Walmart - #2403-254 Puyallup, WA

Emergency Responder Communication Enhancement System Radio
Distributed Antenna System

310 31st Ave SE
Puyallup, WA 98374

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building | Planning
Engineering | Public Works
Fire | Traffic

City of Puyallup Fire REVIEWED FOR COMPLIANCE
DDrake
04/21/2025
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THE APPROVED CONSTRUCTION PLANS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

Approval of submitted plans is not an approval of omissions or oversight by this office or noncompliance with any applicable regulations of local government. The contractor is responsible for making sure that the building complies with all applicable building codes and regulations of the local government.

Plan Notes:

Pathway Identification:

Communication and signal circuits will be identified by a distinctive color on covers or doors. "Emergency Communications-Signal Circuit" will be clearly marked on all terminal and junction boxes.

Rooftop Antenna Mast:

Affix a 2" rigid conduit mast, with grounding and weather-head, extending a minimum 4' above the highest point on the roof for a 360° azimuth rotation.

Headend Requirements:

1. 20A 120VAC power hardwired to BBU
2. Dedicated breaker with lockout at panel
3. 6 N/O dry contact fire alarm connections
4. Fire rated plywood board
5. Grounding busbar for 6 AWG grounding conductors

IFC 2021 - required automatic supervisory signals:

- Loss of normal AC power supply.
- System battery charger(s) failure.
- Malfunction of the donor antenna(s).
- Failure of active RF-emitting device(s).
- Low-battery capacity at 70-percent reduction of operating capacity.
- Failure of critical system components.
- Oscillation of active RF-emitting device(s).

Read Permit Conditions prior to calling for inspection.

Designed By:

CLEARLINE ENGINEERING

Lance Stafford
iBwave Designer
FCC General Radio Operator's License:
PG00048282

Phone: 509-714-6711
Email: lstafford@clearline-engineering.com

Building and applicable codes based on IBC 2021 and International Fire Code but deferred to local AHJ.

2020 iBwave DESIGN CERTIFIED LEVEL 3

CLEARLINE ENGINEERING
19219 68th Ave S, Suite M 109
Kent, WA 98032

Revision history

Project name
Walmart #2403-254

Address
310 31st Ave SE
Puyallup WA
98374

Designer name
Clearline Engineering

Design plan

11/14/2024

Line Diagram

Roof

PS-800
800 MHz - SMR
P25
Sector N/A
Nb. of ch.:16

Level 1

IS-50NX-C2-MA

CBL1

Comba CriticalPoint
RX08V3-A3327P0-S1

RPT0

CBL2

CBL27

ANT7
CBL8
Comba 5 dB
SPT5
DC-R05-ON300C(XH)

ANT8
CBL31

ANT6
CBL7
Comba 10dB
SPT4
DC-R10-ON300C(XH)

CBL32

ANT1
CBL3
Comba 8dB
SPT0
DC-R08-ON300C(XH)

CBL33

ANT4
CBL6
Comba 5 dB
SPT3
DC-R05-ON300C(XH)

ANT5
CBL34

CBL29
Comba 20dB
SPT20
DC-R20-ON300C(XH)

CBL28

CBL30

Comba 15dB
SPT21
DC-R15-ON300C(XH)

CBL35

ANT10
CBL10
Comba 5 dB
SPT7
DC-R05-ON300C(XH)

CBL54

ANT11
CBL53

ANT9
CBL9
Comba 13dB
SPT6
DC-R13-ON300C(XH)

CBL58

ANT2
CBL4
Comba 10dB
SPT1
DC-R10-ON300C(XH)

CBL37

ANT12
CBL11
Comba 8dB
SPT8
DC-R08-ON300C(XH)

CBL38

ANT13
CBL12
Comba 5 dB
SPT9
DC-R05-ON300C(XH)

ANT14
CBL13

Comba 20dB
SPT22
DC-R20-ON300C(XH)

CBL56

CBL57

Comba 10dB
SPT25
DC-R10-ON300C(XH)

CBL55

ANT16
CBL15
Comba 5 dB
SPT11
DC-R05-ON300C(XH)

ANT17
CBL41

ANT15
CBL14
Comba 15dB
SPT10
DC-R15-ON300C(XH)

ANT3
CBL5
Comba 13dB
SPT2
DC-R13-ON300C(XH)

ANT18
CBL16
Comba 10dB
SPT12
DC-R10-ON300C(XH)

ANT19
CBL17
Comba 8dB
SPT13
DC-R08-ON300C(XH)

CBL46

ANT20
CBL18
SPT14
PSW-R2N

ANT28
CBL25

SPT23
PSW-R2N

CBL52

CBL50

Comba 10dB
SPT26
DC-R10-ON300C(XH)

CBL51

CBL39

CBL40

CBL45

CBL36

ANT29
CBL26
Comba 8dB
SPT27
DC-R08-ON300C(XH)

CBL47

CBL59

ANT23
CBL21
Comba 5 dB
SPT17
DC-R05-ON300C(XH)

ANT24
CBL42

Comba 7dB
SPT24
DC-R07-ON300C(XH)

CBL48

ANT22
CBL20
Comba 13dB
SPT16
DC-R13-ON300C(XH)

CBL49

ANT21
CBL19
Comba 10dB
SPT15
DC-R10-ON300C(XH)

CBL43

ANT25
CBL22
Comba 8dB
SPT18
DC-R08-ON300C(XH)

CBL44

ANT26
CBL23
Comba 5 dB
SPT19
DC-R05-ON300C(XH)

ANT27
CBL24

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11/14/2024

Comba

CriticalPoint™ Version 3 / Next Generation Public Safety Solution

Public Safety 700/800MHz Class A/B 27/33dBm Bi-directional Amplifier and Battery Backup Unit

