

# **Business Services**

# **Metro Ethernet**

Project Management

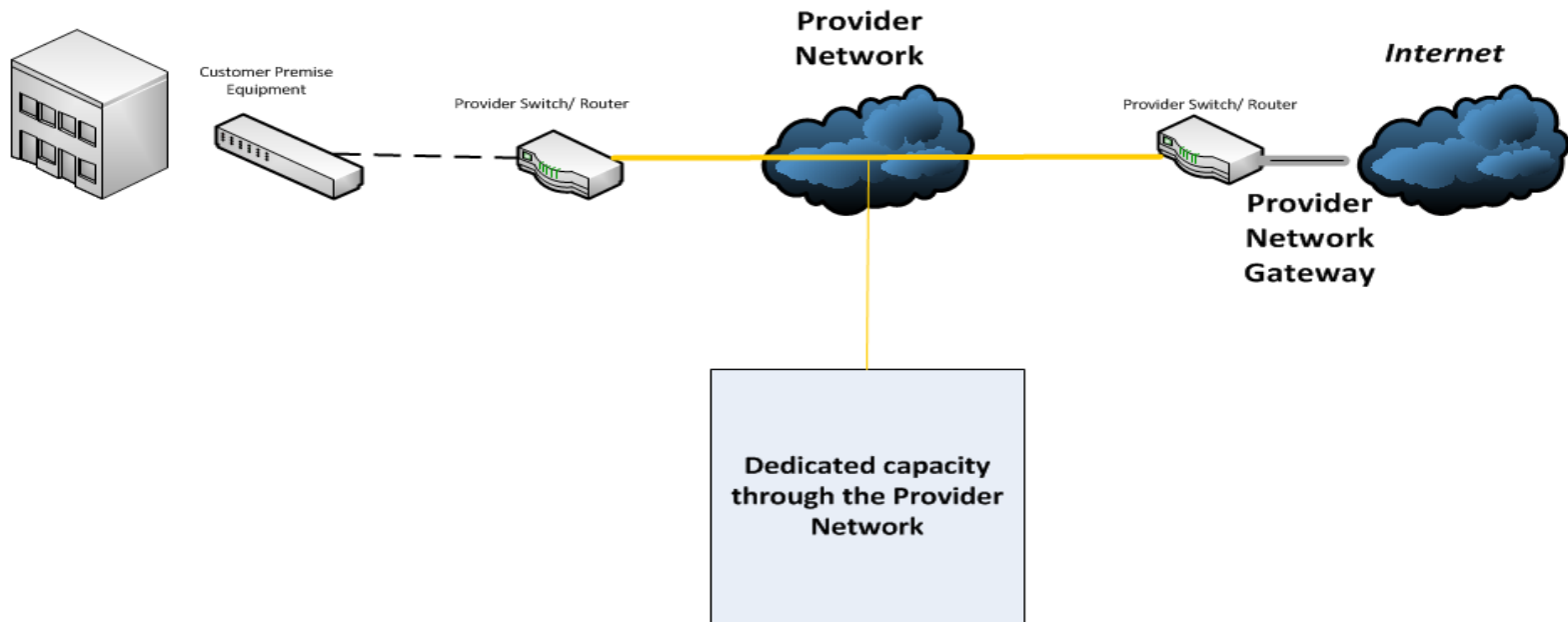
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- Ethernet Private Line Service (EPL) – Point to Point
- Ethernet Virtual Private Line Service (EVPL) – Point to Multi-Point
- Ethernet Network Service (ENS) – Multi-Point to Multi-Point
- Ethernet Dedicated Internet Services (EDI) – Dedicated Bandwidth to the Internet

## **Types of Service**

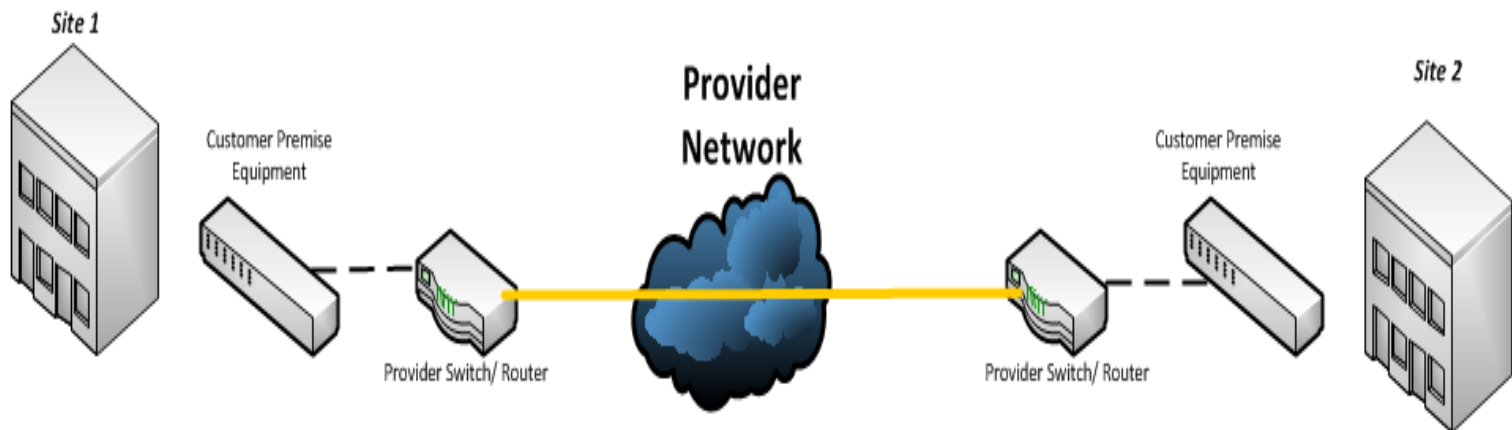
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# Ethernet Dedicated Internet Service – EDI



# EDI

# Ethernet Private Line Service – EPL (Point to Point)

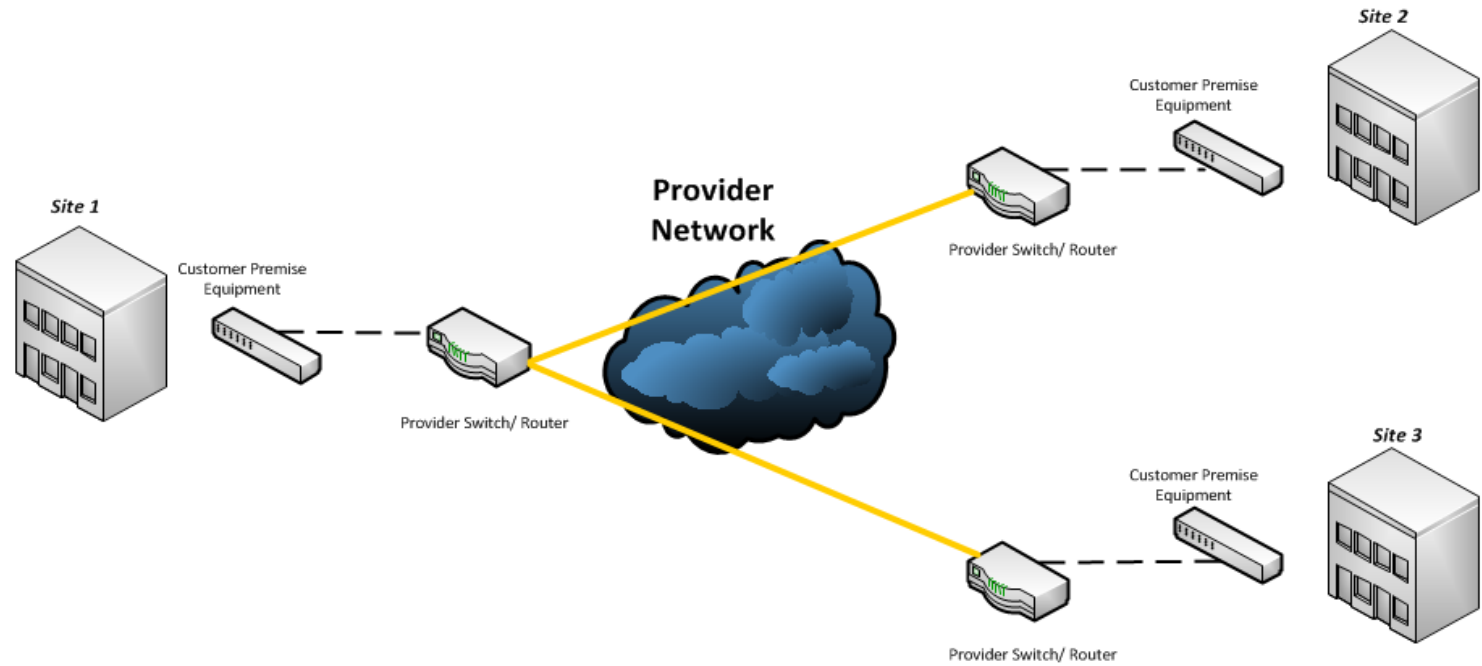


# EPL

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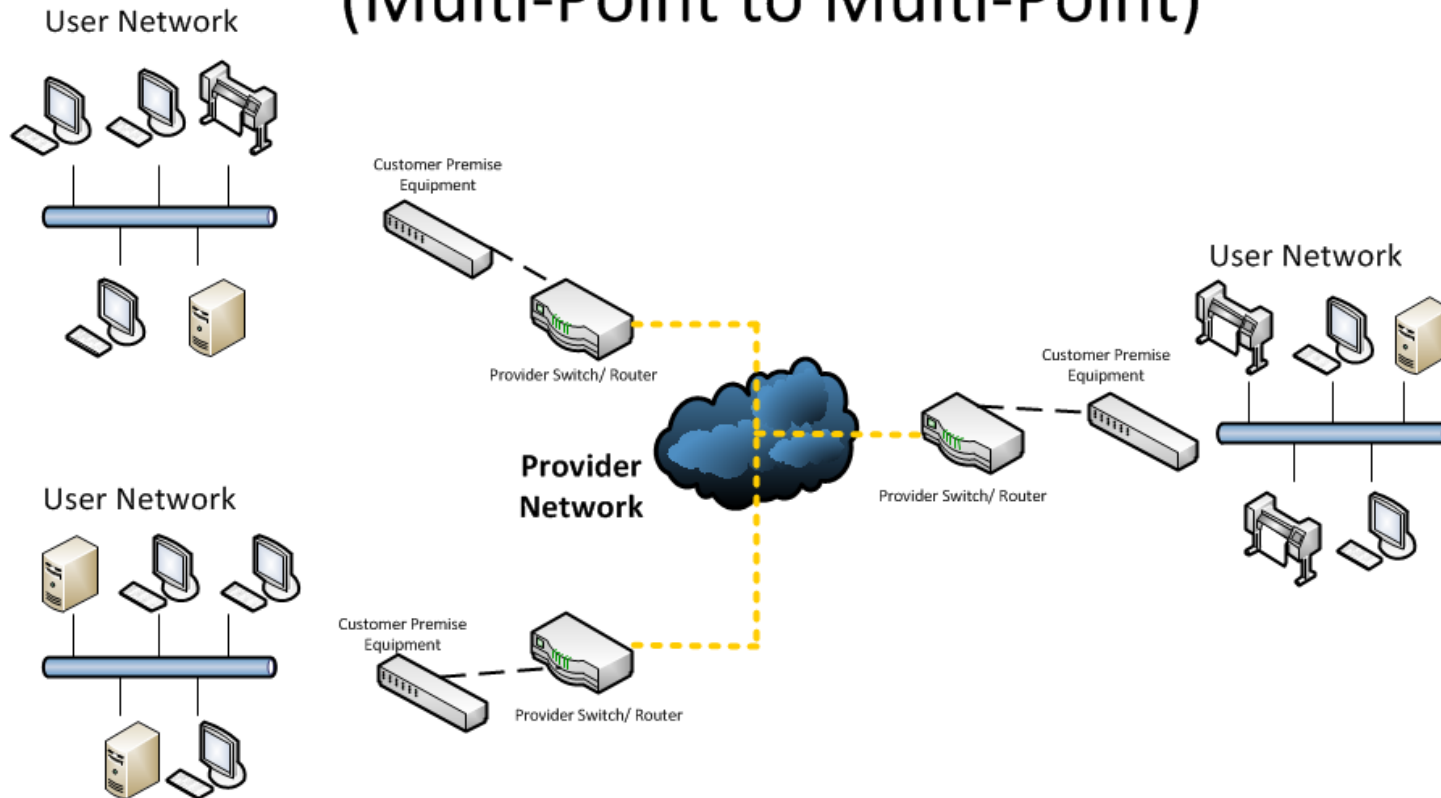


