



August 8, 2016

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Pompano Beach Fire Rescue
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Pompano Beach, FL 33060
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Anthony Alhashemi
Project Manager
City of Pompano Beach, Engineering
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RE: Public Safety Radio Signal In-Building Amplification System, Fire Stations 11 and 103

Chief Hohl, Mr. Alhashemi,

As you know, Signal Communications, L.L.C. was engaged to perform engineering services to design public safety radio signal in-building application systems for the above referenced facilities. Below and attached you will find logical drawings, heat maps, pricing and other required engineering documents. We look forward to your review of this information and setting a meeting to review in person and discuss the next steps. Here's why we think working with us for the installations is the right choice:

- Signal is the only Motorola partner in the south Florida area that works directly with local public safety agencies to design and sell first responder 911 radio system equipment,
- Because of this, Signal has a unique and accurate view of how local public safety communications systems will evolve in the short and long term, ensuring that in-building amplification system designs incorporate these future protocols and technologies,
- Signal has been successfully designing and installing systems of this type for decades, working closely with public safety agencies and building owners,
- Signal is an active and voting member on the Broward County Board of Rules and Appeals committee that developed the new Broward County Building Code, Section 118, addressing these systems specifically. We know the national, state, county and local code requirements for these systems AND the people that approve the designs.
- Signal has been in business for over 25 years by making sure projects like this deploy properly and technically correct. Great customer references are available at your request.

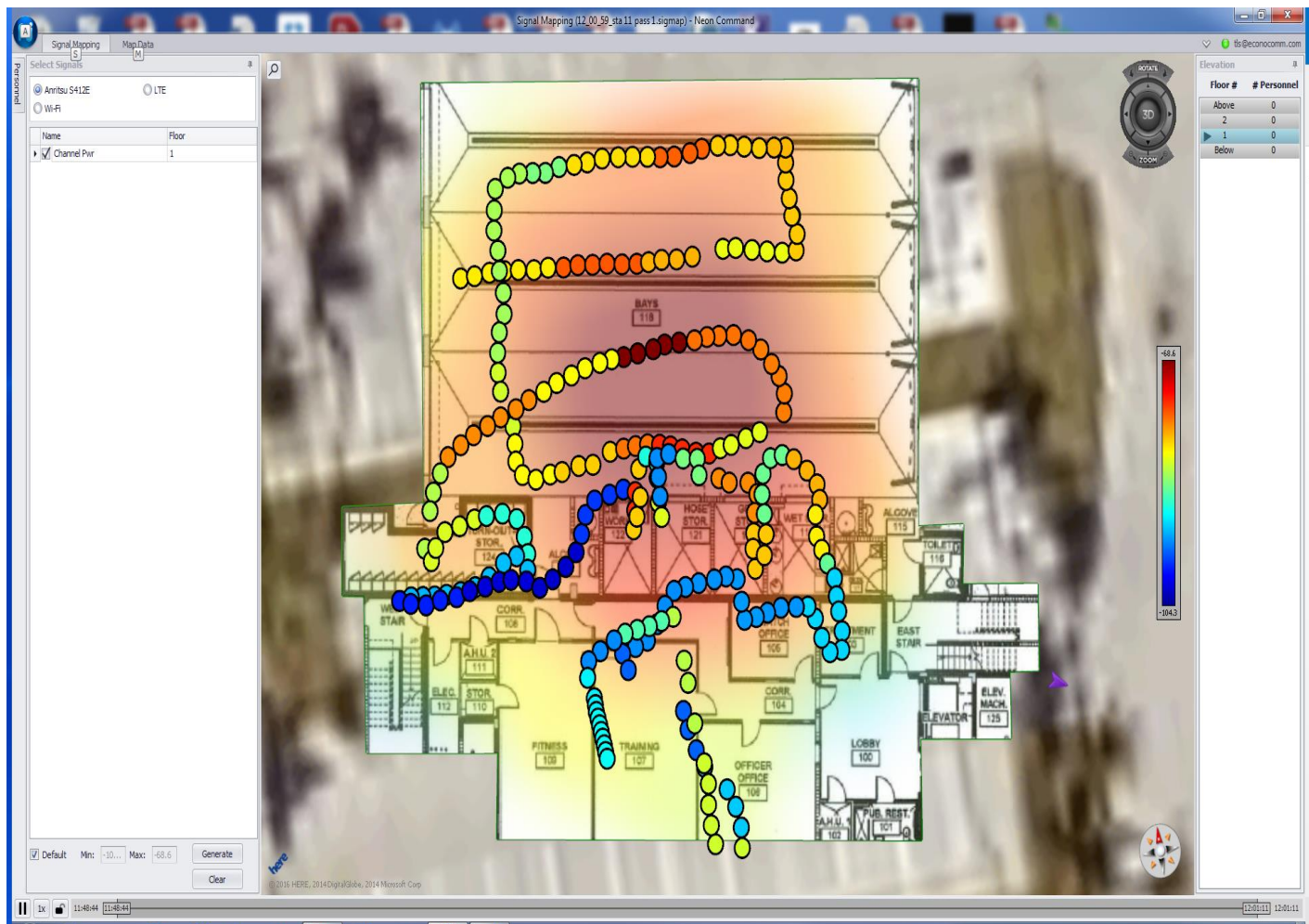
We look forward to your positive review of this proposal package and to working with you further.

