



Alabama Power Fiber Overview



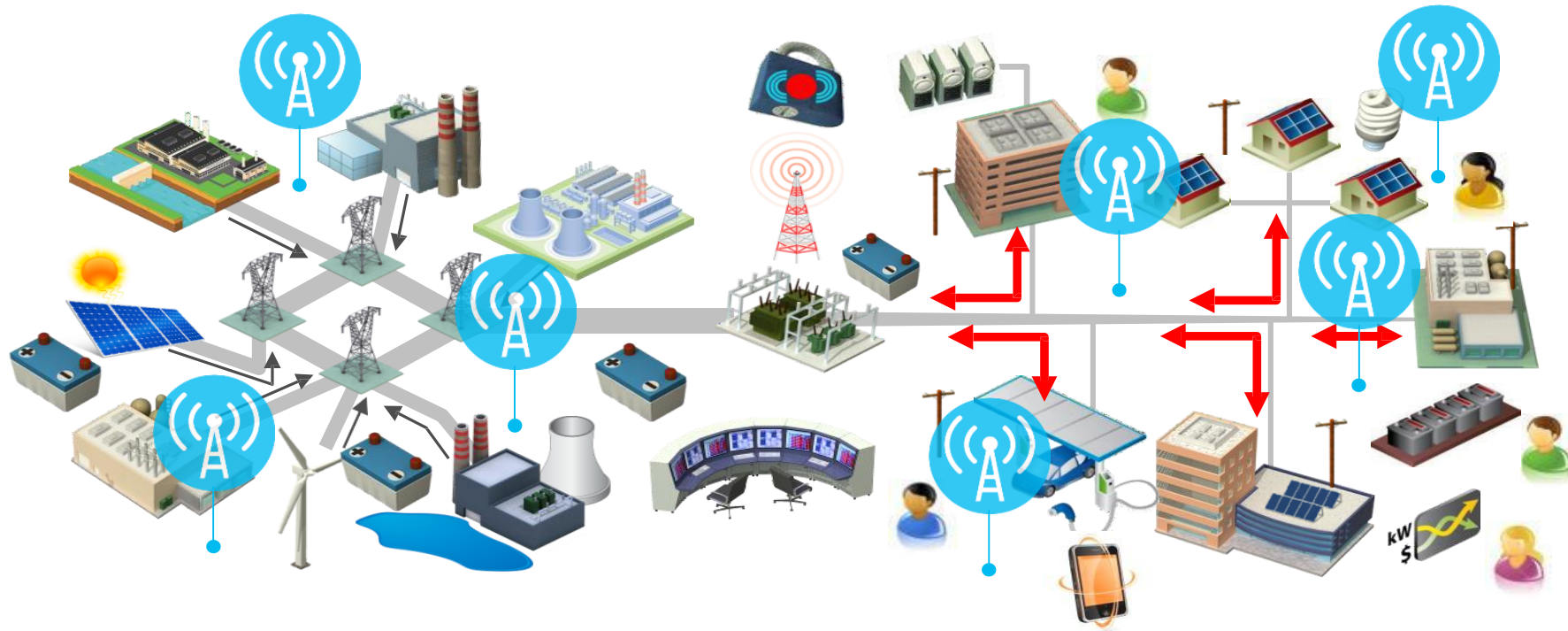


AGENDA

- APC Fiber
- Fiber Overview
- NUG Fiber
- Questions

APC Fiber

Our Industry is Changing



Fiber Advantage & Uses



SPEED: Allows for a high transfer of data at the speed of light



BANDWIDTH: Extremely high capacity that allows for high volume of data to be transmitted



SECURITY: Data is transmitted via light and almost impossible to detect data wirelessly

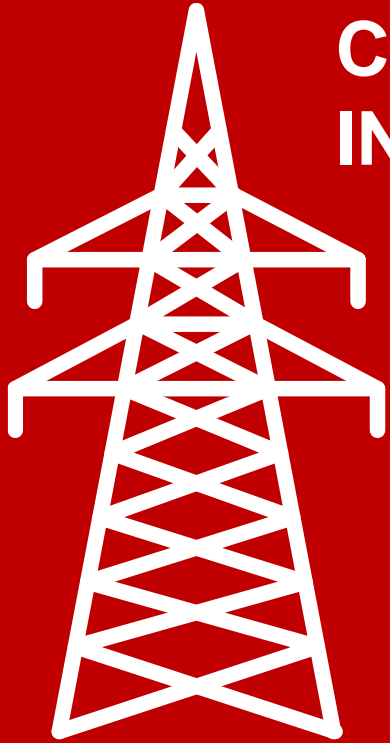


PHYSICAL CAPACITY: Optical fibers are very thin so more fibers can be bundled into a given diameter, offering physical redundancy

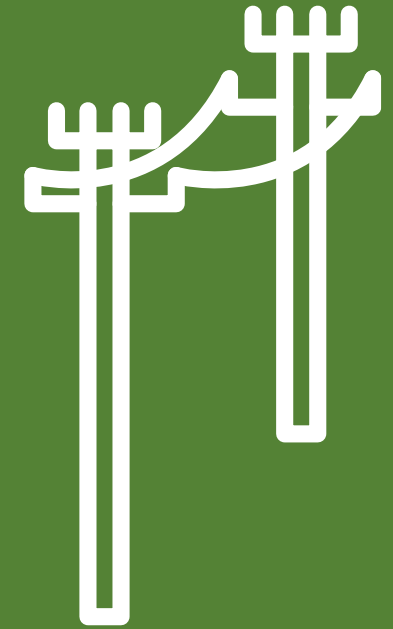


SIGNAL RELIABILITY: Signal can travel long distances without interruptions, congestion or slowdowns

**CAPITAL
INVESTMENT**



**O&M
LANDSCAPE**



**GRID
SOLUTIONS**



**CUSTOMER
EXPERIENCE**

Fiber Deployments

Long-haul Fiber Underground



OPGW Fiber



Fiber to Distribution (FTD)



Factors That Guide Deployments



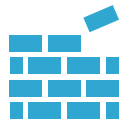
RELIABILITY & SECURITY: What impacts will a fiber project make to the reliability & security of the grid from an electrical and communication perspective



FEASIBILITY: Assess the factors involved in implementing a project and seeing it to completion, which include design complexity, construction and environmental evaluations, ongoing system projects and timeline estimations



CUSTOMER MAKEUP: Specific customer breakdown per project, which includes identifying the presence of any key customers as well as the overall mix of the affected customers



ECONOMIC DEVELOPMENT: Assess the expected positive impacts the project will have on the targeted communities

FIBER | CORE BUSINESS USE CASES



Distribution Fiber Connectivity

Reclosers – Substation Relays – High Density Coordination – SCADA Communications - FISR



Transmission Fiber Connectivity

ICON Protection Rings – Substation Relays – Colocation Facilities – SCADA Communications



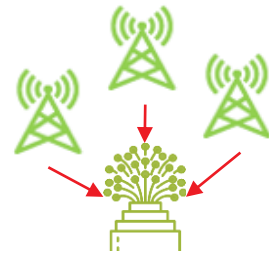
DATA Transportation

LIDAR – Condition Based Maintenance – Imagery - Weather



Facility Fiber Connectivity

Engineering Offices – Control Centers – Data Centers - Colocation Facilities – Training Centers



