

**PUBLIC BUILDING COMMISSION OF CHICAGO
FIRST AMENDMENT
CONTRACT NUMBER PS 805**

THIS FIRST AMENDMENT AGREEMENT is made and entered into as of the 22nd day of August, 2008, and shall be deemed and taken as forming a part of the Agreement for Master Network Administrator services ("Agreement") between by and between the **PUBLIC BUILDING COMMISSION OF CHICAGO**, a municipal corporation of the State of Illinois ("Commission") and **INTERNATIONAL BUSINESS MACHINES CORPORATION** ("IBM") dated February 3, 2006 with the like operation and effect as if the same were incorporated therein.

WITNESSETH:

WHEREAS, the Commission and IBM have heretofore entered into an Agreement dated the 3rd day of February, 2006, wherein IBM is to provide Master Network Administrator services for Operation Virtual Shield; and

WHEREAS, the Commission and IBM now desire to amend the Agreement to include additional Services performed and associated compensation due to IBM;

NOW THEREFORE, in consideration of the provisions and conditions set forth in the Agreement and herein, the parties hereto mutually agree to amend the Agreement as hereinafter set forth.

It is agreed by and between the parties hereto that the sole modification of, changes in, and amendments to the Agreement pursuant to this Amendment are as follows:

TERMS

1. **Recitals**
THE ABOVE RECITALS ARE EXPRESSLY INCORPORATED IN AND MADE A PART OF THE AMENDMENT AGREEMENT AS THOUGH FULLY SET FORTH HEREIN.

2. **Article 3.3 New Services** - Article 3.3 is amended to include the following:

Section 3.3A – New Services – Chicago Housing Authority Video Surveillance System Project

- Locations
 - **Family Investment Center (CHA Central Security Station) – 4859 South Wabash**
 - Scope of work is upgrades to the data center and camera monitoring station
 - **Dearborn Homes Phase I - 2920 and 2940 South Federal**
 - Scope of work is installation of 14 interior camera s and 5 exterior cameras at 2920 and 2940 South Federal

- **Lowden Homes- 95th & Wentworth**
 - Scope of work is install 11 – 12 Exterior cameras on new camera only poles
- **Lawndale Gardens 25th & California**
 - Scope of work is install 12 – 14 Exterior cameras on new camera only poles
- Commencement and Completion dates for each phase or location will be specifically set forth in the Task Orders as a part of the Chicago Housing Authority Video Surveillance System Project covered by this Amendment 1.

Task orders will be issued for each phase or location associated with the Chicago Housing Authority Video Surveillance System Project covered by this Amendment 1.

The full scope of this New Service is covered in Attachment A to the Amendment 1 and is made a part of this Amendment 1.

3. Schedule 7.1 Fee Schedule

Section 1.1 Fees is revised to include the following:

- 1.9. Fees for the Chicago Housing Authority Video Surveillance System Project are not to exceed \$2,500,000.00 (Amendment 1).

Execution of this Amendment by IBM is duly authorized by IBM, and the signature(s) of each person signing on behalf of the Architect have been made with the complete and full authority to commit IBM to all terms and conditions of this Amendment.

All capitalized terms not defined herein shall have the meaning ascribed to them in the agreement. Except as and to the extent that the terms of the Agreement are amended and modified herein, all terms of the Agreement shall remain in force and effect.

IN WITNESS WHEREOF, the parties hereto have agreed and executed this Amendment Agreement No. 1.

**PUBLIC BUILDING COMMISSION
OF CHICAGO**

BY: *Richard M. Daley* Date: _____
Richard M. Daley
Chairman

ATTEST:

BY: *Edgwick C. Johnson* Date: 12-1-08
Edgwick C. Johnson
Secretary

ARCHITECT

INTERNATIONAL BUSINESS MACHINES CORPORATION

By: *James T. Lautenbach* Date: 11-18-2008
James Lautenbach
Client Director

Subscribed and sworn to me this

18th day of November 2008.

Dawn McBride
Notary Public

My Commission expires: 2/15/12



**ATTACHMENT A
SCOPE OF SERVICES
CHICAGO HOUSING AUTHORITY SURVEILLANCE SYSTEM PROJECT**

SEE ATTACHED

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 1 |

CHANGE.
CHICAGO HOUSING AUTHORITY



[Faint, illegible text, possibly a stamp or secondary logo]

Phase I Design Program

**Prepared for the Public Buildings Commission of
Chicago and Chicago Housing Authority
7/8/2008**

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 2 |

Table of Contents

| | | |
|----------|------------------------------------|----------|
| 1 | DOCUMENT INFORMATION | 5 |
| 1.1 | CURRENT DOCUMENT | 5 |
| 1.1.1 | Approvers (Current Document) | 5 |
| 1.2 | REVISION STATUS | 6 |
| 1.3 | INITIAL DISTRIBUTION | 6 |
| 2 | EXECUTIVE SUMMARY | 7 |
| 3 | VIDEO SYSTEM DESIGN PROGRAM | 8 |
| 3.1 | INTRODUCTION | 8 |
| 3.2 | CURRENT ENVIRONMENT | 8 |
| 3.2.1 | Family Investment Center | 8 |
| 3.2.1.1 | Overview | 8 |
| 3.2.1.2 | Technical Summary | 8 |
| 3.2.2 | Dearborn Homes | 8 |
| 3.2.2.1 | Overview | 9 |
| 3.2.2.2 | Technical Summary | 9 |
| 3.2.3 | Lowden Homes | 9 |
| 3.2.3.1 | Overview | 9 |
| 3.2.3.2 | Technical Summary | 9 |
| 3.2.4 | Lawndale Gardens | 9 |
| 3.2.4.1 | Overview | 9 |
| 3.2.4.2 | Technical Summary | 9 |
| 3.3 | CAMERA SYSTEM REQUIREMENTS | 10 |
| 3.3.1 | Introduction | 10 |
| | Camera Requirements | 10 |
| | Outdoor Cameras | 10 |
| | Indoor Cameras | 10 |
| 3.3.2 | General Requirements | 10 |
| 3.3.2.1 | Camera Equipment | 11 |
| 3.3.2.2 | Electrical Equipment | 11 |
| 3.3.2.3 | Network | 11 |
| 3.3.2.4 | Environmental Considerations | 11 |
| 3.3.2.5 | Software Considerations | 11 |
| 3.3.2.6 | Training | 12 |
| 3.3.2.7 | Acceptance Test Plan | 12 |
| 3.3.2.8 | IBM Responsibilities | 12 |
| 3.3.2.9 | Recommended Minimum Specifications | 12 |
| 3.3.3 | Family Investment Center | 13 |
| 3.3.3.1 | Areas of Work | 13 |
| 3.3.3.2 | Scope of Work | 13 |
| 3.3.3.3 | System Capabilities | 13 |
| 3.3.4 | Dearborn Campus | 15 |
| 3.3.4.1 | Exterior | 15 |
| 3.3.4.2 | Interior | 16 |
| 3.3.4.3 | Video System | 21 |
| 3.3.4.4 | WAN Connectivity | 21 |
| 3.3.5 | Lowden Campus | 23 |
| 3.3.5.1 | Exterior | 23 |
| 3.3.5.2 | Interior | 24 |
| 3.3.5.3 | Video System | 25 |
| 3.3.5.4 | WAN Connectivity | 25 |

