



AT&T East Design Engineering Integrated Fiber Planning Playbook

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Document Revision Log

Ver 1.4 (9/3/2021):

- Pages 35 & 39: updated buried HH example to remove station markers

Ver 1.4.1 (9/29/2021):

- Page 53: updated graphic
- Page 59: updated the proper posting of FST in ARAMIS

Ver 1.4.2 (11/1/2021):

- Page 66: updated cable loop requirement chart
- Page 5: ARAMIS live clip update

Ver 1.4.3 (11/18/2021):

- Page 15: added multi-unit structure example
- Page 17: added National ROW Tool information and job aids
- Page 13: updated ROW and private property to show single structure across property lines
- Page 66: corrected error in cable loop requirement chart (aerial loop removed)
- Page 68: added ARAMIS standardization information

Ver 1.5 (12/1/2021):

- Restructured and retitled majority of document to make it easier to follow
- Standardization - updated tether tap connector and FRC change information
- Updated various sample pictures throughout document for clarity

Ver 1.6 (2/1/2022):

- Page 78: Added the QC Validation Tool Access, Training and Documentation section

Ver 1.6.1 (6/23/2022):

- Page 44-45: Updated end section bonding requirements

Ver 1.6.2 (4/28/2023):

- Page 25: Added solution to avoid terminal exhaust situations in residential areas when customers order a second line or new ASE service
- Page 31: Add link to [Business Overbuild BCL \("MIKEY"\)](#)

Contractor Communication, Availability and Timeliness

The purpose of this document is to help provide clarity to AT&T standard engineering practices for employees and contractors designing work prints for the AT&T Integrated Fiber Planning (IFP) project. It is to be reviewed in its entirety and referred to when designing GPON Overbuild or Greenfield OSP projects. Corning's "FlexNAP™" Fiber Optic Cabling System should be used for both GPON Overbuild and Greenfield designs. This product takes into consideration the projects engineered cable attachment and terminal location footage. These footages, identified during the engineering survey phase of the project, provide the manufacturer with the ability to build the cable with exact preinstalled attachment points that identify customer-specific locations along the length of cable. These access points will coincide with the known pole and hand-hole locations, providing faster deployment and shorter time frames for customer connectivity to the network.

Initial suggestions to help you provide a high-quality work print:

- You are encouraged to review all job aids, design quality documentation and web-based resources. If you are still unable to find the needed resources...please ask your AT&T SPOC (single point of contact) on any design concern or misunderstanding you may have.
- The AT&T Engineering team suggests each person or team working on the IFP project have a direct contact phone number provided to AT&T for our SPOC or quality review teams to reach you or the team lead quickly. Our design team resources may see opportunities to help, they may have questions about a design issue, or may want to provide additional clarity to work being performed. Being able to provide this information to the individual or team who is responsible for the work product at the time of our review is very beneficial for future success.
- AT&T expects each companies SPOC or representative to communicate and track messages, concerns, or revisions internally so that all information we provide is sent to the person performing the actual task.
- Timeliness of revisions/corrections turn-around expectations:
 - Quality mistake/Corning update (print return ESVA /IFP contract expectation – next business day)
 - Reach out to AT&T SPOC for any revisions expected to go beyond 24 hours

Please contact AT&T SPOC early upon a concern or problem discovery to communicate and help understand delays beyond initial established timelines or expectations. Providing delayed replies or excuses is unacceptable.

Please note: One can refer to APEX ([APEX - Search Active AT&T Authored \(att.com\)](#)) for additional technical details on any practice or process in this document. This document is subject to change.

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Common IFP Design Errors to avoid causing negative results

Below is a list of mistakes and errors that we feel are significant and impacting to the design and construction of an IFP project. Please review and be aware of the inherent costs and delays caused by such errors.

Significant concern – we too often find the incorrect footages of cable on work-prints as compared to the actual measurements found in the field!

This causes a fiber cable shortage in the field when construction forces go to install fiber cable. Consequently, a delay in construction and associated costs to re-order updated material.

- Cable totals do not add up to span...often missing the up/down pole, coil, or tail measurements while fielding or posting
- Footage of cable do not match-up between ARAMIS records & JAM/OSPCM footages in system

To help you with designing IFP projects, we have some common issues to take note of and avoid:

- Inputting the **wrong PSA, Geo Loc or taper code** upon designing project - **AOTX fail - rework!**
- Using the **wrong FRCs or FTIs or WACs** on tasks – **revision!**
- Failure to **verify PFP location** is consistent across F1 to F2 projects – **fiber cable shortage error / delay in construction – costly revision!**
- Not **reviewing purchase order (PO) request**. Some POs may be specific for an F1 or F2 only – **duplicate work – wasted time and delays!**
- **“To Print x” is not consistent** from print to print / **Cable reference call outs or “bubbles” not consistent** from print to print - **revision!**
- **Required work tasks not on print – all costly revisions!**
 - Tether connection tasks - missing
 - P-coil task – (P) for line crew, (S) for splice locations
 - Place/remove pedestal task - missing
 - Tree trimming call outs - missing notes
 - F1: EML info posted – missing
- Fiber coils/TCF (tether coil future) for future building **missing OVALS info – revision!**
- **Tethers not called out** on print correctly (labeled correctly) – **revision!**

AT&T suggests that all contractors use a checklist for Quality review prior to submitting work to AT&T SPOC



Design_Engineer_C
hecklist.xlsx

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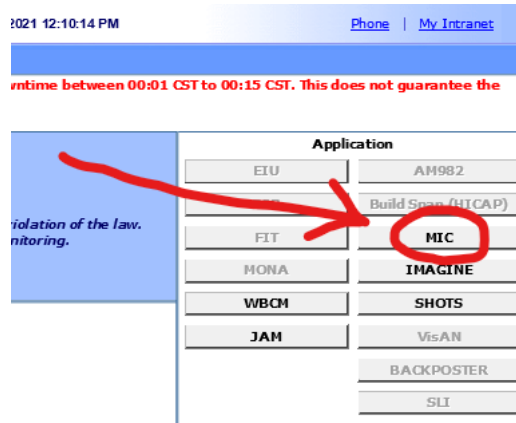
Initial Actions to Take – IFP Project Handoff to Contractor

Review the PSADR, PFP, ACAS(ORCA) location information from planning in the MIC binder

Reviewing the PSADR is necessary to ensure the proposed F2 design does not exceed the boundaries or the proposed fiber design point provided by the OSP Planner.

Additionally, review the write-up provided in ACAS(ORCA) and compare to MIC for accuracy. Any errors must be communicated to your AT&T SPOC immediately for resolution.

1. Log into ELP: <http://englogin.sbc.com/ELP/>
2. Log into MIC by selecting the MIC button within ELP:



3. Enter correct project number and submit:

Welcome to MIC

Please Select An Option From The Left Menu
or
Enter A CFAS Project Number

A015B17

Submit

4. Select Binder link to open documents for review:

Project Number	A015B17	Creator App	MIC	Data retrieved from CFAS at
Project Name:	LG: FTLG PSA 1129LA			
Start Date:	10/01/2017	Estimated in Service Date:	09/23/2021	
Closed Date:		Status:	APPROVED	
Last Updated Date:	05/17/2021	Last Updated By:	TCFA99	
Original Baseline Date:	01/23/2018	Current Baseline Date:	04/30/2021	
Project Little Job:	☐			
Project Type:	OSP-PLANNER	Project Big Job:	☒	
Legal Entity:	Illinois Bell Telephone Company	Project Binder#:	M00434273	
Description:	KM2859 - LA GRANGE 2018 LIGHTGIG PSA 1129LA PFP			

- Review “planning” documents for PSADR and PSA information on project:

Supporting Documents		Import/Edit
Folder Name	Document Name	Date Created
	CFAS Summary Report.htm	
	CFAS Addendum Summary Report.htm	
Planning	FIT REPORT - QueryBuilder.xls	10/25/2017 11:33:13 AM
Planning	GPON Optical Budget Tool.xlsx	10/25/2017 11:33:13 AM
Planning	LGR CILLG -7360 16SLOT GPON OLT Spreadsheet.xlsm	10/25/2017 11:33:13 AM
Planning	LIGHTGIG - PSA1129LA - UT# A015B17.ppt	10/25/2017 11:33:13 AM
Planning	NECAT PRICING REPORT.xls	10/25/2017 11:33:13 AM
Planning	PSADR .pdf .pdf	10/25/2017 11:33:13 AM
Planning	Sold RFD VISIO Template.vsd	10/25/2017 11:33:13 AM
	LGR CILLG DA 1129.xlsx	11/17/2017 11:05:03 AM

- Review information on both documents to ensure you have all the necessary information to know the PSA boundaries (PSADR) and the proposed location of the PFP (location document often a .PDF or .PPT).

***Note:** planning may choose to combine multiple DAs into one PSA.

- Review the OSA/DSA/CSA tab in MIC for accuracy of PSA and taper code:

Description: [IFP CLLI: OKPKILOP DA: 3149LA PSA: 3149LA LOCATION: 414 BELOIT, FOREST PARK]

SWs Key Members FRC/ModCd Budget Line Budget Versions CFAS Transaction Status Tracking Dates Notes Project Status

OSA/DSA/CSA Security Approval/Routing History Service Order Misc Indicators ASE

There are other users sharing the same project number; [View Users Sharing A020MOL](#)

Project Number A020MOL

Miscellaneous Information

Tax Districts Enter Tax Districts Custom Work #

Route 3 Customer Name

OSA/DSA/CSA 1 Customer Contact Name

Planning Area/District CHICAGO SUBURB Customer Contact #

Design Center ELMHURST NPANNX

Primary SWC OKPKILOP

OSA/DSA/CSA information

OSA/DSA/CSA Del PSA/DA relieved Taper code/Tracking units

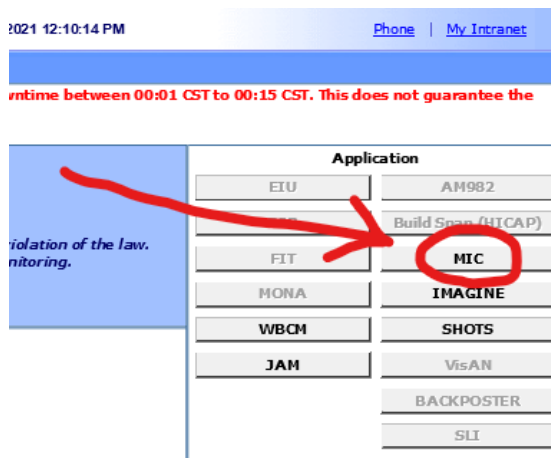
3149P ☐ 3149LA 3149LA

[Pull From LEIS](#) [Save](#) [DA CLLI Assignment](#) [Reset](#)

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Review fiber/splitter information from planning in MIC

1. Log into ELP: <http://englogin.sbc.com/ELP/>
2. Log into MIC by selecting the MIC button within ELP:



3. Enter correct project number and submit:

Welcome to MIC

Please Select An Option From The Left Menu
or
Enter A CFAS Project Number

4. Review MIC for the "FIG" Fiber Inventory Granite for fiber and splitter information. If this information is incorrect or missing, contact AT&T SPOC for assistance. The splitter paths will not build correctly if this information is missing or incorrect. (see image below)

The screenshot shows the MIC Fiber Inventory Granite interface. On the left is a navigation menu with options like 'MIC Home', 'Search', 'Equipment Selection', 'CFAS Project Information', 'Project Component', 'Sketch Tool', 'FTTP Feeder Fiber1', 'FTTP Distribution Fiber1', 'Fiber Inventory Granite1', 'Project Approval', 'Project Reports', 'MIC Project Status', 'Create CFAS Project Number', 'Binder Management', 'Upload to Granite', 'Network Creation', and 'Client Tools'. The main area is titled 'Project Number' and 'Fiber Inventory Granite Sequence'. It contains two sections: 'Originating Information (A-Side)' and 'Originating Fiber Terminating Information'. The 'Originating Information (A-Side)' section includes fields for Location Type, Cili Code, Address, Qty, SWC, SWC Name, and GEO LOC / FRC. The 'Originating Fiber Terminating Information' section includes fields for First Strand of LG11, Last Strand of LG11, and Connector Type. Below these sections is a table titled 'Originating Fiber Terminating Information' with columns for 'Delete', 'Add', 'FDP/Splice Panel', 'Granite Shelf', 'Port', and 'Strand'. The table contains one row with the following data: 'OSP 020206.13.06 (72 PORTS)', '17', '18', '09', '90'. At the bottom of the interface are buttons for 'Save', 'Print', 'Next', 'Reset', 'Email Report', and 'Print Report'.

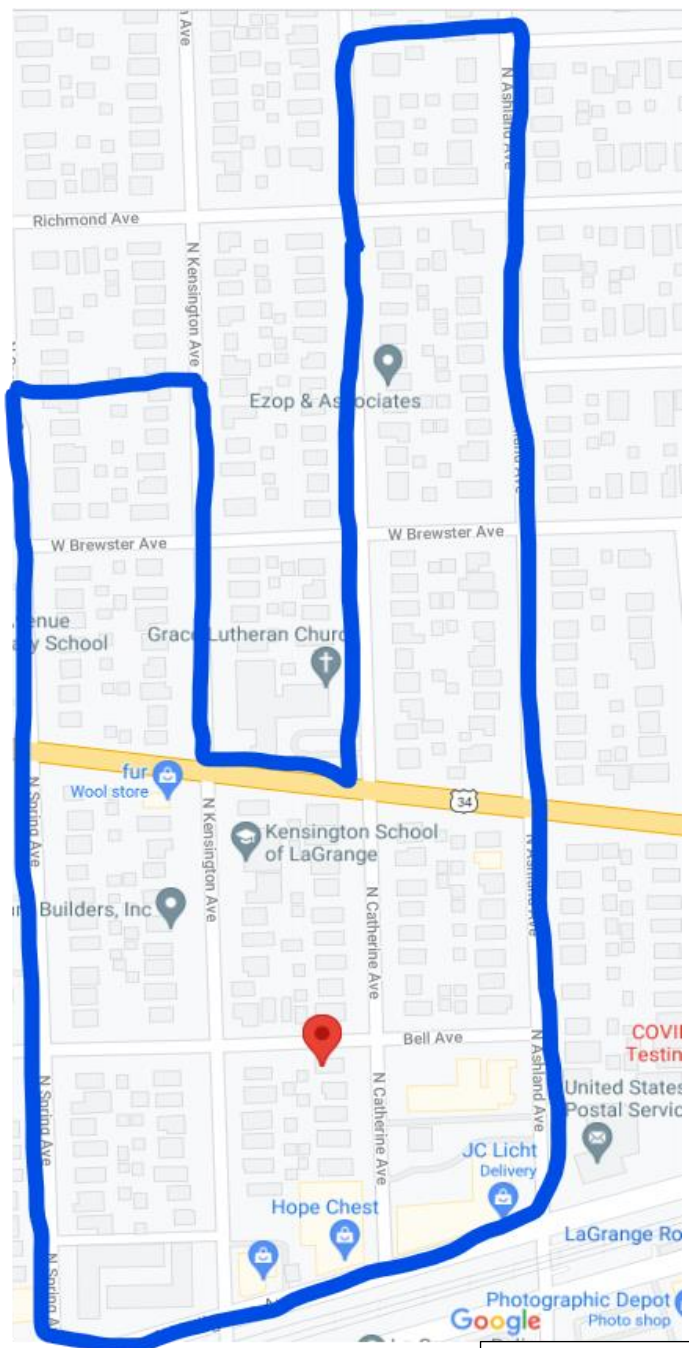
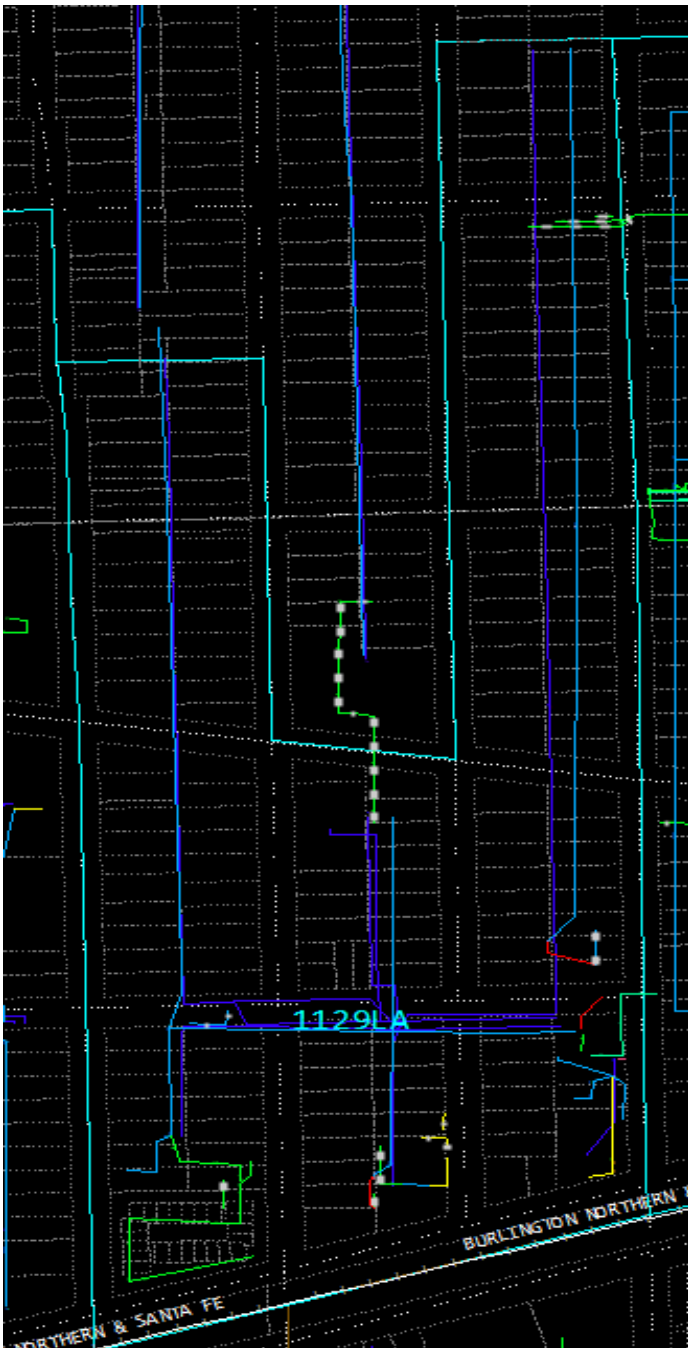
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Take the Time to Research ALL the Cable Routes in the PSA

Review the entire PSA in ARAMIS and compare to an online mapping tool. This needs to occur prior to you going to the field. This is to ensure you are including ALL eligible living units during your field visits and helps to understand exactly what needs to be included during site visit to avoid additional trips to field. You must follow all cable routes to the end of PSA boundaries to capture all living units for proper fiber cabling and sizing. Keep in mind, aerial or buried environments exist, and each provides different challenges for design accuracy! Also, remember to check for cables within a “Detail Window” in Aramis (example: first HH from PFP) that may contain additional cables in PSAs.

ARAMIS

Internet : Google, Bing, Maps, etc.



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Review and Research the Right of Way (ROW), Public and Private Easements

When designing an overbuild project often assumptions are made that AT&T has rights to place new facilities where existing facilities exist. This is not always the case. It is important to understand that the language in easements must be reviewed prior to placing new cable. Often the use of the internet will be very helpful in locating ROW, tax maps and possible easement record data. Use the individual counties GIS viewers for land parcels and road right of ways for general information.

Easement language is often negotiated at the property owner's behest. As an example, a property owner may grant buried rights but limit any above ground appurtenance's size or dimensions. So, it's always important to review and understand easement rights prior to design to avoid costly rework.

There are multiple rights of way that AT&T utilizes to place facilities. Below are listed some Grant of Rights that should always be reviewed before an overbuild design.

- Exclusive AT&T or Legacy Bell Easements – These easements represent the most secure rights for placing facilities. Be sure to review and understand all the language in the legal description of the easement.
- Public Utility Easements – Make sure to read the dedication on the platting to understand what rights were granted. The dedication will spell out the specifics of any utility easements referenced within the blocks and lots of a subdivision
- Non-Exclusive Easements – Like Public Utility Easements, multiple utilities can be located within the same easement. But unlike Public Utility Easements, there is a hierarchy for the rights granted, and the property owner needs to grant permission prior to any new installation. Subordination agreements with existing utilities are also required before placement.
- Power Company Easement – Often assumptions are made that if the power company has a pole line in a private easement, and if AT&T has a joint use agreement with that power company, that AT&T then has inherited rights to place on those poles. This again depends on the language of the easement. It may be that each individual “attacher” needs their own agreement with the property owner. It is also important to follow all requirements for attachments as spelled out in the joint use contract.
- Access or Right of Entry Agreements – These agreements represent permission to place facilities at a single point in time, with a specific owner. Never assume an existing access or right of entry agreement allows for additional facilities to be placed months or years after the original installation.
- Term Easements – Easements that expire after a certain number of years exist. If there is a need to place new facilities in an easement with a term, take the opportunity to negotiate a new easement that lasts into perpetuity. You never want to add additional facilities in an easement where expiration is a certainty.

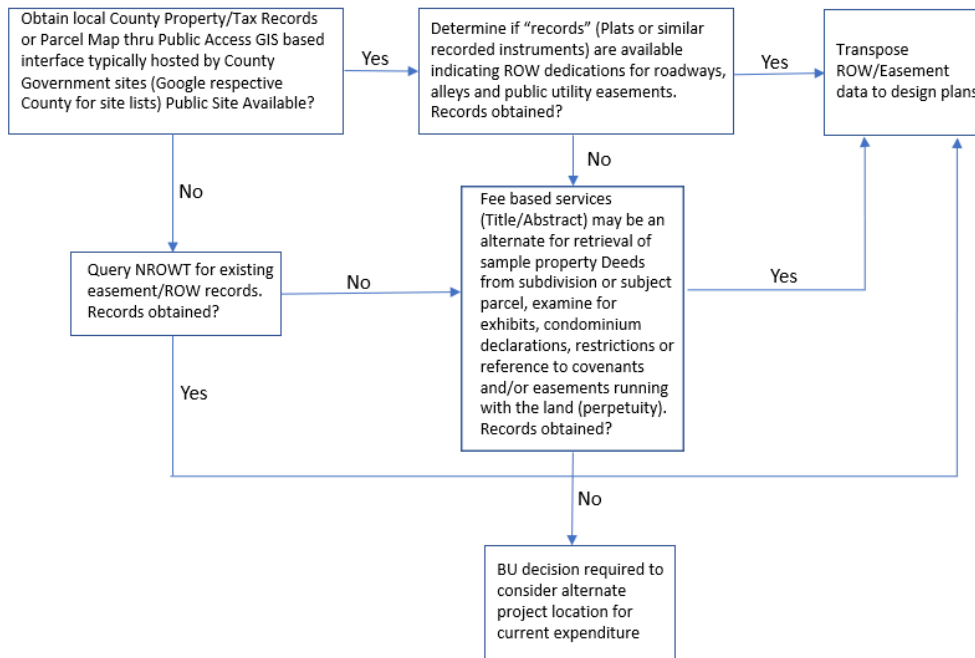
In many instances the ability to locate and view this information will require a visit to the county's recorder office or local city hall for recorded plat records. The contractor will do their own searches for easements and or plats and obtain their own copies. Contractors should not be submitting requests for this information through AT&T personnel (Engineers/ROW Managers).

You will need to do all the research necessary to ensure we are placing all cables and equipment in the proper location, and it is authorized for AT&T's use.

