



# Quote for In-Building Services

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**Ann Arbor Waste Water Treatment Plant  
Ann Arbor, MI  
TEKO Solution**

For:



**Ann Arbor Waste Water Treatment Plant  
49 Old Dixboro Road  
Ann Arbor, Michigan 48105**

Prepared by:

**Earthcom, Inc.**

**March 31, 2016**

POC: Lauren Cochran

517 977 8916

lauren.cochran@earthcom.us



## Project Summary

Earthcom is pleased to provide this Proposal for a Distributive Antenna System (DAS) for the Ann Arbor Waste Water Treatment Plant located in Ann Arbor, MI. The Customer requests a DAS solution to provide 700/850MHz coverage to the Solids Handling Building Floors 1 and 2; the New Administration Building Floors 1 and 2; the West Blower Basement, Tunnel, and West Primary Basement; and the East Blower Basement, Tunnel, and East Primary Basement. The proposed Head End is located in the 3<sup>rd</sup> floor Control Room of the Solids Handling Building. This solution will utilize existing single mode fiber between the buildings that are included in the coverage scope. This quote proposes the installation of a four Remote, TEKO DAS solution sourced by a donor fed Westell Repeater to provide coverage throughout the buildings.

## Scope of Work

### Earthcom will:

- Provide and install a Westell BDA and TEKO gear;
- Provide and install a wall mount rack to house the TEKO sub rack gear and the BDA;
- One remote will be installed at the Head and the three remaining remotes will be installed near the PLC cabinets located in each respective building included in the scope;
- Provide and install a donor antenna on the rooftop of the Solid Handling Building utilizing a non-penetrating roof mount;
- The donor line will enter the building through an existing penetration travelling to the Head End located in the 3<sup>rd</sup> Floor Control Room;
- Provide and install all coaxial cable, jumpers; directional couplers; service antennas and related hardware;
- Provide and install any miscellaneous materials and consumables to complete the work;
- Test and ensure that all coaxial cable performs in accordance with Verizon standards;
- Optimize and test the system to ensure it is working properly and that the coverage objectives are met; and
- Obtain Retransmit Agreement between the Customer and Verizon;

### Assumptions:

- This solution assumes the use of existing fiber available for use between the Buildings to serve the new system;
- This solution assumes that conduit is not required; and
- Quote considers work to be performed during normal business hours.



**Exclusions:**

- All necessary electrical service will be performed/provided by the Customer or their sub-contractor;
- Customer will perform all core drilling where necessary; and
- Reconfiguration of necessary Fiber Termination Panels to accept either SC/APC or LC/ APC connections for proposed TEKO Fiber Das will be performed by the customer or their sub-contractor.

On the Customers behalf, Earthcom will facilitate the acquisition of the necessary retransmission agreement with Verizon Wireless. The Design will be submitted to the carriers for their approval.

Earthcom prides itself on our quality of workmanship and the technical soundness of our DAS and small cell systems. Thank you for the opportunity and we look forward to working with you on this project.



# Quotation

**DATE** March 31, 2016  
**Quotation #** 20160331INLRC1

**Earthcom, Inc.**  
3424 Corwin Road  
Williamston, MI 48895  
517-482-1750

*Quotation valid for 30 days*  
*Prepared by:* Lauren Cochran

**Customer:**  
City Of Ann Arbor  
Ann Arbor Waste Water Treatment Plant  
49 S. Dixboro Road  
Ann Arbor, MI 48105

**Location:**  
**Ann Arbor Waste Water  
Treatment Plant**  
49 S. Dixboro Road  
Ann Arbor, MI 48105

Description	AMOUNT
TEKO System Head End Equipment	\$ 37,158.01
Repeater - CSI D1-D2 24dBm Repeater U7C/Cell	\$ 7,979.05
Install Kit	\$ 8,870.65
Labor	\$ 13,646.00
Project Management, Closeout	\$ 625.00
<b>TOTAL</b>	<b>\$ 68,278.71</b>



## **Close out Package**

A close out package will be delivered within two (2) weeks of the system going on-air.

## **Warranty**

Earthcom will provide a 1 year warranty period for installation and materials.

## **Terms and Conditions**

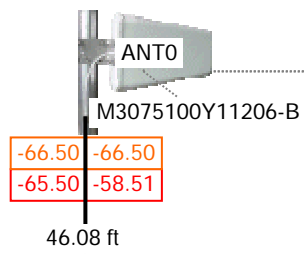
Pricing is based on known site conditions and information provided to Earthcom on the date of this quote. Quote is valid for 90 days.

All of the information contained in this bid submission is the property of Earthcom, Inc. and is intended solely for review purposes only. This material contains information that is confidential and proprietary to Earthcom, Inc. and the use thereof by the receiving party shall be limited solely for the purposes of evaluating Earthcom, Inc.'s bid submission and not be disclosed to or for the benefit of any third party unless and until the rights to such information are legally obtained by the receiving party.

## **Attachments**

- Logical Design
- Design without Prediction
- Design with 700 LTE RSRP Prediction
- Design with 800 CDMA RSSI Prediction
- Electromagnetic Field Report

Solids Handling - Rooftop



OffAir2 (850 MHz - Cellular - CDMA - Off-Air - Measured RSSI)

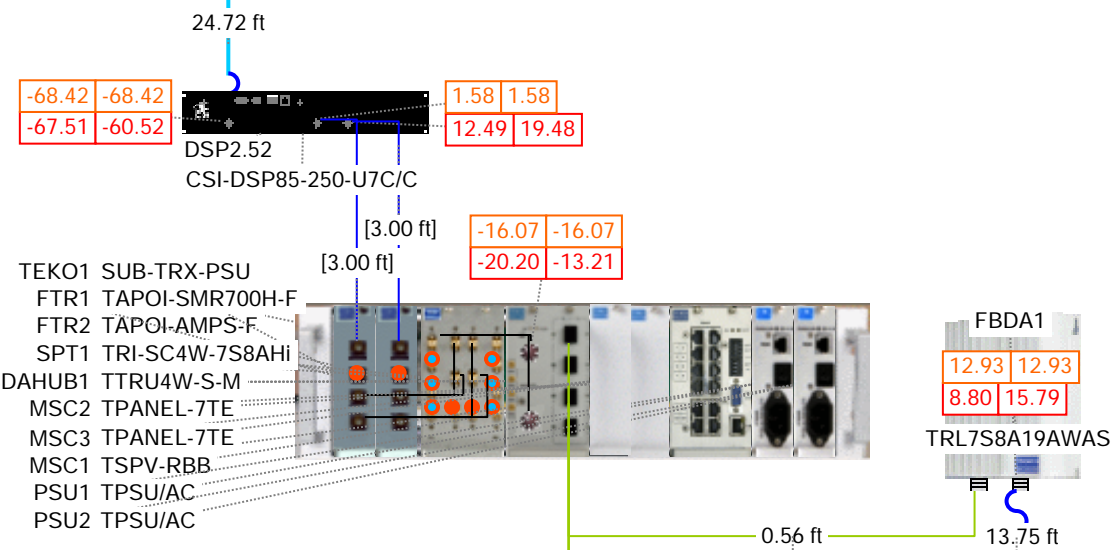


OffAir3 (700 MHz - LTE - Sector N/A - Off-Air - Measured RSSI)

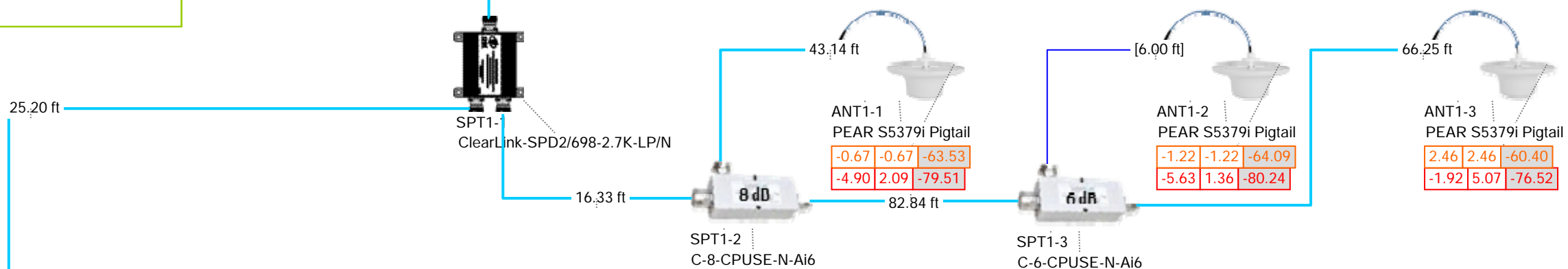
Solids Handling - 4th Floor



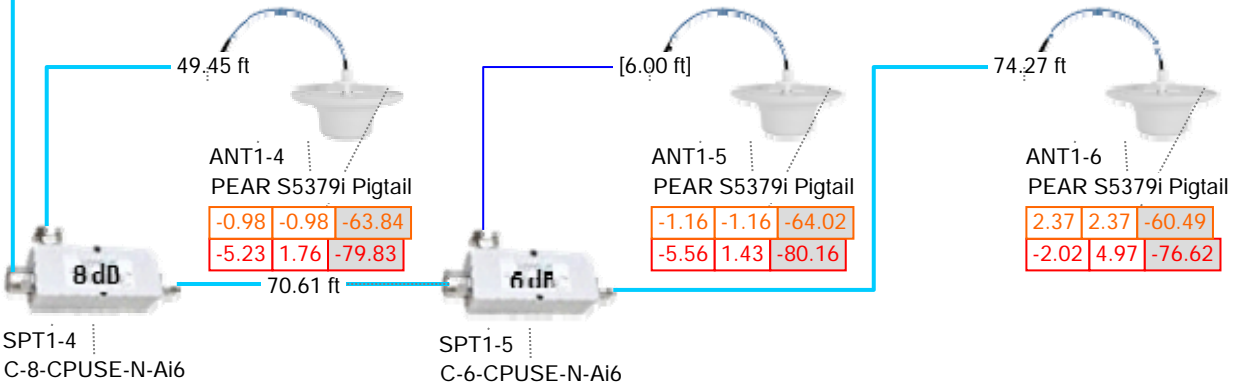
Solids Handling - 3rd Floor



Solids Handling - 2nd Floor

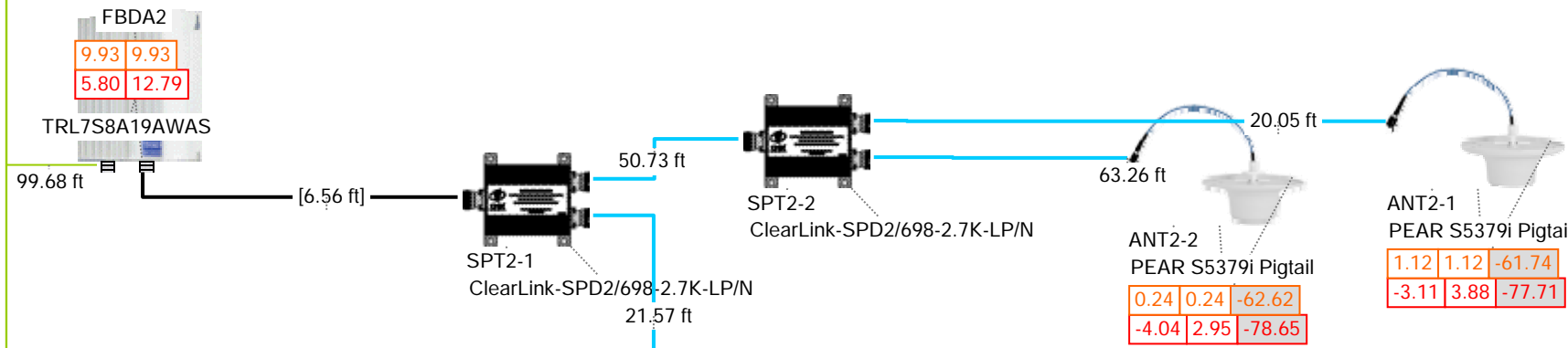


Solids Handling - 1st Floor

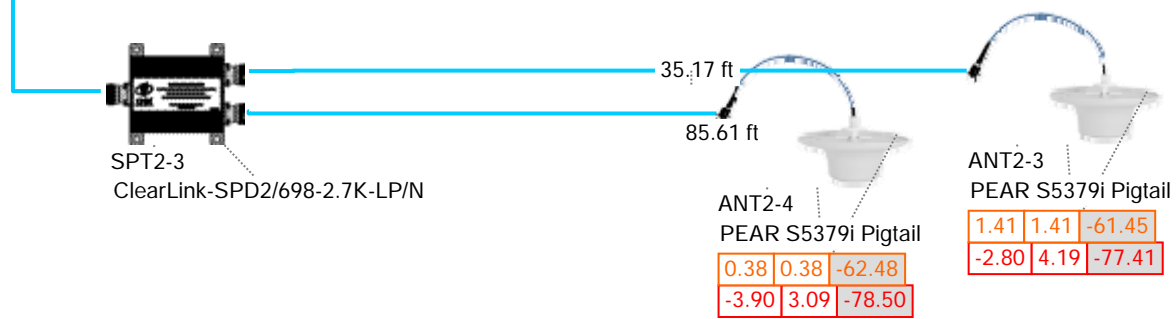


	TITLE	Design plan	DESIGNER	Kurt Force
	COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
		Earthcom, Inc		

