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SUMMARY

My extensive experience in managing & maintaining both the network and the network maps (documentation) allows me to bring a very good working knowledge in many aspects of plant / infrastructure maintenance to any business with a network infrastructure to maintain. With 17+ years of Cable TV (CATV) field experience, 17+ years of CAD Standards / Management, 15+ years of CATV Project Management, and 25+ years of CATV Network Design experience, I am very familiar to the end-to-end process of documenting the Outside Plant (OSP) Assets and communicating those assets to the field staff. For these reasons I feel that I would be a useful and valuable resource to any of those types of businesses with a network infrastructure.

I am currently self-employed operating as a Cable TV (CATV) CAD Project / Design / Drafting / System Administration Consultant with Telecon USA where I have been primarily focused on needs and solutions for the Comcast Corporation. While I find this work to be satisfying the level of security and / or commitment is a bit lower than I would hope for. I would prefer to work in an environment where I can be more focused on the long-term work, tasks, problem resolving, or needs of the company and product.

Although my past experience has been focused on the CATV industry, I have worked closely with other utility companies during that time. I am confident that I can bring those same skills, talents, and quality of work to many other industries such as Power, Telco, or Water.

QUALIFICATIONS

I have 30+ years of experience in the CATV industry in a variety of capacities. This includes 25+ years of experience in the areas of Utility CAD Drafting, Design (engineering), Fiber Design, Administration, Standards Definitions & Enforcement, and Project Management along with 17+ years of CATV field experience.

My Engineering / Design / AutoCAD / Data experience combined with my field experience has made me a strong Project Manager and / or System Administrator for all aspects of documentation of the CATV Network.

I am self taught and then college trained in AutoCAD and self taught in Oracle SQL scripting. This includes experience using AutoCAD versions 12 - 2014, Autodesk Map versions 3 – 2014, and SQL Navigator software. I have CATV engineering / design experience with the Cable Tools, [Lode Data](#), and SpatialNET engineering / design software. This includes the set-up & configuration of all these listed software platforms.

For the past 20 years I have been focused on the mapping / capture / documentation of the Outside Plant Network Assets, more commonly known as system or network maps. This has included System Design & Drafting, the defining of [AutoCAD](#) Mapping Standards, Network Engineering Standards, Network Naming Standards, documenting of Drafting Practices, Data Management, and Specialized Engineering Software Development & Project Management.

Since 2010 my role has primarily been in the areas of System Configuration & Administration in the [SpatialNET](#) software and Autodesk Map platforms. A big part of those first 5 years was to support a national project to migrate all current network data into SpatialNET. This has included my working in Oracle with SQL scripts to create, update, and delete SpatialNET data as needed.

In the field I spent 17½ years with 17 of those years in some sort of technical capacity. That included positions of Service Tech, Sweep Tech, Head-End Tech, and everything in between. This field experience includes both Inside and Outside Plant telecommunications work, including Outside Plant Splicing, both Inside & Outside Plant Trouble Shooting, and Head-End Maintenance.

A list of my skill sets include;

- 25+ Years of CATV Design / Drafting / Management Experience.
- 17+ Years CATV Field Experience / Knowledge.
- RF, Fiber, FTTX, & Microwave Knowledge.
- [AutoCAD](#) Power User.
- [AutoCAD Map](#) Power User (formerly Autodesk Map).
- [SpatialNET](#) Power User.
- Microsoft Office Power User.
- Cable Tools Power User.
- [Lode Data](#) Experienced.
- [SQL Navigator](#) Experienced.
- Oracle SQL Code / Script Writing Experienced.
- Standards Communication & Documentation Experienced.
- CAD Drafting and Standards Training Experienced.
- I work well unsupervised.

WORK HISTORY- CURRENT

Self-Employed CATV Consultant

CATV Consultant with Telecon USA (<http://www.telecon.ca/home-en-1>)

Chico, CA (530) 896-8333

Jan. 2016 to Current

Telecon is a Canadian based company with a very large presence in the telecommunications industry in Canada and a small presence in the USA. Telecon USA, a new division of Telecon, hopes to expand their presence in the USA.