Features

Public Safety Standards Compliance

- Compliance with IFC / NFPA / UL2524
- FCC Class A: PX8RX78V2F-A / Class B: PX8RX78V2F-B
- UL 2524 Standard Certified – SGS Certificate No.: TBD
- ISED (IC): TBD
- UL50E Type 4 / NEMA 4 enclosure for BDA / BBU

Bi-directional Amplifier

- Supports P25 P1/P2, digital and conventional analog communications simultaneously
- Built-in cavity filtering to protect the unit from interference from FirstNet and other neighbor bands
- Up to 64 channels per band on single band models; up to 96 channels shared across bands on dual band models (maximum of 64 on individual band) (Class A)
- Channelized Auto Level Control (ALC) supported (Class A)
- Channelized Downlink and Uplink squelch supported (Class A)
- Uplink PA shutdown during no traffic periods to minimize noise being introduced to the network (Class A)
- Built-in mandatory isolation test to prevent BDA oscillation
- Auto shutdown with alarm upon oscillation detection
- Expandable to 700/800MHz V3/NG fiber system
- Web based GUI for intelligent configuration, SNMP supported
- Integrated Battery Charger Unit, Comba BBU V2 / BBU V3/NG supported
- License based switching between Class A or Class B, Single band or Dual band, 0.5W or 2W configurations
- NFPA / IFC / UL 2524 compliant dry contact alarms, with LED displays
- External Comba Annunciator Panel supported

Battery Backup Unit

- Optional dedicated Battery Backup Solution for BDA V3/NG platform
- Supports Lithium Iron Phosphate (LiFePO4) batteries
- Supports 12 hours backup power with 30AH battery option
- Supports 24 hours backup power with 60AH battery option
- Provides connections for EPO (Emergency Power Off) switch
- Provides AC convenience outlet inside BBU

DS-Control:0-0-3 / 0123 Preliminary

Comba

Specifications - BDA

BDA		700MHz	800MHz
Passband (Downlink / Uplink)	MHz	Configuration S0 – 700MHz: 758-775 / 788 – 805, 800MHz: 851-861 / 806-816 Configuration S1 – 700MHz: 769-775 / 799 – 805, 800MHz: 851-851 / 806-816 Configuration C0 – 700MHz: 768-776 / 798 – 806, 800MHz: 851-869 / 806-824	
Total Output Power, Uplink	dBm	27	
Total Output Power, Downlink	dBm	27 / 33	27 / 33
Maximum System Gain (Uplink / Downlink)	dB	90	90
Gain Adjustment Range (1dB step) *	dB	60-90 / 35-65 / 10-40 (Under different gain limit modes)	60-90 / 35-65 / 10-40 (Under different gain limit modes)
Pass Band Ripple, p-p (Uplink / Downlink)	dB	S0: ≤3, S1: ≤7	S0: ≤3, S1: ≤7
Uplink Noise Figure	dB	<5 (90dB Uplink Gain), <9 (67dB Uplink Gain)	
Intermodulation	dBm	≤ -13	≤ -13
Spurious	dBm	FCC Compliance	FCC Compliance
Maximum RF Input Level without Damage	dBm	0	0
Maximum RF Input Level without Overdrive	dBm	-10	-10
Input VSWR		≤ 2	≤ 2
Impedance	Ω	50	50

Class A / Class B Specialized Filtering			
Number of Filters Downlink			64 per band
Number of Filter Uplink			96 Shared between 700/800MHz
Filter Bandwidth		KHz	12.5/25/75 (Class A) 75/100/150 (Class B Specialized Filtering) Additional 10MHz (LTE) for FirstNet
Filter	Bandwidth (kHz)	Delay(μs)	Out-of-Band Suppression
High rejection Filter Set	12.5	≤48	≥ 60dBc @ filter edge + 30KHz
	25	≤30	≥ 60dBc @ filter edge + 50KHz
	75	≤18	≥ 60dBc @ filter edge + 130KHz
	75 LD	≤15	≥ 60dBc @ filter edge + 200KHz
Low Delay Filter Set	12.5	≤30	≥ 60dBc @ filter edge + 65KHz
	25	≤27	≥ 60dBc @ filter edge + 75KHz
	37.5	≤26	≥ 60dBc @ filter edge + 75KHz
	50	≤26	≥ 60dBc @ filter edge + 100KHz
	75	≤15	≥ 60dBc @ filter edge + 200KHz
	100	≤14	≥ 60dBc @ filter edge + 200KHz
	150	≤13	≥ 60dBc @ filter edge + 205KHz

*Actual delay number is various according to version

Class B Wide Band		
Filter Bandwidth	MHz	0.6-10
Number of Filters		3
System Group Delay	μsec	≤ 14
Out-of-Band Suppression	dBc	≥ 60 @ filter edge + 1MHz

DS-Control:0-0-3 / 0123 Preliminary

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Mechanical - BDA

BDA				
Dimensions, H x W x D		mm / in	330 x 490 x 199 / 13.0 x 19.3 x 7.8	
Weight (without bracket)		kg / lbs	25 / 55.1	
Power Supply Input		VAC	100-240V / 50-60Hz / 0-4.5A	
Power Supply Output		VDC	40-60V (Typical: 53.5V) / 0-7.5A	
Maximum Charging Current		A	5	
Power Consumption		W	27 dBm	33 dBm
	Single Band		<75	<90
	Dual Band		<85	<100
Enclosure Cooling			Convection	
RF Connectors * 2			N-Female (MT, DT), SMA-Female (FOU DL, FOU UL)	
Test Port * 2			SMA-Female (DT-Test, MT-Test)	
LED * 10			Dry Contact Alarm LED 1 - 8, ALM/RUN	
Communication port *2			RJ45 (LAN, OMT)	
Reserved knock outs			3/4-inch hole x 1, 1/2-inch hole x 3, 1-inch hole x2	
Operating Temperature		ºC	-40 to +55	
Operating Humidity			≤ 95%	
Environmental Class			UL50E Type 4 / NEMA 4	
MTBF		Hr	100,000	