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 3 |

| | | |
|----------|---|-----------|
| 3.3.6 | <i>Lawndale Campus</i> | 27 |
| 3.3.6.1 | Exterior | 27 |
| 3.3.6.2 | Interior | 27 |
| 3.3.6.3 | Video System | 28 |
| 3.3.6.4 | WAN Connectivity | 28 |
| 4 | ALARMS AND NOTIFICATIONS | 30 |
| 4.1 | INTRODUCTION | 30 |
| 4.2 | ACTIVE TAMPERING ALARMS | 30 |
| 4.3 | CAMERA LOST | 30 |
| 5 | COMMISSIONING PROCESS | 31 |
| 5.1.1 | <i>Overview</i> | 31 |
| 5.1.2 | <i>Implementation Genetec Folders/sites</i> | 31 |
| 5.1.2.1 | INTRODUCTION | 31 |
| 5.1.2.2 | OPERATIONAL | 31 |
| 5.1.2.3 | NEEDS ATTENTION | 31 |
| 5.1.2.4 | Maintenance | 32 |
| 5.1.3 | <i>Camera Commissioning Process</i> | 32 |
| 5.1.3.1 | Pan/Tilt/Zoom (PTZ) | 32 |
| 5.1.3.2 | Presets | 32 |
| 5.1.3.3 | Camera Naming Convention | 32 |
| 5.1.3.4 | Camera/Encoder Default Settings | 32 |
| 5.1.3.5 | Event Handler | 32 |
| 6 | MAINTENANCE AGREEMENT | 34 |
| 7 | DESIGN PROGRAM SIGN OFF | 35 |

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 4 |

List of Figures

| | |
|---|----|
| Figure 1: Building 2940 Coverage..... | 15 |
| Figure 2: Building 2920 Coverage..... | 15 |
| Figure 3: Basement Camera Coverage | 17 |
| Figure 4: First Floor Camera Coverage | 18 |
| Figure 5: Floors 2 – 6 Camera Coverage..... | 19 |
| Figure 6: Penthouse Camera Coverage..... | 20 |
| Figure 7: Lowden Camera Coverage | 23 |

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 5 |

1 DOCUMENT INFORMATION

1.1 CURRENT DOCUMENT

| | |
|----------------------------|--------------------------------------|
| Version number | 2.1 |
| Document name | Phase I Design Program |
| File name | CHA Phase 1 Design Program v 2.1.doc |
| Next Revision | |
| Repository / Access | |

1.1.1 Approvers (Current Document)

| Name | Function | Approval Date |
|---------------------------|-------------------|---------------|
| IBM Approvers | | |
| Anthony Caputo | Project Manager | |
| Michael Sutherland | Project Executive | |
| | | |
| Customer Approvers | | |
| | | |
| | | |
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| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 6 |

1.2 REVISION STATUS

| Version | Date | Changes |
|---------|-----------|------------------------------------|
| 1.0 | 6/2/2008 | Preliminary Draft |
| 2.0 | 6/16/2008 | Updated with PBC requested changes |
| 2.1 | 7/08/2008 | Updated with PBC requested changes |

1.3 INITIAL DISTRIBUTION

| Name | Function |
|-----------------------------------|-------------------|
| IBM Distribution List | |
| Michael Sutherland | Project Executive |
| Anthony Caputo | Project Manager |
| | |
| Customer Distribution List | |
| | |
| | |

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 7 |

2 EXECUTIVE SUMMARY

This document outlines an initial design approach for that system including system requirements, areas of work, camera coverage target areas, the scope of work, and an overview of the system capabilities.

The properties identified for Phase I of the video surveillance system include:

- The Family Investment Center
- Dearborn Homes
- Lowden Homes
- Lawndale Gardens

Upon the acceptance of this document by IBM, the CHA, and the PBC, task orders will be developed for each property and the design process will begin in full.

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 8 |

3 VIDEO SYSTEM DESIGN PROGRAM

3.1 INTRODUCTION

A centralized video surveillance system will be installed throughout properties owned by the CHA. The system will provide a link to the OEMC and Chicago Police Department, enabling a knowledgeable and appropriate response to any events that may occur at properties. This document describes the initial design of that system for properties including Dearborn Homes, Lowden Homes, Lawndale Gardens, and back end systems at the CHA Family Investment Center (FIC).

IBM DVS Methodology Overview

| Project Time → | | | | |
|----------------|----------------------|-------------------|---------------------|----------------------|
| ← Phase Time | Assess and Plan | Design | Implement | Run |
| | Data Collection | Conceptual Design | Solution Build | Maintenance Services |
| | Strategy Development | Macro Design | Solution Pilot | |
| | Assessment | Micro Design | Solution Deployment | |
| | Solution Approach | | | |
| | Transition Plan | | | |
| | | | | |

This methodology has been successfully used by IBM in past engagements, including the City of Chicago Operation Virtual Shield and the Navy Pier Project.

3.2 CURRENT ENVIRONMENT

3.2.1 Family Investment Center

3.2.1.1 OVERVIEW

The Family Investment Center currently acts as the central location for receiving video feeds from campus locations that are equipped with video surveillance cameras. The Security Command Center currently has two LCD panel displays and five workstations. The systems are monitored during normal business hours Monday through Friday with no monitoring at nights or on weekends.

3.2.1.2 TECHNICAL SUMMARY

The systems monitored for each campus are disparate and require different applications in order to gain access to video. The Family Investment Center has its own surveillance system. This system consists of twenty-two cameras currently monitored at the entrance security station. IBM understands that these cameras are connected centrally in the Family Investment Center Data Center.

3.2.2 Dearborn Homes

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 9 |

3.2.2.1 OVERVIEW

Dearborn Homes is one of the largest CHA facilities, located off of State Street directly north of the Illinois Institute of Technology. The Dearborn campus is constructed of 16 nine and six story buildings, with elevators. The campus is currently undergoing phased reconstruction of buildings. Buildings 2920 and 2940 have been identified as the first two properties that will receive a surveillance system.

3.2.2.2 TECHNICAL SUMMARY

Dearborn Homes currently has no surveillance system in place, and no network connectivity between buildings. Facilities for possible network equipment are also limited due to space requirements and lack of environmental controls. Dearborn personnel have indicated that an office will become available to house network and server equipment. The administration office has two T1 lines providing connectivity back to the Family Investment Center.

3.2.3 Lowden Homes

3.2.3.1 OVERVIEW

Lowden Homes is a CHA facility located off of 95th Street near the Dan Ryan Expressway. The facility has row style housing, with a total of 128 units.

3.2.3.2 TECHNICAL SUMMARY

Lowden Homes currently has a surveillance system in place. This system has been plagued by vandalism and operational issues. The system uses a combination of wireless and wired connectivity for video to be transmitted to the network room in the administration building. Lowden facilities are acceptable for the addition of new network and camera equipment.

3.2.4 Lawndale Gardens

3.2.4.1 OVERVIEW

Lawndale Gardens is a smaller CHA facility located on 25th Street and California Blvd. The campus consists of eight units of row houses, with 128 units.