ROW, Public/Private Easement research checklist/flowchart:

Initial review of available plant records, archived work prints, planning records, paper or scanned documents, etc.**

ROW CHECKLIST



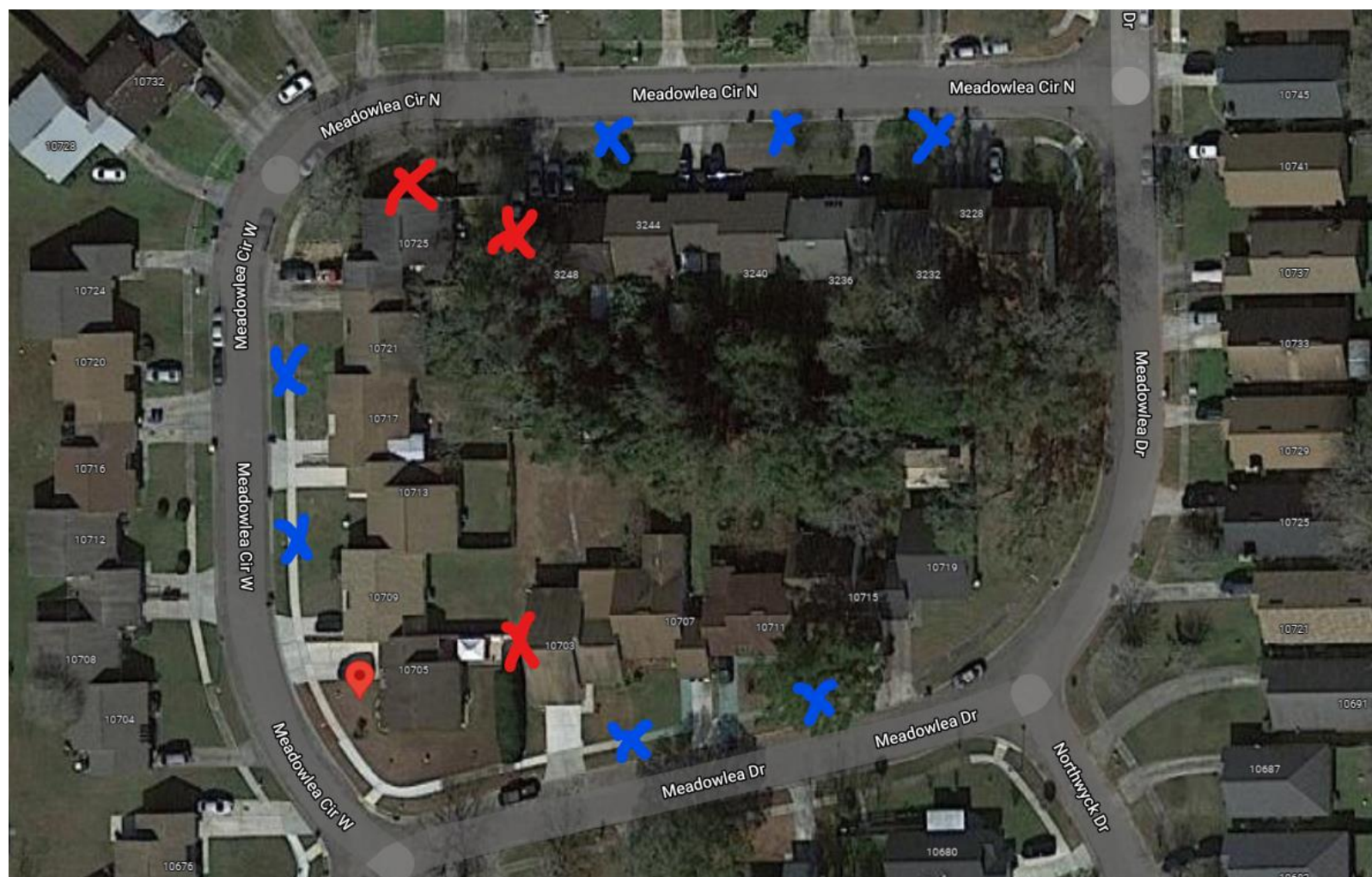
**Age of both the existing AT&T Plant and the developed properties may dictate expectations for ROW records recovery. AT&T facilities installed prior to divestiture (1984) on private property may not have required easements or been sought - communication services were non-competitive and provisioned on as needed basis by AT&T, the National single source provider of telecom services. Work prints/job records developed prior to "mechanization" of engineering plans development ~1999 are not likely recoverable.

Note:

Be aware of adjoining structures when planning cable routes. (reference picture below) We have seen instances where a continuous structure is built across several property lines and appears to look like an MDU.

In the example below, you will notice one structure that crosses four individual property lines. The current copper service is from a single terminal on the west end of the structure (represented in the **RED** X's). This is no longer allowed due to the subdivision of the parcels.

When this situation is encountered the new IFP cable and terminals must be placed in an easement or ROW. Using this example again; the design needs to use pedestals or flowerpots (represented in the **BLUE** X's) to allow the proper placement of drops as they cannot cross private property lines.



GIS and ARAMIS copper cable routes below for this section of property:



AT&T National Right of Way Tool – Use and access

The contractor can use the AT&T National Right of Way Tool (NROWT) application and the search feature to search for any existing easement information that may be in the system.

The NROWT is an AT&T nationally supported standard system for the inventory and processing of data for ROW (Right of Way). NROWT will be the starting point for all ROW requests concerning Research, Surveys, Acquisition of Easements, Conveyance of Rights, Leases, Licenses, Releases or Vacating of Rights, Subordinations, Trespasses, and requests for Railroad crossings. The system will act as the central repository for all rights granted to AT&T related to Wireline activities on both public and private properties. NROWT also has the flexibility to manage that work for one individual or act as a communications engine between requesters and ROW SMEs. The application is interfaced with AT&T land base and can populate data based on the drop of a pin at a parcel level. This allows for standardized reporting and search functions that can quickly provide the availability of Right of Ways in a geographic area.

ROW Manager job aid embedded here:



NROWT_ROWmanager_JOB_AID.pdf

Report job aid is embedded here:



NROWT_REPORT_JOB_AID.pdf

For detailed instructions on how to use this tool – use this link to APEX documentation:

<http://apex.web.att.com/bookview/bookview.jsp?bookname=ATT-TELCO-002-600-654>

Contractors will request access to the National Right of Way Tool

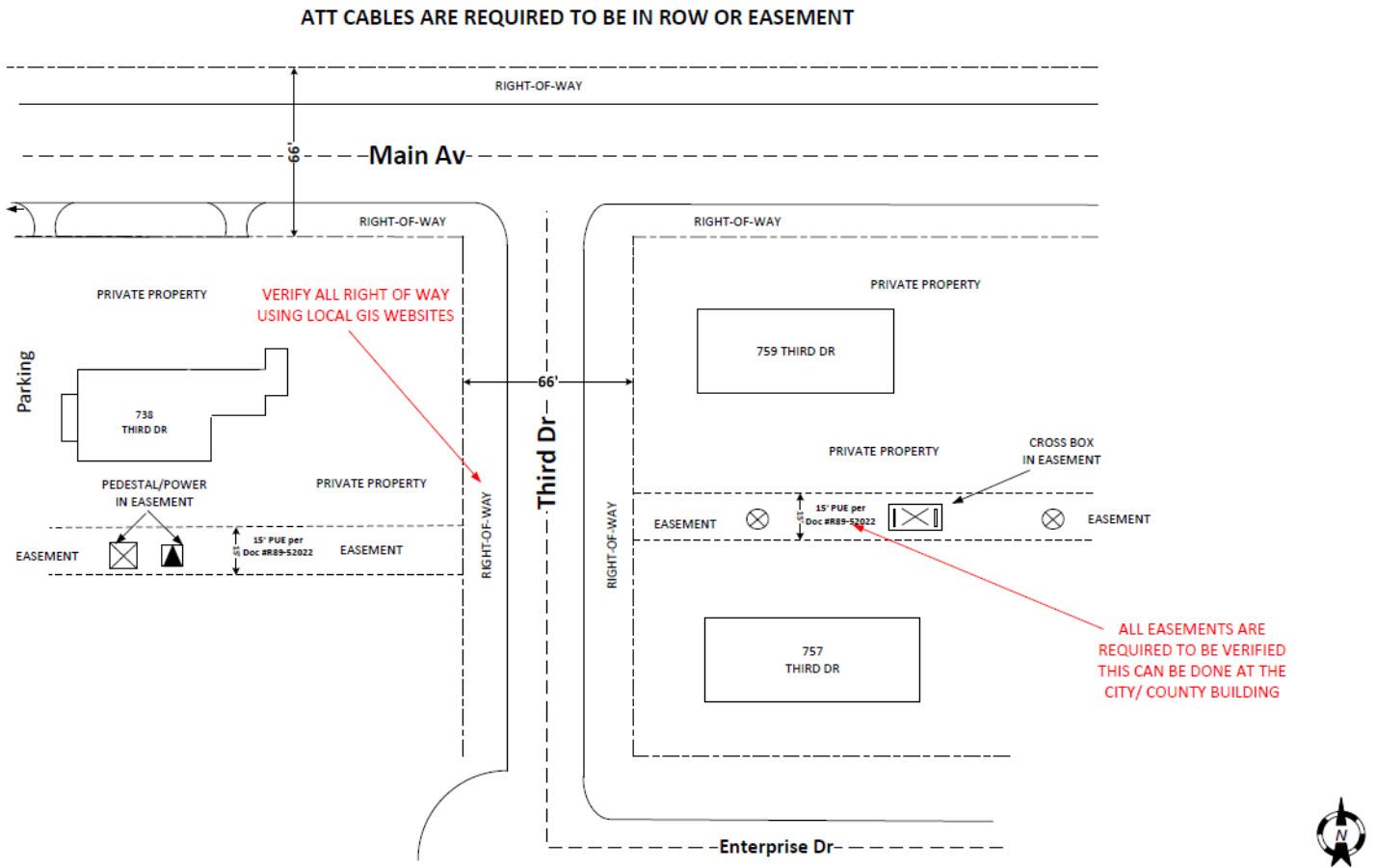
A Requester is a Designer or Planner that needs to access to use the tool. View the step by step for requesters [here](#). At this time Requesters can only be AT&T employees or contractors with a valid UIDs and have an active my Role within the tool.

Access to tool link: Using the Firefox browser for access. <https://ce.lno.att.com/row/#/app/home>

Note: Contractor will contact ATT SPOC FIRST for any request beyond record retrieval.

Note: If the documentation you are looking for is not in the National Right of Way Tool it would be the contractor's responsibility to research further to obtain this information on their own.

Please review the sample document below for ROW and Easement information you will need to find and document on work-prints you create or are responsible for:



Complete a Comprehensive Living Unit Review and DA Address Scrub Tool

The IFP Overbuild project is intended to overlay PON architecture to business, residential, and CRAN node customer locations (aka -living units) to increase ATT fiber footprint and deliver associated high-speed services to ALL existing and potential customers within a particular PSA.

Use of the DA Address List Report

Obtain all the living unit information for the PSA before the field visit. The DA Address List Report gives the Engineer a complete list of Facility addresses from OVALS within a selected DA.

Training - Use the links below for obtaining the DA Address Scrub Process Training:

- PowerPoint - [DA Address Scrub Processes](#)
- Video - [DA Address List Report Training](#)

To run the DA Address List Report you have to request Access in [MyLogins](#). The process to gain access and to run the DA Address report is found at this link: [the DA Address List Job Aid](#).

It is important for all Engineers to ensure facility addresses are SAG valid and that Granite addresses EXACTLY match LFACS addresses to allow customers to order GPON services. We need “like-for-like” in all fields. Please field verify for supplemental addresses and delete incorrect LFACS assignments such as: Flr 2, Flr RR that do not exist.

In the future, ARAMIS SAG validation will do a main and supplemental comparison for address match. We are limited to only the main address today and expect each fielder/designer to correct all addressing errors found on the site visit.

The DA Address List Skinny Report, also known as, the Scrub Report is used to review LFACS addresses for an assigned FOB (Fiber Overbuild) PSA boundary and ensure they are SAG Valid. If the addresses are not SAG Valid, Engineers and/or Contract Engineers should submit a TRAKS request to have the addresses corrected or removed before proceeding with the build of the project.

Post Check Report

- Job Aid – PDF - [http://cayman.lno.att.com/osp/osp-design/SAG/DA Address List Post Check Job Aid.pdf](http://cayman.lno.att.com/osp/osp-design/SAG/DA%20Address%20List%20Post%20Check%20Job%20Aid.pdf)
- Video – (same as above) - [DA Address List Report Training](#)

After AOTX is sent successfully, the DA Address List Enhanced Report, also known as, the Post Check Report allows the Engineers and/or Contractors to do a post job design and/or post job completion quality check on all the Facility Addresses in LFACS and Granite. Therefore, the DA Address List Enhanced report should be used to review the DA and PSA addresses in LFACS and Granite for matching OVALS Address IDs prior to issuing the project to Construction.

Note: If there are any discrepancies, they must be addressed before the project has been final approved.

Screenshot of the DA Address List Report program:

← → ↻ 🏠 Not secure | csisqualprod.web.att.com/daaddress/app/

📁 AT&T 🌐 eLink 📞 Webphone 🌐 HROneStop 📄 ServiceDesk 📁 East Staff Links

DA Address List Report

Service Links

AVSQ
DA Reporting Form
DA Address List Report
MLDB Address Validation
USAP GUI

DA Address List Report

Please select a Report Type, State, CLLI or NPANNX, and DA to generate the DA Address List Report.

1 Select a Report Type

☒ DA Address List Skinny
☐ DA Address List Enhanced

2 Select a State

AL x

3 Select a CLLI or NPANNX

ALVLALMA x

NPANNX

4 Select a DA

1103 x

Please select upto 5 DAs.

Generate Report
Reset

Export
Note: Data latency from source systems is e

Address List (LU Count=223)

House Number	Street Name	Community	Zip Code	Unit Type	Unit	Floor Type	Floor	Building Type	Building	OVALS Address ID	Pi
113-B	E DONS AV	ALBERTVILLE	35950							000016X7SP	10
102	E MAIN ST	ALBERTVILLE	35950							000016XALD	R
104	F MAIN ST	ALBERTVILLE	35950							000016XCHL	R

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Construction/Building Permits – Research and Obtain all Information Required

AT&T cannot start work in most locations without an approved permit on-hand. **Therefore, a permit application must be created and submitted to AT&T SPOC or to the permitting authority before continuing with ARAMIS workprints.**

After fielding the entire PSA you should have all the information needed for all required structure work we need to have construction contractors perform work as needed. Examples: pits/access holes, hand-holes, conduit, boring/placing IPP and PFP pad.

Contractor is expected to adhere to all governing agency permitting requirements including all state, federal and local laws, municipal ordinances, and AT&T practices.

Contractor will create required forms/permits specific to each governing agency. The Contractor may need to coordinate with the governing agency any special requirements (including PE stamps) for the final approval of the permit.

Permit forms for City, County and State will be found by searching local websites or the internet. If you are unable to locate the proper form, you may contact your AT&T SPOC for assistance.

Note: permit forms and permit expectation vary GREATLY from area to area.

A sample permit application for a City:

VILLAGE OF FOREST VIEW				Office Use Only		
7000 W. 46 th Street, Forest View, IL 60402				Permit #		
Phone: (708) 788-3429 Fax: (708) 788-8266				Permit Fee:		
Email: info@forestview-il.org				Approved by Building Commissioner:		
APPLICATION FOR BUILDING PERMIT				Date Issued:		
(Please Print Legibly)				Date Application Submitted:		
Name of Property Owner: <u>46th St ROW</u>						
Owner Address: <u>N/A</u>				Phone: <u>N/A</u>		
Project Address: <u>Wenonah Av and 46th St (4603 Wenonah Av).</u>						
Property Identification Number (PIN): <u>N/A</u>						
Identify & Fully Describe Work (Include Proposal/Quote and Sketch/Drawing, if applicable) – Provide all dimensions, material used, height & widths, distance from other structures on property, lot lines, etc.						
<u>A. PLACE 30"X48"X36" FIBERGLASS HANDHOLE PER PRINT</u>						
<u>B. DIRECTIONAL BORE 382" AND PLACE (1) 2" PC FROM P.4533 TO NEW HH.</u>						
<u>C. DIRECTIONAL BORE 78" (Add'l. Space on Other Side) Total Cost of Project:</u>						
<u>AND PLACE (1) 2" PC FROM HH TO P. 4604</u>						
Contractor Information (If Property Owner doing work indicate "Self" as Contractor Name)						
Contractor Name: <u>TBD (ATT)</u>				Business Phone: <u>(708) 396-7614</u>		
Address: <u>2427 Union St, Blue Island IL 60406</u>				Email Address: <u>@att.com</u>		
Contact Person:				Cell: <u>N/A</u>		
Office Use Only						
	Name	Address/City/Zip	Phone	Ins.	Bond	Insp.
General	(See Above)	--	--			
Carpenter						
Electrician						
Plumber						
Roofer						
Sewer						
HVAC						
Concrete/Asphalt						
Work shall be in strict compliance with all provisions of the Building Codes, Zoning and Ordinances of the Village of Forest View and all amendments thereto. By signing this application I acknowledge that I am either owner of said property or have the authorization of the owner for the performance of scope of work applied for. I hereby certify that all of the information contained herein is true and correct to the best of my knowledge.						
Applicant Signature: _____				or AT&T		
Property Owner				Authorized Agent/Contractor		
Date				Date		
NOTICE: The Village, by ordinance, requires the licensing and bonding of general building contractors and certain sub-contractors and trades normally engaged in the building construction business. Be sure to inquire at the Village Office to obtain information about said license and bond requirements so that final action on the issuance of building permit will not be delayed.						

Note: permit submittals and permit drawings vary GREATLY from area to area.



Corning FlexNAP™ - F2 (distribution) Information

FlexNAP™ Fiber Cable

FlexNAP™ RPX aerial fiber cable

The JAM material description for Corning aerial FlexNAP™ RPX cable is FNAP-CBL-XXXEV4

- FlexNAP™ RPX cable uses a flat cable design and consists of fiber ribbons stacked on top of each other.
- Compatible FST sizes – 4, 8, 12
- **This cable is the first choice for aerial design.**

FlexNAP™ Tenable RPX aerial/buried fiber cable

The JAM material description for Corning aerial FlexNAP™ tenable RPX cable is FNAP-CBL-XXX-T.

- The RPX tenable cable is identical to the RPX aerial cable with the exception that it has a toning wire added for locating purposes. **This cable is meant to be buried and buried tethers can also be placed on this cable.** The advantage of this cable over the buried EUC using the Corning ALTOS cable is that this cable is light, non-armored and features fiber ribbons for faster splicing.
- Compatible FST sizes – 4, 8, 12
- **This cable is the first choice for buried sections during an aerial design.**

Corning FlexNAP™ RPX and RPX tenable cables can be ordered in the following standard sizes: 24, 48, 72, and 144.

FlexNAP™ Self-Support (Figure 8) aerial fiber cable

The JAM material description for Corning aerial Self-Support FlexNAP™ cable is FNAP-SSCBL-XXX.

- FlexNAP™ Self-support is a traditional circular diameter sheathed cable utilizing “Loose-tube” fiber design.
- Compatible FST sizes – 2, 4, 6, 8, 12 (a 2-fiber tether is available but uses a 4 Opti-Tap terminal)
- Corning Self-Support FlexNAP™ cables can be ordered in the following standard sizes: 24, 48, 72, 144, 216

FlexNAP™ EUC buried fiber cable

The JAM material description for Corning buried FlexNAP™ EUC cable is FNAP-CBL-XXXEUC.

- FlexNAP™ EUC or Altos cable is a traditional circular diameter sheathed cable utilizing “Loose-tube” fiber design.
- Compatible FST sizes – 2, 4, 6, 8, 12 (a 2-fiber tether is available but uses a 4 Opti-Tap terminal)
- Corning FlexNAP™ EUC buried cables can be ordered in the following standard sizes: 24, 48, 72, 144, 216 and 432 (only the outer layer of fiber tubes are available for tether use on 432 cables – inner tubes are “express” to end)

NOTE – Standard BAU cable should be used in cases where a larger cable is required or in place of a smaller cable that does not require a factory tether, e.g., 5BQ2MR-432, 5BQ2MT-144, etc...

See the Aerial FlexNAP™ Cables and Buried FlexNAP™ Cables sections of [ATT-TELCO-002-600-625](#) for additional details.

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Tethers and Their Lengths

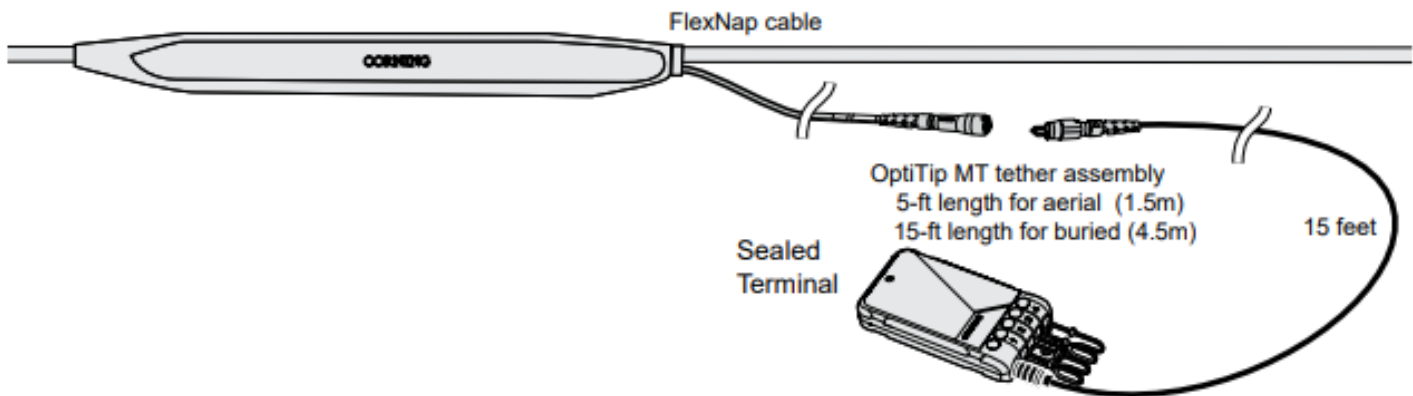
The FlexNAP™ cable design includes built-in access splice points with attached tethers with multipoint environmentally hardened connectors on their ends which support the placement of the Corning MultiPort OptiTap or Corning Evolv Terminals.

FlexNAP™ Tethers are NOT locatable. They do not have a trace wire, tone wire, or armored plate under the jacket that would allow for locating.

The tethers are specific to each type of FlexNAP™ cable that the tether is utilized with. The Material Descriptions for the tethers spell out which type of FlexNAP™ cable they are used with, but it is NOT meant that the tether is locatable.

Tethers are factory spliced at all terminal and lateral tap locations and are equipped with an OptiTip connector which connects with the FST tail or lateral cable.

- Aerial cable tether lengths are 5'
- Buried cable tether lengths are 15'



TPA-6627

See [APEX doc ATT-TELCO-PAN-OUTSIDEPLANT-2014-0001](#) for additional details on Corning tethers.

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Cable Laterals, Cable Lengths and Spare Buffer Tube Requirements

Cable Lateral Information:

Corning FlexNAP™ - 24 and 48 fiber cables can be connected to another FlexNAP™ cable with a factory 12 fiber tether connector. This is known as a “tether” connection. (also known as a “reverse tether” due to the physical connection to the cable). All tethers are in counts totaling 24 or 48 fibers.

- Single tether (24 fiber) – A, 1-12 DEAD, PON 13-24
- Double tether (24 fiber) – PON 1-24
- Triple tether (48 fiber) – A, 1-12 DEAD, PON 13-36
- Quad tether (48 fiber) – PON 1-48

Tether lateral counts must be whole ribbon counts and may not be split across ribbons.

All lateral cables larger than a 48 fiber will need to be field spliced at the backbone connection.

Cable Lengths:

Aerial FlexNAP™ RPX cables can be ordered at lengths as needed. It is recommended to keep maximum lengths at 3Kft and not to exceed 4- 90's without maintenance coil. Note: Longer sections may be placed with careful review of plant and construction concurrence.

Buried FlexNAP™ EUC cables can be ordered at lengths as needed. It is recommended to keep maximum lengths at 2Kft and not to exceed 3-90's without maintenance coil. Note: Longer sections may be placed with careful review of plant and construction concurrence.

Spare Buffer:

FlexNAP™ cables with greater than 25 tether splices must include 1 spare tube from end to end for possible rework of cable design. The extra tube should be in the lowest part of the cable count just as it is for a future splice.

Note: on a 432 EUC – entire tube must be left for dead count – normally: 217-228. It is available for use after placement.