As of this writing my work has been primarily focused on Comcast post-migration SpatialNET support, but the vision is that as Telecon USA expands I will train & support individuals in my current roles and move into other roles as a technical lead to support Telecon USA projects and all of their customers.

Currently my primary roles with Telecon USA have been in supporting Comcast Corporation with their post-migration SpatialNET needs. This includes;

- a. SpatialNET Equipment Creation / Defining: Defining equipment as needed for Fiber, Fiber-Deep, Fiber-to-the-Premise, HFC, and RF network architectures. I primarily perform these tasks in Oracle via SQL scripting as it's faster than the SpatialNET User-Interface (UI) and less prone to human error.
- b. SpatialNET Equipment Review: The review of equipment created by others to insure that it adheres to both the SpatialNET requirements and the Comcast Equipment Dictionary Naming Standards. This insures easier & accurate future data mining.
- c. SpatialNET Functionality Troubleshooting: Research, trouble-shoot, and reviewing of issues reported by the Comcast SpatialNET users and / or contractor community. The goal is of course to identify & resolve the issue, but at times the defining of workarounds and / or software functionality enhancement requests are required.
- d. CAD-GIS Standards: As of May 2016 the defining, documenting, management, and maintenance of all Comcast AutoCAD block and layer definitions was re-assigned to me. I previously had this role for Comcast from 1999 – Dec 2015. (Current release is v3.6, 494 blocks, 378 layers.)
- e. Divisional or Regional Support: Supporting as needed some local Comcast divisional or regional tasks. Much of this includes the training of user, trouble-shooting of issues, and /or writing & applying SQL scripts in Oracle.
- f. Consultation: The review and /or offering of solutions for other potential projects with both Telecon and clients.

WORK HISTORY - PAST

Self-Employed CATV Consultant

Primary Consultant, Project Manager to Comcast for Migration into SpatialNET

Chico, CA (530) 896-8333

June 2010 to Dec. 31, 2015

I was the primary CAD & engineering consultant to Comcast for their "eGIS" Migration Project, which was the migration of all of the system network maps company wide into SpatialNET. This included AutoCAD, Microstation, Bentley CAD, Lode Data, CaddStar, BentleyComms (Bentley Communications) engineering / design information, and some very chaotic Excel spreadsheets.

All source CAD & engineering / design data had to be redefined or "mapped" to a SpatialNET definition via various software tools & applications, some of which I developed, while on others I had input into their development.

In this role I oversaw the collection of the regional source data (source CAD & engineering / design files), managed the mapping process of that source data with multiple contractors, reviewed much of that work, and finally delivering the "mapped" definitions to the migration contractor to do the actual migration into SpatialNET.

During the time of the Comcast eGIS Migration Project my additional roles were;

- a. SpatialNET Support: The creation and / or updating (troubleshooting) of SpatialNET equipment definitions, RF, Fiber, Landbase, & Support Structure. This was a SpatialNET Administrative role.
- b. CAD-GIS Standard: This was the defining, documenting, management, and maintenance of all AutoCAD block and layer definitions. (Last release was v2.1, 519 blocks, 284 layers.)
- c. SpatialNET IDM Research: This involved the researching & defining of all aspects for the use of the SpatialNET IDM (Inside Plant Documentation) to capture specific network devices or components.
- d. Outside Plant (OSP) Naming Standard: This was the input / defining, documenting, management, and maintenance of the Comcast Naming Standard of all OSP devices in the fiber & coaxial network. (Last release was v3.1.0 at 155 pages.)
- e. Equipment Dictionary Naming Standard: This was the input / defining, documenting, management, and maintenance of Comcast Equipment Naming Standard for all equipment definitions within SpatialNET. This document came out of the OSP Naming Standard document in 2015 and defines the administration and naming of equipment definitions in SpatialNET dictionaries. (Last release was v1.1.0 at 72 pages.)
- f. HFC Drafting Practices Manual: This was the input / defining, documenting, management, and maintenance of the Comcast Drafting Practices or Methods document. (Last release (2012) was v2.9 at 204 pages.)
- g. Miscellaneous CATV Consulting: On smaller or short term tasks such as how to get the data out to the user community, assisting the migration contractor is the resolution of migration issues, etc....