3.2.4.2 TECHNICAL SUMMARY

Lawndale Gardens currently has no surveillance system in place, and no network connectivity between campus buildings. Facilities for possible network equipment are limited due to space requirements and lack of environmental controls. Some areas have been identified as possible candidates for housing equipment, including the basements and ComEd rooms at each building.

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 10 |

3.3 CAMERA SYSTEM REQUIREMENTS

3.3.1 Introduction

The Chicago Housing Authority wishes to create a unified video monitoring system for CHA properties including Dearborn Homes, Lawndale Gardens, and Lowden Homes. This unified video monitoring system will consist of new cameras strategically located throughout the facilities along with the incorporation of existing cameras in various areas. These cameras will be required to record upon motion with up to 30 days of video retention in a Network Digital Video Surveillance (DVS) system. In addition, the CHA will require structural changes and enhanced network capacity for existing facilities including the Family Investment Center, Dearborn Homes, Lawndale Gardens, and Lowden Homes. The system is fully scalable so CHA campus locations may be added in the future.

Camera Requirements

OUTDOOR CAMERAS

All new outdoor cameras shall comply with the following minimum specifications:

- 360 degree rotation
- Pan, tilt and zoom
- Day/Night operability
- Completely weatherproof housings
- Vandal Resistant Housing
- Minimum capable resolution of 640 x 480 or 4CIF
- Record Upon Motion

INDOOR CAMERAS

All new indoor cameras shall comply with the following minimum specifications:

- Fixed camera view
- Vandal Resistant Housing
- Tamper Notification Alarms
- Minimum capable resolution of 640 x 480 or 4CIF
- Minimum illumination of .7 lux in color mode shutter
- Power over Ethernet or 24 VAC
- Record Upon Motion

3.3.2 General Requirements

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 11 |

The purpose of this video monitoring system is to provide Chicago Housing Authority Security personnel with a tool to increase security for residents, visitors, and employees consistent with the interests concerning investment protection and operational security threats.

Listed below are the general requirements of the Services for the System:

3.3.2.1 CAMERA EQUIPMENT

- Furnish, install, configure and commission new cameras

3.3.2.2 ELECTRICAL EQUIPMENT

- Furnish and install either EMT or Rigid conduit as required by Chicago Electrical Code between each camera and its appropriate IDF to support networking and power cables
- Furnish and install power supply modules to provide appropriate voltage power to cameras

3.3.2.3 NETWORK

- Utilize Multi-mode fiber or CAT6 cable based on run lengths from the camera to the IDF
- Utilize 18/2 copper cable to provide low voltage power to cameras, camera housing and remote fiber transceivers (if required)
- Implement enhanced networking equipment in each required IDF to support the number of cameras terminating at each location
- Provide the MDFs with an enhanced networking core that will support a converged video System and data network
- Utilize MDFs and other facilities for the location of System servers and storage to support the video monitoring System

3.3.2.4 ENVIRONMENTAL CONSIDERATIONS

- Investigate potential server and network equipment storage rooms for acceptable environmental controls

3.3.2.5 SOFTWARE CONSIDERATIONS

IBM understands that CHA's expectation is that the System's hardware and software be based upon open standards, for example Ethernet, or generally commercially available industry technology standards (such as Windows and Linux). IBM understands that

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 12 |

CHA strongly desires solutions that rely upon non-proprietary approaches; all hardware and software solutions should be interoperable.

3.3.2.6 TRAINING

IBM understands that CHA's expectation is that IBM will train qualified CHA employees in the skills and knowledge necessary to operate the video monitoring system after implementation.

3.3.2.7 ACCEPTANCE TEST PLAN

IBM will provide site management and operations Services to the extent necessary for the video monitoring System to be adequately tested as described in Section 3.4 Commissioning Process, and accepted by CHA staff, the PBC and other end users. The testing process and commissioning process will be outlined in detail in the Statement of Work or Task Order.

3.3.2.8 IBM RESPONSIBILITIES

IBM shall provide Materials, Services and equipment required to complete the deployment of this project. In addition, IBM shall assume principal responsibility for designing, recommending, furnishing, installing, testing and integrating the network and monitoring equipment into live operating environments in accordance with the agreed Completion Criteria (to be outlined in the Statement of Work or Task Order), including acquisition of off-the shelf products and/or integration of customized products, delivery of products, scheduling and co-ordination of all IBM suppliers and subcontractors, interface and compatibility with existing architecture and providing training of CHA employees and other end users, as defined by these requirements.

3.3.2.9 RECOMMENDED MINIMUM SPECIFICATIONS

The video system at each location shall comply with the following minimum specifications outlined below:

- Retain video for a period of 30 days with the following specifications
 - MPEG4 format at CIF resolution
 - 1024kbs bit rate
 - Bitrate control
 - Record upon motion
 - Record at 15 Frames per Second
- The storage system will be configured to RAID 5 format for drive fault tolerance
- The storage system will incorporate SATA drive technology
- The work stations as described in this document will be configured and loaded with Administration, Viewing and Archive viewing software. There is no maximum number of workstations that this software can be loaded on however, the number of simultaneous users is based the licensing arranged for the servers

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 13 |

- Operators will be added, configured and be given viewing/archiving privileges as determined during the design phase of this project

3.3.3 Family Investment Center

The Family Investment Center currently has seven outdoor and fifteen indoor operational security cameras. These cameras will be integrated into the overall solution. In addition to adding these cameras, the Family Investment Center will house the Security Command Center and equipment associated with network connectivity and the Genetec Omnicast Federation Server.

3.3.3.1 AREAS OF WORK

The Family Investment center will include the following areas of work:

- The Data Center
- The Security Command Center
- The Security Desk

3.3.3.2 SCOPE OF WORK

The Scope of Work will include the following:

- A detailed design, including:
 - Determination of equipment locations
 - Determination and satisfaction of environmental requirements
 - Determination and satisfaction of power requirements
- Installation of a rack to house new equipment
- Installation and configuration of Wide Area Network equipment for connectivity to housing campus locations
- Installation and configuration of Video Encoders or other necessary equipment for the integration of the current camera system at the Family Investment Center
- Installation and configuration of a server to support cameras currently existing at the Family Investment Center
- Installation and configuration of a server to support centralized access to CHA locations with Genetec Omnicast systems
- Installation and configuration of five workstations and equipment for the Security Command Center
- Installation and configuration of a workstation at the front security desk
- Training of users, managers, and administrators in Genetec Omnicast operations

3.3.3.3 SYSTEM CAPABILITIES

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 14 |

The Genetec Omnicast server and video encoders installed at the FIC will allow for the viewing and recording of video from cameras currently installed at the FIC. This video will be available from the Security Command Center, or the Security Desk. This video will be retained for a minimum of thirty days.

The Genetec Omnicast Federation server will act as a central user authentication and video access point for all CHA properties and the FIC. Users at the FIC will access the Federation server and be able to view all cameras and recorded video at all locations, unless otherwise specified by the CHA. Users will be able to view a maximum of 32 total cameras from all locations simultaneously, dependent upon desktop configuration and network connectivity at each location. Also, depending on future discoveries and requirements from CHA in the design phase, individual users may be able to view fewer cameras simultaneously.