Wireless Support

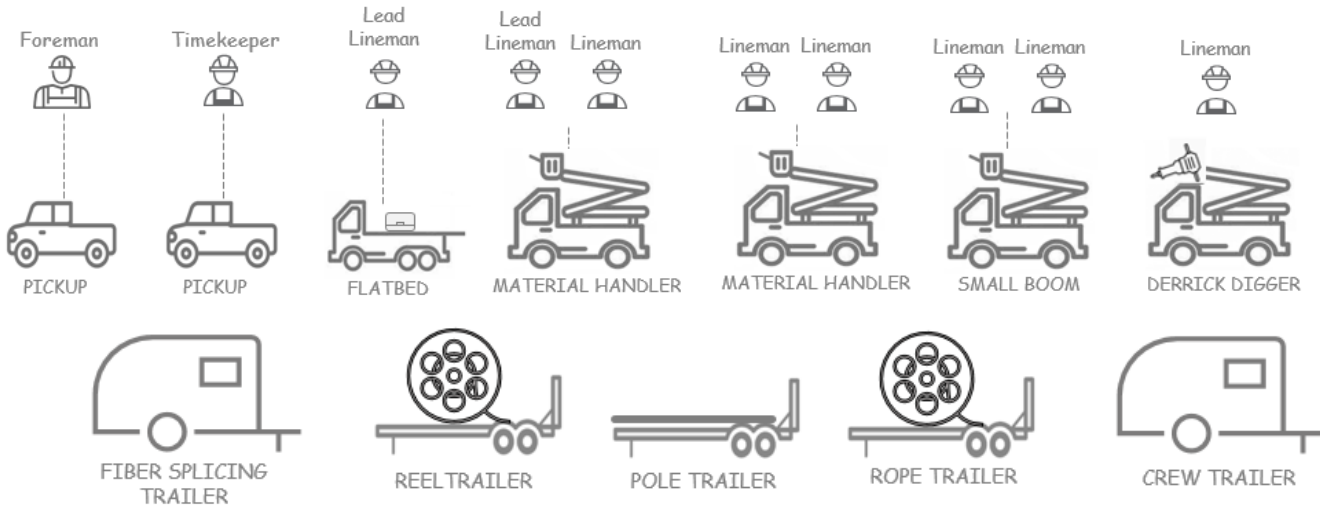
LINC LTE Towers – CBRS – AMI Network

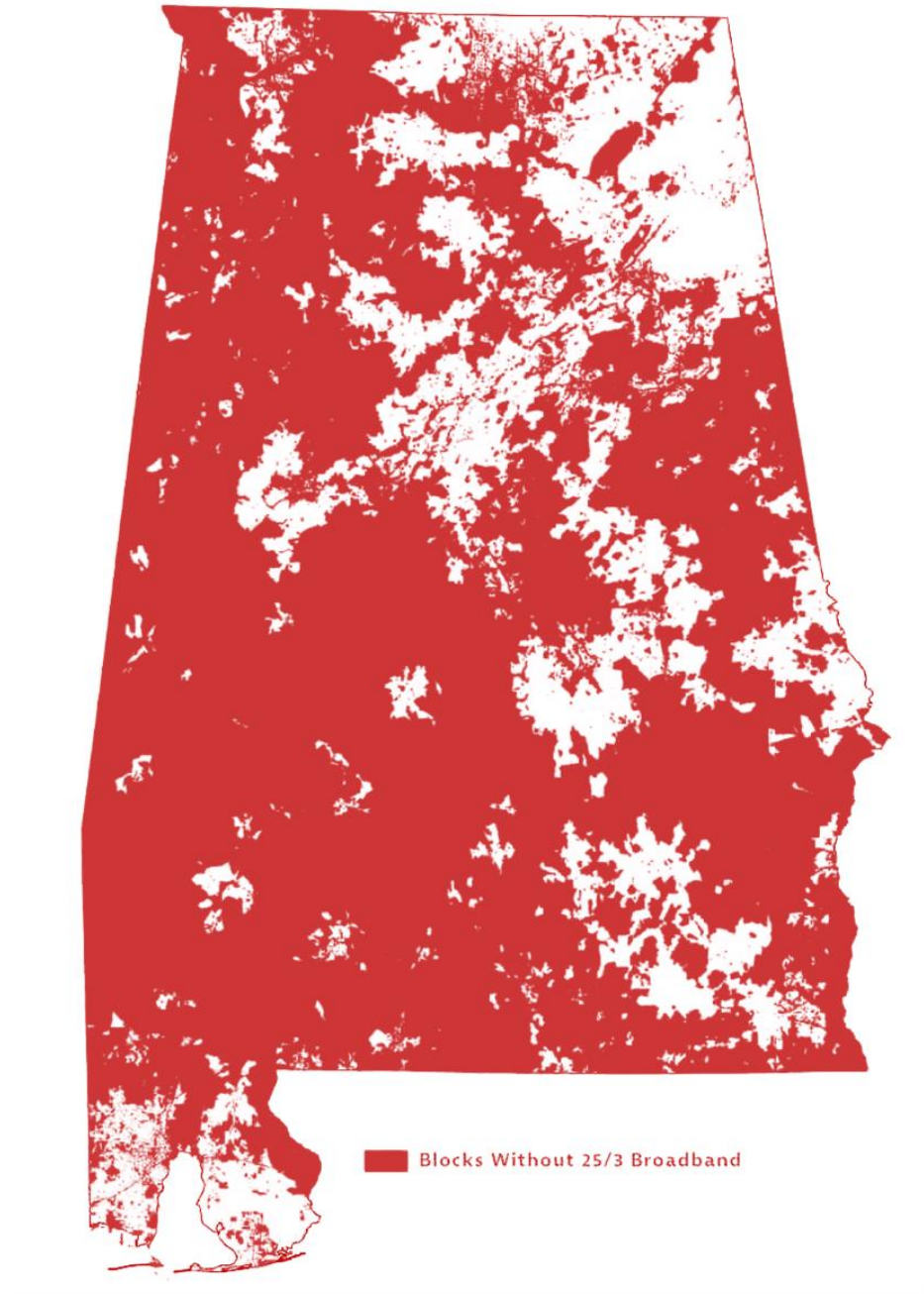
FIBER | Connectivity Crew



2023

New APC Fiber to Distribution Crew





Broadband (lack of) coverage map

Shaded regions show areas where average connectivity speeds do not meet FCC standards.

GOVERNMENT AFFAIRS | STATE LEGISLATION



Alabama Rural Broadband Accessibility Fund (SB90)

Expanded the eligibility provisions of state broadband grants to include the types of middle mile fiber being deployed by electric utilities.



Broadband Using Electric Easements Accessibility Act (HB400)

Authorizes electric utilities to use and permit the use of their electric delivery systems and electric easements for broadband purposes and clarifies that electric utilities have easement rights.



Connect Alabama Act of 2021 (SB215)

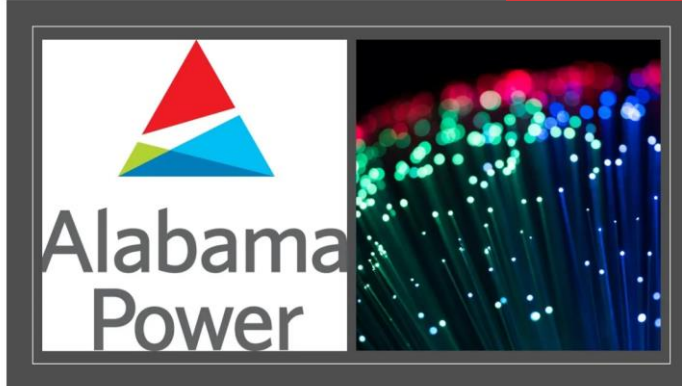
Alabama Power at the table developing new sweeping plans for statewide planning and investment in bridging the digital divide.

FIBER | IN THE NEWS



Alabama Power wins prestigious Edison Electric Institute advocacy award for connectivity initiative

By Alabama NewsCenter Staff
March 15, 2021



Alabama Power's efforts to expand broadband in the state earned it the Edison Electric Institute's Advocacy Excellence Award. (Alabama Power and Getty Images)

Point Broadband to offer high-speed fiber internet on Alabama's Lake Martin

By Alabama NewsCenter Staff
January 6, 2021



Point Broadband will provide high-speed internet on Lake Martin in a new partnership with Alabama Power. (contributed)



WATCH: C Spire announces ultra-fast fiber broadband in 2 Alabama markets



Governor signs bills to boost broadband access in rural Alabama