# Ethernet Virtual Private Line Service – EVPL (Point to Multi-Point)



# EVPL

# Ethernet Network Service – ENS (Multi-Point to Multi-Point)



# ENS

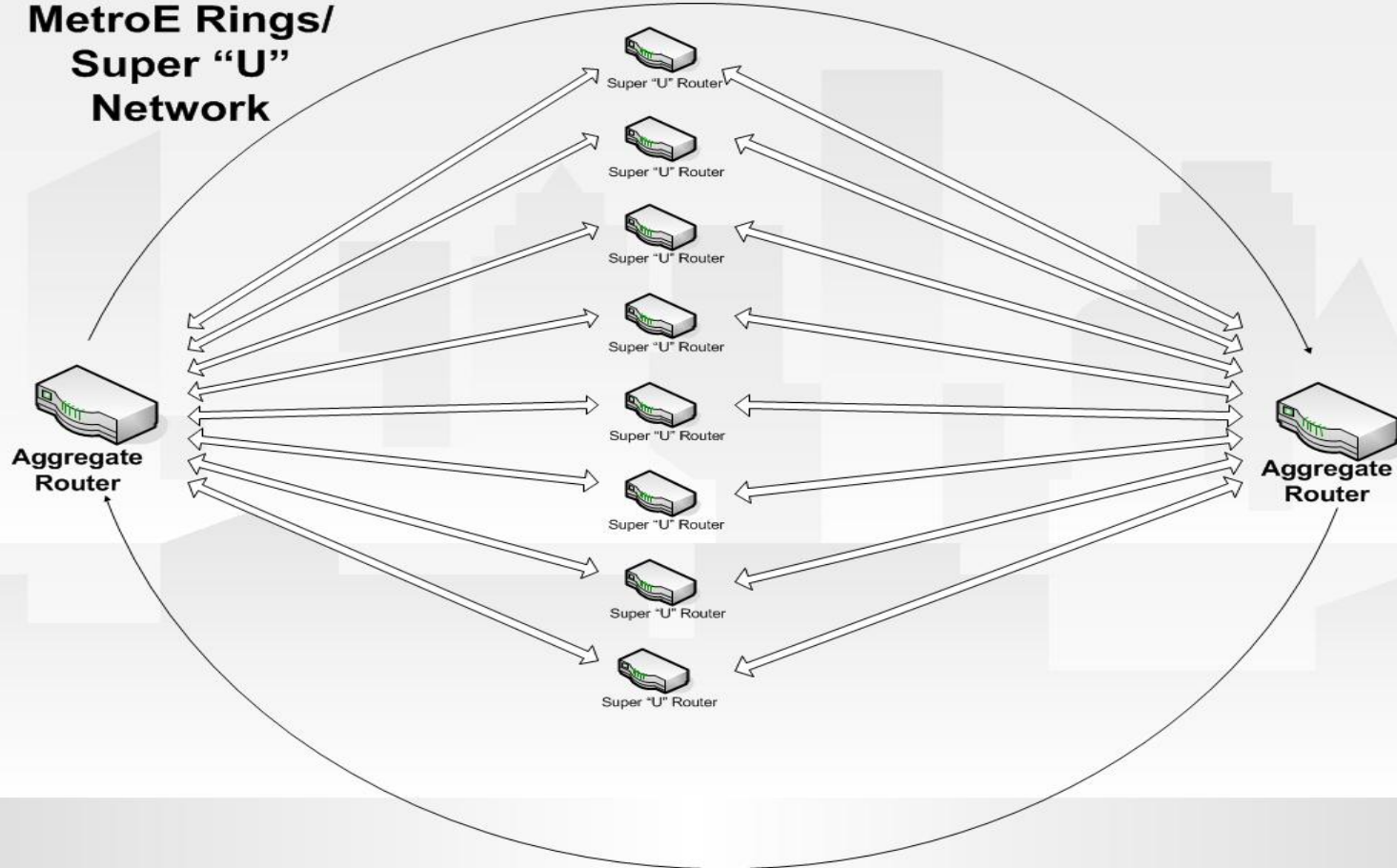


# **FIBER INFRASTRUCTURE**

Exposure & Protection

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## MetroE Rings/ Super "U" Network



# Provider network



Primary Head End



Primary Hub



Secondary Hub



OTN



Distribution Fibers this is where the bulk of our fibers are



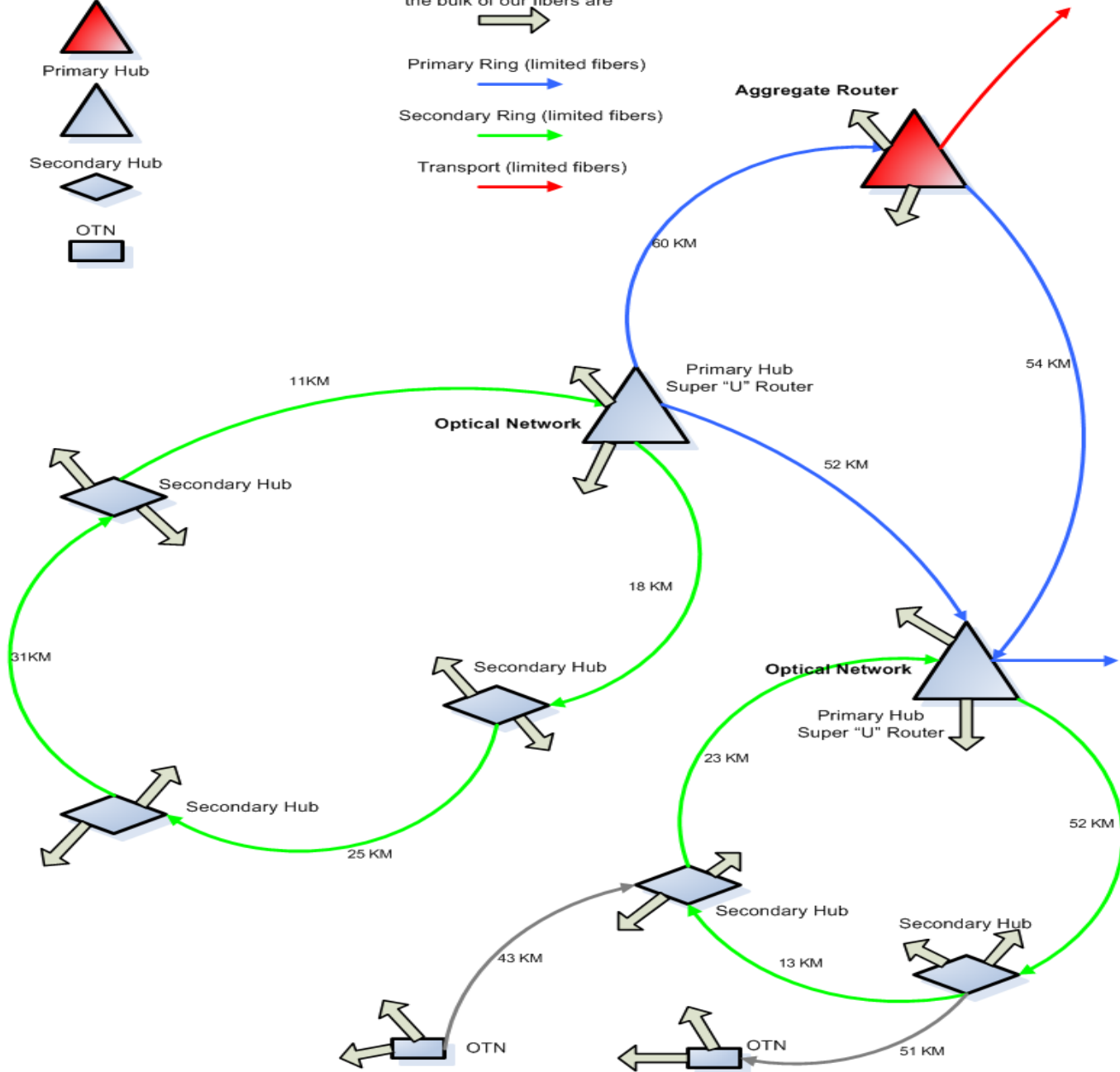
Primary Ring (limited fibers)

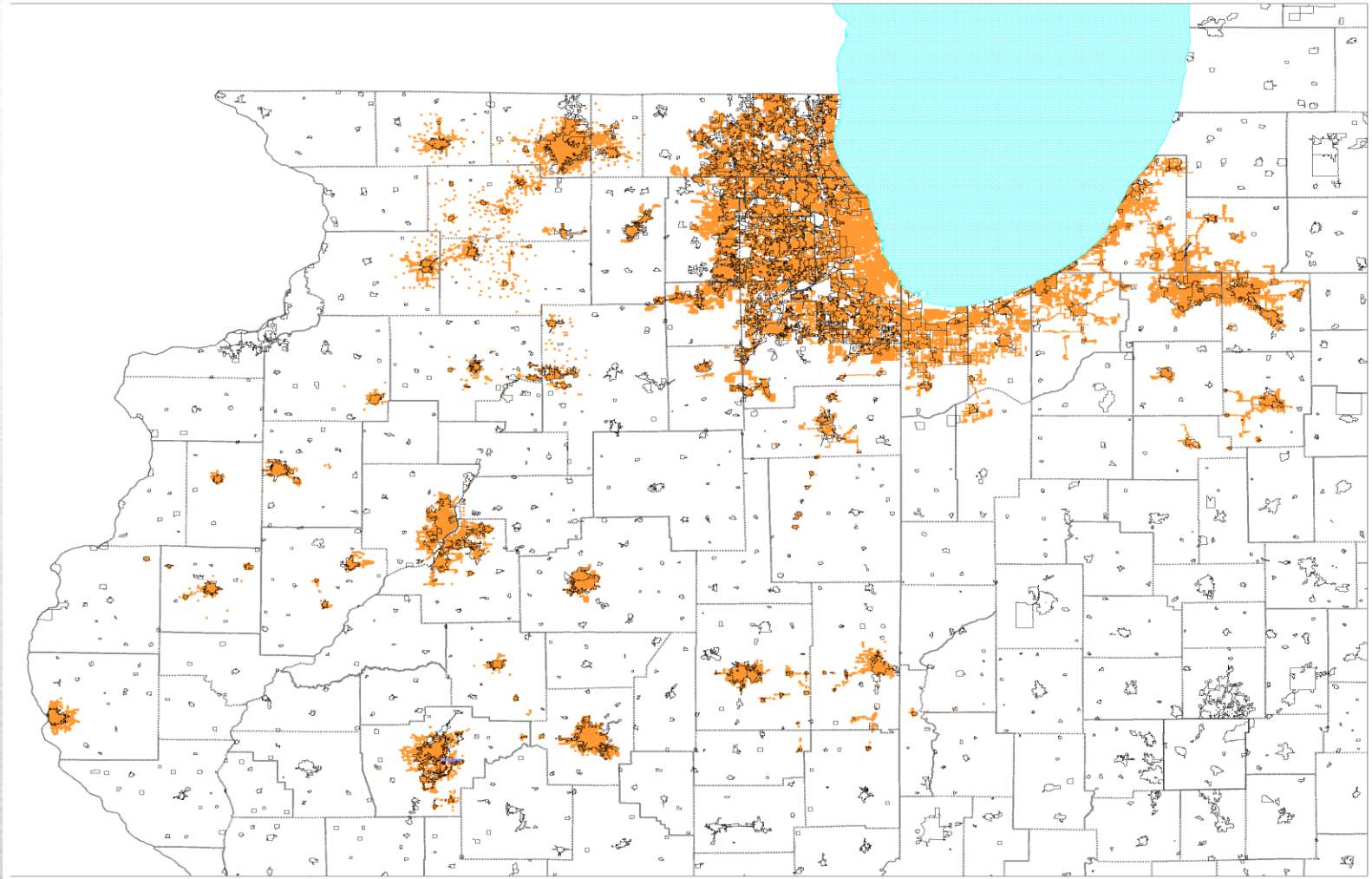


Secondary Ring (limited fibers)