Thank you,

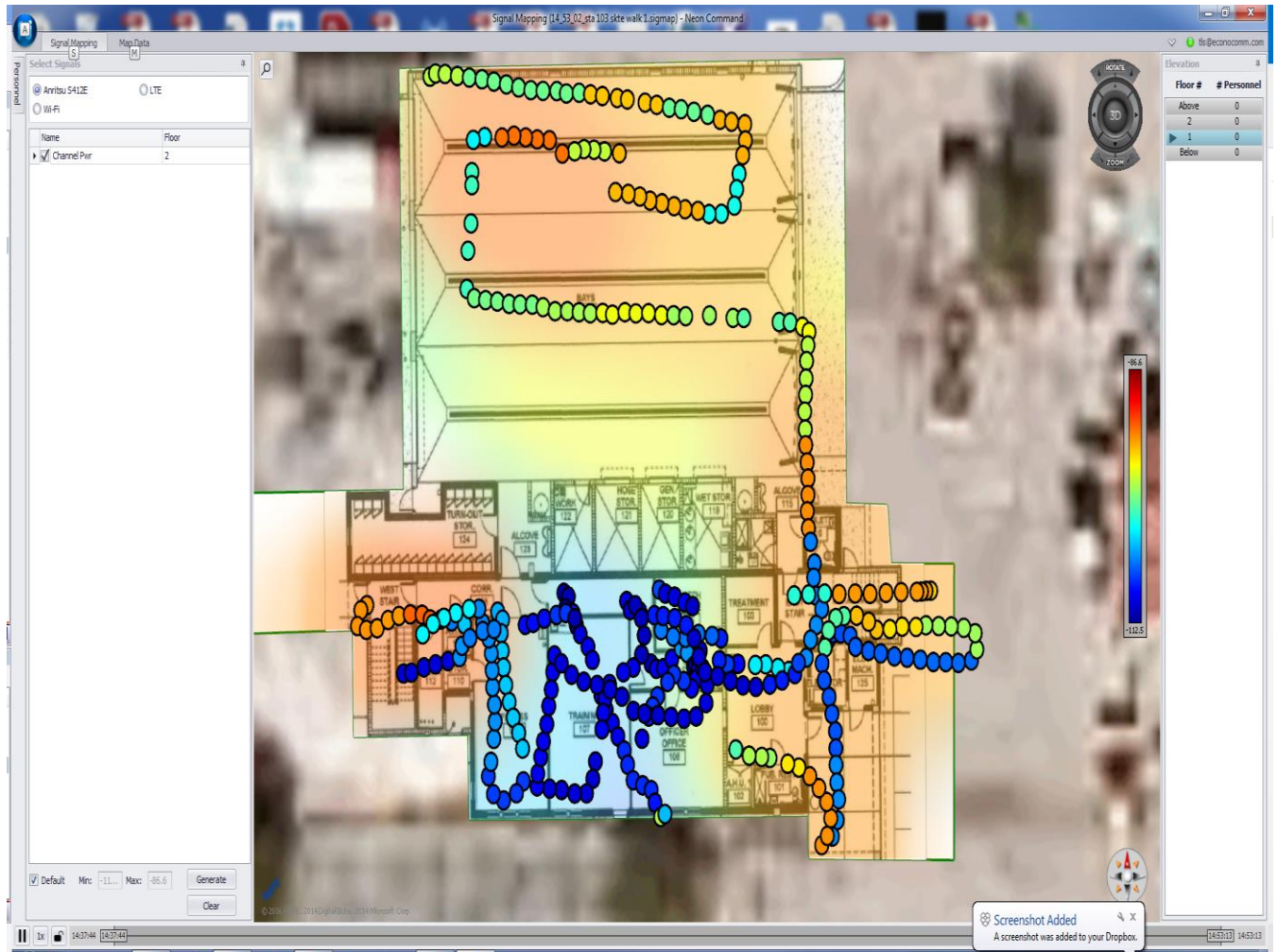
Jonathan Franklin,

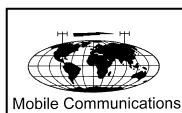
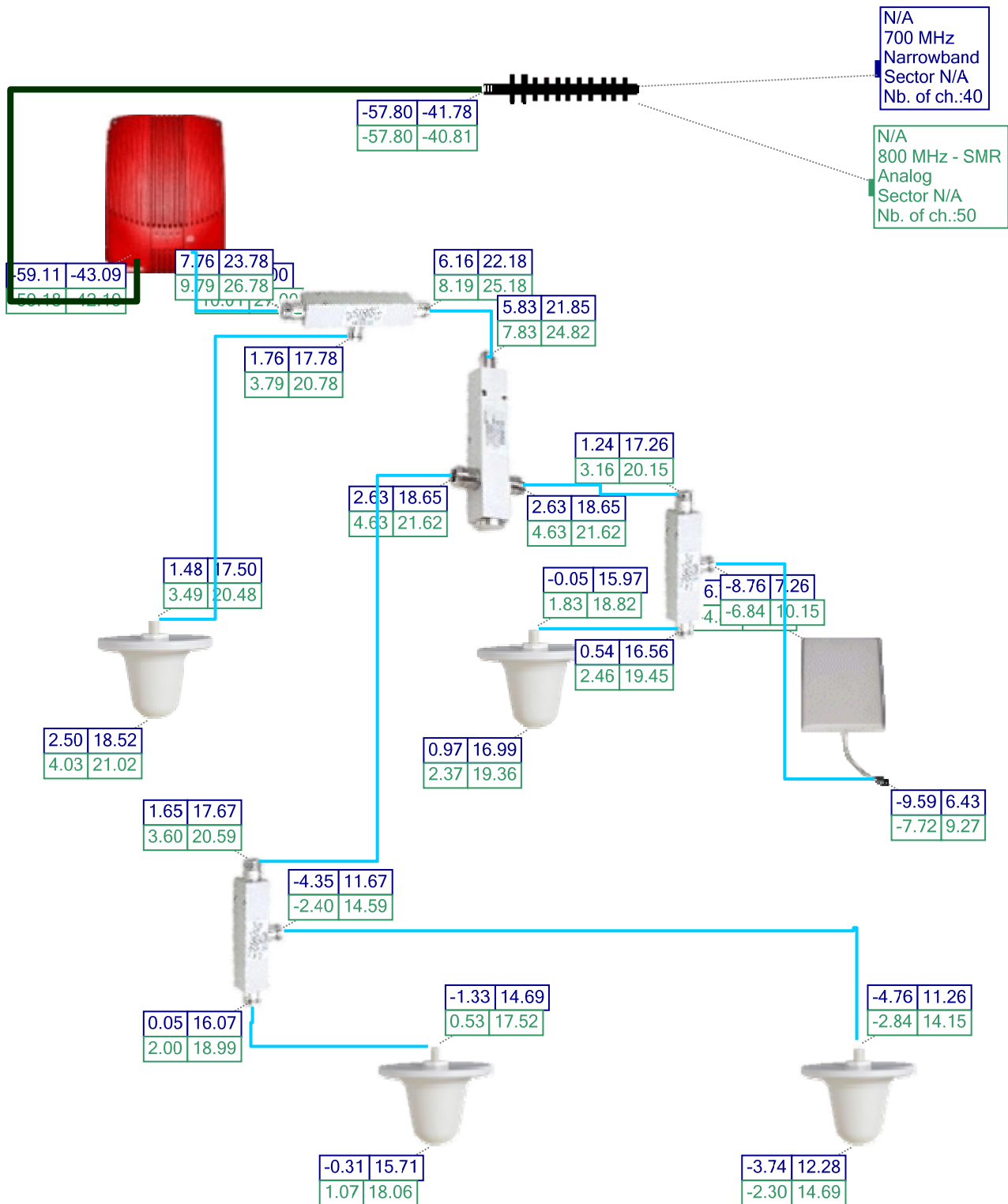
Jonathan Franklin,
 President,
 Signal Communications, LLC,
 6820 Lyons Technology Circle,
 Suite 115,
 Coconut Creek, FL 33073,
 email) jf@signalcommunications.com,
 direct) 954.275.8854,
 office) 954.427.9830,
 toll free) 800.400.3220,
 fax) 954.571.2070

