

Lumen Fiber Services

Pre-Installation Site Readiness

What is this Pre-Installation Site Readiness Guide and for whom is it intended?

This document is intended to address common requirements that must be satisfied by the property owner, business owner or customer technical staff to help ensure a smooth and efficient physical installation of fiber service. Keep in mind these are general requirements and specific requirements for your location are determined by conducting a site survey. Some items may require you to bring in a contractor to meet the requirements. Other items, Lumen may provide, potentially at an additional cost.

Electrical Power

<input checked="" type="checkbox"/> Existing	<input type="checkbox"/> N/A (OWS NAC)	<input type="checkbox"/> Customer Action Required
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A permanent, grounded, 3-prong electrical outlet is required within 6 feet of equipment location. Note: Extension cords do not meet this requirement.

We recommend a standard duplex outlet, called a NEMA 5-15R.

Lumen electronics need to be powered by 120 VAC (15-30 Amp) dedicated circuit.

Circuit breakers must be identified/labeled at the AC service panel (breaker box) provided for the system.

It is recommended that the circuit breakers be covered or locked to prevent accidentally being tripped.

Each outlet must be wired to an individual circuit breaker. Each circuit must have individual hot, neutral, and ground wires. Each ground wire must be terminated on the Isolated Ground Bus located in the AC panel supplied for the system. Splices or daisy chaining not accepted.

Grounding

<input checked="" type="checkbox"/> Existing	<input type="checkbox"/> Customer Action Required
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A ground bar or minimum #6 AWG copper ground wire from an approved grounding source. Common ground must be 25 ohm or less. This is separate from the outlet grounding and is a safety requirement.

Equipment Placement (Spaces & Location)

<input checked="" type="checkbox"/> Existing	<input type="checkbox"/> Customer Action Required	<input type="checkbox"/> Lumen will provide
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Your site's Telco Room where Lumen will deliver service must be easily accessible with adequate space and have a 4 X 4-foot (3/4 inch thick) fire-rated

Piece of plywood securely mounted to the Telco Room's wall or a data equipment rack with four consecutive rack units.

Lumen Fiber Services

Pre-Installation Site Readiness

Equipment Environment

<input checked="" type="checkbox"/>	Room/Area/Closet Meets Environmental Conditions	<input type="checkbox"/>	Customer Action Required
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The Lumen equipment requires a clean, well lit, dust and vibration free environment that is controlled to temperatures of 55 to 85 degrees Fahrenheit and humidity of 70% or less.

Entrance Facilities

<input checked="" type="checkbox"/>	Existing	<input type="checkbox"/>	Customer Action Required	<input type="checkbox"/>	*Lumen may assist
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Conduit is a plastic pipe which will run from the edge of your business property line to the negotiated (between building owner and Lumen) equipment location inside your building (“demarcation point”.)

*Lumen may assist in providing entrance facilities on qualified opportunities on a per-site basis within the guidelines. Check with your sales representative to identify options that may benefit your business.

Note: If your business is located in a building that is not owned by your company, then Lumen will need the name and contact information for your building owner/manager to attain the necessary agreement to meet this requirement.

Clear Path

<input checked="" type="checkbox"/>	Existing	<input type="checkbox"/>	Customer Action Required	<input type="checkbox"/>	Lumen will provide
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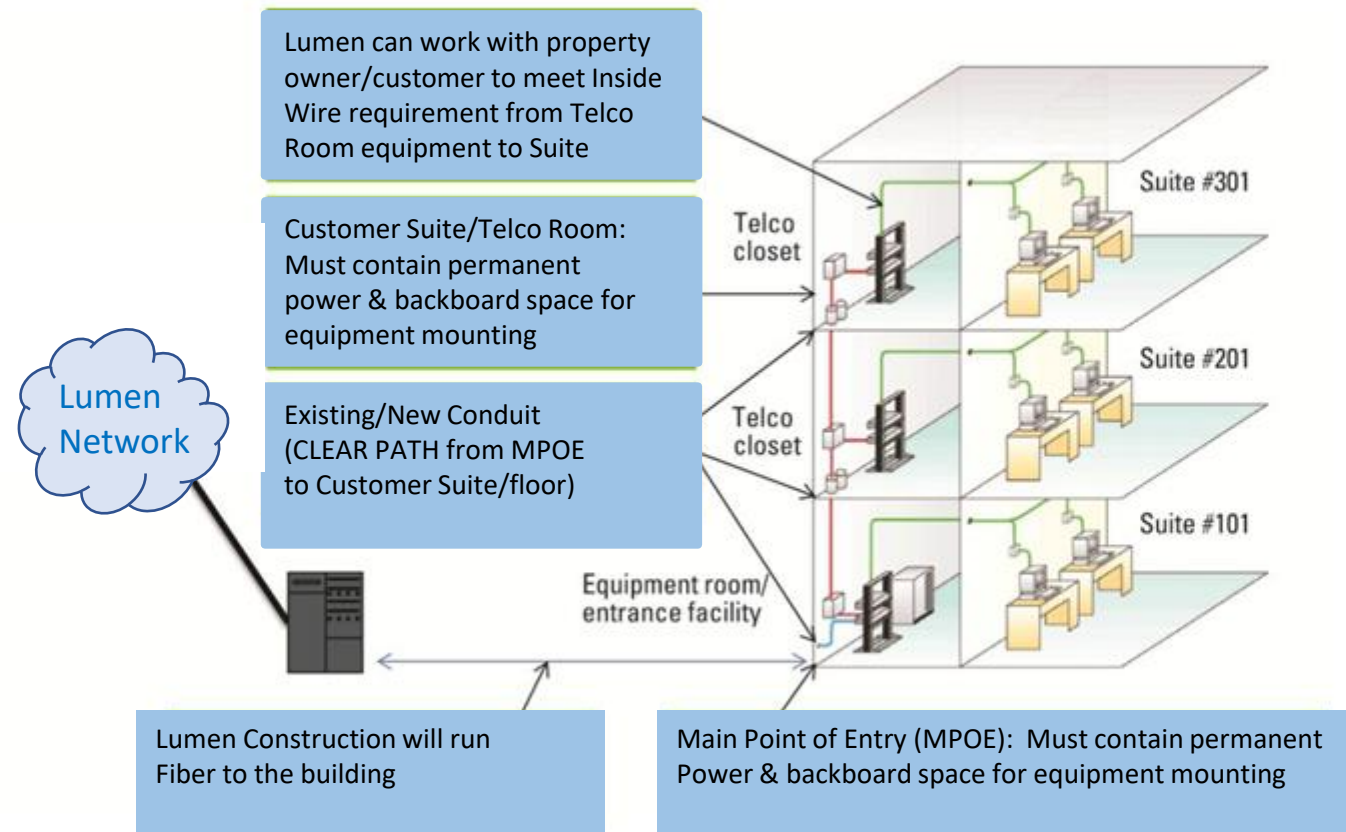
A clear path, as shown in the below visual diagram, from the building’s Main Point of Entry (MPOE) to your suite/floor’s Telco Room is required. A clear path is typically established with conduit, to include pull tape, which allows for the cable extensions (Cat5e or above/fiber) within the building.

We may or may not be able to use the existing conduit for various reasons such as full capacity or private ownership. Please address this with your building manager to ensure a clear path is available. Lumen may assist in providing clear path on qualified opportunities on a per-site basis within the guidelines.