Point Broadband announces plans to offer fiber-to-the-premises high-speed Internet for select areas on Lake Martin



Bill allowing electric utilities to offer high-speed internet to rural areas passes



Guest notebook: Digital divide is real in Alabama



Faster internet speeds on the way to the Jasper area



Parts of Trussville, Jasper to be first in Alabama with access to C Spire's fiber broadband services



New partnerships bringing ultra-fast internet to Alabama



Construction planned in Jasper, Trussville to provide better broadband



Expanded broadband access is the Alabama Rural Broadband Coalition's mission



Fiber project moving forward

C Spire connecting first Alabama customers to ultrafast fiber internet

By Alabama NewsCenter Staff
December 10, 2020



C Spire is now providing service to customers in Jasper. Marking the event were, from left, Ashley Phillips, general manager of C Spire Home Services; Jasper City Council member Gary Cowen; Jasper Mayor David O'Mary; and Ben Moncrief, managing director of C Spire Alabama. (contributed)

Tombigbee Communications and Alabama Power expand rural broadband to Fayette County

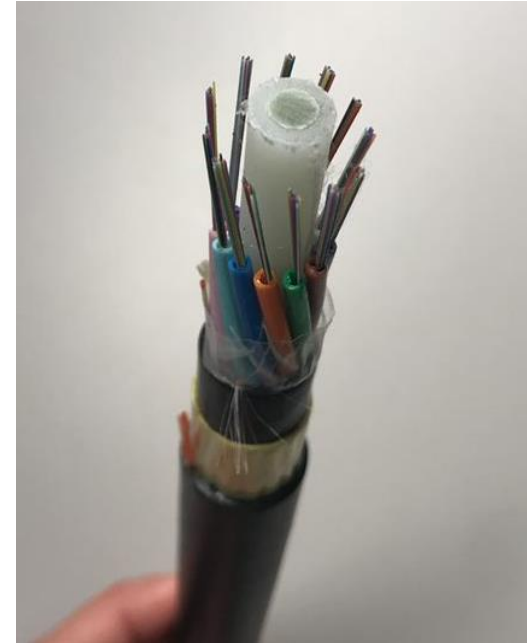
By Alabama NewsCenter Staff
June 11, 2021



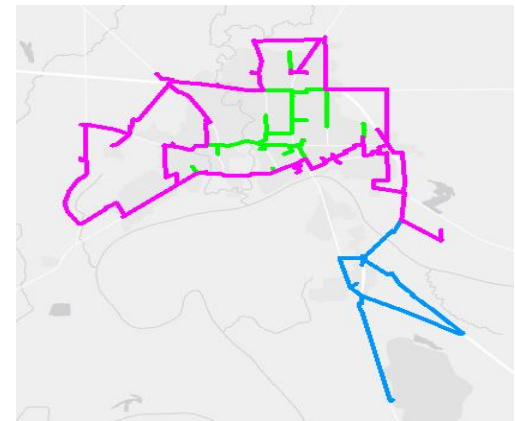
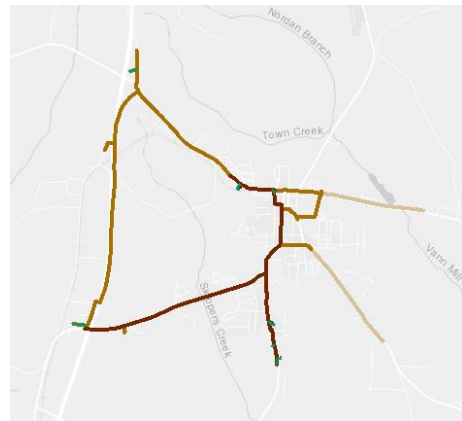
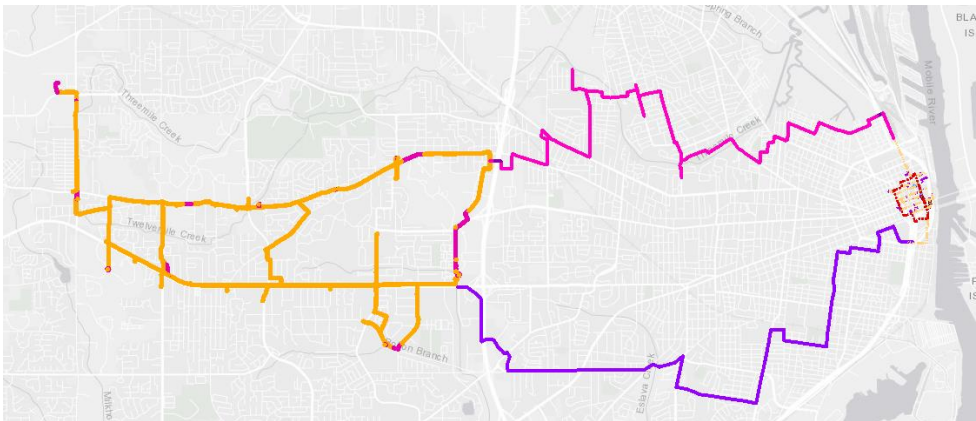
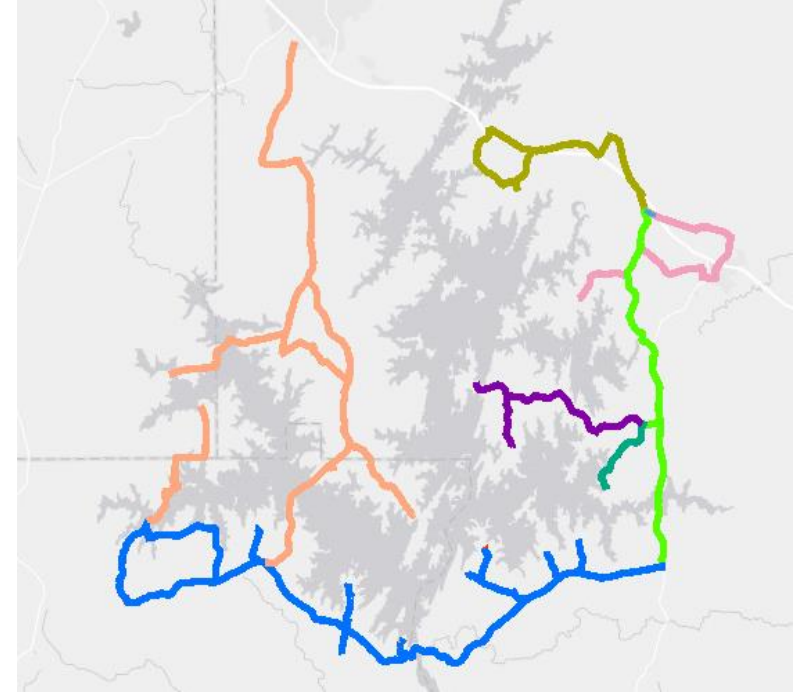
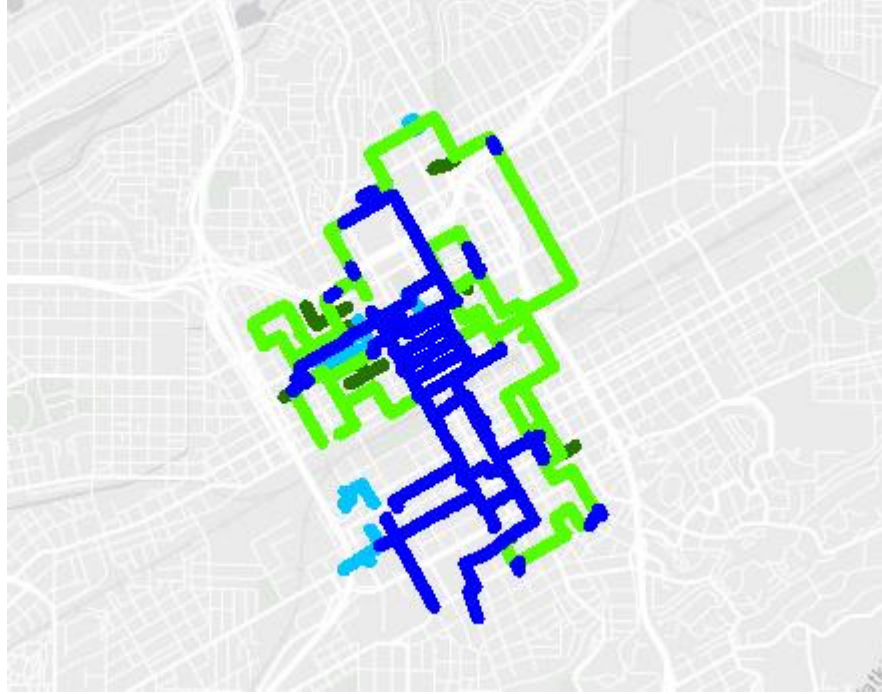
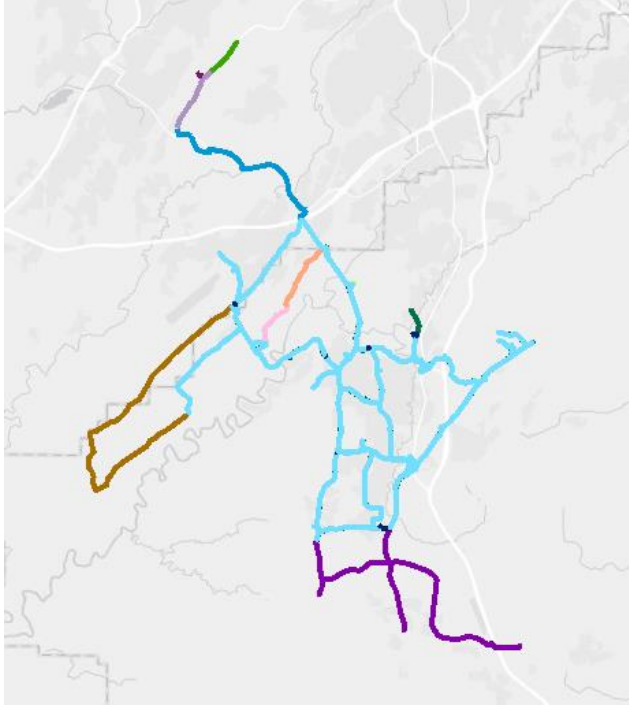
Mark Crews, vice president of Western Division for Alabama Power, speaks at the announcement of a partnership between Alabama Power and Tombigbee Communications to deploy rural broadband and high-speed fiber internet service in Fayette County. (Dennis Washington / Alabama NewsCenter)