The network equipment installed at the FIC will provide two main capabilities: WAN connectivity and VPN connectivity to the OEMC. WAN connectivity is required to provide connectivity to CHA properties with camera systems. WAN bandwidth will be dedicated and fixed. VPN connectivity is required for OEMC connectivity to view cameras within the CHA camera domain. OEMC connectivity will be on demand over an internet connection at the FIC. The current internet connection will be assessed and upgrade recommendations will be made, if necessary.

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 15 |

3.3.4 Dearborn Campus

The Dearborn Homes campus is a CHA property consisting of sixteen buildings. The first phase of the video surveillance project will include two buildings, 2920 and 2940. Building 2920 will receive two outdoor cameras and fifteen indoor cameras. Building 2940 will receive three outdoor cameras and fifteen indoor cameras. To provide bandwidth to a central location, a trench of approximately 500 feet will be created from building 2940 to the administration building for fiber. Foliage will be a challenge at this location. IBM understands that CHA will be responsible for trimming foliage to a level suitable for camera placements, to be determined in the design phase.

3.3.4.1 EXTERIOR

Area of Work

The external work areas for Dearborn Homes Campus will include the following, at minimum:

- A path from the administration building to building 2940 for the installation of fiber optic cable
- A perimeter of 30' feet in every direction from buildings 2920 and 2940
- The rooftops of buildings 2920 and 2940

Coverage Areas

The external camera coverage areas for Dearborn Homes Campus will include the following, at minimum:

- Areas to the northwest and southeast of building 2920
- Areas to the southwest, northwest, and northeast of building 2940

Camera will be located between the third and fourth floors in the following exterior locations:

Building 2920 will have two exterior cameras

- The southeast corner of the south Wing
- The northwest corner of the west Wing

Building 2940 will have three exterior cameras

- The southeast corner of the northeast Wing
- The southwest corner of the northwest Wing
- The northwest corner of the northwest Wing

The following exterior areas will not be covered with exterior cameras in Phase I:

- The southeast corner of building 2940
- The northeast corner of building 2920

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 16 |

It is anticipated that these areas will gain camera coverage in future phases of the CHA surveillance system project.

Camera locations and coverage areas are illustrated in Figure 1 and Figure 2.



Figure 1: Building 2940 Exterior Coverage and Camera Locations



Figure 2: Building 2920 Exterior Coverage and Camera Locations

Scope of Work

The exterior scope of work will include:

- Installation of cameras and all associated equipment to provide camera coverage to the designated areas
- Installation of wireless network equipment on the roof of each building
- The creation of a trench and the installation of fiber from building 2940 to the administration building

3.3.4.2 INTERIOR

Areas of Work

The interior of the Dearborn Homes Campus will include the following areas of work:

- Administration Building
 - The Server Room (to be designated in the design phase)
 - Path from the network entry point to the server room
 - Workstation locations
- Campus Buildings
 - The Basement – Power systems will be placed in the basement near current electrical equipment. Outdoor Cameras will require power supplies to convert power to appropriate voltages.
 - Floors 1-6 hallways and common areas – Cameras will be installed on every floor.
 - All floors – Electrical and data chase rooms, IDFs and MDFs – Access to these rooms will be required to run electrical and data connectivity to cameras.

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 17 |

- The Penthouse - It is likely that network equipment will be housed in the penthouse at the top of each building. If this is the case, a small, environmentally controlled and secured cabinet will be placed in the penthouse of each building, containing a switch.

Coverage Areas

The overall strategy for coverage is to capture all ingress and egress traffic to each floor. To meet that goal, the interior of the Dearborn Homes Campus will include the following estimated camera coverage areas:

Basement

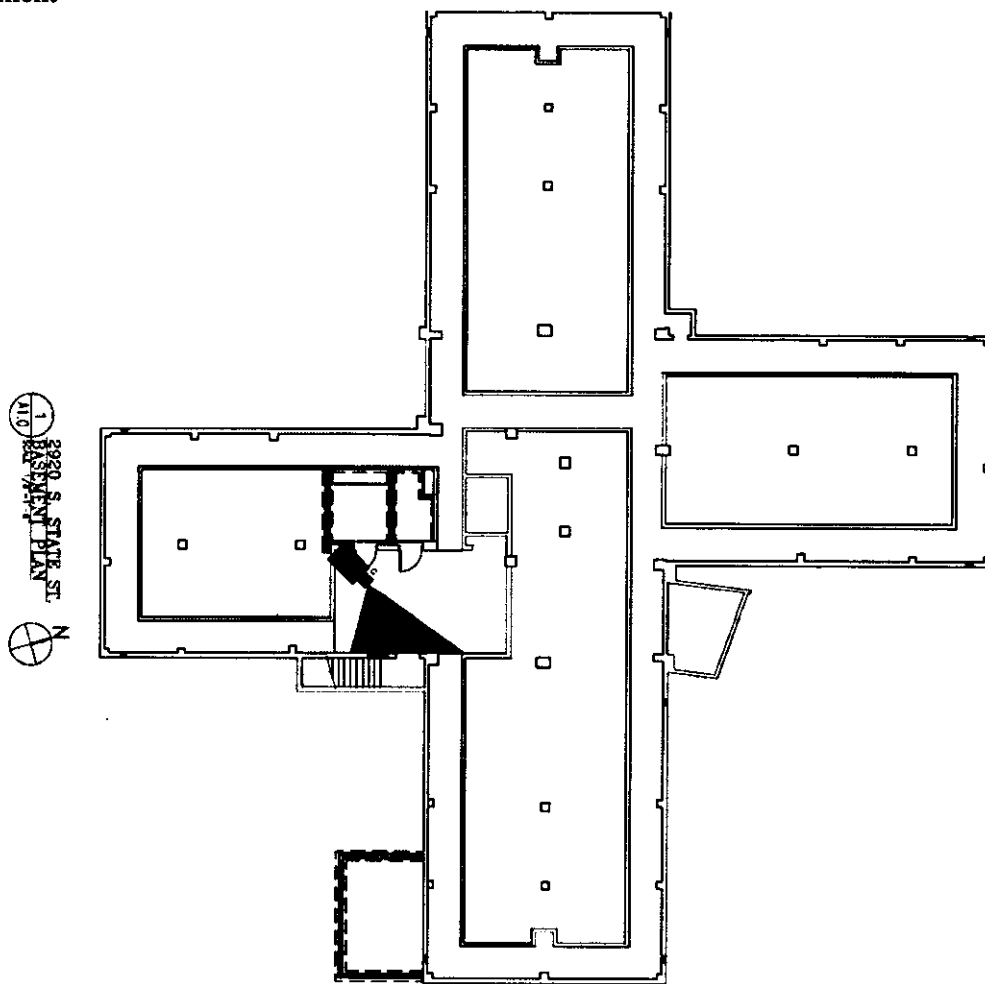


Figure 3: Basement Camera Coverage

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 18 |

First Floor

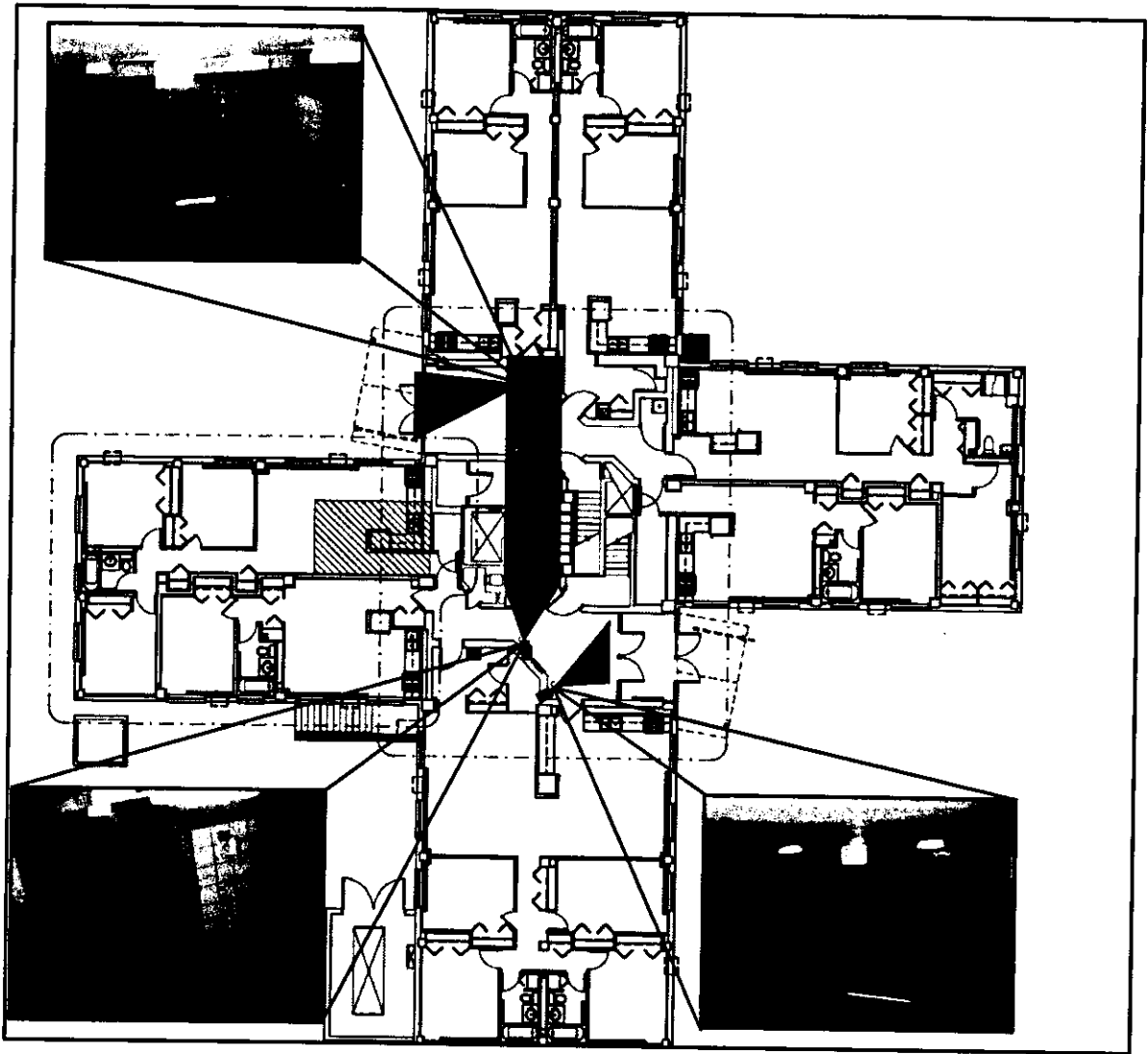


Figure 4: First Floor Camera Coverage

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 19 |

Floors 2-6

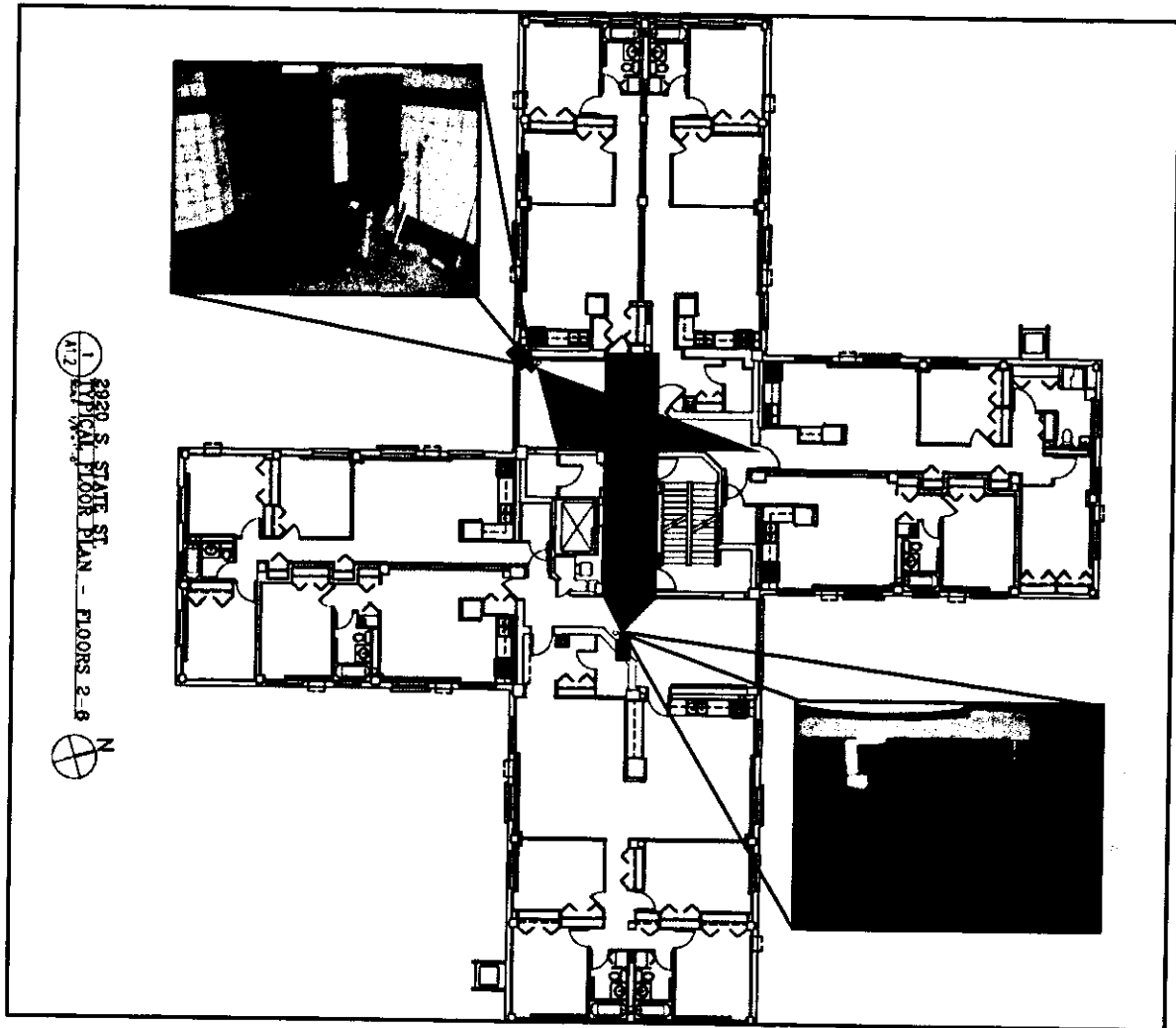


Figure 5: Floors 2 – 6 Camera Coverage

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 20 |

Penthouse

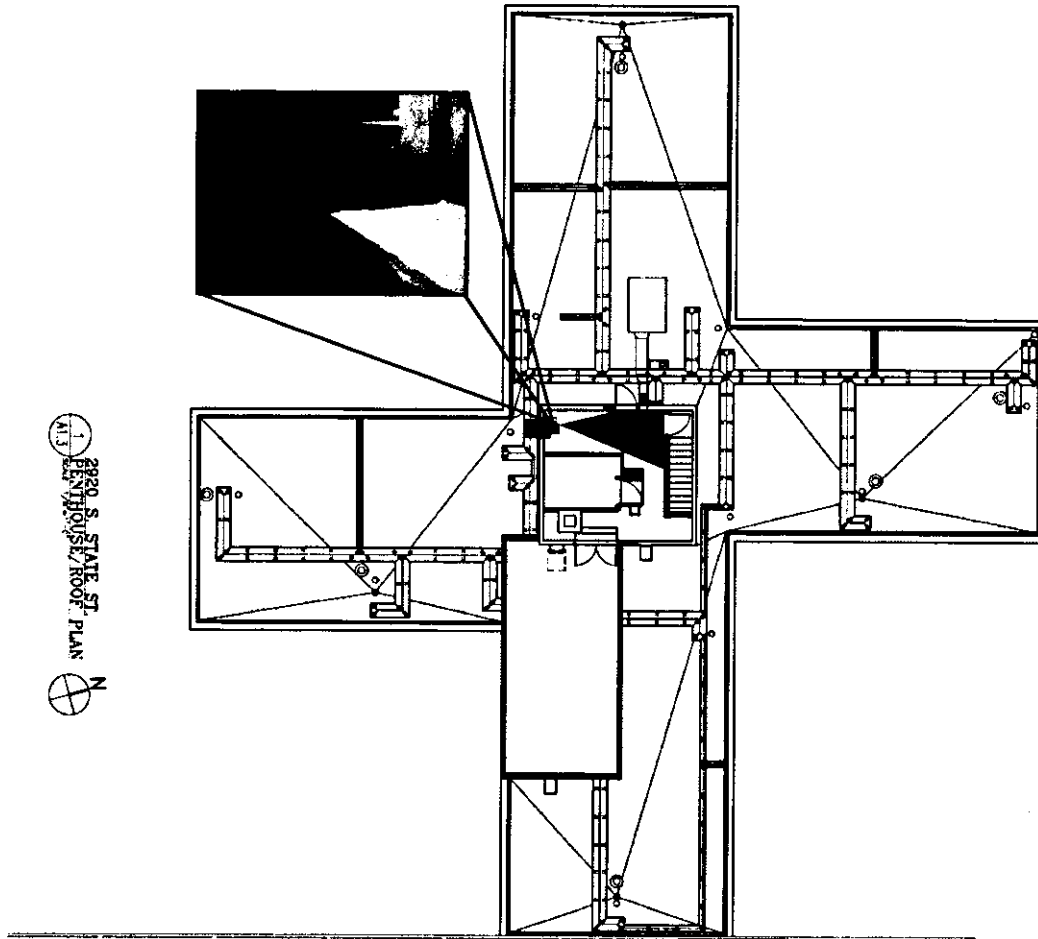


Figure 6: Penthouse Camera Coverage

Scope of Work

The interior Scope of Work will include the following:

- Installation of a rack in the administration building to house new equipment
- Installation of environmental systems to support network and server equipment
- Installation of indoor cameras at the designated locations, including:
 - One camera in the basement
 - Three cameras on the first floor
 - Two cameras on floors two through six
 - One camera in the penthouse

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 21 |

- Installation of switches and other required equipment
- Installation and configuration of Wide Area Network equipment for connectivity to the Family Investment Center
- Installation and configuration of a server to support cameras to be installed at the Dearborn Homes Campus
- Installation and configuration of two workstations and equipment for the property manager and front desk
- Installation and configuration of a laptop at the front security desk for each building
- Installation of a network drop at the front security desk for each building
- Training of up to five end users
- IBM understands that conduit currently exists for all interior cameras with pull strings in place for data and electrical wiring installation

3.3.4.3 VIDEO SYSTEM

Overview

The Genetec Omnicast server installed at Dearborn will allow for the viewing and recording of video from cameras installed. This video will be available from the Security Command Center at the FIC, the local security desk, or the local administration office. This video will be retained for a minimum of thirty days.

Data Storage and Expandability