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**Owner, Designer, Drafter, Technical Design & Drafting
Consultant, Project Manager to Comcast for CAD-Engineering Software Development**

Chico, CA (530) 896-8333

March 1999 to June 2010

From 1999 thru June 2010 my primary duties were CATV consulting to Comcast Seattle in the areas of Project Manager for CATV Software Development and the Management & Maintenance of the company CAD & Drafting Practices Standard. I performed this role for TCI, AT&T Broadband, and eventually Comcast. During this time I have overseen the development, maintenance, support, and expansion of a **"Rules Based"** CATV drafting software application known as @MApp (previously as ATT_MApp). This includes the development of multiple versions of this software that adheres to Comcast's drafting standards in an AutoCAD environment.

The original purpose for the development of @MApp was to one day be able to move all the network system maps into a Centralized Enterprise Database, which was completed in 2015. After that the data could then be leveraged for all types of needs to benefit the business. Having the network system maps in a defined, known, & enforced CAD standard would make that move to an enterprise database smoother and more accurate.

My duties as @MApp Project Manager have included the creation and maintenance of @MApp User Manuals, the creation & application of Training / Lesson Plans, and the management of Administration Tools for all these applications. The maintenance, upgrade, and / or editing of the @MApp Software applications as needed was another of my roles.

I have trained many @MApp users across the nation for both Comcast and independent contractors, and had been the main @MApp Support individual for AT&T Broadband / Comcast nationwide from its original release in August 2000 until the SpatialNET migration was completed in Dec 2015, where it was decommissioned. I will point out that the @MApp CAD Standard became the Comcast CAD-GIS Standard for the SpatialNET migration.

Published articles & success stories of the @MApp applications / benefits can be viewed at:
<http://www.techdd.com/PubsMApp/Pub@MApp.htm> where you can find;

CED Magazine, Dec. 2001: **Painting the Big Picture,**

GeoSpatial, March 2002: **AT&T Ties IT Together,**

Autodesk Feb 2007: **GIS Cuts Costs and Generates \$10 Million in New Annual Revenue,**

Communication Technology - Sept. 2007: **Geographical Information Systems - A Call for an HFC Standard.**

Comcast also used me to create, research, and document many different engineering needs and / or standards over the years. In 2009 I was commissioned to define a 1000MHz Engineering Specification document for Comcast Seattle at the direction of Sean Bristol. This type of work included subjects such as Fiber Deep Network Architecture, the impact or advantages of using Equalized (EQ) & higher value taps (greater than 23) in new network architectures, Digital Channel Drop and Insertion, and Service Drop Specifications for new network architectures.

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***Supervisor of MDU System Design and CAD,
TCI Network Engineering & Construction,***

Kent, WA (425) 656-4931

September 1, 1998 to March 1999

My primary job duties began as overseeing the engineering & drafting of all the Multiple Dwelling Units in the Puget Sound 750/860Mhz upgrade project. The position evolved into receiving, overseeing, and the management of all the delivered AutoCAD maps (file management) from the contract design houses along with the Outside Plant System Engineering / Design files that we received from those same design houses for the Puget Sound 750/860Mhz upgrade.

I had 2 AutoCAD drafters / programmers and 3 designer / drafters under my supervision and was in the process of recruiting 2 more of each when I left this position. Occasionally I would re-engineer / re-design entire Nodes myself for various reasons as well as prepare hard copy presentations to show the type of problems that my department was finding and / or the status of entire build areas in the process of being upgraded. I was responsible for all the computers and software that my department / staff used to carry out these tasks.

***Owner, Designer, Drafter
Technical Design & Drafting***

Chico, CA (530) 893-3124

July 1, 1997 to August 31, 1998

Here I performed all aspects of CATV System Engineering / RF & Fiber Design / Mapping. This included system walkout, AutoCAD Drafting, and Engineering / Design of the CATV network. I completely walked-out, mapped, and designed Burney, CA (38 miles of plant) and Susanville, CA (80 miles of plant) for Century Communications.