Fiber Overview

What Does Fiber to Distribution Look Like?



What Does Fiber to Distribution Look Like?

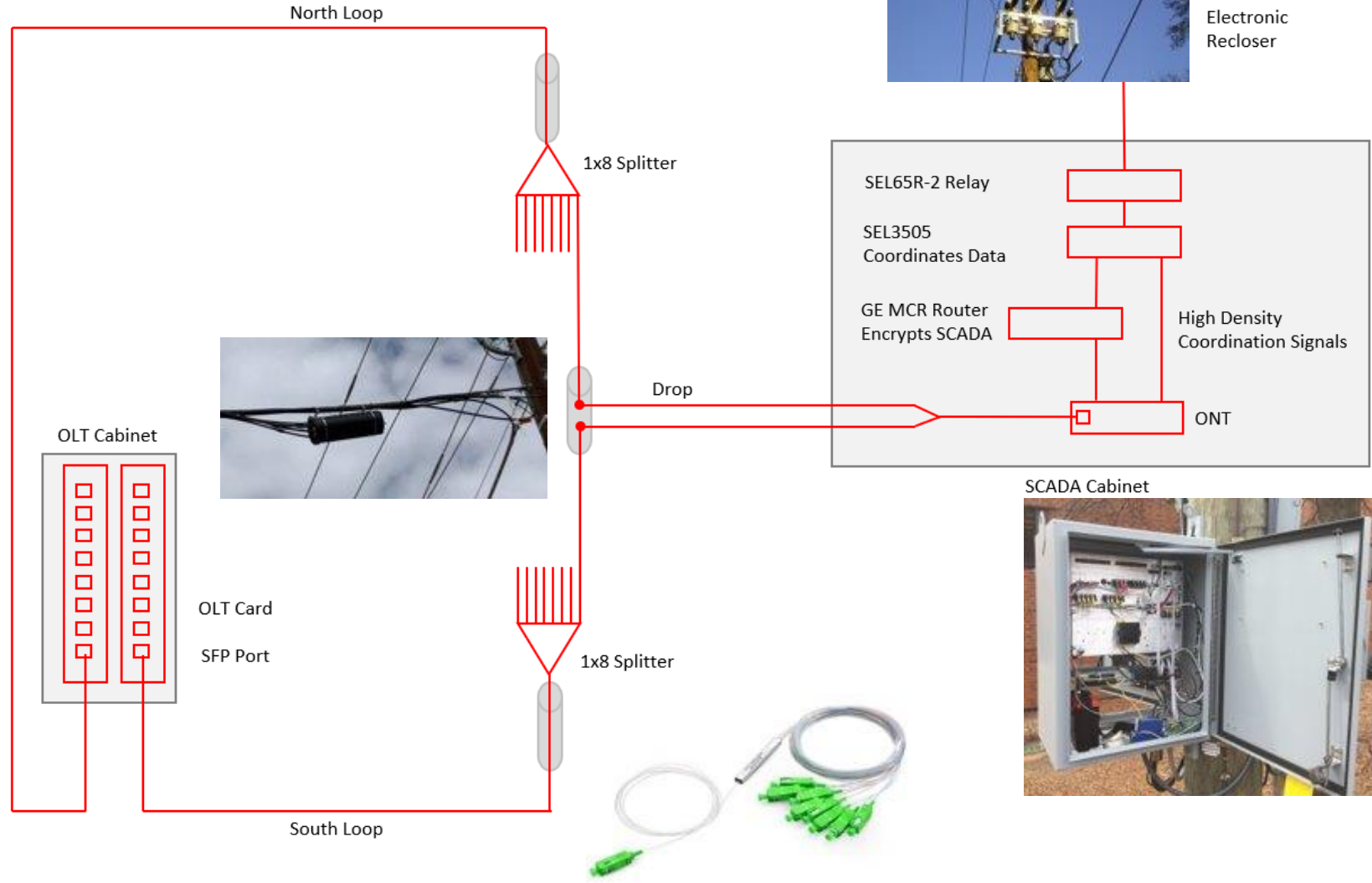




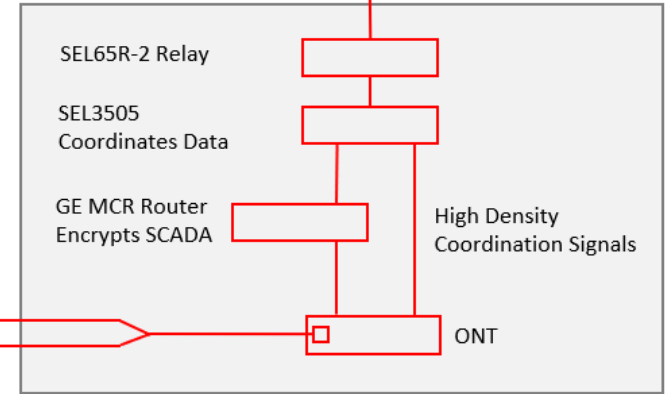
OLT Cabinet



OLT Shelf



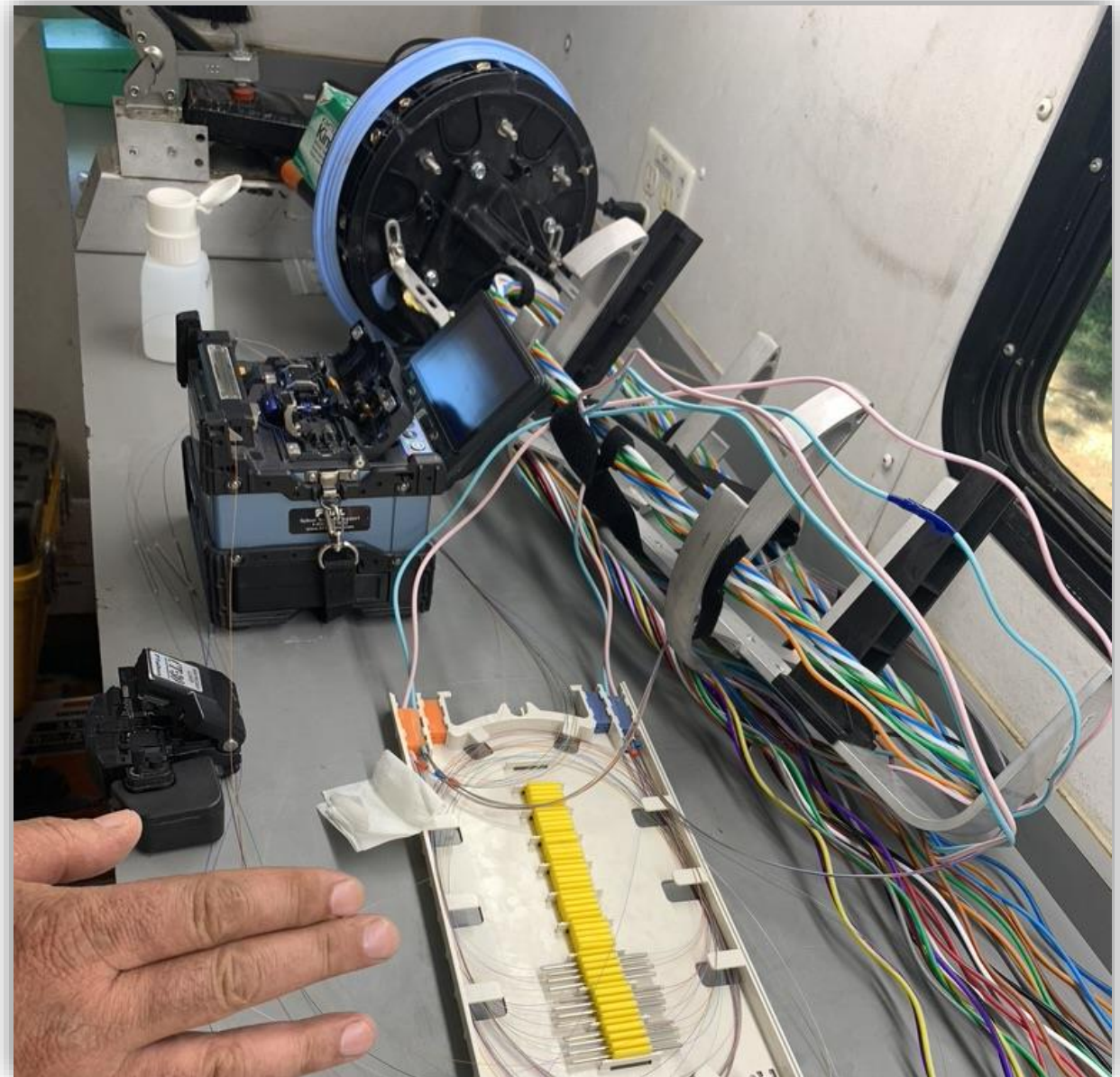
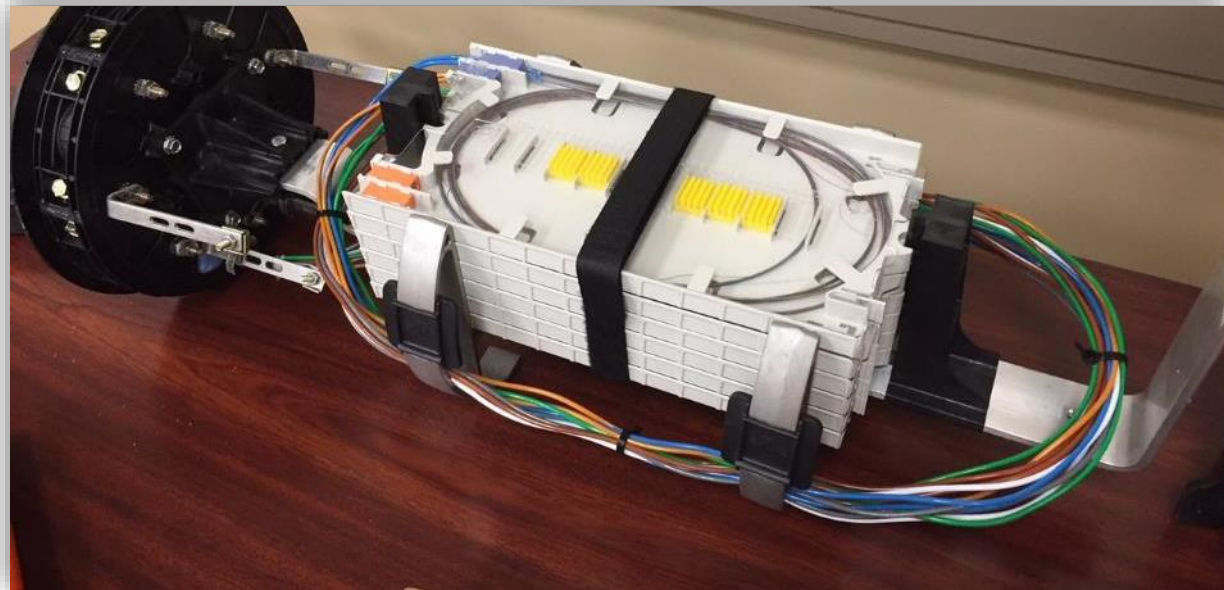
Electronic Recloser