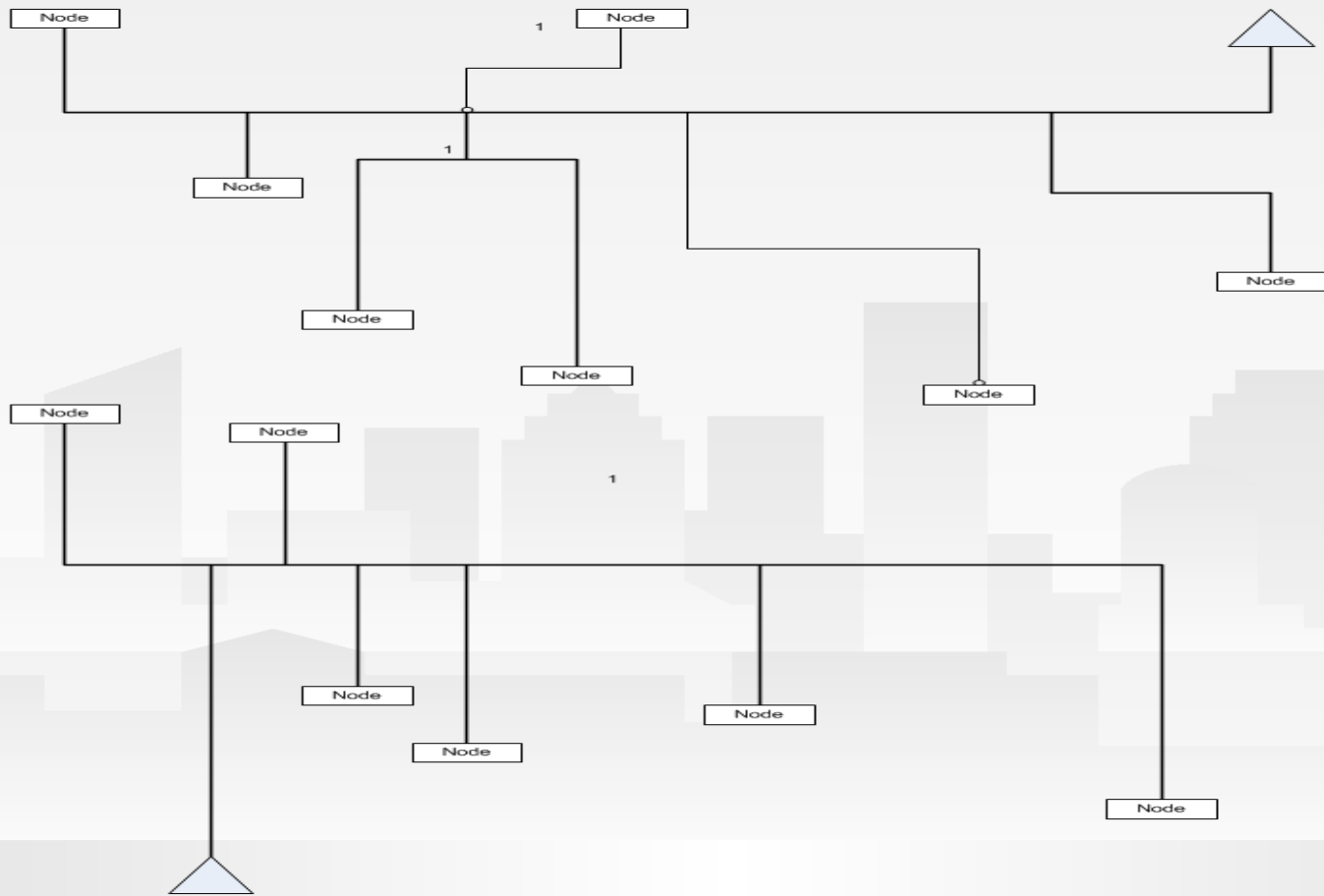
Transport (limited fibers)



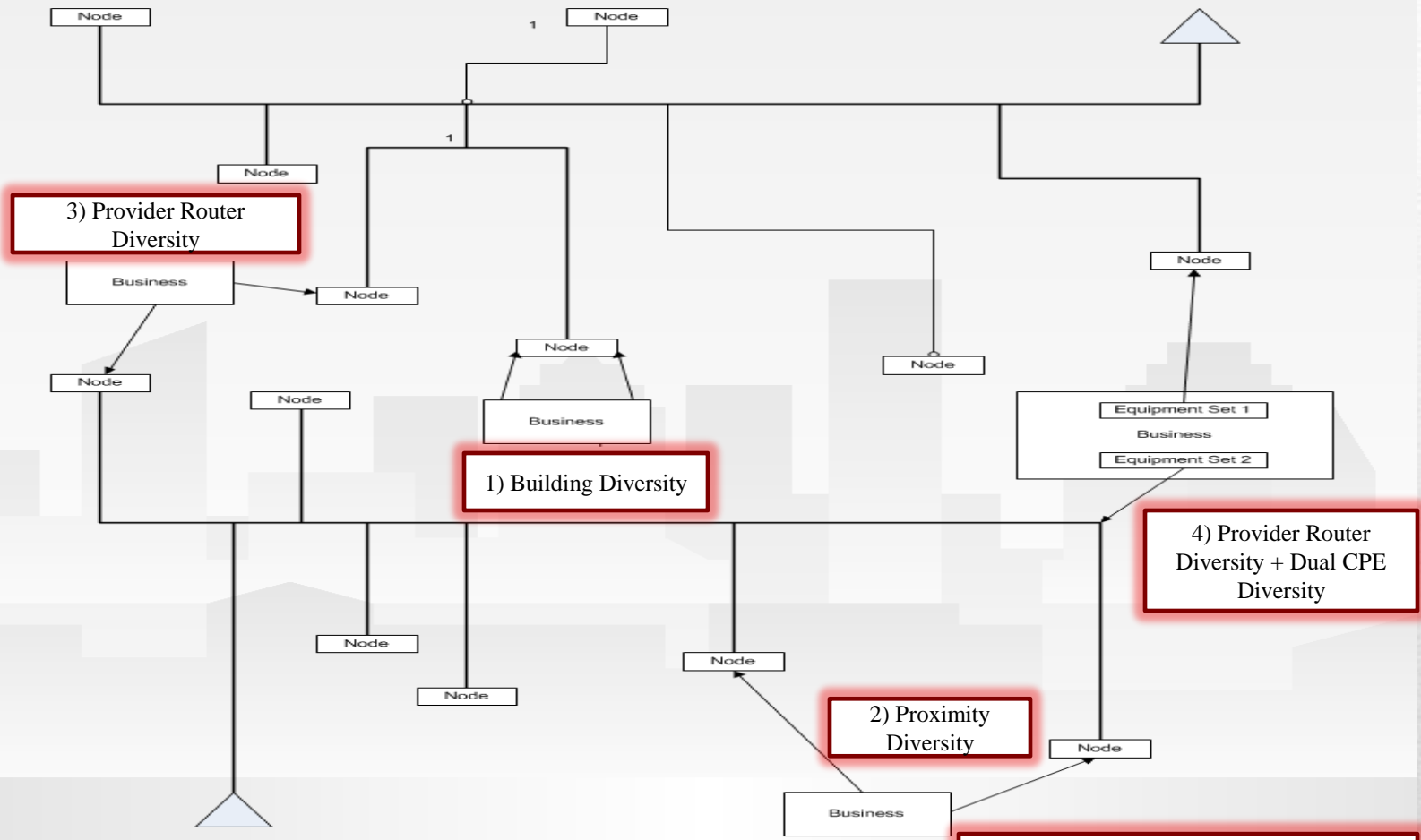


## Market infrastructure

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# Distribution



**Border Gate Control (BGP)**  
 Is a service that one provider can enable the customer to use a second provider as a diverse source for their service.

# Network Diversity





# **PROJECT MANAGEMENT**

Metro Ethernet

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- ❖ Sectional and in order
- ❖ Task oriented
- ❖ Can be passed from Team to Team or work in parallel
- ❖ Document storage
- ❖ One Stop notations for Order progress
- ❖ Timing Tool
- ❖ Record for Up-Sell or Change of Services

## **Project Management Data Bases**

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Service Orchestrator - Windows Internet Explorer provided by Comcast - Greater Chicago Region

http://csomapp-wc-a1p.sys.comcast.net:7031/OM/layoutPage.exc?sessionId=wcVfRh8HCQjG3y0BpQ2LhT12Zv3bprjy5JlBdbx5J91Rp2CvpP118727? Bing

Service Orchestrator

Go to Application: --Select-- Welcome: thartz001 Signout

Workorder Reports Dependency

Complete Site Build

Task Status

Task Name	Task Status	Task Owner	Task Age	Task Completion/Deferred Date	Task Ready Date	Task Completed By	Task Deferred By
<b>Service Order : 1000460270 : EDI EVC Configuration</b>							
Submit ASR	DEFERRED	Not Assigned		04/29/2013			System
Update Design	COMPLETED	sbind200	0	04/30/2013	04/30/2013	sbind200	
Create Account and Equipment	COMPLETED	pdesai001c	1	05/01/2013	04/30/2013		
Ship CPE	COMPLETED	vsamue00	15	05/15/2013	04/30/2013	vsamue00	
Assign Design Information	COMPLETED	pdesai001c	0	05/01/2013	05/01/2013		
Generate Core Configs	COMPLETED	pdesai001c	1	05/02/2013	05/01/2013	pdesai001c	
Generate CPE Configs	COMPLETED	pdesai001c	1	05/02/2013	05/01/2013	pdesai001c	
Load Core Configs	COMPLETED	ktaylo204	5	05/07/2013	05/02/2013	ktaylo204	
Install CPE	IN PROGRESS	Not Assigned	5		05/15/2013		
Set Critical Dates	PENDING	awitko200					
Create CM Ticket	PENDING	tdaube200					
Activate Service	PENDING	Not Assigned					
Notify Customer of Service Installation	PENDING	awitko200					
Complete Customer Acceptance Testing	PENDING	Not Assigned					
<b>Create Order Billing Package</b>							
Start Billing	PENDING	Not Assigned					
<b>Service Request : 1720566</b>							
Contact Customer	CONTACTED	awitko200			04/29/2013		
Manage Off-Net Operator Order	DEFERRED	Not Assigned		04/29/2013			System
<b>Site Order : 1000460268 : Architex International, 3333 COMMERCIAL AVE, Northbrook -60062, IL, US</b>							
Conduct Site Survey	COMPLETED	dpanac000	1	04/30/2013	04/29/2013	dpanac000	
Obtain Site Agreement(s)	COMPLETED	ejenki201	1	04/30/2013	04/29/2013	ejenki201	
Conduct Fiber Plant Survey	COMPLETED	dpanac000	1	04/30/2013	04/29/2013	dpanac000	
Build House Account	IN PROGRESS	awitko200	21		04/29/2013		
Obtain Site Permits	DEFERRED	dpanac000		04/30/2013	04/30/2013		System
Obtain Fiber Plant Permits	IN PROGRESS	CDiaz8515k	20		04/30/2013		
Complete Site Build	IN PROGRESS	CDiaz8515k	20		04/30/2013		
Complete Fiber Plant Build	PENDING	Not Assigned					

IN PROGRESS

Trusted sites | Protected Mode: Off

2:44 PM 5/20/2013

# Order Management



- Initiating the Sale
- Helping the Potential Customer to understand what we can do/what they need
- Requesting the “Desk Top” Survey
- Design & Bill of Materials
- Making the Business Case
- Customer Acceptance
- Order Acceptance
- Order Management Launch

## **Pre-Sales**

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- Fiber availability research & assignment/ Fiber Label “Snap Shot”
- System Maps depicting route from Customer premise to Infrastructure tie point
- Public Mapping program depicting route + “Order Specific” notes
- Fiber Infrastructure details/ Fiber Map & Schematic “Snap-shots”
- Construction & Materials “*Estimation*”/ Desk-Top Work-Book