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Terminals

- The standard sizes for Evolv Terminals are 4, 6, 8 and 12 ports. Evolv terminal tails are available in several lengths 10' - 1000', increments of 100' after 100' terminal tail. Terminals are sized at 4 building/structures per Evolv Terminal with fiber drops not to cross property lines this applies to both aerial and buried Integrated Fiber Planning (IFP) projects.
- If more than 12 LUs are to be served from a terminal location two (2) tethers and terminals can be placed at a single location.
- The serving drop will be a push lock port on the terminal. These terminals are the same for both buried and aerial applications and have no metallic members. For aerial applications, they are usually mounted to the pole, but a bracket is available for strand mounting.
- **Terminal Exhaust in PON Residential Areas:** In certain residential areas the IFP sizing guidelines of 1 fiber per LU could cause exhaust issues when customers order a second line or ASE service and there are no spare facilities in the serving terminal. To avoid these exhaust situations the following solution can be applied during the initial design phase of the IFP Project. One of the terminals (and the tether) in the lateral cable serving a group of LUs may be upsized if spare fibers are available due to minimum cable size requirements and activation of spare fibers in order to maintain ribbon integrity. The selected terminal should be able to reach all customers along the lateral cable so that the fiber drop placed by AFO will not exceed 500 ft. If the fiber drop to reach some of the customers will exceed 500 ft., then it might be necessary to upsize more than one terminal **but only if spare fibers are available**. Refer to the [PON Fiber Exhaust Solution](#) document for more details and examples.
Note: Upsizing PFP, Feeder or Distribution cables to provide additional spare fibers will not be allowed. Upsizing terminals will only be allowed if spare fibers are available due to minimum cable size requirements and activation of spare fibers in order to maintain ribbon integrity.
- It's important that buried end terminal location is clearly shown on the work print with a tie-in measurement clearly showing where the terminal is to be placed. ***This is critical to help avoid cable shortages since cables are placed from the far end working back toward the PFP location.***
- Select the **PON-C** option under **GPON Type**. This selection will specify the terminal as a connectorized ready CFST type.

Fiber Terminal - 108592583			
Fiber Terminal		Common Address	Complements
Attribute Name		Attribute Value	
Type		FBT W/O STUB	
Description		INV	
Size		88	
Total Size		88	
CLLI			
Taper Code		12345	
Footage to CO Splice		0	
Terminal Indicator		IN	
Primary Terminal			
Housing Type			
GPON Type		PON-C	

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Terminal continued

Note: Corning uses the letter “O” in their Evolve terminal descriptions.

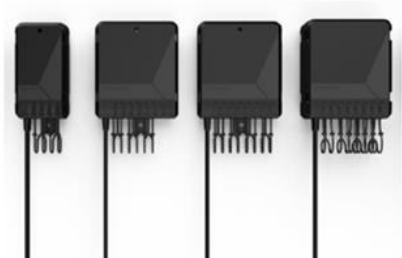
- In the example below the use of EVOLV8/25OTIP is 25' **O**TIP – not 250'.

Feature Explorer - Fiber Terminal - 109844786	
Fiber Terminal	Common Address
Complements	Tax District
Hyperlink	Geometry
Attribute Name	Attribute Value
Type	FST
Description	EVOLV8/25OTIP
Size	8
Total Size	8
CLLI	
Taper Code	1111PA
Footage to CO Splice	1
Terminal Indicator	BUR
Primary Terminal	
Housing Type	
GPON Type	PON-C
Ground Source	
GeoLoc	Q26280
FRC	845C
Mortality	
Project Id	KH7426RC
Remarks	
Component	
Feature State	Pre-Post Addition
Feature Id	109844786
Legacy Id	



Evolve Terminal Assembly

- Sealed OSP Terminal (FST) with Pushlok connector ports and pre-con OptiTip stub
- Standard sizes for Lightgig are 4-port, 6-port, 8-port and 12-port terminals
- Standard OptiTip stub lengths are 10' for aerial and 25' for buried
 - After 100' stub lengths are in increments of 100' up to 1000'
 - Stubs are SST Drop Cable with a Minimum Bend Diam. 6.5"
- Aerial applications (Pole or Strand Mounted) or Buried applications (Handhole or Pedestal)
- Note – 4 port terminals to be utilized with 2f Tethers – ports 1 and 4 will be dead



Network access points(tethers) are pre-installed at customer specified locations along the length of the cable

Standard 2f, 4f, 6f, 8f, 12f tethers factory spliced

Pre-Connectorized with OptiTip Multifiber Connector

5' Length for Aerial Installs

15' Length for Buried Installs

Tether ID Label

- Position Number
- Cable ID – Fiber Count
- Tether 1 or 2

Tether Color Code

3 in. color coded / UV resistant heat shrink provides easy identification

- Terminal stubs have color tape markers that match the tether markers
- Intuitive color marking scheme allows field technicians to install the correct terminal

- Slate – 2 Fibers
- Red – 4 Fibers
- White – 6 Fibers
- Blue – 8 Fibers
- Green – 12 Fibers



Fielding the Project and Measurement of All Fiber Routes

Contractor must perform all field measurements with 100% accuracy

- **The work you are about to perform is VERY IMPORTANT!**
- **The field measurement is the MOST CRITICAL component to any IFP project!!!**
- **Any measurement error may lead to VERY EXPENSIVE corrections and delays in the future**

Key components of a field survey (*list is not all inclusive*):

- Where will the proposed facilities be placed?
 - Public ROW
 - Utility easements
 - Private easements
- What are the permit requirements or easement requirements/restrictions?
 - Scaled drawing required?
 - Take key measurements from back of curb, edge of pavement, etc.
 - Never from existing cables!
 - Cable depth of cable over 24" required.
- What types of placing methods will be used? Is the area accessible?
 - For aerial plant, account for Corning fiber cable "sag" by rounding up to next higher foot of section.
 - Note tree trimming or other cable placing obstacles
 - For buried plant, account for obstacles to the best of your ability.
 - Example: existing cables, sewer lids, fences, landscaping, public use easement shifts across roads, etc.
- What other utilities are in the vicinity of the proposed work area that may cause an obstacle?
 - Low power wires, large risers, etc.
 - Too many pedestals in one property (permit or municipal requirements)
 - Power duct runs (AVOID is possible)
 - Natural gas – high pressure or pipeline runs to cross (AVOID if possible)
- Are there any maintenance issues, safety requirements, or hazardous conditions requiring attention?
 - Defective (visually broken or rotten) poles
 - Broken guy wire
 - Terminals fallen over or missing lids/covers
 - Cables falling off strand (broken lashing wire)
 - Vicious dogs in yard
- High Quality Laser measuring tools are highly recommended - **there is no room for error in your measurements**
 - Be very neat and organized on your site visit!
 - Take clear and concise notes!
 - Others may need to read your writing and understand your notes
 - Measuring wheels and measuring tapes are acceptable
 - Double check to ensure all tools are set to a "foot" setting versus a metric setting



Laser Range Finder



Measuring Wheel



Duct Measuring Tape

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F2 Initial Design Information – Plan Entire Fiber Route and Consider Living Unit Needs for Proper Fiber Sizing

The F2 project will be for the distribution plant leaving the PFP. The project will include FlexNAP™ fiber cables, fiber tethers, coiled fiber locations and fiber serving terminals for either aerial and/or buried fiber overbuild of the Integrated Fiber Planning (IFP) PSA. Deviation from the existing path will be a matter of engineering discretion, however please contact your AT&T SPOC for prior approval.

Recommended to view the attached document via the link below. This is a presentation by Corning to help to further understand Corning FlexNAP™ cable “rules”:

http://cayman.lno.att.com/osp/osp-design/DESIGN_PROCESS_TEAM/FOB/ATT_Greenfield_and_Lightgig_Corning_Engineering_Process.pptx

Distribution Fiber Cable Sizing Requirements

PON Distribution Fiber Sizing in overbuild areas - size One (1) fiber per residential living unit, including MDU buildings. If a SFU living unit appears to have multiple LUs add fibers accordingly.

Note: while sizing the F2 cables – you may find that the living unit counts may exceed the PFP from planning. Contact your AT&T SPOC if this situation arises for help.

NOTE: For the purposes of sizing FTTP MDU distribution fiber cables, a living unit is further defined as any known communications requirement. In MDU applications the need for standalone building fire alarms, security gate access, and other requirements should be considered as a living unit for sizing purpose. This will ensure the F2 distribution cables are not undersized.

Greenfield Residential	
Unit Type	Sizing Recommendation
Single Family Unit (SFU) Greenfield	1.5 fibers per SFU
Multi Dwelling Unit (MDU) Greenfield	1.25 fibers per MDU

Integrated Fiber Planning (IFP) Residential Fiber Over Build (FOB)	
Unit Type	Sizing Recommendation
Single Family Unit (SFU) Integrated Fiber Planning (IFP) (FOB)	1 fiber per SFU
Multi Dwelling Unit (MDU) Integrated Fiber Planning (IFP) (FOB)	1 Fiber per MDU

NOTE: For business locations that cannot be served via a fiber terminal in the right of way and the placement of a fiber drop see the Coiled fiber loop and Tether sizing chart in section below.

Business Sizing For both Greenfield and FOB GPON areas	
Unit Type	Sizing Recommendation
Multi-Tenant Unit (MTU), Business Customer Locations (BCL)	2 fiber per BCL, plus any non GPON forecasted fibers
Strip malls and Business Location	2 fiber per BCL, plus any non GPON forecasted fibers
E Rate Locations, i.e. eligible school or library	4 fiber per E Rate Location
Standalone business	4 fiber per location
CRAN Locations	8 Fibers per location
Rural/Suburban Macro Cell Sites	12 fibers per location
Urban Macro Cell Sites	24 fibers per location

Important to refer to: Integrated Fiber Planning (IFP) Distribution Fiber Cable sizing section of [ATT-TELCO-002-600-625 \(section 6\)](#)

OSP Guidelines for IFP Business Overbuild

Read this document:

<http://apex.web.att.com/bookview/bookview.jsp?bookname=ATT-TELCO-002-600-710>

PON Distribution Sizing for IFP Business Dense PSA's

Engineers will size Business Dense IFP PSA distribution PON cable for all the BCL's in the PSA. The BCL addresses and number of customers will be available for each PSA using the "MIKEY" database information from sales. Each BCL in the PSA will be inventoried into either GRANITE by being built to an FBT or it will be inventoried in OVALS-GIS and associated to a Coiled Fiber/tether location. In an effort to future proof our network, Engineers need to consider the changing nature of commercial real estate and how that impacts PON fiber Sizing and overall PSA design.

[Business Overbuild BCL \("MIKEY"\)](#)

PON Commercial Sizing

Engineers sizing PON fiber distribution cables and terminal to feed a commercial location must take BCL counts, building square footage and the property usage into consideration.

Items to consider:

- Business-dense IFP Building Owner known/planned number of Business Customer Locations (BCLs).
- Business IFP number of facility addresses associated with the address in LFACS obtained through the [OVALS DA Address List Scrub Report](#) (open in Firefox).
 - This list will be confirmed by a site walk to verify addresses are accurate and physically exist in the field.
- IFP BCLs size of the commercial building in Square Feet (sq. ft.).
- IFP BCL use of the commercial building. For example, is the space intended for retail, office space, warehouse, etc.

General Guidelines Business-Dense IFP PSA's

First Choice is to size PON distribution fiber using the known BCL count identified by the OVALS DA Address List Scrub Report and the subsequent site walk while maintaining the following Minimum Sizing Principals.

- Size each known BCL at 2 PON distribution fibers per BCL.
- OR
- Size a minimum of 6 PON fibers for buildings up to 10,000 sq. ft.
 - Size a minimum of 12 PON fibers for buildings 10,000 sq. ft. up to 20,000 sq. ft.
 - Size a minimum of 24 PON fibers for building greater than 20,000 sq. ft.

Use the sizing criteria that allows for the largest PON cable placement.

Business Dense PON Distribution Cable Sizing - Do not exceed 12 PON fibers for any building used as a warehouse regardless of size.

The three components to sizing Business locations are:

- The usable square footage of the building/structure
- The number of known Business Customer Locations (BCL's)
- The BCL Type, for examples warehouse, hospital, car lot or data center.

SQ. of Building	BCL Type	# of BCLs Identified on SCRUB & Site Visit	PON Fiber Sizing	Comments:
5,000	Office	2	6 fiber strands	PON Distribution sized at a minimum of 6 fibers, based on SQ. of the BCL.
7,000	Retail	5	12 fiber strands	PON fibers sized at 2 fibers per BCL for a total of 10 fibers, round sizing up to 12 strands for Corning Requirements.
15,000	Retail	4	12 fiber strands	PON Distribution sized at a minimum of 12 fibers, based on SQ. of the BCL.
16,000	Office	11	24 fiber strands	PON fibers sized at 2 fibers per BCL for a total of 22 fibers, round sizing up to 24 strands for Corning Requirements.
25,000	Office	10	24 fiber strands	PON Distribution sized at a minimum of 24 fibers, based on the SQ. of the BCL.

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F2 Assigning the Fiber Cable Counts

Distribution fiber allocation and terminal counts must follow a certain convention. The highest counts are assigned closest to the PFP and the lowest counts are spliced to the furthest terminals fed by the cable. Distribution cable tap locations will be administered in complete ribbons and tap splices must be assigned from the highest ribbon to the lowest as in the example below. **In the sample picture below on next page** - the 144-fiber backbone distribution cable that is feeding the other lateral distribution cables must have all the taps laid out first and assigned from the highest ribbon to the lowest before assigning cable counts to the lateral cables. All fiber cables should be engineered using full ribbons - no partial ribbon counts.

Start with the CO side of the cable and assign counts to "Connectors" for the highest fiber sheath count to the lowest fiber sheath count.

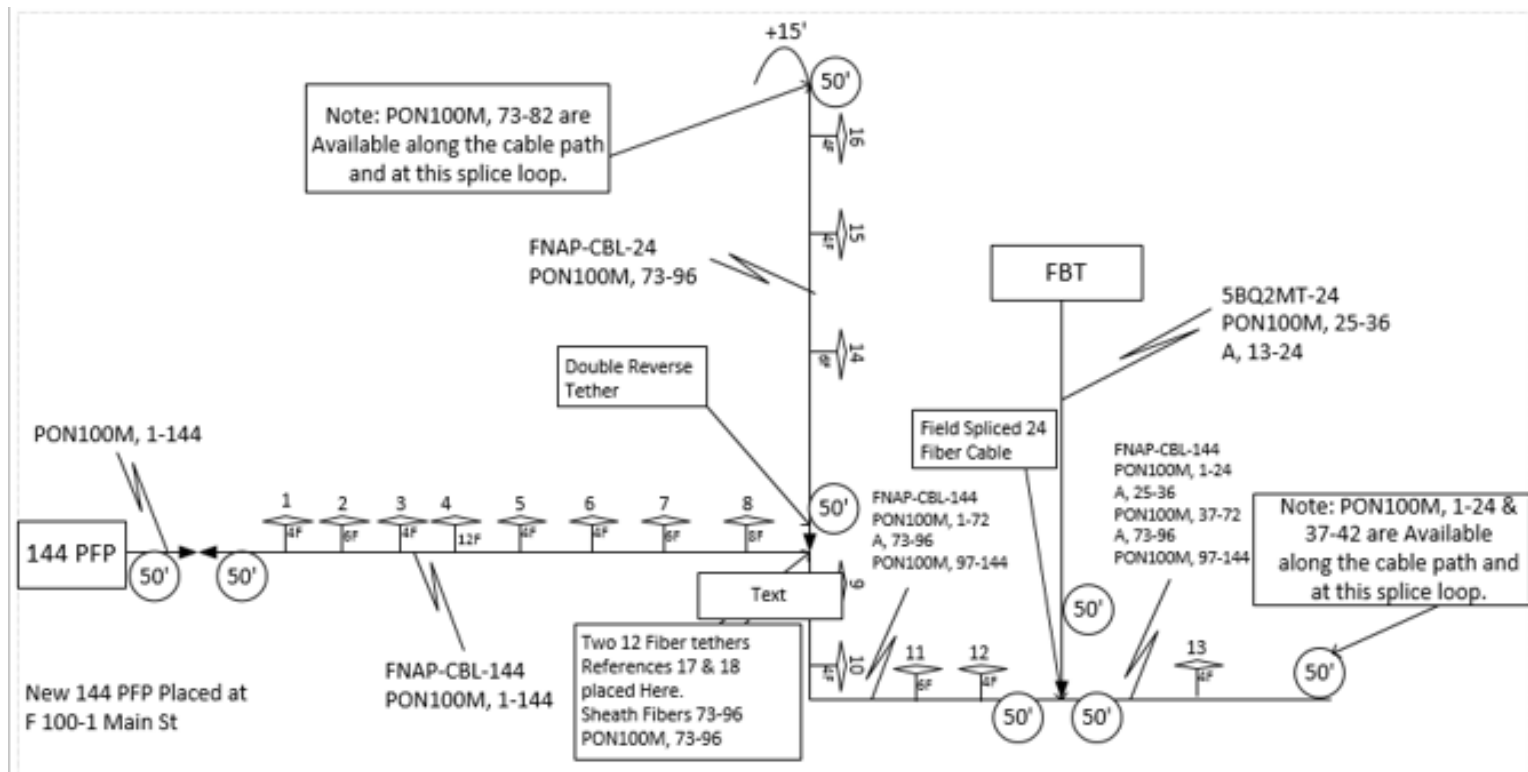
- Includes first and second tethers at the same location.
- Includes tether with preterm laterals.
- Includes any spare tethers for future use.
- Assigning spare ribbons for fusion splicing to additional FlexNAP™ Cables, MDU or Business locations.
- Assign all fiber designated for use at the end of a fiber lateral or a theoretical count in the lowest fiber counts of the FlexNAP™ cable.

In the sample picture on next page, using a 144-fiber backbone distribution cable PON100M, 1–144 and you want to have 24 fibers available along the cable path at the end of the cable run, you would use fibers 1–24 as these fibers. If you want to create a 24 fiber theoretical count in a FlexNAP™ cable you would assign the theoretical count to the lowest fibers, the example placing a 144 would result in the count being A, 1–24 and PON100M, 25–144. Corning builds all FlexNAP™ cable starting with the highest sheath count and allocates all the fiber from the highest fiber sheath count to the lowest.

Projects designed with multiple tether sizes will be built with the fiber count from high to low cable count. Projects can be engineered with any combination of 4-6-8-12 fiber tethers and terminals; fiber counts should remain contiguous and fiber ribbons can be split into three 4-fiber Tethers. See the figure below, the 3rd terminal with the fiber count of 131–134 the terminal uses 2 fibers out of the 11th ribbon and 2 fibers out of the 12th ribbon. Taps can split buffer tubes but cannot “skip” fibers. For multiple taps at one location, up to 2 buffer tubes can be utilized at that location. Due to a manufacturing limitation Splitting counts across 3 buffer tubes at the same splice location is not allowed.

See the Distribution Fiber Allocation and Terminal Counts section of [ATT-TELCO-002-600-625](#)

Sample 144 PFP Design:



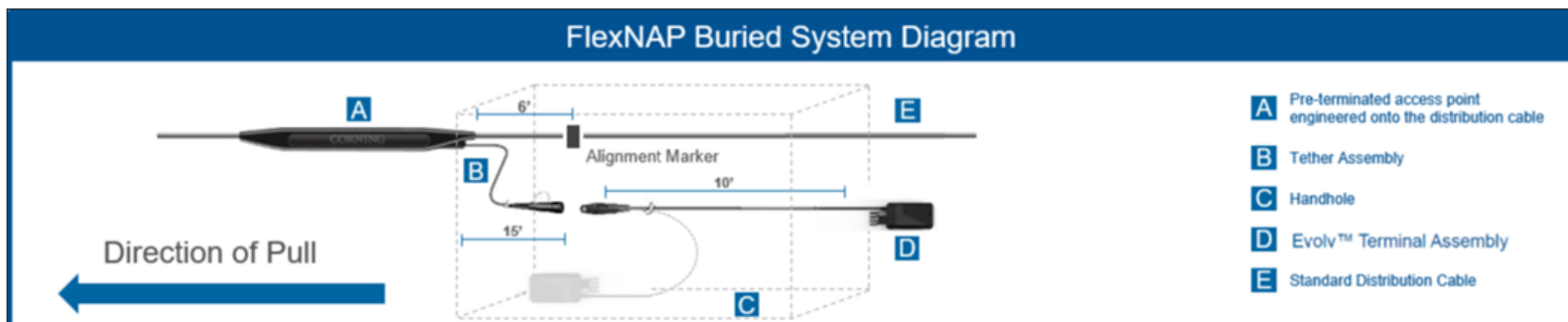
Terminal	Terminal/ Tether Size	Corning cable tether fiber sheath Count	AT&T Pon Count	Terminal	Terminal/ Tether Size	Corning cable tether fiber sheath Count	AT&T Pon Count
1	4 Fiber	141-144	PON100M, 141-144	10	4 Fiber	57-60	PON100M, 57-60
2	6 Fiber	135-140	PON100M, 135-140	11	12 Fiber	51-56	PON100M, 51-56
3	4 Fiber	131-134	PON100M, 131-134	12	4 Fiber	47-50	PON100M, 47-50
4	12 Fiber	119-130	PON100M, 119-130	13	4 Fiber	43-46	PON100M, 43-46
5	4 Fiber	115-118	PON100M, 115-118	14	6 Fiber	19-24	PON100M, 91-96
6	4 Fiber	111-114	PON100M, 111-114	15	4 Fiber	15-18	PON100M, 87-90
7	6 Fiber	105-110	PON100M, 105-110	16	4 Fiber	11-14	PON100M, 83-86
8	8 Fiber	94-104	PON100M, 94-104	17	12 Fiber Te	73-85	PON100M, 73-85
9	12 Fiber	61-72	PON100M, 61-72	18	12 Fiber Te	86-96	PON100M, 86-96

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F2 Buried Plant Design Information

The FlexNAP™ system can be used in buried applications. In this case the cable is a more typical round armored, loose tube, fiber cable or the tonable buried version of RPX® as described earlier in this document. The cable and splices in this application will be larger than they are in the aerial application. The tethers in the buried application are dielectric and are 15' in length compared to 5' in length for the aerial application. AT&T fiber optic cable will be placed at a minimum of 24" deep. Additional depth may be specified for crossings or other obstructions (creeks, streams, roads, etc.). The IFP buried project work prints must include measurements between pedestal and/or hand-hole locations so that the tether locations can be spliced correctly in the manufacturing process. Pedestal and/or manhole / hand-hole locations need to be identified on the work prints by number like Pole numbers in aerial environment.

