

Appendix B

Grosse Pointe Public School System WAN Ring Design

Assumptions:

1. All cable is OFS Allwave Plus Fiber - using worst case loss of .34dB/Km @ 1310nm. Higher frequencies have slightly lower loss.
2. Splice loss of .1dB - most splices should be in the .03 to .06 range.
3. Building interior fiber is not included - longest interior run is 350 ft. which is about .1 dB.
4. Building to building distance/loss numbers are different for the clockwise vs counterclockwise table due to the order/ sequence of the buildings that share a lateral connection.
5. The loss number for the WSU leg to Parcels starts at the splice at Alter road and goes to Parcels, both clockwise and counter clockwise, are point to point on the ring and do not pass through any of the other building
6. The loss calculations do not include the loss incurred with patch cables.
7. The Added Loss Margin is overhead to allow for any differences between the estimated loss and the actual loss (measured after construction is complete) plus fiber plant changes over time.

Counter clockwise Ring

From	To	Ring footage	Lateral footage	number of splices	Ring Km	Lateral Km	total splice loss@.1dB per splice	total Ring loss @ .34dB/Km	total Lateral loss @.34 dB/Km	Estimated Total Bldg to Bldg loss	Added Loss Margin of 2 dB
Parcells	Maire	27540	5899	3	8.394192	1.7980152	0.3	2.85402528	0.611325168	3.765	5.765
Maire	Full circle	0	5060	1	0	1.542288	0.1	0	0.52437792	0.624	2.624
Full Circle	Pierce	15728	6457	3	4.7938944	1.9680936	0.3	1.629924096	0.669151824	2.599	4.599
Pierce	Defer	0	1366	1	0	0.4163568	0.1	0	0.141561312	0.242	2.242
Defer	Richard	18668	12305	3	5.6900064	3.750564	0.3	1.934602176	1.27519176	3.510	5.510
Richard	South	0	5904	1	0	1.7995392	0.1	0	0.611843328	0.712	2.712
South	Kerby	12797	2804	3	3.9005256	0.8546592	0.3	1.326178704	0.290584128	1.917	3.917
Kerby	Brownell	0	2571	1	0	0.7836408	0.1	0	0.266437872	0.366	2.366
Brownell	Monteith	6179	5431	3	1.8833592	1.6553688	0.3	0.640342128	0.562825392	1.503	3.503
Monteith	Barnes	9473	1460	2	2.8873704	0.445008	0.2	0.981705936	0.15130272	1.333	3.333
Barnes	North	3600	2228	2	1.09728	0.6790944	0.2	0.3730752	0.230892096	0.804	2.804
North	Ferry	2406	3539	2	0.7333488	1.0786872	0.2	0.249338592	0.366753648	0.816	2.816
Ferry	Mason	5672	3337	2	1.7288256	1.0171176	0.2	0.587800704	0.345819984	1.134	3.134
Mason	Parcells	3084	1982	2	0.9400032	0.6041136	0.2	0.319601088	0.205398624	0.725	2.725