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Visual Diagram of Installation



The following slides depict a visual diagram specific to this customer's site



Customer: HARRIS Corporation - GCSD [1-16MM6]
 Suite/Floor: SUITE 103 / 1ST FLOOR
 Street Address: 4280 MILLER TRUNK RD EVELETH MINNESOTA
 55734

Lumen Reference Only:
 DSR: N36121815
 FW: P.267636
 SSTID: NA

ARMOR: 0925-2498999
 WFMT: A.3041767
 GLM: PL0012665348

LUMEN REQUIREMENTS:

- SPLICE COUNTS LEV1, 19-24 FROM HH N AIRPORT RD TO MPOP.
- LEAVE A LOOP OF 50FT FOR 72CT FIBER AT HH N AIRPORT RD.
- BORE & PLACE 800FT OF NEW 1.25IN CONDUIT & PULL NEW 72CT FIBER FROM HH N AIRPORT RD (00+00) TO NEW HH-4280 MILLER TRUNK RD (08+00).
- PLACE A NEW HH-4280 MILLER TRUNK RD (08+00) & LEAVE A LOOP OF 100FT FOR 72CT FIBER.
- BORE & PLACE 145FT OF NEW 1.25IN CONDUIT & PULL NEW 72CT FIBER FROM NEW HH-4280 MILLER TRUNK RD (08+00) TO HH-4280 MILLER TRUNK RD-2 (09+45).
- PLACE A HH-4280 MILLER TRUNK RD-2 (09+45), LEAVE A LOOP OF 50FT FOR 72CT & 50FT FOR 24CT FIBER.
- BORE & PLACE 850FT OF NEW 1.25IN CONDUIT & PULL NEW 24CT FIBER FROM HH-4280 MILLER TRUNK RD-2 (09+45) TO CUST HH (17+95).
- PULL 175FT OF NEW 24CT FIBER THROUGH EX. CBO FROM CUST HH (17+95) TO MPOP ENTRY (19+70).
- FROM MPOP ENTRY (17+95) PLACE 5FT OF NEW 24CT FIBER TOWARDS NEW FDP (18+00), LEAVE A LOOP OF 50FT & TERMINATE THE FIBER.
- PLACE A NEW FDP & CIENA 3916 DEVICE ON THE NORTH-WEST WALL BACKBOARD OF MPOP ROOM.
- UTILIZE COUNTS LEV1, 19-20 TO TURN UP 1G UPLINK OF NEW CIENA 3916 DEVICE.

TOTAL FIBER FOOTAGE: 2275FT
 72CT FIBER: 1145FT
 24CT FIBER: 1130FT
 1.25IN CONDUIT: 1825FT

CUSTOMER REQUIREMENTS: RETAIL

- NO CLEAR PATH REQUIRED AS FDP, CIENA 3916 & CUSTOMER EQUIPMENTS WILL BE IN THE SAME ROOM.

	Yes	No	
BEA		X	
BE		X	
Multitenant		X	
			Municipality
Pole Memo		X	
TCP Permit		NA	
Placing Permit	X		Fayal Township - St. Louis County
Additional Permit		X	
Additional Permit		X	

Lumen Engineer: SCOTT KUNZMAN
Email: Scott.Kunzman@lumen.com
Phone: 763-326-2975

LCON: Al Chamberlain
Mobile: 321-309-5060
Desk: NA
Email: Achamberlain_FTIOrders@L3Harris.com
Property Management Company: NA
Contact Number: NA
Demarcation Room Access Availability Notes: NA

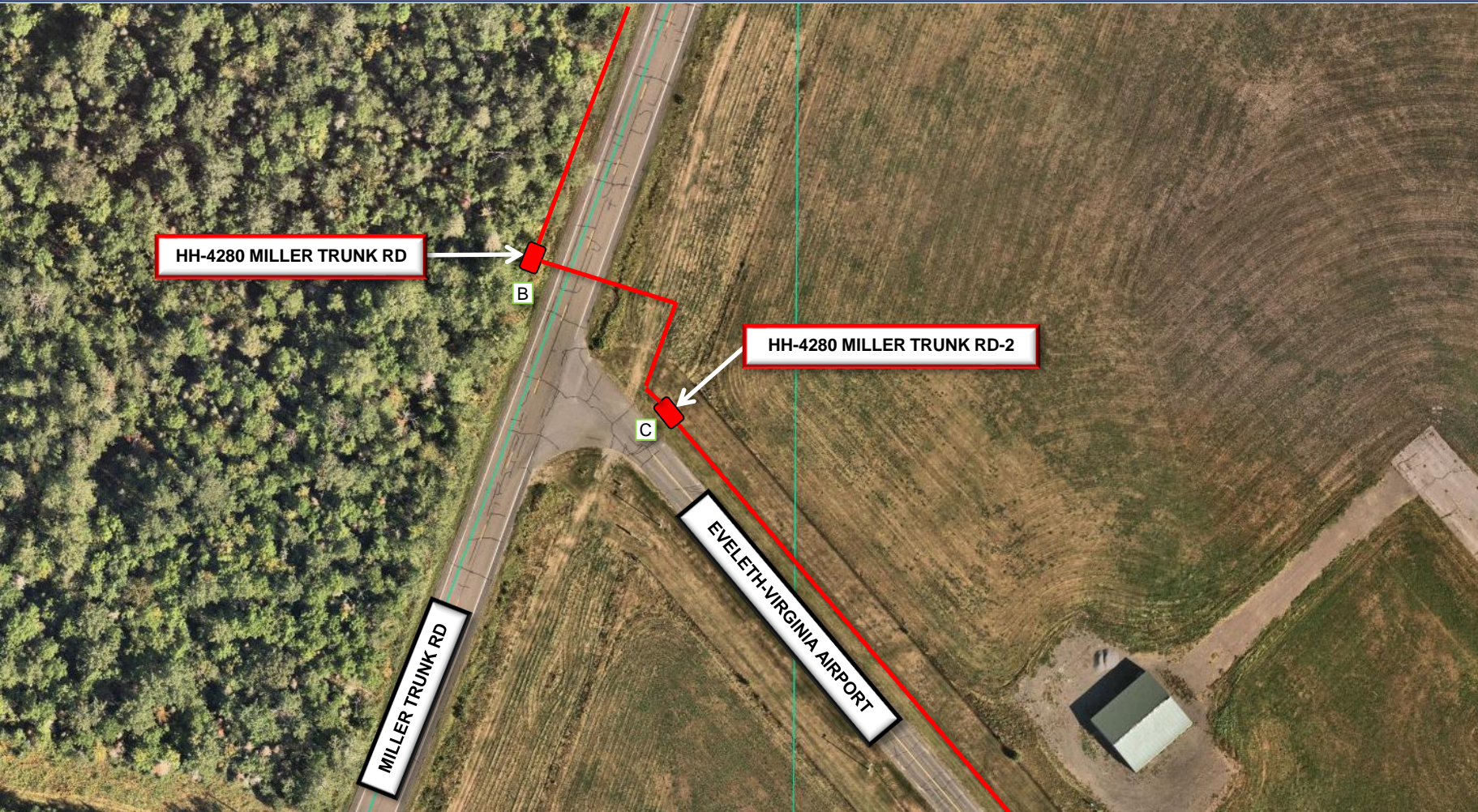
Met and confirmed path with:
Name: Alyssa Hauer
Email: alyssa.hauer@l3harris.com
Date of Survey: 11/06/2024



A TO B	BORE & PL. 1.25" CONDUIT W/72CT	800FT
B TO C	BORE & PL. 1.25" CONDUIT W/72CT	145FT
C TO D	BORE & PL. 1.25" CONDUIT W/24CT	840FT
D TO E	PLACE 24CT IN EX. CBO	175FT