Buried System Diagram



Buried Construction – Conduit/Direct buried – Loose tube Fiber – FNAP-CBL-XXXEUC

- Terminal counts are high to low starting at the PFP
- Cable counts must be a multiple of 12
- No Fibers can be skipped in terminal counts
- All FlexNAP™ cables have a 25' drip loop at the end that must be accounted for in total footage
- All single, double, triple, and quad tethers have 25' drip loop at beginning and end of cable that must be accounted for in total footage
- Terminal sizes are 2, 4, 6, 8, or 12 fibers
- (terminals with 2 ports will utilize middle counts of 4 fiber terminals)
- On a 216 fiber; a count cannot be across inner and outer tubes. The inner tube contains 1-144, the outer is 145-216. (Example; cannot have a count of 141-146)
- If conduit is required, due to the tether size, recommended minimum conduit is 3" for all cables
 - o 24 and 48 fibers may be placed in a 2" IPP/Conduit (check with your Construction peers for concurrence)
- Last terminal must be next to copper terminal to avoid placing ground field

Buried Construction – Conduit/Direct buried – Ribbonized – FNAP-CBL-XXX-T

- Toneable RPX cable
- Follow same guidelines as aerial RPX cables
- Can be used to go between aerial and buried environments without creating splice
- If placed in conduit, minimum size is 3" for cables 24-72 fibers, 4" for 144 fiber

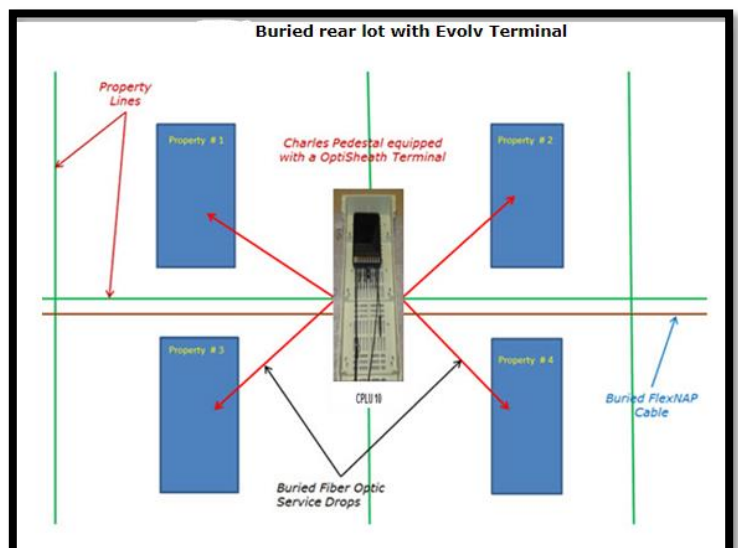
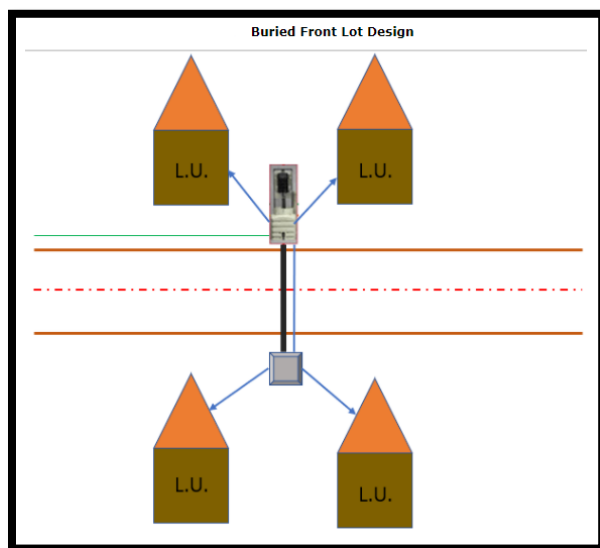
Cable and Terminal location:

Buried rear easement placement with Corning Evolv Terminals mounted in Charles Pedestals is the preferred buried Integrated Fiber Planning (IFP) PSA's design. The standard sizes for Evolv Terminals are available 4, 6, 8 and 12 ports. These terminals are equipped with PushLok connections to allow fiber drop connections. The Evolv Terminal are sized at 4 buildings/structures per terminal with Drops not to cross property lines.

Buried front lot Integrated Fiber Planning (IFP) Projects, when possible, will be designed based on the location of existing facilities and easements. Front lot buried easements with facilities on a single side of the street serving both sides of the street will be sized at 1 Distribution fiber per L.U. and no more than 4 buildings/structures per Evolv Terminal. Plastic Pipe (aka Inner duct) will ONLY be placed under roads from the Charles Pedestal or Hand hole to the small flowerpot.

All terminals are to be placed to adhere to maximum lengths of 550' for the pre-terminated drop cable (this applies in both the aerial and buried environment.) Fiber can be placed by direct bury using a trench or bore. FNAP cables can be placed in conduit as needed.

There will be orange Position Alignment Markers (PAMs) used for proper positioning of the Tether Access Point (TAP) tethers and the cable itself. Each PAM has a specified manhole/hand-hole number printed on it for field reference. This is vital to ensure correct placement in the field.



Cable LAP

AT&T material ordering systems automatically add extra footage to cables to allow for placing and splicing activities. This is called "cable lap". (See chart below.) Cable lap happens automatically upon entry into JAM and manually in OSPCM.

LAP Chart

Copper and Fiber Cable Settings:	Lap for Task Requiring Less than 1000 Ft	Lap for Task Requiring 1000 Ft or More
Aerial	10	20
Buried	10	20
House	10	20
Underground	20	20

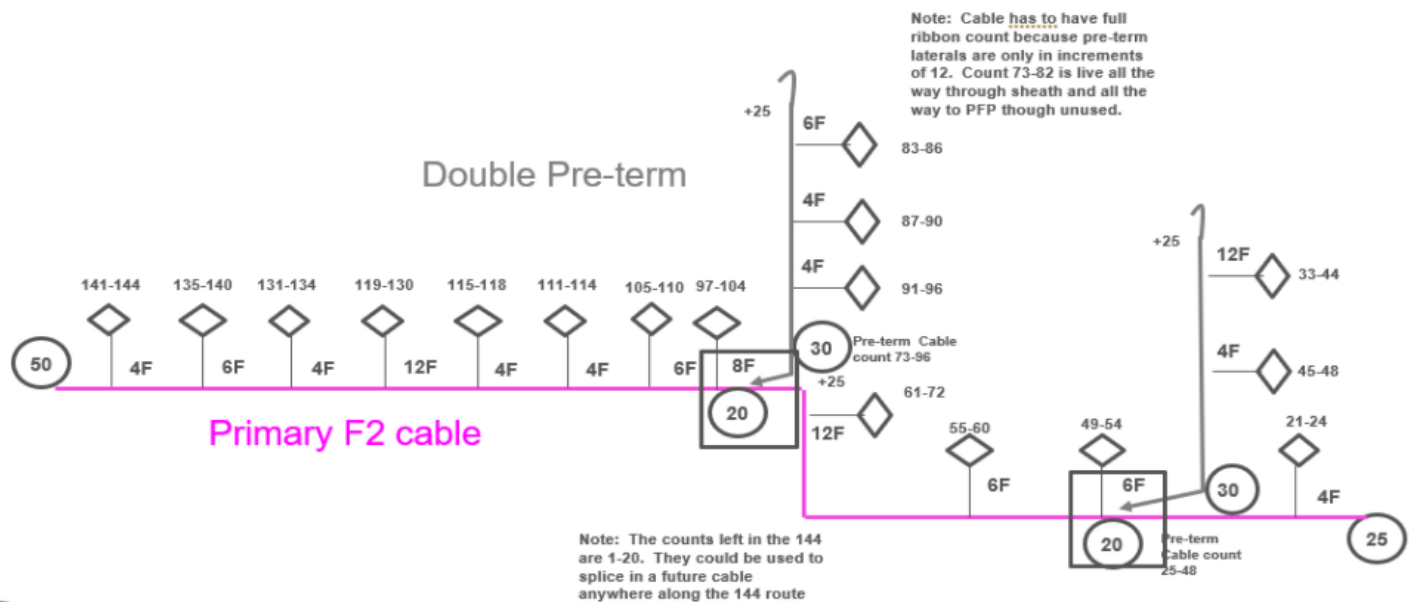
The "cable lap" is not part of the engineer's cable measurements on the work-print when adding up spans or sections. Corning will consider the cable lap with their Configurator tool for FlexNAP™ cable.

Note: Projects with cable placement starting at a manhole and the "setting" in the drafting tools is "U" for underground, add a note on the work print indicating that the cable LAP adder is 20'. This is to alert Corning during the project review process to add the correct amount of cable LAP to each FlexNAP™ cable task. Indicate the length of the cable with the setting in the drafting tool "U" on each page of the work print.

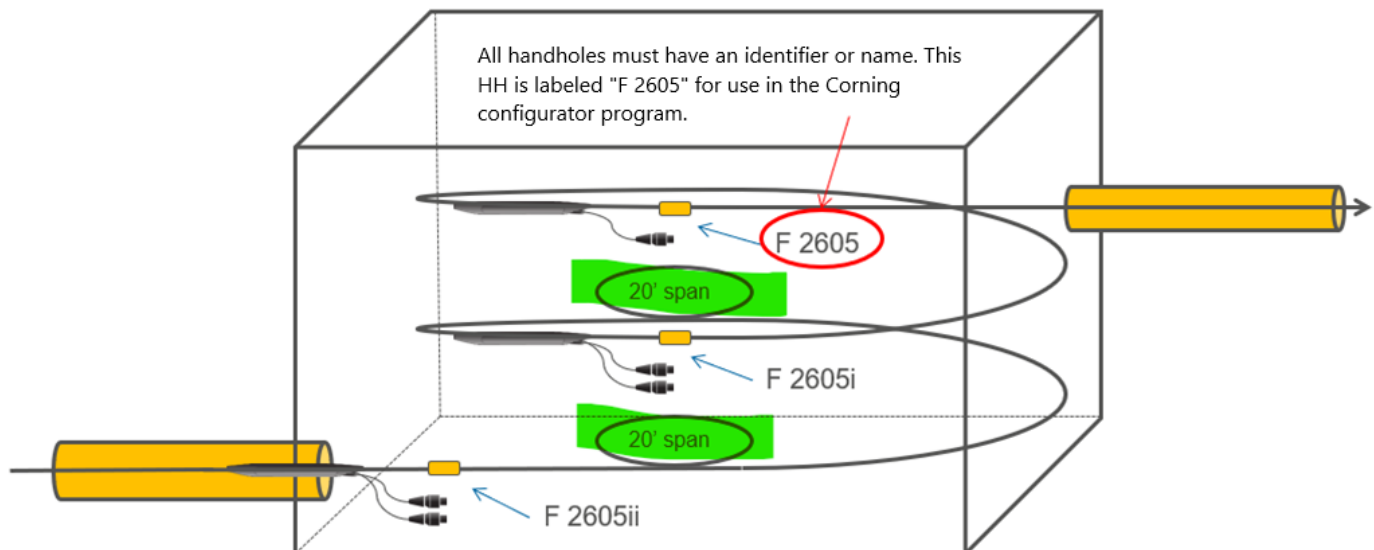
The Corning FlexNAP™ cables that will be built as one continues section but have multiple environmental changes in JAM or OSPCM the **FRC's need to be added as notes to the print** to align with the configurator LAP footage. For example: 1100' of 216 fiber cable with FRC's of 845C (buried) for 600' and an FRC of 85C (underground) for 500' the LAP total for the configurator will be 30'.

Buried Slack Loops

A buried slack loop should be 50' at the beginning of the cable on standard FlexNAP™ cables and 25' shown at the end of the lateral. Pre-term buried cables, 25' at the front and rear of the cable and 50' in the first span. 100' slack loops for mid-span splices.



Provide 20' minimum slack loops between a terminal and double preterm lateral, the 20' slack loop is required when there are more than 2 tethers at the same location in a buried application. The slack allows for tethers to be accessed within Handholes. See figure below:

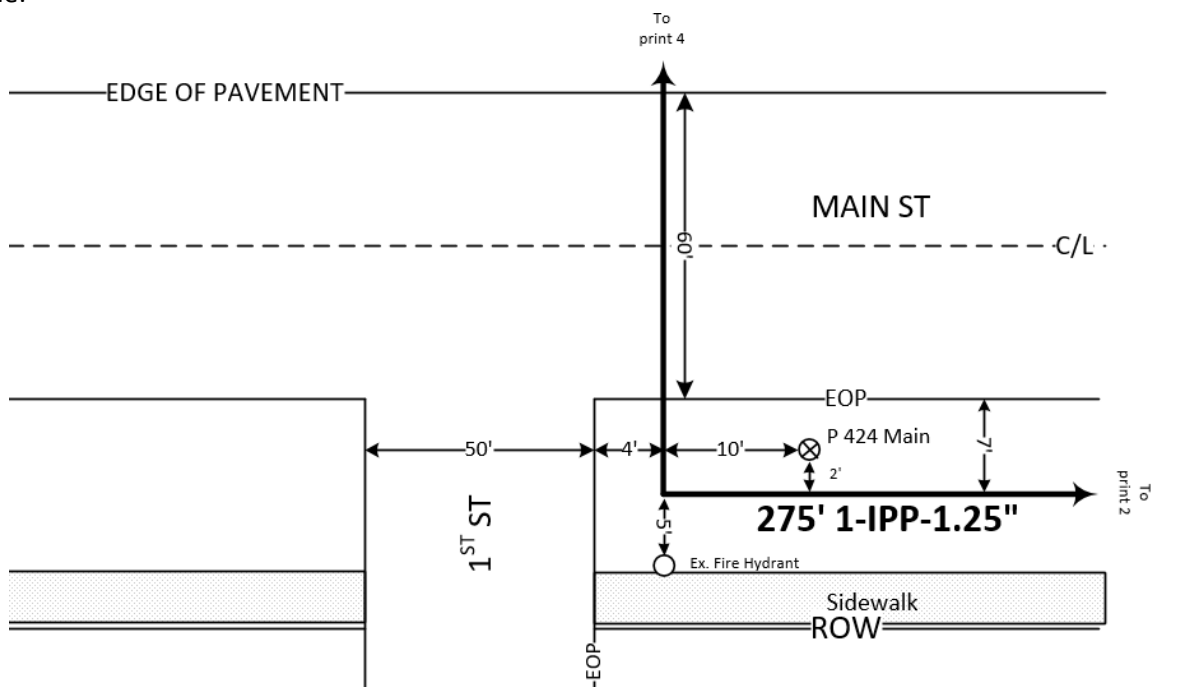


Note: F2605, F2605i, and F2605ii markers all contained in hand-hole

Work print items to consider in your design:

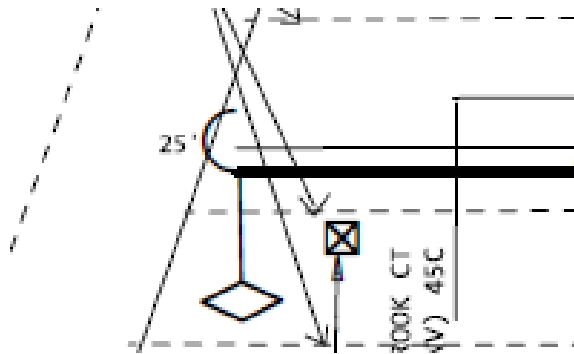
1. The distance between a tethered terminal (up to 2 at one location) or splice and another FlexNAP™ “tethered” feature, will always be a minimum of 20'. Note: *See Corning's training video for additional information.*
2. Slack loops should have their own measurement and be clearly labeled and should not be included in any span or PI-PI (point of interest) measurement.
3. When a cable is rising from buried to aerial placement, the PI-PI indicator on the buried section leading up to the pole should be to the bottom of the pole. An additional riser measurement is required to be texted next to the pole.
4. Adequate measurements to physical objects to tie in the center line of proposed structures or plant from a known source (**AKA “offsets”**) must be provided either on the work print(s) or on supplemental documentation contained within the project work package to ensure the facility is placed within the confines of the Right of Way or easement. Construction teams must be able to locate proposed structure and plant placement sites as accurately and easily as possible. Other above ground objects need only to be shown for locating purposes or if in conflict with proposed build.

Sample:



5. Include tie-in measurements for cables and handholes from physical objects whenever possible, such as edge of pavement, back of curb, fence, existing pedestal, pole, etc., **but not from existing cables.**
6. When tether connecting a FlexNAP™-24 or 48 lateral cable to a backbone cable, place a note on the print at that point designating it as a “Single, Double, Triple or Quad Reverse Tether”. **NOTE – If one ribbon is being connected it is a single reverse tether and if two ribbons are being connected it is a double reverse tether, etc.**
7. When placing cable in a PUE or easement, FST terminals are to be placed in 8” pedestals. 12 port Evolve terminals will need a 10” pedestal.
8. A “Direction of Placement” arrow should be included on all work prints pointing from the field end toward the PFP. The abbreviation “DOP” may be placed over the cable directional arrow to satisfy this requirement.
9. Existing copper terminals do not need to be shown on the work prints. When placing a new buried FST next to an existing copper terminal, show the old pedestal symbol and terminal address on the print for reference. It can be used for a tie-in measurement to the new FST as well as helping with addressing standards.
10. Work-print must show a 25’ moisture inhibitor tail on FlexNAP™ RPX-T and EUC cables.

a. Sample:



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F2 Handhole Usage Considerations for IFP Design

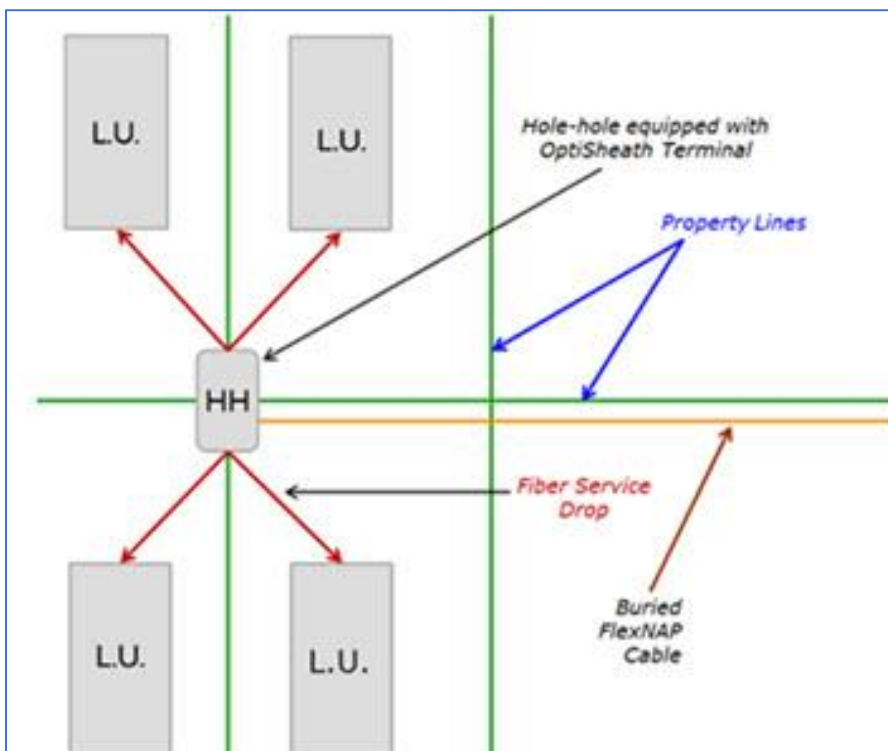
AT&T first choice of placement is to utilize the above ground 8" or 10" Charles pedestal as its distribution point in providing "Single Living Unit" service.

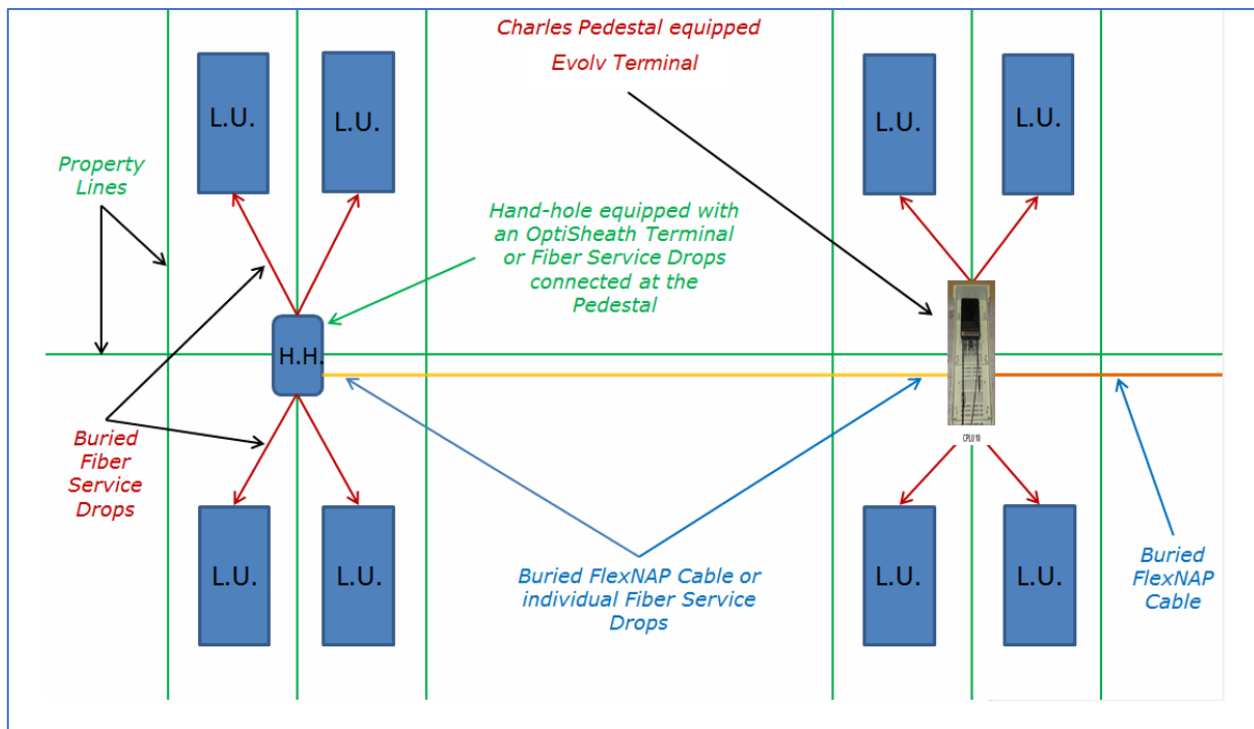
However, the option to place the Corning Evolv Terminal in a hand-hole fills the gap when confronted with placement obstacles or municipality permitting requirements.

The substitution of a hand-hole in place of a pedestal is fully approved.

The Evolv Terminal is designed for use in aerial, pedestal and hand-hole applications, due to their sealed and environmentally hardened design structure.

Sizing guidelines utilize a 4:1 Living Unit deployment structure for the FlexNAP™ overbuild for the Integrated Fiber Planning (IFP) Service option as its preferred distribution ratio. The use of the hand-hole option in conjunction with the Terminal, Charles Pedestal configuration, the living Unit deployment structure ratio can be expanded from (4:1) to (12:1) depending upon build requirements, that ratio can be increased to support a service distribution number up to the number of available ports on the OptiSheath Terminal. Both options are depicted below:





When the hand-hole option is utilized, hand-hole should be positioned on adjacent property lines on either side of the pedestal as required to connect surrounding properties. The hand-holes are to be placed on or as close to the property line as possible within the property's easement.

The design engineer will ensure that all specific hand-hole information is provided to include:

- Hand-hole sizes on the work prints for construction to order
- It's recommended to have locations staked in the field to provide contractors with adequate hand-hole identification

Handhole Sizing Suggestions for IFP Design:

FNAP 4-8 Port Evolve Terminal Only (SCL10A)

- Greenway – 10x15x12" (MW/SE avail)
- TIER 15 – 13x24x18 (SE Only)
- TIER 22 – 10x15x12" (MW/SE avail)

FNAP 12 Port Evolve or Reverse Tether Only – No Splice (SHH00A)

- Greenway – 17x30x18" (MW/SE avail)
- TIER 15 – 17x30x24" (MW/SE avail)

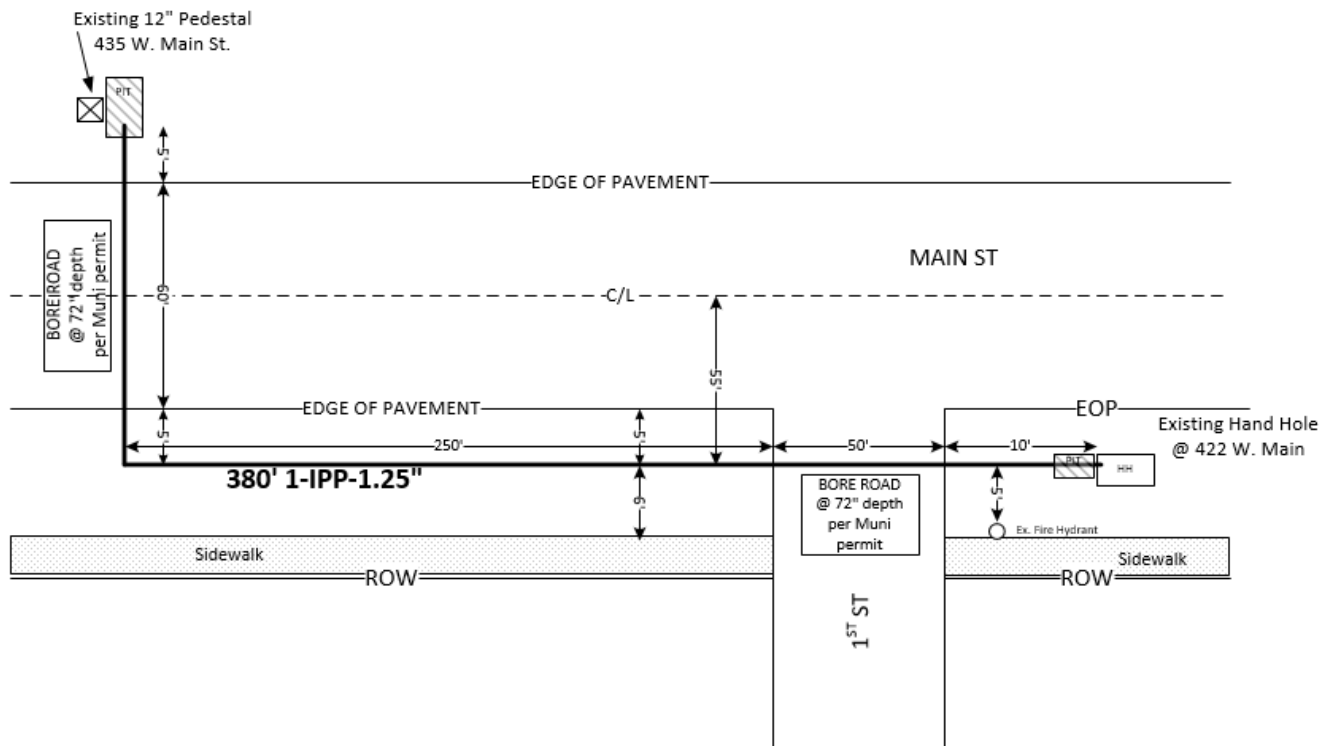
Small Branch Splice (SHH00A) – 72F max.