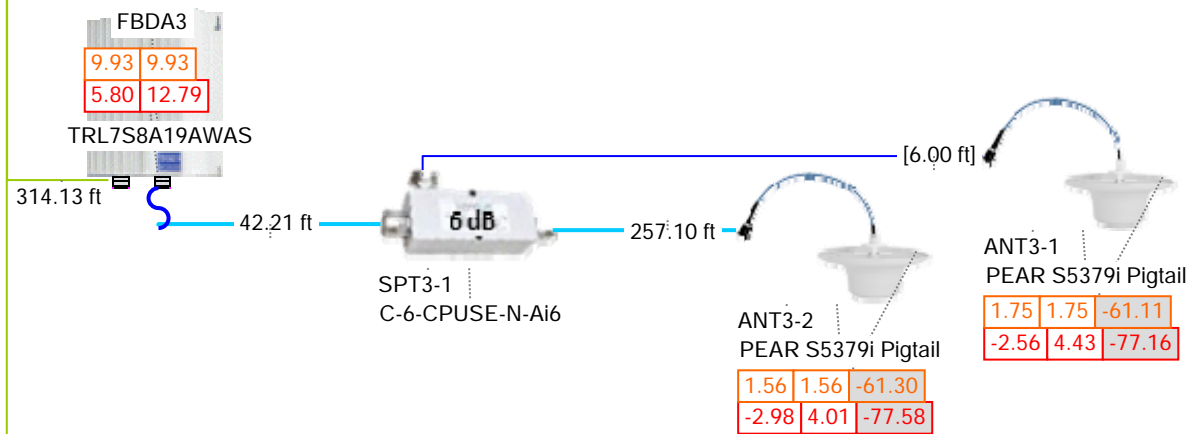
Admin - 2nd Floor



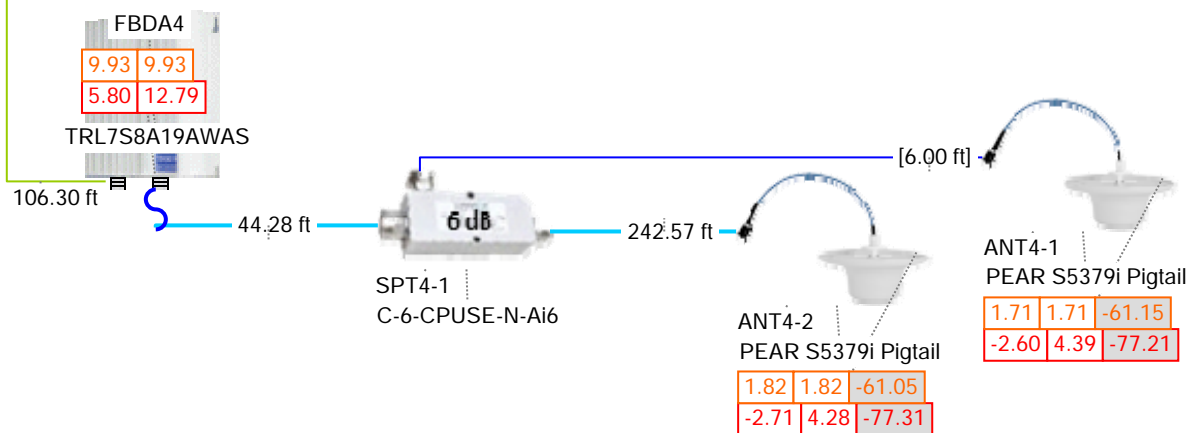
Admin - 1st Floor




West Primary & Blower Basement

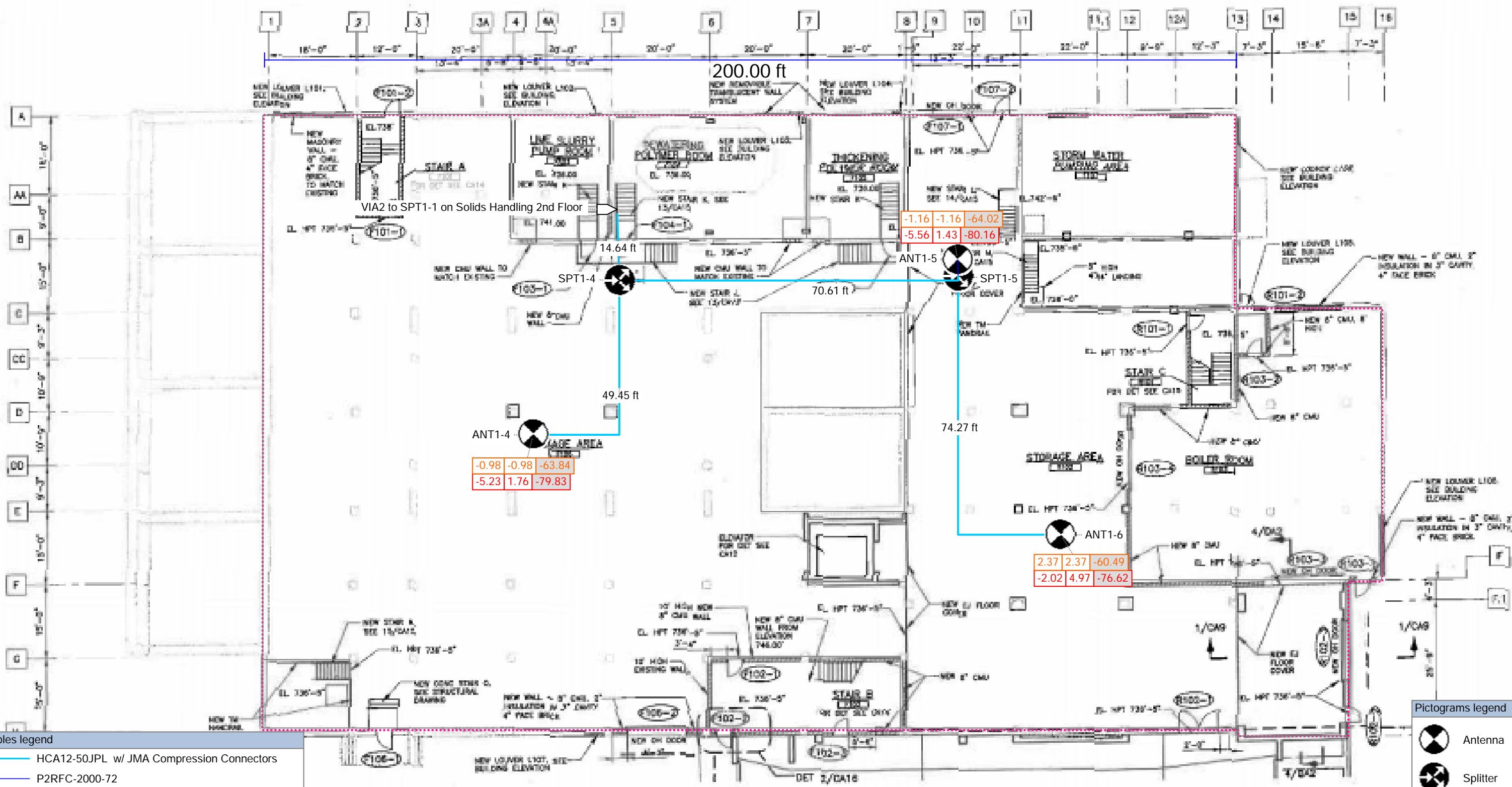


East Primary & Blower Basement



	TITLE	Design plan	DESIGNER	Kurt Force
	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd		DATE	3/26/2016
	COMPANY	Earthcom, Inc		

Indoor prediction legend



**Cables legend**

- HCA12-50JPL w/ JMA Compression Connectors
- P2RFC-2000-72

**Calculations legend**

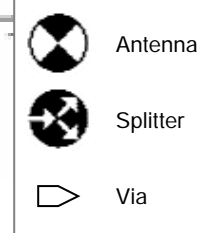
VZW - 700 MHz - LTE

Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
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VZW - 850 MHz - Cellular - CDMA

Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
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Pictograms legend

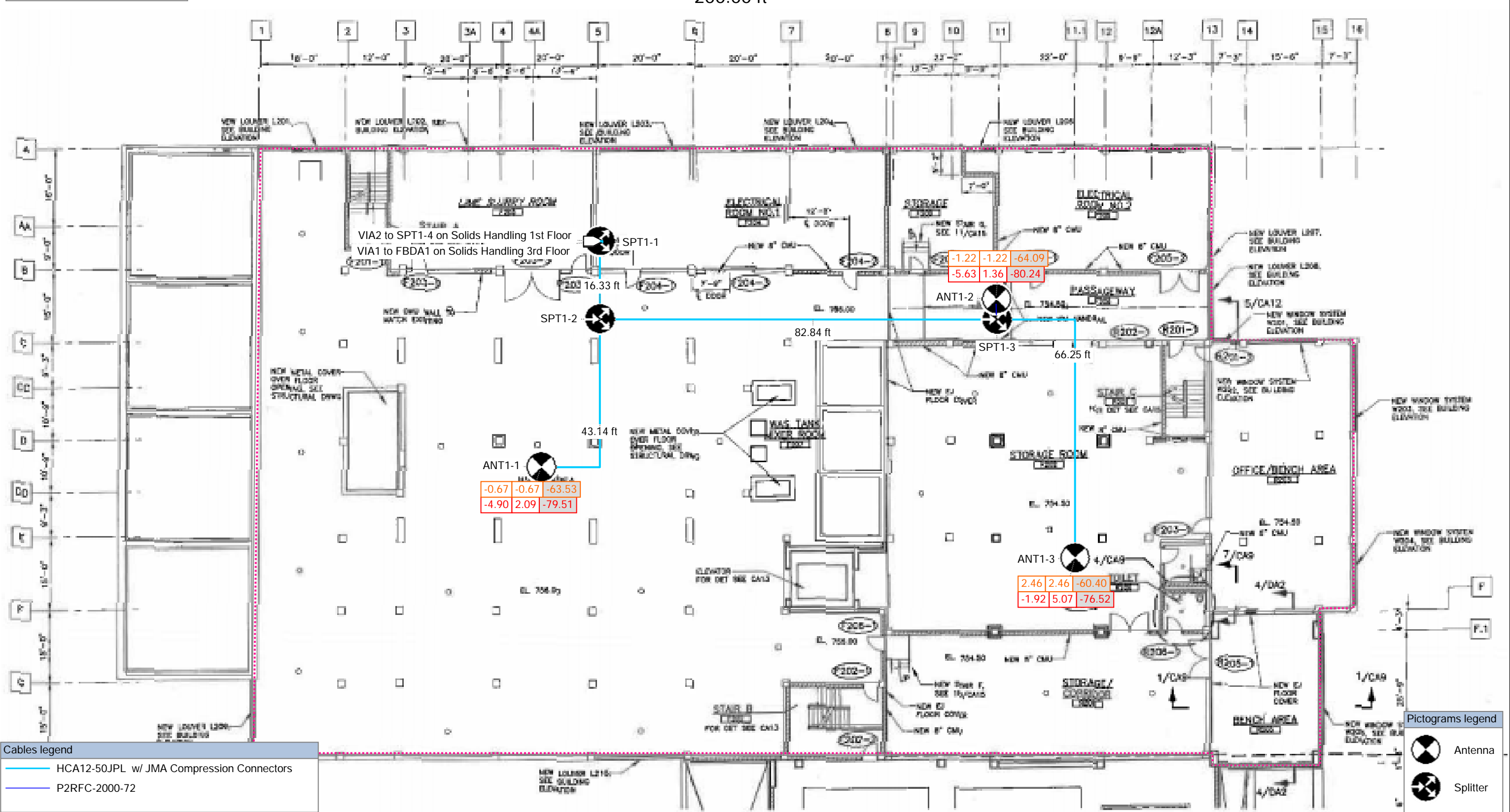


Solids 1st Floor 27,749 sq/ft  
 Solids 2nd Floor 27,602 sq/ft  
 Solids total coverage: 55,351 sq/ft

	TITLE	Solids Handling 1st Floor	DESIGNER	Kurt Force
	COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
		Earthcom, Inc		



Indoor prediction legend



Cables legend

	HCA12-50JPL w/ JMA Compression Connectors
	P2RFC-2000-72

Calculations legend

VZW - 700 MHz - LTE		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
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Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])

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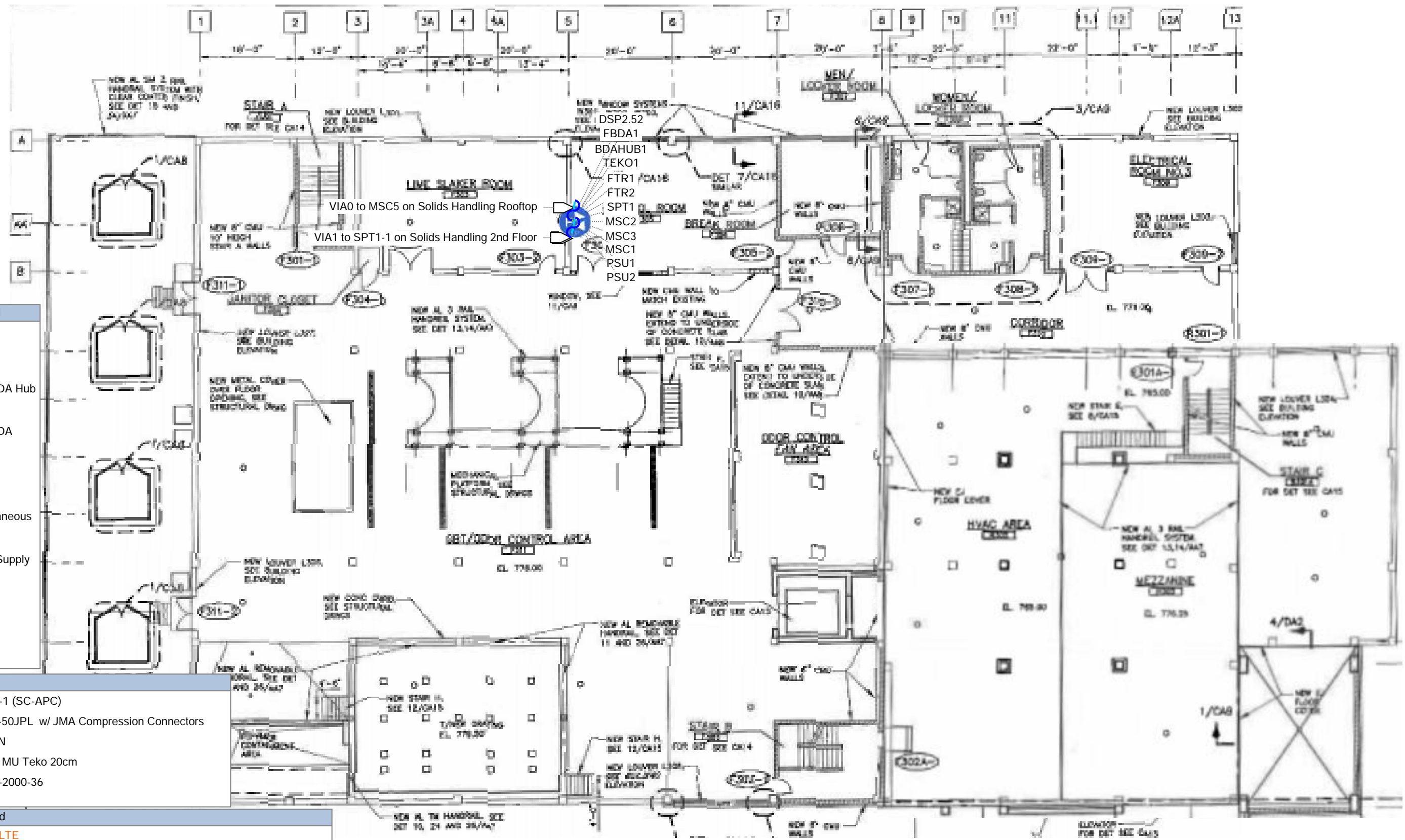
	TITLE	Solids Handling 2nd Floor	DESIGNER	Kurt Force
	COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
		Earthcom, Inc		

