Colorado Department of Health – Denver, CO (12 Month Project – Staff of 8): Background:

CDoH procured and performed a total renovation of 200,000 sq. ft. facilities to consolidate their administrative, laboratory and records divisions from five (5) locations, consisting of over 2,000 workstation nodes- Primary hosts Novell, HP and Wang.

Program Management:

Provided primary consultative and technical support, including:

Strategic Business Planning

Strategic Technical Planning

Analysis and Inventory of Existing Systems and Facilities

Business and Technical Requirements Identification and Documentation

Demolition and Construction Oversight

Life-Cycle Project Management

Engineering and Consulting:

Provided lead engineering and design consulting, including:

High-Level Design:

Facilities Renovation:

Architecture Strategic Planning

Architecture Design, Specification and Review

Demolition and Decommission Planning

Computer Room Design

MDF and IDF Room Design

Campus Services Access Design

UPS, Transients, Harmonics, "Digital Quality" Power Design HVAC Design

Physical Cable-Plant:

Architecture Strategic Planning (Voice, Video, Data – 8 Standards Supported)

Raceways and Inter-Building Design Specifications

MDF and IDF Room Design

Lightning Protection Design

Cat-5, Cat-3, Coax Copper Cabling Design

Fiber-Optic Cabling Design

Systems Design Specifications, RFP Management and Review

LAN / WAN Systems:

Standards Specifications

Topology Architecture

Component Specifications, RFP Management and Review

Connectivity Specifications

Production Systems:

Standards Specifications

Application Architecture and Interoperability

Platform Architecture

Computer Room Foot-Print Layout

Component Specifications, RFP Management and Review

J. Scott Fabling <u>i.scott.fabling@att.net</u> Medical Facilities Consulting and Engineering Projects

Connectivity Specifications	
Detailed-Level Design:	
Facilities Renovation:	
Naming and Numbering Specifications	
Physical Locations Specifications	
Architectural Plans Review	
Physical Cable-Plant:	
Naming and Numbering Specifications	
Physical Location Specifications	
Drop Specifications	
Cut and Punch Lists	
Cross-Connect Specifications	
Extension Specifications	
CAD and Document "To-Build-To" Specifications	
LAN / WAN Systems:	
Standards Specifications	
Topology Architecture	
Component Specifications, RFP Management and Revi	ew
Connectivity Specifications	
CAD and Document "To-Build-To" Specifications	
Production Systems:	
Standards Specifications	
Application Architecture and Interoperability	
Platform Architecture	
Computer Room Foot-Print Layout	
Component Specifications, RFP Management and Revi	ew
Connectivity Specifications	
OS and Applications Configuration Specifications	
CAD and Document "To-Build-To" Specifications	
Relocation Planning:	
Physical Asset Move Planning	
Staging and Production Down-time Planning	
Systems Migration Planning	
New Systems Training Planning	
Fault-Tolerance and Redundancy Planning	
Task List and Scheduling Planning	
Implementation:	
Facilities Renovation:	
Monitor Construction	
Identify, Document, Track and Resolve Issues	
Physical Cable-Plant:	
Review and Advise in Contract Negotiations	
Source and Procure Components	
Validate Custom Designs to Specifications	
Monitor Construction	
Identify, Document, Track and Resolve Issues	

А	dministrative Training				
LAN / W	VAN Systems:				
Re	Review and Advise in Contract Negotiations				
Se	ource and Procure Components				
Μ	Monitor Bench-Test and Assembly				
Monitor Pre-Installation Configuration					
Define & Monitor Proof-of-Concept Interoperability Testir					
Identify, Document, Track and Resolve Issues					
A	dministrative Training				
Production	on Systems:				
Re	eview and Advise in Contract Negotiations				
Se	ource and Procure Components				
Μ	onitor Platform Bench-Test and Assembly				
Μ	onitor Pre-Installation Configuration				
Μ	onitor Application Development and Integration				
D	efine & Monitor Proof-of-Concept Interoperability Testing				
Μ	onitor Migration				
Id	lentify, Document, Track and Resolve Issues				
A	dministrative Training				
C	ustomer Training				
Relocatio	on:				
Re	eview and Advise in Mover Contract Negotiations				
Se	ource and Procure Components				
Μ	onitor Disassembly and Assembly				
Μ	Monitor Pre-Installation Configuration				
	onitor Application Development and Integration				
D	efine & Monitor Proof-of-Concept Interoperability Testing				
Μ	onitor Migration				
Id	lentify, Document, Track and Resolve Issues				
Implement	ation:				
Facilities	Renovation:				
7	x 24 Maintenance and Support Contracts				
	AD and "As-Built" Documentation				
	Cable-Plant:				
7	x 24 Maintenance and Support Contracts				
Μ	loves, Adds and Changes (MAC)				
C.	AD and "As-Built" Documentation				
LAN / W	VAN Systems:				
7	x 24 Maintenance and Support Contracts				
Μ	oves, Adds and Changes (MAC)				
C.	AD and "As-Built" Documentation				
Producti	on Systems:				
7	x 24 Maintenance and Support Contracts				
М	oves Adds and Changes (MAC)				