SCADA Cabinet



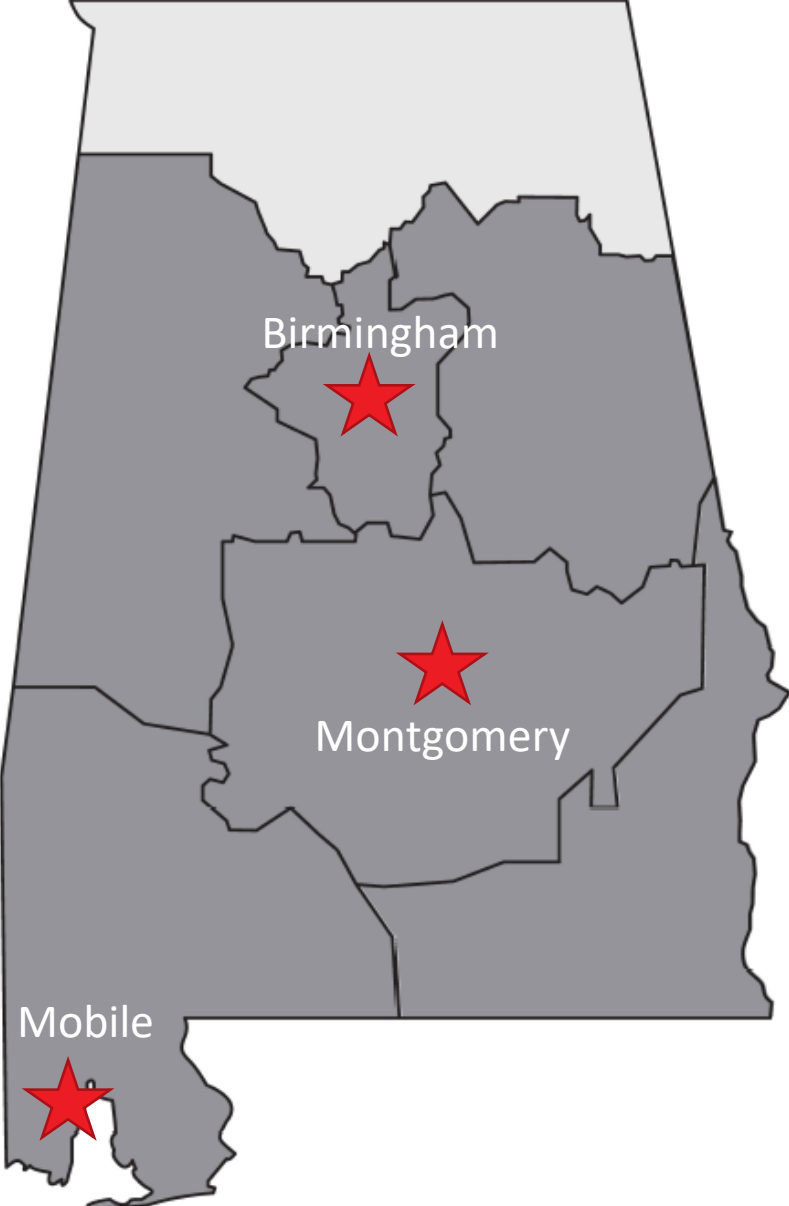
Splicing



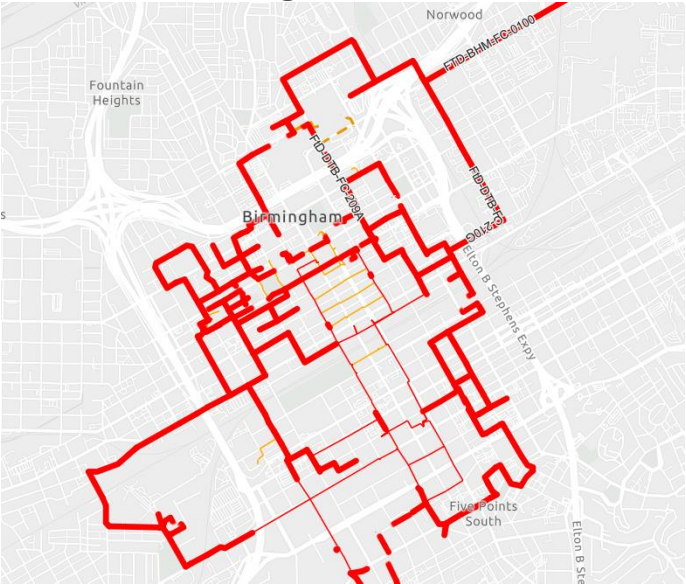
NUG Fiber

Fiber NUT Builds

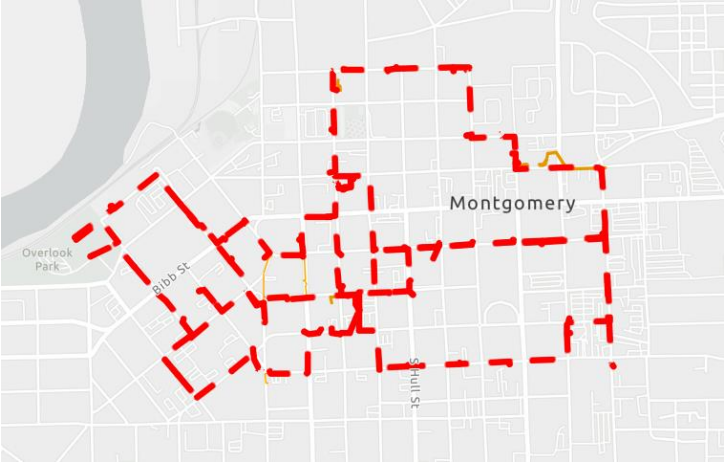
Mobile: 54 Vaults



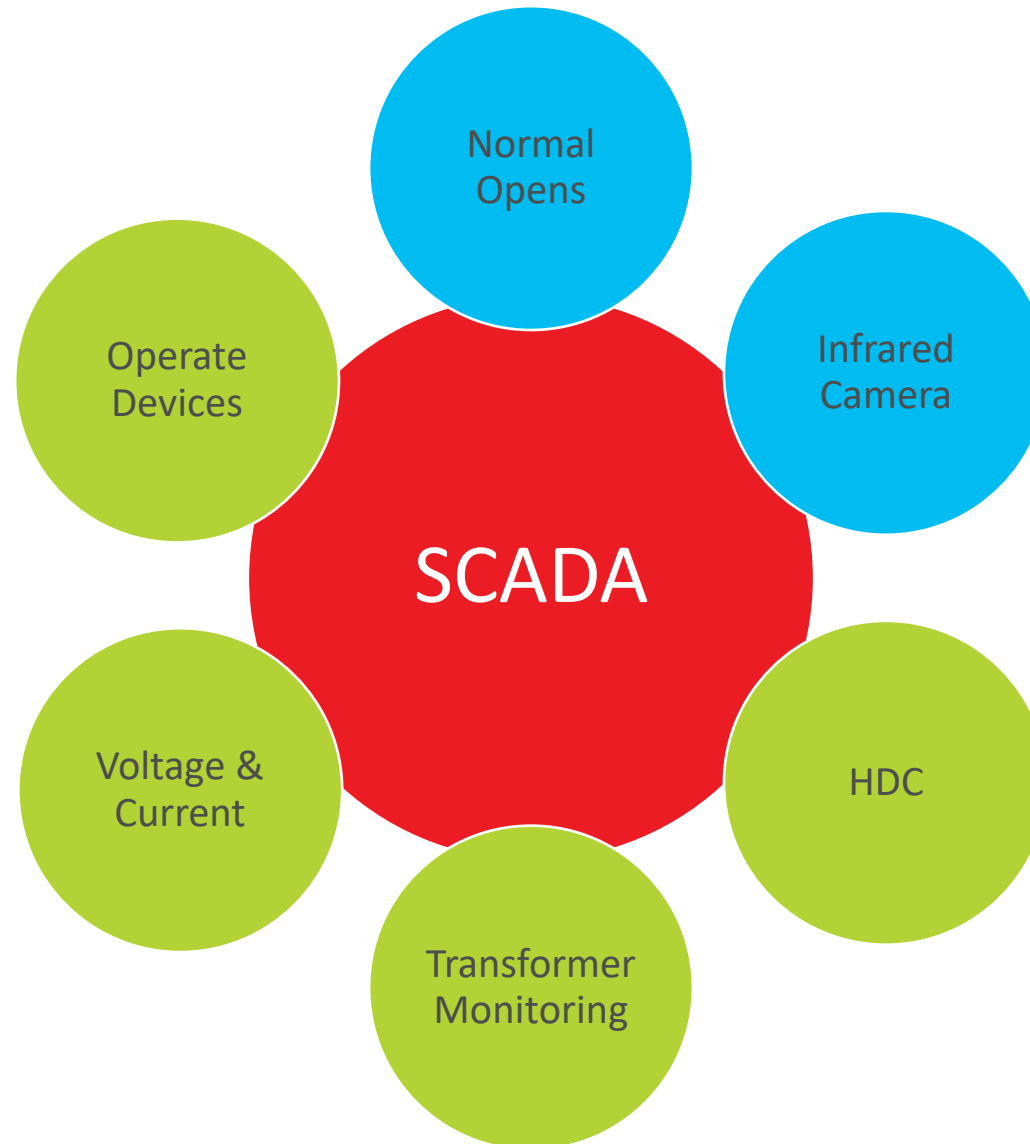
Birmingham: 113 Vaults



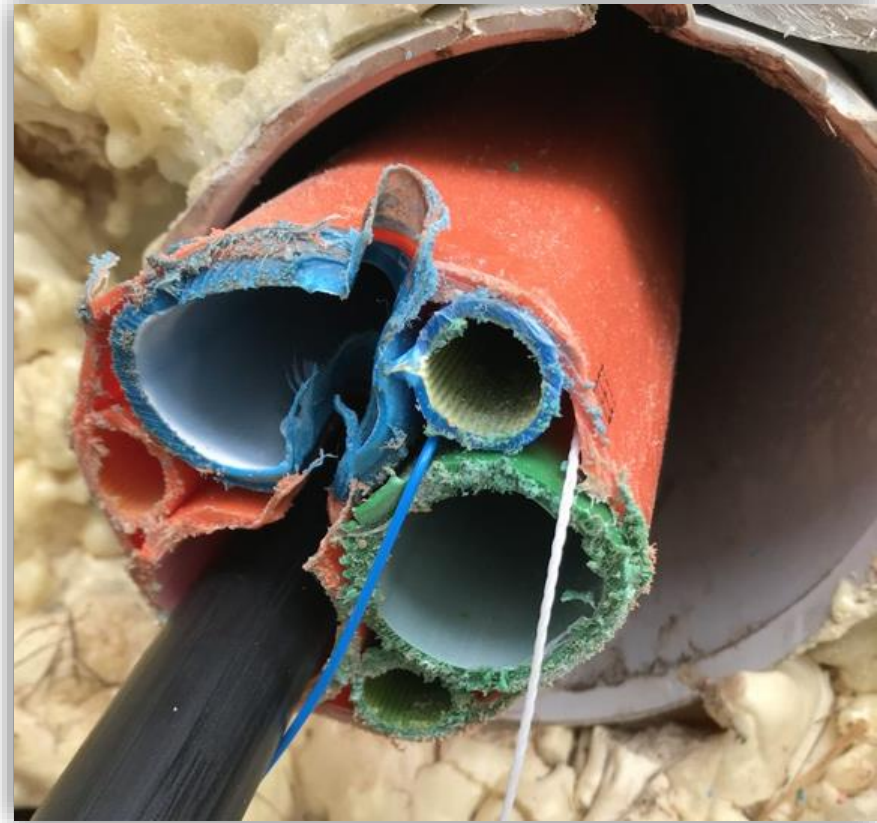
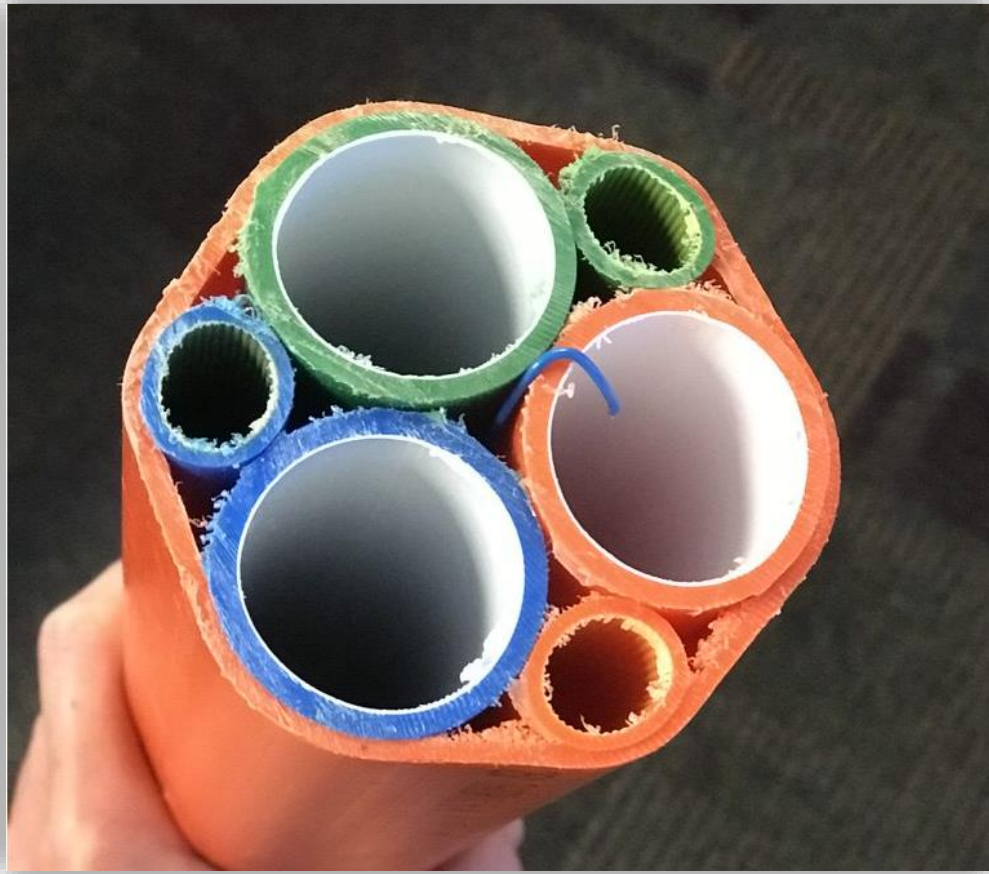
Montgomery: 74 Vaults



How is Fiber being used in NUG?