Battery Backup Unit

BBU				
Dimensions, H x W x D		mm / in	605 x 500 x 272.9 / 23.8 x 19.7 x 10.7	
Weight (without battery)		Kg / lbs	26 / 57.3	
LiFePO4 Output		VDC	Per Battery	
LiFePO4 Battery Communication Port			Serial port (RS485)	
Knockouts			3/4-inch hole x 4, 1/2-inch hole x 6	
Operating Temperature		ºF (ºC)	32 to 104 (0 to 40)	
Operating Humidity			≤ 95%	
Enclosure Environmental Class			UL50E Type 4 / NEMA 4	

Battery				
Battery Type		(Lithium Iron Phosphate) LiFePO4		
System Required Quantity	pcs	1	1	1
Amp/Hour (Discharge at XC)		30AH	60AH	100AH
Nominal Voltage		51.2V	51.2V	51.2V
Battery Weight	lb(kg)	52.9 (24)	79.8 (36.2)	123.5 (56)
Battery Electrolyte Counts		0.456 Gallons / 4.6 lbs	0.913 Gallons / 9.1 lbs	1.758 Gallons / 17.6 lbs

Note: Gain adjusts down to 10dB total gain but is no longer FCC compliant for NF at that level
Note: Typical specifications at room temperature

DS-Control:0-0-3 / 0123 Preliminary

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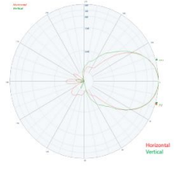
19219 68th Ave S, Suite M 109
Kent, WA 98032

AD-PA-617-960-D

Low-Band High Isolation Donor Antenna



Electronic Specifications

Frequency Range	617 - 698 MHz	698 - 806 MHz	806 - 894 MHz	880 - 960 MHz
Gain	15.1 dBi	15.5 dBi	16.6 dBi	16.8 dBi
Horizontal Beamwidth	32.1°	29°	25.8°	24.3°
Vertical Beamwidth	31.6°	29.7°	26.2°	24.1°
Front-to-Back Ratio	31.0 dB	31.8 dB	30.6 dB	29.4 dB
VSWR	1.5 : 1			
Polarization	Vertical			
Intermodulation IM3	-153 dBc (2 x 43 dBm)			
Impedance	50 Ω			
Power Rating	100 W (Max)			

Mechanical Specifications

Dimension (W x D x H)	27.6 x 27.6 x 5.4 in (700 x 700 x 137 mm)
Weight (w/out Mounting Kit)	19.8 lbs (9.0 kg)
RF Connector	7-16 DIN Female
Wind Load @ 100 MPH	Front 697N, 135N, Rear 697N
Survival Wind Speed	150 MPH (Max)
Radome (Color)	ASA (Gray)

Web www.adrftech.com
Tel +1 818.840.8131 **Fax** +1 818.840.8138
Technical/Customer Support +1 800.313.9345
3116 West Vanowen Street Burbank, CA 91505

Economy Multiband Omnidirectional Antenna

Model Numbers

- Ant-O\698-2.7k/N(f) Econ (CS03-019-429)
- Ant-O\698-2.7k/4.3-10 Econ (CS03-019-429-02)

Frequency Range

- 698-960/1710-2700

Features & Benefits

- Low Cost
- Multiband Design
- Covers CDMA, GSM, DCS, 3G/UMTS, LTE
- In-building coverage

Multiband Omnidirectional Antenna

Electrical Specifications

Frequency Range	698-960/1710-2700
Polarization	Vertical
Gain (dBi)	1±0.5/5±1.0
Half-power Beam Width	Hor: 360/ Ver: 60/30
Impedance (Ω)	50
VSWR	≤2.0/≤1.5
Maximum Input Power (W)	50

Mechanical Specifications

Connector	N (f) or 4.3-10 (f)
Size (in)	7.3x3.4
Weight (lb)	0.5
Wind Loading Area (m2)	≤0.2
Rated Wind Velocity (mph)	82
Reflector Material	Aluminum
Radome Material	ABS
Radome Color	White
Operating Temperature (F/C)	-40~131 (-40~55)

Specifications subject to change without notice.

WESTELL

Comba
keeps you connected

Wideband Directional Coupler

DC-Rxx-ON300C(XH)

Low PIM(-153dBc), 698-2700MHz, N-Female, 300W

- Wideband design covering 698-2700MHz
- Available 5, 6, 7, 8, 10, 13, 15, 20, 30 & 40dB values
- Suitable for indoor/outdoor environment
- High Reliability and Low Insertion Loss

Electrical Specification

Product Model	DC-R05-ON300C (XH)	DC-R06-ON300C (XH)	DC-R07-ON300C (XH)	DC-R08-ON300C (XH)	DC-R10-ON300C (XH)	DC-R13-ON300C (XH)	DC-R15-ON300C (XH)	DC-R20-ON300C (XH)	DC-R30-ON300C (XH)	DC-R40-ON300C (XH)
Frequency (MHz)	698-2700									
Coupling (dB)	5.0	6.0	7.0	8.0	10.0	13.0	15.0	20.0	30.0	40.0
Coupling Tolerance (dB)	± 0.8	± 0.8	± 0.8	± 0.8	± 0.8	± 1.0	± 1.0	± 1.2	± 1.5	± 1.5
Loss (dB)	≤ 2.1	≤ 1.7	≤ 1.4	≤ 1.2	≤ 0.7	≤ 0.5	≤ 0.4	≤ 0.3	≤ 0.2	≤ 0.2
Isolation (dB)	≥ 25	≥ 26	≥ 27	≥ 28	≥ 30	≥ 33	≥ 35	≥ 40	≥ 45	≥ 55
VSWR @ input port	≤ 1.25									
PIM (dBc)	<-153 @ 2 x 43dBm									
Average Power, max (W)	300									
Peak Power, max (W)	1000									
Impedance (ohm)	50									