Pictograms legend









	Antenna
	Splitter
	Via

200.00 ft






Indoor prediction legend



Pictograms legend


-  DSP2.5
-  Fiber BDA Hub
-  Fiber BDA
-  Filter
-  Miscellaneous
-  Power Supply
-  Splitter
-  Via

Cables legend

-  242749-1 (SC-APC)
-  HCA12-50JPL w/ JMA Compression Connectors
-  JA-10TN
-  Jumper MU Teko 20cm
-  P2RFC-2000-36


Calculations legend

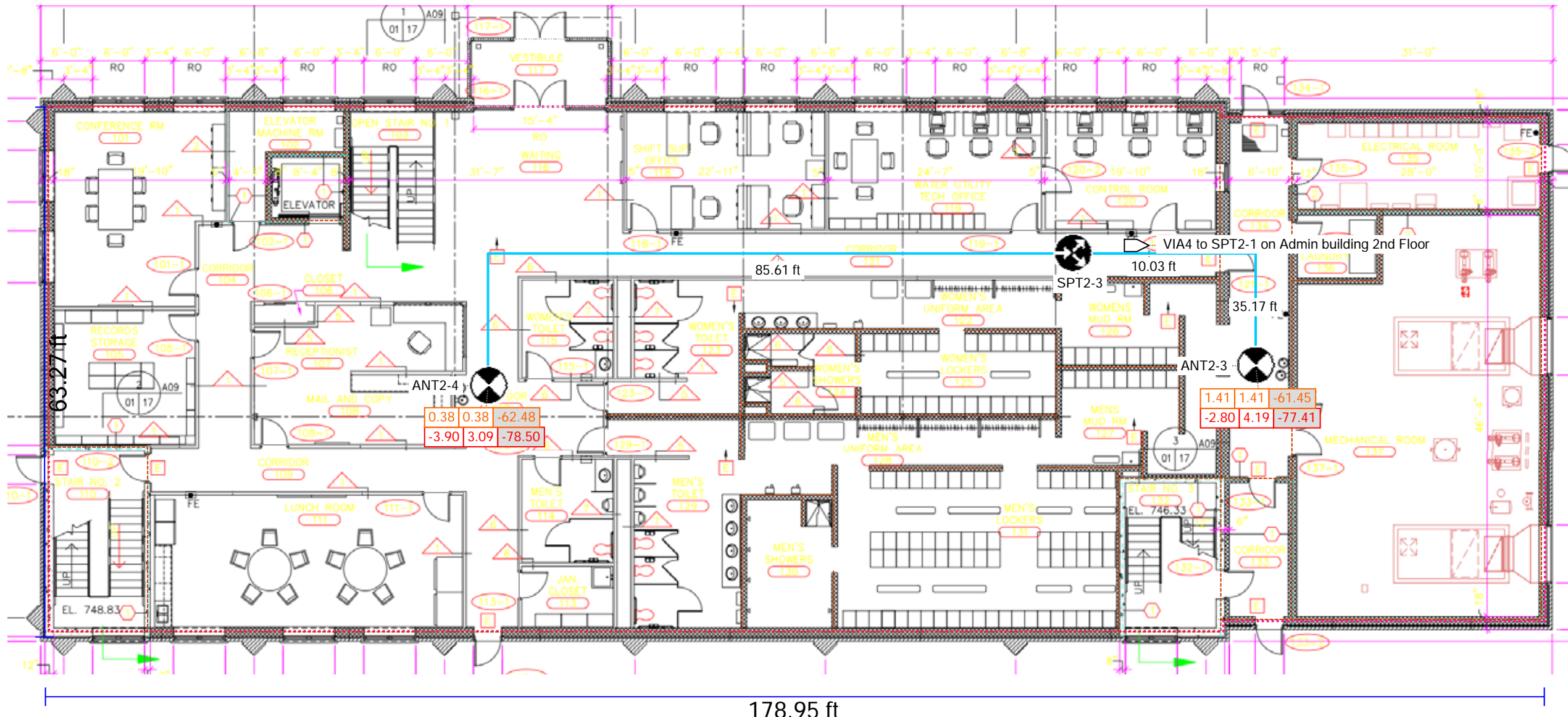
- VZW - 700 MHz - LTE
- Power/Channel [dBm] | Composite power [dBm] | MS RSSI [dBm] (at 98.43 [feet])
- VZW - 850 MHz - Cellular - CDMA
- Power/Channel [dBm] | Composite power [dBm] | MS RSSI [dBm] (at 98.43 [feet])

	TITLE	Solids Handling 3rd Floor	DESIGNER	Kurt Force
	COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
		Earthcom, Inc		



Ann Arbor Wastewater Treatment

	TITLE	Solids Handling Rooftop	DESIGNER	Kurt Force
	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd		DATE	3/26/2016
	COMPANY	Earthcom, Inc		



Indoor prediction legend

**Cables legend**  
 HCA12-50JPL w/ JMA Compression Connectors

**Calculations legend**  
 VZW - 700 MHz - LTE  
 Power/Channel [dBm] | Composite power [dBm] | MS RSSI [dBm] (at 98.43 [feet])  
 VZW - 850 MHz - Cellular - CDMA  
 Power/Channel [dBm] | Composite power [dBm] | MS RSSI [dBm] (at 98.43 [feet])

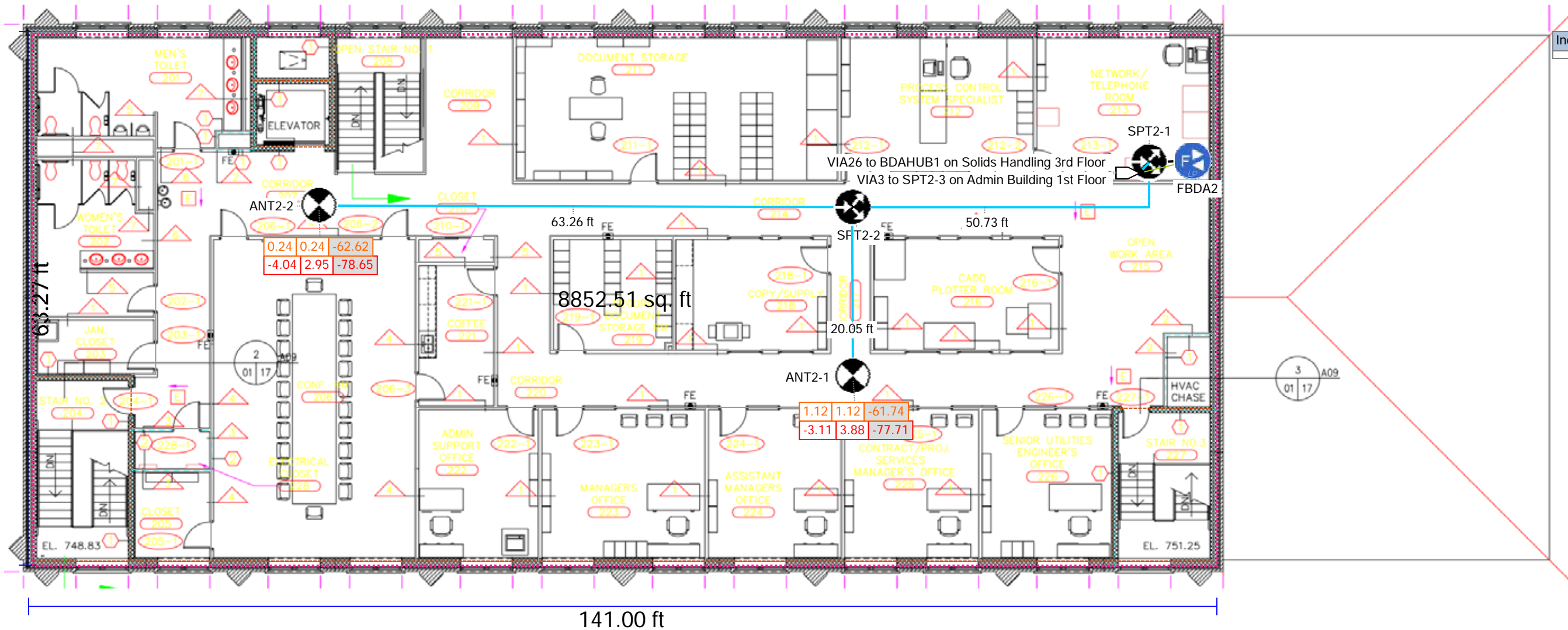
**Pictograms legend**  
 Antenna  
 Splitter  
 Via

Admin 1st Floor 11,100 sq/ft  
 Admin 2nd Floor 8,852 sq/ft  
 Admin Total Coverage 19,952 sq/ft



TITLE Admin Building 1st Floor  
 Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd  
 COMPANY Earthcom, Inc

DESIGNER Kurt Force  
 DATE 3/26/2016



Indoor prediction legend

Pictograms legend

- Antenna
- Fiber BDA
- Splitter
- Via

**Cables legend**

	242749-1 (SC-APC)
	HCA12-50JPL w/ JMA Compression Connectors
	SPP250NMNM2.0M

**Calculations legend**





VZW - 700 MHz - LTE		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
VZW - 850 MHz - Cellular - CDMA		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])


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 Admin Total Coverage 19,952 sq/ft

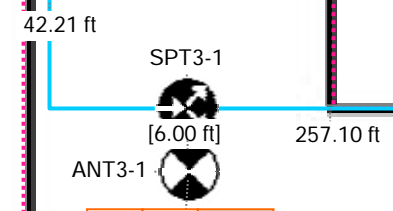


TITLE	Admin building 2nd Floor
COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd
	Earthcom, Inc

DESIGNER	Kurt Force
DATE	3/26/2016

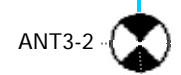
Cables legend	
	242749-1 (SC-APC)
	HCA12-50JPL w/ JMA Compression Connectors
	JA-10TN
	P2RFC-2000-72

FBDA3  VIA28 to BDAHUB1 on Solids Handling 3rd Floor



1.75	1.75	-61.11
-2.56	4.43	-77.16

257.10 ft







1.56	1.56	-61.30
-2.98	4.01	-77.58

Indoor prediction legend

145.00 ft

294.00 ft

Pictograms legend	
	Antenna
	Fiber BDA
	Splitter
	Via





Calculations legend		
VZW - 700 MHz - LTE		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
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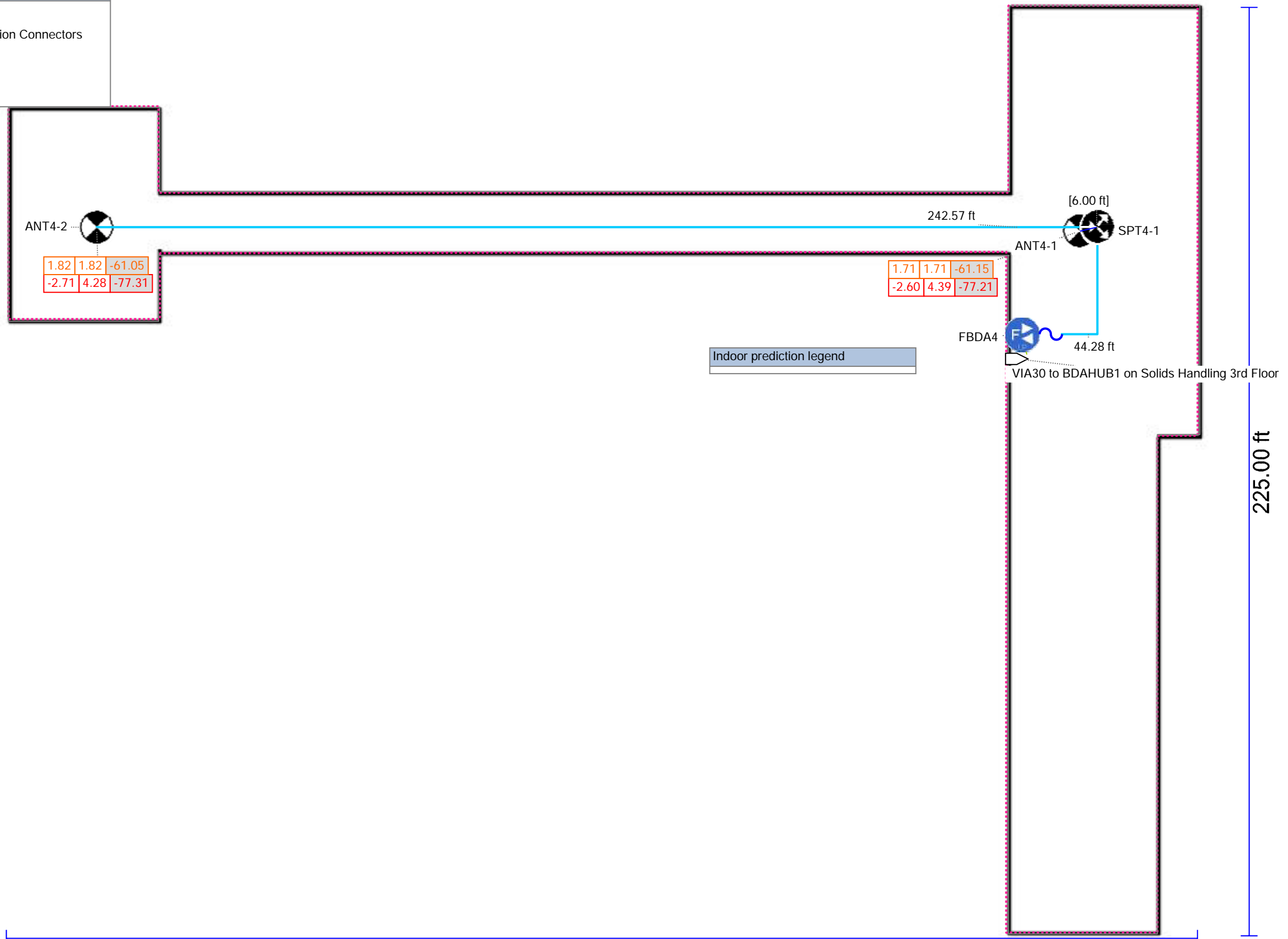
West Primary Tunnel and Blower 13,802 sq/ft