The video system will retain video for up to twenty-five (25) cameras for thirty (30) days with standard configuration parameters. The storage system will be configured to RAID 5 format for drive fault tolerance, with SATA drive technology. One server will operate as the video archive system and as the main Genetec Directory and gateway for the system, with licensing for up to (100) cameras per archiver.

The video system will require space in the Administration building. An office is to be designated by Dearborn personnel for this use.

Workstations

The workstations will be configured and loaded with Administration, Viewing and Archive viewing software. There is no maximum number of workstations allowed, however, the number of simultaneous users is based the licensing arranged for the servers. Two new workstations that meet the minimum systems requirements will be provided.

Users, Permissions, and Privileges

Operators will be added, configured and be assigned viewing/archiving privileges as determined during the design phase of this project.

3.3.4.4 WAN CONNECTIVITY

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 22 |

The Dearborn campus will require connectivity back to the CHA Family Investment Center (FIC). WAN connectivity is currently provided by AT&T over a pair of T1 trunk lines, providing approximately 3Mbps of bandwidth. This, however would not be sufficient for carrying live video traffic to either the FIC or OEMC, should the need arise.

Due to the high quantity of cameras, it is especially important at to ensure sufficient bandwidth over the WAN at this location. Therefore, at Dearborn, 50Mbps is the recommended bandwidth. This bandwidth would provide for the simultaneous viewing of up to 30 cameras. However, 20Mbps would be the absolute minimum sufficient bandwidth to allow for live camera viewing, allowing for the simultaneous viewing of 15 cameras..

The connectivity provider and connection type for all WAN connections will be based on negotiations with local service providers. AT&T is the incumbent provider, and has indicated that each of the connections would be possible at this site, as well as the others in question, without excessive effort, due to the proximity of the AT&T POP to each property.