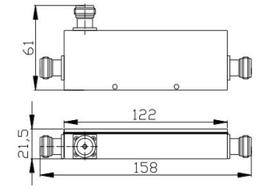
Mechanical Specification

Dimension (in/mm)	6.2x2.4x0.8 / 158x61x21.5
Weight (lb/kg)	0.75 / 0.34
Connector	N-Female

Environment & Compliance

Application	Outdoor / Indoor
Operating Temperature	-40ºC to +80ºC
Environment	IP65
Relative Humidity	Up to 95%
RoHS	Compliant

Outline Drawing



DS-Control
1-0-0/ 0316

Comba Telecom Inc. 235 Charcot Avenue, San Jose, CA 95131. http://www.combausa.com/
Tel: +1 866 802 7961, combausa@comba-telecom.com, Fax: +1 408 526 0181

Revision history

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Designer name
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Design plan

11/14/2024

AirCell®

Connectors & Tools

TRILOGY Communications

Connector Specification

NMP01250 AirCell® 50 Ohm Connectors

For use with AirCell® 1/2" 50 Ohm Plenum, Conduit and In-Conduit Cables

Description	NMP01250
General Specifications	
Interface	N Male
Body Style	Straight
Electrical Specifications	
Impedance, Ohms	50
Operating Frequency Band	0.3 MHz to 6 GHz
Dielectric Withstand Voltage	2 kV DC
3rd Order IMD	-140 dBc minimum, -150 typical
3rd Order IMD, Test Method	2 x 20 Watt carriers
Average Power	0.6 kW
Peak Power, maximum	10 kW
Insertion Loss, typical	0.05
Shielding Effectiveness	-130 dB
Return Loss (VSWR)	
DC to 1 GHz	30 dB (1.06)
1 GHz to 2 GHz	31 dB (1.06)
2 GHz to 3 GHz	32 dB (1.06)
3 GHz to 4 GHz	25 dB (1.12)
4 GHz to 5 GHz	20 dB (1.22)
5 GHz to 6 GHz	15 dB (1.43)
Mechanical Specifications	
Outer Contact Plating	Silver
Inner Contact Plating	Silver
Interface Durability	500 cycles
Interface Durability Test Method	IEC 16916
Minimum Connector Pull-off Force	200 lbs
Environmental Specifications	
Operating Temperature, °F (°C)	-40° to 158° (-40° to 70°)
Storage Temperature, °F (°C)	-40° to 158° (-40° to 70°)
Installation Temperature, °F (°C)	23° to 122° (-5° to 50°)
Immersion Test Method	IEC60529:2001 IP68
Corrosion Test Method	MIL-STD-1344A
Thermal Shock Test Method	MIL-STD-202F
Vibration Test Method	MIL-STD-202F
Regulatory Compliance/Certifications	
RoHS 2011/65/EU Compliant	
TL 9000 H-V - All Cables designed and manufactured under this quality management system	

Notice: Trilogy disclaims any liability or responsibility for the results of improper or unsafe installation, inspection, maintenance or removal practices

AirCell®

Plenum Cable

TRILOGY Communications

Product Specification

50 Ohm Plenum Cable, 1/2" - APC012J50

Description	Product Number
Plenum Rated Cable	
1/2", Corrugated (6 GHz) Jacketed CMP, Conforms to NFPA-262, UL-444, Canadian CSA 22.2#1-10	APC012J50
Physical Dimensions	
Center Diameter, in (mm)	0.188 (4.78)
Diameter Over Outer Conductor, in (mm)	0.550 (13.97)
Maximum Diameter Over Jacket, in (mm)	0.63 (16.00)
Center Conductor	Copper-Clad Aluminum
Outer Conductor	Corrugated Aluminum
Jacket Color	Off White
Electrical Characteristics	
Maximum Frequency, GHz	10
Peak Power Rating, KW	35
DC Resistance, Ohms/1,000 ft (1,000 m)	
Center	0.46 (1.51)
Outer	0.51 (1.67)
DC Breakdown, kV	2
Capacitance, pF/ft (m)	22 (72.12)
Inductance, mH/ft (m)	0.057 (0.187)
Jacket Spark, kV RMS	8
VSWR min. (dB)	1.25 (19.0)
VSWR typical, 700-960 / 1700-2200 MHz (dB)	1.13 (24.3)
Impedance, Ohms	50 ± 2
Velocity of Propagation	94%
Mechanical Characteristics	
Minimum Bend Radius, in (mm) - Single	2 (50.8)
Minimum Bend Radius, in (mm) - Multiple	5 (127)
Cable Weight, lb/ft (kg/m)	0.11 (0.16)
Bending Moment, ft lb (N m)	1 (1.4)
Tensile Strength, lb (kg)	250 (114)
Flat Plate Crush, lb/in (kg/mm)	78 (1.39)
Number of Bends, minimum	15
Recommended Install Temp., °F (°C)	+5° to 104° (-15° to 40°)
Recommended Storage Temp., °F (°C)	+5° to 104° (-15° to 40°)
Recommended Operating Temp., °F (°C)	+5° to 104° (-15° to 40°)
Standard Conditions	
For Attenuation: VSWR 1.0, Ambient Temperature 20°C (68°F)	
For Average Power: VSWR 1.0, Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), No Solar Loading	
Regulatory Compliance/Certifications	
RoHS 2011/65/EU Compliant	
TL 9000 H-V - All Cables designed and manufactured under this quality management system	