TITLE	West Primary & Blower
COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd
	Earthcom, Inc

DESIGNER	Kurt Force
DATE	3/26/2016

Cables legend	
	242749-1 (SC-APC)
	HCA12-50JPL w/ JMA Compression Connectors
	JA-10TN
	P2RFC-2000-72




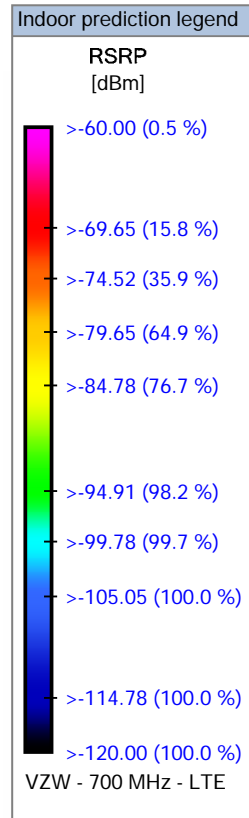
Indoor prediction legend

Pictograms legend	
	Antenna
	Fiber BDA
	Splitter
	Via

Calculations legend		
VZW - 700 MHz - LTE		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
VZW - 850 MHz - Cellular - CDMA		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])

East Primary Tunnel and Blower 14,082 sq/ft

	TITLE	East Primary & Blower	DESIGNER	Kurt Force
	COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
		Earthcom, Inc		

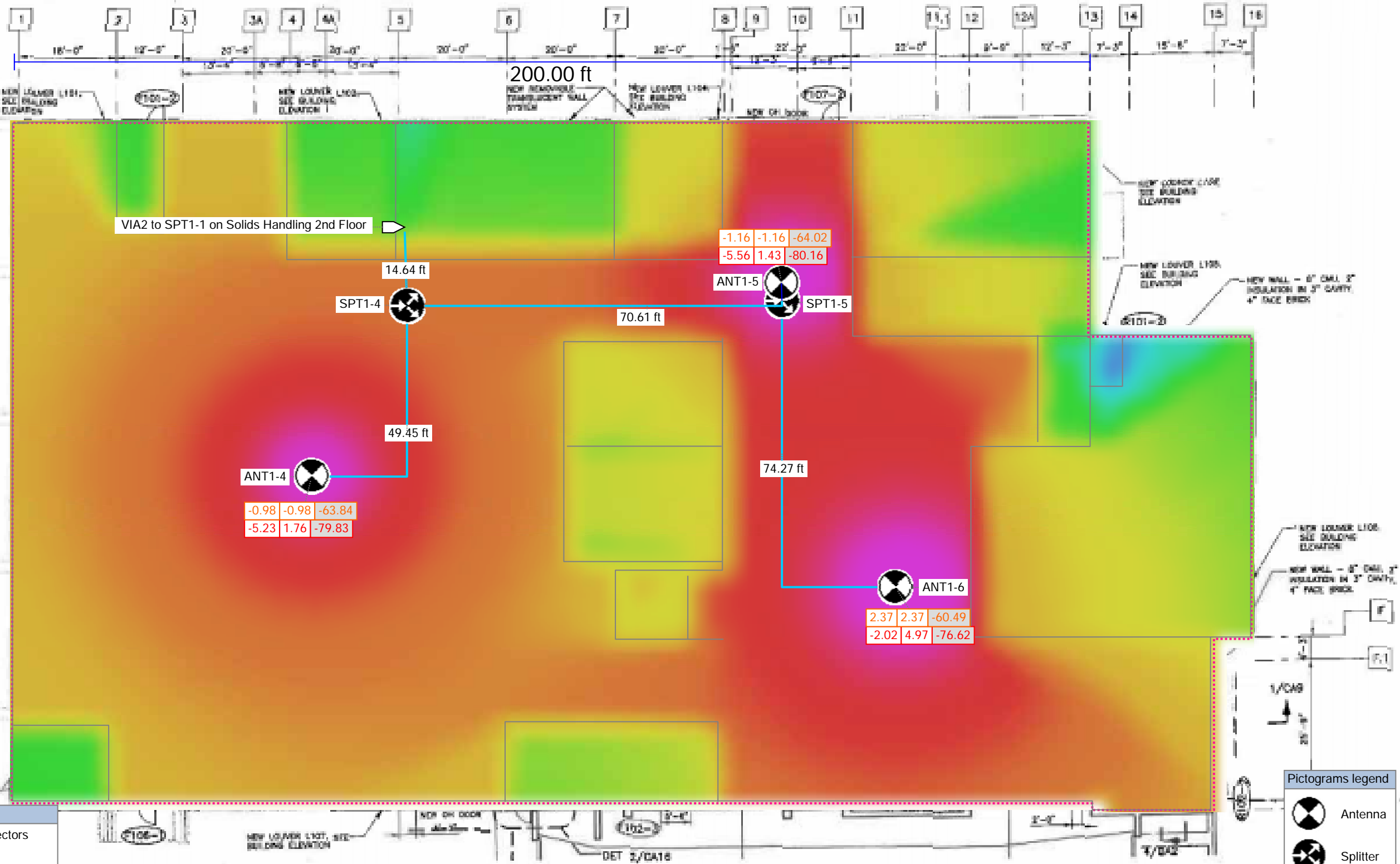


**Cables legend**

	HCA12-50JPL w/ JMA Compression Connectors
	P2RFC-2000-72

**Calculations legend**

VZW - 700 MHz - LTE		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
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Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])



**Pictograms legend**

	Antenna
	Splitter
	Via

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 Solids 2nd Floor 27,602 sq/ft  
 Solids total coverage: 55,351 sq/ft

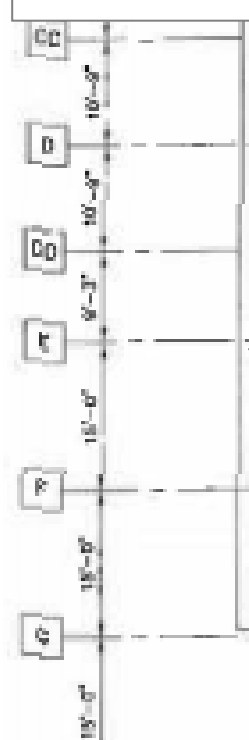
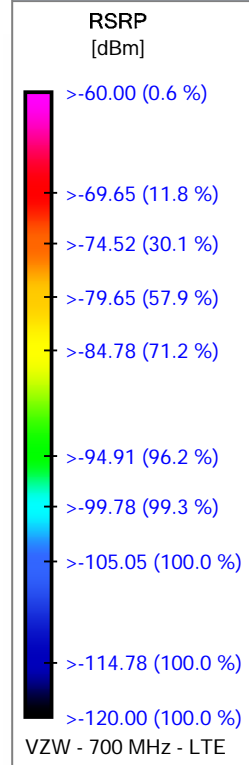


TITLE	Solids Handling 1st Floor
COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd
	Earthcom, Inc

DESIGNER	Kurt Force
DATE	3/26/2016



Indoor prediction legend

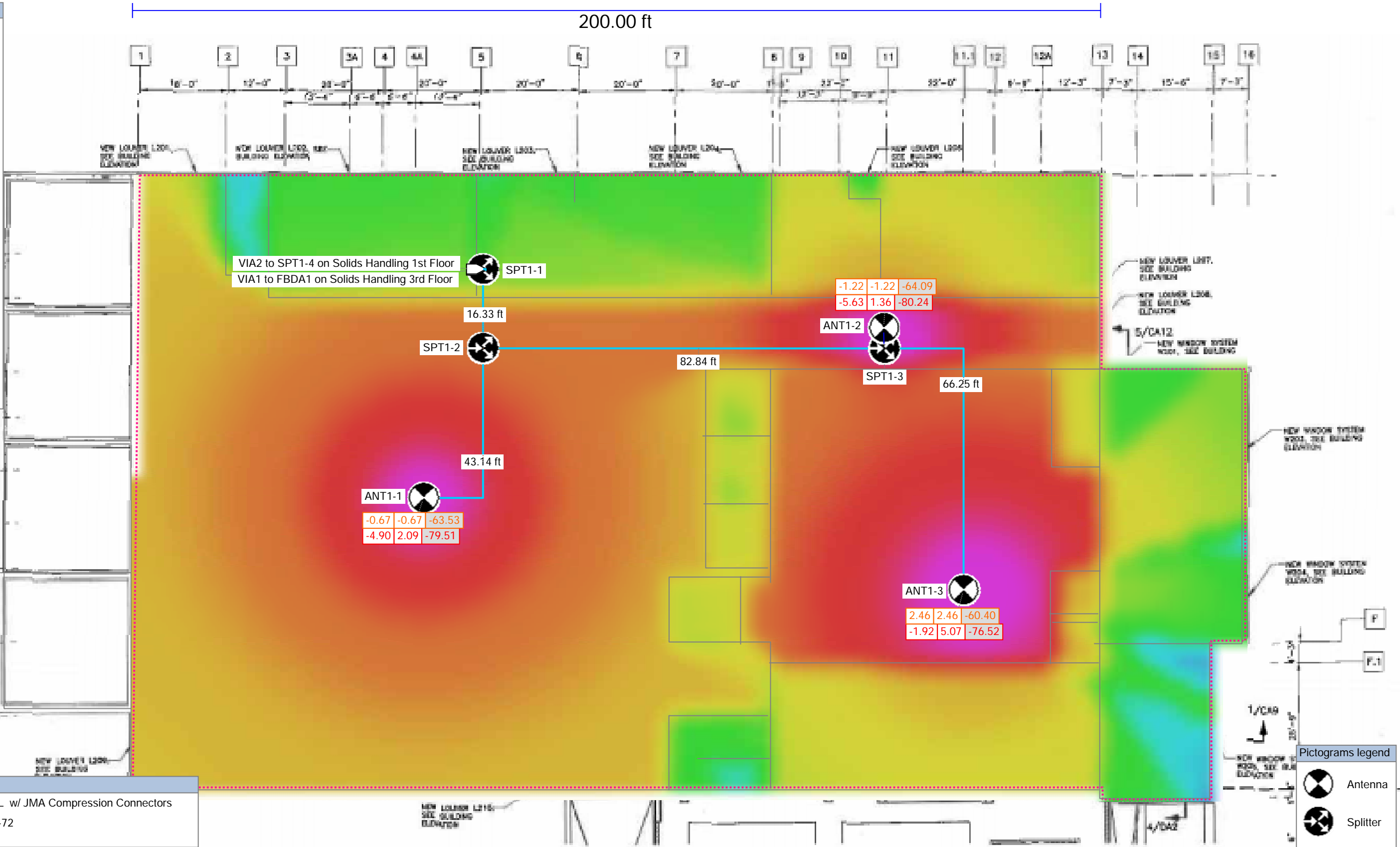


Cables legend

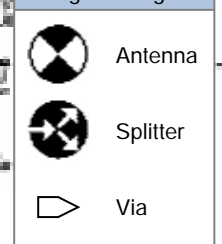
	HCA12-50JPL w/ JMA Compression Connectors
	P2RFC-2000-72

Calculations legend

VZW - 700 MHz - LTE		
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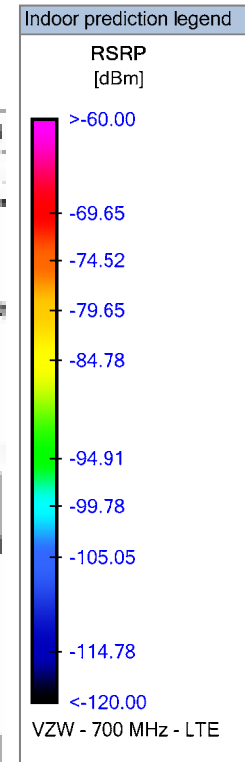
Pictograms legend



Solids 1st Floor 27,749 sq/ft  
Solids 2nd Floor 27,602 sq/ft  
Solids total coverage: 55,351 sq/ft

	TITLE	Solids Handling 2nd Floor	DESIGNER	Kurt Force
	COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
		Earthcom, Inc		