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 23 |

3.3.5 Lowden Campus

3.3.5.1 EXTERIOR

Area of Work

The exterior of the Lowden Campus will include the following areas of work:

- The Lowden campus bounded by Wentworth Ave. to the East, the Metra Rail tracks to the West, W. 95th St. to the South, and the ally to the north of the campus
- The Areas surrounding light poles that are to be designated in the design phase
- Areas near buildings with basements
- Areas between light poles and buildings containing network connectivity

The exterior of the Lowden Campus includes several existing and functional cameras. These cameras will be integrated into the solution using video encoders. These cameras will be supplemental only to the new system, and will not be considered in designing coverage areas for newly placed cameras.

The general strategy for placement of cameras at Lowden Homes is the following: Cameras will be placed on 40' poles that are to be erected specifically for cameras. Decorative lighting may be placed on the tops of these poles, depending on exact design requirements.

Coverage Areas

New exterior cameras will include the following coverage areas:

- Parking Areas
- Common Areas
- The Playground
- The Basketball Courts

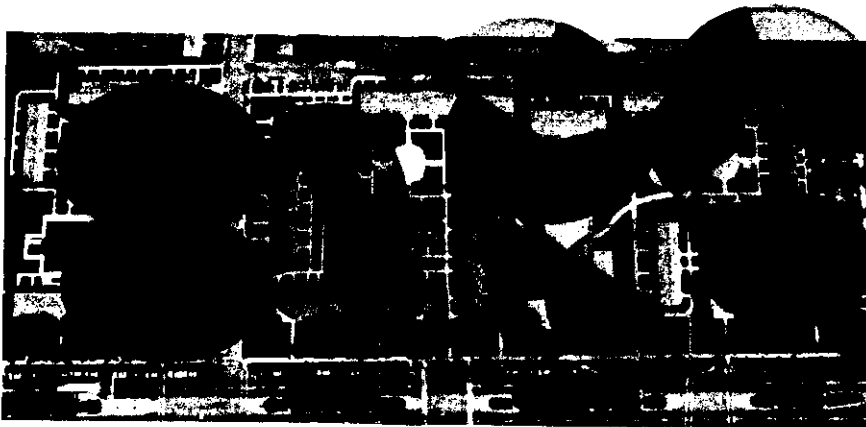


Figure 7: Lowden Camera Coverage

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 24 |

Please note that these coverage areas are approximate estimates for general reference only. With current estimated camera placements all areas on the campus will be covered except:

- The northwest most corner of the campus near the Metra Tracks
- The East most area of the campus on Wentworth Avenue.

Scope of Work

The exterior scope of work will include the following:

- Installation of twelve new poles to support cameras
- Replacement of existing poles and pole bases as necessary
- Installation of fifteen cameras on poles
- Installation of new electrical and data cabling to support cameras on poles
- Installation of new conduit as necessary
- Installation of new hand holes as necessary

3.3.5.2 INTERIOR

Area of Work

The interior of the Lowden Campus will include the following areas of work:

- Basements of all buildings
- Basement of the administration building
- Network equipment room of the administration building
- Main entrance hallway of the administration building
- Front Desk
- Property Manager's Office

Coverage Areas

The interior of Lowden Campus will include the following camera coverage areas

- Main entrance

The interior of the administration building also has several existing cameras. These cameras will be integrated into the new solution using video encoders.

Scope of Work

The interior Scope of Work will include the following:

- Installation of a rack in the administration building network room to house new equipment (existing rack space may be used if space is sufficient)
- Installation and configuration of one indoor camera at the administration office entrance
- Installation and configuration of switches and other required equipment

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 25 |

- Installation and configuration of equipment associated with integrating current cameras
- Installation and configuration of Wide Area Network equipment for connectivity to the Family Investment Center
- Installation and configuration of a server to support cameras to be installed at the Lowden Homes Campus
- Installation and configuration of two workstations and equipment for the property manager office and front desk
- Training of up to five end users

3.3.5.3 VIDEO SYSTEM

Overview

The Genetec Omnicast server installed at Lowden will allow for the viewing and recording of video from cameras installed. This video will be available from the Security Command Center at the FIC and the local administration office. This video will be retained for a minimum of thirty days.

Data Storage and Expandability

The video system will retain video for up to fifteen cameras for thirty days with standard configuration parameters. The storage system will be configured to RAID 5 format for drive fault tolerance, with SATA drive technology. One server will operate as the video archive system and as the main Genetec Directory and gateway for the system.

The video system will require space in the Administration building. This space has been designated as the currently existing network closet.

Workstations

The workstations will be configured and loaded with Administration, Viewing and Archive viewing software. There is no maximum number of workstations allowed, however, the number of simultaneous users is based the licensing arranged for the servers. Two new workstations that meet the minimum systems requirements will be provided.

Users, Permissions, and Privileges

Operators will be added, configured and be assigned viewing/archiving privileges as determined during the design phase of this project.

3.3.5.4 WAN CONNECTIVITY

The Lowden campus will require connectivity back to the CHA Family Investment Center. WAN connectivity is currently provided by AT&T over a pair of T1 trunk lines, providing approximately 3Mbps of bandwidth. This, however would not be sufficient for

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 26 |

carrying live video traffic to either the FIC or OEMC, should the need arise. The recommended bandwidth for this location is 20Mbps to allow for live camera viewing.

The connectivity provider and connection type for all WAN connections will be based on negotiations with the local service providers. AT&T is the incumbent provider, and has indicated that each of the connections would be possible at this site, as well as the others in question, without excessive effort, due to the proximity of the AT&T POP to each property.

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 27 |

3.3.6 Lawndale Campus

3.3.6.1 EXTERIOR

Area of Work

As of the writing of this document, the exact locations for cameras have yet to be established. Generally, the exterior of the Lawndale Gardens Campus will include the following areas of work:

- Areas between buildings that are designated for camera poles
- Roofs of buildings (Cameras will not be placed on roofs of buildings, but access may be necessary)

Coverage Areas

Camera placement maps for this property will be developed. It is currently estimated that approximately 20 cameras will be required for sufficient outdoor coverage at this location. Cameras will be placed on poles no less than 30' high. Most poles will support two or more cameras. Foliage will be a challenge at this location, and camera coverage may vary due to growth and blockage due to trees. IBM understands that CHA will work to trim foliage for camera coverage as deemed necessary by IBM.

Scope of Work

The exterior scope of work will include the following:

- Installation of new poles to support cameras
- Replacement of existing poles and pole bases as necessary
- Installation of cameras on poles
- Installation of new electrical and data cabling to support cameras on poles
- Installation of new conduit as necessary
- Installation of new hand holes as necessary

3.3.6.2 INTERIOR

The Lowden campus will include no indoor cameras. The interior of Lowden Homes will include the following areas of work:

- Basements of buildings supplying power and network connectivity to camera poles
- Basement of the community center
- Management office

Scope of Work

The interior Scope of Work will include the following:

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 28 |

- Installation of a rack in the community center to house new equipment (are to be designated in the design phase)
- Installation and configuration of switches and other required equipment
- Installation and configuration of Wide Area Network equipment for connectivity to the Family Investment Center
- Installation and configuration of a server to support cameras to be installed at the Lawndale Gardens Campus
- Installation and configuration of two workstations and equipment for the property manager office and front desk
- Training of up to five end users

3.3.6.3 VIDEO SYSTEM

The Genetec Omnicast server installed at Lawndale will allow for the viewing and recording of video from cameras installed. This video will be available from the Security Command Center at the FIC and the local administration office. This video will be retained for a minimum of thirty days.