Attenuation and Average Power

Frequency, MHz	Attenuation dB/100 ft	Attenuation dB/100 m	Average Power kW
100	0.70	2.30	5.98
450	1.50	4.92	3.85
500	1.59	5.22	3.75
600	1.75	5.74	3.58
700	1.87	6.14	3.47
800	1.96	6.43	3.37
900	2.14	7.02	3.29
960	2.23	7.32	3.24
1000	2.30	7.55	3.21
1500	2.85	9.35	3.08
1700	3.05	10.01	2.99
1800	3.14	10.30	2.93
1950	3.24	10.63	2.85
2000	3.33	10.93	2.84
2100	3.42	11.22	2.82
2200	3.50	11.48	2.80
2300	3.59	11.78	2.78
2400	3.67	12.04	2.77
2500	3.75	12.30	2.75
2700	3.90	12.80	2.72
3000	4.14	13.58	2.69
3300	4.33	14.21	2.67
3400	4.45	14.60	2.63
4000	4.91	16.11	2.55
4900	5.61	18.41	2.39
5000	5.69	18.67	2.49
5200	5.92	19.42	2.48
5300	6.03	19.78	2.47
5600	6.37	20.90	2.45
5825	6.63	22.41	2.45

Trilogy AirCell® Cable

Proud to be 100% Made in the USA

AirCell®

In-Conduit Cable

TRILOGY Communications

Product Specification

50 Ohm In-Conduit Cable, 1/2" - AC012J50

Description	Product Number
Standard Cable	
1/2", Corrugated, Black Polyethylene Jacket	AC012J50
Physical Dimensions	
Center Diameter, in (mm)	0.188 (4.78)
Diameter Over Outer Conductor, in (mm)	0.550 (13.97)
Maximum Diameter Over Jacket, in (mm)	0.63 (16.00)
Center Conductor	Copper-Clad Aluminum
Outer Conductor	Corrugated Aluminum
Jacket Color	Black
Electrical Characteristics	
Maximum Frequency, GHz	10
Peak Power Rating, KW	35
DC Resistance, Ohms/1,000 ft (1,000 m)	
Center	0.46 (1.51)
Outer	0.51 (1.67)
DC Breakdown, kV	2
Capacitance, pF/ft (m)	22 (72.12)
Inductance, mH/ft (m)	0.057 (0.187)
Jacket Spark, kV RMS	8
VSWR min. (dB)	1.25 (19.0)
VSWR typical, 700-960 / 1700-2200 MHz (dB)	1.13 (24.3)
Impedance, Ohms	50 ± 2
Velocity of Propagation	94%
Mechanical Characteristics	
Minimum Bend Radius, in (mm) - Single	2 (50.8)
Minimum Bend Radius, in (mm) - Multiple	5 (127)
Cable Weight, lb/ft (kg/m)	0.11 (0.16)
Bending Moment, ft lb (N m)	1 (1.4)
Tensile Strength, lb (kg)	250 (114)
Flat Plate Crush, lb/in (kg/mm)	78 (1.39)
Number of Bends, minimum	15
Recommended Install Temp., °F (°C)	-10° to 170° (-23° to 77°)
Recommended Storage Temp., °F (°C)	-40° to 170° (-40° to 77°)
Recommended Operating Temp., °F (°C)	-40° to 170° (-40° to 77°)
Standard Conditions	
For Attenuation: VSWR 1.0, Ambient Temperature 20°C (68°F)	
For Average Power: VSWR 1.0, Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), No Solar Loading	
Regulatory Compliance/Certifications	
RoHS 2011/65/EU Compliant	
TL 9000 H-V - All Cables designed and manufactured under this quality management system	

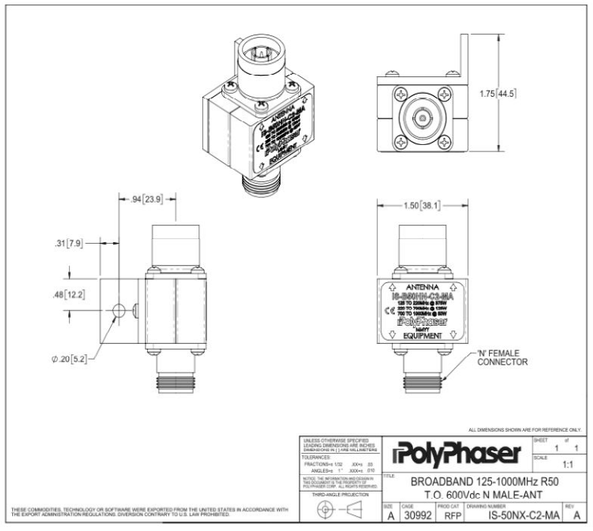
Attenuation and Average Power

Frequency, MHz	Attenuation dB/100 ft	Attenuation dB/100 m	Average Power kW
100	0.70	2.30	3.98
450	1.50	4.92	1.85
500	1.59	5.22	1.75
600	1.75	5.74	1.58
700	1.87	6.14	1.47
800	1.96	6.43	1.37
900	2.14	7.02	1.29
960	2.23	7.32	1.24
1000	2.30	7.55	1.21
1500	2.85	9.35	0.98
1700	3.05	10.01	0.98
1800	3.14	10.30	0.93
1950	3.24	10.63	0.85
2000	3.33	10.93	0.84
2100	3.42	11.22	0.82
2200	3.50	11.48	0.80
2300	3.59	11.78	0.78
2400	3.67	12.04	0.77
2500	3.75	12.30	0.75
2700	3.90	12.80	0.72
3000	4.14	13.58	0.68
3300	4.33	14.21	0.61
3400	4.45	14.60	0.60
4000	4.91	16.11	0.55
4900	5.61	18.41	0.50
5000	5.69	18.67	0.49
5200	5.92	19.42	0.48
5300	6.03	19.78	0.47
5600	6.37	20.90	0.46
5825	6.83	22.41	0.45