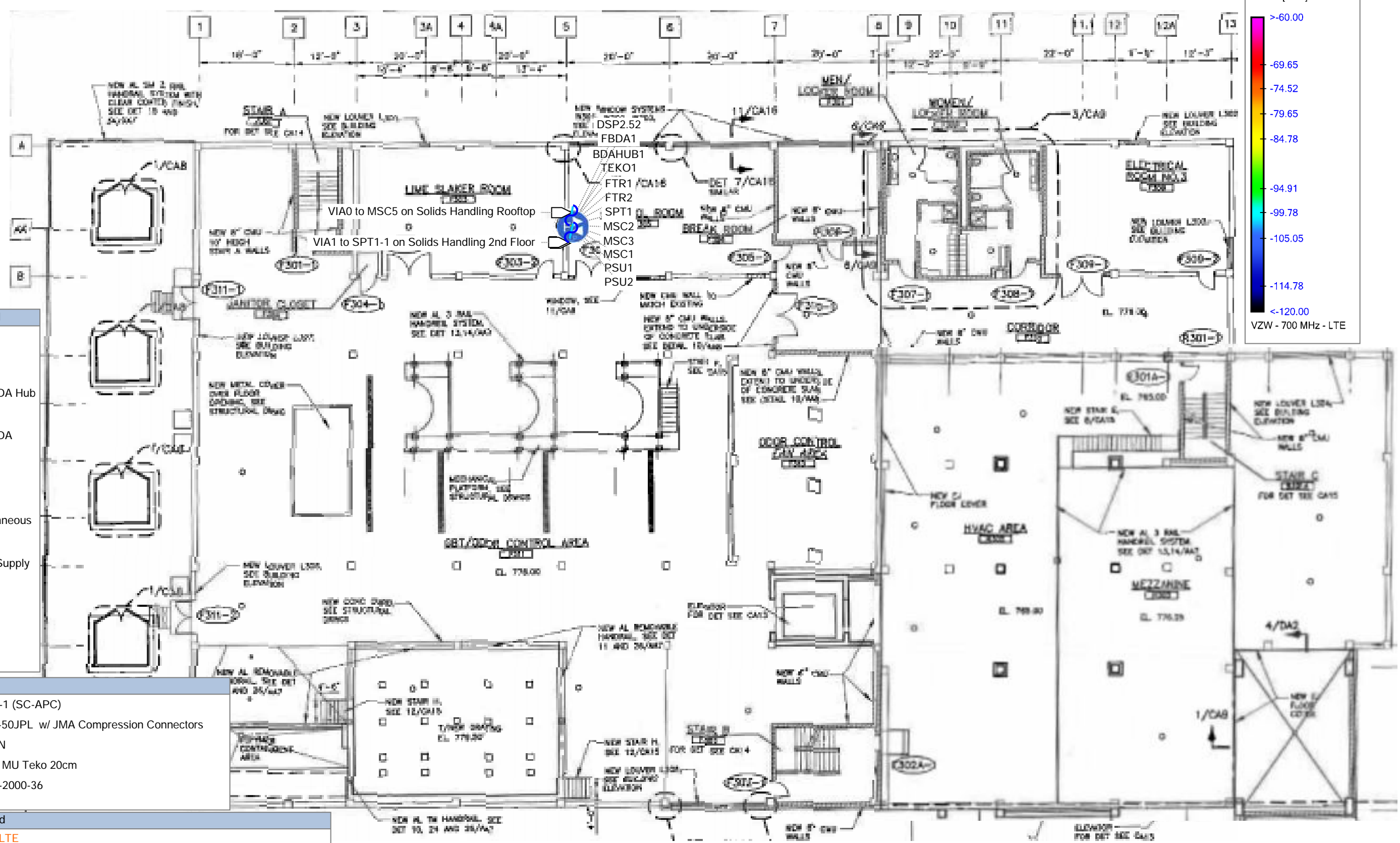
200.00 ft



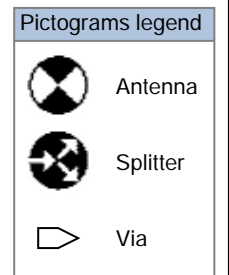
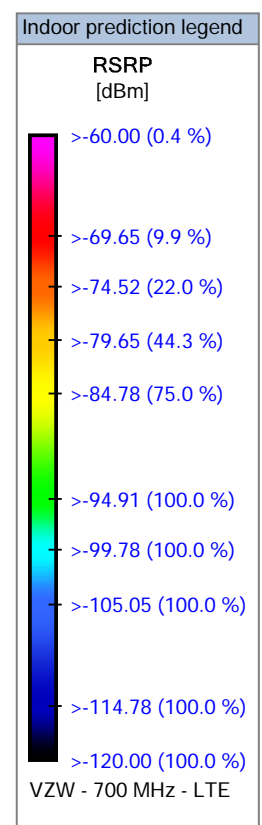
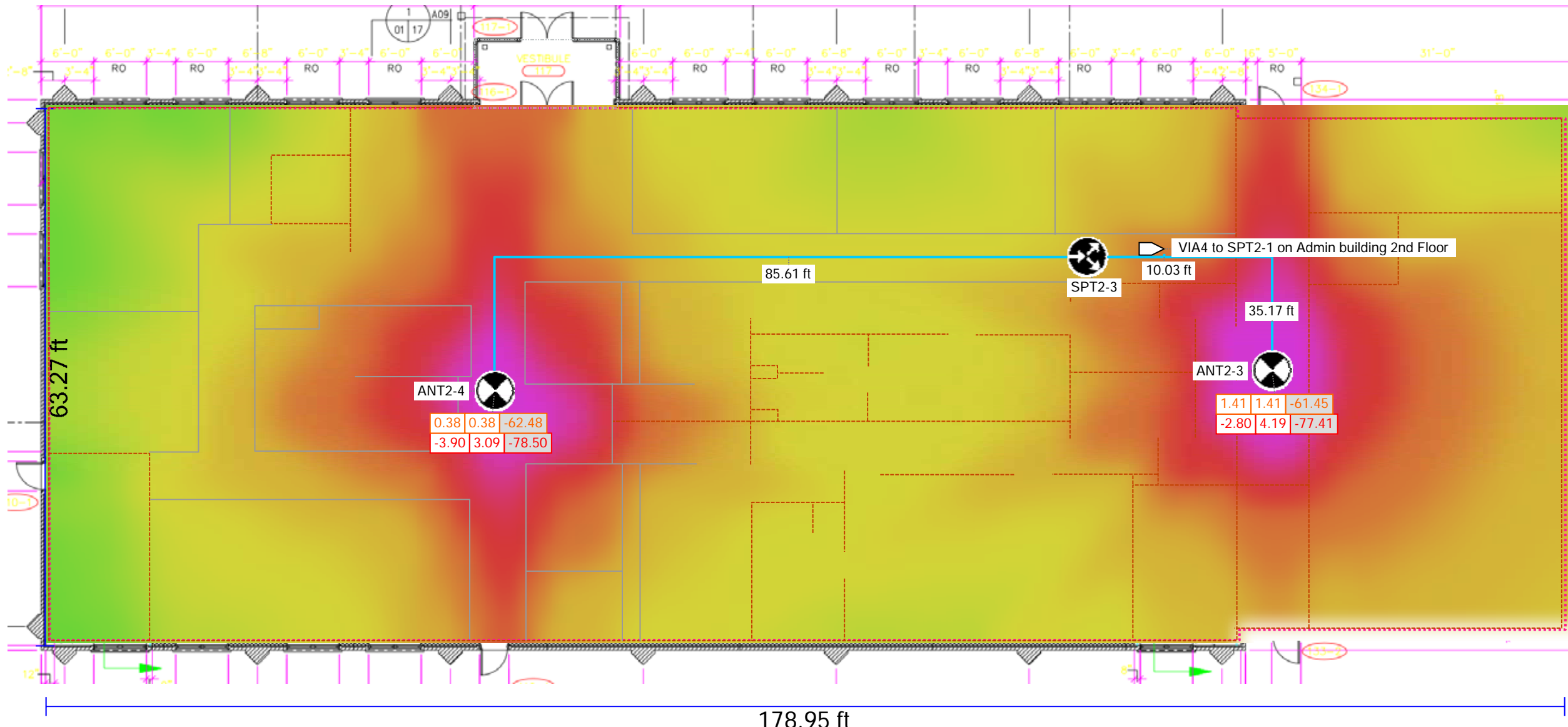
- Pictograms legend**
- DSP2.5
  - Fiber BDA Hub
  - Fiber BDA
  - Filter
  - Miscellaneous
  - Power Supply
  - Splitter
  - Via

- Cables legend**
- 242749-1 (SC-APC)
  - HCA12-50JPL w/ JMA Compression Connectors
  - JA-10TN
  - Jumper MU Teko 20cm
  - P2RFC-2000-36

- Calculations legend**
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  - Power/Channel [dBm] | Composite power [dBm] | MS RSSI [dBm] (at 98.43 [feet])
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  - Power/Channel [dBm] | Composite power [dBm] | MS RSSI [dBm] (at 98.43 [feet])



	TITLE	Solids Handling 3rd Floor	DESIGNER	Kurt Force
	COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
		Earthcom, Inc		



**Cables legend**

HCA12-50JPL w/ JMA Compression Connectors
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**Calculations legend**

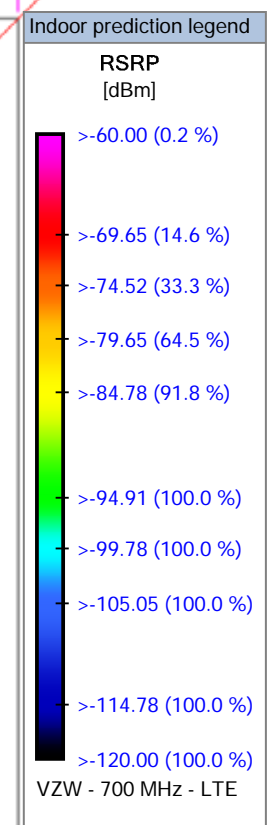
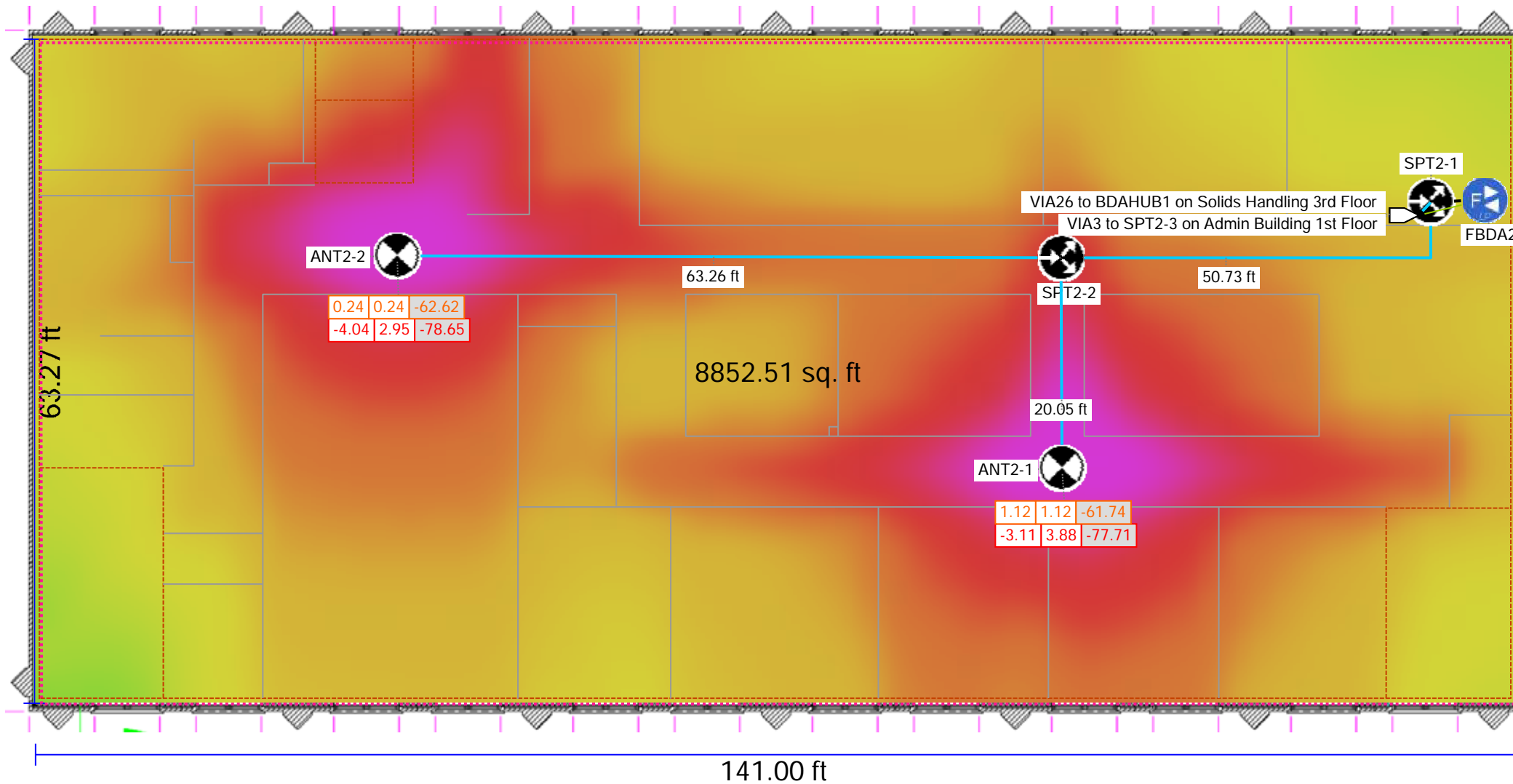
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Admin 1st Floor 11,100 sq/ft  
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 Admin Total Coverage 19,952 sq/ft



TITLE	Admin Building 1st Floor
COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd
	Earthcom, Inc

DESIGNER	Kurt Force
DATE	3/26/2016



**Cables legend**

	242749-1 (SC-APC)
	HCA12-50JPL w/ JMA Compression Connectors
	SPP250NMNM2.0M

**Calculations legend**

VZW - 700 MHz - LTE		
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Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])