Survey Map for Fire Station 11



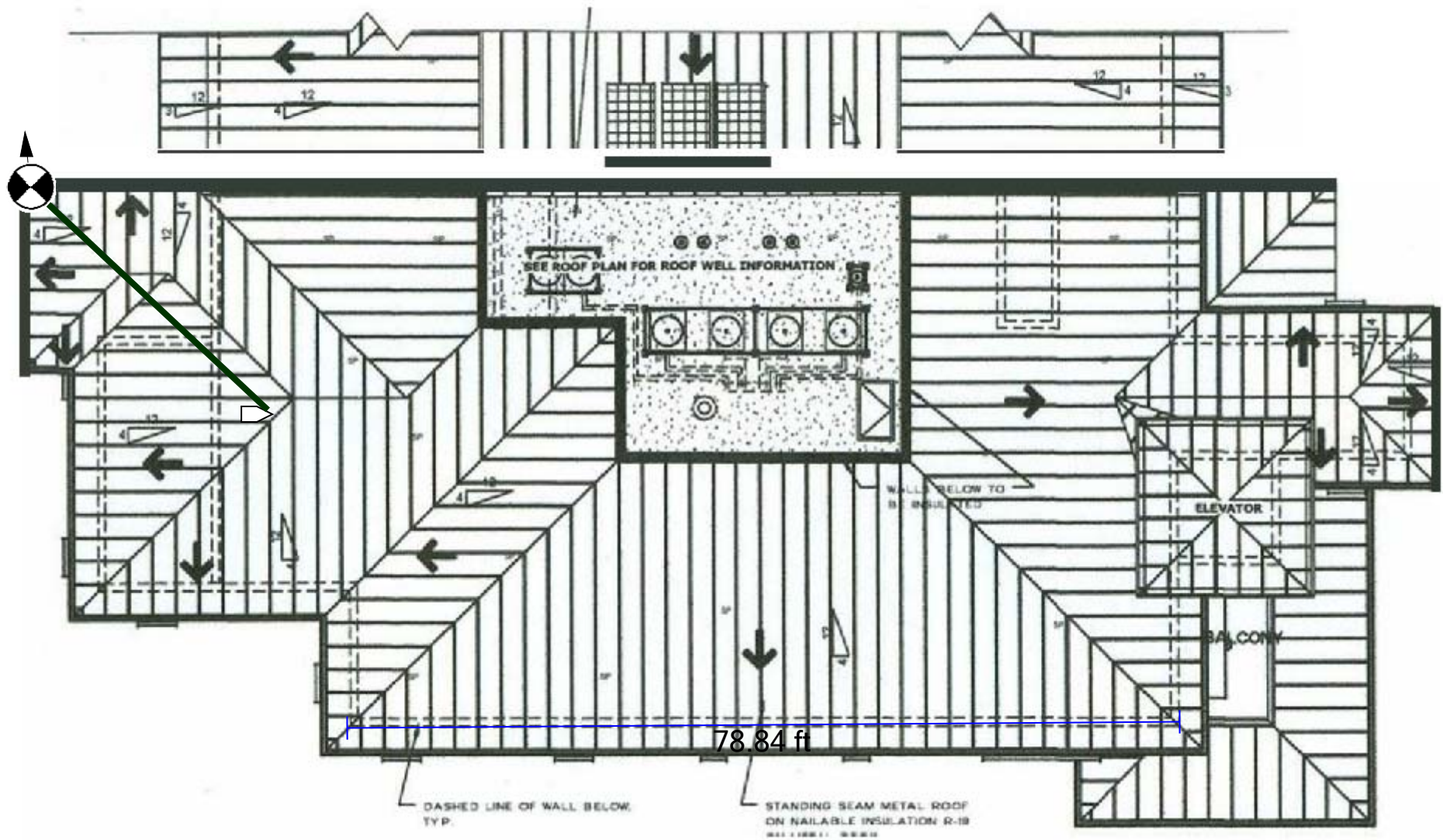
Survey Map for Fire Station 103




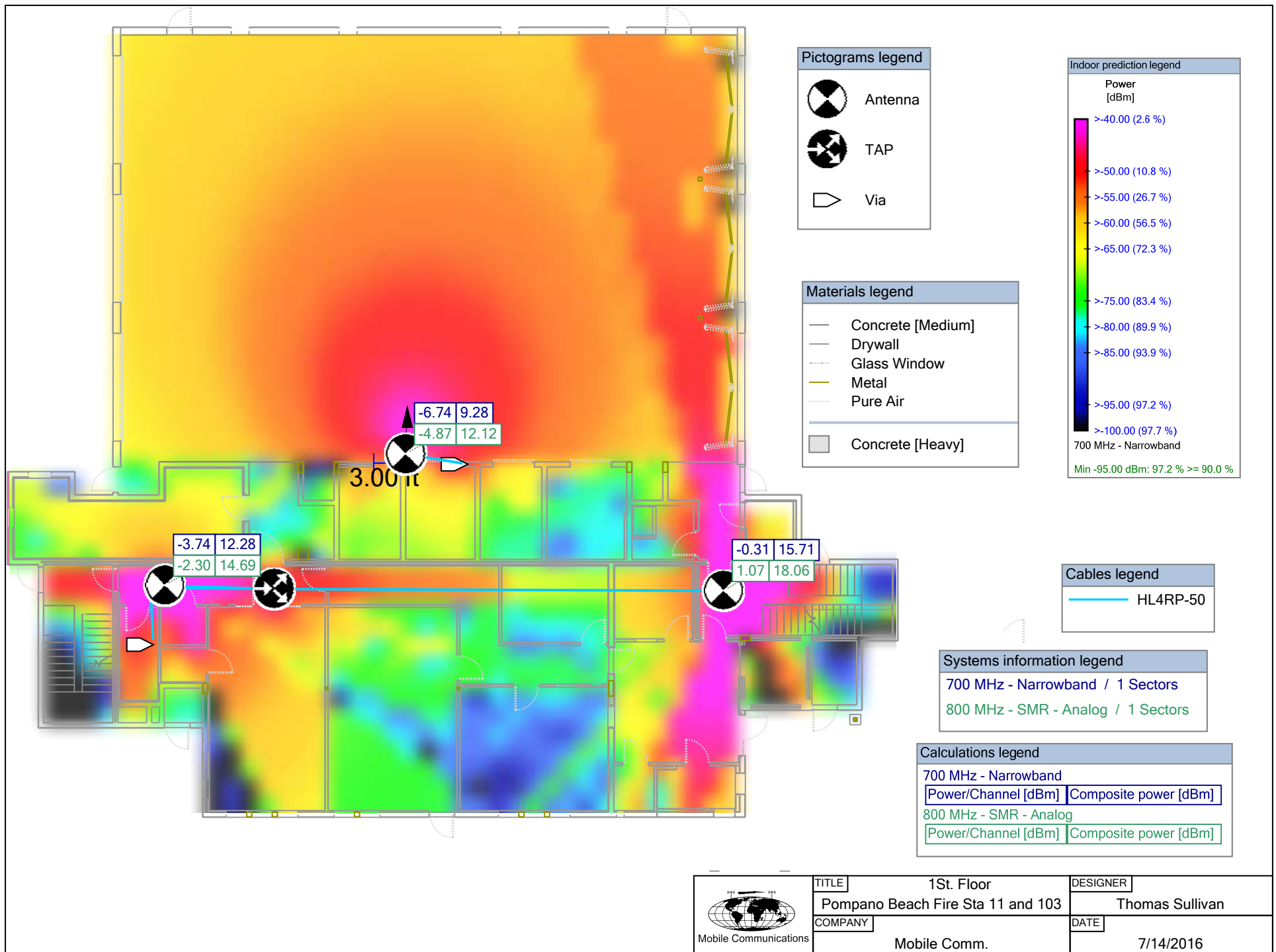



TITLE	Design plan
	Pompano Beach Fire Sta 11 and 103
COMPANY	Mobile Comm.

DESIGNER	Thomas Sullivan
DATE	7/14/2016



 Mobile Communications	TITLE	Roof	DESIGNER
		Pompano Beach Fire Sta 11 and 103	Thomas Sullivan
	COMPANY	Mobile Comm.	DATE
			7/14/2016



 Mobile Communications	TITLE	1St. Floor	DESIGNER
		Pompano Beach Fire Sta 11 and 103	Thomas Sullivan
	COMPANY	Mobile Comm.	DATE
			7/14/2016



Signal Communications, LLC
 6820 Lyons Technology Circle
 Suite 115
 Coconut Creek, FL 33073
 954.427.9830/800.400.3220

Quotation

DATE	Quotation #
8/8/2016	3296

FOR:
City of Pompano Beach Station 11 100 West Atlantic Boulevard Pompano Beach, FL 33060

P.O. NO.	TERMS	REP
	1% 15, Net 30	