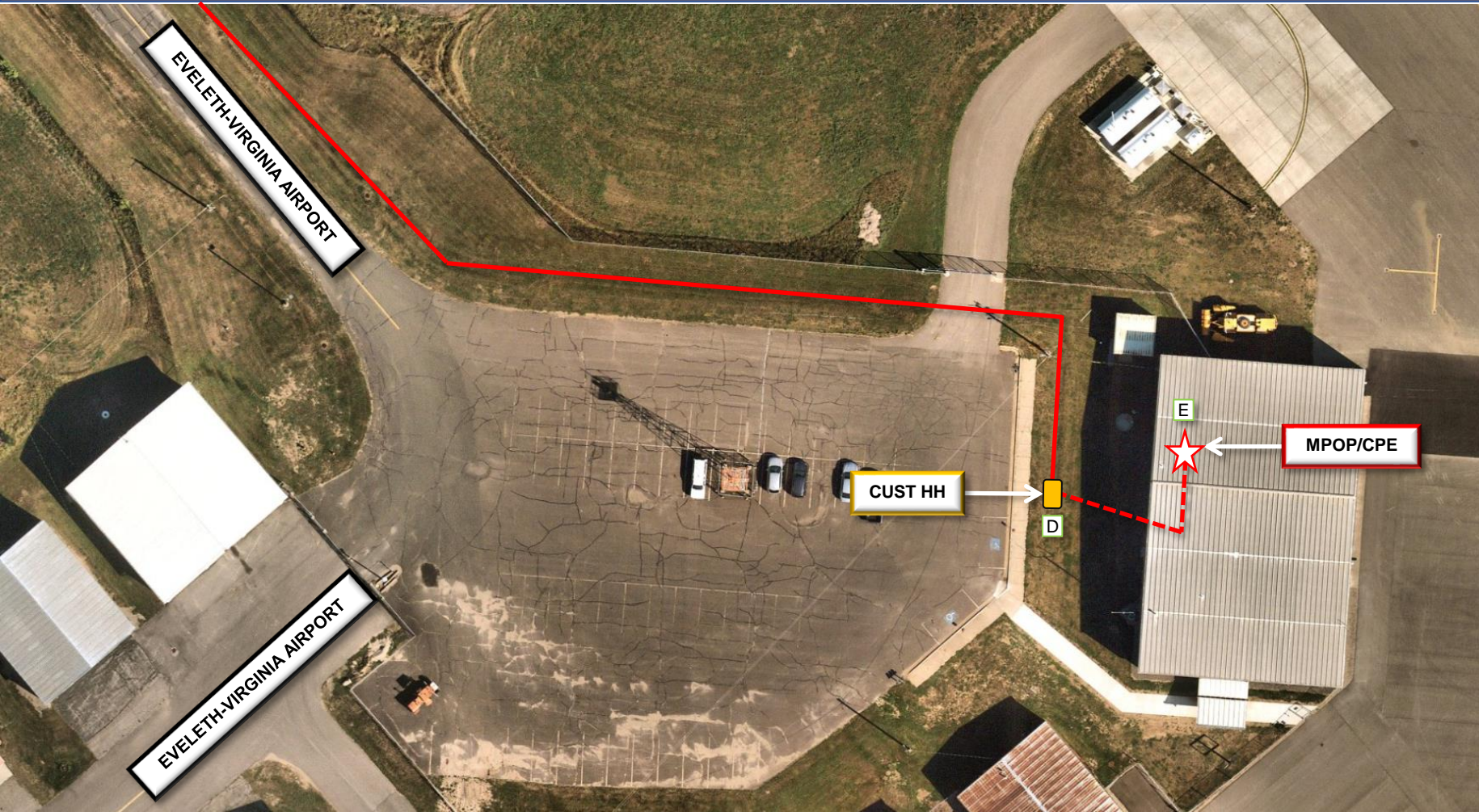
	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								





A TO B	BORE & PL. 1.25" CONDUIT W/72CT	800FT
B TO C	BORE & PL. 1.25" CONDUIT W/72CT	145FT
C TO D	BORE & PL. 1.25" CONDUIT W/24CT	840FT
D TO E	PLACE 24CT IN EX. CBO	175FT

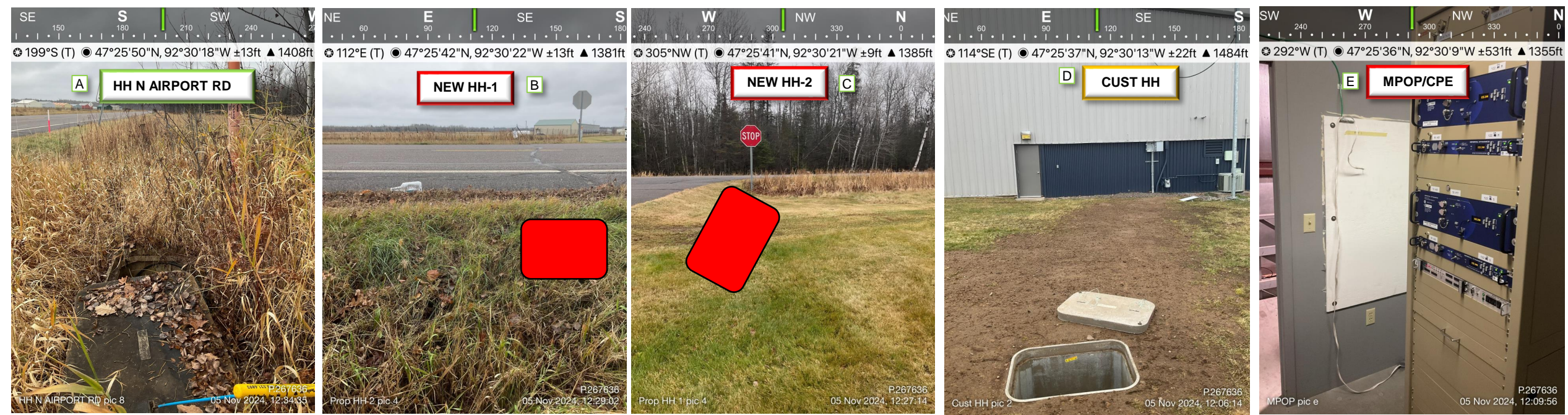
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	Existing Cable Route								
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	Customer Requirement								



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	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								





	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



HH N AIRPORT RD

LUMEN TO: SPLICE COUNTS LEV1, 19-24 FROM HH N AIRPORT RD TO MPOP.

LUMEN TO: BORE & PLACE 800FT OF NEW 1.25IN CONDUIT & PULL NEW 72CT FIBER FROM HH N AIRPORT RD (00+00) TO NEW HH-4280 MILLER TRUNK RD (08+00).

LUMEN TO: LEAVE A LOOP OF 50FT FOR 72CT FIBER AT HH N AIRPORT RD.



	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



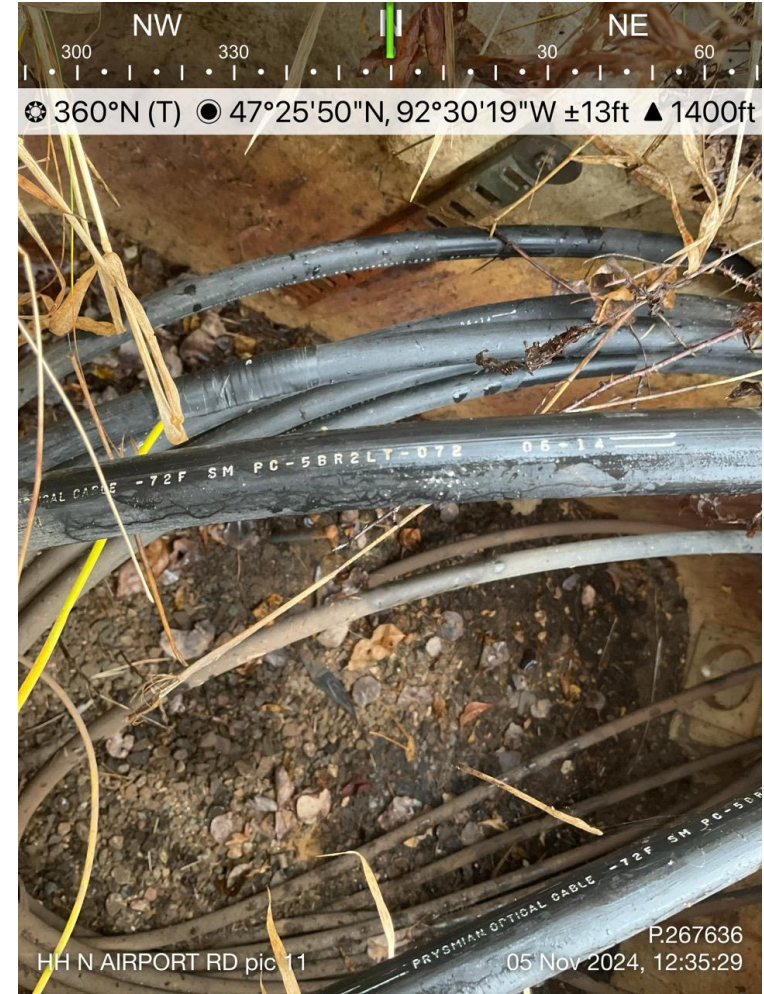
HH N AIRPORT RD
 INTERNALS



	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



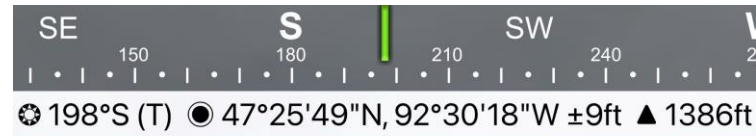
HH N AIRPORT RD
 INTERNALS



	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



LUMEN TO: BORE & PLACE 800FT OF NEW 1.25IN CONDUIT & PULL NEW 72CT FIBER FROM HH N AIRPORT RD (00+00) TO NEW HH-4280 MILLER TRUNK RD (08+00).