## **Desk Top Survey Content**

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**PORTAGE**

03-04-01-01

**E SPANGHEHL**

OSP 288 96 FIER 193-288

		<b>CCS Park Dist</b>										<b>PD 30 SP CCS</b>		STUDIO		<b>PD-02 RTN 2</b>			
9	1.757 26747 OSP 288-201	17	Active 26655 OSP 288-209	25	1.507 25,005 OSP 288-217	33	1.456 25,005 OSP 288-225	41	1.275 18,222 OSP 288-233	49	1.284 18,122 OSP 288-241	57	1.024 18,138 OSP 288-249	65	1.344 18,222 OSP 288-257	73	1.516 26,496 OSP 288-265	81	Active 33647 OSP 288-273
		<b>CCS Park Dist</b>												<b>PD 30 SP CCS</b>		STUDIO		<b>PD 02 SP</b>	
10	1.696 26,789 OSP 288-202	18	Active 26,665 OSP 288-210	26	1.627 25,005 OSP 288-218	34	1.65 25,022 OSP 288-226	42	1.176 18,122 OSP 288-234	50	0.991 18,122 OSP 288-242	58	1.129 18,138 OSP 288-250	66	1.722 18,222 OSP 288-258	74	1.374 26,496 OSP 288-266	82	2.224 33681 OSP 288-274
		<b>Crisman school</b>												<b>peg fr ogden dunes</b>		STUDIO		<b>CH68270H T MOBIL</b>	
11	1.428 26,781 OSP 288-203	19	preterm4/7 cross/patch OSP 288-211	27	1.295 24,972 OSP 288-219	35	1.433 25,005 OSP 288-227	43	0.971 18,122 OSP 288-235	51	0.977 18,105 OSP 288-243	59	1.053 18,122 OSP 288-251	67	Active 26,563 OSP 288-259	75	1.767 26,496 OSP 288-267	83	Active 33647 OSP 288-275
		<b>Crisman school</b>												<b>sp-to ogden dunes</b>		STUDIO		<b>CH68270H T MOBIL</b>	
12	1.672 26,747 OSP288-204	active	preterm4/8 cross/patch OSP 288-212	28	1.574 25,005 OSP 288-220	36	1.614 25,005 OSP 288-228	44	1.133 18,122 OSP 288-236	52	1.152 18,122 OSP 288-244	60	1.01 18,122 OSP 288-252	68	1.611 26,571 OSP 288-260	76	1.639 26,496 OSP 288-268	84	Active 33631 OSP 288-276
<b>PD 09 FWD</b>												<b>PD 30 FWD</b>		<b>PD 01 RTN 1</b>		STUDIO		<b>PD 03 FWD</b>	
13	1.503 26,647 OSP 288-205	21	1.641 27,166 OSP 288-213	29	1.516 25,005 OSP 288-221	37	0.958 18,122 OSP 288-229	45	1.229 18,122 OSP 288-237	53	1.122 18,122 OSP 288-245	61	1.236 18,214 OSP 288-253	69	1.933 26,567 OSP 288-261	77	1.862 26,496 OSP 288-269	85	0.598 11,598 OSP 288-277
<b>PD 09 RTN</b>												<b>PD 30 RTN 1</b>		<b>PD 01 RTN 2</b>		STUDIO		<b>PD 03 RTN 1</b>	
14	1.805 26,655 OSP 288-206	22	1.802 27,166 OSP 288-214	30	1.559 25,039 OSP 288-222	38	1.129 18,088 OSP 288-230	46	1.04 18,122 OSP 288-238	54	1.062 18,122 OSP 288-246	62	0.945 18,231 OSP 288-254	70	1.861 26,567 OSP 288-262	78	1.516 26,479 OSP 288-270	86	0.824 11,598 OSP 288-278
<b>PD-09 RTN</b>		<b>CITY STUDIO</b>										<b>PD 30 SP</b>		<b>PD 01 FWD</b>		<b>PD 02 FWD</b>		<b>PD 03 RTN 2</b>	
15	1.57 26,655 OSP 288-207	23	1.587 27,149 OSP 288-215	31	1.479 25,022 OSP 288-223	39	0.898 18,122 OSP 288-231	47	1.19 18,122 OSP 288-239	55	1.036 18,138 OSP 288-247	63	1.037 18,239 OSP 288-255	71	1.753 26,567 OSP 288-263	79	2.079 33,647 OSP 288-271	87	0.698 11,514 OSP 288-279
<b>PD-09 SP</b>		<b>CITY STUDIO</b>										<b>PD 30 SP</b>		<b>PD 01 SP</b>		<b>PD 02 rtn 1</b>		<b>PD 03 SP</b>	
16	1.88 26,655 OSP 288-208	24	1.799 27,166 OSP 288-216	32	1.693 25,005 OSP 288-224	40	1.308 18,122 OSP 288-232	48	1.013 18,105 OSP 288-240	56	1.281 18,138 OSP 288-248	64	1.209 18,222 OSP 288-256	72	1.866 26,567 OSP 288-264	80	1.147 33,631 OSP 288-272	88	1.007 11,598 OSP 288-280

# Fiber Label Snap Shot

GW Berkheimer DIGITAL 05-15-13 - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Format

