8<"%=5&- 9 5((8"!5+--H#-#\$' -V 9 T ; -54-L&%A&-=&7-B-
&%-&-(5*#-68<"4#' '!-&#-#\$' -\$8% '+-

-
> '?'%='!-. //0-1-9 &7-. /2.-- 3 9 ; -I74#\$(5(-@!8c' ?#(-*8!-T5G\$I?\$88<- 9 &#'\$%?(+-
B-'6&<"&#', -A!'1('!65?'-# '&?\$'!(\-(74#\$(5(-A!8c' ?#(-54-&<5G4%'4#-

-
./2E-1./2K- - - >!+-b '5(\$&-H<=!5#84-C- ; \$&5!A'!(84-
-
./2W-1-./20- - - >!+-@ '<&G5&-b5<G8!'-1- ; 8%%5##' '-9 '%='!-
-
-
./2W-1-@!'('4#- - - Q&Z'(5&->"A!' '-C- ; 81 ; \$&5!A'!(84-
-
./201-@!'('4#- - - ; &' '-@54, '!-C- ; \$&5!A'!(84--
-
./201-@!'('4#- - - x "'('\$84, &-b", &5(5-C- ; \$&5!A'!(84-
-
./201-@!'('4#- - - @!&#\$5%&-S8G"% "<&1- ; 8%%5##' '-% '%='!-
-
./201-@!'('4#- - - ; 74#\$5&- ; &(#!81 9 544'\$&41- ; \$&5!A'!(84-
-
./2K-C-@!'('4#- - - 9 &##\$'N-1\F!5'4-C- ; \$&5!A'!(84--
-
./2K1-@!'('4#- >'445(-Y&!, -C- ; 8%%5##' '-9 '%='!&4, -J]#!4&<- ; \$&5!A'!(84-*8!-#\$'-
>'*'4('+-

-
019(*,*'9#'\$(!U515*+!?!%+(+!

!

./2D-1-./2W-- - - ; &((&4, !&-S&!#84-1- ; 81 ; \$&5!A'!(84-

./2E-1-./20- - - I\$56&45-I88Z?\$&4, -1- ; 81 ; \$&5!A'!(84-

./201-./20--- - - H==5-V54&<,5-C- ; 81 ; \$&5!A'!(84--

-
-
:5#*+(!?'#;%\$!

!

-
9 HJ-E^K-C-S '8% '#!7-&4, -9 ' &('!'% '4#*8!-95, ,<' -S!&, '(-
L'&?\$'!(-

-
9 HJ-E^^01L8A5?(-54-L'&?\$54G-S '8% '#!7-

-
9 HJ-EKDW-C-@!&?#5?"% -54-9 &#\$' %?(-J, "?Ɉ-

-
9 HJ-O2DE-C- ; " !5?"<"% -T5(#8!7-&4, -V' ('&!?\$-54-9 &#\$' %?(-
J, "?Ɉ-

-
9 HJ-OK2/-C->5!' ?#', -V' ('&!?\$-54-9 &#\$' %?(-J, "?Ɉ-

-
9 HJ-OKDW-C-@!&?#5?"% -54-9 &#\$' %?(-J, "?Ɉ--

-
9 HJ-OKO/-C->5(('!Ɉ--

-