

# NetSpan™ FTTH Network Planning and Engineering Services

## Key Features & Benefits

- **A single-source for contract Fiber To The Home (FTTH) network planning and engineering services** – better use of deployment dollars and no need to coordinate activities of multiple vendors.
- **Total turnkey solutions** for Planning, Field Survey, Design Engineering and Drafting.
- **70 years of experience** in design, engineering and manufacturing of Outside Plant (OSP) systems and equipment.
- **Fully trained Emerson fiber network engineers** using cutting-edge technology and equipment.
- **Access to proprietary graphics databases** for creation of new drawings or updating of existing drawings to show fiber installations.
- **Experienced Emerson project manager** as a single point of contact to minimize administration costs and keep the project on schedule.

## A single-source solution for planning, field survey, design engineering and drafting

### Product Overview

With service providers' core engineering groups fully occupied in maintaining copper networks, it is often difficult to devote engineering resources to fiber network planning and design. However, the loss of voice traffic and significant amounts of unrealized revenue to other providers and technologies makes it critical that providers accelerate the deployment of fiber and begin offering High-Definition TV (HDTV) along with voice, data and future broadband services.



*Aerial Fiber Deployment*

To accelerate your fiber service turn-up time, Emerson Network

Power can provide complete planning and engineering services for FTTH deployment on a national, regional or local contract basis. Working with your local engineering group, we plan your network, conduct field surveys, completely design and engineer the necessary fiber deployment and draft detailed work drawings. This total planning and design solution will let you accurately estimate costs, allow your procurement group to obtain the necessary materials and enable your contractor(s) to efficiently deploy the necessary fiber, poles, terminals and other facilities—whether it's a greenfield residential deployment, an overlay of existing copper or provision for a multiple dwelling unit (MDU).

The advantages of dealing with a single source for planning, field survey, design engineering and drafting are many. Emerson "ownership" of the total package eliminates "finger pointing" and streamlines the process when changes are necessary. It stretches your deployment dollars by eliminating multiple contacts, separate contracts, and the validation and payment of multiple invoices. We will also provide individual services on a "boutique" basis, should you desire.

Each of our graduate engineers must complete a 5-week Emerson training program in FTTH deployment and all new drafting specialists must complete a 4-week drafting program that qualifies them to utilize specific electronic drafting systems. We employ quality control procedures throughout the planning and engineering process, including careful review of any incoming data from external sources, all work prints and the total network planning and design package before it is submitted to the customer.

Total  
satisfaction  
from a total  
package

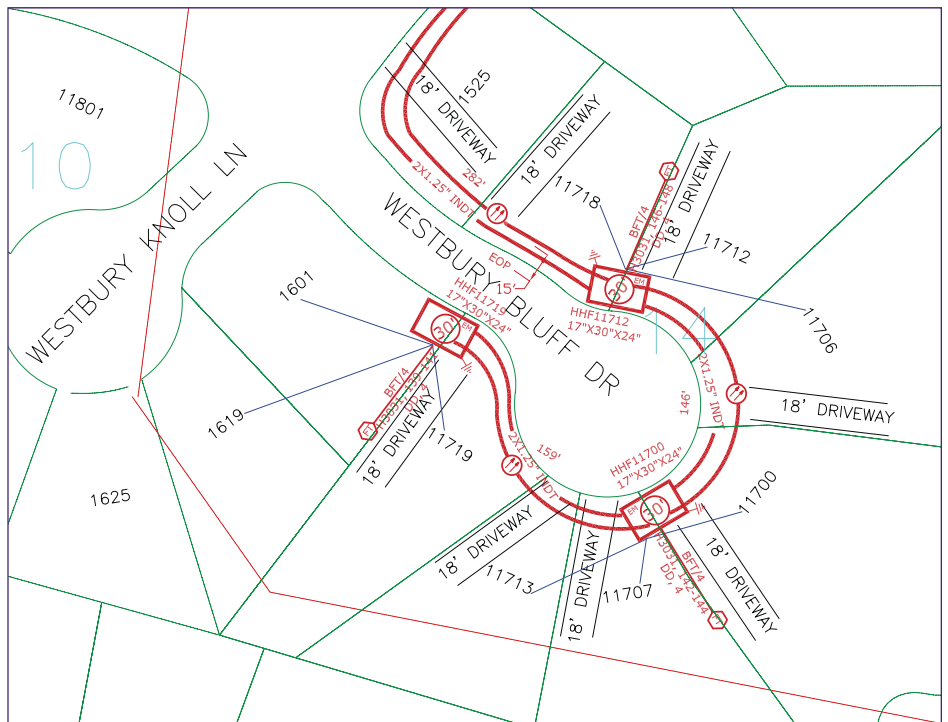
## Planning

We work with you to understand your FTTH objectives, technical standards, and prevailing regional and local requirements. We consult population density projections, real estate development plans, income levels and other planning demographics. We then apply our technical understanding of network requirements, beginning at the wire center or central office and ending at the residence or commercial premise.