- Greenway – 24x36x24" (MW/SE avail)
- TIER 15 – 24x36x24" (MW Only)

Large Branch Splice (SHH00B)

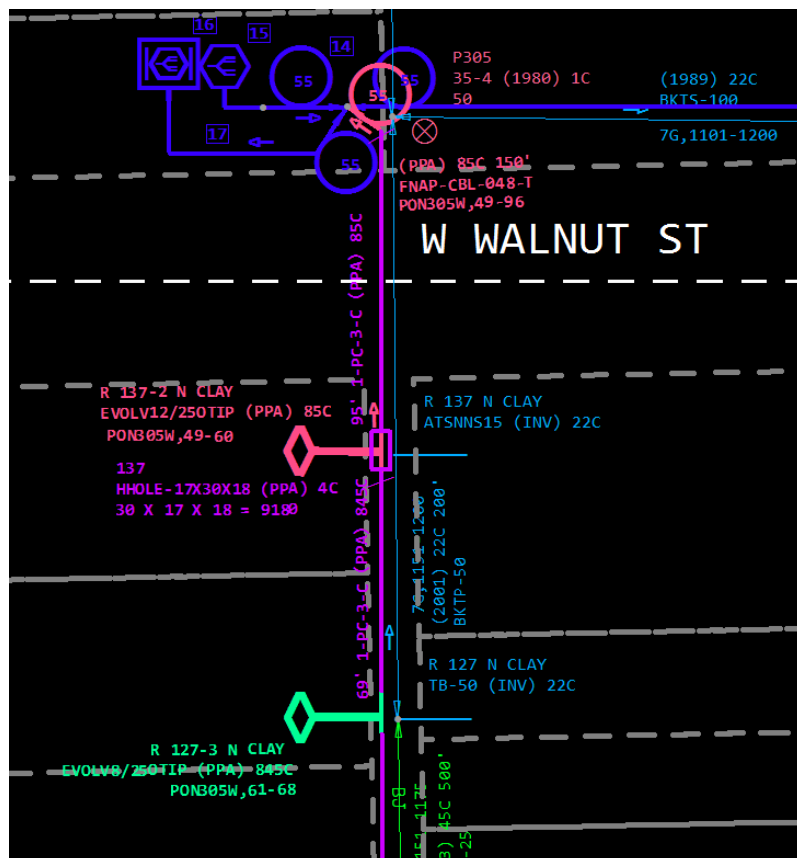
- TIER 15 – 30x48x36" (MW/SE avail)

Example of what detail is required on a buried work print with handholes:



Screenshot of ARAMIS with a Hand-Hole and an Evolve 12 port terminal.

*Note the use of the larger 17x30x18" HH to accommodate the larger 12 port terminal.



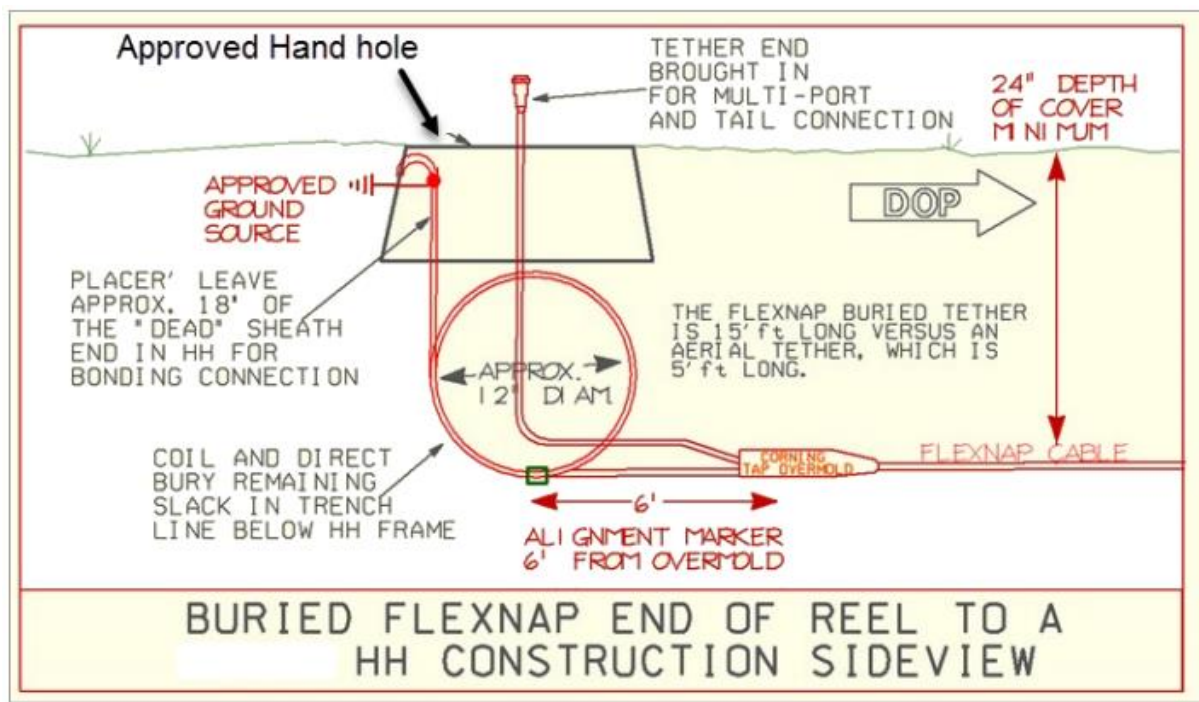
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F2 FlexNAP™ End Section Bonding and Grounding

The following procedures shall be followed for FlexNAP™ end section bonding and grounding. It is AT&T practice that each section of cable, strand, or device shall stand on its own for electrical protection. Each length of cable, strand, or device shall be attached to the ground source separately.

- The extended loop of end section cable on FlexNAP™ is for water blocking and bonding to an approved ground source. This end section of FlexNAP™ cable MUST be brought up from the bore or trench during placement operations to allow for bonding of the cable sheath.
- Construction forces will bond the end section during terminal placement. If the end section was NOT bonded during terminal placement a separate task must be encoded to send construction forces to properly bond the end section.

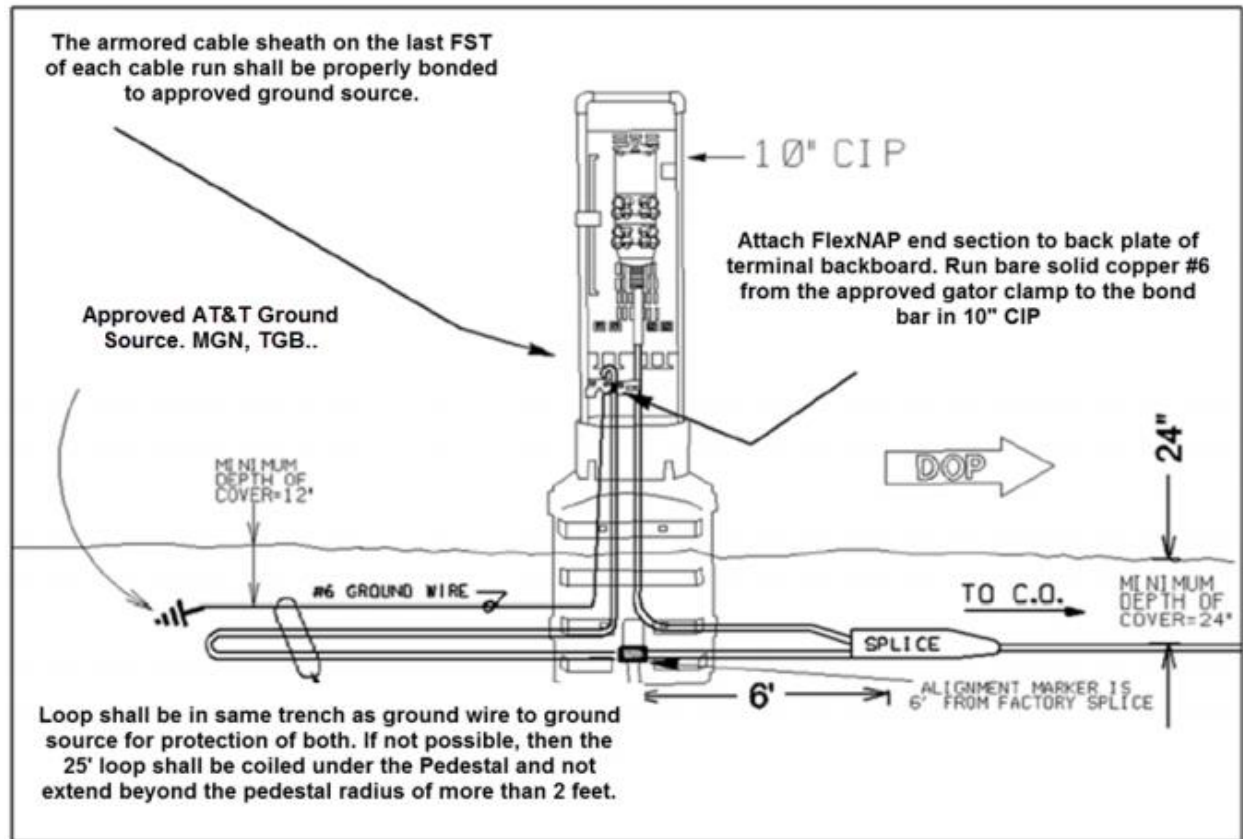
Hand Hole Detail for End Section Bonding and Grounding:



Attach approved shield bond connectors. A solid bare # 6 will be required to be attached with the proper crimp lug to bus bar in hand hole. The cable itself should be routed and buried in a coil as shown in picture below. The total footage of the end section shall be placed in such a manner as to protect it from accidental digging damage.

Buried Pedestal End Section Bonding and Grounding

CABLE LOOP UP DETAIL FOR BONDING & GROUNDING



FlexNAP™ RPX® and Altos® end sections placed into pedestals shall be protected from harsh environments. If exposed to water or other environmental conditions, it is recommended that the “hand hole method” be followed. End section Bonding and Grounding must be placed either in a Hand Hole or Pedestal by the methods listed. The 25' end section is a moisture barrier and cannot be cut off to accommodate placement.

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F2 Aerial Plant Design Information

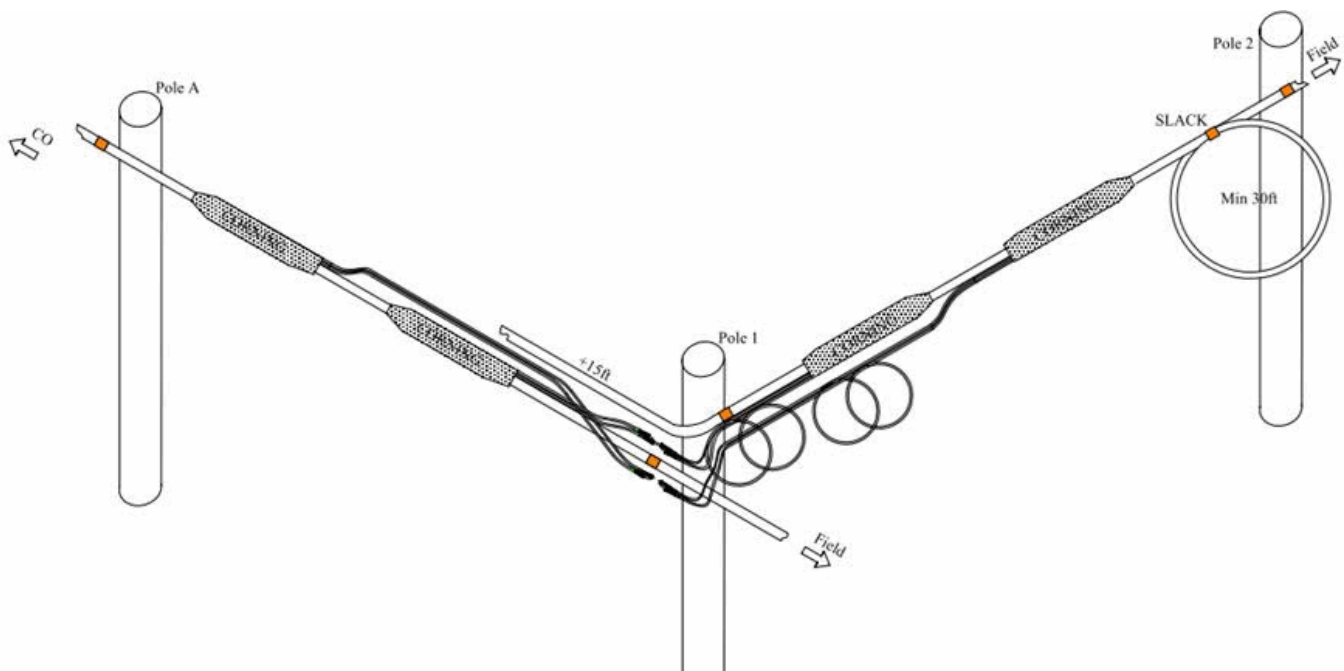
Over-lashing in the aerial environment is the preferred method where allowed, for additional information on aerial cable placements, refer to the following documents. ATT-TELCO-620-000-206 Placing Lashed Optical and Metallic Aerial Cable General Corning FlexNAP™ System Cable Assembly Placing - Lashed Aerial

The cable used for aerial installations is the Corning RPX cable or Altos Figure 8 self-support cable. These cables were discussed in detail earlier in this document.

The most critical element of the Aerial FlexNAP™ Cable design is obtaining accurate span measurements which will be used in ordering the cable. These measurements must be accurate to ensure proper positioning of terminals when the cable is installed. Another important consideration in the design of aerial IFP projects is accurate Pole Numbers or Tether location names. All Poles will require a pole number. The Pole location numbers are entered into the Configurator for labels to be placed on the cable; these labels are called Position Alignment Markers (PAMs). There will be orange Position Alignment Markers (PAMs) used for proper positioning of the Tether Access Point (TAP) tethers and the cable itself. Each PAM has a specified handhole or pole identifier printed on it for field reference. For an Aerial Integrated Fiber Planning (IFP) project, when the PAMs are properly positioned and assuming the cable pull is towards the central office (CO) from the field side (FS), the TAP access point itself will hang 6 feet from the pole towards the CO side. This allows the 5-foot tether (aerial tether length) at each TAP to reach the pole for connection of the Evolv Terminal.

Picture below shows a Quad tether connection. Each orange marker/tape is a PAM (Pole alignment Marker).

The main cable from the left has the connectors that “plug-in” to the connectors from the cable on the right. The left cable continues to serve additional locations. Note: each pole is identified by number or letter format as mentioned above.



Aerial Construction – Overlash – Ribbonized Fiber – FNAP-CBL-XXXEV4

- Terminal counts are high to low starting at the PFP
 - o FlexNAP™ cable count = PON, 1-144
 - o The first 12 fiber terminal from PFP = PON, 133-144
 - o The last 12 fiber terminal from PFP = PON, 1-12
- All cable counts must end in a multiple of 12
 - o Example: 12, 24, 36, 48, etc.
- No fibers can be skipped in terminal counts
 - o Terminal A = 133-144
 - o Terminal B = 121-132
 - o Terminal C = 109-117
- All RPX FlexNAP™ cables have a 15' tail at the end that must be accounted for in total footage
- Configurator footages are calculated for LAP automatically added by JAM
 - o 0-999' = 10' added to cable (Plot footage = 775', Configurator footage = 785')
 - o 1000'+ = 20' added to cable (Plot footage = 1125', Configurator footage = 1145')
- Terminal sizes are 4, 8, or 12 fibers
 - o We CAN split ribbons for terminal counts
 - Terminal A (8F) = 137-144
 - Terminal B (8F) = 129-136
 - Terminal C (4F) = 125-128
- All tethers must also be multiples of 12
 - o If terminal counts do not complete the ribbon before a tether, last terminal must be a center count to complete the ribbon. Upsize terminal counts to complete ribbon.
 - Terminal A (8F) = 137-144
 - Terminal B (4F) = 133-136
 - Terminal C (8F) = 123-130 (center 8 fibers of ribbon 121-132)
 - Tether 1 = 109-120
- All single and double tethers have 15' tail at beginning and end of cable that must be accounted for in total footage
- Maximum of 25 total taps on a 144 fiber – unless spare buffer the max. tap would be 50.

Aerial Construction – “Figure 8” Self-support– Loose tube fiber – FNAP-SSCBL-XXX

- Same guidelines as above with the following differences:
 - o 216 fiber cable is available
 - Max of 25 total taps on 216 or 144 fiber
 - On a 216 fiber; a count cannot be across inner and outer tubes. The inner tube contains 1-144, the outer is 145-216. (Example: cannot have a terminal count of 141-146)
 - o 6 fiber terminals are available
 - o No more than one self-support cable down the same lead. If multiple cables are required, longest would be self-support, additional would be over lashed FlexNAP™

IFP SPLICING



F2 Coiled Fiber and Tether Sizing Chart and Usage

Engineers will size, design and inventory IFP PSA distribution PON cable for all the living units in the PSA. Each living unit in the PSA will be inventoried into either GRANITE by being built to a fiber terminal or it will be inventoried in OVALS-GIS and associated to a Coiled Fiber/tether location.

Place CFST's for all Residential (SFU's) and when there is a small standalone business mixed into a residential area, include that facility address (FA) in the CFST. This scenario does not require an FBT. An example would be a gas station at the end of subdivision where there is rear easement and CFST's have been placed. We can provide service to the gas station with fiber drop place by Installation from the CFST. Locations that are businesses only zero residential place FBTs to provide service. Both CFSTs and FBTs are inventoried in GRANITE via AOTX. Any business customer location (BCL) with 1 to a maximum of 6 businesses that can be serviced with a fiber drop, place an FBT in the R.O.W.

Follow the chart below for recommended tether and coil fiber sizing and usage.

Tether and Coil Fiber Sizing

Living Unit	Tether or Coil	Tether Size	Aerial Tether Length	Buried Tether Length	Notes
MDU (FOB)	Coil Fiber	N/A			
CRAN	Tether Location	8 - BLUE	5'	15'	Orange Dust Cap ONLY
1 to 2 BCLs	Tether Location	4 - RED	5'	15'	
3 BCLs	Tether Location	6 - WHITE	N/A	15'	Buried ONLY
3 to 4 BCLs	Tether Location	8 - BLUE	5'	15'	
5 to 6 BCLs	Tether Location	12 - GREEN	5'	15'	
7 to 12 BCLs	Tether Location	12 x (2) 24	5'	15'	
13 to 23 BCLs	Coil Fiber	N/A			
24+ BCLs	Coil Fiber	N/A			ON-PREMISE PFP

Coiled Fiber (CF) and Tether (TCF) PON Distribution Sizing for Business Dense IFP PSA's

Engineers will size, design and inventory Business Dense IFP PSA distribution PON cable for all the BCL's in the PSA. Each BCL in the PSA will be inventoried into either GRANITE by being built to an FBT or it will be inventoried in OVALS-GIS and associated to a Coiled Fiber/tether location.

The table below contains (CF/TCF) sizing guidelines that have been adjusted to align with the Business sizing rules:

Business Dense IFP PSA Coil Fiber and Tether Location Sizing:

SQ. of Building	BCL Type	# of BCLs	Coil to Tether	TCF Sizing	Comments:
5,000	Office	2	Tether location	TCF6 - WHITE	PON Distribution sized at a minimum of 6 fibers based on SQ. of the BCL
7,000	Retail	5	Tether location	TCF12 - GREEN	PON fibers sized at 2 fibers per BCL for a total of 10 fibers, round sizing up to 12 strands for Corning Requirements, thus TCF12
15,000	Retail	4	Tether location	TCF12 - GREEN	PON Distribution sized at a minimum of 12 fibers, based on sq. of BCL, thus TCF12
16,000	Office	11	Tether location	TCF12 x (2) 24	PON fibers sized at 2 fibers per BCL for a total of 22 fibers, round sizing up to 24 strands for Corning Requirements, thus (2) TCF12's.
25,000	Office	25	Coil Fiber	On Prem PFP	+24 BCL's place on Premise PFP

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OVALS GIS - Coiled Fiber and Tether Input Process and Requirements

Introduction

OVALS GIS is identified as the National Tool and Process that will capture Coiled/Tethered Fiber (TCF) and Associations.

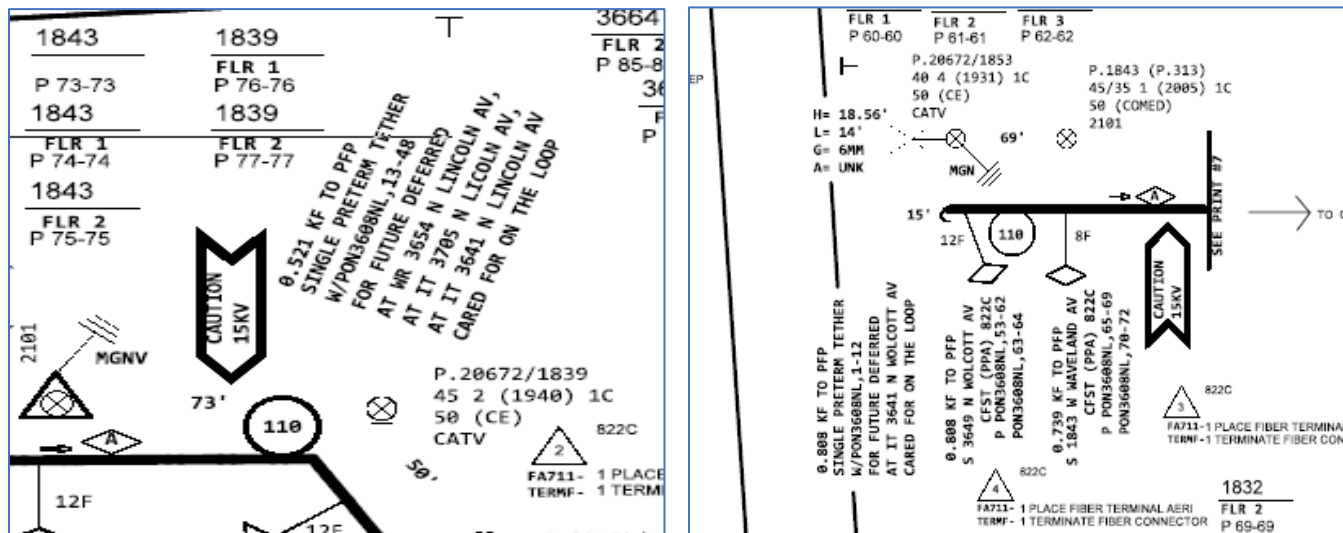
OVALS GIS application will inventory Coiled Fiber/Tethered Access Loop Locations, and will associate MDUs, MTUs, (MDU/MTU) Mixed, E-Rate, SFU, and CRAN with SAG valid address locations. The OVALS GIS inventory will capture and generate inventory reporting for Coiled/Tethered Fiber and Associations for future fiber penetration and revenue opportunities.