Data Storage and Expandability

The video system will retain video for up to twenty-five cameras for thirty days with standard configuration parameters. The storage system will be configured to RAID 5 format for drive fault tolerance, with SATA drive technology. One server will operate as the video archive system and as the main Genetec Directory and gateway for the system.

The video system will require space in the Community Center building. This space has yet to be identified. IBM will work with the CHA to identify an appropriate location in the design phase of this project.

Workstations

The workstations will be configured and loaded with Administration, Viewing and Archive viewing software. There is no maximum number of workstations allowed, however, the number of simultaneous users is based the licensing arranged for the servers. Two new workstations that meets the minimum systems requirements will be provided for the management office.

Users, Permissions, and Privileges

Operators will be added, configured and be assigned viewing/archiving privileges as determined during the design phase of this project.

3.3.6.4 WAN CONNECTIVITY

The Lawndale campus will require connectivity back to the CHA Family Investment Center (FIC). WAN connectivity is currently provided by AT&T over a pair of T1 trunk

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 29 |

lines, providing approximately 3Mbps of bandwidth. This, however would not be sufficient for carrying live video traffic to either the FIC or OEMC, should the need arise. The recommended bandwidth for this location is 20Mbps to allow for live camera viewing.

The connectivity provider and connection type for all WAN connections will be based on negotiations with the local service providers. AT&T is the incumbent provider, and has indicated that each of the connections would be possible at this site, as well as the others in question, without excessive effort, due to the proximity of the AT&T POP to each property.

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 30 |

4 ALARMS AND NOTIFICATIONS

4.1 INTRODUCTION

The Genetec Omnicast system that will be used has the capability to act on alarms. Thus far the active tampering alarm and camera lost alarms have been the only alarms identified that will be acted upon. Other alarms to be acted upon will be decided in the design phase of this project.

4.2 ACTIVE TAMPERING ALARMS

The active tampering alarm is a feature of certain Axis branded cameras. When possible, cameras that support this feature will be selected.

The active tampering alarm will send an email to a designated person upon the detection of tampering to a camera. The alarm will also send a message to any persons currently logged into the system.

4.3 CAMERA LOST

The camera lost alarm will be used to notify local security and administrator personal in the event that the connection to a camera has been lost.

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 31 |

5 COMMISSIONING PROCESS

5.1.1 Overview

The commissioning process involves end-to-end testing of components after installation, assuming the underlying support components are functioning properly. Once the camera appears on the Genetec Omnicast System is ready for configuration and setup for operations.

Genetec Omnicast automatically recognizes an added camera to the network, if the underlying system components including networking segments are functioning properly and field crews have tested the site's components and verified proper operation.

5.1.2 Implementation Genetec Folders/sites

5.1.2.1 INTRODUCTION

During the implementation process, development folders are added to the Genetec system in order to properly manage installed cameras. These folders will have different permissions access, depending on their content.

Historically, the site folders would include:

1. Operational
2. Needs Attention
3. Maintenance

5.1.2.2 OPERATIONAL

A camera is considered operational once placed within the "Operational Site Folder." The cameras are fully commissioned and ready for use.

Cameras in this site can be seen and used by CHA. Once a camera is placed in this site is considered accepted by CHA.

5.1.2.3 NEEDS ATTENTION

If cameras do not pass initial tests, they are placed in the "Needs Attention" Site Folder. The CHA Database is updated with the status of the camera and proposed resolution. These cameras cannot be seen by CHA.

Once a camera has been fixed IBM field personnel will update the status in the CHA Database to "Operational." This indicates the commissioner reevaluated the camera and

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 32 |

it has passed the commissioning tests, and is therefore placed in the Operational Site folder. The CHA Database will be updated and the camera is now considered accepted by CHA.

5.1.2.4 MAINTENANCE

Cameras in this category have been accepted by CHA, but have been taken off-line for maintenance, software upgrades, or replacement.

Once maintenance has been completed IBM field personnel will update the status in the CHA Database to "Operational".

5.1.3 Camera Commissioning Process

5.1.3.1 PAN/TILT/ZOOM (PTZ)

Using Genetec, a PTZ controller is added to the camera and tested thoroughly by spinning the camera 360 degrees, and from the top dome of one side of the camera, down and around to the opposite side. Auto focus is verified by zooming into distant objects.

5.1.3.2 PRESETS

Preset PTZ positions are to be determined, but are typically set for (1)Home, (2)North, (3)South, (4)East, and (5)West. IBM has made the assumption that the high-traffic area is the default "Home" position for the camera. Presets are tested to ensure that the camera points to the designated locations.

5.1.3.3 CAMERA NAMING CONVENTION

The camera's directory name is created following the Alpha-Numeric name designated within the CHA Database.

5.1.3.4 CAMERA/ENCODER DEFAULT SETTINGS

The default settings that will be outlined in the Statement of Work or Task Order will applied to each encoder / camera.

These default settings include most of the attributes for each site with the exception of the PTZ presets and auto presets such as camera position based on an event flag. These settings must be applied per camera location.

5.1.3.5 EVENT HANDLER

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 33 |

Each camera must be assigned its default event handler. This enables the ability for automated actions to be associated with events as they occur, such as a camera returning to "Home" position after two minutes of inactivity. Events will be determined by IBM and the CHA in the design phase.

Table 1: DEFAULT CAMERA AND ENCODER SETTINGS

| Recording & Viewing | | |
|--------------------------------|----------------------|---|
| Attribute | Setting | Comments |
| Resolution | MPEG4 CIF | |
| Frame Rate | 15 frames per second | |
| Bit rate | 1024 bits per second | |
| Quality | 6 (Six) | Sets the desired quality value |
| Filter mode | Medium filter | Filters out detail that would cause unnecessarily high bit rates which would exceed storage design parameters |
| Schedule | On Motion | Record video upon motion only |
| Retention | 30 days | After 30 days video archives will be deleted |
| Event Capture | | |
| PTZ stopped | 120 seconds | Preset (1) Home position activated to prevent camera from being left in alternative positions. |

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 34 |

6 MAINTENANCE AGREEMENT

IBM understands that the CHA wishes to have comprehensive break fix services which would be priced in a Maintenance Agreement for the system to be installed. Under the Maintenance Agreement it is transferred to IBM the responsibility for replacement services relating to defective components which are, under the Maintenance Agreement, managed and provided by IBM. IBM will work with the CHA to develop an appropriate Maintenance Agreement to be included in a separate Statement of Work or Task order that is to be developed.

| REVISION | DATE | DOCUMENT NAME | CONTRACT | PAGE |
|----------|----------|--|----------|------|
| 2.1 | 7/8/2008 | Video System Requirements Document DRAFT | | 35 |

7 DESIGN PROGRAM SIGN OFF

This agreement constitutes a preliminary design approach to the designated CHA properties and facilities. This does not guarantee delivery of services, pricing, scheduling, or imply any agreement beyond an initial design approach.

IBM Representative

Date

PBC Representative

Date

CHA Representative

Date