Grosse Pointe Public School System
DWDM Network Electronics RFP

Appendix B

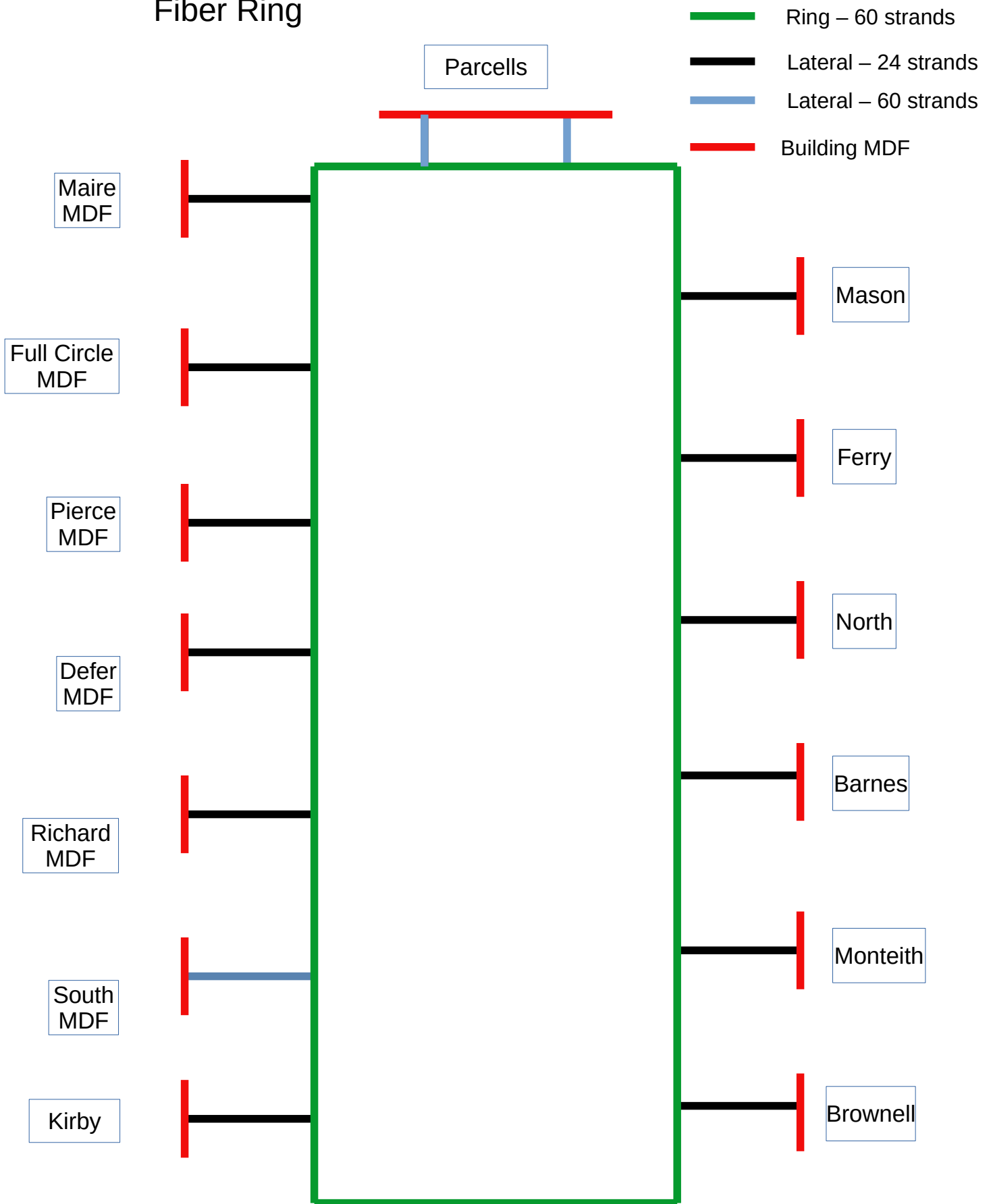
Clockwise Ring

From	To	Ring footage	Lateral footage	number of splices	Ring Km	Lateral Km	total splice loss@.1dB per splice	total Ring loss @.34dB/Km	total Lateral loss @.34 dB/Km	Estimated Total Bldg loss to Bldg loss	Added Loss Margin of 2 dB
Parcells	Mason	3084	1982	2	0.9400032	0.6041136	0.2	0.319601088	0.205398624	0.725	2.725
Mason	Ferry	5672	3337	2	1.7288256	1.0171176	0.2	0.587800704	0.345819984	1.134	3.134
Ferry	North	2406	3539	2	0.7333488	1.0786872	0.2	0.249338592	0.366753648	0.816	2.816
North	Barnes	3600	2228	2	1.09728	0.6790944	0.2	0.3730752	0.230892096	0.804	2.804
Barnes	Monteith	9473	1460	2	2.8873704	0.445008	0.2	0.981705936	0.15130272	1.333	3.333
Monteith	Kerby	6179	2760	3	1.8833592	0.841248	0.3	0.640342128	0.28602432	1.226	3.226
Kerby	Brownell	0	2671	1	0	0.8141208	0.1	0	0.276801072	0.377	2.377
Brownell	South	12797	5475	3	3.9005256	1.66878	0.3	1.326178704	0.5673852	2.194	4.194
South	Richard	0	5904	1	0	1.7995392	0.1	0	0.611843328	0.712	2.712
Richard	Pierce	18668	10939	3	5.6900064	3.3342072	0.3	1.934602176	1.133630448	3.368	5.368
Pierce	Defer	0	7063	1	0	2.1528024	0.1	0	0.731952816	0.832	2.832
Defer	Full Circle	15728	7823	3	4.7938944	2.3844504	0.3	1.629924096	0.810713136	2.741	4.741
Full Circle	Maire	0	5060	1	0	1.542288	0.1	0	0.52437792	0.624	2.624
Maire	Parcells	27540	5899	3	8.394192	1.7980152	0.3	2.85402528	0.611325168	3.765	5.765