Clipboard Font Alignment Number Styles Cells Editing

Picture 3

88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151

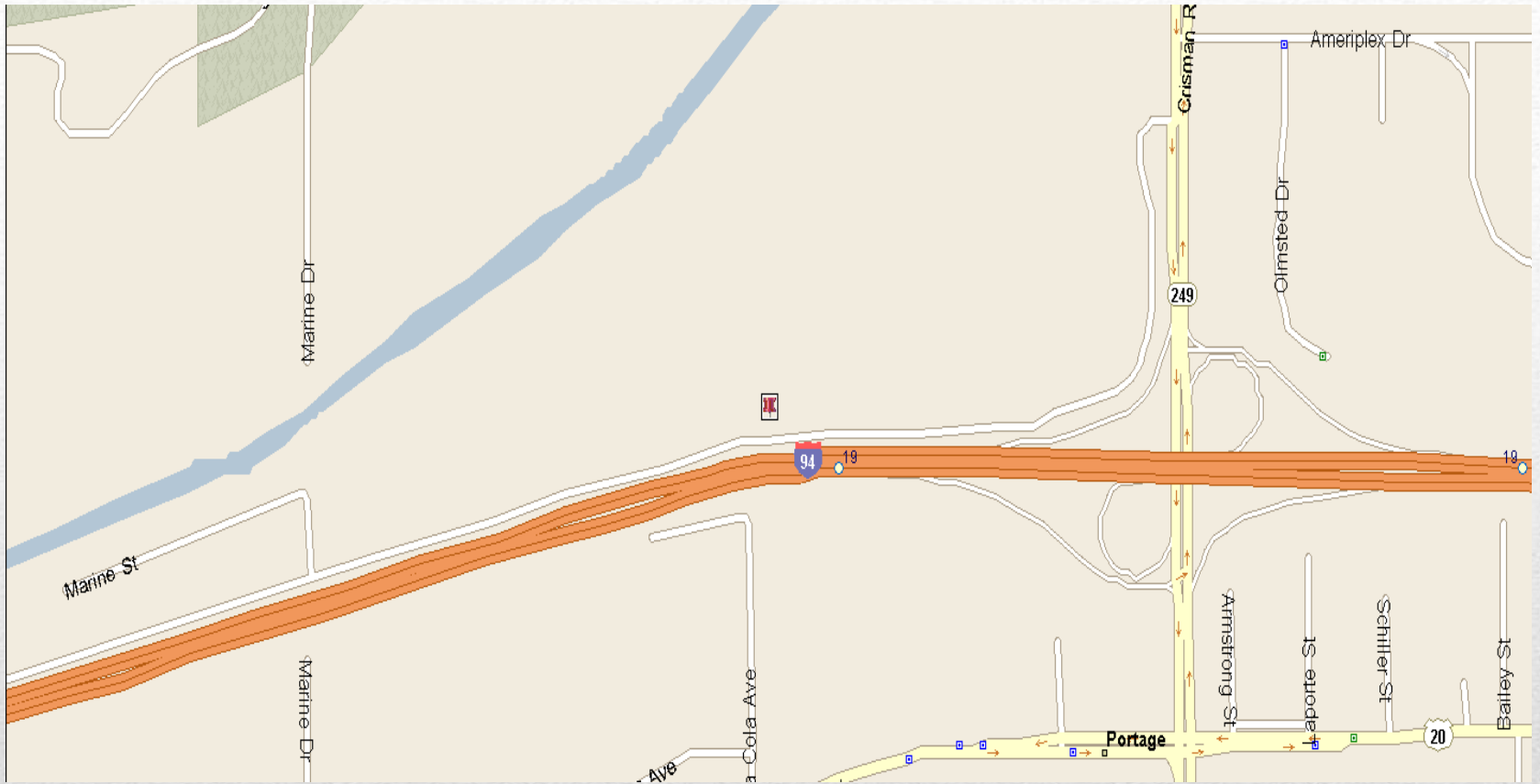
Project Name Site KEY STANDARDS

Ready

9:45 AM 5/21/2013

# System Map Snap Shot

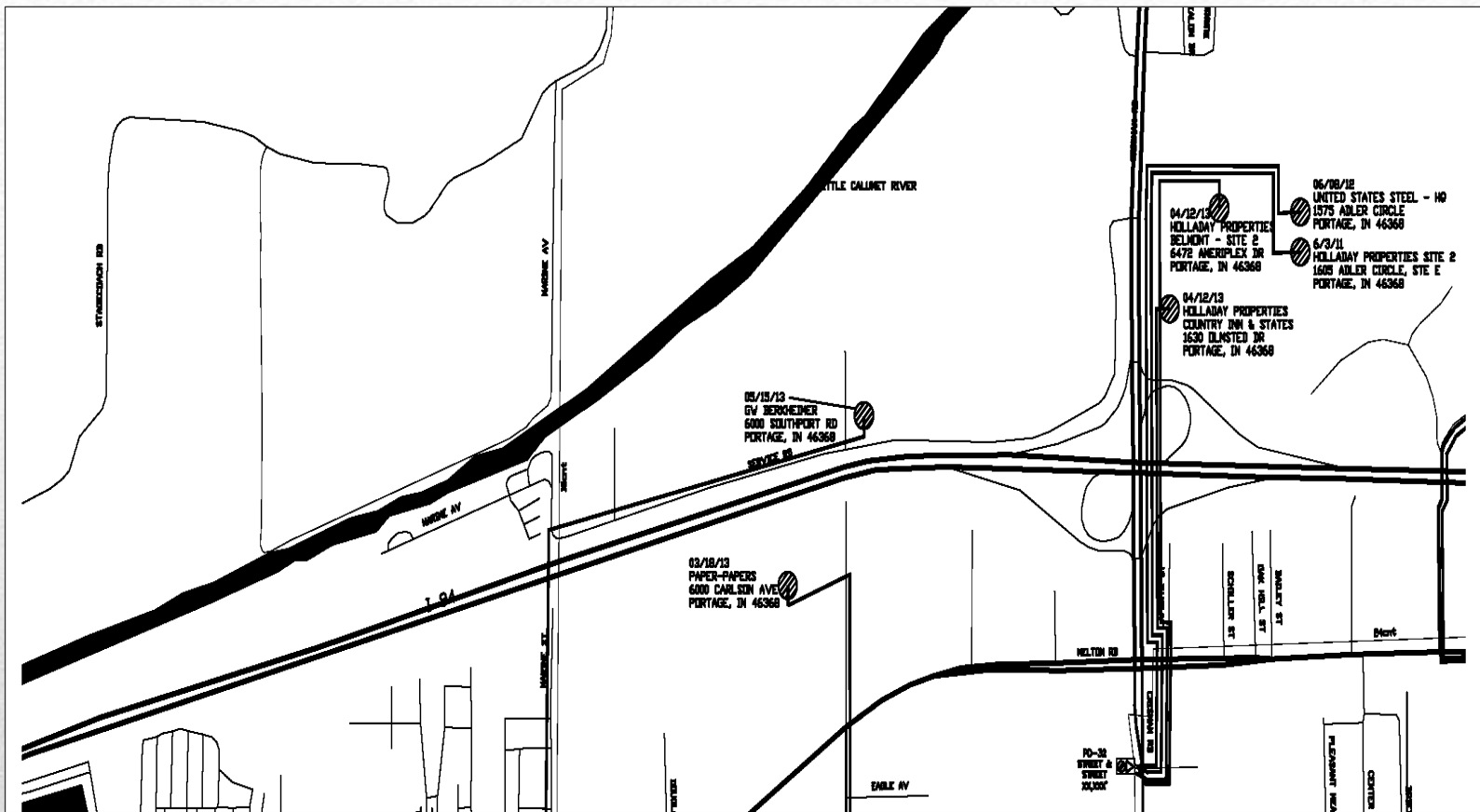




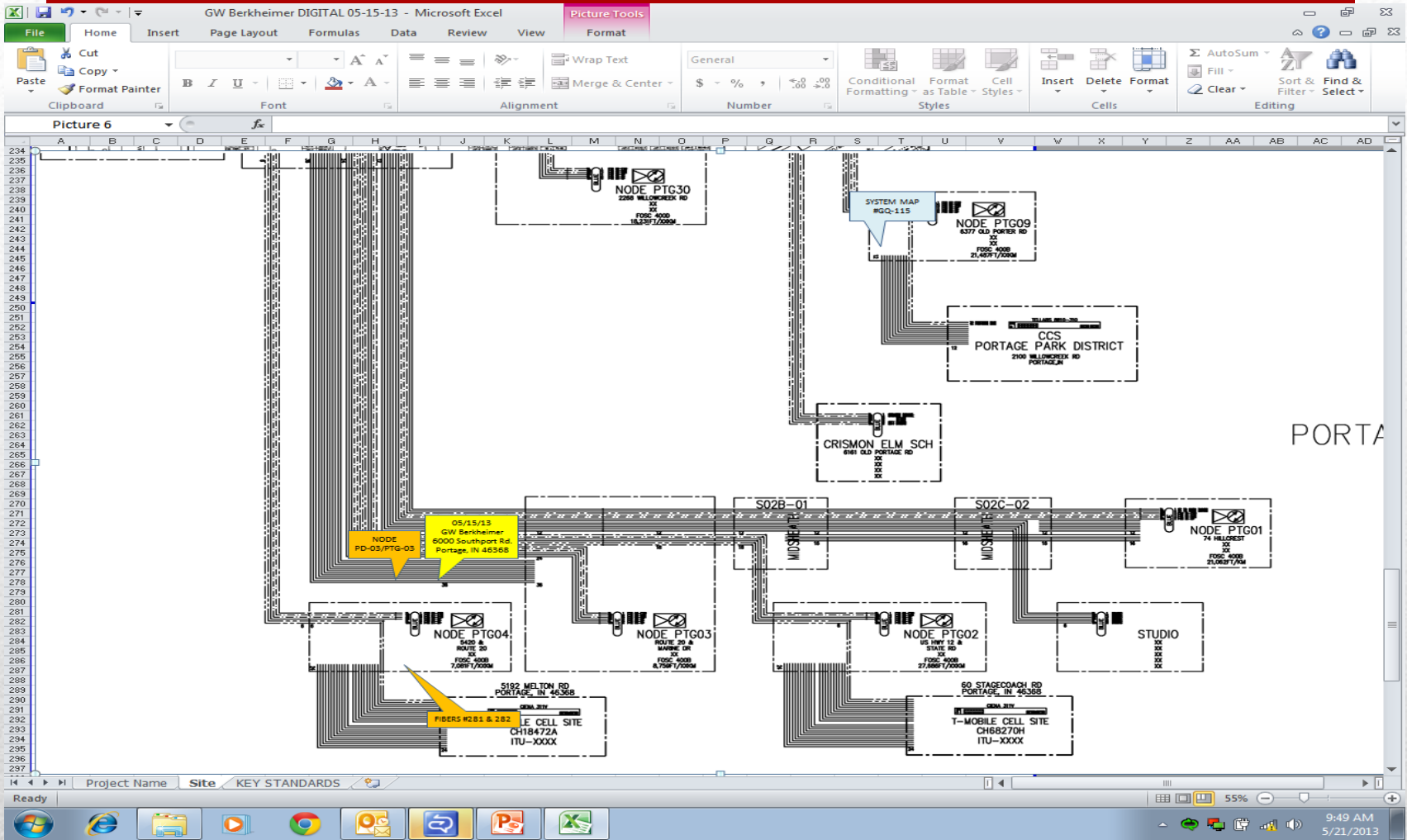
# Public Mapping Location Snap Shot

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# Fiber Overlay Snap Shot



# Fiber Schematic Snap Shot

QQ Fiber - Coax combined Quotes - GCR-CIL V 2.7 2012 0919 - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View

Clipboard Copy Paste Format Painter

Arial 10 Bold Italic Underline Font Merge & Center Alignment Number Conditional Formatting Styles Cell Styles Insert Delete Format Cells AutoSum Fill Clear Sort & Filter Find & Select Editing

H33

Construction Estimate/ Quick Quote

<b>Customer Name</b>		<b>Customer / Project Name</b>	
<b>Full Quote Totals/ Fiber</b>		<b>Number of Sites</b>	0
All Sites			
OSP Cost	\$	-	-
ISP Cost	\$	-	-
<b>Quote Total</b>	<b>\$</b>	<b>-</b>	<b>-</b>
<b>Average per site</b>	<b>#DIV/0!</b>	If a site goes back to a Head End facility that is not MetroE ready high light RED. If any sites on the quote book are not ME ready, then the "Customer/ Project name should be highlighted RED.	
<b>Name of FPM</b>			
<b>Date of Quote Creation</b>			
<b>Fiber passings in same building</b>	0		
<b>Fiber passings along route of new fiber</b>	0		

<b>FQ1</b>	\$	-	<b>FQ11</b>	\$	-
0	1/0/1900	-	1/0/1900	1/0/1900	-
0	0	-	0	0	-
OSP Cost	\$	-	OSP Cost	\$	-
ISP Cost	\$	-	ISP Cost	\$	-
	\$	-		\$	-

<b>FQ2</b>	\$	-	<b>FQ12</b>	\$	-
0	1/0/1900	-	1/0/1900	1/0/1900	-
0	0	-	0	0	-
OSP Cost	\$	-	OSP Cost	\$	-
ISP Cost	\$	-	ISP Cost	\$	-
	\$	-		\$	-

<b>FQ3</b>	\$	-	<b>FQ13</b>	\$	-
0	1/0/1900	-	1/0/1900	1/0/1900	-
0	0	-	0	0	-
OSP Cost	\$	-	OSP Cost	\$	-
ISP Cost	\$	-	ISP Cost	\$	-
	\$	-		\$	-

<b>FQ4</b>	\$	-	<b>FQ14</b>	\$	-
0	1/0/1900	-	1/0/1900	1/0/1900	-
0	0	-	0	0	-
OSP Cost	\$	-	OSP Cost	\$	-
ISP Cost	\$	-	ISP Cost	\$	-
	\$	-		\$	-

<b>FQ5</b>	\$	-	<b>FQ15</b>	\$	-
0	1/0/1900	-	1/0/1900	1/0/1900	-
0	0	-	0	0	-
OSP Cost	\$	-	OSP Cost	\$	-
ISP Cost	\$	-	ISP Cost	\$	-
	\$	-		\$	-

<b>FQ6</b>	\$	-	<b>FQ16</b>	\$	-
0	1/0/1900	-	1/0/1900	1/0/1900	-
0	0	-	0	0	-
OSP Cost	\$	-	OSP Cost	\$	-
ISP Cost	\$	-	ISP Cost	\$	-
	\$	-		\$	-

<b>FQ7</b>	\$	-	<b>FQ17</b>	\$	-
0	1/0/1900	-	1/0/1900	1/0/1900	-
0	0	-	0	0	-
OSP Cost	\$	-	OSP Cost	\$	-
ISP Cost	\$	-	ISP Cost	\$	-
	\$	-		\$	-

Fiber Summary Coax Summary FQ1 CQ1 FQ2 CQ2 FQ3 CQ3 FQ4 CQ4 FQ5 CQ5 FQ6 CQ6 FQ7 CQ7 FQ8 CQ8 FQ9 CQ9 FQ10 CQ10

Ready 75% 3:14 PM 5/20/2013

# Desk Top Construction Quote



## • Final Proposal Accepted

- Fiber Pre-Qualification
- Construction Route verification
- Site Walk Out (Physical Walk & Bid Proposal)
- DWDM or CWDM Wavelength Assignment
- SUR/Head End & Hub verification
- Network Design completed by Design Engineer
- Bill of materials created for Network Components
- All Fiber & Network documentation recorded & stored on permanent document formats
- Construction begins Permitting Process
- Market Development starts ROE Process

## **Pre-Sale Permitting, ROE & Wavelength Assignment Launch**

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# **ORDER ACCEPTED**

Order Launched into Project  
Management Data Base

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- Layer 1 Basic Drawing & Fiber Tie-points QC'd
- Order Acceptance Notice distributed to Teams
- Pre-Sales Map Package distributed to Construction Team
- Network Component BOM filled by National Warehouse
- Layer 1 Optics Materials requested by Fiber Project Manager
- Layer 1 Fiber Components ordered by Market
- Construction Job launched in CST
- Construction progress monitored by BSOS
- Tasks updated in Project Management Data Base
- Configurations built for Customer Network
- Customer Network activation

## **Post-Sales**

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GW Berkheimer - GCR-CIL V 2 8 05-15-13 - Microsoft Excel

	D	E	F	G	H	I	J	K	L	M
1		<b>Existing footage</b>	<b>Customer site to</b>	<b>Total</b>	<b>HE, hub or site</b>	<b>Primary Ft back</b>	<b>HE, hub or site</b>	<b>Primary Ft back</b>	<b>Secondary Ft Back</b>	<b>Primary</b>
2	<b>Build to</b>	11,598	6,963	18,561	Hub	80,933		Hub	50,784	Head End
3	Node LQ-04									
43					Sample					
44										
45										
46	<b>Customer</b>									
47										
48	<b>Provider SUR</b> address City, IN 46383 <b>SUR</b>	50,784	<b>Provider Hub</b> address City, IN 46304 <b>DWDM PASSTHRU</b>	80,933	<b>Provider Hub</b> Address City, IN 46368	11,598	<b>Field MUX</b>	ITU-20 6,963	<b>Customer Premise</b> Address City, IN, 46368	
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Fiber Summary FQ1 BASIC DRAWING

Ready 85% 10:06 AM 5/21/2013

# Basic Drawing for Design Engineer

Service Orchestrator - Windows Internet Explorer provided by Comcast - Greater Chicago Region

http://csomapp-wc-a1p.sys.comcast.net:7031/OM/layoutPage.exc?sessionId=wcVfRh8HCQjG3y0BpQ2LhT12Zv3bprjy5JlBdbx5J91Rp2CvpP118727? Bing

Service Orchestrator

Go to Application: --Select-- Welcome: thartz001 Signout

Workorder Reports Dependency

Complete Site Build

Task Status

Task Name	Task Status	Task Owner	Task Age	Task Completion/Deferred Date	Task Ready Date	Task Completed By	Task Deferred By
<b>Service Order : 1000460270 : EDI EVC Configuration</b>							
Submit ASR	DEFERRED	Not Assigned		04/29/2013			System
Update Design	COMPLETED	sbindi200	0	04/30/2013	04/30/2013	sbindi200	
Create Account and Equipment	COMPLETED	pdesai001c	1	05/01/2013	04/30/2013		
Ship CPE	COMPLETED	vsamue00	15	05/15/2013	04/30/2013	vsamue00	
Assign Design Information	COMPLETED	pdesai001c	0	05/01/2013	05/01/2013		
Generate Core Configs	COMPLETED	pdesai001c	1	05/02/2013	05/01/2013	pdesai001c	
Generate CPE Configs	COMPLETED	pdesai001c	1	05/02/2013	05/01/2013	pdesai001c	
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Install CPE	IN PROGRESS	Not Assigned	5		05/15/2013		
Set Critical Dates	PENDING	awitko200					
Create CM Ticket	PENDING	tdaube200					
Activate Service	PENDING	Not Assigned					
Notify Customer of Service Installation	PENDING	awitko200					
Complete Customer Acceptance Testing	PENDING	Not Assigned					
<b>Create Order Billing Package</b>							
Start Billing	PENDING	Not Assigned					
<b>Service Request : 1720566</b>							
Contact Customer	CONTACTED	awitko200			04/29/2013		
Manage Off-Net Operator Order	DEFERRED	Not Assigned		04/29/2013			System
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Conduct Site Survey	COMPLETED	dpanac000	1	04/30/2013	04/29/2013	dpanac000	
Obtain Site Agreement(s)	COMPLETED	ejenki201	1	04/30/2013	04/29/2013	ejenki201	
Conduct Fiber Plant Survey	COMPLETED	dpanac000	1	04/30/2013	04/29/2013	dpanac000	
Build House Account	IN PROGRESS	awitko200	21		04/29/2013		
Obtain Site Permits	DEFERRED	dpanac000		04/30/2013	04/30/2013		System
Obtain Fiber Plant Permits	IN PROGRESS	CDiaz8515k	20		04/30/2013		
Complete Site Build	IN PROGRESS	CDiaz8515k	20		04/30/2013		
Complete Fiber Plant Build	PENDING	Not Assigned					

IN PROGRESS

Trusted sites | Protected Mode: Off

2:44 PM 5/20/2013

# Order Management

FW: Russo Power Equipment - Opportunity ID #236928 (IL) - Mixed Order Acceptance Notification - Message (HTML)