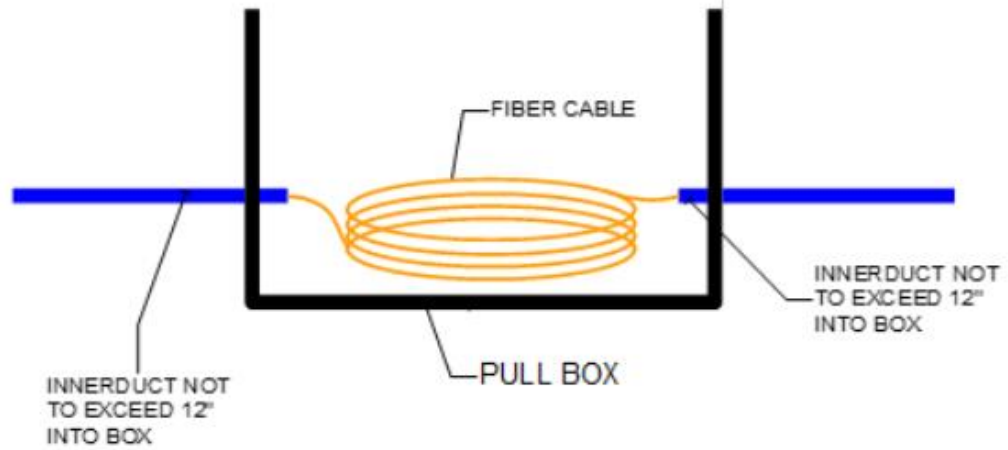


Innerduct



Handholes

PROFILE VIEW

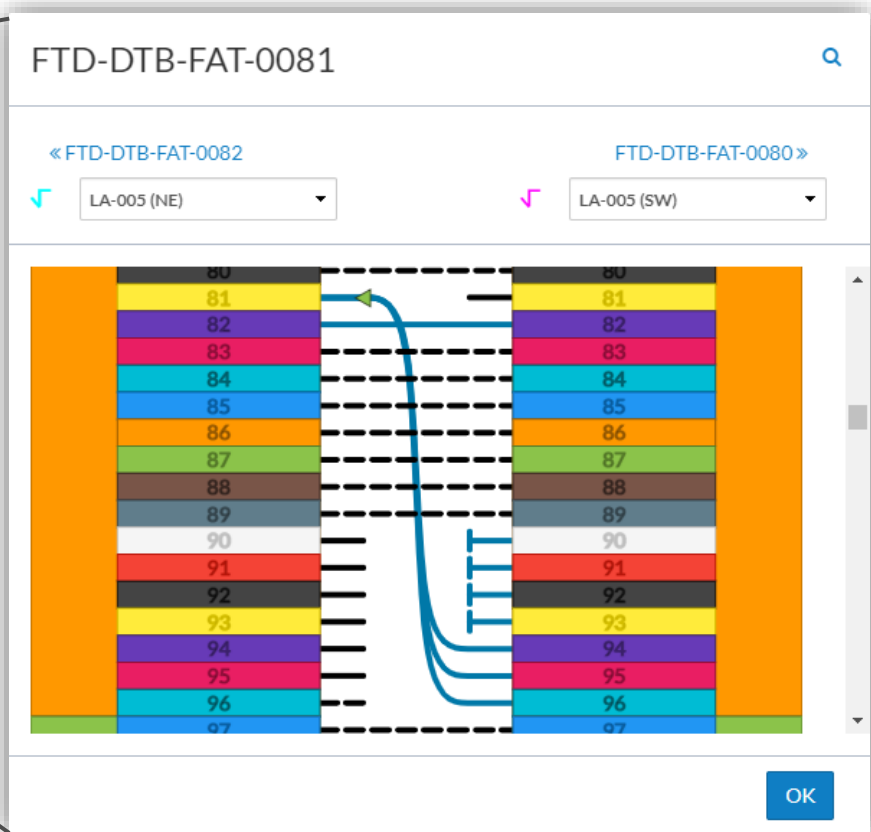
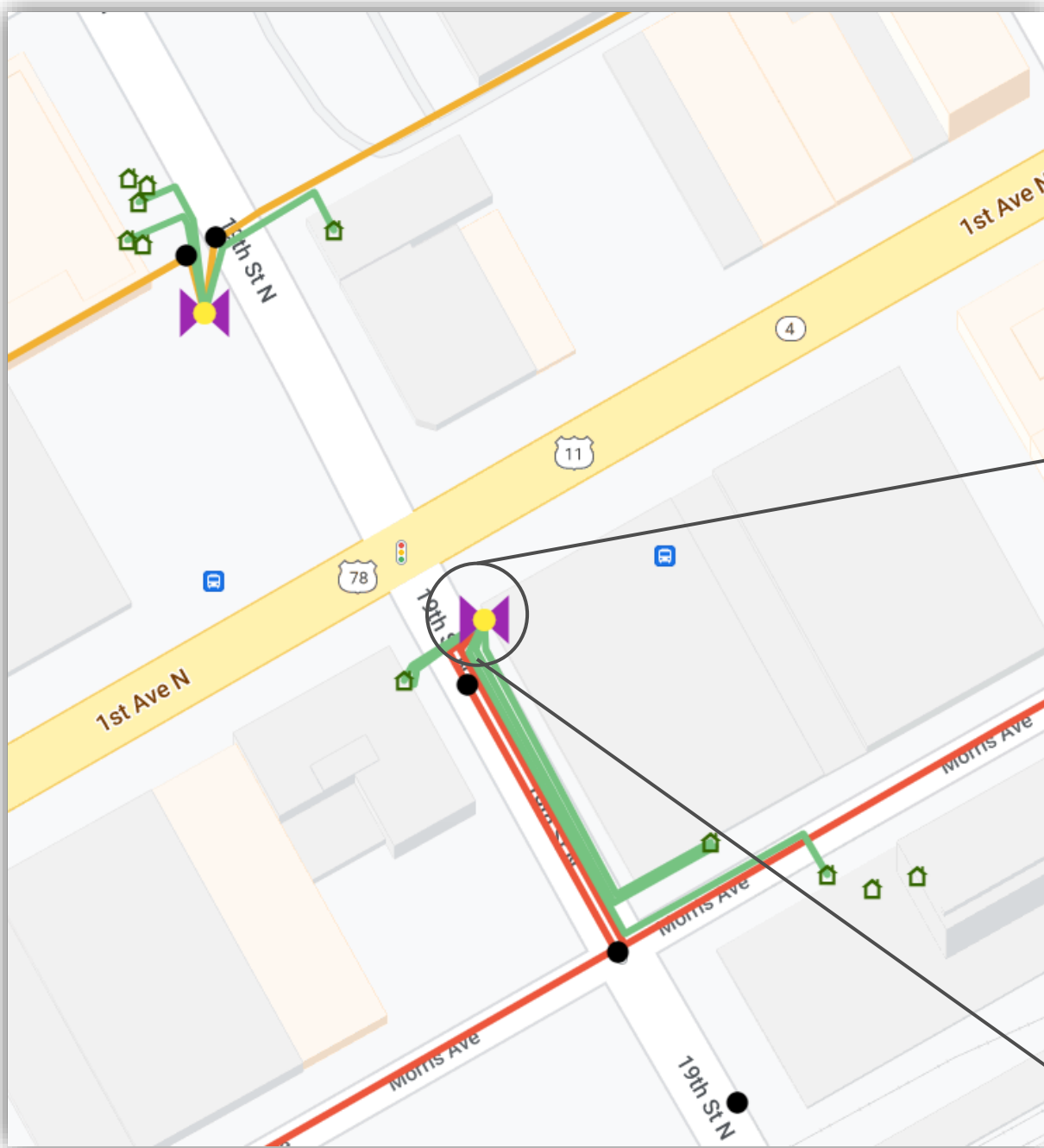


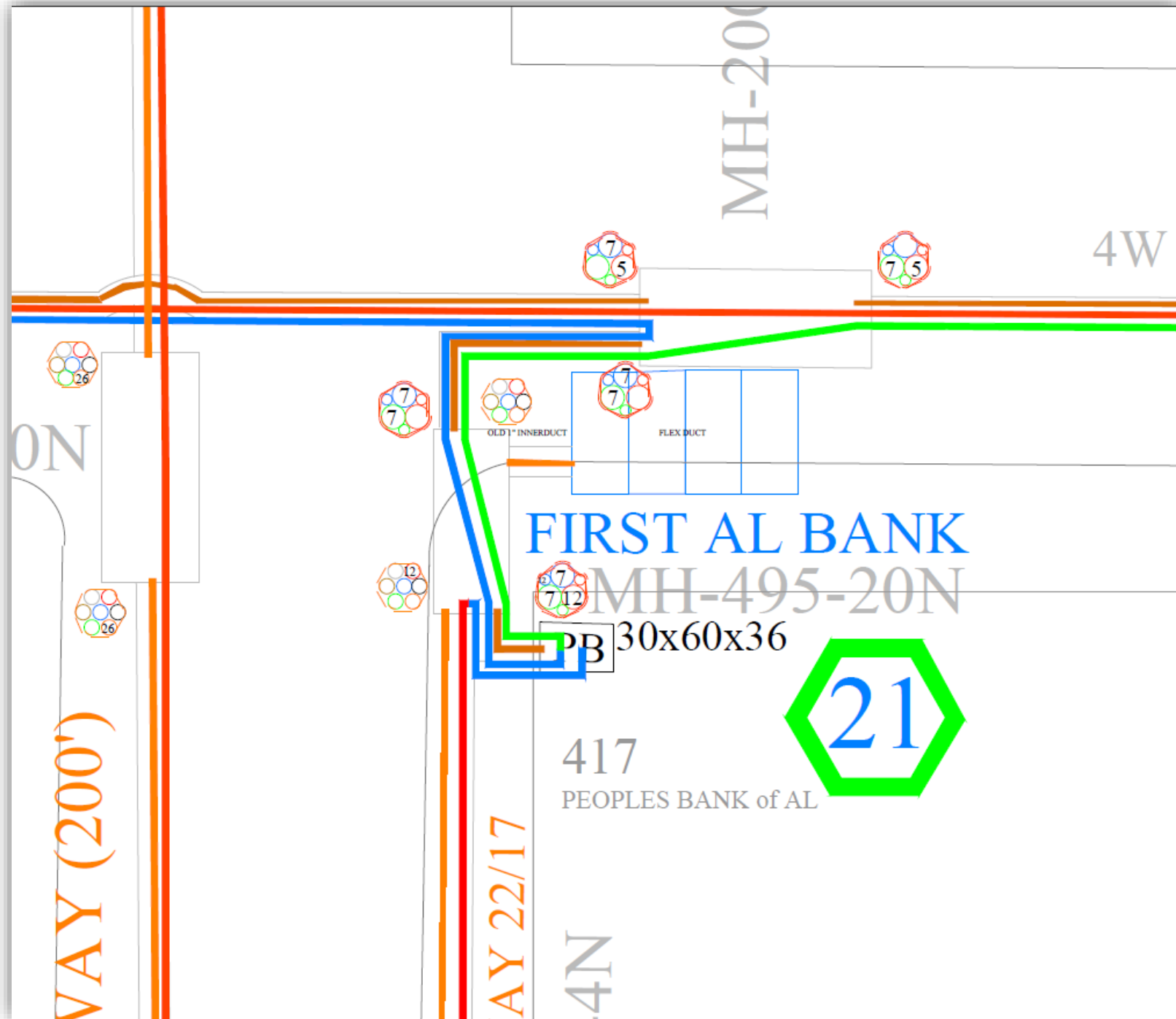
Fiber Racks

Spare Above Grade Vaults



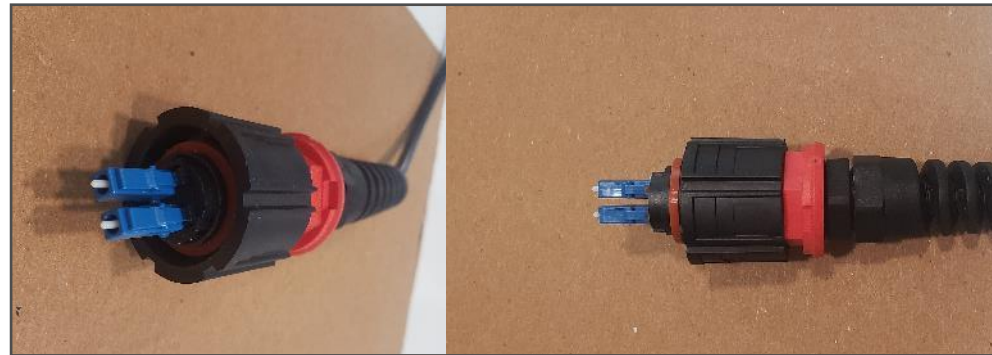
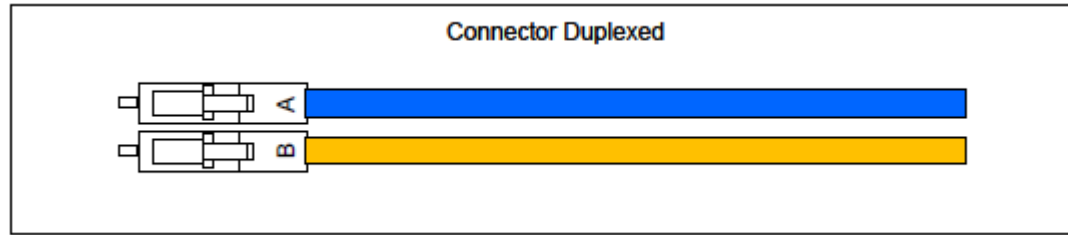
Fiber Drops and Splicing