The coiled/tethered fiber inventory information will also be utilized by AT&T business solutions group to identify potential customer location for fiber services. New enhancement of TCF Access Loops added for further detail options. TC2 Access Loop, TCF4 Access Loop, TCF6 Access Loop, TCF8 Access Loop, and TCF12 Access Loop.

The Design Engineers will input the Coiled/Tethered Fiber Access Loop and Associated Address Locations into the OVALS GIS application.

For system access and instructions for the use of the OVALS-GIS system refer to the Job Aid (JA) [ATT-TELCO-JA-000-004-368](#).

Coiled fiber example in ARAMIS:



Note: All Coils must be called out with GLID in ARAMIS

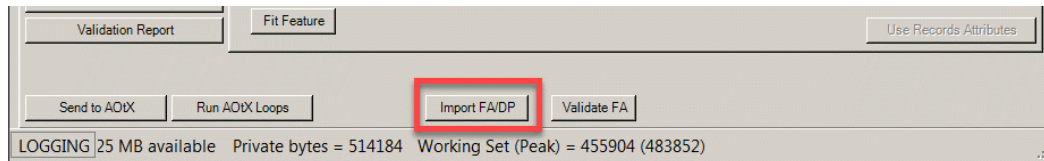
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AOTX Expectations and Bulk Import

All living units will be built properly in the AOTX tab in ARAMIS. All addresses must be SAG validated. All living units must be successfully sent to AOTX without errors upon completion of upload. All errors must be corrected by contractor.

- Adding addresses in bulk via. AOTX

We now can bulk import addresses into AOTX. Import FA/DP (see figure below) allows for importing a spreadsheet with Facility Addresses and optional Dedicated Pairs.



The import process takes a spreadsheet of Primary Terminal Address, Facility Address and DP information. *There is **NO** filename restrictions. Name it whatever you like. It **MUST** have the **specific** columns in the **specific** order below.* The process splits up the Facility Addresses and adds them to the Facility Address tab of the relative Primary Terminal Address in Workprint Manager. The format of the spreadsheet is shown below with a description of what each column is for. There is also an template on the ARAMIS SharePoint site under the Job Aids topic (also linked [here](#)).

PRIMARY_TERM_ADDRESS	FAC_ADDR	CABLE_ID	DP	PRIMARY
1240 E STOP 11 RD	3437 STODDARD PL	3155	1076	P
1240 E STOP 11 RD	3437 STODDARD PL	3155	1077	S
1240 E STOP 11 RD	3449 STODDARD PL			
1240 E STOP 11 RD	3461 STODDARD PL			

Note: If you run the DA scrub as previously instructed, you will be able to copy and paste the addresses to this sheet and only must write in your new terminals.



FA_IMPORT_Template.xlsx

- Manual Address Entry into AOTX

Lastly, attached is another job aid to show how to manually input SAG valid addresses.



JOB AID for SAG
VALID addresses.pdf

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F1 Corning's Primary Flexibility Point (PFP)

The Primary Flexibility Point (PFP) enclosures are used to provide connections between fiber optic cables and passive optical splitters in the Outside Plant (OSP) environment. These enclosures are used to connect feeder and distribution cables via optical splitters in the Integrated Fiber Planning (IFP) network. The PFP enclosures are used primarily in a centralized splitter deployment model, the PFP enclosures provide secure environmental and mechanical protection for cables, splices, connectors, and passive optical splitters.

The CommScope Primary Flexibility Point (PFP) enclosures are approved for use in the East region of AT&T.

Primary Flexibility Point (PFP) enclosures:

The FDH 3000 PFP features splitter modules, distribution panels and a parking lot for unused splitter outputs. The "count" of the PFP represents the number of distribution fibers that can be fed out of it. In most cases the number of available splitter slots will allow a larger number of "out" fibers than the size of the cabinet if all 1 X 32 modules are used.

- **Pad Mount FDH 3000 Cabinets are available in 144, 288, 432, and 864 sizes.** The PFPs are designed to be installed over a concrete pad. Pad mount cabinets include armored feeder and distribution stub cables that exit downward through the base of the cabinet. Each pad mount cabinet is shipped with a factory installed 6" riser attached to the cabinet bottom.
- **Pole Mount FDH 3000 Cabinets are available in 96, 144, 288, 432, and 576 sizes.** They are designed for overhead/aerial cable plant installations and are available in extra small, small, and medium cabinet sizes for fiber counts ranging from 96 to 576. All sizes of pole mount cabinets include 100' dielectric feeder and distribution stub cables.
- **Wall Mount FDH 3000 Cabinets are available in 32, 96, and 144 sizes.** The 96-fiber size can be placed outdoors on a wall or indoors on a wall. The indoor version is equipped with OFNR (riser rated) cable stubs. The 32 and 144 sizes are designed for indoor use only.
- **Rack mount FDH 3000 Cabinets are available in 288, 432, 576, and 864 sizes.** They are shipped in a 7' Zone 4 earthquake rack with a 100' OFNR (riser rated) distribution cable stubs but no feeder stub.

Note: In the past the Commscope PFP cabinets shipped with 1x32 splitter modules. Due to the transition from GPON to XGSPON and the varying distances, **designers will now have to order the ratio and number of splitters for each job.** This change will insure we have the correct splitters inside each cabinet on day one.

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F1 PFP Information to Review

Primary Flexibility Point (PFP) site selection verification:

The on-site contractor must use “best engineering judgment” if the site provided in the MIC documentation binder is not the optimal site for the PFP. The placement of any PFP should be in improved areas only where there is little to no chance of relocation. In some cases, securing an easement may be appropriate.

Site selection must include review of existing copper cross-box reskin/expansion options or even usage of a Controlled Environmental Vault (CEV) as a possible solution when faced with challenges to placement. The low cost, most efficient selection is required.

- The Contractor will coordinate all new site selections with the AT&T SPOC prior to designing the job.
- PFP address may change when relocating. This may change PON count designations on project.
- Unlike copper SAI/FDI's, PFP's cannot be relocated without service interruptions. Fiber cables cannot be “half-tapped” and cutting feeder fibers will cause multiple out of services.
- If an aerial opportunity or solution exists, follow the attached PFP pole selection job aid.



PFP pole selection
job aid.pdf

Several other factors must be considered when selecting the physical location of a walk-up or ground mounted PFP:

- #1 - Safety - Must provide a safe environment for both the ATT employees and the public
 - Clear line of vision for placement near road intersections or alley entrances
 - Find location where AT&T employees can park safely to work at location
 - The PFP must be moved to a “safe to work” location if suggested location is not safe in any way
- Access – Avoid public inconvenience and ensure the plant can always be accessed
- Location – within legal right to place and maintain facilities
 - Verify PFP pad location with local permitting authority's approval – quickly
- Minimize possibility of future relocation because of public improvements
- Accommodate ultimate (growth) requirements
- Minimize potential for damage from flooding or being hit by vehicles
- Aesthetics – Be considerate of placement; if it were your yard, where would you place it?
 - Avoid placing in front of residences
 - Do not block private property views as best as possible

Sample pictures for different PFP location placement options:





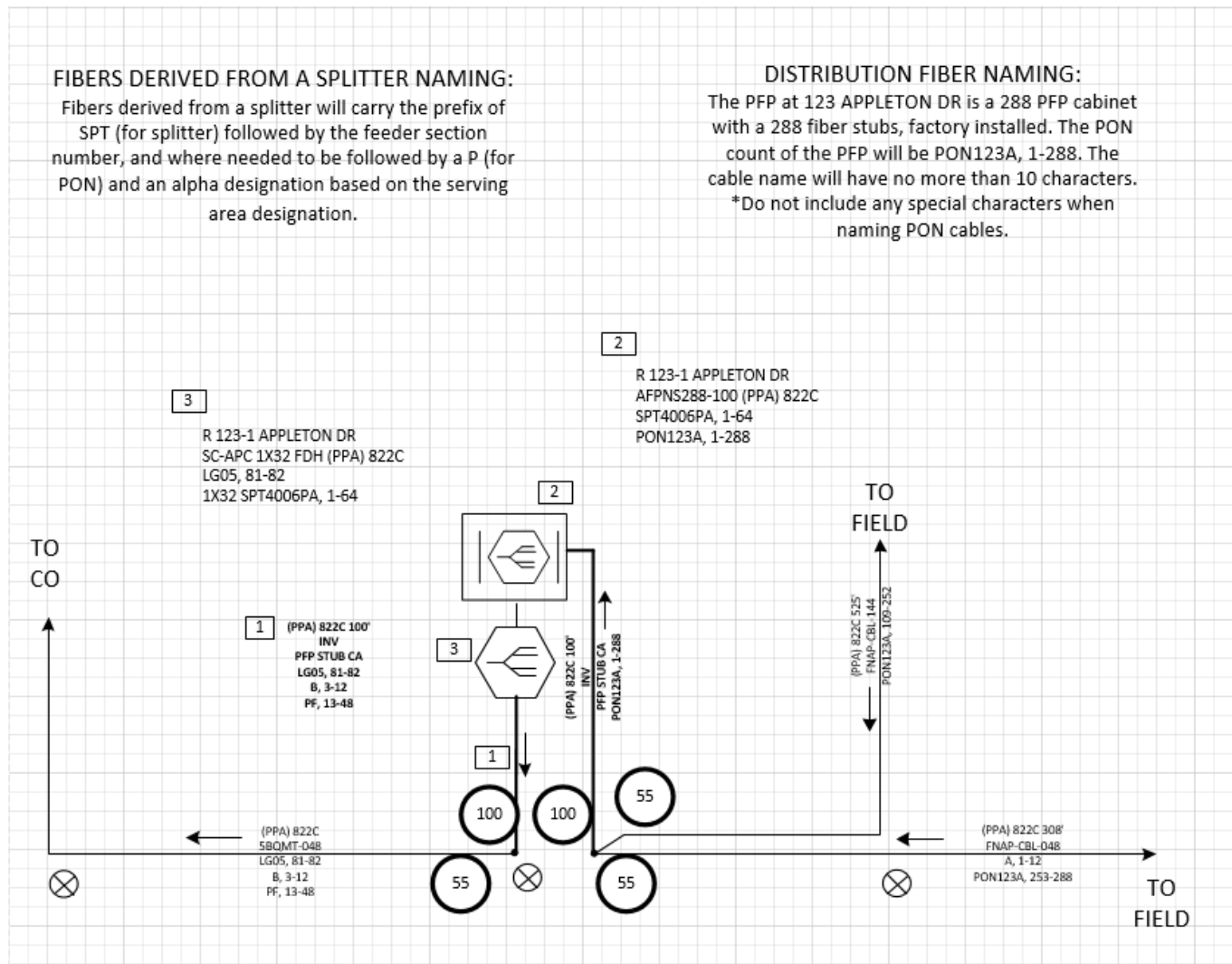
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F1 Initial Design Information

The F1 project will be for the placing and splicing of the PFP, splitters & F-1 feeder fiber facilities for the PSA.

F1 fiber cable and strand counts are provided by planning and located in MIC component FIG.

PFP Posting Example:



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Fiber Cable Grounding Requirements - National

1. All fiber cables 100' or longer containing metallic components are required to be grounded at the beginning and end and spaced no more than 2500' along the cable when commercial power is 3' or more away. This includes cables that are field spliced as well as those that have factory tethers.
2. Use the TGB and Grd Bed symbols if driving a Ground Bed.
3. Use the MGNV symbol if using a power company ground.
4. The CO side splice (beginning) and the end terminal (end) of all FlexNAP™ EUC cables must be grounded.
5. Dielectric fiber cable, FlexNAP™ RPX, BAU-5B92M-XXX, etc..., and dielectric splice cases are not required to have a ground symbol on the workprints.
6. PFPs are required to be grounded and may be connected to the same ground field with the main fiber handhole.
7. It is AT&T practice that each section of cable, strand, or device shall stand on its own for electrical protection. Each length of cable, strand, or device shall be attached to the ground source separately.
8. Follow local practice regarding the use of a ground field and the number of rods to be used.
 - a. Ground rod details are in the embedded document:

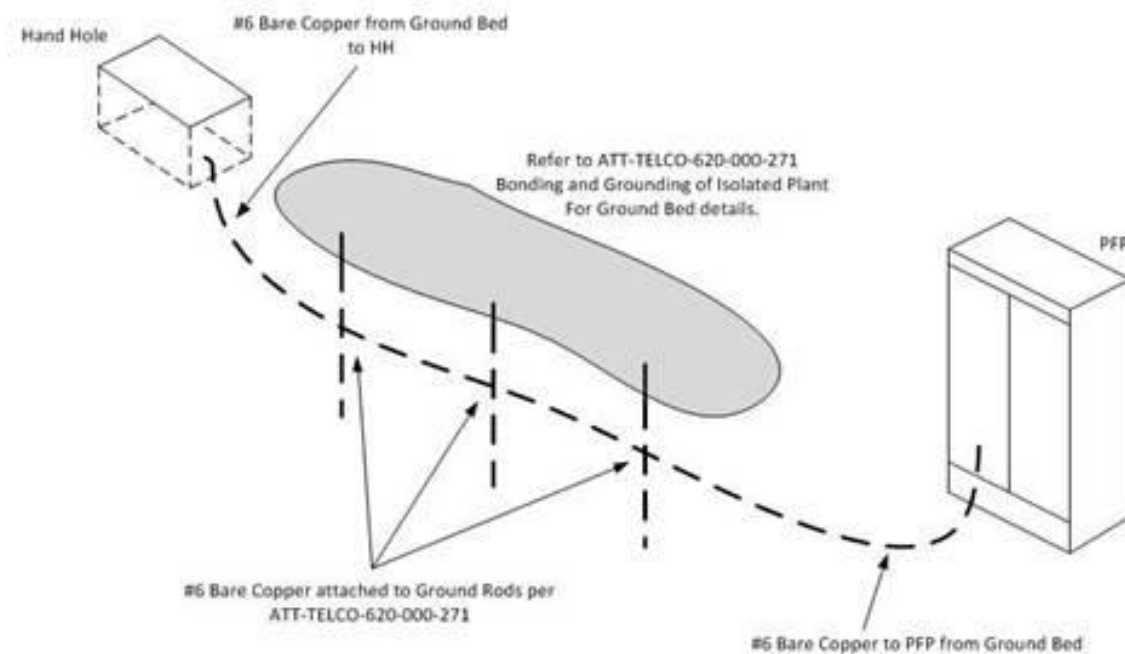


Ground Beds -
Resistivity.pdf

FlexNAP™ cable grounding job aid link:

[http://apex.web.att.com/books/ATT-TELCO-620-000-352/figures/Buried%20End%20Section%20for%20FlexNAP™%202004-2018.pdf](http://apex.web.att.com/books/ATT-TELCO-620-000-352/figures/Buried%20End%20Section%20for%20FlexNAP%202004-2018.pdf)

Example Ground Bed for F1 Handhole and PFP:



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Pole Posting - General Rules/Record Correction Project

Pole posting rules:

1. All poles must be posted to the GEO PLR & applicable attributes populated. This includes both:
 - New poles placed in the field
 - Poles found in the field but not on the records
2. If an existing pole is found in the field and is not posted on the records; that pole MUST be added to the records on a Records Correction Project.
 - This is a 2-step process:
 1. Add the pole as PPA to the records
 2. State change the pole to FPA on the records

IMPORTANT: If this process is not followed the pole(s) added via the records correction project will forever remain in PPA status; as record correction projects are not a part of the final post process.

3. If an existing pole is being replaced in the field & that existing pole is not posted on the records; the existing pole MUST be added to the record on a Records Correction project & then that same pole is replaced & tasked under a CFAS project.

Record Correction Project:

- Add the pole as PPA
- State Change the pole to FPA

CFAS Project:

- Replace pole that was added on records correction project & task detail the pole replacement.

4. Pole descriptions used on the records MUST match the pole description on your task.
 - If ATT owns 100% of the pole, (ordered & placed by ATT); use the standard pole description (Ex. 25-5).
 - If ATT has ANY ownership in the pole, & it's set by others (including power co); use a pole description that contains 'POCO' (Ex. 25-5-POCO).
 - If ATT has NO ownership in the pole, & it's set by power company; use pole description that contains 'PWR-POLE'; (Ex. PWR-POLE-25)
5. Pole ownership % must be accurate on the records & match the pole ownership % on the task.
 - CO poles = 100% ownership
 - JO poles= 1-99% ownership
 - IO poles = 0% ownership

Pole Addressing

All regions MUST utilize 911 addressing for poles.

Feature Explorer - Pole - 25409811

Pole - 25409811

Attribute Name	Attribute Value
Relative Location	
Address Number	1990
Prefix	West - W
Street Name	SMITH VALLEY
Postfix	RD - ROAD
Loc Spec	

If there is not an address – follow the No Physical Address (NPA) process:

- Note: In rural locations where a USPS address is unavailable, the use of letters 'NPA' as the STREET NAME along with an associated AHN (Assigned House Number) Pole number, Rural Lead number, Lot number or Pedestal number that would assist with identifying the actual terminal location is acceptable as a last resort option.
- Address Number: 500' S 1801 LUCKY GROVE AVE POLE

Pole Attribution - ARAMIS

All BOLD attribute fields are mandatory. Non-Bold attribute fields should be populated when known.

Pole CO	Common Address	Multiple Pole Ownership
Attribute Name		Attribute Value
Type	CO	
Description		
ATT Pole/Tag Number		
Other Utility Pole/Tag Number		
CLLI		
Municipality		
JWA Number		
Telco Percent	100	
Street Name/Rural Lead		
Location Code		
GPS Lat		
GPS Long		
GPS Survey Date		
Ground Source		
Balcony	N	
Termination	N	
Step	N	
GeoLoc		
FRC	1C	
Mortality		
Project Id		
Remarks		
Feature State	Pre-Post Addition	
Ownership in Dispute	N	
Transformer	N	
Feature Id	103515237	
Legacy Id		

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O-calc all poles as needed and update ARAMIS with pole information

When is Pole Loading Required?

It all comes down to safety. Pole loading analysis is required when placing a new pole/pole line or attaching new cables or equipment to an existing pole. If a pole fails loading analysis, the proposed build should be changed, or additional measures should be taken to counter the load, or a new pole needs to be placed. If a pole is over-loaded, it can fail, causing serious injury, as well as vehicle and/or property damage. Pole loading analysis is the process of calculating structural loads on new and existing utility poles providing details on loads (shear, bending, and axial), Bending Moments (wind, eccentric, and wire tension), Stress (axial, bending, and total for determining load capacity), Column Buckling Analysis (axial loads for determining the vertical capacity utilization), Pole Deflections, Guy Wire and Anchor/Rod (tensile stress).

For more in-depth review of pole loading review [chapter 10](#), section seven of the OSPE C&E eHandbook: Pole Line.

Pole Loading Considerations

Pole loading must be completed using the O-Calc Pro software or the AT&T Fast Templates Workbook. Pole loading for every pole is not required when pole lines are consistent in facility attachments and heights. In this case It is acceptable to use sampling of several poles within the run. See section 2.2.

Loading is REQUIRED on any pole that deviates (class, size, attachments, attachment height, change in run direction, begins or ends the run, etc.) from the run.

- Pole loading must be completed prior to construction start. Pole loading supporting documentation is included within the project package and can be matched to the poles on the project work print.
- The maximum pole capacity utilization MUST be below 85% for consideration of additional attachments If greater than 85% more detailed analysis is required before making additional attachments.
- Drops (including CATV, Telco, power, etc) must be included at 80% or greater of pole capacity or if the total number of service drops (including CATV, Telco, power, etc) exceeds 20 (twenty).

Pole loading **IS** required when:

- Placing new poles or replacing an existing poles (including poles placed by others)
- Placing new cables (includes replacing "like for like" cable)
- Placing new or removing existing guys (including downguys, OHG, pole-to-pole)
- Placing pole mounted cabinets (VRADs, VSEMS, SAI, DAS, etc.)

Pole loading is **Recommended but Optional** when

- Placing aerial splice cases
- Placing pole mounted serving terminals
- Replacing existing guys for maintenance reasons
- Pole loading is **NOT** required for transfer work that is not initiated by AT&T

Pole Loading

- A. "Any entity planning the addition of facilities [to an existing pole] shall ensure that the addition of the facilities will not reduce the safety factors below the values specified by Rule 44.3."
- B. When performed, Pole Load Calculations (PLCs) shall take into account known local conditions, such as wind speed and soil conditions, and existing configurations, such as Ground Line Circumference and current intrusive test results.
- C. PLCs for wood structures more than 15 years old, shall incorporate the results of intrusive inspections performed within the previous five years.
- D. PLC documents shall be maintained for the service life of the pole and shall provide them to authorized joint use occupants and the CPUC upon request.

Pole Sampling

Sample Loading: loading for every pole is not required when pole lines are consistent in facility attachments and heights. It is acceptable to complete a load sampling of several poles within the run. Loading is REQUIRED on any pole that deviates within the run. Examples: change in class, size, attachments, attachment height, change in run direction, begins, or ends the run, etc.)

Example of what qualifies for sampling:

1. 20 pole lead
2. Poles are the same size and height
3. The same cables are attached throughout the lead
- 4. The first and last poles are guyed**
- 5. One of the poles has two transformers attached**

Complete pole loading (sampling) on the three (3) most impacted poles with in the 20-pole lead, loading is conducted on the transformer and guyed poles (3 poles total).

A complete O-Calc analysis is required on all aerial designs – the “Pole Loading Report” must be uploaded into MIC.



Altos Fig 8 OCALC
report.pdf

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Standardization

ARAMIS System Usage Expectation / Supplemental Documentation and Work Print Requirements

ARAMIS:

The proper use of ARAMIS must be practiced by all! - The use of live clips is expected while creating, design and working on all items of plant contained in the PLR.

Workprints should be comprised of live record clips with minimal use of redlines (copy graphics). The live clip is merely a “window into the records.” Whatever updates are performed in the records will flow to the workprints. If a user does not use live clips, any revisions or changes in the ARAMIS records need to be done manually to update the workprints.

This is an AT&T national requirement for several reasons and benefits as shown in the table below.

Functionality	Live Clips	Copy Graphics
Intelligence - Updates in records are updated on workprints. This means there is no extra work needed to update workprints.	YES	NO
Integrated AOTX Functionality; ARAMIS copies AOTX info to AOTX tab.	YES	NO
Review feature attributes on workprints.	YES	NO
Ability to retrieve lost graphics or clips without starting from scratch.	YES	NO
Associate placement features from workprints (impacts material tasking).	YES	NO
Ability to retrieve feature information from workprints without searching in ARAMIS record.	YES	NO

Supplemental Documentation/Informational Prints

If it is necessary to provide highly detailed instructions or work-prints for placing operations such as hand-holes, boring conduit, placing duct, digging access pits, etc. The use of another system (Visio, MicroStation, or any CAD software, etc.) is permitted. The detailed measurements, offsets, etc. can be much easier to work with using a system other than ARAMIS.

The inclusion of supplemental 'hand drawn, or CAD generated' prints should be done to convey 'informational-only' detail to support placing or splicing field work that may prove otherwise challenging to provide on standard work prints.

An 'Informational only' print (print created without the use of an AT&T approved drawing system) cannot contain:

- Splicing or placing steps (FTIs or WACs)
- Construction specific work operations
- Record affecting content

Note: All work print drawings must utilize a properly populated title block which includes a condensed version for supplemental/informational prints. A condensed version of a title block which must include the following:

1. the project number itself
2. a print identification number (i.e., Print 3A which corresponds with Print 3)

Note: If supplemental documentation is used to provide this information, a Construction note must be placed on the work print to notify Construction of the additional document. The supplemental information must be converted to a .PDF and uploaded into MIC.

Proposed Facilities Location (“tie-in”)

Adequate measurements to physical objects to tie in the center line of proposed structures or plant off a known source (AKA “offsets”) must be provided either on the work print(s) or on supplemental documentation contained within the project work package to ensure the facility is placed within the confines of the Right of Way or easement.