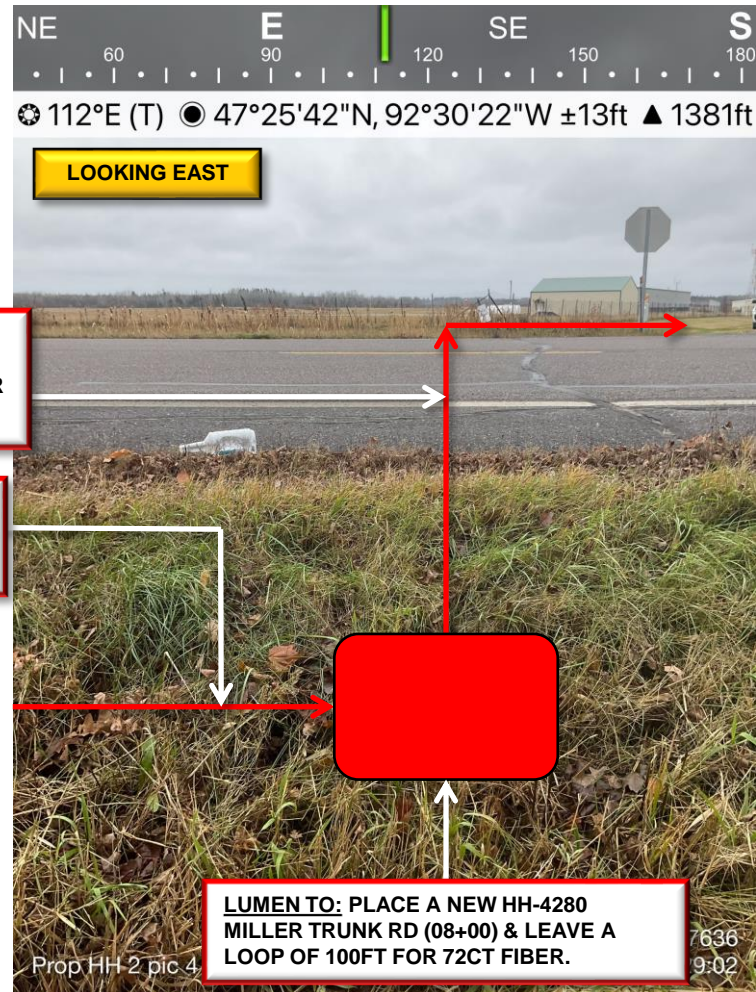
	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



NEW HH-1

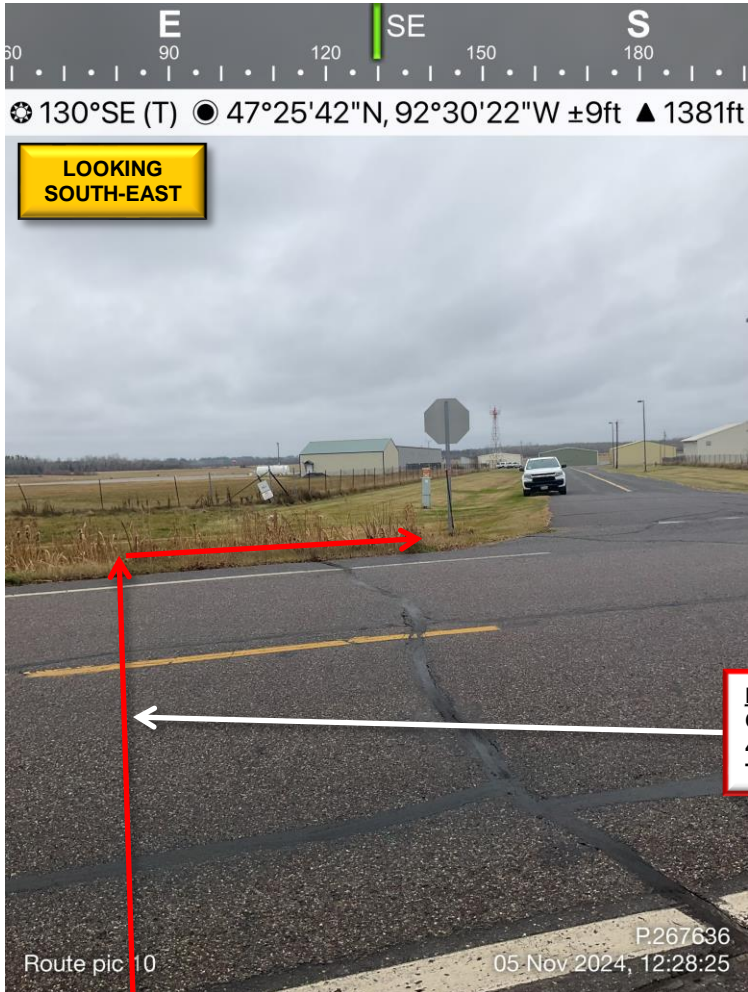
LUMEN TO: BORE & PLACE 145FT OF NEW 1.25IN CONDUIT & PULL NEW 72CT FIBER FROM NEW HH-4280 MILLER TRUNK RD (08+00) TO HH-4280 MILLER TRUNK RD-2 (09+45).

LUMEN TO: BORE & PLACE 800FT OF NEW 1.25IN CONDUIT & PULL NEW 72CT FIBER FROM HH N AIRPORT RD (00+00) TO NEW HH-4280 MILLER TRUNK RD (08+00).



LUMEN TO: PLACE A NEW HH-4280 MILLER TRUNK RD (08+00) & LEAVE A LOOP OF 100FT FOR 72CT FIBER.

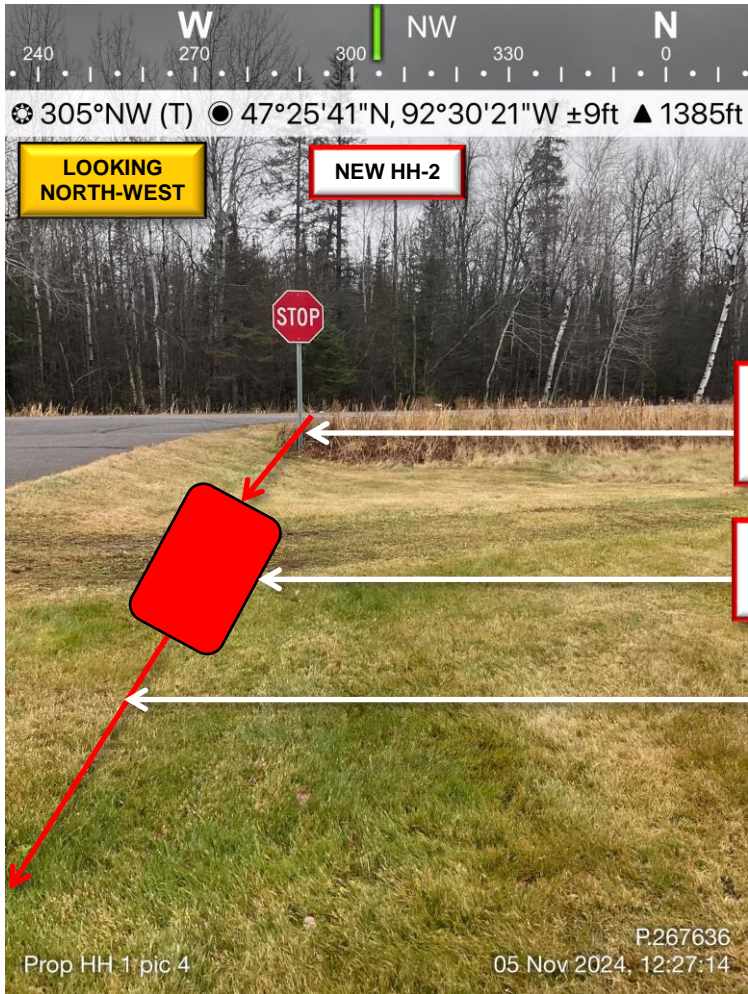
	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



LUMEN TO: BORE & PLACE 145FT OF NEW 1.25IN CONDUIT & PULL NEW 72CT FIBER FROM NEW HH-4280 MILLER TRUNK RD (08+00) TO HH-4280 MILLER TRUNK RD-2 (09+45).