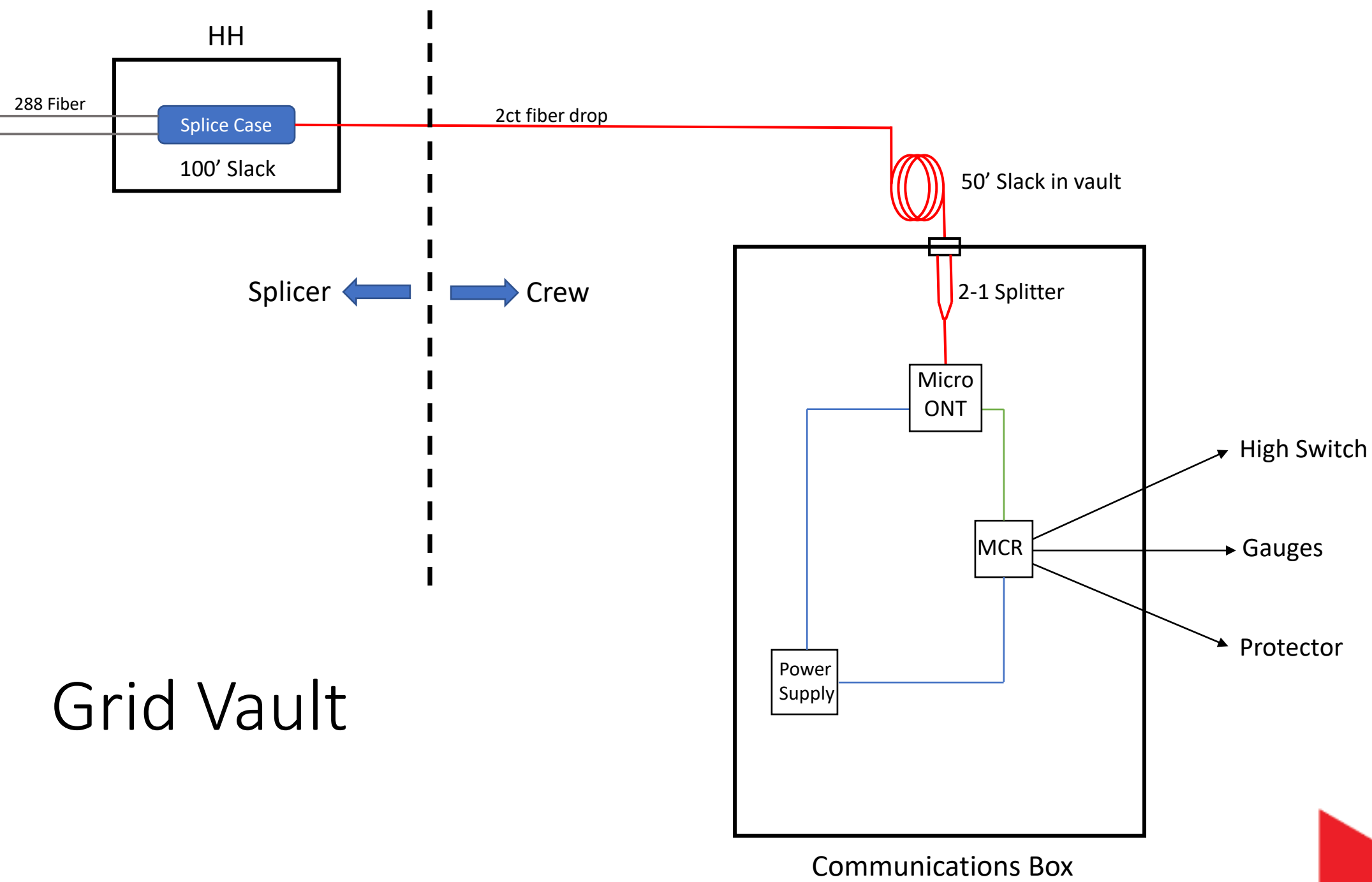




Innerduct Mapping

2 Count Fiber Drop





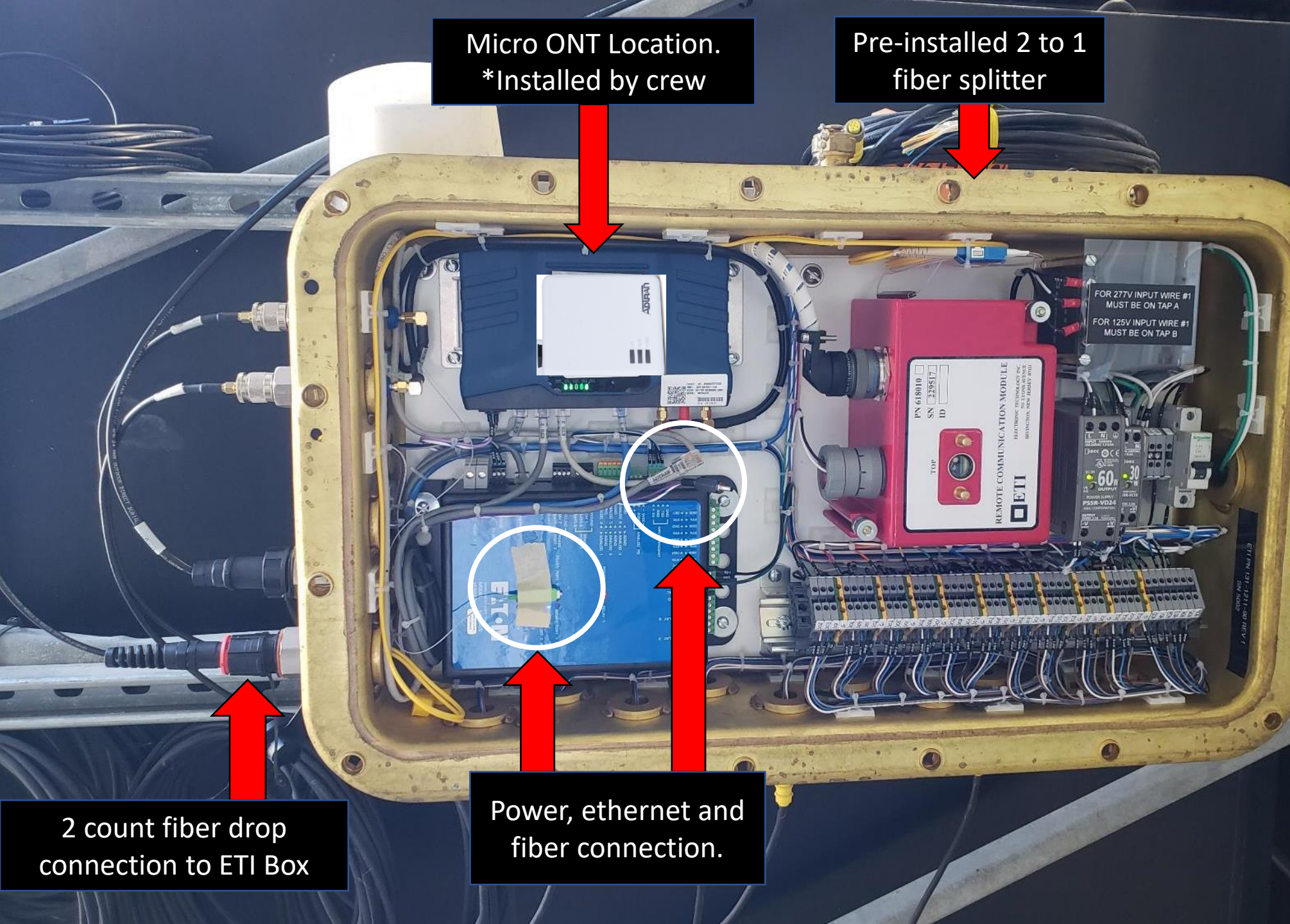
Micro ONT Location.
*Installed by crew

Pre-installed 2 to 1
fiber splitter

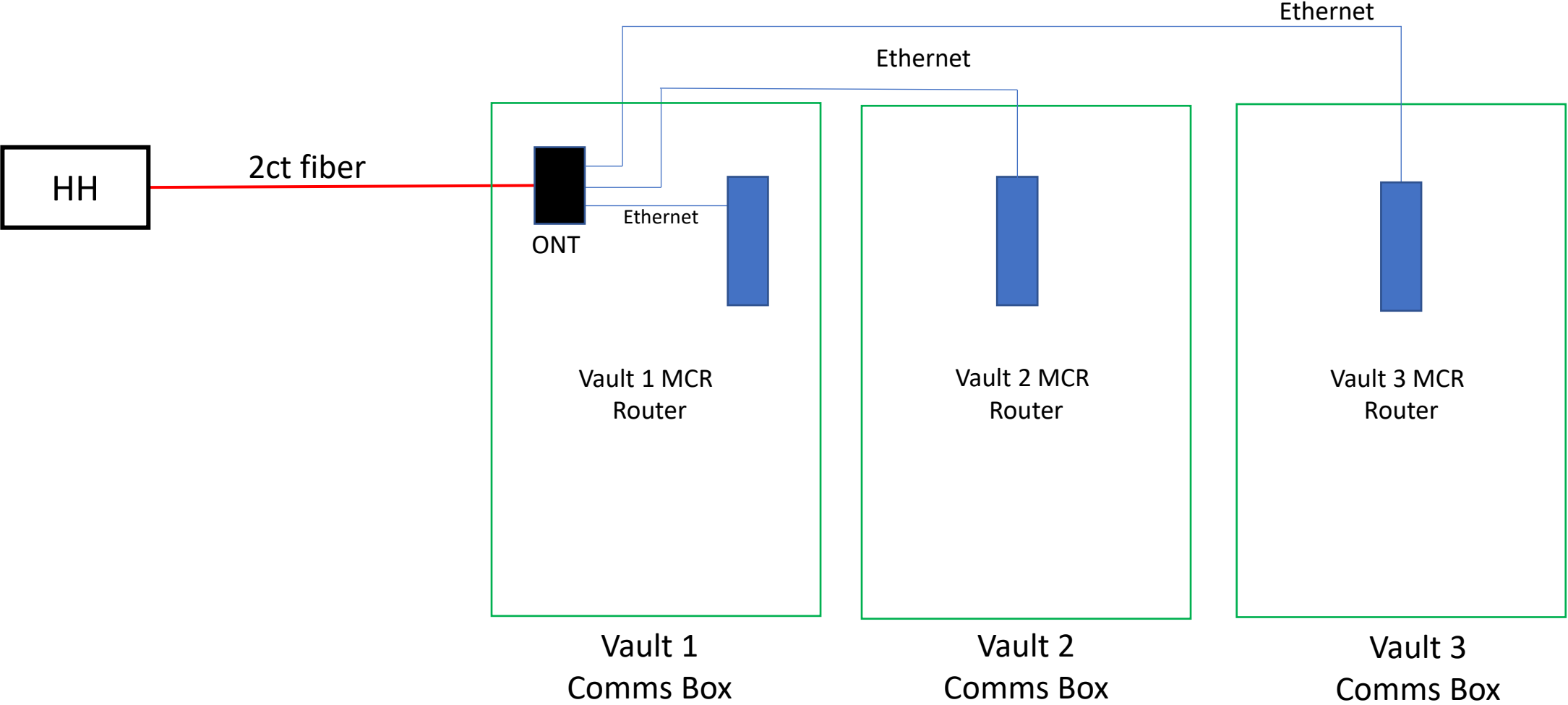
2 count fiber drop
connection to ETI Box