Construction teams must be able to locate proposed structure and plant placement sites as accurately and easily as possible. Other above ground objects need only to be shown for locating purposes or if in conflict with proposed build. Examples of physical placement references include:

- Street/highway center lines
- Edges of pavement (road edges)
- Back of curb
- Sidewalks
- Fence lines
- Poles
- Utility boxes
- Property lines (PL) and right-of-way (ROW) - If pins are available

Unmarked locations (unmarked property lines, rights-of-way, etc.) should only be used as physical placement references when the field designer is able to provide appropriate staking of said property line, easement, etc. Unmarked locations may also be used to provide information for record purposes (i.e., to identify the limits of right-of-way, property lines, etc.).

***Note:** If supplemental documentation is used to provide this information, a Construction note must be placed on the work print to notify Construction of the additional document. The supplemental information must be converted to a .PDF and uploaded into MIC.

Easements

When proposed facilities are being placed in an easement, the easement dimensions and the location of the easement must be identified by either staking in the field or offset measurements to a physical reference being provided either on the work print(s) or on supplemental documentation contained within the project work package.

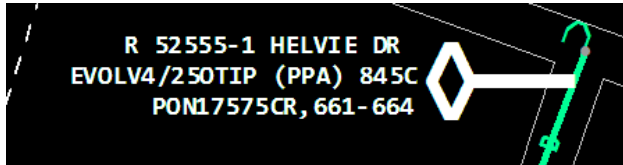
***Note:** If supplemental documentation is used to provide this information, a Construction note must be placed on the work print to notify Construction of the additional document. The supplemental information must be converted to a .PDF and uploaded into MIC.

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FST placement in ARAMIS

FST placement and posting in ARAMIS will show the FST tail being placed as touching the parent cable to establish a “owned by cable” relationship. This applies ONLY to standard stub length FSTs:

- MultiPort OptiTap - 5' or 15' lengths
- Evolv - 10' or 25' lengths

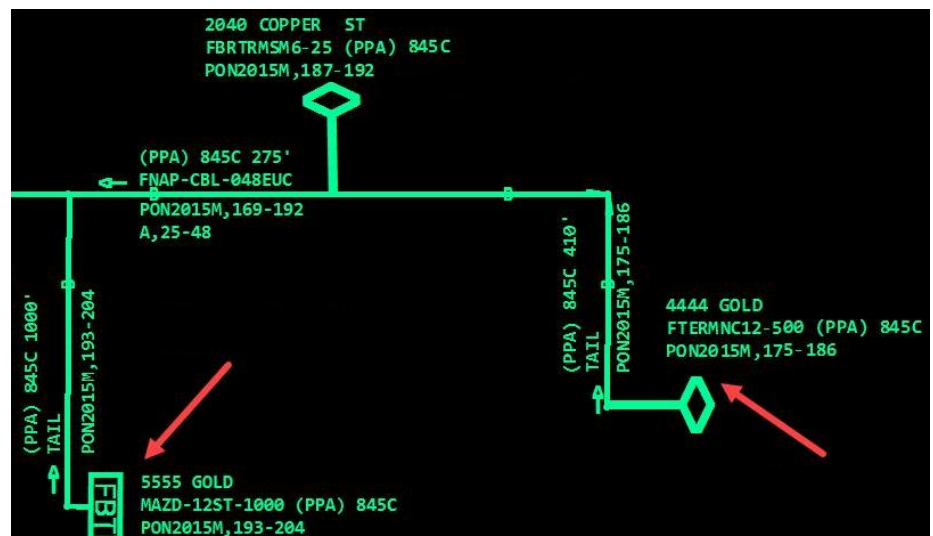


Feature Explorer - Fiber Terminal - 110119948		
Fiber Terminal - 110119948		
Contains		
Expansion Owns		
Owned By		
Fiber Cable - 110115969		
Owns		
Repair Feature ParentChild		
Fiber Terminal		Common Address
Attribute Name		Attribute Value
Type		FST
Description		EVOLV4/250TIP
Size		4
Total Size		4
CLLI		
Taper Code		2104PA

Note: placing Corning FSTs with >25' tails will require a fiber section of "tail" to be placed and connectorized as such due to the physical location (*addressing*) being too far away to be accurate from the pole or pedestal tether location.

Users should use the 'cable feature' with a description of "TAIL" to depict the tail for lengths over 25'. The length of the "TAIL" cable should be the estimated placing footage of the tail. This will aid in the records showing a truer tail footage and a more accurate LMU for the terminal. Using the cable feature for the tail provides consistency and will assist with reducing the need for the additional layers to be turned on within WALDO (required to view the tails when the components are used).

TAIL Description Fiber Example			
Fiber Cable	Cable Sections	Complements	Slack Loop - Detail
Attribute Name		Attribute Value	
Description		TAIL	
Size		144	
Usage		Exchange	
Fiber Mode		Single	
Design Type			
Ground Source			
GeoLoc		F1145	
Fiber Trace Wire			
F1		N	

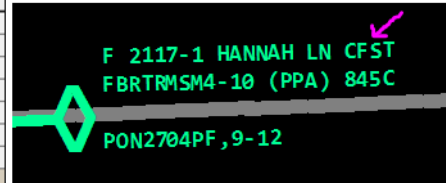


Fiber Terminals cont.

The FST symbol will be used in ARAMIS. The user selects GPON Type “PON-C” in feature explorer when placing the item in the GEO window. AOTX will automatically add CFST to the terminal in GRANITE when sent through for upload. This is often entered into ARAMIS incorrectly.

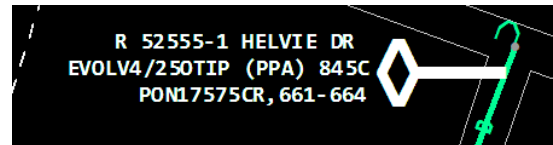
INCORRECT:

Feature Explorer - Fiber Terminal - 129699915	
Fiber Terminal - 129699915	
Fiber Terminal	Common Address
Attribute Name	Attribute Value
Relative Location	Front - F
Address Number	2117-1
Prefix	
Street Name	HANNAH
Postfix	LN - LANE
Loc Spec	CFST
LFACS Address	F 2117-1 HANNAH LN CFST FST



CORRECT:

Feature Explorer - Fiber Terminal - 110119948	
Fiber Terminal - 110119948	
Fiber Terminal	Common Address
Attribute Name	Attribute Value
Relative Location	Rear - R
Address Number	52555-1
Prefix	
Street Name	HELVIE
Postfix	DR - DRIVE
Loc Spec	
LFACS Address	R 52555-1 HELVIE DR FST



FOR REFERENCE, APEX ATT-TELCO-002-202-426, SECTION 6. ADDRESSING

- Therefore, users will not see 'CFST' in the Address or LFACS Address attribute fields in ARAMIS-DT. Users will continue to see 'FST' as they do currently when an FST is placed, as illustrated below.
Do NOT add 'CFST' to the Address field in ARAMIS-DT.

ARAMIS-DT

Fiber Terminal	Common Address	Complements	Tax District	Hyperlink	Geometry	Graphic Components
Attribute Name	Attribute Value					
Relative Location						
Address Number	2015					
Prefix						
Street Name	COPPER					
Postfix	ST - STREET					
Loc Spec						
LFACS Address	2015 COPPER ST FST					

'CFST' is not added to the LFACS Address by ARAMIS-DT

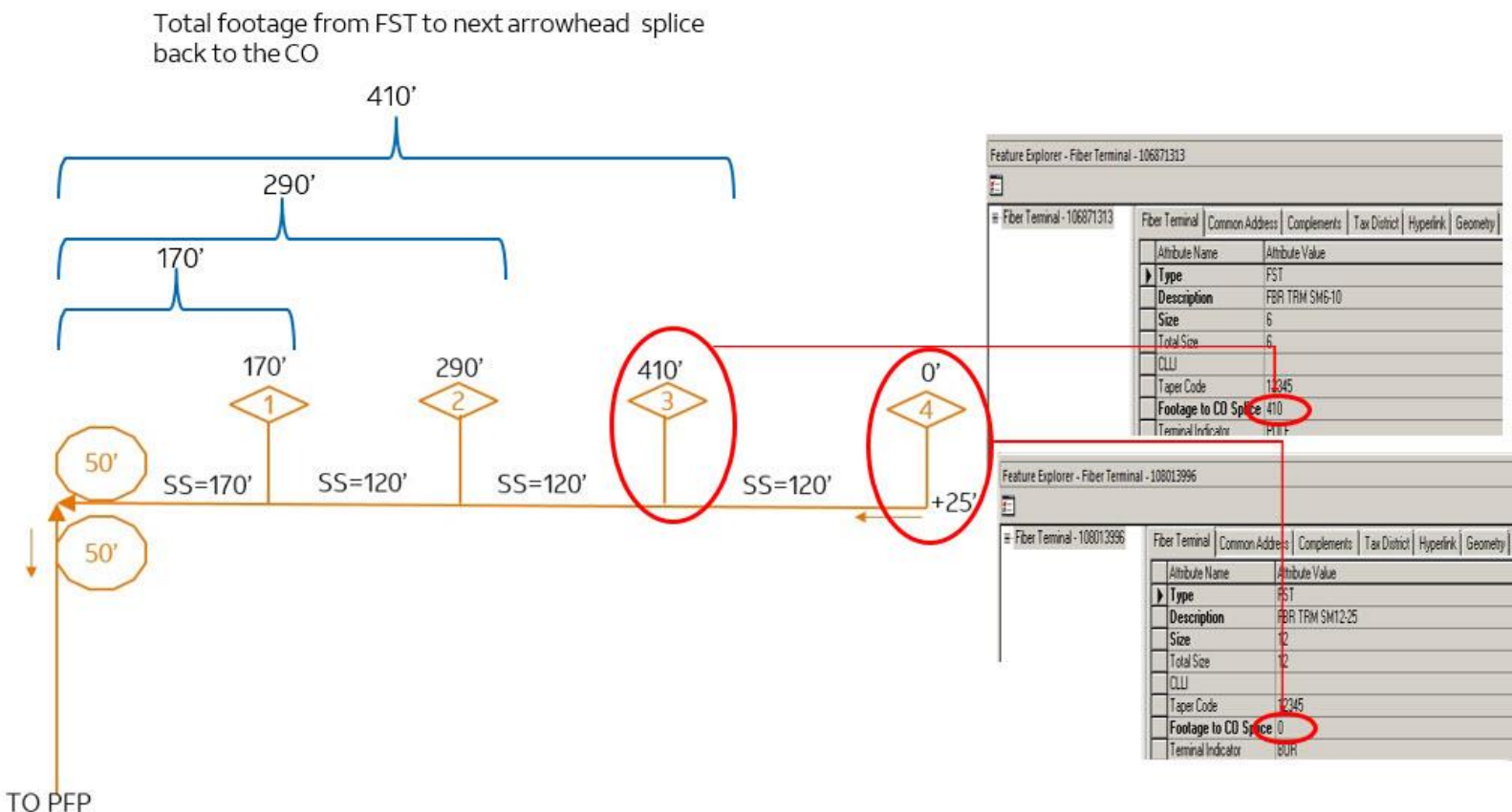
FST Footage to CO Splice – ARAMIS

Footage to CO Splice is the footage from the terminal tap in location being worked on to the next splice back in the direction of the CO. This is NOT the footage to the PFP; nor should a generic value be used.

ARAMIS requires this field to be populated for correct placement of terminals along the cable to check relationships. Engineers must show the 'Footage to CO' information on the terminal attribute screen. If the terminal is owned by a cable, the footage to CO must be greater than 0 but less than the total cable length.

However, FNAP cable must have a connector at the end (you will receive a P1 error without the connector when posting). The last terminal on a FNAP fiber lead is owned by the splice connector at the end, so the entry for “footage to CO” will always be entered as 0'.

Note: this “Footage to CO” data is used for LMU (Loop Make-Up) footages and must be entered into ARAMIS properly for correct cable length measurements in other systems.



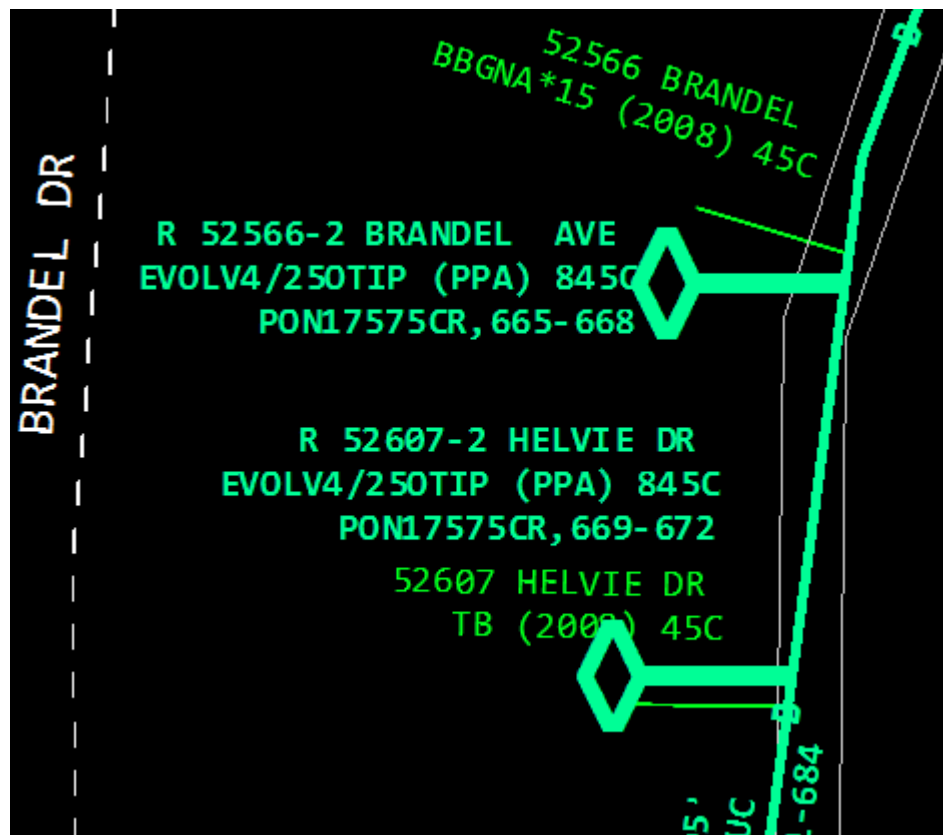
FST Terminal Addressing Rules

Per 21 State Terminal Addressing Standards - ATT-TELCO-002-600-038, all new FST terminals and PFPs, must use the multi-terminal naming process. The first terminal being placed on a pole, pedestal or handhole, will use the -1 indicator. If a copper or fiber terminal or terminals already exists at the same location, the new terminal will be shown with a -2, -3, etc....to indicate its consecutive placement at that same location.

For example, a new FST addressed at R 123-1 Main St indicates it as the first terminal at that location. If there is already a copper terminal at that location - R 123 Main St, then the new FST would be addressed as R 123-2 Main St to indicate it as the second terminal at that location. No differentiation is to be made between copper and fiber terminals.

Sample below:

- Notice the new fiber terminals have “-2” with the same address as the copper terminals:

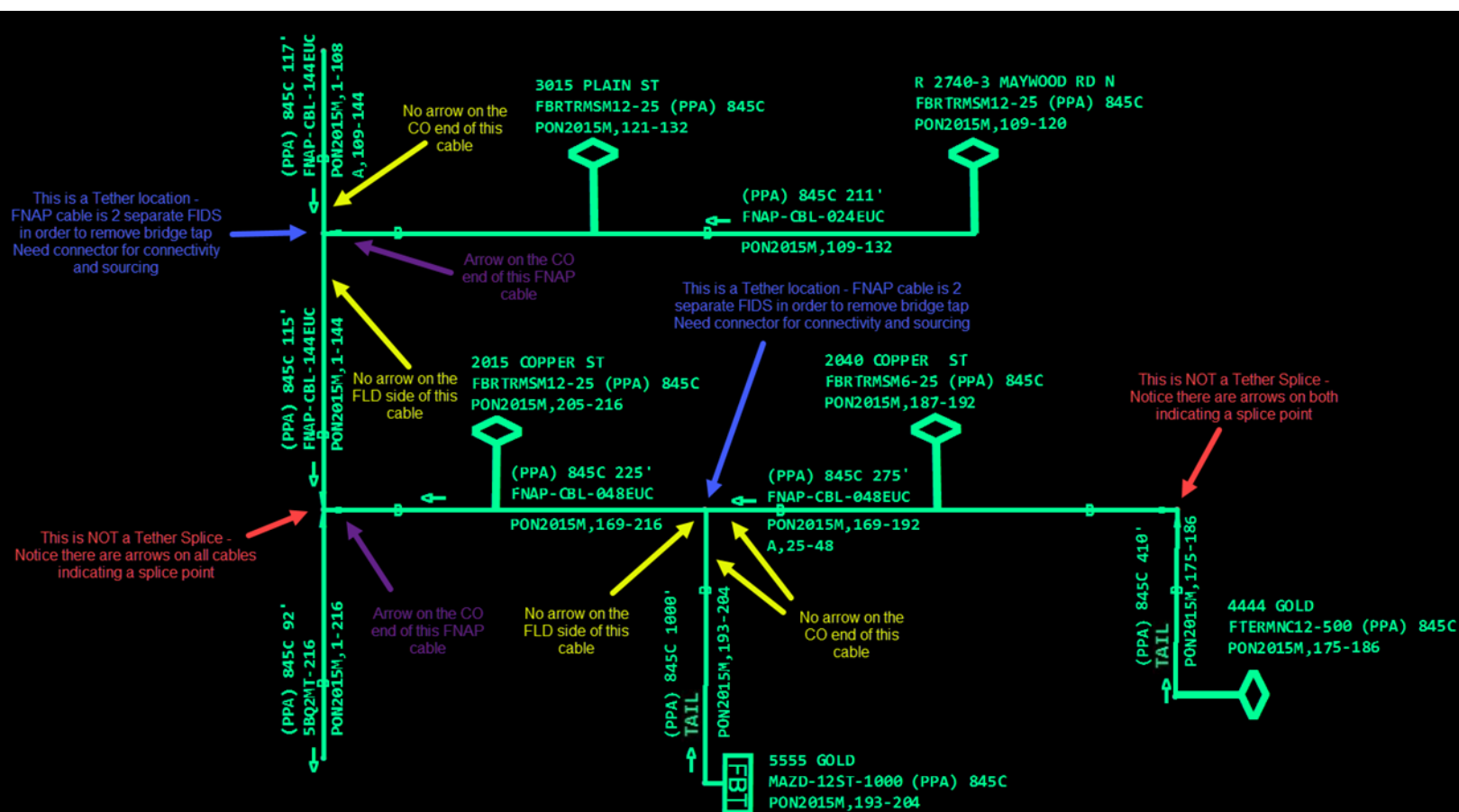


Cable Tether Placements: (excluding standard FST placements)

The Corning FlexNAP™ System uses network access splice points (aka. tethers) that are not re-enterable (see blue text and arrows below). Tether splices, like other splice symbols, denote that there is either a partial (tap-in) or full splice at that location within the cable. The feed cable must be broken at the lateral cable tether splice location to ensure bridge tap is removed from the record accordingly (although its one cable to Corning.) Whether designing a single or double tether splice location, an arrowhead is used to denote that splice location. Count changes show the theoretical count beyond where the pre-term laterals are introduced for the ability of an accurate loop makeup. Otherwise, the LMU would show the bridge tap added length in error. This is also a requirement to allow automation features to function correctly in the future. The designer must show arrows to differentiate between connector locations of a splice point of different cable or no arrows when it's the continuance of the same parent cable.

Below (cables and terminals in green) is an example of what FlexNAP™ cables, tethers and splices would look like on the ARAMIS-DT record in a pre-post state (PPA). The annotations clarify the different locations of splice connectors, tether splices and notes.

The work print itself would be a clip of the record below with a note added indicating the tether splice location and type (signal, dual, triple and quad), using the red-line and text tools in ARAMIS-DT.



Cable Placements in Multiple Environments – FRC Changes

Functionality exists within ARAMIS-DT (utilizing Feature Explorer - Cable Sections tab) which allows for the placement and identification of multiple segments/sections of the same cable, drop or wire in Geo, Detail or a combination of both Geo and Detail. This functionality can be applied to Drop, Copper or Fiber Cable, & Wire and has been identified by Design Staff as the approved posting standard for long span placement design. Users shall establish the long span record feature as one cable, drop or wire, one FID, with all subsections along that long span represented by the use of tick marks at specified points (MH, SB, HH, Slack Loop location, Future FAP, Pole, etc.).

Placing labor tasks can be assigned individually to each section as appropriate – do NOT associate the placing task to the fiber cables themselves in ARAMIS.

Feature Explorer - Cable - 100082767

Cable - 100082767

Copper Cable | Cable Sections | Complements | Slack Loop | Tax District | Hyperlink | Graphic Components

Component Length	Prefix

Section Start Meas.	Section Length	Plant Type	FRC	CO End	Field End	Record Type
0	157	AERIAL	22C			Geo
157	278	BURIED	45C			Geo

Attribute Name	Attribute Value
Total Length	435

Cable is Contiguous

Make Contiguous

Fiber Cable - Fiber cable will be placed as one piece of cable. Use ARAMIS break-cable feature upon placement at all future splice or slack loop locations. This will setup and prevent future fiber cable breaks and allow for successful LMU processing to these future splice points.

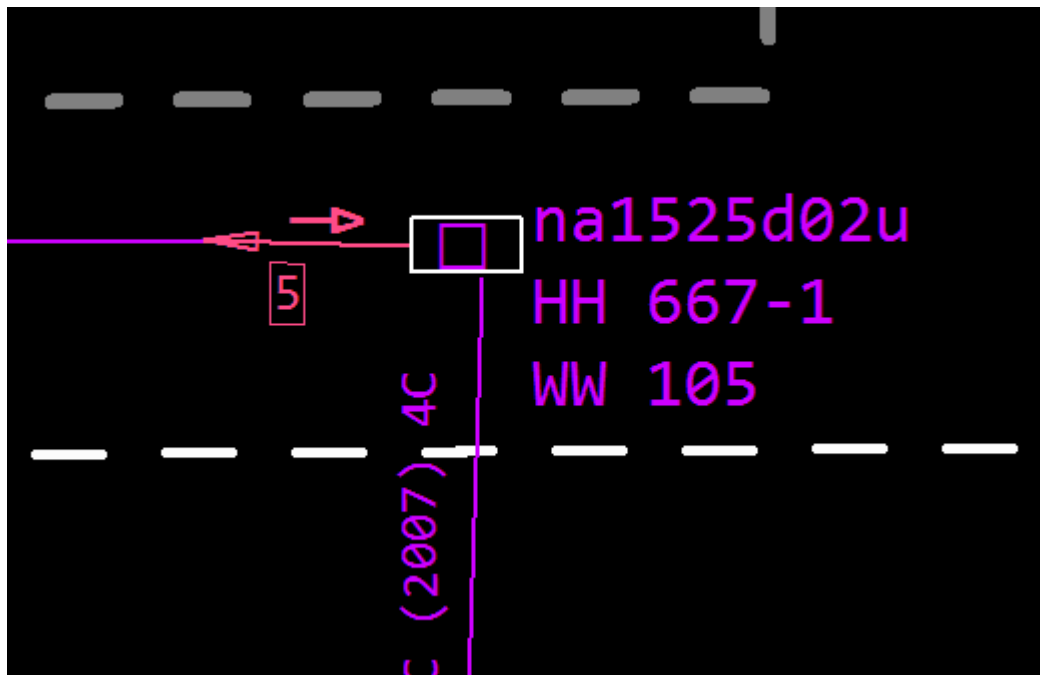
Note: Fiber cables placed as separate FIDS, for the purpose of denoting FRC changes are causing false results in downstream systems. Downstream systems are interpreting each FID as a separate cable with a physical splice at each end of the cable, when in fact, there is no splice in the field; only a change in FRC. Therefore, as stated above, it is very important to ensure each fiber cable is built as a single FID with the change in FRC to be denoted in the Cable Sections tab in Feature Explorer.