	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								

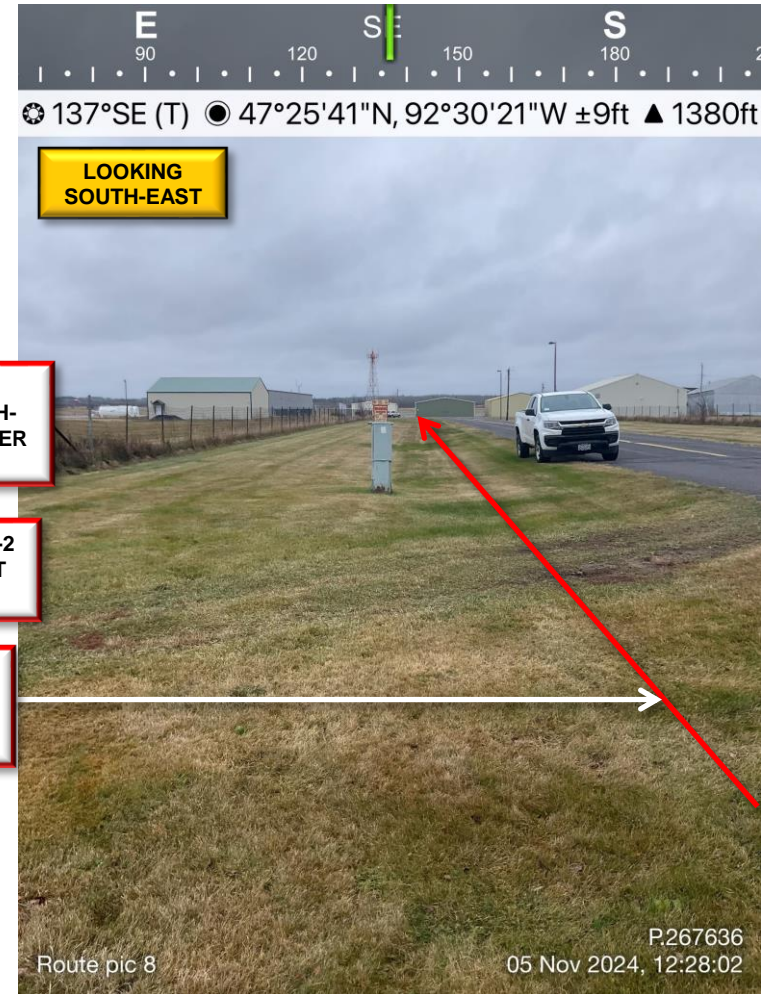




LUMEN TO: BORE & PLACE 145FT OF NEW 1.25IN CONDUIT & PULL NEW 72CT FIBER FROM NEW HH-4280 MILLER TRUNK RD (08+00) TO HH-4280 MILLER TRUNK RD-2 (09+45).

LUMEN TO: PLACE A HH-4280 MILLER TRUNK RD-2 (09+45), LEAVE A LOOP OF 50FT FOR 72CT & 50FT FOR 24CT FIBER.

LUMEN TO: BORE & PLACE 850FT OF NEW 1.25IN CONDUIT & PULL NEW 24CT FIBER FROM HH-4280 MILLER TRUNK RD-2 (09+45) TO CUST HH (17+95).



	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



Route pic 7

P.267636
 05 Nov 2024, 12:26:36

LUMEN TO: BORE & PLACE 850FT OF NEW 1.25IN CONDUIT & PULL NEW 24CT FIBER FROM HH-4280 MILLER TRUNK RD-2 (09+45) TO CUST HH (17+95).



Route pic 6

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	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



LUMEN TO: BORE & PLACE 850FT OF NEW 1.25IN CONDUIT & PULL NEW 24CT FIBER FROM HH-4280 MILLER TRUNK RD-2 (09+45) TO CUST HH (17+95).



	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



LUMEN TO: BORE & PLACE 850FT OF NEW 1.25IN CONDUIT & PULL NEW 24CT FIBER FROM HH-4280 MILLER TRUNK RD-2 (09+45) TO CUST HH (17+95).