From: Tony\_Hartzell@cable.comcast.com

Subject: FW: Russo Power Equipment - Opportunity ID #236928 (IL) - Mixed Order Acceptance Notification

### MetroE Order Acceptance Notification

Information as of Date:	5/21/2013
<b>Customer Name</b>	<b>ME Customer</b>
Division	<b>Central</b>
Market / Region	Chicago
Account Executive Name	Account Executive
Customer SO Signature Date	5/20/2013
Total Approved Construction Capex (OSP & ISP)	\$\$\$\$\$\$
Number of Sites	3
Number of PRI Sites	
Number of BC Sites	
Number of BVE over Coax Sites	
Number of BVE over fiber/NGT Sites	
Number of UNIs	4
Opportunity Type	New
<b>Mixed Order</b>	
<b>TSP Priority</b>	
ICB Type	Technical/Financial
Service Description:	10MB EDI/10MB ENS Premium-PRI over Fiber/Provider

<b>Financial Highlights</b>	
MRC	\$\$\$\$\$
NRC	\$0.00
Term (# Months)	48
Gross Contract Value (GCV)	\$\$\$\$\$\$
Total Construction CAPEX (OSP & ISP)	

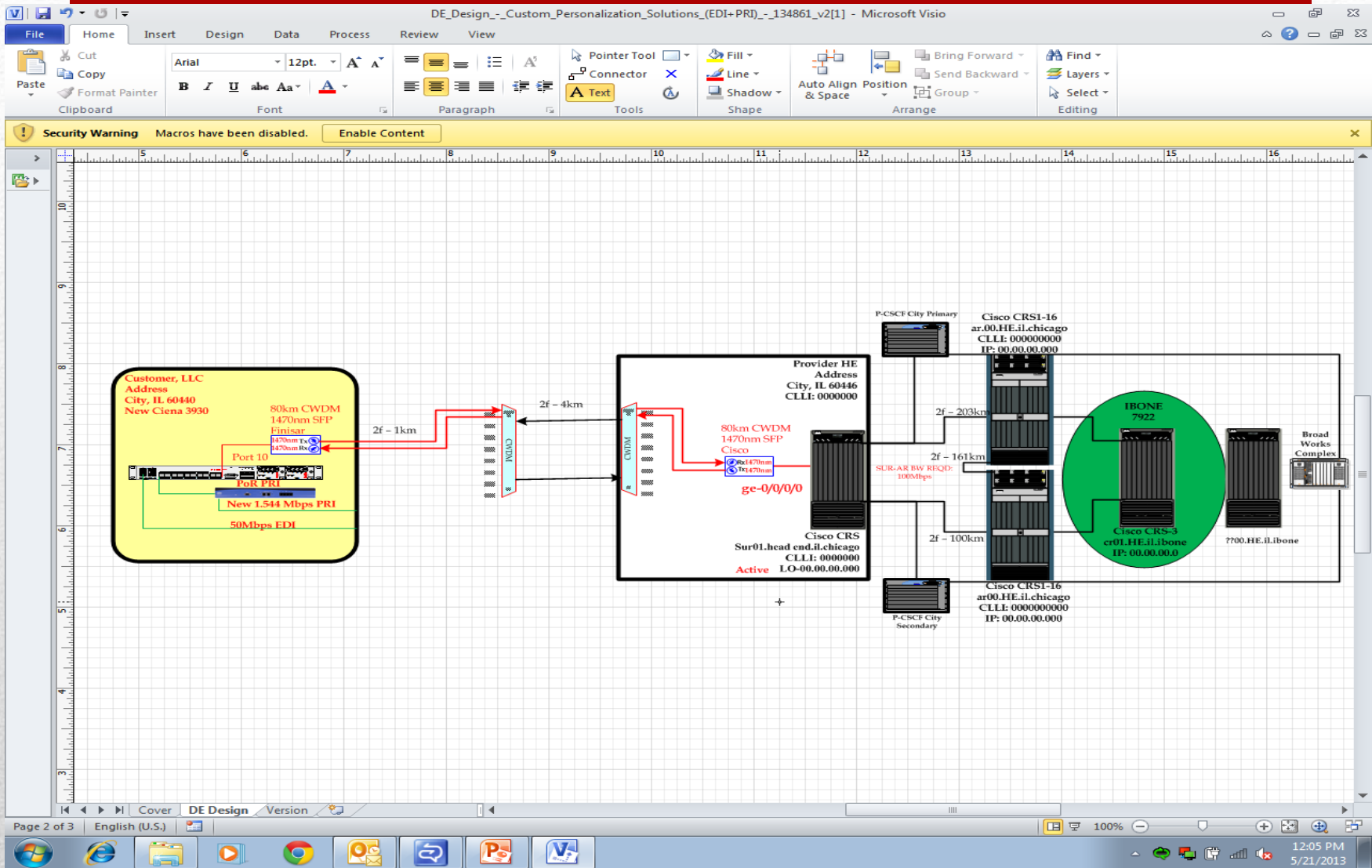
Click on a photo to see social network updates and email messages from this person.

Connect to social networks to show profile photos and activity updates of your colleagues in Outlook. Click here to add networks.