ITEM	DESCRIPTION	QTY	COST	TOTAL
99999	Antenna - 10 dBd Gain - Yagi Directional Antenna - 746-985 MHz - N-Male Connector	1	495.46	495.46
99999	Antenna - Cell-Max - Directional In Building Antenna - 698-960 MHz / 1710-2700 MHz - N-Female	1	202.49	202.49
99999	Antenna - Cell-Max™ Omni In-building Antenna, 698-960 MHz and 1710-2700 MHz	4	137.38	549.52
99999	BDA - "In Building BDA, PS7/PS8NEPS, UL (793-816) +27 dBm / DL (763-775 / 851-861) +27 dBm, Gain 80 dB, N-Female Connector. Available in ""C"", ""N"", or ""R"" enclosures."	1	18,674.00	18,674.00
99999	Cable - 7/8" Flexible Hypercell Low Loss - Foam Dielectric Coaxial Cable - 50-ohm	100	5.18	518.00
99999	Cable - 1/2" Air Dielectric, Plenum Rated (CATVP), HL Series - 50-ohm	300	5.21	1,563.00
99999	Connector - 7/16 Female Connector for Corrugated 7/8" Flexible Cable - HPL50-7/8F	2	59.16	118.32

Notes:
 Validity of the quotation is 30 days.

TOTAL



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Quotation

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8/8/2016	3297

FOR:
City of Pompano Beach Station 103 100 West Atlantic Boulevard Pompano Beach, FL 33060

P.O. NO.	TERMS	REP
	1% 15, Net 30	

ITEM	DESCRIPTION	QTY	COST	TOTAL
99999	Connector - N for LDF4-50A, Low Density Foam Dielectric Cable	12	49.48	593.76
99999	Splitter - 2-Way Reactive Power Splitter - 698-2700 MHz - N Connector	1	287.59	287.59
99999	Tap - 6dB, Tapper, 698-960/1710-700 MHz - N Connectors	2	240.67	481.34
Labor	Estimated Labor	1	13,900.00	13,900.00
99999	Stamped Engineered Drawings	1	6,700.00	6,700.00
99999	Permits Estimate	1	2,700.00	2,700.00
Quote prepared by: Jonathan Franklin (954) 275-8854 Fax: (954) 571-2070				

Notes:
Validity of the quotation is 30 days.