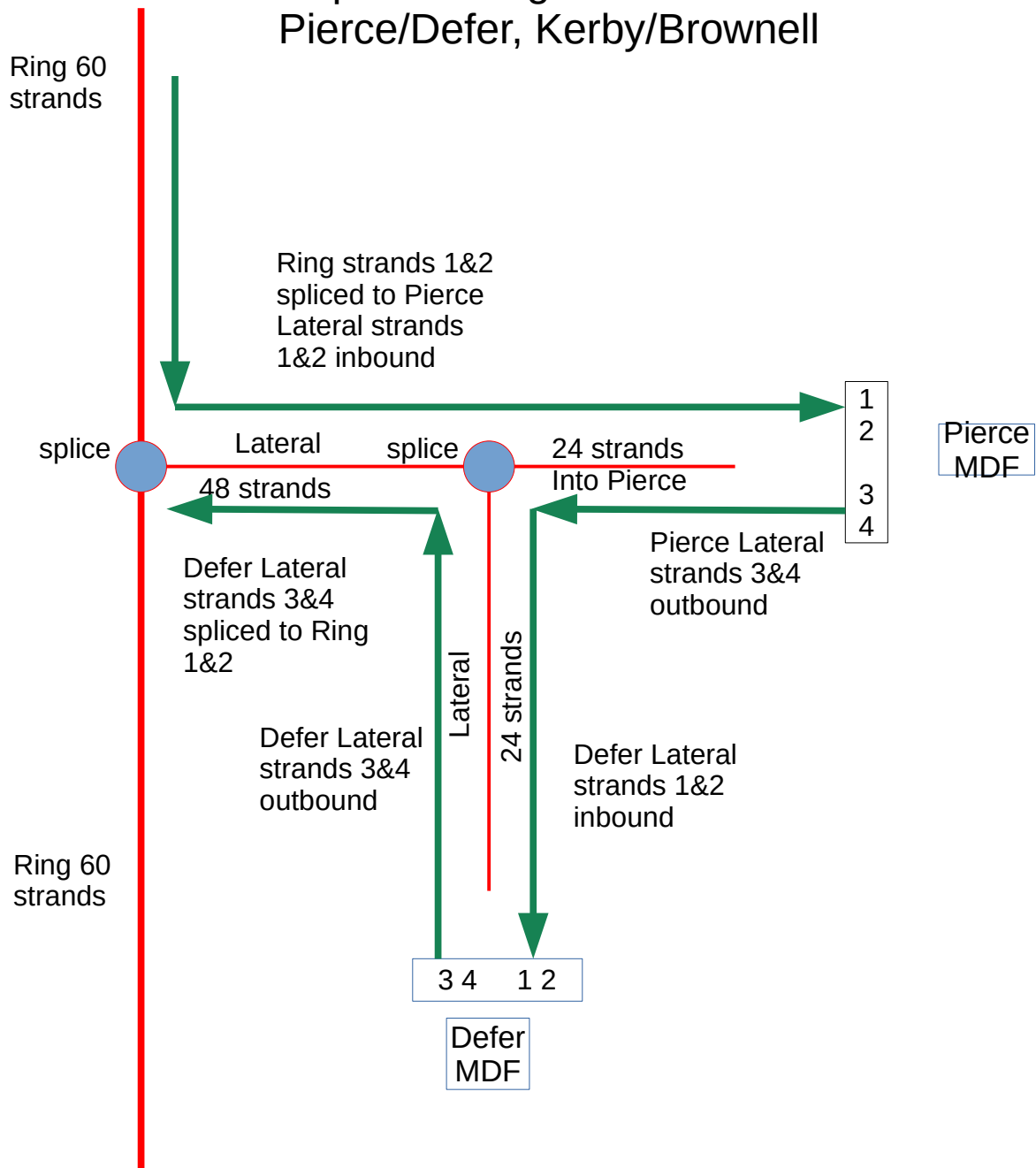
WSU Connection

From	To	Ring footage	Lateral footage	number of splices	Ring Km	Lateral Km	total splice loss@.1dB per splice	total Ring loss @.34dB/Km	total Lateral loss @.34 dB/Km	Estimated Total loss	Added Loss Margin of 2 dB
WSU Data Center	Splice at Alter & Jefferson (Ring)	77659	0	7	23.6704632	0	0.7	8.047957488	0	8.748	10.748
Splice at Alter & Jefferson (Ring)	Parcells (direct on Ring counter clockwise)	43268	1599	3	13.1880864	0.4873752	0.3	4.483949376	0.165707568	4.950	6.950
Splice at Alter & Jefferson (Ring)	Parcells (direct on Ring clockwise)	61879	798	8	18.8607192	0.2432304	0.8	6.412644528	0.082698336	7.295	9.295