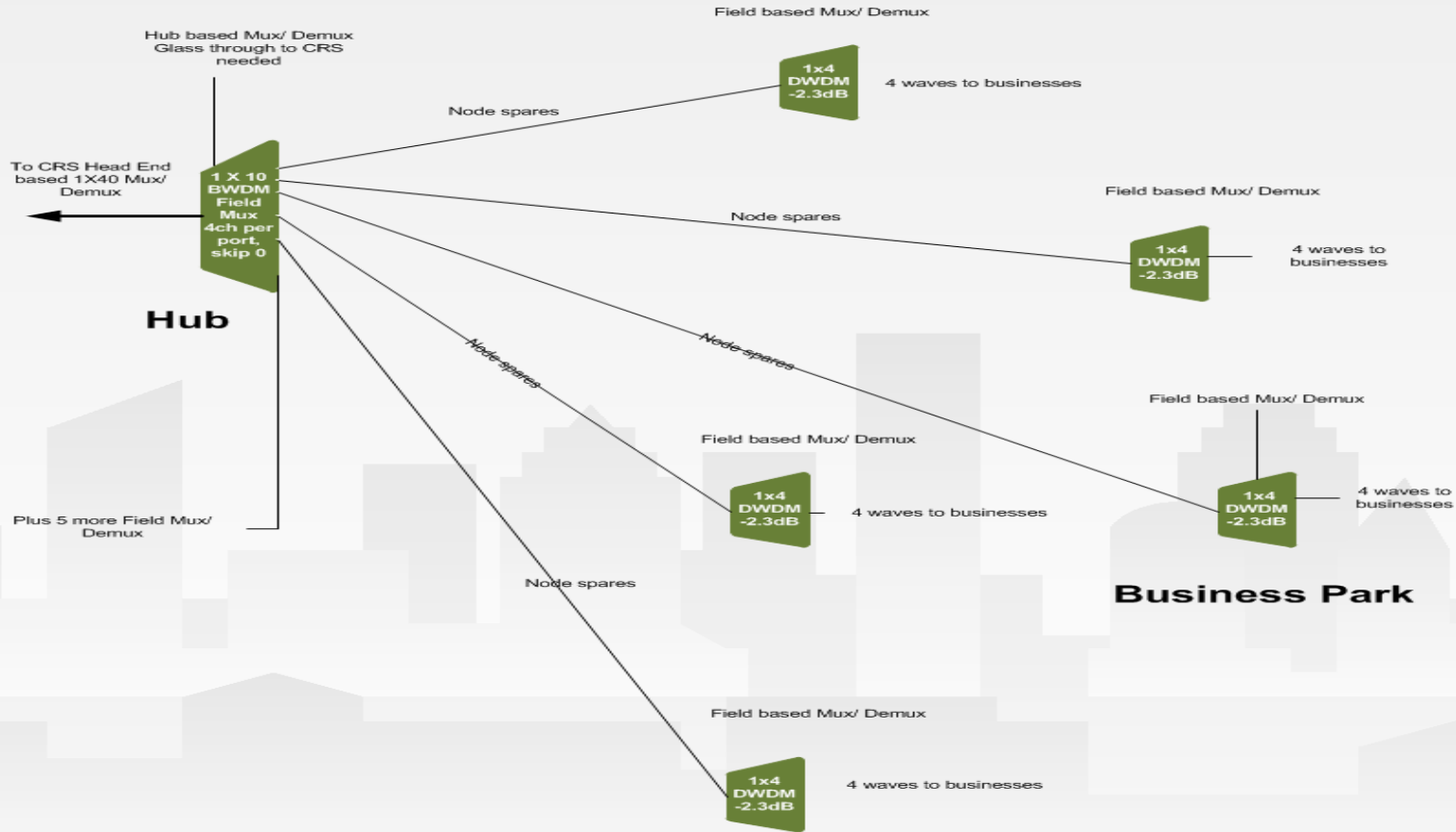
11:45 AM  
5/21/2013

# Order Acceptance Notification





# Network Design



# Fiber Plant Components

ITU-DWDM.pdf - Adobe Reader

File Edit View Window Help

1 / 1 110%

Tools Sign Comment

	L-Band				C-Band				S-Band			
	100 GHz Grid		50 GHz Offset		100 GHz Grid		50 GHz Offset		100 GHz Grid		50 GHz Offset	
	THz	nm	THz	nm	THz	nm	THz	nm	THz	nm	THz	nm
1	186.00	1611.79	186.05	1611.35	191.00	1569.59	191.05	1569.18	196.00	1529.55	196.05	1529.16
2	186.10	1610.92	186.15	1610.49	191.10	1568.77	191.15	1568.36	196.10	1528.77	196.15	1528.38
3	186.20	1610.06	186.25	1609.62	191.20	1567.95	191.25	1567.54	196.20	1527.99	196.25	1527.60
4	186.30	1609.19	186.35	1608.76	191.30	1567.13	191.35	1566.72	196.30	1527.22	196.35	1526.83
5	186.40	1608.33	186.45	1607.90	191.40	1566.31	191.45	1565.90	196.40	1526.44	196.45	1526.05
6	186.50	1607.47	186.55	1607.04	191.50	1565.50	191.55	1565.09	196.50	1525.66	196.55	1525.27
7	186.60	1606.60	186.65	1606.17	191.60	1564.68	191.65	1564.27	196.60	1524.89	196.65	1524.50
8	186.70	1605.74	186.75	1605.31	191.70	1563.86	191.75	1563.45	196.70	1524.11	196.75	1523.72
9	186.80	1604.88	186.85	1604.46	191.80	1563.05	191.85	1562.64	196.80	1523.34	196.85	1522.95
10	186.90	1604.03	186.95	1603.60	191.90	1562.23	191.95	1561.83	196.90	1522.56	196.95	1522.18
11	187.00	1603.17	187.05	1602.74	192.00	1561.42	192.05	1561.01	197.00	1521.79	197.05	1521.40
12	187.10	1602.31	187.15	1601.88	192.10	1560.61	192.15	1560.20	197.10	1521.02	197.15	1520.63
13	187.20	1601.46	187.25	1601.03	192.20	1559.79	192.25	1559.39	197.20	1520.25	197.25	1519.86
14	187.30	1600.60	187.35	1600.17	192.30	1558.98	192.35	1558.58	197.30	1519.48	197.35	1519.09
15	187.40	1599.75	187.45	1599.32	192.40	1558.17	192.45	1557.77	197.40	1518.71	197.45	1518.32
16	187.50	1598.89	187.55	1598.47	192.50	1557.36	192.55	1556.96	197.50	1517.94	197.55	1517.55
17	187.60	1598.04	187.65	1597.62	192.60	1556.55	192.65	1556.15	197.60	1517.17	197.65	1516.78
18	187.70	1597.19	187.75	1596.76	192.70	1555.75	192.75	1555.34	197.70	1516.40	197.75	1516.02
19	187.80	1596.34	187.85	1595.91	192.80	1554.94	192.85	1554.54	197.80	1515.63	197.85	1515.25
20	187.90	1595.49	187.95	1595.06	192.90	1554.13	192.95	1553.73	197.90	1514.87	197.95	1514.49
21	188.00	1594.64	188.05	1594.22	193.00	1553.33	193.05	1552.93	198.00	1514.10	198.05	1513.72
22	188.10	1593.79	188.15	1593.37	193.10	1552.52	193.15	1552.12	198.10	1513.34	198.15	1512.96
23	188.20	1592.95	188.25	1592.52	193.20	1551.72	193.25	1551.32	198.20	1512.58	198.25	1512.19
24	188.30	1592.10	188.35	1591.68	193.30	1550.92	193.35	1550.52	198.30	1511.81	198.35	1511.43
25	188.40	1591.26	188.45	1590.83	193.40	1550.12	193.45	1549.72	198.40	1511.05	198.45	1510.67
26	188.50	1590.41	188.55	1589.99	193.50	1549.32	193.55	1548.91	198.50	1510.29	198.55	1509.91
27	188.60	1589.57	188.65	1589.15	193.60	1548.51	193.65	1548.11	198.60	1509.53	198.65	1509.15
28	188.70	1588.73	188.75	1588.30	193.70	1547.72	193.75	1547.32	198.70	1508.77	198.75	1508.39
29	188.80	1587.88	188.85	1587.46	193.80	1546.92	193.85	1546.52	198.80	1508.01	198.85	1507.63
30	188.90	1587.04	188.95	1586.62	193.90	1546.12	193.95	1545.72	198.90	1507.25	198.95	1506.87
31	189.00	1586.20	189.05	1585.78	194.00	1545.32	194.05	1544.92	199.00	1506.49	199.05	1506.12
32	189.10	1585.36	189.15	1584.95	194.10	1544.53	194.15	1544.13	199.10	1505.74	199.15	1505.36
33	189.20	1584.53	189.25	1584.11	194.20	1543.73	194.25	1543.33	199.20	1504.98	199.25	1504.60
34	189.30	1583.69	189.35	1583.27	194.30	1542.94	194.35	1542.54	199.30	1504.23	199.35	1503.85
35	189.40	1582.85	189.45	1582.44	194.40	1542.14	194.45	1541.75	199.40	1503.47	199.45	1503.10
36	189.50	1582.02	189.55	1581.60	194.50	1541.35	194.55	1540.95	199.50	1502.72	199.55	1502.34
37	189.60	1581.18	189.65	1580.77	194.60	1540.56	194.65	1540.16	199.60	1501.97	199.65	1501.59
38	189.70	1580.35	189.75	1579.93	194.70	1539.77	194.75	1539.37	199.70	1501.21	199.75	1500.84
39	189.80	1579.52	189.85	1579.10	194.80	1538.98	194.85	1538.58	199.80	1500.46	199.85	1500.09
40	189.90	1578.69	189.95	1578.27	194.90	1538.19	194.95	1537.79	199.90	1499.71	199.95	1499.34
41	190.00	1577.86	190.05	1577.44	195.00	1537.40	195.05	1537.00	200.00	1498.96	200.05	1498.59
42	190.10	1577.03	190.15	1576.61	195.10	1536.61	195.15	1536.22	200.10	1498.21	200.15	1497.84
43	190.20	1576.20	190.25	1575.78	195.20	1535.82	195.25	1535.43	200.20	1497.46	200.25	1497.09
44	190.30	1575.37	190.35	1574.95	195.30	1535.04	195.35	1534.64	200.30	1496.72	200.35	1496.34
45	190.40	1574.54	190.45	1574.13	195.40	1534.25	195.45	1533.86	200.40	1495.97	200.45	1495.60
46	190.50	1573.71	190.55	1573.30	195.50	1533.47	195.55	1533.07	200.50	1495.22	200.55	1494.85
47	190.60	1572.89	190.65	1572.48	195.60	1532.68	195.65	1532.29	200.60	1494.48	200.65	1494.11
48	190.70	1572.06	190.75	1571.65	195.70	1531.90	195.75	1531.51	200.70	1493.73	200.75	1493.36
49	190.80	1571.24	190.85	1570.83	195.80	1531.12	195.85	1530.72	200.80	1492.99	200.85	1492.62
50	190.90	1570.42	190.95	1570.01	195.90	1530.33	195.95	1529.94	200.90	1492.25	200.95	1491.88

2:01 PM 5/21/2013

# ITU – DWDM Wavelengths





# Muxing

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West MetroE Interval Tracker 05-21-13 - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Styles Cells Editing

AutoSum Fill Clear Sort & Filter Find & Select

CCOM Quote ID#	Product Type	CST Mstr Prj #	Customer Name	Site Name	Street	City	OA Date	CCOM PTD	FPM	CPM	Construct	Contractor	Comments	Date given
5012632		133556		Oak Brook		Oak Brook	3/5/2013	5/15/2013	Shawn	Alan	Charles		Replace Mux - Pending clarification on new fib	3/4/2013
5013043				SunGard Data Ce		Wood Dale	3/22/2013	5/28/2013	Shawn	Todd DeTam	Jack		changing to EoHFC	3/22/2013
1720667		137589		Melrose Park		Melrose Park	5/2/2013	7/1/2013	Shawn	Alan	Jack		EX4200 Arch Dependency (Stern Pinball)	5/3/2013
1721070		138781		Bedford Park		Bedford Park	5/7/2013	7/5/2013	Shawn		Jack		all work is on cust property need ROE	5/7/2013
1721470				Winfield		Winfield			Shawn		Scott			5/13/2013
5008970				Lisle		Lisle	8/14/2012	6/11/2013	Shawn	Todd DeTam	Scott			4/15/2013
5013419		134124		Downers Grove		Downer Grove	4/18/2013	6/24/2013	Shawn		Axel		Waiting on customer to install rack5-16	4/18/2013
5013270		131395		Westmont		Westmont	4/8/2013	6/14/2013	Shawn		Axel		Cancelled5-15	
				Providence Bank		Shorewood			Shawn					5/21/2013
5011296		107057		Mokena		Mokena	12/20/2012	6/17/2013	Shawn	Joey	Jack		cust. Needs to set cabinet 3/30 4/24	12/20/201
1720594		138528		Oak Brook		Oak Brook	5/1/2013	6/30/2013	Shawn	Tom Fabian	Jack			5/3/2013
1720518		137612		Cicero		Cicero	4/26/2013	6/27/2013	Shawn	Todd	Jack			4/29/2013
5011382		108251		Consolidated Fun		Lombard	12/24/2012	3/1/2013	Shawn	Joey	Jim		PRI	12/24/201
5013483		136793		Bensenville		Bensenville	4/22/2013	6/28/2013	Shawn	Alan	Charles			4/22/2013
5013490				St. Charles		St. Charles	4/22/2013	6/28/2013	Shawn		Scott			4/23/2013
5012866		124349		Downers Grove		Downers Grove	3/18/2013	4/29/2013	Shawn	Tom Fabian	Charles		UG OSP starts 3/21	3/18/2013
5011754		114794		Oak Brook		Oak Brook	1/22/2013	6/10/2013	Shawn	Joey	Jim			1/22/2013
5011754		115450		Hinsdale		Hinsdale	1/22/2013	6/13/2013	Shawn	Joey	Jim		BUILDING UNDER CONSTRUCTION. MDF	1/22/2013
5013018				Lisle		Lisle	3/22/2013	5/28/2013	Shawn	Joey	Jim			3/25/2013
1720597				Naperville-Washi		Naperville	5/1/2013	7/1/2013	Shawn	Alan	Jim		EX4200 Arch Dependency (TM-CH75443)	5/3/2013
1720597				Naperville-Ricker		Naperville	5/1/2013	7/1/2013	Shawn	Alan	Jim		EX4200 Arch Dependency (TM-CH65472)	5/3/2013
1720597				Plainfield		Plainfield	5/1/2013	7/1/2013	Shawn	Alan	Jim			5/3/2013
				Crest Hill					Shawn					5/21/2013
5013338				Warrenville		Warrenville	4/11/2013	7/11/2013	Shawn	Todd	Scott			4/3/2013
5013462		137145		Willowbrook		Willowbrook	4/22/2013	6/28/2013	Shawn		Axel		Turning up tomorrow5-16	4/22/2013
5013562		137595		Itasca		Itasca	4/26/2013	7/2/2013	Shawn		Charles			4/26/2013
5009202				Riverside		North Riverside	8/22/2012	4/12/2013	Shawn	Joey	Scott		follow up on cancellation	8/22/2012

Ready | West | E-Rate | EoHFC | Pre-Sales Pending Survey-Bid | 85% | 1:33 PM 5/21/2013

# Construction Tracking

```
Adams Street Partners - Gramtel DC - Expanded Config 8-29-12 - Notepad
File Edit Format View Help
! 3930 Configuration File
! Chassis MAC:
! Created:      wed Aug 29 19:37:54 2012
! Created by:   CLI
! SW Package:   Slot 1 - saos-06-09-01-0100
! Build Number: 8152
! MIB Number:   04-09-01-0009
!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! RESOURCE CONFIG
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! NETWORK CONFIG: vlans
!
vlan create vlan 1000,3393
!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! CONGESTION AVOIDANCE PROFILE CONFIG:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! RCOS QUEUE MAP CONFIG:
!
traffic-services queuing queue-map create rcos-map metrocpe
traffic-services queuing queue-map set rcos-map metrocpe rcos 1 queue 1
traffic-services queuing queue-map set rcos-map metrocpe rcos 3 queue 3
traffic-services queuing queue-map set rcos-map metrocpe rcos 5 queue 6
!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! FCOS->RCOS MAP CONFIG:
!
traffic-services cos-mapping resolved-cos-map create cos-map metrocpe
traffic-services cos-mapping resolved-cos-map set cos-map metrocpe dotldpri-cos 0,4,6-7 dotldpri-dei 0 r-cos 1 r-color green
traffic-services cos-mapping resolved-cos-map set cos-map metrocpe dotldpri-cos 0,4,6-7 dotldpri-dei 1 r-cos 1 r-color green
traffic-services cos-mapping resolved-cos-map set cos-map metrocpe dotldpri-cos 2 dotldpri-dei 0 r-cos 3 r-color green
traffic-services cos-mapping resolved-cos-map set cos-map metrocpe dotldpri-cos 2 dotldpri-dei 1 r-cos 3 r-color green
traffic-services cos-mapping resolved-cos-map create cos-map noprem
traffic-services cos-mapping resolved-cos-map set cos-map noprem dotldpri-cos 0,4-7 dotldpri-dei 0 r-cos 1 r-color green
traffic-services cos-mapping resolved-cos-map set cos-map noprem dotldpri-cos 0,4-7 dotldpri-dei 1 r-cos 1 r-color green
traffic-services cos-mapping resolved-cos-map set cos-map noprem dotldpri-cos 2 dotldpri-dei 0 r-cos 3 r-color green
traffic-services cos-mapping resolved-cos-map set cos-map noprem dotldpri-cos 2 dotldpri-dei 1 r-cos 3 r-color green
traffic-services cos-mapping resolved-cos-map create cos-map nopri
traffic-services cos-mapping resolved-cos-map set cos-map nopri dotldpri-cos 0,2-4,6-7 dotldpri-dei 0 r-cos 1 r-color green
traffic-services cos-mapping resolved-cos-map set cos-map nopri dotldpri-cos 0,2-6 dotldpri-dei 1 r-cos 1 r-color green
!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! RCOS->FCOS MAP CONFIG:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! COMMAND LOG MANAGER
!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! EVENT LOG MANAGER:
!
log flash create filter xcvr max-severity minor min-severity minor
log flash add filter xcvr xcvr-mgr info
log flash add filter xcvr port 9-10
log flash create filter configchg max-severity config min-severity config
log flash add filter configchg bcast-containment-mgr info
log flash add filter configchg blade-mgr config,info
log flash add filter configchg chassis-mgr info
log flash add filter configchg config-mgr info
log flash add filter configchg dnld-mgr info
log flash add filter configchg dnsc-mgr resolve,info
log flash add filter configchg event-mgr info
log flash add filter configchg flow-mgr info
```

# Configurations

1 N. Wacker Adams St. Partners Turn-up form 08-15-12 [Read-Only] - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Styles Cells Editing

Calibri 11

General

Conditional Formatting as Table Cell Styles

Insert Delete Format

AutoSum Fill Clear Sort & Find & Filter Select

E9

Customer Turn-Up Sheet

Contractor & Tech Name: Contractor - Mike Date: 8/15/12

Customer Name: Customer Site Name: Address

**OTDR TEST WITH NEW MUX IN-LINE (Must be OTDR from headend & customer site)**

Comcast Headend Name	Comcast Headend Port #'s	Comcast Pre-Term Shelf #	Comcast Headend Rack #	Comcast Headend Row #	OTDR Footage (@1550nm)	MUX Channel Spliced to	Mux Location
Address					1647 ft.	ITU 32	Address 4th Floor Riser Closet