Buried Plant: Fiber Cables in Conduit/Handholes

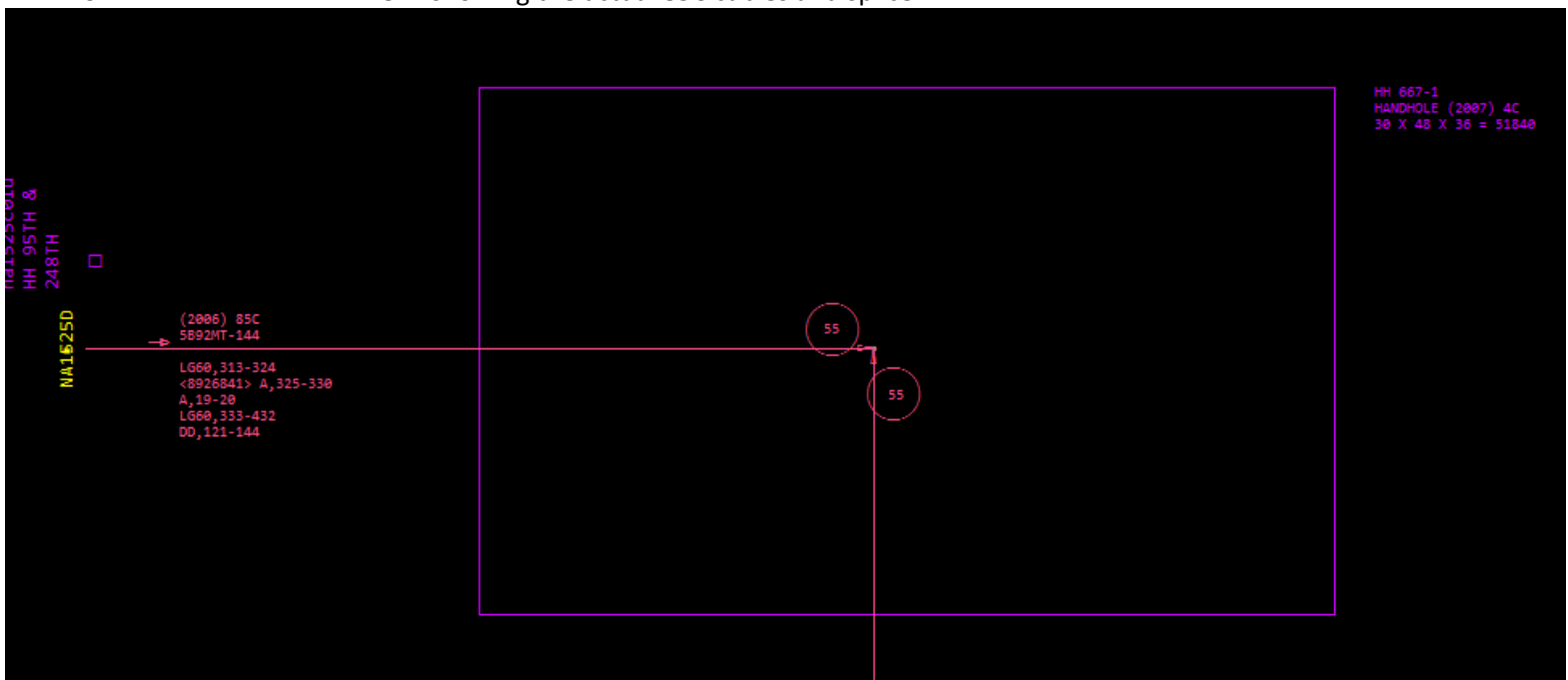
If conduit is placed feature to feature (HH to HH) then the conduit is shown on the GEO PLR and what is placed within the conduit would only be shown on the DET (detail) PLR of each HH detail.

GEO WINDOW showing 4C conduit:

Note: 4C is when both ends of such conduit terminate in a manhole, hand-hole, CEV, or other item of plant to constitute a conduit system.



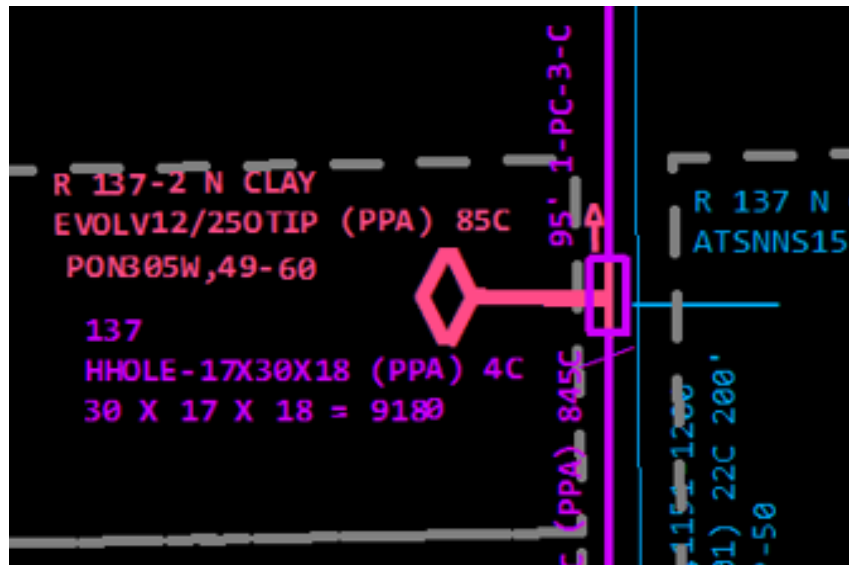
SAME HH - DETAIL WINDOW showing the actual 85C cables and splice:



Handhole and Terminal Posting IFP Exception

In buried plant and if ONLY a FST terminal is placed in a flowerpot or small handhole it will only be shown on the GEO PLR versus the need to populate the DET detail window with the cables, splices and terminals.

Note: ARAMIS will automatically create the detail (DET) PLR – do not populate the detail information.



Other than this one exception, all handholes placed will require a GEO HH symbol and a detail drawing record placed into ARAMIS:

- A DET PLR will be created for ALL new manholes/handholes.
- Limit of 1 MH/HH per detail PLR.
- A GEO polygon MUST be created & placed on the GEO PLR for ALL MH/HH details.

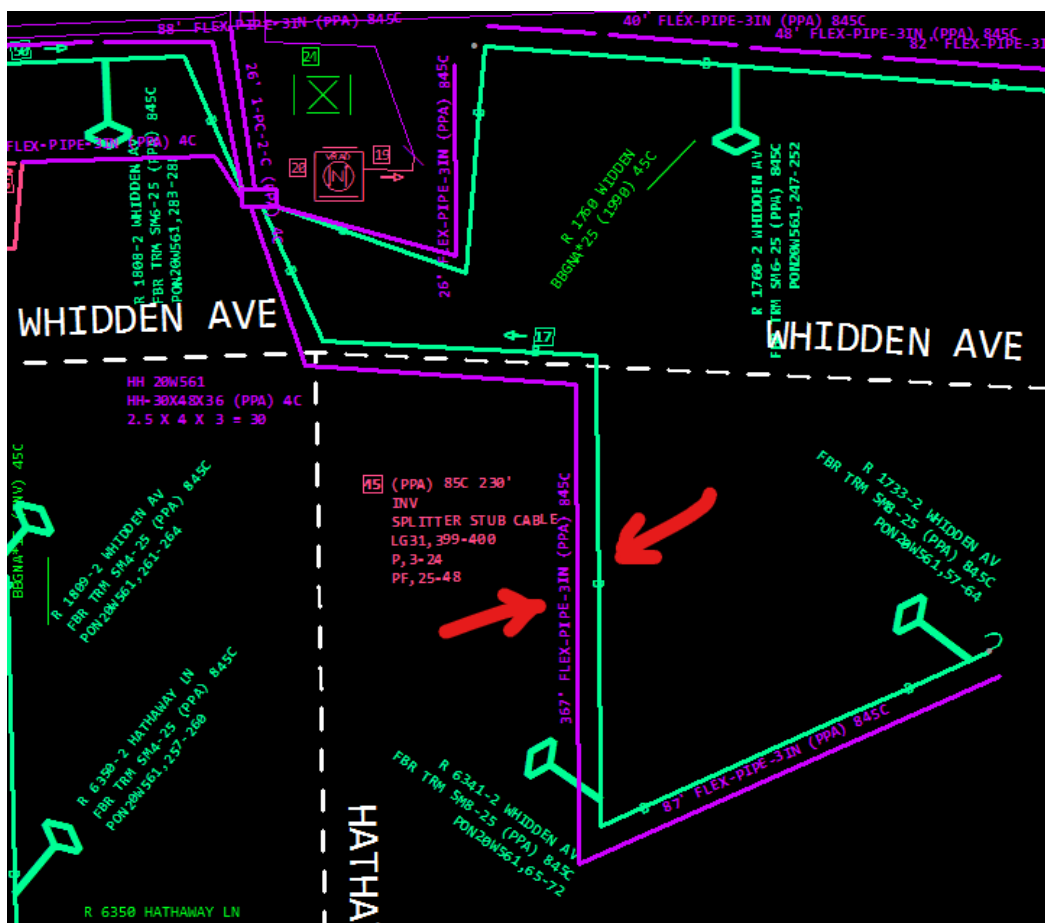
Conduit placement and fiber cables placed in them

All 2" or larger direct buried conduit/innerduct must be posted in ARAMIS/PLR. 845C conduit is considered as isolated conduit placed for the protection of the fiber optic cable. However, when fiber cables are placed through them, the PLR must accurately reflect this relationship. Conduit must properly show the beginning and end of placements. The cables must be shown within the conduit as they are once the structure is placed and used in the field.

Refer to the sample pictures below:

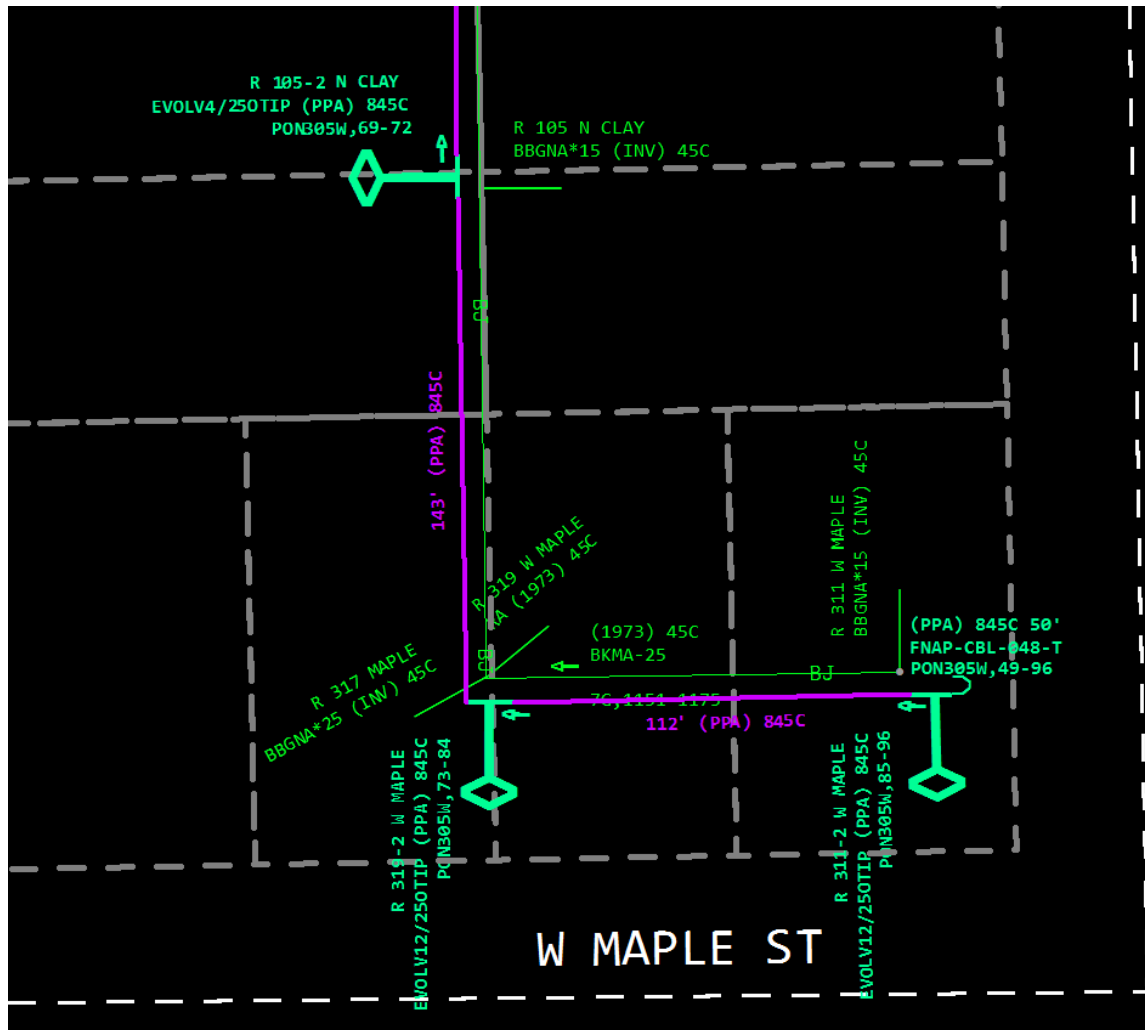
Ref #1 - This visually states that the cable is separate from the conduit. It would appear the fiber cable was placed in a separate trench or bore. This is incorrect!

#1 -WRONG:



The correct way is to show the fiber cable as entering and leaving the conduit where it starts and stops at each terminal location.
See Ref. #2.

#2 - CORRECT:



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Fiber Loop Lengths

The fiber “loops” and other measurement items placed in ARAMIS and on AT&T work prints need to be consistent across the AT&T East Design teams. To accomplish this the following footages are to be used for “normal” design. As always, exceptions can be made for circumstances requiring extra lengths. Excess cable required to facilitate splicing or for slack must be shown as a coil on the cable. All new and/or modified coils must be shown and indicate the amount of excess cable in the coil. Exceptions should be used minimally.

FlexNAP™ Fiber

Env.	Beginning and End of Cable (Automatic)	Slack Loop	Splice Loop	Double Tether location (Automatic)	Riser	HH	Ped	MH
Aerial FlexNAP	15' Loops front and end of cable (water blocking)	100'	50' on each side of splice (100' total)		HOA + Buried Depth	Not applicable in aerial environment	Not applicable in aerial environment	Not applicable in aerial environment
Buried FlexNAP	25' Loops front of cable and end of cable (water blocking)	100'	50' on each side of splice (100' total)	20' between each tap location	Not applicable in buried environment	See loop details	2 x (Buried Depth + Ped Height)	2 x (MH Length) (for racking)

Work-print Requirements

Workprint Information

- A rasterized vicinity map is acceptable
- Stick schematic require for FlexNAP™ projects (Corning requirement not AT&T)
- Fill blocks are not required on cables or stick schematics
- Items not required on print for overlashed cable (Must pass O-Calc)
 - Height of attachment
 - Existing down guy and anchor attributes if adequate (note guy and anchor presence)
 - Other aerial cables not being overlashed
- Pole identifier is required on prints for any aerial cable placement (class & size required for new poles)
- Span measurements are required on work print for FlexNAP™ & BAU cable
- Copper cable counts not required on fiber projects
- JAM “last task” notes not required
- One FID is required at a splice location – use connector FID (not every FID)
- Wiring limits not required on the work print
- The words ‘TO CO’ not required on the arrow symbol in ARAMIS (The directional arrow is still required)
- Count ripple schematics are not required

- No need to place arrow heads on cables indicating a continuation of the cable
- New strand does not need to be shown on the work print but a note indicating strand size being placed must be on the print
- Buried cable requires placement tie down details
- Any buried cable placement depth other than 24" must be shown on the work print

Notes not to place on workprints

Do not place notes that do not convey useful information:

- "Cable omitted for clarity"
- "Warning other utilities in the area"
- "T-Bug note"
- General safety note advising the technician to purge MH, wear safety equipment, etc.
- Bonding & grounding note identifying APEX document number.
- "Call Before You Dig" stamp not required

Notes on workprints to use

Do place special consideration notes on work prints when applicable. When a note is intended for a particular audience, it is recommended that the intended audience be identified in the note title to clearly communicate the note information (i.e., "Construction Note", "Posting Note", etc.).

- U-verse information for U-verse only planned fiber events
- ACC FOB Private Utility Locate note as required
- Any known safety hazards in the area (dangerous animals, high voltage, high traffic, unknown MH volume, etc.).
- Access information (gate codes, person to contact, building access, etc.).
- Previous project completions that are not yet posted or other projects associated with the current project.
- Required permits (Storm Water Pollution Prevention Plan [SWPPP], local and state permits, etc.)
- Joint use information.
- Special engineering design considerations with appropriate reference to the locations to which they apply.
- Special considerations noted in the field.

QC Validation Tool Access & Documentation

Online Training Link:

[IFP Engineering Documentation](#) - Select this link for all IFP Engineering documentation including the IFP Material Calculator and the IFP QC Validation Tool.

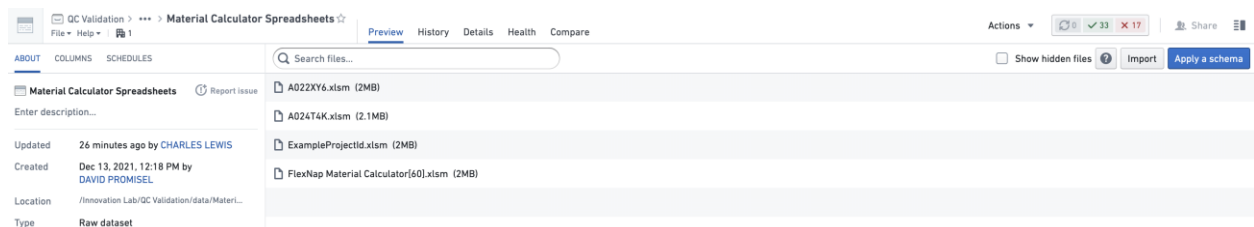
Getting Access

To get access to the tool & data you will need to do the following steps:

1. Click this link: <https://paloma.palantirfoundry.com/workspace/slate/documents/deep-foundry> - this will lead you to the landing page of DEEP and will create a user account within the platform. No further action is required after you have clicked the link.
2. Go into Upstart <https://www.e-access.att.com/upstart-az/UPSTART/UPSTART.cgi> and apply for the following roles
 1. Select the 'REQUESTS' link on the Upstart title bar
 2. In the SEARCH VALUE field type in 'DEEP'
 3. Scroll down and select the two roles below that are required for the QC Macro
 1. **PU0533 DEEP QC Validation Viewer** - This will give you access to the application.
 2. **PU0371 DEEP Network Ontology Viewer** - Needed to access data
 4. In the SEARCH VALUE field type in 'LCAT'
 5. Scroll down and select the role below that is also required for the QC Macro
 1. **PU0391 - LCAT Data on DEEP Restricted** - Needed to access data
 6. Select the 'Checkout' button on the lower right-hand corner of the screen to submit all requests

Upload Assignment Tool Data

1. Download the assignment tool from the MIC binder and rename it to the associated project ID.
2. Navigate to the upload folder: <https://paloma.palantirfoundry.com/workspace/data-integration/dataset/preview/ri.foundry.main.dataset.b6b0dddb-e24d-4a74-8067-97599e11ec9e/master>
3. Click "Import"



4. Accept the upload acknowledgement and drop the **renamed** file into the dialog box:

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(MB)

sm (2MB)

calculator[60].xl



Upload...



Upload acknowledgement

The use of this application is subject to AT&T Security Policy and Requirements (ASPR) and the AT&T Code of Conduct requirements. Misuse of this platform can result in disciplinary action, up to and including termination. Uploaded data is subject to AT&T processes and standards relating to retention schedules for company records. See ASPR-0191: Records and Information Management (RIM).

☐

I acknowledge that uploaded data is in compliance with AT&T Security Policy and Requirements (ASPR) and the AT&T Code of Conduct requirements. I acknowledge that uploaded data must be periodically reviewed, and items reaching their expiration limit according to RIM/business needs are purged (deleted). It is each user's responsibility to do this on a regular and periodic basis.



Drop files here or [choose from your computer](#).

Recommended file types: csv, tsv, xls, xlsx, xlsm, xlsx

Next

5. Select "Update"

 A022XY6.xlsm  2MB 

Select import type

☒ **Update**
Creates an UPDATE transaction. The uploaded files will be added to the existing file collection. Files with the same name will be overridden.

☐ **Replace**
Creates a SNAPSHOT transaction. The existing files will be replaced, and a new schema will be inferred

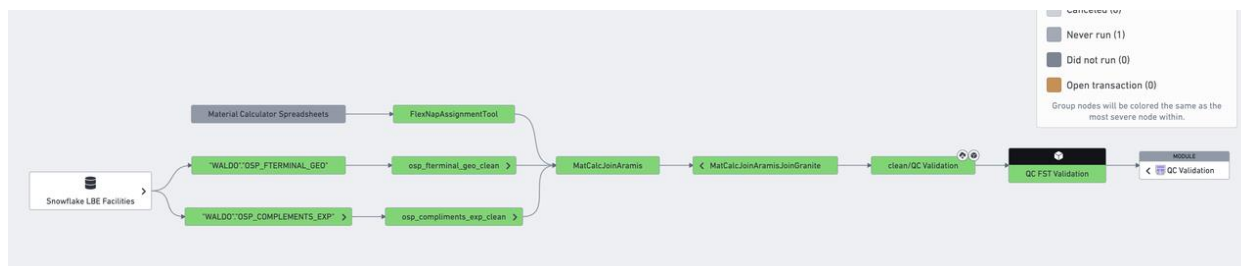
Next

6. After you have placed the file, the QC Macro pipeline will kickoff, this will take 10-20 minutes to show up in the validation module.

Monitor QC Validation Pipeline

If there is an unexpected delay, or if you would like to monitor your build status, navigate to:

<https://paloma.palantirfoundry.com/workspace/data-integration/monocle/graph/ri.monocle.main.graph.c237f91e-c40d-4edd-be86-275c9d925039?coloring=monocle.color.running-builds>



- Green indicates the latest build has succeeded and nothing is currently running.
- Blue indicates the transform is currently running.
- Yellow indicates the transform is queued and waiting for another build to finish.
- Red indicates a failure.

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Review QC Report

[Note: After uploading the file it will take 15 min before the results can be reviewed in the application]

To review your results, follow these steps:

1. Navigate to the results review here:
<https://paloma.palantirfoundry.com/workspace/module/view/latest/ri.workshop.main.module.1ecf76b4-2950-4aaa-a530-0c3c1abb1a27>
2. Select the “Assignment Tool Validation” tab

QC Validation Tool Assignment Tool Validation Design Validation Tool																Edit	
MATERIAL CALCULATOR PROJECT ID																Search...	
All Aramis Match	Title	Aramis Found	ARAMIS OSP ID	Aramis Matching Pen Count	Material Calculator PON Count	ARAMIS PON COUNT	Aramis Matching Size	ARAMIS TOTAL SIZE	Material Calculator Tether Size	Aramis Matching Project ID	Material Calculator Project ID	ARAMIS PROJECT ID	Granite Equipment Found	Living Unit Found	T2 Found		
Yes	F 3360-2 PINE MEADOW RD NW	Yes	197701852	Yes	613-616	613-616	Yes	4	4	Yes	A022XY6	A022XY6	No	No	No		
Yes	F 10016-1 WOODY RIDGE RD	Yes	204049719	Yes	17-22	17-22	Yes	6	6	Yes	A024T4K	A024T4K	No	No	No		
Yes	F 3285-3 RILMAN RD NW	Yes	197701843	Yes	437-440	437-440	Yes	4	4	Yes	A022XY6	A022XY6	No	No	No		
Yes	F 10028-1 WOODY RIDGE	Yes	204049718	Yes	23-24	23-24	Yes	4	4	Yes	A024T4K	A024T4K	No	No	No		

3. Enter a Project ID into “Project ID” field
4. The table provides a visual view into the validations, to see more information you can click on a row.

Design Validation Tool Documentation

The Design Validation Data Tool can be found, following this link:

<https://paloma.palantirfoundry.com/workspace/module/view/latest/ri.workshop.main.module.1ecf76b4-2950-4aaa-a530-0c3c1abb1a27>

Instructions:

- Enter a CFAS Project ID on the left panel
- Review the FSTs associate with the selected CFAS Project ID on the left upper table→ Click “Export” to download an XLS file with the FST information.
- Review the Living Units that are linked to the FSTs associated with the selected CFAS Project ID on the lower table →
 - Click “Export” to download an XLS file with the living units and the associated FST

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End of document