Trilogy AirCell® Cable

Proud to be 100% Made in the USA

Type N M/F Coaxial RF Surge Protector, 125MHz - 1GHz, DC Block, 375W, 220uJ, 50kA, Blocking Cap, Bracket Up, Hole Mount
IS-50NX-C2-MA **CAD Drawing**



CLEARLINE ENGINEERING

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

19219 68th Ave S, Suite M 109
Kent, WA 98032

Revision history

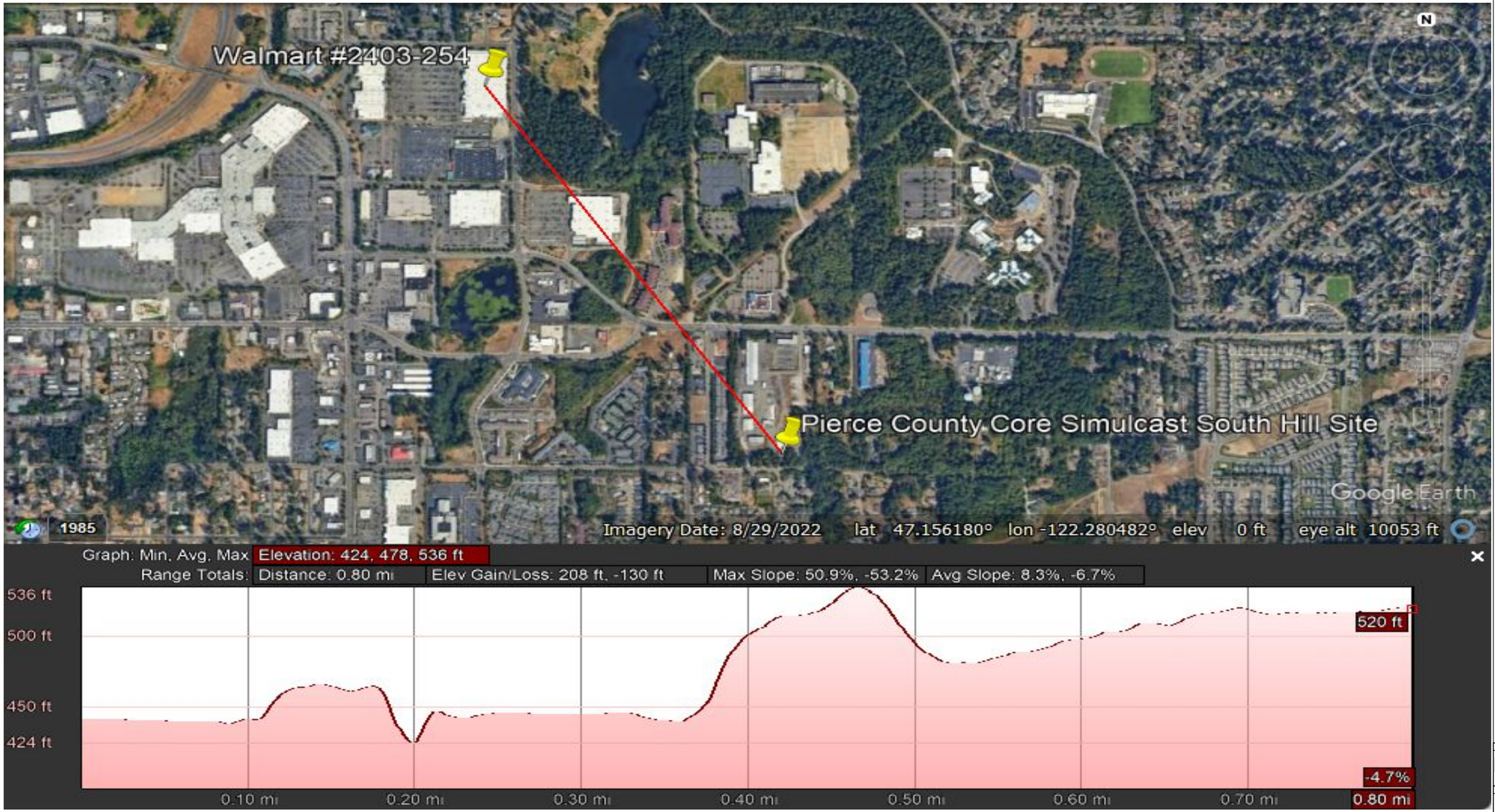
Project name
Walmart #2403-254

Address
310 31st Ave SE
Puyallup WA
98374

Designer name
Clearline Engineering

Design plan

11/14/2024



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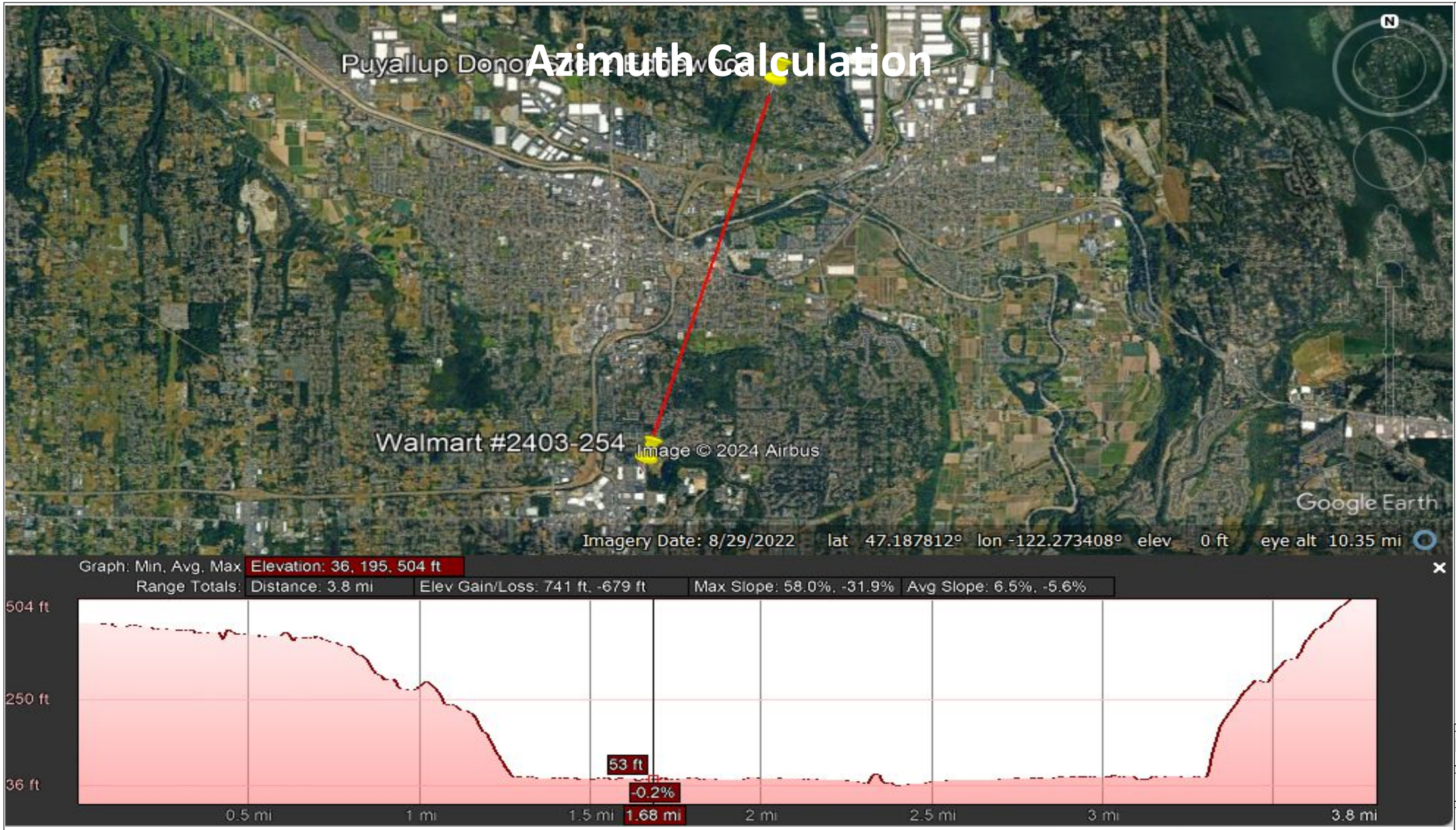
Azimuth Calculation



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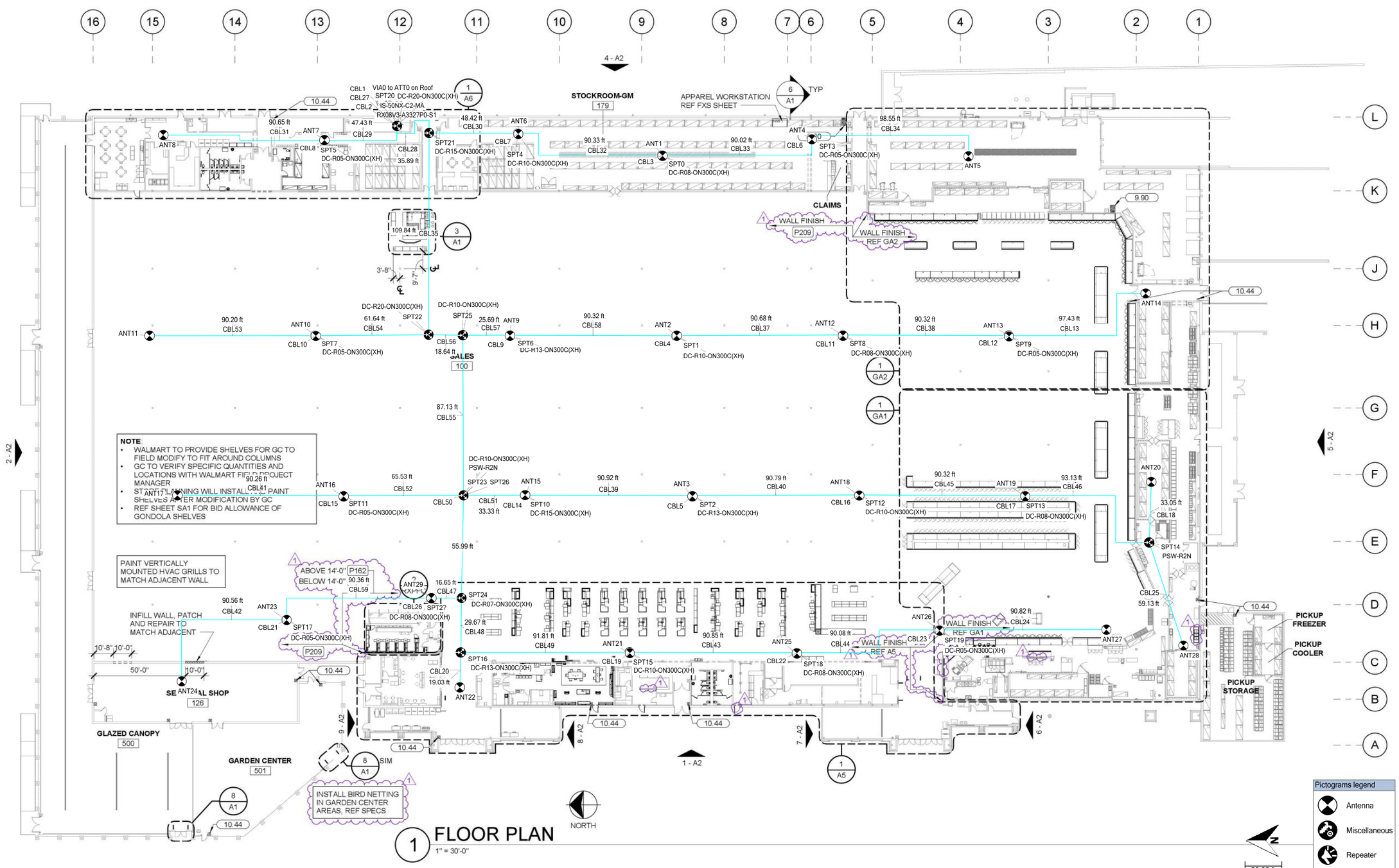