**Pictograms legend**





	Antenna
	Fiber BDA
	Splitter
	Via

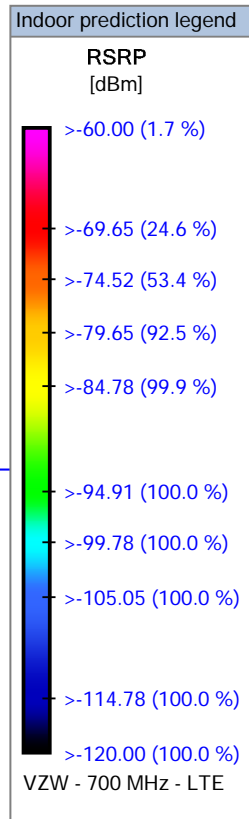
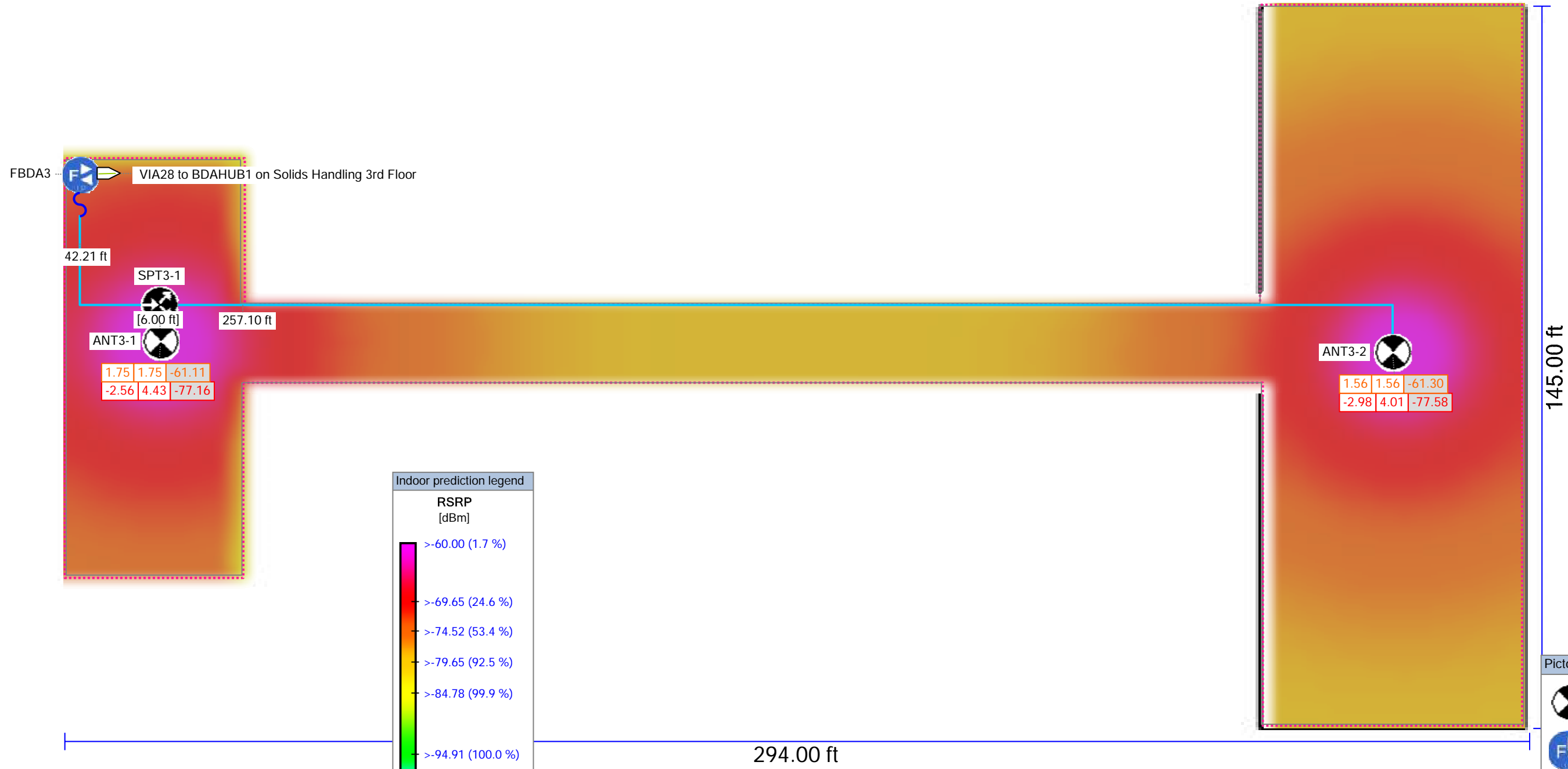
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
TITLE	Admin building 2nd Floor
COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd
	Earthcom, Inc

DESIGNER	Kurt Force
DATE	3/26/2016

Cables legend	
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Calculations legend		
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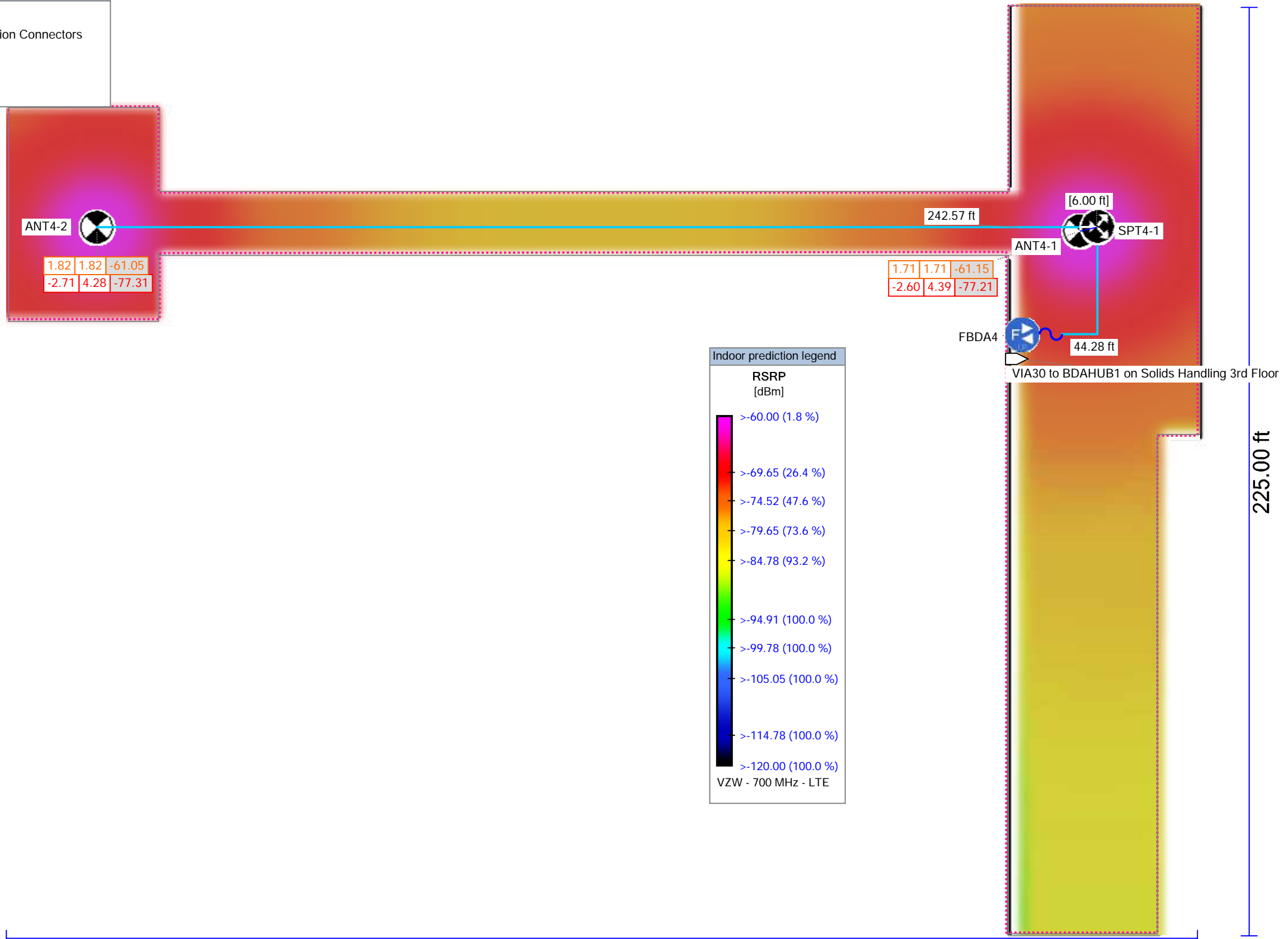
Pictograms legend	
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	Fiber BDA
	Splitter
	Via

West Primary Tunnel and Blower 13,802 sq/ft



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COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
	Earthcom, Inc		

Cables legend	
	242749-1 (SC-APC)
	HCA12-50JPL w/ JMA Compression Connectors
	JA-10TN
	P2RFC-2000-72



Calculations legend		
VZW - 700 MHz - LTE		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
VZW - 850 MHz - Cellular - CDMA		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])





288.64 ft

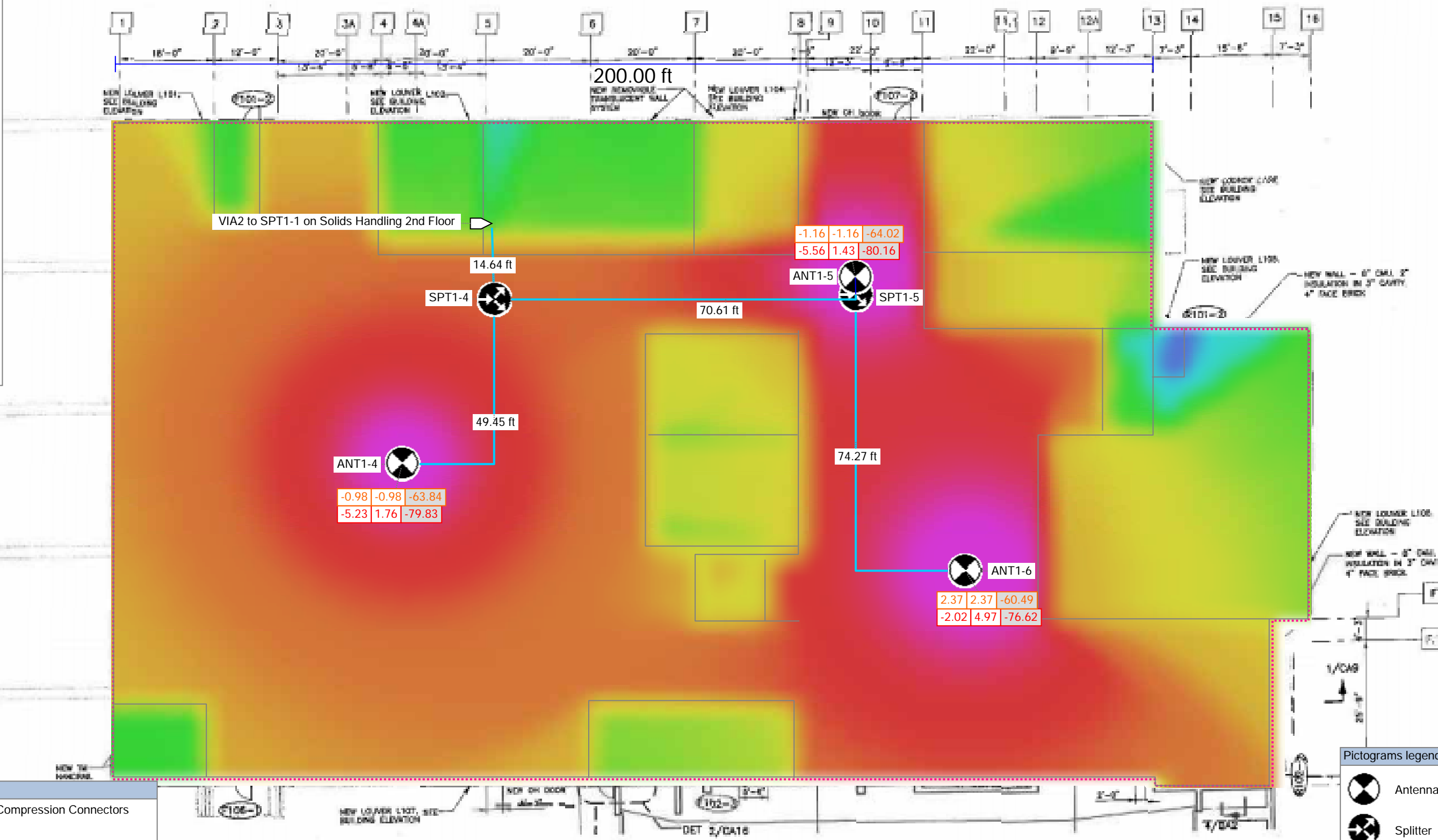
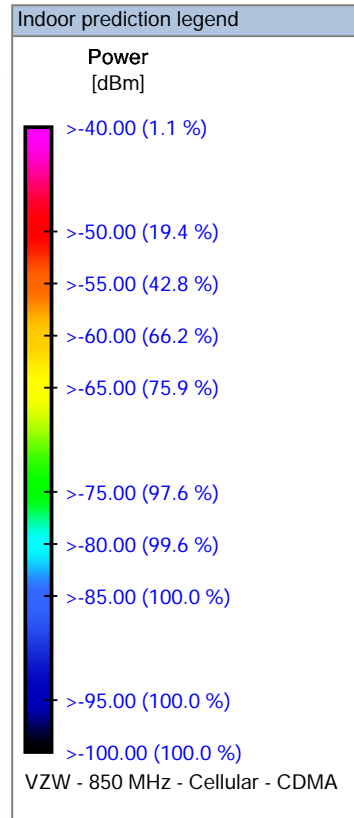
East Primary Tunnel and Blower 14,082 sq/ft



TITLE	East Primary & Blower
COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd
	Earthcom, Inc

DESIGNER	Kurt Force
DATE	3/26/2016

Pictograms legend	
	Antenna
	Fiber BDA
	Splitter
	Via



**Cables legend**

	HCA12-50JPL w/ JMA Compression Connectors
	P2RFC-2000-72

**Calculations legend**

VZW - 700 MHz - LTE		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
VZW - 850 MHz - Cellular - CDMA		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])

**Pictograms legend**

	Antenna
	Splitter
	Via

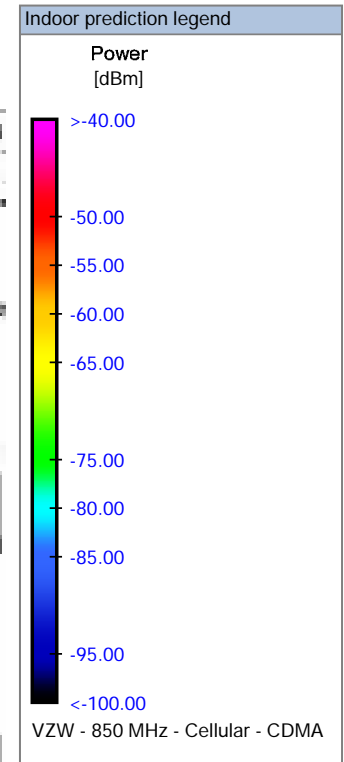
Solids 1st Floor 27,749 sq/ft  
 Solids 2nd Floor 27,602 sq/ft  
 Solids total coverage: 55,351 sq/ft

	TITLE	Solids Handling 1st Floor	DESIGNER	Kurt Force
	COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
		Earthcom, Inc		