Moves, Adds and Changes (MAC) Revisions, Upgrades and Enhancements (RUE) CAD and "As-Built" Documentation

Post

Lutheran Medical Center - Westminster, CO (20 Month Project – Staff of 15): Background:

LMC, one of the oldest and most prestigious medical facilities in the Denver Metro Area, performed a \$3M infrastructure enhancement, renovating a 7-Building Campus Design and Build – consisting of over 4,000 nodes - Primary hosts consisting of Novell, Sun, and DEC.

Program Management:

Provided primary consultative and technical support, including:

Strategic Business Planning

Strategic Technical Planning

Analysis and Inventory of Existing Systems and Facilities

Business and Technical Requirements Identification and Documentation

Demolition and Construction Oversight

Life-Cycle Project Management

Engineering and Consulting:

Provided lead engineering and design consulting, including:

High-Level Design:

Facilities Renovation:

Architecture Strategic Planning

Architecture Design, Specification and Review

Demolition and Decommission Planning

Computer Room Design

MDF and IDF Room Design

Campus Services Access Design

UPS, Transients, Harmonics, "Digital Quality" Power Design HVAC Design

Physical Cable-Plant:

Architecture Strategic Planning (Voice, Video, Data – 8 Standards Supported)

Raceways and Inter-Building Design Specifications

MDF and IDF Room Design

Lightning Protection Design

Cat-5, Cat-3, Coax Copper Cabling Design

Fiber-Optic Cabling Design

Systems Design Specifications, RFP Management and Review

LAN / WAN Systems:

Standards Specifications

Topology Architecture

Component Specifications, RFP Management and Review

Connectivity Specifications

Production Systems:

Standards Specifications

Application Architecture and Interoperability

Platform Architecture

Computer Room Foot-Print Layout

Component Specifications, RFP Management and Review

J. Scott Fabling <u>i.scott.fabling@att.net</u> Medical Facilities Consulting and Engineering Projects

Connectivity Specifications	
Detailed-Level Design:	
Facilities Renovation:	
Naming and Numbering Specifications	
Physical Locations Specifications	
Architectural Plans Review	
Physical Cable-Plant:	
Naming and Numbering Specifications	
Physical Location Specifications	
Drop Specifications	
Cut and Punch Lists	
Cross-Connect Specifications	
Extension Specifications	
CAD and Document "To-Build-To" Specifications	
LAN / WAN Systems:	
Standards Specifications	
Topology Architecture	
Component Specifications, RFP Management and Revi	ew
Connectivity Specifications	
CAD and Document "To-Build-To" Specifications	
Production Systems:	
Standards Specifications	
Application Architecture and Interoperability	
Platform Architecture	
Computer Room Foot-Print Layout	
Component Specifications, RFP Management and Revi	ew
Connectivity Specifications	
OS and Applications Configuration Specifications	
CAD and Document "To-Build-To" Specifications	
Relocation Planning:	
Physical Asset Move Planning	
Staging and Production Down-time Planning	
Systems Migration Planning	
New Systems Training Planning	
Fault-Tolerance and Redundancy Planning	
Task List and Scheduling Planning	
Implementation:	
Facilities Renovation:	
Monitor Construction	
Identify, Document, Track and Resolve Issues	
Physical Cable-Plant:	
Review and Advise in Contract Negotiations	
Source and Procure Components	
Validate Custom Designs to Specifications	
Monitor Construction	
Identify, Document, Track and Resolve Issues	

Adminis	strative Training			
LAN / WAN S	bystems:			
Review	Review and Advise in Contract Negotiations			
Source and Procure Components				
Monitor Bench-Test and Assembly				
Monitor Pre-Installation Configuration				
Define & Monitor Proof-of-Concept Interoperability Testir				
Identify, Document, Track and Resolve Issues				
Adminis	strative Training			
Production Sys	stems:			
Review	and Advise in Contract Negotiations			
Source a	and Procure Components			
	Platform Bench-Test and Assembly			
	Pre-Installation Configuration			
	Application Development and Integration			
	Monitor Proof-of-Concept Interoperability Testing			
	Migration			
	Document, Track and Resolve Issues			
	trative Training			
	er Training			
Relocation:				
Review	and Advise in Mover Contract Negotiations			
	and Procure Components			
	Disassembly and Assembly			
Monitor Pre-Installation Configuration				
Monitor Application Development and Integration				
	Monitor Proof-of-Concept Interoperability Testing			
	Migration			
	Document, Track and Resolve Issues			
Implementation:				
Facilities Rend	ovation:			
7 x 24 N	laintenance and Support Contracts			
	d "As-Built" Documentation			
Physical Cable				
7 x 24 N	faintenance and Support Contracts			
Moves,	Adds and Changes (MAC)			
CAD an	d "As-Built" Documentation			
LAN / WAN S	bystems:			
7 x 24 N	faintenance and Support Contracts			
Moves,	Adds and Changes (MAC)			
	d "As-Built" Documentation			
Production Sys	stems:			
7 x 24 N	laintenance and Support Contracts			
	Adds and Changes (MAC)			