**Customer Site Name and Address**

Customer Site Name and Address	Customer Port #'s	OTDR Footage (@1550nm)	MUX Channel Spliced to	Mux Location
Customer	1 & 2	819 Ft.	ITU 32	Address 4th Floor Riser Closet
Address				

**OTDR TEST WITH EXISTING MUX IN-LINE (Only needs to be OTDR from customer site)**

Customer Site Name and Address	Customer Port #'s	OTDR Footage (@1550nm)	MUX Channel Spliced to	Mux Location

**OTDR TEST WITH No MUX IN-LINE (Must be OTDR from headend & customer site)**

Comcast Headend Name	Comcast Headend Port #'s	Comcast Pre-Term Shelf #	Comcast Headend Rack #	Comcast Headend Row #	OTDR Footage (@1550nm)	MUX Channel Spliced to	Mux Location

Sheet1 Sheet2 Sheet3

Ready

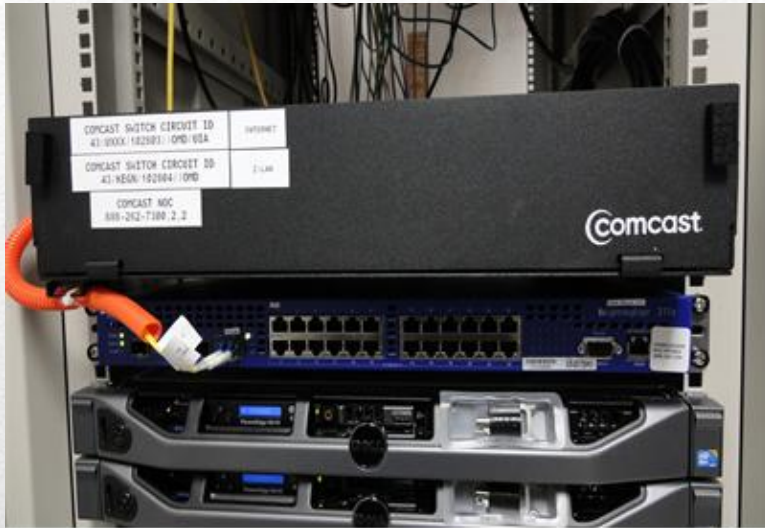
100%

1:47 PM 5/21/2013

# Fiber Ready







# CPE Installation

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# Head End Installation

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- Install Hardware & FO Jumpers
- Label & document everything
- Light Level Test & document
- Call & test all services with the Test & Turn Up Team
- Document Testing
- Explain and equipment & services to customer
- Customer Project Manager calls & sends Welcome Package & answering any questions

## **Test & Turn Up**

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Panduit Corp 500Mb EDI To Romeoville.pdf - Adobe Reader

File Edit View Window Help

2 (2 of 7) 80%

Tools Sign Comment

**Overall Test Result : PASS**

THROUGHPUT TEST RESULT : PASS  
 LATENCY TEST RESULT : PASS  
 FDV TEST RESULT : PASS  
 FRAME LOSS TEST RESULTS : PASS

**Test Configuration**

Basic RFC 2544 Setup	
Perform Throughput test	true
Perform Latency_FDV test	true
Perform Frame Loss test	true
Perform Back to Back test	false
Layer To Test	Layer 3
IP Address Type:	IPv4
Destination IPv4 Address - (xxx.xxx.xxx.xxx)	50.201.210.170
Configure remote device for loopback	true
Type of loopback device	Supported JDSU Portable
Maximum test duration (HH:MM:SS)	24:00:00
Run test immediately otherwise Abort	true

Service Detail	
Subscriber rate/CIR	500
Subscriber rate units	Mbps
Use DHCP - for source configuration	false
IPv4 Source Address	107.1.143.66
IPv4 Source Subnet Mask	255.255.255.252
IPv4 Gateway Address	107.1.143.65
Perform TAM Control	false
S-VLAN (1-4095 or empty)	3538
S-VLAN priority	Priority 0
Define C-VLAN	false
Remote VLAN tag count	No VLAN tags

Frame Sizes To Test	
Minimum size (see help)	false
128 bytes	true
256 bytes	false
512 bytes	false
1024 bytes	true
1280 bytes	false
1518 bytes	false
9000 bytes	false
Use custom frame size	true
Custom frame size (64-9502)	1500

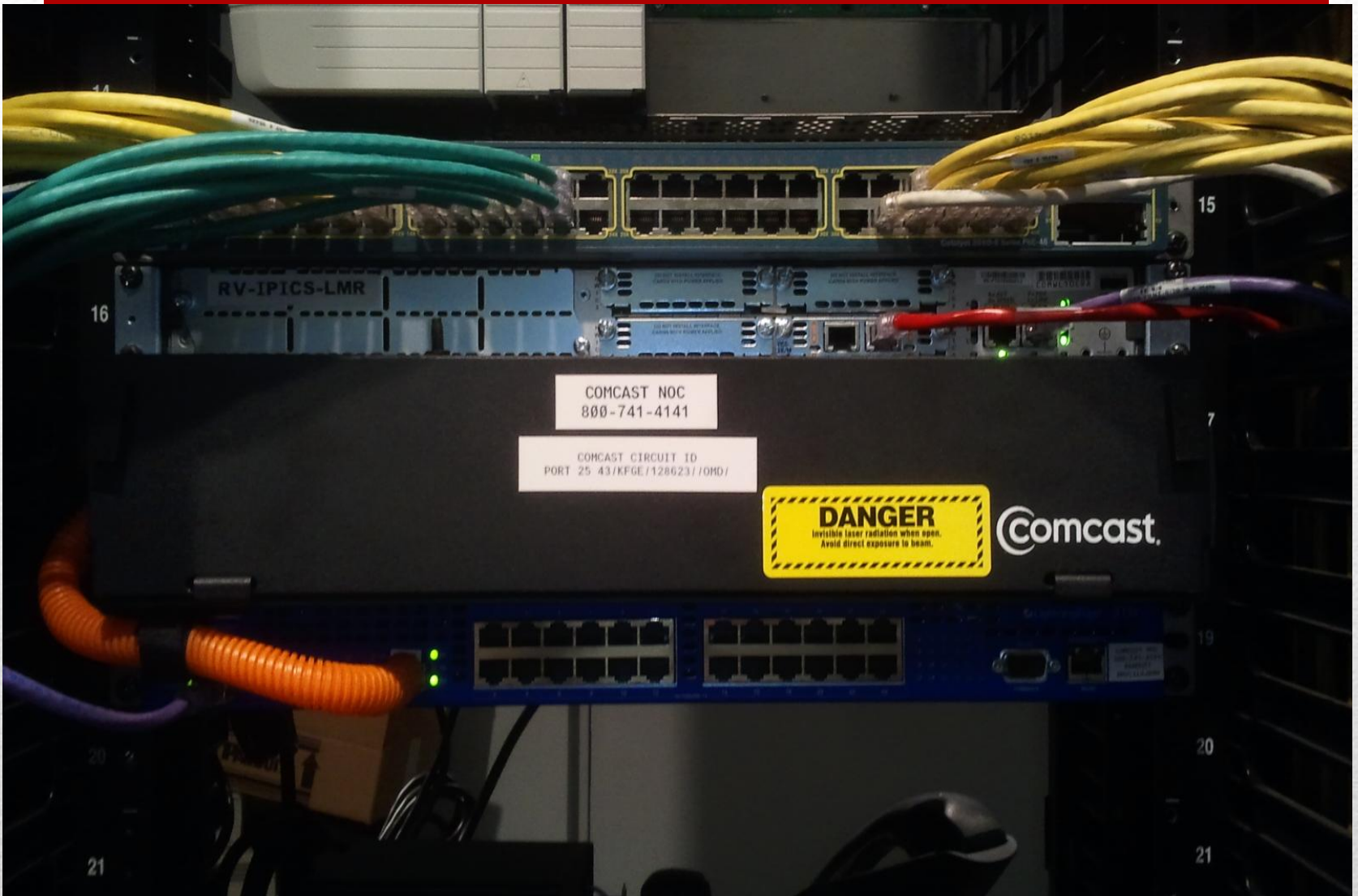
Frame Content	
Ethertype for CFM Frames	8902
Specify ToS/DiffServ flags as	DiffServ
DiffServ flags	Exp. Forwarding (46)

Optimization Options	
Stop overall RFC 2544 test if Throughput test fails	true

Throughput Test Options	
Show Pass/Fail	true
Test duration for each frame size (5-600 sec)	120
Bandwidth measurement accuracy (%)	1
Frame Loss Tolerance (0.00-5.00%)	0.00
Starting utilization as a percent of Subscriber Rate (10-110%)	100

Page 2 of 7

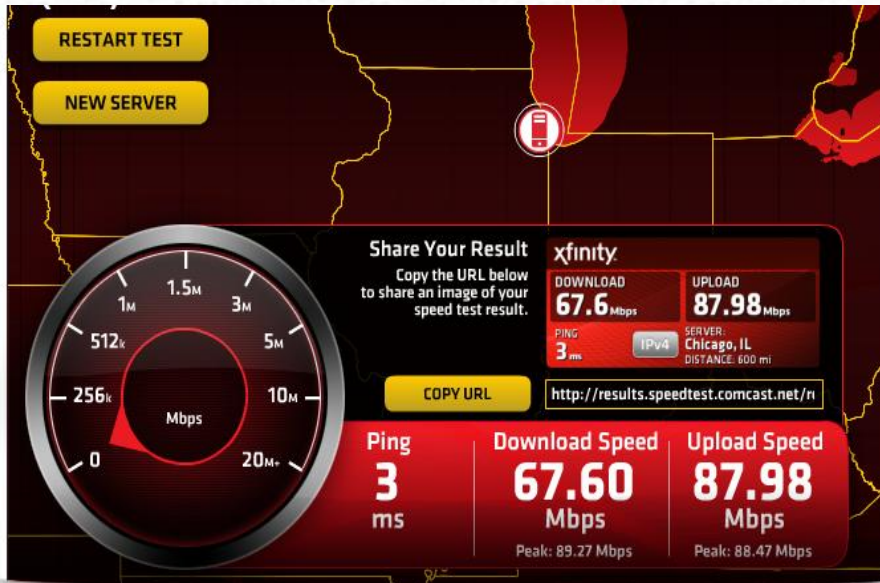
# Turn Up Documents



# Actual Install

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- My speed test results are poor, what can I do to improve my connection?
- What do my speed test results mean?
- What is the best way to use XFINITY Speed Test?
- What must be installed to use XFINITY Speed Test?
- What is ping and how do you measure it?

More Speed Test FAQs  
Top Extreme 105 FAQs

#### Related Links

- [Run TCP Optimizer for XP](#)
- [Comprehensive Security Suite](#)
- [My Device Info](#)
- [Download Comcast Toolbar](#)
- [Comcast Forums](#)
- [Comcast Twitter](#)
- [Leave feedback on this page](#)

# Screen Shot of Speed Test

- ❖ Sales Executives
- ❖ Serviceability Team (Desk Top Team)
- ❖ Sales Engineers
- ❖ Design Engineers
- ❖ Market Development Team
- ❖ Business Services Sales Support
- ❖ Order Acceptance Team
- ❖ Business Services Operations Support
- ❖ Fiber Project Managers
- ❖ Customer Project Managers
- ❖ National Engineering & Technical Operations
- ❖ Construction Team
- ❖ Fiber Department
- ❖ OSP Utility Contractors
- ❖ Design Team/ Design House Contractors
- ❖ National Warehouse
- ❖ Local Warehouse
- ❖ MetroE Field Tech OPS
- ❖ Test & Turn Up Team

## **Teams that touch each Order**

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*Documentation is the most important thing to not lose sight!!*

- ✓ Fiber Pre-terms
- ✓ Fiber Schematics
- ✓ Fiber Overlay Maps
- ✓ Head End/ Hub labeling & recording
- ✓ Customer Premise labeling & recording
- ✓ Testing documentation
- ✓ Network Design Drawings
- ✓ Asset documentation
- ✓ As-Built Fiber & Facility documentation
- ✓ Muxing & Wavelength documentation

# Documentation

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- ✓ Know what your goal is, and reverse engineer to create your process
- ✓ Build Processes for flow and make everything flow through that process
- ✓ Delegate responsibility and control to the Teams that make sense for the task
- ✓ Let each team handle their part of the process

*“No one can whistle a symphony. It takes an entire orchestra.” - H.E. Luccock*

## **Project Management Wisdom**

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