1 FLOOR PLAN
1" = 30'-0"

CLEARLINE ENGINEERING

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
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Fire	Traffic

19219 68th Ave S, Suite M 109
Kent, WA 98032

Pictograms legend
- Antenna
- Miscellaneous
- Repeater
- Splitter
- Via

Cables legend
- AP6012J50

Revision history

Project name
Walmart #2403-254

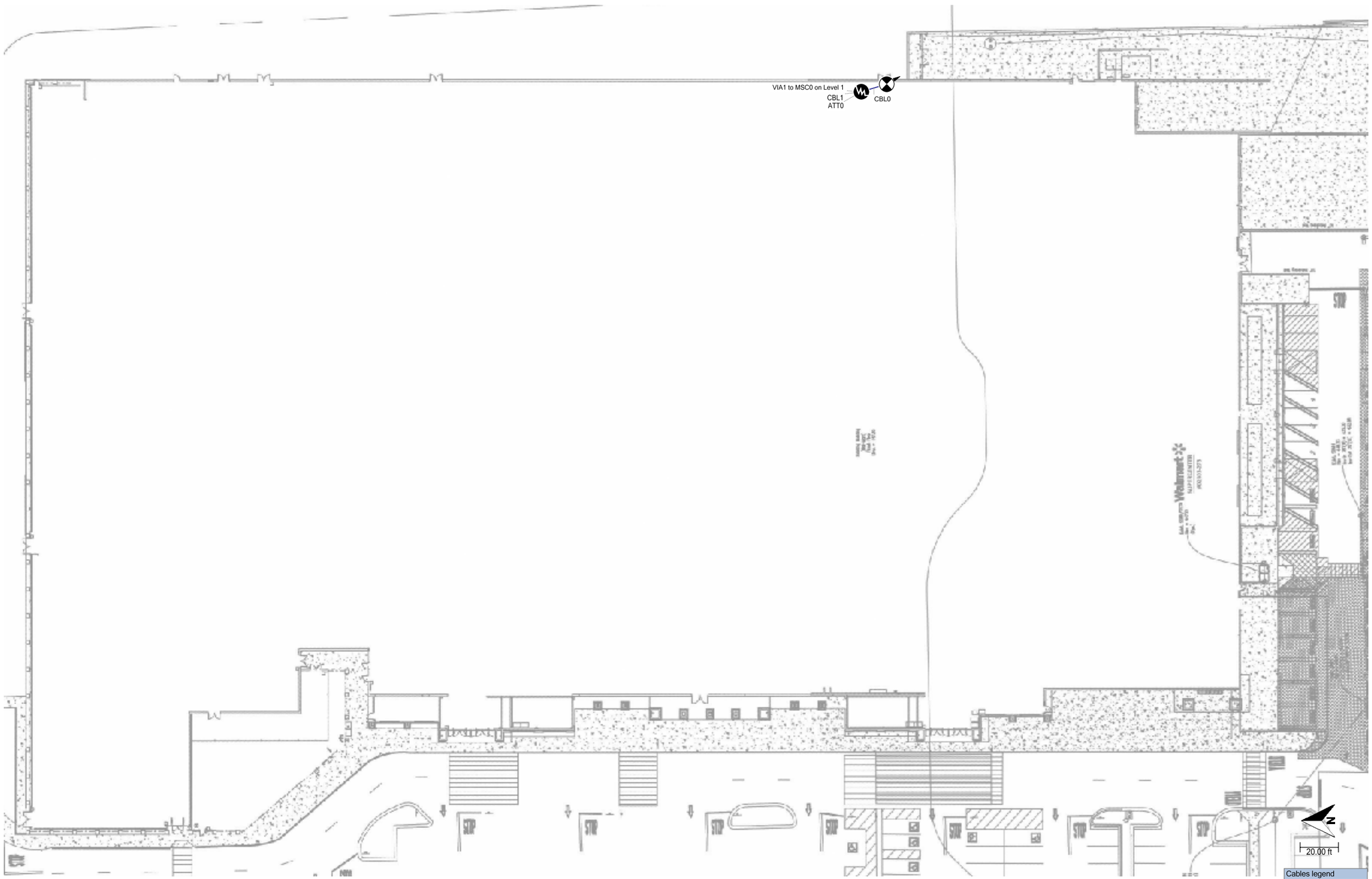
Address
310 31st Ave SE
Puyallup WA
98374

Designer name
Clearline Engineering

Level 1

Architectural Plan Reference:
Proto Cycle 3/29/24

11/14/2024



Cables legend
- AP6012J50
- LDF4-50A

Pictograms legend
- Antenna
- Attenuator
- Via

CLEARLINE ENGINEERING

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
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Address
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Designer name
Clearline Engineering

Roof

Architectural Plan Reference:
Proto Cycle 3/29/24

11/14/2024