Moves, Adds and Changes (MAC) Revisions, Upgrades and Enhancements (RUE)

CAD and "As-Built" Documentation

Post

Sisters of Mercy Health Systems – St. Louis, MO (8 Month Project – Staff of 7): Background:

Sisters of Mercy, an International caretaker and healthcare provider commissioned a infrastructure standards program to ensure continuity and consistency between all of their facilities.

Program Management:

Provided primary consultative and technical support, including:

Strategic Business Planning

Strategic Technical Planning

Analysis and Inventory of Existing Systems and Facilities

Business and Technical Requirements Identification and Documentation

Life-Cycle Project Management

Engineering and Consulting:

Provided lead engineering and design consulting, including:

High-Level Design:

Facilities Renovation:

Architecture Strategic Planning Architecture Design, Specification and Review Demolition and Decommission Planning Computer Room Design MDF and IDF Room Design Campus Services Access Design UPS, Transients, Harmonics, "Digital Quality" Power Design HVAC Design

Physical Cable-Plant:

Architecture Strategic Planning (Voice, Video, Data – 8 Standards Supported)

Raceways and Inter-Building Design Specifications

MDF and IDF Room Design

Lightning Protection Design

Cat-5, Cat-3, Coax Copper Cabling Design

Fiber-Optic Cabling Design

Systems Design Specifications, RFP Management and Review

LAN / WAN Systems:

Standards Specifications Topology Architecture Component Specifications, RFP Management and Review Connectivity Specifications

Sisters of Mercy Health Center – Laredo, TX (20 Month Project – Staff of 35): Background:

SoM-Laredo, the oldest medical facilities in southern Texas, invested in a 1,500% expansion project to build a new 650,000-square foot complex - located on a 50-acre site – Primary hosts consisting of Novell, Sun, DEC.

Program Management:

Provided primary consultative and technical support, including:

Strategic Business Planning Strategic Technical Planning Analysis and Inventory of Existing Systems and Facilities Business and Technical Requirements Identification and Documentation Demolition and Construction Oversight Life-Cycle Project Management **Engineering and Consulting:** Provided lead engineering and design consulting, including: High-Level Design: **Facilities Renovation:** Architecture Strategic Planning Architecture Design, Specification and Review Demolition and Decommission Planning Computer Room Design MDF and IDF Room Design Campus Services Access Design UPS, Transients, Harmonics, "Digital Quality" Power Design HVAC Design **Physical Cable-Plant:** Architecture Strategic Planning (Voice, Video, Data - 8 Standards Supported) Raceways and Inter-Building Design Specifications MDF and IDF Room Design Lightning Protection Design Cat-5, Cat-3, Coax Copper Cabling Design Fiber-Optic Cabling Design Systems Design Specifications, RFP Management and Review LAN / WAN Systems: Standards Specifications Topology Architecture Component Specifications, RFP Management and Review **Connectivity Specifications Production Systems:** Standards Specifications Application Architecture and Interoperability Platform Architecture Computer Room Foot-Print Layout Component Specifications, RFP Management and Review **Connectivity Specifications Detailed-Level Design: Facilities Renovation:** Naming and Numbering Specifications Physical Locations Specifications

Architectural Plans Review

Physical Cable-Plant:

Naming and Numbering Specifications

Physical Location Specifications **Drop Specifications** Cut and Punch Lists **Cross-Connect Specifications Extension Specifications** CAD and Document "To-Build-To" Specifications LAN / WAN Systems: Standards Specifications **Topology Architecture** Component Specifications, RFP Management and Review **Connectivity Specifications** CAD and Document "To-Build-To" Specifications **Production Systems:** Standards Specifications Application Architecture and Interoperability Platform Architecture Computer Room Foot-Print Layout Component Specifications, RFP Management and Review **Connectivity Specifications** OS and Applications Configuration Specifications CAD and Document "To-Build-To" Specifications **Relocation Planning:** Physical Asset Move Planning Staging and Production Down-time Planning Systems Migration Planning New Systems Training Planning Fault-Tolerance and Redundancy Planning Task List and Scheduling Planning **Implementation: Facilities Renovation:** Monitor Construction Identify, Document, Track and Resolve Issues **Physical Cable-Plant:** Review and Advise in Contract Negotiations Source and Procure Components Validate Custom Designs to Specifications Monitor Construction Identify, Document, Track and Resolve Issues Administrative Training LAN / WAN Systems: Review and Advise in Contract Negotiations Source and Procure Components Monitor Bench-Test and Assembly Monitor Pre-Installation Configuration Define & Monitor Proof-of-Concept Interoperability Testing Identify, Document, Track and Resolve Issues