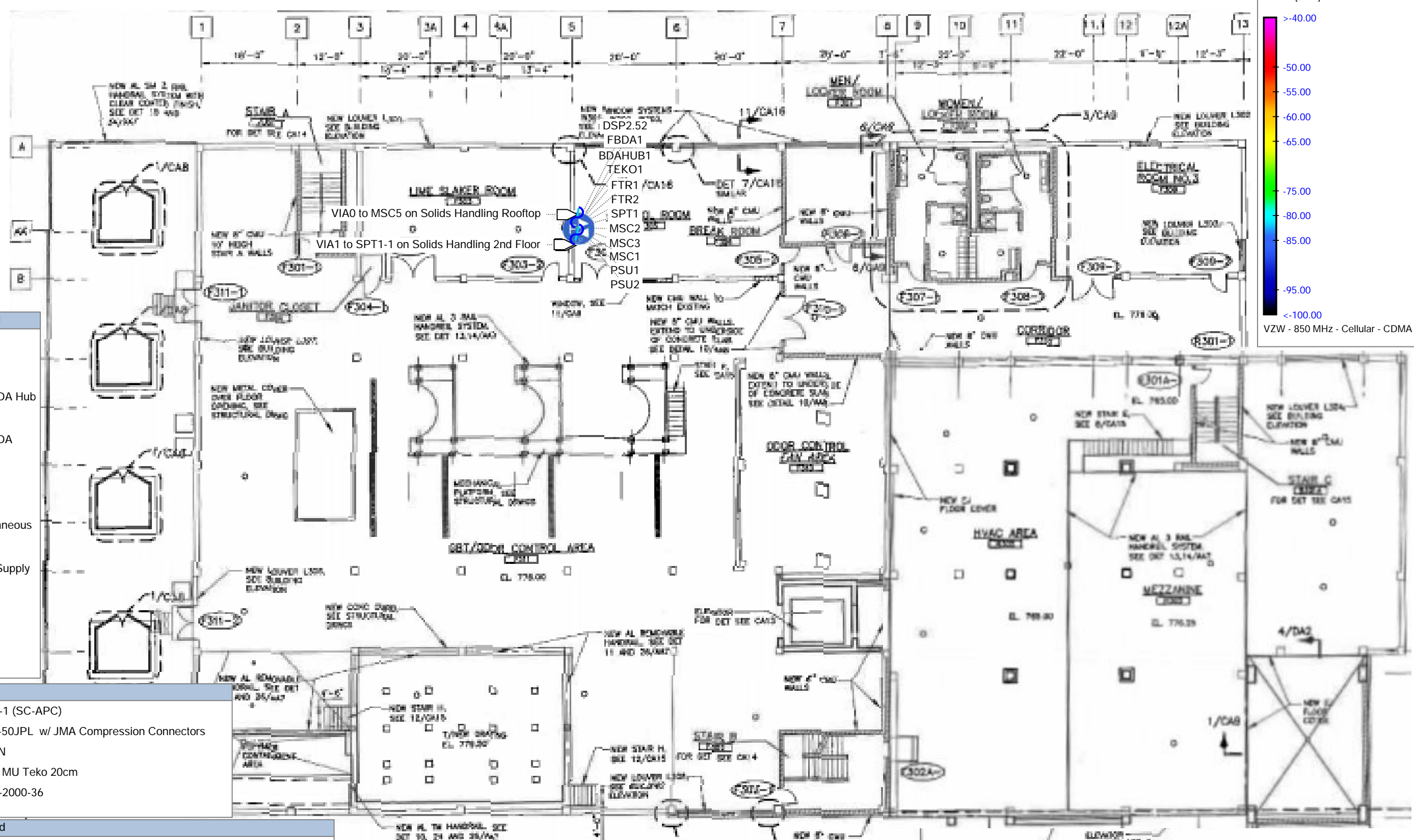
200.00 ft



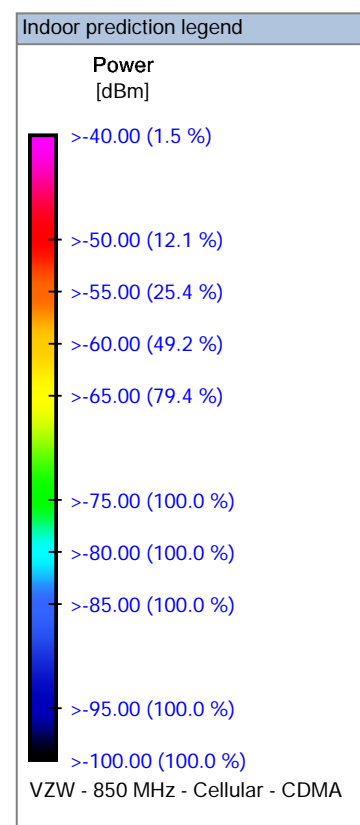
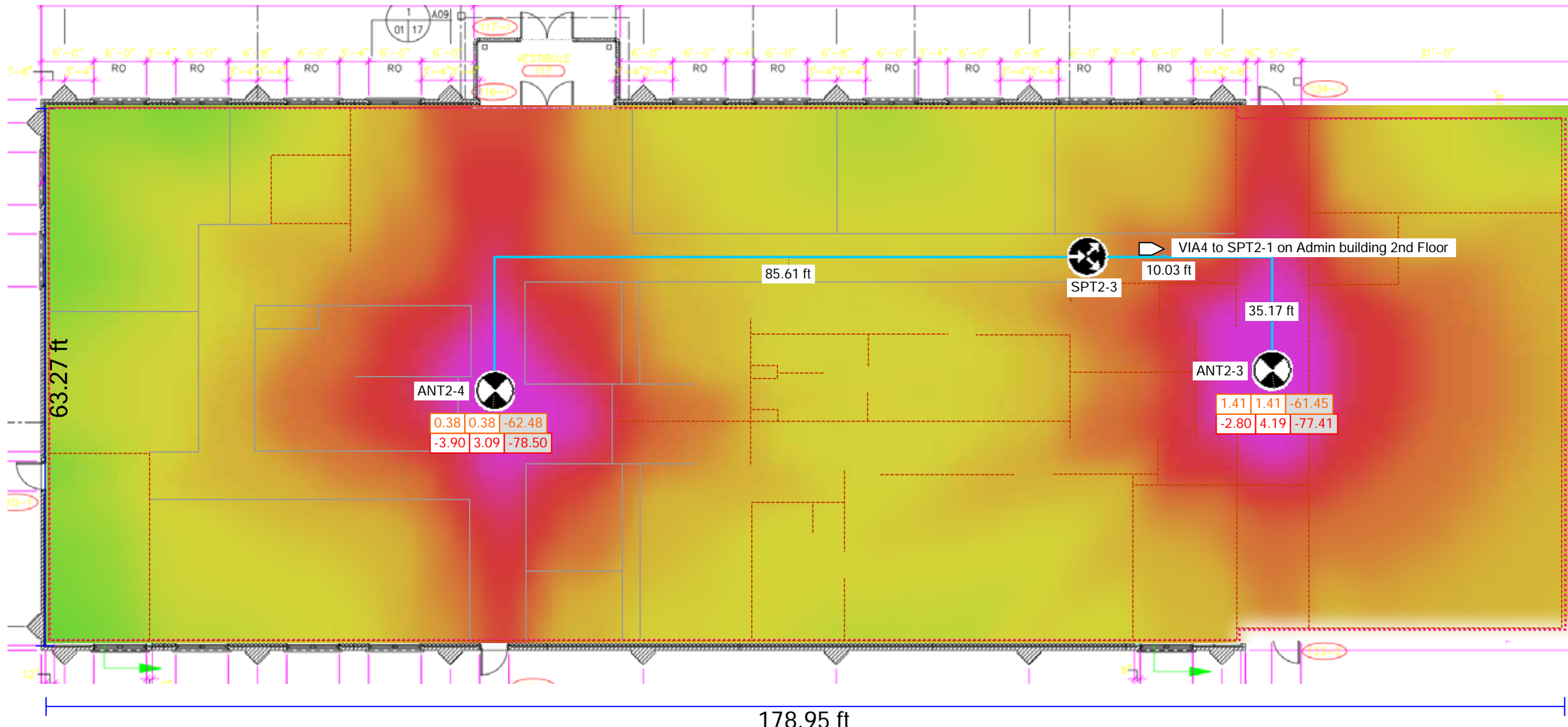
- Pictograms legend**
- DSP2.5
  - Fiber BDA Hub
  - Fiber BDA
  - Filter
  - Miscellaneous
  - Power Supply
  - Splitter
  - Via

- Cables legend**
- 242749-1 (SC-APC)
  - HCA12-50JPL w/ JMA Compression Connectors
  - JA-10TN
  - Jumper MU Teko 20cm
  - P2RFC-2000-36

- Calculations legend**
- VZW - 700 MHz - LTE
- Power/Channel [dBm] | Composite power [dBm] | MS RSSI [dBm] (at 98.43 [feet])
- VZW - 850 MHz - Cellular - CDMA
- Power/Channel [dBm] | Composite power [dBm] | MS RSSI [dBm] (at 98.43 [feet])



	TITLE	Solids Handling 3rd Floor	DESIGNER	Kurt Force
	COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
		Earthcom, Inc		



**Cables legend**

	HCA12-50JPL w/ JMA Compression Connectors
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**Calculations legend**

VZW - 700 MHz - LTE		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
VZW - 850 MHz - Cellular - CDMA		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])

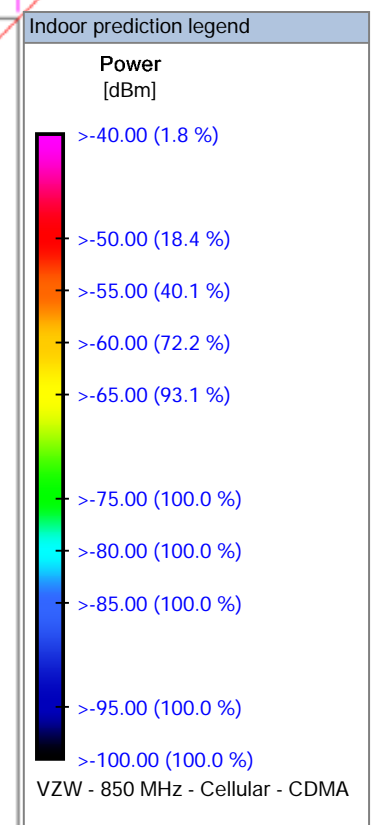
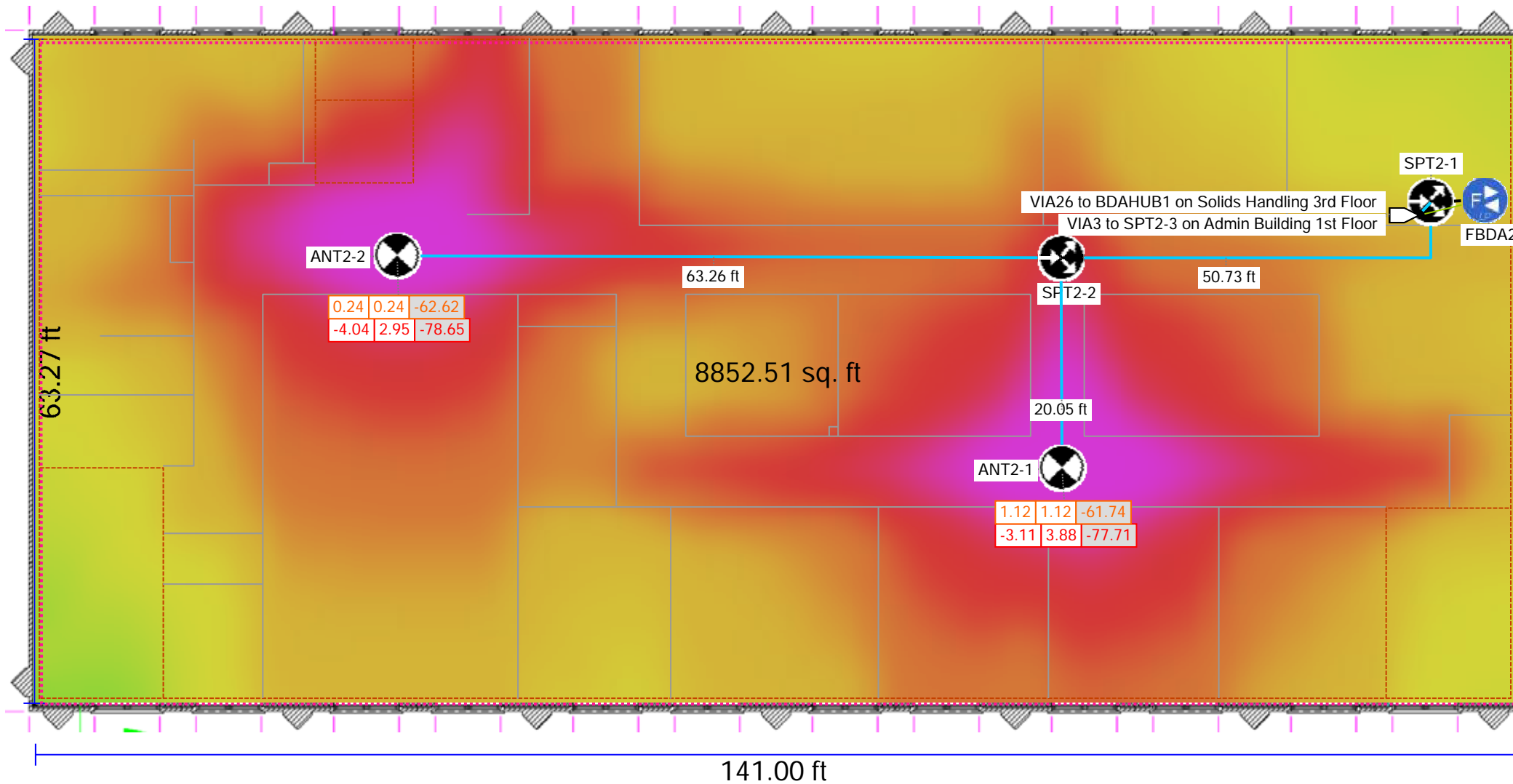
**Pictograms legend**

	Antenna
	Splitter
	Via

Admin 1st Floor 11,100 sq/ft  
 Admin 2nd Floor 8,852 sq/ft  
 Admin Total Coverage 19,952 sq/ft

	TITLE	Admin Building 1st Floor
	COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd
		Earthcom, Inc

DESIGNER	Kurt Force
DATE	3/26/2016



Cables legend	
	242749-1 (SC-APC)
	HCA12-50JPL w/ JMA Compression Connectors
	SPP250NMNM2.0M

Calculations legend		
VZW - 700 MHz - LTE		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
VZW - 850 MHz - Cellular - CDMA		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])