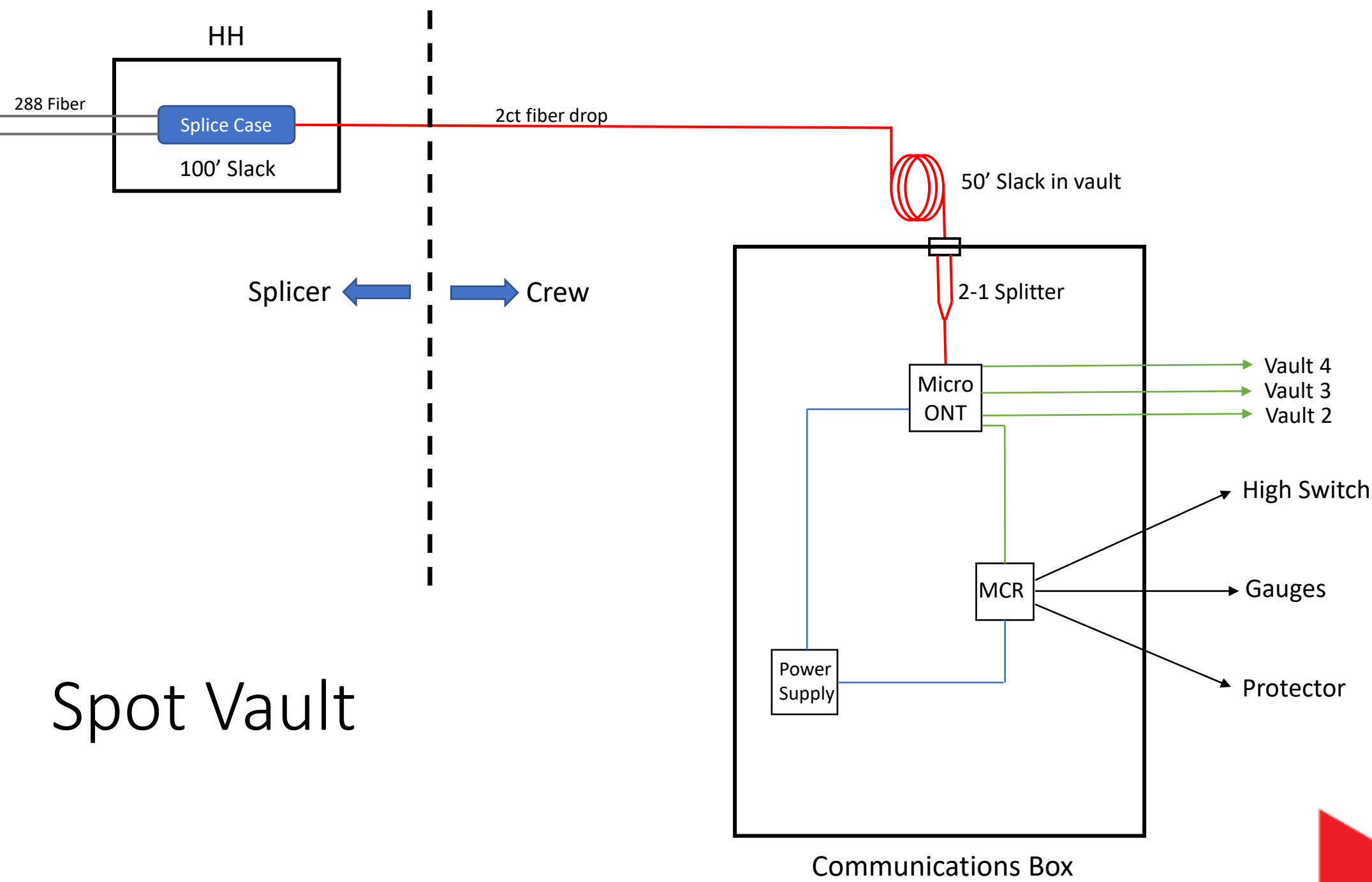
Power, ethernet and
fiber connection.

Grid
Vaults



Spot Vault



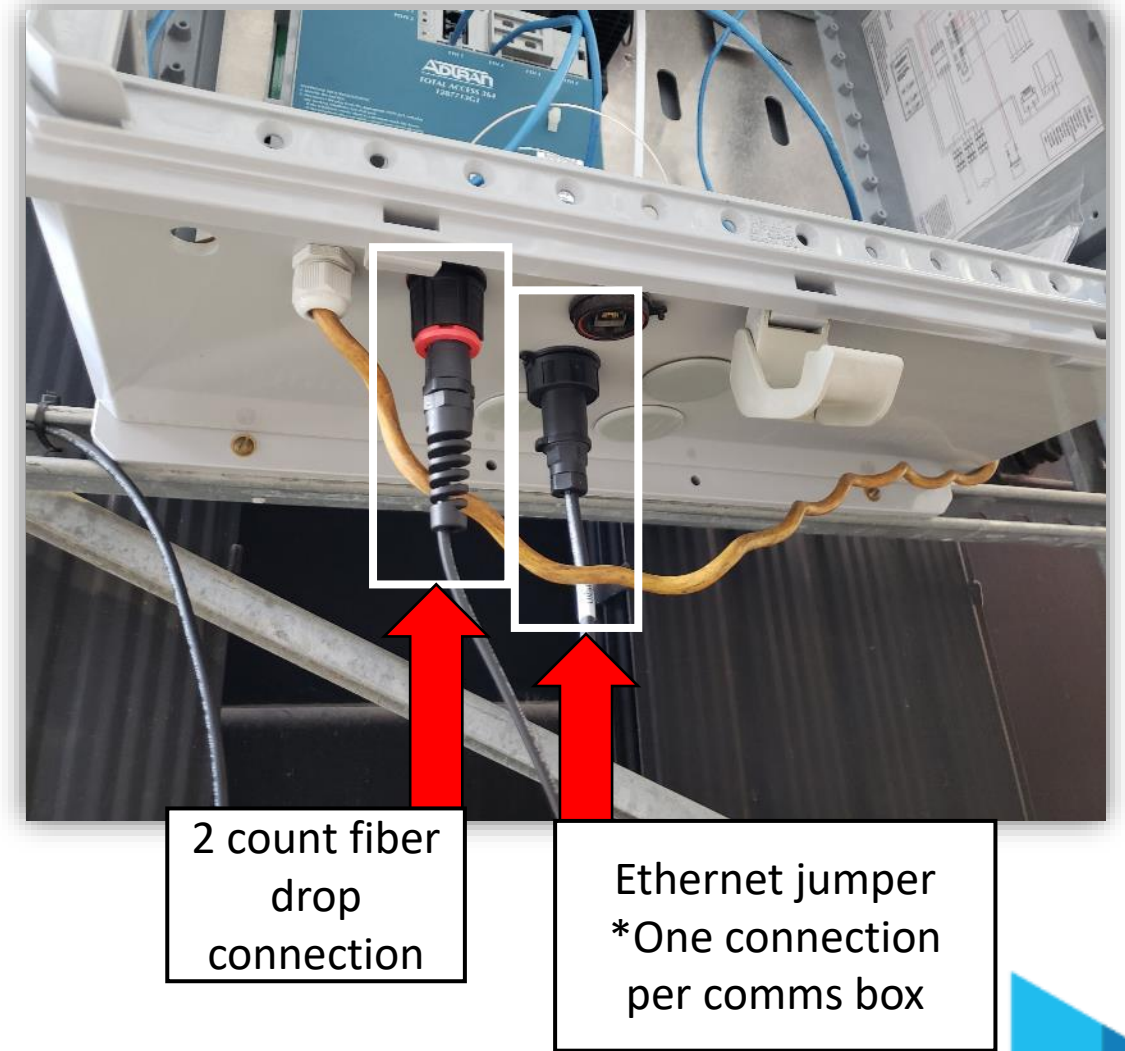
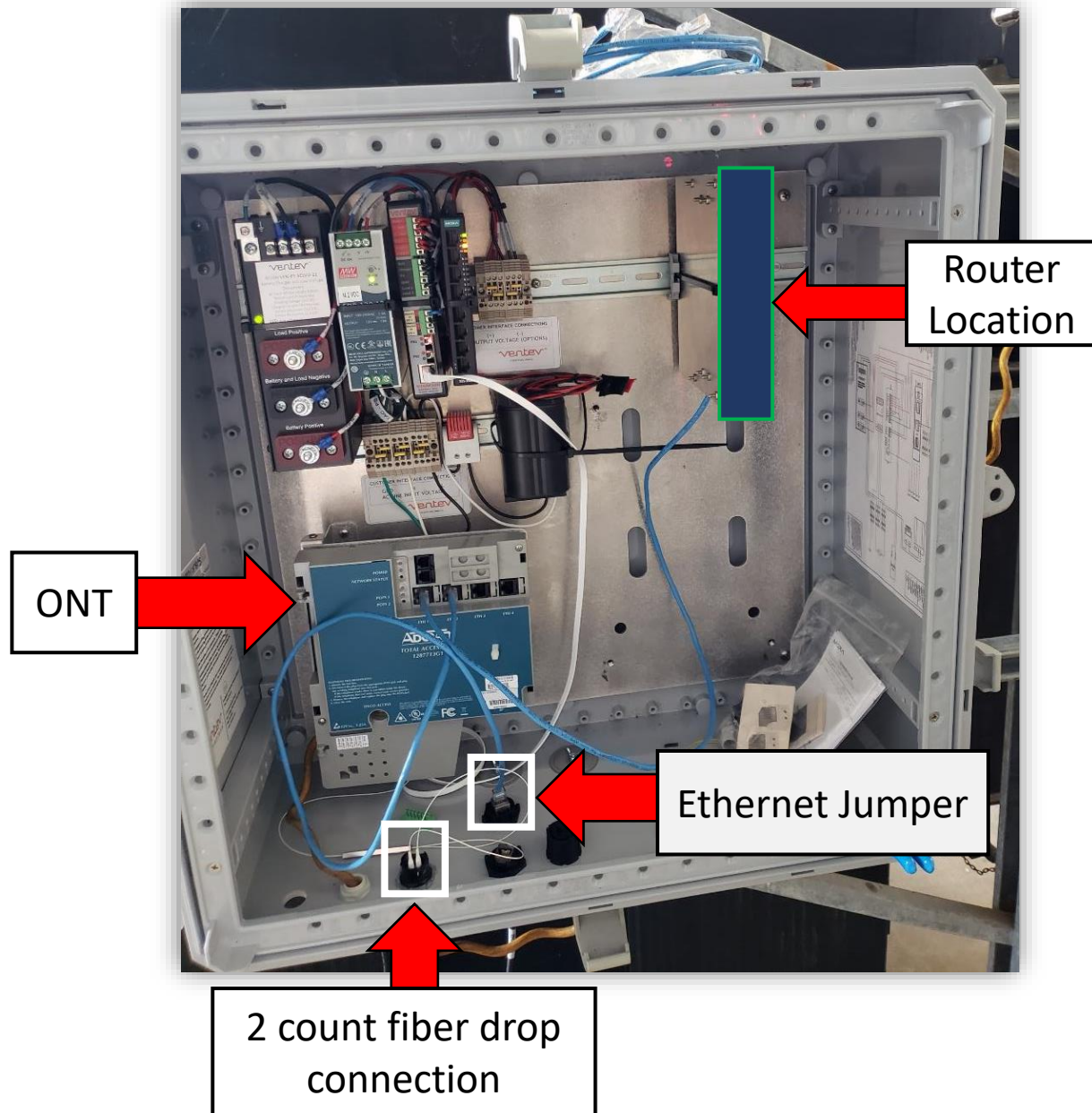


Spot Vault

Communications Box



Spot Vault



Questions