	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								

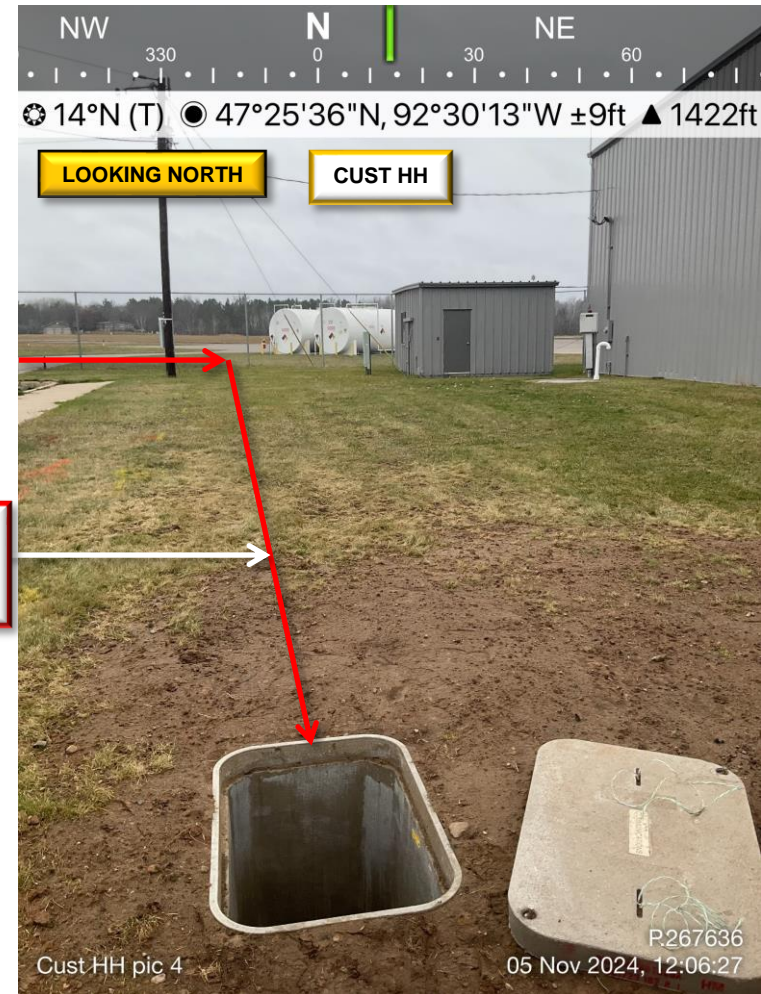




Route pic 1

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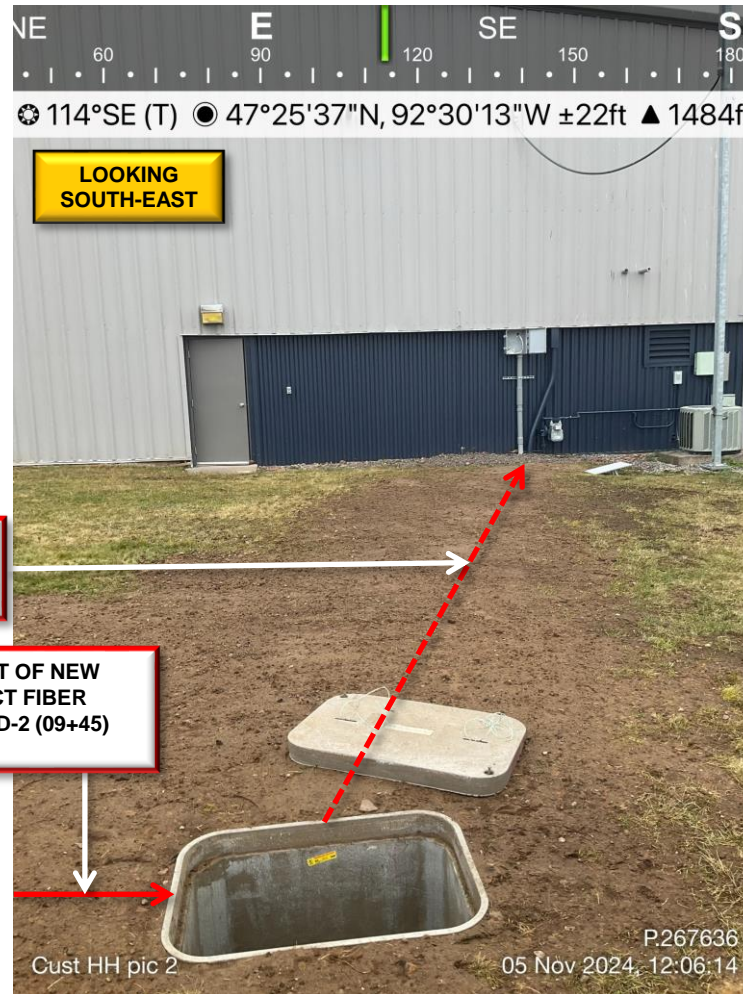
LUMEN TO: BORE & PLACE 850FT OF NEW 1.25IN CONDUIT & PULL NEW 24CT FIBER FROM HH-4280 MILLER TRUNK RD-2 (09+45) TO CUST HH (17+95).



Cust HH pic 4

P.267636
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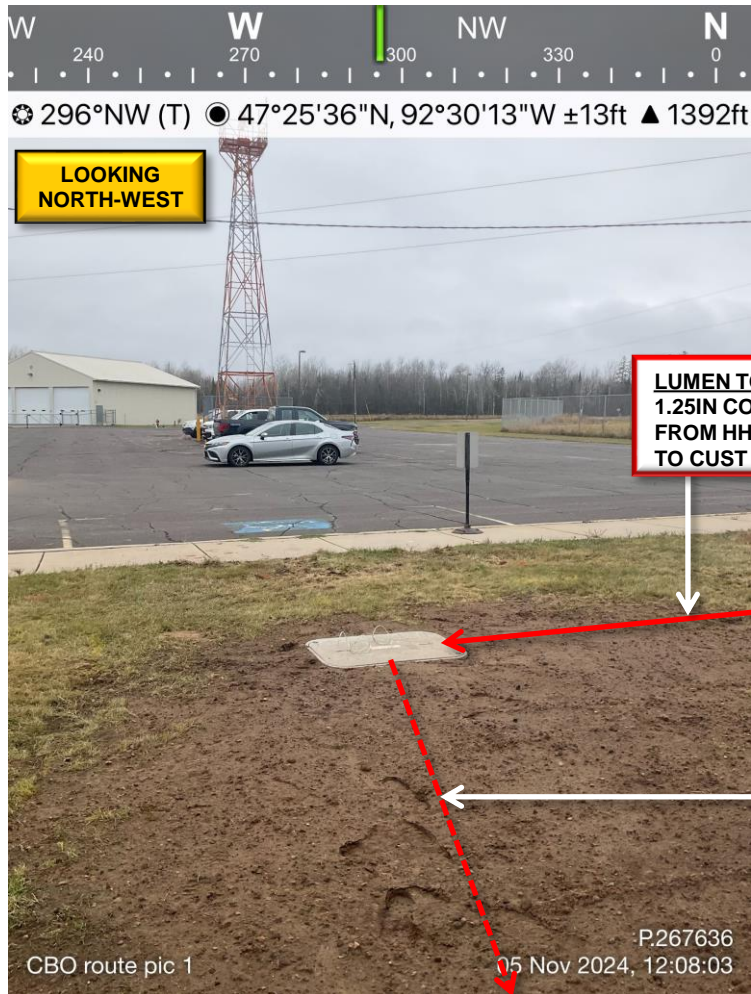
	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



LUMEN TO: PULL 175FT OF NEW 24CT FIBER THROUGH EX. CBO FROM CUST HH (17+95) TO MPOP ENTRY (19+70).

LUMEN TO: BORE & PLACE 850FT OF NEW 1.25IN CONDUIT & PULL NEW 24CT FIBER FROM HH-4280 MILLER TRUNK RD-2 (09+45) TO CUST HH (17+95).

	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



CBO route pic 1

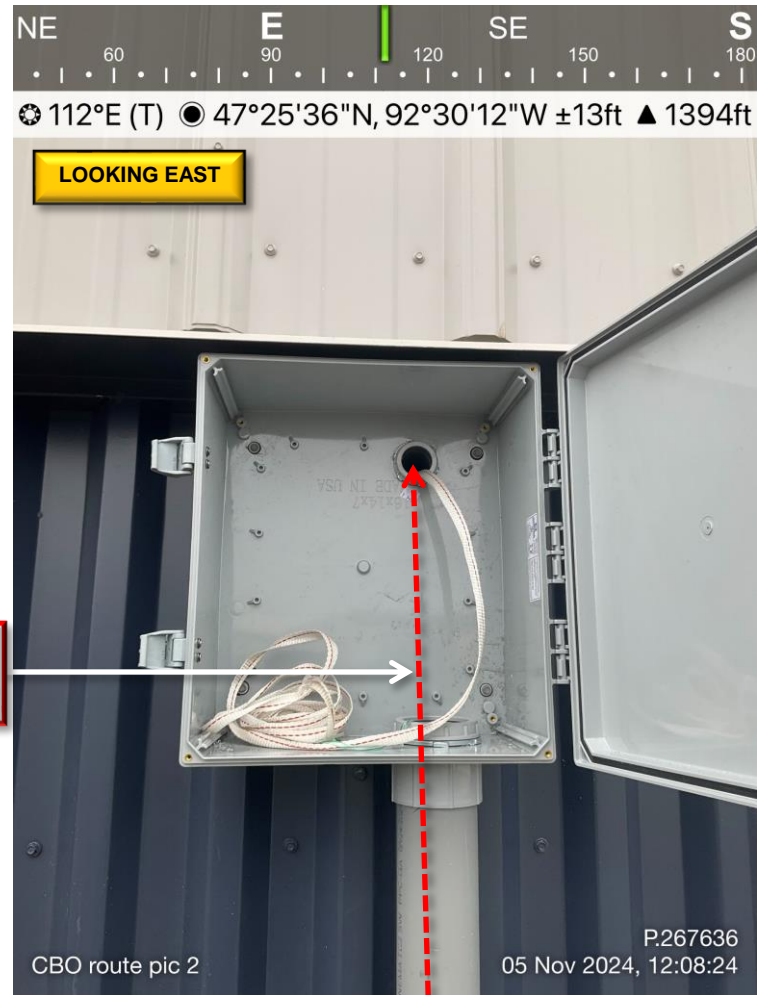
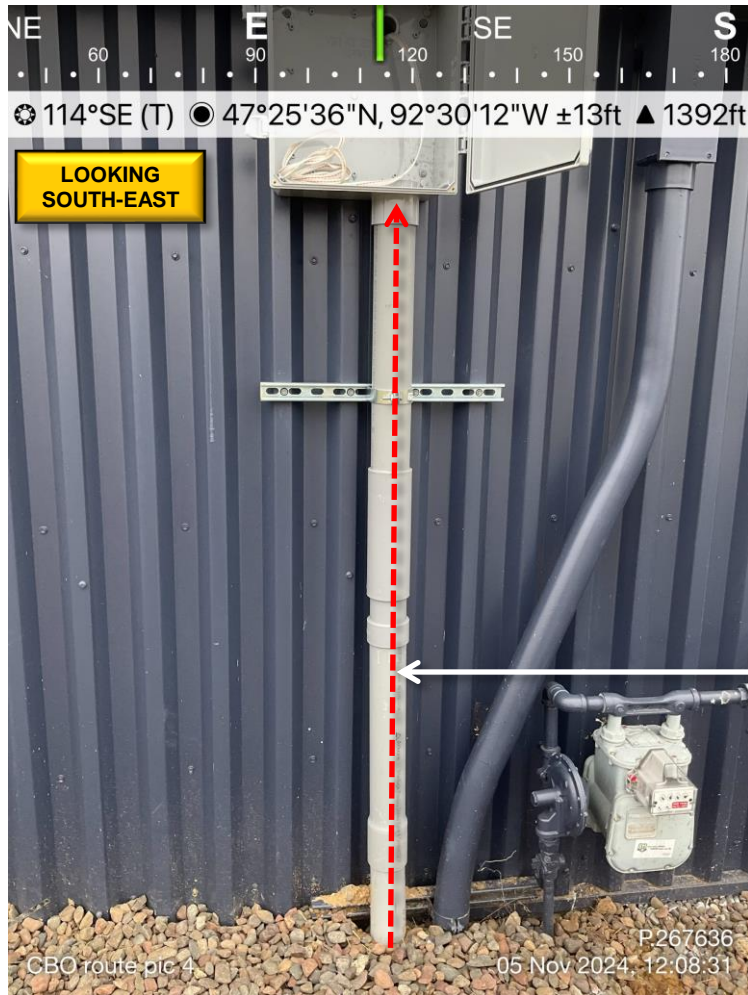
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CBO route pic 2

P.267636
05 Nov 2024, 12:08:12

	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



LUMEN TO: PULL 175FT OF NEW 24CT FIBER THROUGH EX. CBO FROM CUST HH (17+95) TO MPOP ENTRY (19+70).