When we plan the network, we survey the area, lay out the fiber, determine where the splice terminals should be located, where poles are needed, what size fiber to run and

whether or not innerduct conduit is available or must be installed. We make sure that easements are available so that we have the authorization to optimize fiber placement.

We will also confirm that planning is appropriate to serve present and future subscribers. While there may be some logic for “over-specifying” to cover any possible future growth, it may also be cost-prohibitive and impede or delay the immediate decision to deploy fiber.



Field Survey Notes in Autocad or Visio

# NetSpan™ FTTH Network Planning and Engineering Services

## Field Survey

We utilize qualified, knowledgeable personnel to perform field surveys. If local sources are not available, we will provide them. In addition to being technically competent, these representatives know how to deal with the public when, for example, they are walking through backyards to verify distances between telephone poles or are walking existing copper routes to see if burying fiber in a particular backyard is practical.

We determine if there is an easement from the land owner allowing the fiber to go through that backyard. If there is no easement existing, we may apply for one in the provider's name, or we may decide to run the route along a roadway and use the local municipality's right-of-way.

We look for structural obstructions (barns, sheds, other construction) or topographical obstructions (densely wooded, wetlands, grade/hilly, etc.) that may impede the deployment. When we engineer a route, we keep in mind that large construction equipment will also require access to the area and we plan for this in our design.

If innerduct conduit is shown on existing prints, we verify that it actually exists. If no innerduct exists, we determine where it should go and provide detailed trenching or boring directions for the construction crew. Our surveyors are well equipped with laser range finders, measuring wheels, pull finders (for pole guy lead positioning and specifications) and other instrumentation.



*NetSpan™ Fiber Distribution Hub*

## Design Engineering

When planning is approved and field survey notes are complete, we identify all the necessary components and fiber runs. We size and route feeders, locate hand holes and specify terminal locations. We specify fiber counts and identify which fibers in a particular cable are to be used for each subscriber, which fibers are going to be dropped off, which fibers are going to be cut dead. All of these details are incorporated into work prints that will enable the provider to develop an accurate list of materials and allow the construction crew to install the network.

Where boring is required, we specify the length and direction of the bore to bypass roads, driveways and other impediments and remain within the right-of-way. If aerial deployment is required, we will route it over

existing copper (over-lash it) if possible. If existing strand is inadequate or if the provider's deployment practice calls for new strand, we will specify where new strand is required.

Recognizing that even the best laid plans may encounter unforeseen obstacles in the field, we provide engineering support to the construction crew and work with our planners to re-route or redesign so that the construction crew can overcome such obstacles.

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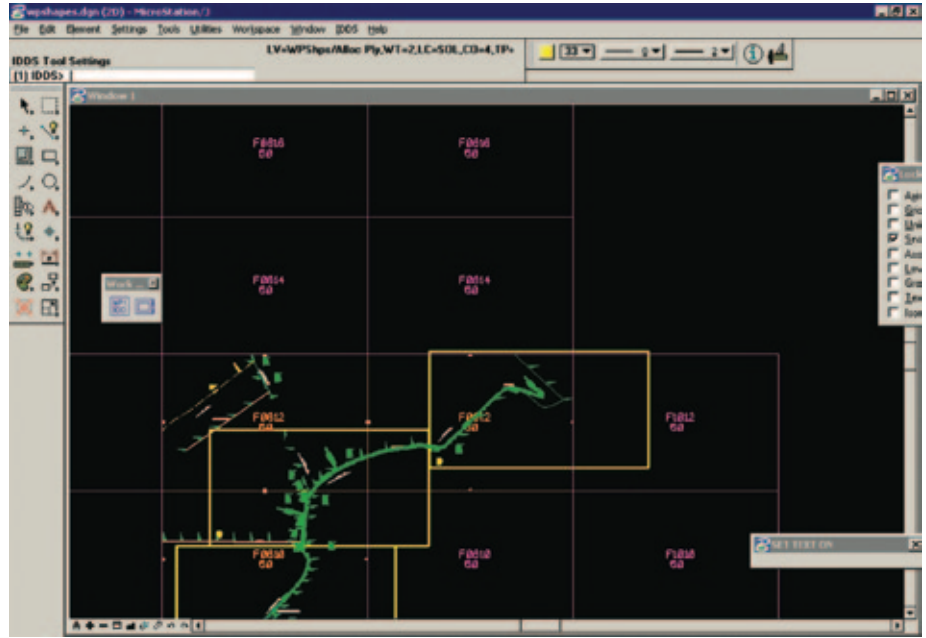
## Drafting

All the information gathered and developed during planning, surveying, and engineering comes together in the drafting process when our drafting specialists place it into a provider's intelligent database or other graphics system to create the work prints.

Through our extensive experience in supporting providers' power requirements, we already have access to many providers' graphics packages, even before we furnish any fiber network engineering services to the provider.

## Additional Information

To learn more about NetSpan™ FTTH Planning and Engineering Services and discuss your FTTH plans, please contact your Emerson Network Power sales representative, call 800-800-1280 or email [EnergySystems@EmersonNetworkPower.com](mailto:EnergySystems@EmersonNetworkPower.com)



Intelligent Graphics Database

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Printed in USA