TOTAL	\$46,783.48
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Compliance Report

Project name: Pompano Beach Fire Sta 11 and 103
Project creation date: 7/14/2016

Design company: Mobile Comm.
Designer: Thomas Sullivan

<No operator defined> - 700 MHz - Narrowband

Signal strength			Min -95.00 dBm Target: 90.0 % Result (%) Compliant							
Total area (Sq. feet)										
Building 1	1St. Floor	8691.58	97.2	Yes						
	2nd Floor	4274.98	98.0	Yes						
	All Floors	12966.56	97.5	Yes						

<No operator defined> - 800 MHz - SMR - Analog

Signal strength			Min -95.00 dBm Target: 90.0 % Result (%) Compliant							
Total area (Sq. feet)										
Building 1	1St. Floor	8691.58	96.7	Yes						
	2nd Floor	4274.98	97.8	Yes						
	All Floors	12966.56	97.1	Yes						

Link Budget Report

Project name: Pompano Beach Fire Sta 11 and 103
Project creation date: 7/14/2016

Design company: Mobile Comm.
Designer: Thomas Sullivan

Antenna ID	Operator	System ID	Coupler			
			Thru Loss			Tap Loss
			CommScope			CommScope
			CT-10-CPUSE-Ni6	CT-6-CPUSE-Ni6		CT-10-CPUSE-Ni6
			-0.70 dB	-1.60 dB		-10.00 dB
			Qty	Qty	Subtotal (dB)	Qty
ANT1		700 MHz - Narrowband - Sector N/A		1	-1.60	1
		800 MHz - SMR - Analog - Sector N/A		1	-1.60	1
ANT2		700 MHz - Narrowband - Sector N/A				
		800 MHz - SMR - Analog - Sector N/A				
ANT3		700 MHz - Narrowband - Sector N/A	1	1	-2.30	
		800 MHz - SMR - Analog - Sector N/A	1	1	-2.30	
ANT4		700 MHz - Narrowband - Sector N/A		1	-1.60	
		800 MHz - SMR - Analog - Sector N/A		1	-1.60	
ANT5		700 MHz - Narrowband - Sector N/A		2	-3.20	
		800 MHz - SMR - Analog - Sector N/A		2	-3.20	

Total number of antennas: 5

Total number of radiating cables: 0

Coupler		Splitter		Cable			Other
Tap Loss		Loss					
CommScope		CommScope		Acome	CommScope		Sinclair
CT-6-CPUSE-Ni6		S-2-CPUSE-H-Ni6		HPL50 7/8F	HL4RP-50		SY406-SF2SNM
-6.00 dB		-3.20 dB					12.20 dB
Qty	Subtotal (dB)	Qty	Subtotal (dB)	Length (ft)	Length (ft)	Subtotal (dB)	Qty
	-10.00	1	-3.20	82.60	107.35	-4.08	1
	-10.00	1	-3.20	82.60	107.35	-4.31	1
1	-6.00			82.60	13.47	-1.81	1
1	-6.00			82.60	13.47	-1.89	1
		1	-3.20	82.60	96.75	-3.84	1
		1	-3.20	82.60	96.75	-4.06	1
1	-6.00	1	-3.20	82.60	69.99	-3.25	1
1	-6.00	1	-3.20	82.60	69.99	-3.43	1
		1	-3.20	82.60	114.01	-4.22	1
		1	-3.20	82.60	114.01	-4.46	1

Other	Summary			
	Sys Out Pwr	Total DAS Gain/Loss	Antenna Gain	Antenna ERP
	Total			Pwr per Ch.
Subtotal (dB)	(dBm)	(dB)	(dBd)	(dBm)
12.20	-57.80	48.21	2.85	-6.74
12.20	-57.80	50.08	2.85	-4.87
12.20	-57.80	59.28	1.02	2.50
12.20	-57.80	61.29	0.54	4.03
12.20	-57.80	57.75	1.02	0.97
12.20	-57.80	59.63	0.54	2.37
12.20	-57.80	53.04	1.02	-3.74
12.20	-57.80	54.96	0.54	-2.30
12.20	-57.80	56.47	1.02	-0.31
12.20	-57.80	58.33	0.54	1.07