	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



CBO route pic 6

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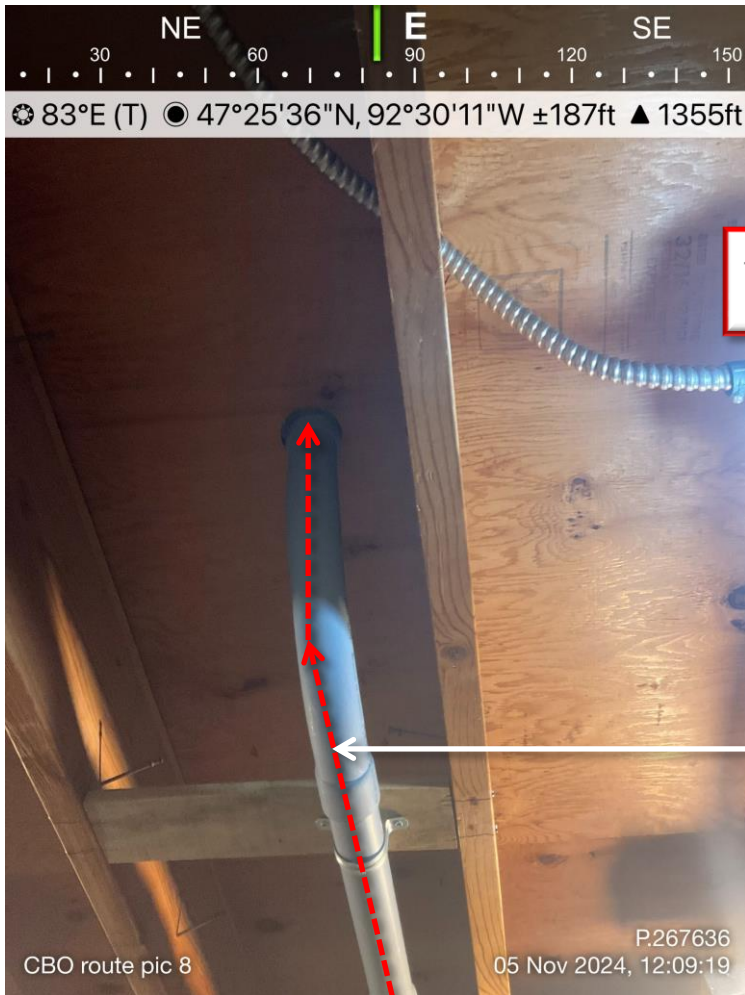
LUMEN TO: PULL 175FT OF NEW 24CT FIBER THROUGH EX. CBO FROM CUST HH (17+95) TO MPOP ENTRY (19+70).



CBO route pic 7

P.267636
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	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								

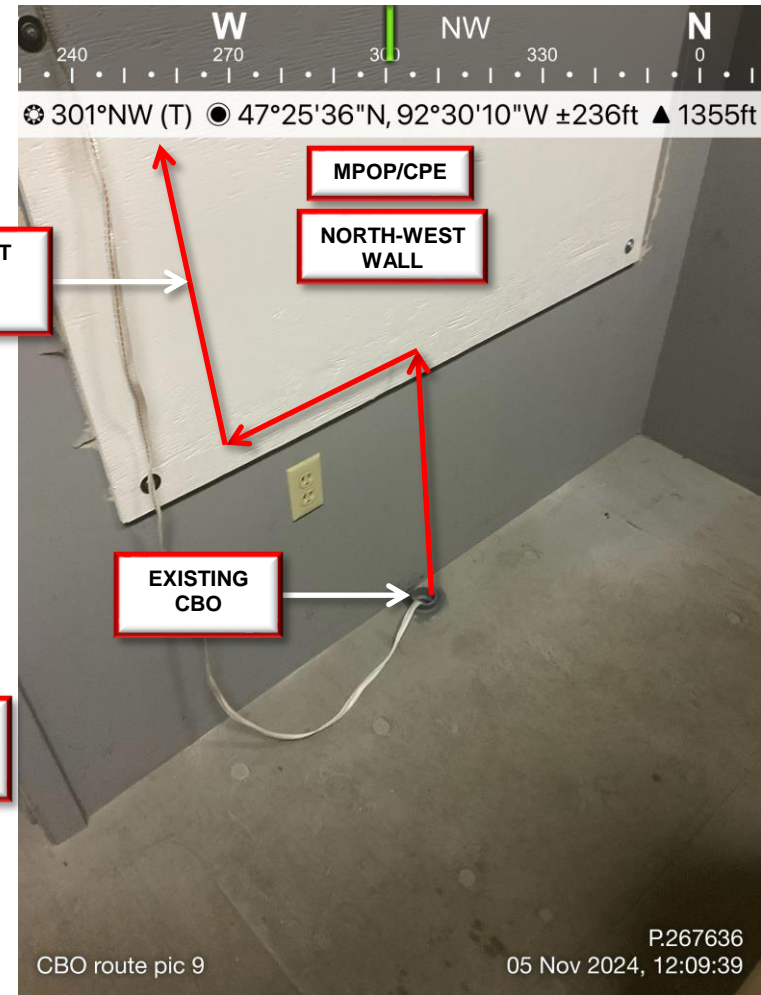


CBO route pic 8

P.267636
05 Nov 2024, 12:09:19

LUMEN TO: FROM MPOP ENTRY (17+95) PLACE 5FT OF NEW 24CT FIBER TOWARDS NEW FDP (18+00), LEAVE A LOOP OF 50FT & TERMINATE THE FIBER.

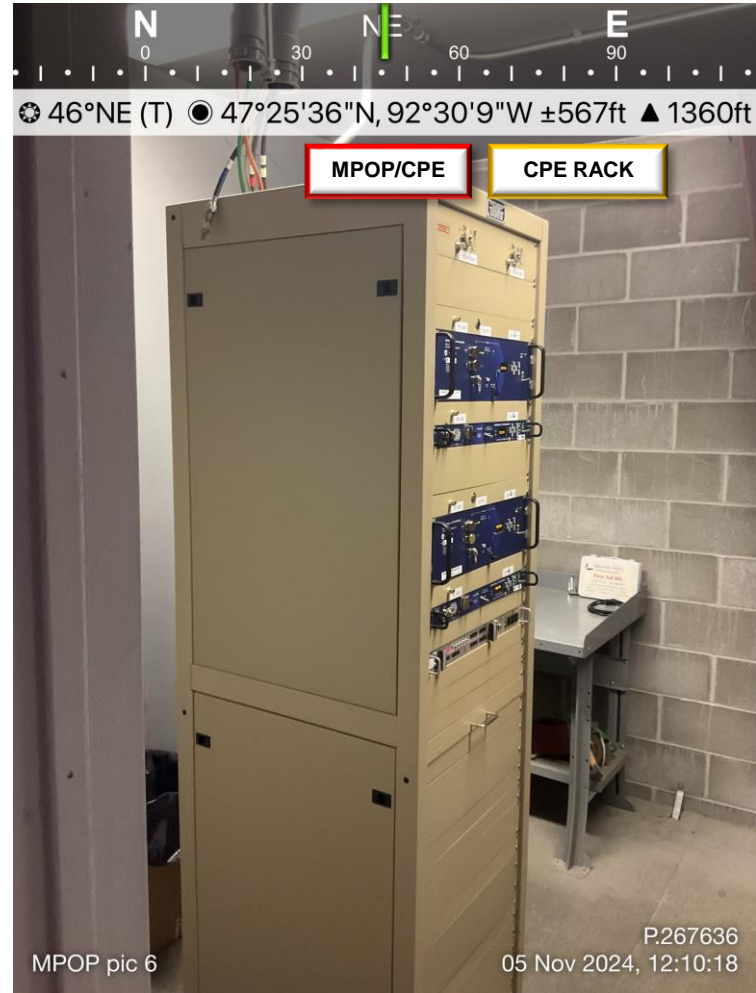
LUMEN TO: PULL 175FT OF NEW 24CT FIBER THROUGH EX. CBO FROM CUST HH (17+95) TO MPOP ENTRY (19+70).