Administrative Training **Production Systems:** Review and Advise in Contract Negotiations Source and Procure Components Monitor Platform Bench-Test and Assembly Monitor Pre-Installation Configuration Monitor Application Development and Integration Define & Monitor Proof-of-Concept Interoperability Testing Monitor Migration Identify, Document, Track and Resolve Issues Administrative Training Customer Training **Relocation:** Review and Advise in Mover Contract Negotiations Source and Procure Components Monitor Disassembly and Assembly Monitor Pre-Installation Configuration Monitor Application Development and Integration

Define & Monitor Proof-of-Concept Interoperability Testing

Monitor Migration

Identify, Document, Track and Resolve Issues

Post Implementation:

Facilities Renovation:

7 x 24 Maintenance and Support Contracts

CAD and "As-Built" Documentation

Physical Cable-Plant:

7 x 24 Maintenance and Support Contracts Moves, Adds and Changes (MAC)

CAD and "As-Built" Documentation

LAN / WAN Systems:

7 x 24 Maintenance and Support Contracts

Moves, Adds and Changes (MAC)

CAD and "As-Built" Documentation

Production Systems:

7 x 24 Maintenance and Support Contracts Moves, Adds and Changes (MAC) Revisions, Upgrades and Enhancements (RUE) CAD and "As-Built" Documentation

Catholic Health Care West – San Francisco, CA (6 Month Project – Staff of 3): Background:

Catholic Health Care West, encompasses a 14 Hospital Network in the Seven (7) Western US State area – Headquarter in San Francisco, CA - Commissioned a infrastructure standards program to ensure continuity and consistency between all of their facilities.

Program Management:

Provided primary consultative and technical support, including: Strategic Business Planning Strategic Technical Planning Analysis and Inventory of Existing Systems and Facilities Business and Technical Requirements Identification and Documentation Life-Cycle Project Management **Engineering and Consulting:** Provided lead engineering and design consulting, including: **High-Level Design: Facilities Renovation:** Architecture Strategic Planning Architecture Design, Specification and Review Demolition and Decommission Planning Computer Room Design MDF and IDF Room Design Campus Services Access Design UPS, Transients, Harmonics, "Digital Quality" Power Design HVAC Design **Physical Cable-Plant:** Architecture Strategic Planning (Voice, Video, Data - 8 Standards Supported) Raceways and Inter-Building Design Specifications MDF and IDF Room Design Lightning Protection Design Cat-5, Cat-3, Coax Copper Cabling Design Fiber-Optic Cabling Design Systems Design Specifications, RFP Management and Review LAN / WAN Systems: Standards Specifications Topology Architecture

Component Specifications, RFP Management and Review Connectivity Specifications

HealthOne – Denver, CO (3 Month Project – Staff of 4):

Background:

HealthOne, one of the countries largest healthcare provider, Based out of Denver, CO, commissioned a infrastructure standards program to ensure continuity and consistency between all of their facilities.

Program Management:

Provided primary consultative and technical support, including:

Strategic Business Planning

Strategic Technical Planning

Analysis and Inventory of Existing Systems and Facilities

Business and Technical Requirements Identification and Documentation

Life-Cycle Project Management

Engineering and Consulting:

Provided lead engineering and design consulting, including:

High-Level Design:

LAN / WAN Systems:

Standards Specifications Topology Architecture Component Specifications, RFP Management and Review Connectivity Specifications

Centura Health – Denver, CO (Strategic Planning Project – Staff of 5):

Background:

Centura Health - Commissioned an infrastructure standards program to ensure continuity and consistency between all of their facilities.

Program Highlights:

Provided guidance and direction consulting, including:

Network Hardware Replacement Wide Area Connectivity Local Area Network Problem Resolution Service Provider Trouble Shooting Procedures 2nd Tier Technical for Network and Infrastructure Integrated Cabling Testing and Design Enhancement Moves, Adds and Changes Network Monitoring Expansion Design and Procurement Network Management Procedures Data Archiving Storage Backup and Recovery **Report Generation Standards** Software and Hardware Installations and Upgrades Data File Restructuring Network Access Device Standards and Configurations Preventative Maintenance and Services Processes