Additionally I made all those system maps available in a "Protected Web Based" format that were available to access, view, and print to anybody at Century Communications.

As part of my work in this area I also performed an extensive Microwave survey of all of Lassen County CA in a combined effort with Lassen County, U.S. Forest Service, and California State University Chico. This survey documented & measured the distances of multiple microwave routes / hops to feed rural schools, fire stations, and Forest Service mountain top fire look-outs.

***Sweep/Head-End Technician,
Chambers Cable TV***

Chico, CA

March 1, 1982 to March 3, 1997

My primary duties were to sweep and maintain the trunk & distribution lines throughout the system in 6 different communities and keep all in proper operating condition. These 6 communities all had AML Microwave receivers as their hubs, which I also maintained.

As the past Head-End Technician, I was also responsible to back up and help the new Head-End Technician in whatever means possible. If there was a problem at the Head-End it was as much

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my responsibility to respond to it, as it was the new Head-End Technicians responsibility. This was any issue ranging from Antenna and Earth Stations, Powering problems, RF Processing equipment (Processors, Modulators, Encoders, etc.), and Microwave Transmitters.

The last 10 years of employment with Chambers Cable TV I was the In-House System Designer for all new sub-divisions / plant extensions and any local rebuilds that were needed. As the Sweep Tech I often designed it, helped build it, and then activated it with the existing plant/network.

Sweep Technician,
United Cable TV of the Bay Area

Hayward & San Leandro, CA

Oct. 5, 1979 to Feb. 26, 1982

After 6 months as an Installer I was promoted to Service Technician. One year later I was promoted to Line / Sweep Tech where I continually swept all distribution lines in the San Leandro & San Lorenzo systems. After 6 months as a Line/Sweep Tech I left to take a job in Chico, California.

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EDUCATION

Pierce Community College, Puyallup, Washington

ENGR 108, Advanced AutoCAD, Dec 1998,
Grade "A".

Butte College, Oroville, California

DFT 32, Intermediate AutoCAD, May 1998,
Grade "A".

Butte College, Oroville, California

DFT 12, Beginning AutoCAD, Dec. 1997,
Grade "B".

("A" work, but lost a grade for attendance. The attendance problem being I was out of town operating my business.)

Butte College, Oroville, California

CSCI 60, Microcomputer Applications: May 1997, Grade "A".

Livermore High School, Livermore, California

Graduated: June 1978.

Majors: Mathematics, Electronics, Drafting, and Surveying.

Sports: Lettered in soccer. Additionally I played baseball and football.

CERTIFICATES

SPATIALinfo

SPATIALnet Fiber Management, Jan 2005,
Grade "Passed".

Autodesk Systems Center Solutions Training

Autodesk Mapguide 4 - Technical, April 2000, Grade "Passed".

Autodesk Systems Center Solutions Training

AutoCAD Map 4 - Advanced, Oct 1999,
Grade "Passed".

N.C.T.I., National Cable Training Institute

Advanced Technician course: Completed March 16, 1993.

N.C.T.I., National Cable Training Institute

System Technician course: Completed June 4, 1992.

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REFERENCES

Curtis Hannah

Corporate Director of Engineering & Operations
Comcast
1701 John F Kennedy Blvd
Philadelphia, PA 19103
Current Cell: (215) 910-0581
(Former Supervisor & Co-Worker)

Sean Bristol

Senior Director HFC Construction Standards & Compliance (Formerly)
Charter Communications (Denver, CO)
and
Sr. Director Planning, Design & Construction (Formerly)
Comcast (Puyallup, WA)
Current Cell: (253) 219-4068
(Former Supervisor & Client)

Larry Thurmond

Construction Manager
Horizon Communications (Lynnwood, WA)
and
Network Operations Manager (Formerly)
Comcast (Seattle, WA)
Current Cell: (206) 817-7221
(Former Co-Worker)

Others

Available upon request.