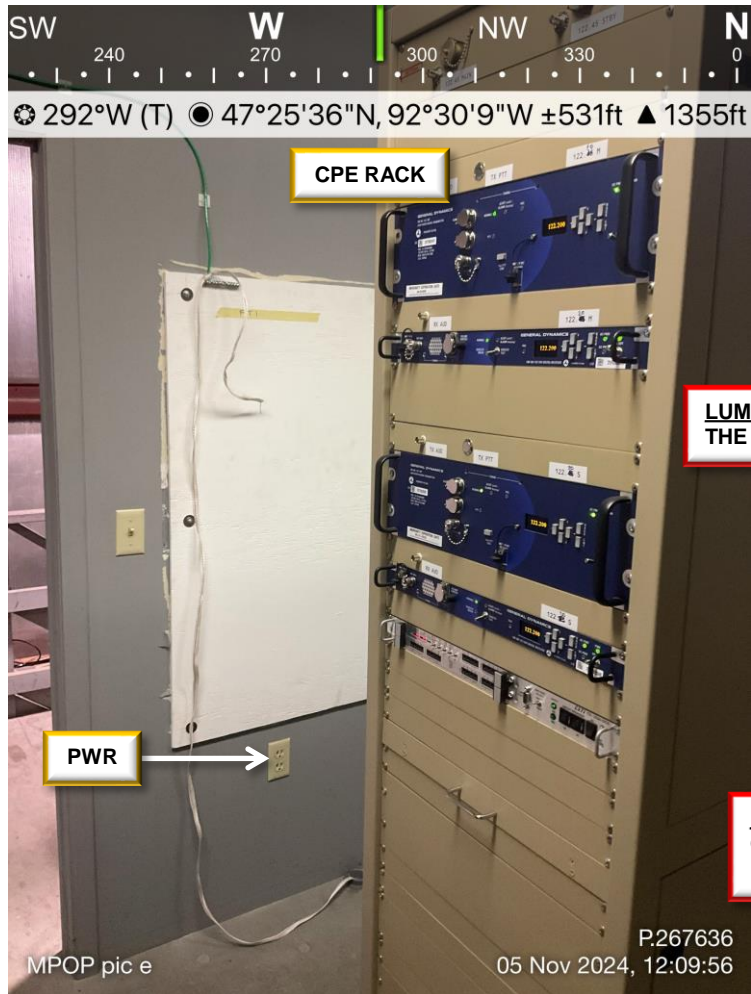
CBO route pic 9

P.267636
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	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



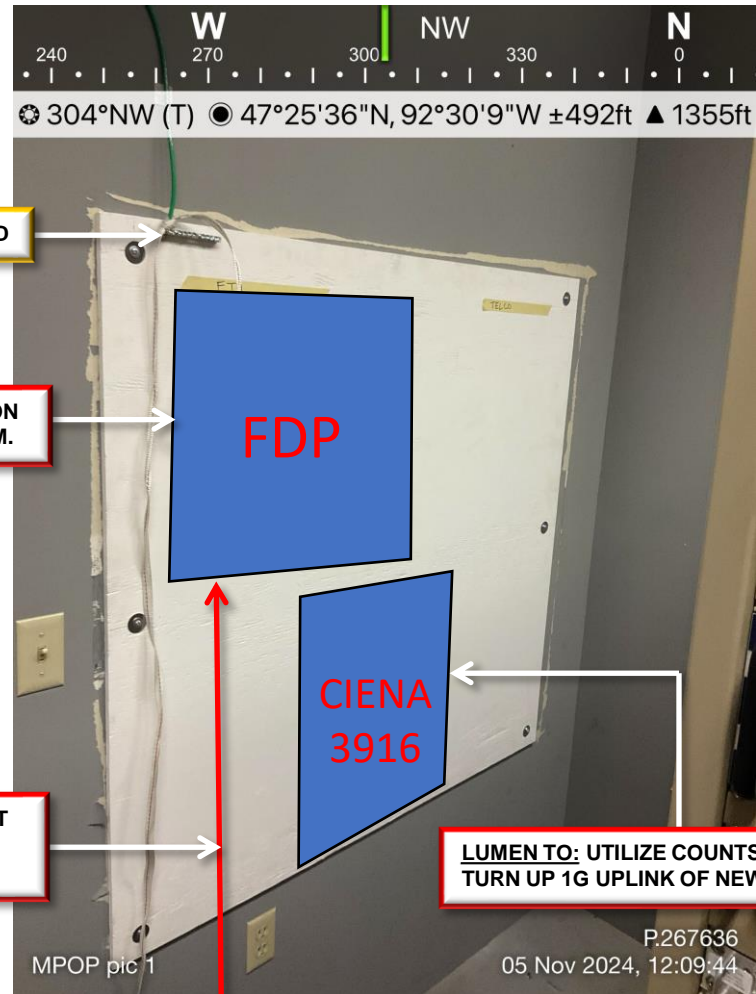
	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



MPOP/CPE
 NORTH-WEST WALL

LUMEN TO: PLACE A NEW FDP & CIENA 3916 DEVICE ON THE NORTH-WEST WALL BACKBOARD OF MPOP ROOM.

LUMEN TO: FROM MPOP ENTRY (17+95) PLACE 5FT OF NEW 24CT FIBER TOWARDS NEW FDP (18+00), LEAVE A LOOP OF 50FT & TERMINATE THE FIBER.



LUMEN TO: UTILIZE COUNTS LEV1, 19-20 TO TURN UP 1G UPLINK OF NEW CIENA 3916 DEVICE.

	Right of Way (ROW) / Municipal Land – Permit Required		Existing HH		New HH		POLE/OLD POLE		EXISTING PED
	New Conduit Route and Cable Placement/ Lumen requirement		Existing MH		New MH		NEW POLE		NEW PED
	Existing Cable Route								
	Existing Conduit Route And Cable Placement								
	Customer Requirement								



Reference	Definition
APOP	Alternate Point of Presence: Another room/location where service is requested to be delivered from the MPOP
BB	Backboard: Usually ¾" fire-rated plywood for mounting a switch or terminal for Fiber or Copper (Required in MPOP/APOP locations)
Conduit	Tube that provides a path for Fiber or Copper cable to travel underground and/or through walls. Size to be indicated on drawing
Customer Suite	Office/location where service is being requested
DMARC	Demarcation: The physical location where service provided by LUMEN terminates in the Customer building (this location can be at the MPOP, MPOE, APOP)
Duct	See Conduit
FDP	Fiber Distribution Point: Location where Fiber from outside terminates
Meet Point	Location where customer building entrance facilities (ie. conduit) meets LUMEN service connection point (typically at property line / municipal right of way)
MPOP/MPOE	Minimum Point of Presence/Entry (Minimum typically means closest to the street. This is the location that service enters the building)
HH	Handhole: A service box located on outside either off or on private property (Picture) [ie. 3048 HH is 30"x48" box]
MH	Manhole: Location fiber feed.
PED	Pedestal: Metal Box that terminates conduit and cable outside either off or on private property.
POF	Point of Feed: Location where fiber is currently terminated – can be a Manhole, PED or HH
RR	Relay Rack : Usually 19" or 23" server rack - may or may not exist at the MPOP/APOP