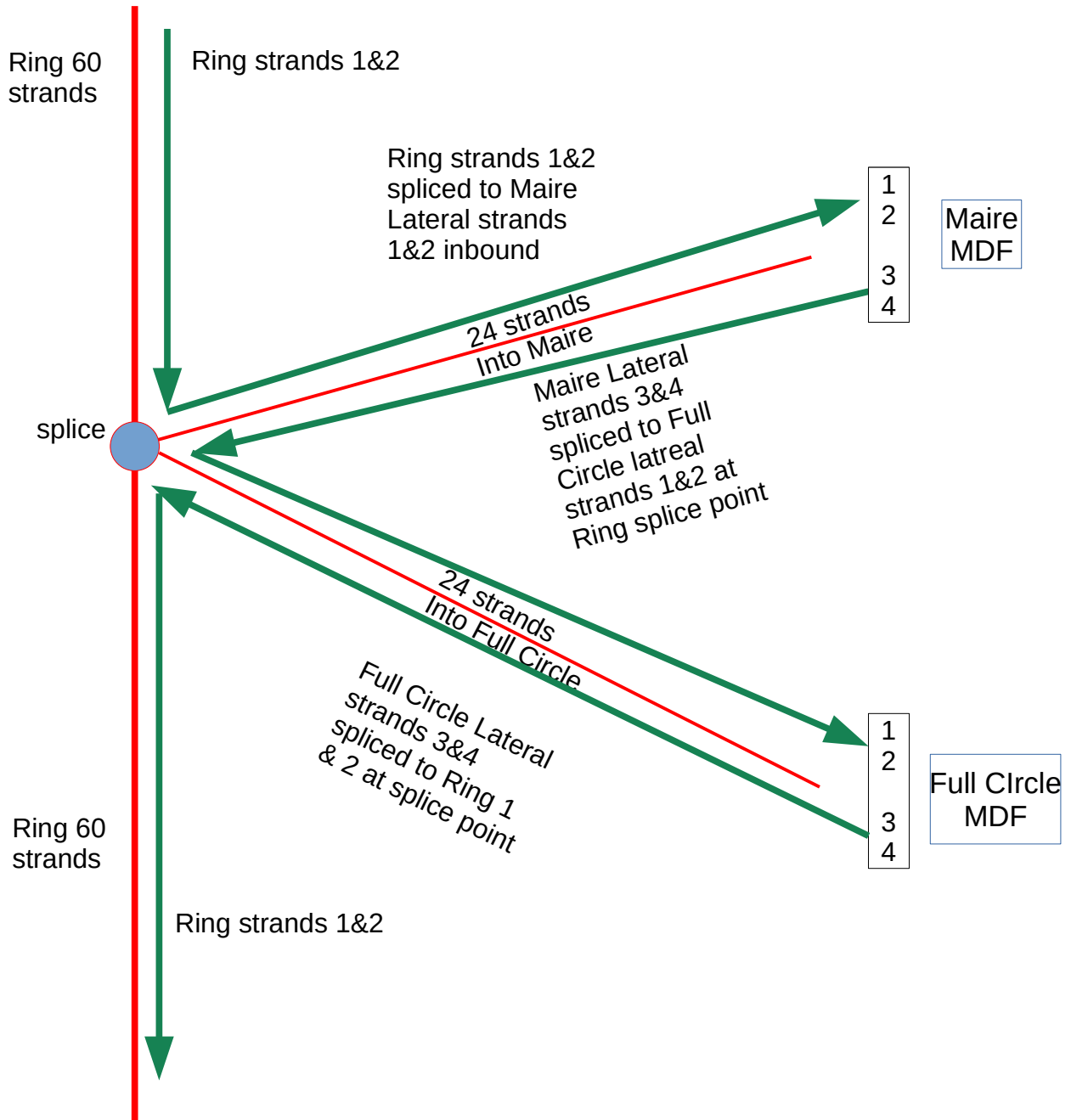
Fiber Ring



Multiple Buildings on One Lateral Pierce/Defer, Kerby/Brownell



Multiple Buildings on Separate Laterals from One Splice Point Maire/Full Circle, Richard/South



Ring with cable lengths