Pictograms legend	
	Antenna
	Fiber BDA
	Splitter
	Via

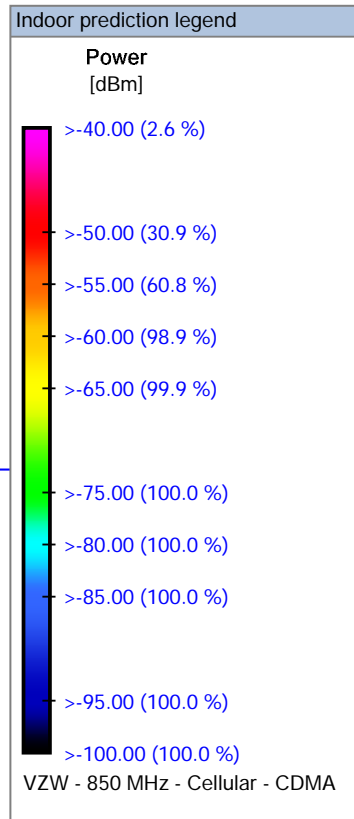
Admin 1st Floor 11,100 sq/ft  
 Admin 2nd Floor 8,852 sq/ft  
 Admin Total Coverage 19,952 sq/ft







TITLE	Admin building 2nd Floor
COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd
	Earthcom, Inc

DESIGNER	Kurt Force
DATE	3/26/2016

Cables legend	
	242749-1 (SC-APC)
	HCA12-50JPL w/ JMA Compression Connectors
	JA-10TN
	P2RFC-2000-72



Calculations legend		
VZW - 700 MHz - LTE		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])
VZW - 850 MHz - Cellular - CDMA		
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])





Pictograms legend	
	Antenna
	Fiber BDA
	Splitter
	Via

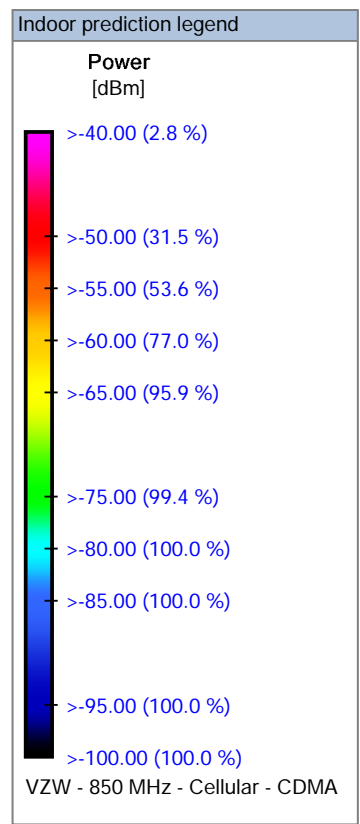
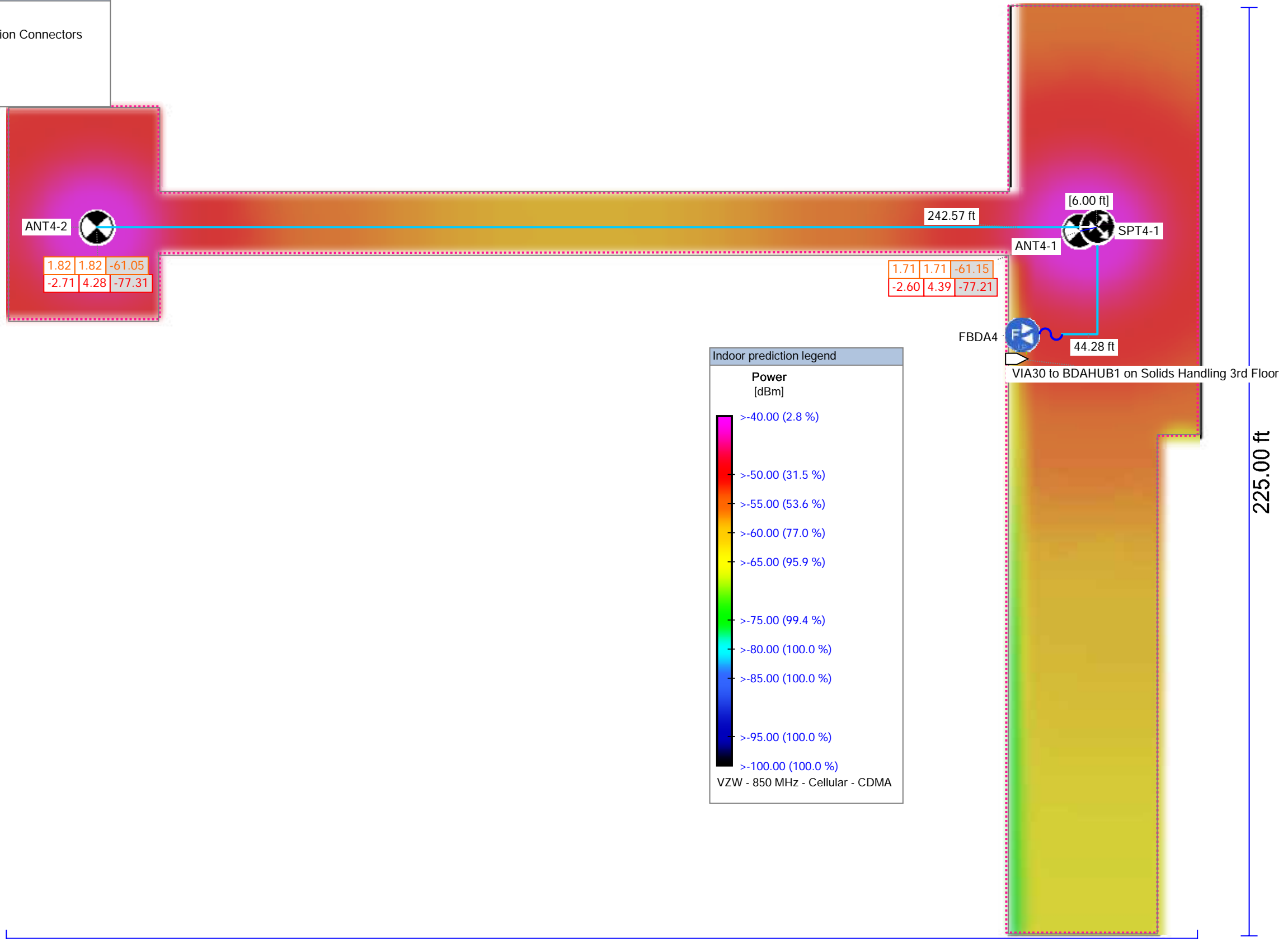
West Primary Tunnel and Blower 13,802 sq/ft







TITLE	West Primary & Blower
COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd
	Earthcom, Inc

DESIGNER	Kurt Force
DATE	3/26/2016

Cables legend			
	242749-1 (SC-APC)		
	HCA12-50JPL w/ JMA Compression Connectors		
	JA-10TN		
	P2RFC-2000-72		



Pictograms legend	
	Antenna
	Fiber BDA
	Splitter
	Via

Calculations legend			
VZW - 700 MHz - LTE			
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])	
VZW - 850 MHz - Cellular - CDMA			
Power/Channel [dBm]	Composite power [dBm]	MS RSSI [dBm] (at 98.43 [feet])	

East Primary Tunnel and Blower 14,082 sq/ft



TITLE	East Primary & Blower	DESIGNER	Kurt Force
COMPANY	Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd	DATE	3/26/2016
	Earthcom, Inc		

## Electromagnetic Field Report

**Project name:** Ann Arbor Waste Water Treatment Plant - 49 Old Dixboro Rd

**Design company:** Earthcom, Inc

**Project creation date:** 3/26/2016

**Designer:** Kurt Force

Antenna ID	System ID	Composite power		Power density (W/Sq. m)	Electric field (V/m)	Distance (in)	Power contribution (%)	Distance compliance (6.00 in)	Power compliance (0.00 dBm)
		Before ant. (dBm)	After ant. (EIRP) (dBm)						
ANT1-1	850 MHz - Cellular - CDMA - Sector N/A	2.24	4.24	2.7562	32.2344	0.34	61.47	-	-
ANT1-1	700 MHz - LTE - Sector N/A	-0.52	1.48	1.4606	23.4655	0.34	38.52	-	-
ANT1-1	All systems	4.09	6.09	-	-	0.34	100.00	Pass	-
ANT1-2	850 MHz - Cellular - CDMA - Sector N/A	1.51	3.51	2.7134	31.9830	0.32	60.52	-	-
ANT1-2	700 MHz - LTE - Sector N/A	-1.07	0.93	1.4968	23.7549	0.32	39.48	-	-
ANT1-2	All systems	3.42	5.42	-	-	0.32	100.00	Pass	-
ANT1-3	850 MHz - Cellular - CDMA - Sector N/A	5.22	7.22	2.7206	32.0255	0.49	60.68	-	-
ANT1-3	700 MHz - LTE - Sector N/A	2.61	4.61	1.4908	23.7068	0.49	39.32	-	-
ANT1-3	All systems	7.12	9.12	-	-	0.49	100.00	Pass	-
ANT1-4	850 MHz - Cellular - CDMA - Sector N/A	1.91	3.91	2.7512	32.2050	0.33	61.36	-	-
ANT1-4	700 MHz - LTE - Sector N/A	-0.83	1.17	1.4649	23.5004	0.33	38.64	-	-
ANT1-4	All systems	3.77	5.77	-	-	0.33	100.00	Pass	-
ANT1-5	850 MHz - Cellular - CDMA - Sector N/A	1.58	3.58	2.7145	31.9896	0.32	60.54	-	-
ANT1-5	700 MHz - LTE - Sector N/A	-1.01	0.99	1.4959	23.7472	0.32	39.45	-	-
ANT1-5	All systems	3.49	5.49	-	-	0.32	100.00	Pass	-
ANT1-6	850 MHz - Cellular - CDMA - Sector N/A	5.12	7.12	2.7190	32.0160	0.48	60.64	-	-
ANT1-6	700 MHz - LTE - Sector N/A	2.52	4.52	1.4921	23.7173	0.48	39.36	-	-
ANT1-6	All systems	7.02	9.02	-	-	0.48	100.00	Pass	-

Antenna ID	System ID	Composite power		Power density (W/Sq. m)	Electric field (V/m)	Distance (in)	Power contribution (%)	Distance compliance (6.00 in)	Power compliance (0.00 dBm)
		Before ant. (dBm)	After ant. (EIRP) (dBm)						
ANT2-1	850 MHz - Cellular - CDMA - Sector N/A	4.03	6.03	2.7571	32.2395	0.42	61.49	-	-
ANT2-1	700 MHz - LTE - Sector N/A	1.27	3.27	1.4599	23.4602	0.42	38.51	-	-
ANT2-1	All systems	5.88	7.88	-	-	0.42	100.00	Pass	-
ANT2-2	850 MHz - Cellular - CDMA - Sector N/A	3.10	5.10	2.7425	32.1544	0.38	61.17	-	-
ANT2-2	700 MHz - LTE - Sector N/A	0.39	2.39	1.4722	23.5585	0.38	38.83	-	-
ANT2-2	All systems	4.96	6.96	-	-	0.38	100.00	Pass	-
ANT2-3	850 MHz - Cellular - CDMA - Sector N/A	4.34	6.34	2.7618	32.2670	0.44	61.60	-	-
ANT2-3	700 MHz - LTE - Sector N/A	1.56	3.56	1.4560	23.4282	0.44	38.40	-	-
ANT2-3	All systems	6.18	8.18	-	-	0.44	100.00	Pass	-
ANT2-4	850 MHz - Cellular - CDMA - Sector N/A	3.24	5.24	2.7448	32.1680	0.39	61.22	-	-
ANT2-4	700 MHz - LTE - Sector N/A	0.53	2.53	1.4703	23.5432	0.39	38.78	-	-
ANT2-4	All systems	5.11	7.11	-	-	0.39	100.00	Pass	-
ANT3-1	850 MHz - Cellular - CDMA - Sector N/A	4.58	6.58	2.7373	32.1236	0.45	61.05	-	-
ANT3-1	700 MHz - LTE - Sector N/A	1.90	3.90	1.4767	23.5944	0.45	38.95	-	-
ANT3-1	All systems	6.46	8.46	-	-	0.45	100.00	Pass	-
ANT3-2	850 MHz - Cellular - CDMA - Sector N/A	4.16	6.16	2.6798	31.7845	0.44	59.77	-	-
ANT3-2	700 MHz - LTE - Sector N/A	1.71	3.71	1.5252	23.9790	0.44	40.23	-	-
ANT3-2	All systems	6.12	8.12	-	-	0.44	100.00	Pass	-
ANT4-1	850 MHz - Cellular - CDMA - Sector N/A	4.54	6.54	2.7365	32.1191	0.45	61.04	-	-
ANT4-1	700 MHz - LTE - Sector N/A	1.86	3.86	1.4772	23.5988	0.45	38.96	-	-
ANT4-1	All systems	6.41	8.41	-	-	0.45	100.00	Pass	-

Antenna ID	System ID	Composite power		Power density (W/Sq. m)	Electric field (V/m)	Distance (in)	Power contribution (%)	Distance compliance (6.00 in)	Power compliance (0.00 dBm)
		Before ant. (dBm)	After ant. (EIRP) (dBm)						
ANT4-2	850 MHz - Cellular - CDMA - Sector N/A	4.43	6.43	2.6840	31.8097	0.45	59.87	-	-
ANT4-2	700 MHz - LTE - Sector N/A	1.97	3.97	1.5216	23.9509	0.45	40.13	-	-
ANT4-2	All systems	6.38	8.38	-	-	0.45	100.00	Pass	-

System ID	EMF statistics (safety distance)					
	Average (in)	Std. dev. (in)	Minimum		Maximum	
			Antenna ID	(in)	Antenna ID	(in)
700 MHz - LTE - Sector N/A	0.41	0.06	ANT1-2	0.32	ANT1-3	0.49
850 MHz - Cellular - CDMA - Sector N/A	0.41	0.06	ANT1-2	0.32	ANT1-3	0.49

#### System legend

700 MHz - LTE - Sector N/A / VZW / LTE / 700 MHz Band / FDD - 10 MHz - Band 13 Block / Nb. of channels: 1 / Nb. of sources: 1  
850 MHz - Cellular - CDMA - Sector N/A / VZW / CDMA / 850 MHz - Cellular Band / ALL Block / Nb. of channels: 5 / Nb. of sources: 1

Based on: ICNIRP limits for general public exposure to time-varying electric fields, as defined in Table 7 of Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields