CAPITOL COMPLEX MASTER PLAN

FINDINGS & RECOMMENDATIONS (F & R) NEEDS ASSESSMENT

NORTH CAMPUS NORTH BUILDING, 6321 NORTH DOWNING STREET (DENVER)

NOVEMBER 2014

RNL

FINDINGS & RECOMMENDATIONS (F&R) NEEDS ASSESSMENT

NORTH CAMPUS NORTH BUILDING
6321 NORTH DOWNING STREET (DENVER)

November 2014

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EXECUTIVE SUMMARY

The purpose of this report is to provide a Findings & Recommendations (F&R) Needs Assessment of the North Campus North Building at 6321 North Downing Street in Denver, Colorado (Adams County). The report includes a description and evaluation of the existing conditions, recommendations, and cost estimates for the recommended work from the following focus areas: architecture (RNL), structural (Martin/Martin Consulting Engineers), civil (Martin/Martin Consulting Engineers), mechanical/electrical/plumbing (RMH Group), voice and data (Shen Milsom Wilke), security (Shen Milsom Wilke), and cost estimating (CBRE, Inc.). The project team, led by RNL, reviewed existing building documentation, drawings, and audit reports provided by the Owner, and conducted a site visit to identify and document the observable existing conditions of the building and its code and life safety issues.

In general the building is in poor condition. A poor condition rating refers to the fact that the North Campus North Building is in urgent need of repairs to address life safety and loss of use/reliability issues.

Although all recommendations presented in this report should be considered for implementation, the following are the top five priorities due to their impact on life safety (LS), loss of use/reliability (LOU), finishes (F), and overall energy efficiency:

1. Demolish the original building structure and rebuild as necessary to suit current needs. This recommendation encompasses life safety, loss of use/reliability, finishes, and overall energy efficiency issues and is related to the age and condition of the original building (east side), which was constructed as a temporary prefabricated metal building in 1968.

OR, if the building cannot be demolished and must remain in use, the following are the top five priorities:

1. Add fire sprinkler system. This recommendation encompasses life safety issues and is due to egress and fire protection code issues.

   High Level Cost Estimate: $150,686

2. Replace fire alarm. This recommendation encompasses life safety issues and is due to fire protection code issues and the age of the system.

   High Level Cost Estimate: $60,888

3. Replace roof and add fall protection. This recommendation encompasses life safety and loss of use/reliability issues and is due to the age and condition of the roof and the fact that no fall protection is provided.

   High Level Cost Estimate: $378,738

4. Upgrade lights. This recommendation encompasses loss of use/reliability issues and is due to the age and condition of the T8 fluorescent fixtures.

   High Level Cost Estimate: $185,071

5. Replace original building skin, doors, and windows. This recommendation encompasses loss of use/reliability issues and is due to the age and overall deterioration of the original building skin, doors, and windows.

   High Level Cost Estimate: $341,604

If all recommendations in this report are implemented as a single project, including the top 5 priorities, the high level cost estimate is:

$2,788,886

If all recommendations in this report are implemented system by system as multiple projects, including the top 5 priorities (systems), the high level cost estimate is:

$3,036,190

1.0 OVERVIEW

1.0-A ARCHITECTURE OVERVIEW

The North Campus site, located in Denver, Colorado in Adams County, contains three buildings originally constructed as temporary buildings. The North Campus North Building was constructed in 1968. The building is on the northwest corner of East 62nd Avenue and Downing Street. The west side of the building is a newer addition and currently serves as the Personnel & Administration Integrated Document Solutions (IDS) Incoming & Security Scan Unit laboratory spaces for mail processing and as secure storage space. The addition is reported to have been constructed approximately 10 years ago. The east side of the building currently serves as the Personnel & Administration IDS Shipping & Receiving spaces with secure storage and warehouse spaces and also serves as a machine shop and a welding shop for the Community College of Denver. It was reported that the Community College of Denver is planning to move to a new facility in 2014. There is also a separate storage area at the northeast corner of the building which contains an above-ground 10,000 gallon fuel storage tank.

The North Campus North Building is an engineered metal building on a masonry foundation and has areas of masonry and brick infill walls, on the west end. The building appears to consist of two separate structural systems sharing an interior structural masonry wall. This one-story building grosses 23,630 square feet of space.

The architectural assessment of the North Campus North Building at 6321 North Downing Street included reviews of the existing building documentation, drawings, and audit reports provided by the Owner, and a site visit to survey and document the existing conditions of the building and its code and life safety issues. During the site survey on October 22, 2013, building maintenance personnel provided building history and information on the layout, finishes, maintenance routines, systems, and the dates of repairs and upgrades. In general, the original building is in poor condition and the addition on the west side is in fair condition. There are issues related to interior and exterior finish materials, building systems, code compliance, accessibility, asbestos, and other items that require attention in the near term. One of the main concerns is the overall age and condition of the building as a whole. Other concerns include the age and condition of the roof and the age and condition of the original building's skin, windows, and exterior doors. These concerns encompass life safety, loss of use/reliability, finishes, and overall energy efficiency issues. These findings, along with recommendations for repairs, are detailed in the body of this report.

1.0-B STRUCTURAL OVERVIEW

Martin/Martin conducted a building condition assessment on October 22, 2013 of the north building of the north campus, 1001 East 72nd Avenue in Denver, Colorado. The purpose of our condition assessment was to identify structural defects, damage, and deterioration.

The buildings at the north campus are all engineered metal buildings. The north building appears to have two separate structural systems sharing an interior structural masonry wall. The western half has metal panels at the walls and roof. The roof panels span between open web steel joists bearing on steel girders, which in turn bear on steel pipe columns. The easternmost bay of open web joists bear on the demising masonry wall. The eastern half also has metal panels at the walls and roof. The roof panels span between cold-formed steel purlins which bear on heavier gage steel frames. Both halves of the building have a membrane roof overlaying the metal panels. Some areas of exterior wall panel are interrupted by brick or masonry infill.

The structural framing that was readily observable is in fair condition. The majority of the steel framing on the eastern half appears to have been coated with some sort of thermal spray-on insulation. This coating prevented close examination of significant portions of the structure, but the coating is beginning to fail and fall from the structure.

An interior steel beam supporting a landing has a proportionally large hole cut through the web of the beam. The hole greatly reduces the shear capacity of the beam and should be analyzed further.

The roof of the building was sloped and no fall protection was provided. A fall protection system should be installed along the roof to meet current safety codes.

1.O-C CIVIL OVERVIEW

The State of Colorado North Campus contains three buildings originally considered “temporary” buildings; the west, north and east buildings. This assessment report covers the north building. The north building of the State of Colorado North Campus site is approximately 1.97 acres and is located at 6321 North Downing Street in Adams County, Colorado. The existing site consists of the building, parking lot and street right-of-way including sidewalk. The main building entrance is accessed from the parking lot on the west side. The condition of the site surrounding the building is consistent with an estimated age of 30+ years.

The site exterior is generally in poor condition. The main concern regarding the site is drainage and the condition of the asphalt in the parking lot. There are numerous locations around the site with broken, deteriorated and cracked asphalt in need of repair or replacement. Broken surfaces in walking paths are a tripping hazard and safety concern. Surface cracks and broken pavement surfaces also increase the risk of further site deterioration. Localized ponding was observed along with indicators of improper drainage. It is recommended that the entire site be re-graded and re-paved to improve the surface drainage and maintain the site posterity. While the existing building functions in its current state, improvements can be made to improve drainage, comply with regulations and enhance aesthetics.

1.0-D MECHANICAL, ELECTRICAL, AND PLUMBING OVERVIEW

The electrical and mechanical assessment of the North Campus North building was performed to observe the existing electrical and mechanical equipment installation and assess code and building energy efficiency issues. During the site survey, information about the building history, electrical and mechanical systems conditions, maintenance routines, and installation dates was provided. The North Campus North building is a metal prefab structure with one half occupied by the state and the other half occupied by Community College of Denver. On the state side of the building, the spaces include office and storage. On the community college side of the building, the space is used as a machine shop and welding.

The main concerns regarding the North Campus Building North are related to the age of the electrical equipment, including the panelboards, lighting, and fire alarm system. The service to the building appears undersized based on the equipment in use in the building. Also, as the equipment ages it is difficult to find replacement parts and can extend outages from a few hours to a few days. Also, this building need lighting controls to conserve energy (see Energy conservation section below).

The main concern about mechanical system is the HVAC equipment and life safety in the building. The building is not provided with sprinkler system. Part of the building is used as storage (paper products). It is recommended to provide sprinkler system to enhance the life safety of the building. The shop areas should be provided with proper ventilation; minimum outside air and exhaust. The waste oil storage tank should be decommissioned and removed from the site.

Energy Conservation

To conserve energy in this building a lighting control system that provides automatic daylight dimming and occupancy sensor shutoff will provide energy savings. Also, following the most up-to-date energy codes regarding how much light is used (watts per square feet) will reduce the number of fixtures required for each space. Supplemental task lighting can be used in each area to ensure occupants are able to perform their work effectively.

Replacing old HVAC units with new high efficiency units will reduce heating and cooling energy costs. Also replacing electric water heater with gas fire heater will save energy costs.

1.0-E VOICE AND DATA OVERVIEW

The Voice and Data IT/Telecommunications Infrastructure assessment report provides recommendations for the design and construction of the IT/Telecommunications Infrastructure required to support Voice/Data and other technology systems within the North building for renovation projects. Much of the building's existing IT/Telecommunications infrastructure may not be consistent with current industry standards and best practice installation methods. The current IT infrastructure may not properly support many newer technology IP devices which are now considered to be standard in the industry such as VoIP phones and PoE type security cameras. Existing network cabling may have bandwidth limitations as compared to that of more robust, industry standard Cat6 or Cat6A cable plant specifications. It should be noted where referenced, that IT systems infrastructure not only includes the cabling, but the cabling pathways and the spaces (or rooms) that support the network cabling. Technology spaces requiring to be properly outfitted in the building may include the Main Distribution Facility (MDF) room, and distributed IDF rooms (minimum of one per floor). Backbone infrastructure shall include proper cabling pathways between MDF/IDF rooms, in order to support installation of both fiber and copper backbone cabling. Singlemode and laser optimized multimode fiber optic cables, along with Category 3 copper backbone cables should be installed from the MDF room to each IDF room to support the technology systems. Hardwired network connectivity should be provided for users, and distributed appropriately throughout all areas of the facility. Category 6, at minimum, UTP cable shall be installed from the telecom outlets and IP field devices to termination hardware in the IDF rooms using conduit and/or cable tray horizontal pathways. A proper grounding and bonding system must be provisioned for, and will provide a uniform ground within the telecommunications rooms, to ensure safe and reliable operation of the communications and low-voltage equipment and systems. These recommendations may be used for IT/Telecom Infrastructure program development, space planning, and budgeting of these systems at a conceptual design level. Industry standard and best practice design methodology shall be applied, including BICSI and TIA/EIA design and construction guidelines. For telecommunications infrastructure renovation projects within the facility, any applicable Governor's Office of Information Technology (OIT) design criteria documents should be complied with.

The following list prioritizes voice/data infrastructure upgrades required:

1. Necessary: Retrofit facility with proper MDF/IDF room distribution, which meets industry standard for telecommunication structured cabling system.

2. Necessary: Replace horizontal copper station cabling with Cat 6 network cabling.
3. Necessary: Replace vertical and network backbone cabling with appropriate copper and fiber optic cabling.
4. Necessary: Provide voice/data infrastructure to support wireless access points (WAPs), for wireless network coverage throughout facility.

1.0-F SECURITY SYSTEMS OVERVIEW

The security systems design guidelines outline electronic security systems infrastructure which will enhance security operations and provide a safe and secure environment for persons and assets within the North Campus North Building. The security systems should be planned and designed to allow the security personnel the operational flexibility to provide various levels of security based on the threat level at a given time. Security systems should be designed such that they may be monitored remotely from centralized security monitoring locations. Best practice security design methodology should be applied, including crime prevention through environmental design (CPTED), layered security, integrated design, and concentric circles of protection. Additionally it is recommended that the following document be used a guideline for developing specific security design criteria for renovations: ASIS Facilities Physical Security Measures, IESNA G-1-03 Guideline for Security Lighting, Unified Facilities Criteria UFC 4-010-01.

For renovation projects, applicable State construction standards and design guidelines must be followed. Electronic security systems to be considered for implementation or upgrade include access control, intrusion detection, duress alarm, intercom, video surveillance, and emergency call system. The access control system (ACS) will be an expansion of the existing campus wide system currently installed throughout other State buildings. The ACS shall also serve as the primary security management system for monitoring intrusion alarms. The video surveillance system (VSS) should be comprised of IP digital cameras integrated with the existing VSS. The State's existing wireless duress alarm system infrastructure should be expanded where needed to support new locations of wireless duress buttons.

Existing security systems in State facilities are generally controlled and monitored centrally from Colorado State Patrol's Central Command Center (CCC), located in Denver CO.

Within the building, new head-end security control equipment is to be located in IDF or technology rooms, as coordinated with State IT technical staff. Equipment may include ACS control panels, power supplies, duress alarm panels, network video recorders, and UPS units.

All critical electronic security equipment should be backed-up with emergency power circuits or UPS units. State security personnel and other authorized staff may remotely monitor access control events, system alarms, and security video through network connected client workstations.

For the Campus North Building renovation work, requirements for security device additions/upgrades and specific security system functionality are to be coordinated with State security personnel during design and construction phases.

The following list prioritizes security system upgrades required:

NOTE: Consideration should be given to the investigation of a site security plan.

1. Necessary: Replace/Repair existing Hirsch Access Control card readers.
2. Necessary: Replace analog security cameras with IP PoE minimum 1.2MP cameras.
3. Necessary: Replace existing coaxial CCTV cabling with CAT 6 network cabling, required to support item 1 & 2 above.
4. Necessary: Verify functionality of access control devices and perimeter door alarms, replace if defective. Provide door sensor alarm on all perimeter doors.
5. Necessary: Verify functionality of wireless duress alarms. Provide duress alarms for all public interface counters and cash handling areas.
6. Recommended: Install IP security camera within main entrance/lobby.
7. Recommended: Install intercom station at facility main entrance door exterior. Must be intercom-over-IP (IoIP) based PoE intercom stations. Install IP camera to view intercom.

Consideration should be given in regards to the Installation and mounting details for any security related renovations. Due to the uniqueness of the buildings under consideration, design plans must be cognizant of maintaining the historical attributes of the buildings.

2.0 OVERALL BUILDING ASSESSMENT FINDINGS AND RECOMENDATIONS

2.1 ARCHITECTURE

2.1-A EXTERIOR BUILDING ENVELOPE/SITE

General

The North Campus North Building is a one-story tall building. The original building on the east side is an engineered metal building equipped with multiple overhead rolling doors and few windows. The original building shares an interior structural masonry wall with the new building addition to the west. The west addition has metal panels cladding the exterior walls above a masonry block foundation along the south facade and above a concrete block foundation along the west facade and a portion of the north facade. The metal panels span the full height of the west addition's exterior wall, from the ground to the roof, along the majority of the north facade. The west addition has a double row of windows along the majority of the north and south facades. The entrances to the building are located along the north, east, and south sides of the building. The main building entrances are along the south side. There is an EPDM roof along the entire length of the building. The roof of the original building is slightly higher than the roof over the west addition.

With the exception of the west addition's exterior walls, the building envelope is in poor condition overall. Various elements are showing the effects of deferred maintenance, others are simply damaged or worn out.

Front/South Elevation of the North Campus North Building

Front/South Elevation of the North Campus North Building, West Addition

Front/South Elevation of the North Campus North Building, West Addition Canopy

Front/South Elevation of the North Campus North Building, West End of the Original Building

Eastern Portion of the Original Building Occupied by the Community College of Denver

Side/East Elevation of the North Campus North Building, Looking North

Side/East Elevation of the North Campus North Building, Looking South

Side/West Elevation of the North Campus North Building, West Addition

Back/North Elevation of the North Campus North Building, West Addition

Back/North Elevation of the North Campus North Building, Original Building

Cladding

The metal panels and areas of masonry and concrete block foundation around the exterior of the west addition are in good to fair condition overall. It was noted that the metal panels span the full height of the majority of the west addition's north facade. The metal panels will likely corrode over time where they currently meet the ground.

The metal panels on the exterior walls of the original engineered metal building are in poor condition overall. Areas of peeling paint and areas with evidence of corrosion were observed around the exterior of the original building (see Fig. 2.1.A.1, Fig. 2.1.A.2, and Fig. 2.1.A.3). There were holes and gaps readily observable in the metal panels from the inside of the building (see Fig. 2.1.A.4). Other damaged areas of the metal panels were observed around the building (see Fig. 2.1.A.5 and Fig. 2.1.A.6). The damage is likely from vehicles running into the building. It was noted that there are no concrete guard posts/bollards placed around the original building to protect the structure from vehicle damage in and around the loading dock doors and parking areas. There was dirt and debris observed to be collecting along the north side of the building (see Fig. 2.1.A.7).

Fig. 2.1.A.1 Areas of peeling paint observed at the metal panels around the exterior of the original building.

Fig. 2.1.A.2 Corrosion observed at the metal panels around the exterior of the original building.

Fig. 2.1.A.3 Corrosion observed at the metal panels around the exterior of the original building.

Fig. 2.1.A.4 Holes and gaps in the metal panels readily observable from the inside of the original building.

Fig. 2.1.A.5 Damaged metal panels observed around loading areas at overhead rolling doors around the exterior of the original building.

Fig. 2.1.A.6 Damaged metal panels observed at parking areas around the exterior of the original building.

Fig. 2.1.A.7 Dirt and debris collecting along the north side of the original building.

Recommendations for the original building:

- Demolish the original building structure and rebuild as necessary to suit current needs.

OR, if the building cannot be demolished and must remain in use:

- Remove the building skin around the exterior of the original building and replace with a new building skin, including new insulation.
- Install concrete guard posts/bollards along parking areas and around overhead rolling doors around the exterior of the original building to protect the structure from future vehicular damage.

Glazing Systems and Doors

The windows around the west addition are double-pane with a thermal break. The windows appear to be in good to fair condition overall. The windows around the exterior of the original building appear to be original as well, making them approximately 45 years old. It was reported that replacement of the windows is on the Capitol Complex list of projects that need to be addressed.

The double entrance doors on the south side of the west addition have evidence of extensive wear-and-tear along the bottom halves of the doors with the paint scraped off and exposing the metal (see Fig. 2.1.A.8). Deteriorating weatherstripping was noted at the door on the north side of the west addition with air gaps observed along the base of the door (see Fig. 2.1.A.9).

Deteriorating weatherstripping and wear-and-tear was noted in general at the doors around the exterior of the original building (see Fig. 2.1.A.10, Fig. 2.1.A.11, and Fig. 2.1.A.12). The overhead rolling doors around the exterior of the original building are in generally fair to poor condition with wear-and-tear and damaged noted throughout (see Fig. 2.1.A.13 and Fig. 2.1.A.14).

Fig. 2.1.A.8 Entrance doors with extensive wear-and-tear on the south side of the west addition.

Fig. 2.1.A.9 Deteriorating weatherstripping with air gaps observed along the base of the entrance on the north side of the west addition.

Fig. 2.1.A.10 Deteriorating weatherstripping observed at the exterior doors on the north and south side of the corridor between the original building and the west addition.

Fig. 2.1.A.11 Typical air gaps observed along the base of the doors around the exterior of the original building.

Fig. 2.1.A.12 Typical wear-and-tear and corrosion observed at the doors around the exterior of the original building.

Fig. 2.1.A.13 Wear-and-tear and holes observed at the overhead rolling doors around the exterior of the original building.

Fig. 2.1.A.14 Wear-and-tear and holes observed at the overhead rolling doors around the exterior of the original building.

Recommendations for the west addition:

- Refurbish or replace the entrance doors on the south side of the west addition. Add bumpers to the base of both doors as necessary to protect them from future damage.
- Replace the weatherstripping around the entrance doors on the north and south sides of the west addition as necessary to prevent air leakage from the building.

Recommendations for the original building:

- Demolish the original building structure and rebuild as necessary to suit current needs.

OR, if the building cannot be demolished and must remain in use:

- Replace existing windows around the exterior of the original building with new energy efficient windows and frames.
- Replace entrance doors and overhead rolling doors around the exterior of the original building with new doors and frames and new lever-style door handles.

Roof

The roof over the original building and over the west addition both consist of an EPDM roofing membrane in generally poor condition overall. The exact age of the roof over both sides of the building is unknown. It was reported that the roof over the original building is known to leak but that the roof over the west addition does not have any known leaking issues. Standing water was observed during the site survey visit inside of the northeast corner of the original building (see Fig. 2.1.A.15). It is unknown if the water intrusion occurred from the roof or from the overhead rolling door to the west of the standing water. The EPDM labels show that the membrane is 45 millimeters thick over the west addition and 60 millimeters thick over the original building. Both sides of the roof have deteriorating EPDM with evidence of widespread patching (see Fig. 2.1.A.16 and Fig. 2.1.A.17). The sealant between the seams of the EPDM sheeting and along the edges of the roof was noted to be widely deteriorating or missing entirely (see Fig. 2.1.A.18, Fig. 2.1.A.19, and Fig. 2.1.A.20). A few areas of standing water were observed near the edges around the perimeter of the roof (see Fig. 2.1.A.21). Corrosive dust shedding off of pipes above the roof was noted

to be collecting on the EPDM roofing membrane under the pipes (see Fig. 2.1.A.22). It was reported that replacement of the roof is on the Capitol Complex list of projects that need to be addressed.

Fig. 2.1.A.15 Standing water observed during the site survey visit at the northeast corner of the original building.

Fig. 2.1.A.16 Generally deteriorating EPDM roofing membrane with widespread patching.

Fig. 2.1.A.17 Typical patching observed around the roof.

Fig. 2.1.A.18 Typical instance of deteriorating sealant observed at the roof.

Fig. 2.1.A.19 Typical instance of sealant missing entirely from the seam between the EPDM roofing membrane sheets.

Fig. 2.1.A.20 Typical instance of deterioration along the edge of the roof.

Fig. 2.1.A.21 Standing water observed along the edge of the roof.

Fig. 2.1.A.22 Corrosive dust observed on the EPDM roofing membrane under corroding pipes.

Recommendations for the west addition:

- Replace the existing roof with a new roofing system throughout.

Recommendations for the original building:

- Demolish the original building structure and rebuild as necessary to suit current needs.

OR, if the building cannot be demolished and must remain in use:

- A complete roof tear-off and replacement is recommended for the original building, including replacement of the metal roof panels that span between the steel purlins.

Entrance Canopies

The sealant and weatherstripping around the metal panels of the entrance canopy located at the northwest corner of the original building were noted to be deteriorating or missing entirely (see Fig. 2.1.A.23).

Deteriorating paint was noted along the top of the metal entrance canopy along the south facade of the west addition (see Fig. 2.1.A.24).

Corrosion was observed at the metal entrance canopy on the north side of the west addition (see Fig. 2.1.A.25).

Fig. 2.1.A.23 Deteriorating and missing sealant and weatherstripping observed around the metal panels of the entrance canopy at the northwest corner of the original building.

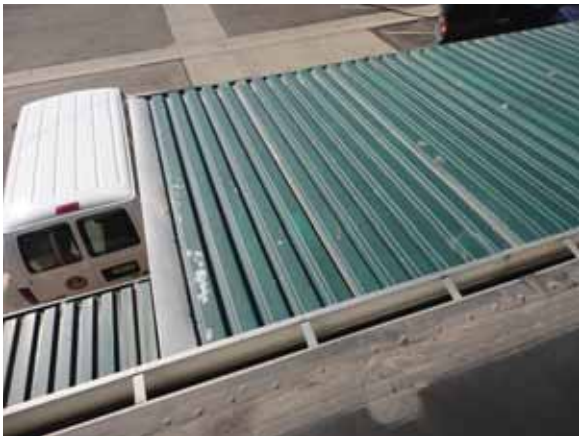

Fig. 2.1.A.24 Deteriorating paint noted along the top of the metal entrance canopy along the south facade of the west addition.

Fig. 2.1.A.25 Corrosion observed at the metal entrance canopy on the north side of the west addition.

Recommendations for the west addition:

- Remove deteriorating paint, and any corrosion, from the top of the metal entrance canopy along the south facade of the west addition, and repaint.
- Remove corrosion from the metal entrance canopy on the north side of the west addition and repaint.

Recommendations for the original building:

- Demolish the original building structure and rebuild as necessary to suit current needs.

OR, if the building cannot be demolished and must remain in use:

- Replace the sealant and weatherstripping around the metal panels of the entrance canopy at the northwest corner of the original building.

2.1-B CODE ISSUES

Applicable Codes

The following approved building codes and standards adopted by State Buildings Programs (SBP) and other state agencies are identified as the minimum requirements to be applied to all state-owned buildings and physical facilities including capitol construction and controlled maintenance construction projects, as revised 7/2013.

The 2012 edition of the International Building Code (IBC)

(as adopted by the Colorado State Buildings Program as follows: Chapter 1 as amended, Chapters 2-35 and Appendices C and I)

The 2012 edition of the International Energy Conservation Code (IECC)

(as adopted by the Colorado State Buildings Program)

The National Fire Protection Association Standards (NFPA)

(as adopted by the Department of Public Safety/Division of Fire Safety as follows with editions shown in parentheses: NFPA-1 (2006), 11 (2005), 12 (2005), 12A (2004), 13 (2002), 13D (2002), 13R (2002), 14 (2003), 15 (2001), 16 (2003), 17 (2002), 17A (2002), 20 (2003), 22 (2003), 24 (2002), 25 (2002), 72 (2002), 409 (2004), 423 (2004), 750 (2003), and 2001 (2004))

The 2007 edition of ASME A17.1 Safety Code for Elevators and Escalators

(as adopted by the Department of Labor and Employment/Conveyance Section and as amended by ASME International)

The 2005 edition of ASME A17.3 Safety Code for Existing Elevators and Escalators

(as adopted by the Department of Labor and Employment/Conveyance Section and as amended by ASME International)

The 2003 edition of ICC/ANSI A117.1, Accessible and Usable Buildings and Facilities

(as adopted by the Colorado General Assembly as follows: CRS 9-5-101, as amended, for accessible housing)

Note: It is anticipated that compliance with the federal Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG) and Colorado Revised Statutes Section 9-5-101 will be met by compliance with the 2012 International Building Code and ICC/ANSI A117.1. However, each project may have unique aspects that may require individual attention to these legislated mandates.

Building Construction Type

The building is 1 story tall and has a total floor area of 23,630 square feet. The North Campus North Building is a structure with multiple occupancy groups related to its uses, according to the International Building Code (2012).

The majority of the west addition appears to serve as secure storage space (see Fig. 2.1.B.1). Cardboard document storage boxes were observed with “CBI Forensic Services” labels within the fenced-off storage areas. It is assumed that the secure storage space does not contain hazardous materials that would result in a high-hazard occupancy classification and that this area would therefore be classified as Occupancy Group S-1 according to the IBC (primary use as a moderate-hazard storage Group S-1 occupancy includes, among others, the use of a building or structure, or a portion thereof, for storage that is not classified as a hazardous occupancy).

The remainder of the west addition appears to consist of offices and a laboratory space in the northeast corner that is reportedly used for the processing of incoming legislative mail. These spaces would be considered as Occupancy Group B according to the IBC (primary use as a Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts). The laboratory space has caution signs referring to the use of X-ray equipment within the space and the potential presence of bombs and biohazards (see Fig. 2.1.B.2). This space should follow the provisions and standards established by the Colorado Department of Public Health and Environment for the control of radiation and other potential hazards related to the function of the space.

The Personnel & Administration Integrated Document Solutions (IDS) Shipping & Receiving storage and warehouse spaces on the southwest side of the original building would be classified as Occupancy Group S-1 according to the IBC (primary use as a moderate-hazard storage Group S-1 occupancy includes, among others, the use of a building or structure, or a portion thereof, for storage that is not classified as a hazardous occupancy).

The space at the northeast corner of the original building appears to be used by the State of Colorado's Division of Oil and Public Safety. There is exterior signage stating that the space is used for "State Oil Inspection." A 10,000 gallon above-ground fuel storage tank was observed within the space during the site survey visit (see Fig. 2.1.B.3). It was reported that the fuel storage tank is no longer used. The quantity of fuel that can be stored in this tank is in excess of the maximum allowable quantity limits and would result in a High-Hazard Group H occupancy classification according to the IBC. Otherwise this area would be classified as Occupancy Group S-1 for the storage of allowable quantities of combustibles and autos. The fuel storage tank should be officially decommissioned and removed from the building if it is no longer in service. If the tank remains, and is unused, it should be decommissioned and rendered unusable. If the tank remains, and is used, this area must comply with International Building Code, National Fire Protection Association Standards, and any applicable Life Safety Code requirements for storage of hazardous materials.

The remainder of the original building is occupied by Community College of Denver. This space includes a welding shop and a machine shop with accessory locker room, small classroom, and office space (see Fig. 2.1.B.4 and Fig. 2.1.B.5) and would be classified as Occupancy Group F-2 according to the IBC (primary use as a low-hazard factory industrial Group F-2 includes uses that involve the fabrication or manufacturing of noncombustible materials which during finishing, packing, or processing do not involve a significant fire hazard). There was a room that appears to store hazardous materials for the Community College of Denver on the southeast corner of the original building (see Fig. 2.1.B.6). The contents of this room should be verified to determine whether a high-hazard occupancy exists.

According to Table 508.4 of the IBC (2012), the required separation between a Group F-2 occupancy and a Group S-1 occupancy is 2 hours when a building is not equipped with an automatic sprinkler system installed in accordance with Section 903.3.1.1. We assume that the required separation between the Group F-2 and Group S-1 occupancies meet code requirements but were unable to confirm the fire-resistance ratings.

It was reported that a code compliance analysis is on the Capitol Complex list of controlled maintenance projects that need to be addressed.

Fig. 2.1.B.1 Fenced-off secure storage areas with cardboard boxes observed throughout the majority of the west addition.

Fig. 2.1.B.2 Laboratory space used for processing incoming legislative mail at the northeast corner of the west addition.

Fig. 2.1.B.3 An above-ground 10,000 gallon fuel storage tank observed in the northeast corner of the original building.

Fig. 2.1.B.4 The Community College of Denver welding shop along the southeast side of the original building.

Fig. 2.1.B.5 The Community College of Denver machine shop along the northwest side of the original building.

Fig. 2.1.B.6 A room with hazardous materials stored by the Community College of Denver observed on the southeast side of the original building.

Egress Issues

Alterations, repairs, additions, and changes of occupancy to, or relocation of, existing buildings and structures shall comply with the current provisions for alterations, repairs, additions and changes of occupancy or relocation. As an existing building, the North Campus North Building is exempt from current code requirements for new construction as long as minimal renovation is done. If the building undergoes extensive renovation, the following issues may need to be addressed per current code requirements.

According to Table 1014.3 of the IBC (2012), the common path of egress travel for a building without a sprinkler system in B-type and S-type occupancies is 100 feet with an occupant load less than 30 and 75 feet with an occupant load greater than 30. The common path of egress travel for a building without a sprinkler system in an F-type occupancy is 75 feet regardless of the occupant load. The plans provided by the Owner appear to indicate that the spaces throughout the North Campus North Building comply with these code requirements with the exception of the Community College of Denver's F-type occupancy areas. The length of the longest common path of egress travel from the southwest corner of the Community College of Denver machine shop appears to be approximately 98 feet. If the door leading to the north-south corridor on the west side of the original building still existed, as indicated by the plans provided by the Owner, this space would be in compliance with the code requirements for the length of the longest common path of egress travel. Alternatively, if the space were equipped with an approved automatic sprinkler system, the length of the common path of egress travel would increase to 100 feet and this space would be in compliance with the code requirements for the length of the longest common path of egress travel. The length of the longest common path of egress travel and the occupancy loads of each floor should be verified as part of any future renovation plan.

According to Table 1016.2 of the IBC (2012), the exit access travel distance in a B-type and in an S1-type occupancy without a sprinkler system is 200 feet. The exit access travel distance in an F2-type occupancy without a sprinkler system is 300 feet. The approximate greatest distance of travel that exists from the most remote point on any of the North Campus North Building's floor plans to an exit is 120 feet according to the plans provided by the Owner, which is well within either the 200 feet or the 300 feet allowed

by code. The length of the greatest distance of travel and the occupancy loads of each floor should be verified as part of any future renovation plan.

The north-south corridor on the west side of the original building is currently being used as storage space (see Fig. 2.1.B.7). The storage on either side of the corridor has reduced the width of the corridor. Materials are also being stored just outside of the pair of doors on the north side of the corridor, blocking the west side of the doors (see Fig. 2.1.B.8). The corridor width appears to be wide enough for the current egress requirements of the IDS Shipping & Receiving storage and warehouse spaces on the southwest corner of the original building. If the building occupancies change, the items being stored within the corridor and blocking the north exit may need to be removed per egress code requirements.

It was noted that the egress doors throughout the areas occupied by the Community College of Denver are equipped with bolt-style locks (see Fig. 2.1.B.9 and Fig. 2.1.B.10). The egress door on the west end of the south side of the welding shop was observed to have a latch-style locking device used in conjunction with a padlock (see Fig. 2.1.B.11). According to Section 1008.1.9.4 of the IBC (2012), manually operated flush bolts or surface bolts are not permitted. Panic hardware or fire exit hardware should be provided on these doors per egress code requirements to allow egress even when the doors are locked and the space is not open to the general public.

Fig. 2.1.B.7 The north-south corridor along the west side of the original building is currently used for storage.

Fig. 2.1.B.8 Materials being stored outside of the pair of doors on the north side of the north-south corridor located along the west side of the original building.

Fig. 2.1.B.9 Bolt-style locks observed on the egress doors throughout the areas occupied by the Community College of Denver.

Fig. 2.1.B.10 Bolt-style locks observed on the egress doors throughout the areas occupied by the Community College of Denver.

Fig. 2.1.B.11 A latch-style lock used in conjunction with a padlock observed on an egress door on the west end of the south side of the Community College of Denver's welding shop.

Recommendations for the original building:

- Demolish the original building structure and rebuild as necessary to suit current needs.

OR, if the building cannot be demolished and must remain in use:

- Restore the egress door leading to the north-south corridor from the southwest corner of the Community College of Denver's machine shop or install an approved sprinkler system throughout per code requirements.
- Remove the manually operated flush bolts or surface bolts from the egress doors throughout the spaces in the original building occupied by the Community College of Denver. Any new locking devices or hardware must comply with means of egress code requirements.
- Remove the materials currently blocking the pair of egress doors from the outside on the north side of the north-south corridor along the west side of the original building.

Fire Suppression Systems

The North Campus North Building is not equipped with an automatic sprinkler system.

Recommendations for the west addition:

- If any amounts of hazardous materials exceed the exempt amounts outlined by the IBC (2012), within any area of the North Campus North Building, the extra material(s) should be removed. If the material(s) must remain, any areas classified as high-hazard occupancies by the IBC (2012) must be brought into compliance with code requirements.

Recommendations for the original building:

- Demolish the original building structure and rebuild as necessary to suit current needs.

OR, if the building cannot be demolished and must remain in use:

- If any amounts of hazardous materials exceed the exempt amounts outlined by the IBC (2012), within any area of the North Campus North Building, the extra material(s) should be removed. If the material(s) must remain, any areas classified as high-hazard occupancies by the IBC (2012) must be brought into compliance with code requirements.
- A fully automatic sprinkler system must be installed throughout per code requirements unless an additional exit door is provided on the west side of the Community College of Denver's machine shop.

Stairs and Ramps

The stairways throughout the North Campus North Building serve mezzanine areas throughout the original building. The areas of the original building occupied by the Community College of Denver are considered a Group F occupancy used by students and are therefore considered spaces that are open to the public. The areas of the original building serving the IDS Shipping & Receiving storage and warehouse spaces on the southwest side and the storage space on the northeast side are areas that are generally considered a Group S occupancy used by employees only and are therefore considered spaces that are not open to the public.

There were issues noted with the stair dimensions and details with the mezzanine stairways included in the site survey visit. The stairways included in the site survey visit were noted to generally have railing systems on only one side of the stairs (see Fig. 2.1.B.12). According to Section 1009.15 of

the IBC (2012) and Section 505.2 of ICC/ANSI A117.1 (2003), handrails shall be provided on both sides of stairs and ramps.

The stair riser heights of the stairway leading to the mezzanine area in the IDS Shipping & Receiving space are approximately 7-1/4 inches (see Fig. 2.1.B.13). According to Section 1009.7.2 of the IBC (2012), stair riser heights shall be 7 inches maximum and 4 inches minimum.

The top of the railings are too low in height. The top of the railing above the stair nosing of the IDS Shipping & Receiving stairway is approximately 31 inches (see Fig. 2.1.B.14). The top of the railing along the edge of the IDS Shipping & Receiving mezzanine is approximately 36-1/4 inches above the walking surface (see Fig. 2.1.B.15). The top of the railing above the stair nosing of the stairway on the east side of the Community College of Denver's welding shop is approximately 32 inches (see Fig. 2.1.B.16). The top of the railing along the edge of the mezzanine on the northeast side of the Community College of Denver's welding shop is approximately 40-1/2 inches above the walking surface (see Fig. 2.1.B.17). According to Section 1012.2 of the IBC (2012) and Section 505.4 of ICC/ANSI A117.1 (2003), handrail height, measured above stair tread nosing, or finish surface of ramp slope, shall be uniform, not less than 34 inches and not more than 38 inches. According to Section 1013.3 of the IBC (2012), required guards located along the open-side of walking surfaces shall not be less than 42 inches high, measured vertically from the adjacent walking surfaces and from the line connecting the leading edges of the tread nosings on stairs.

The distance between the guards at the stairway and mezzanine railings in the IDS Shipping & Receiving area is approximately 16 inches, which is well within the 21 inches allowed in areas that are not open to the public. The current guardrail system along the edge of the mezzanine at the northeast corner of the Community College of Denver's welding shop is open to the public and exceeds guardrail opening limitations, easily allowing passage of a sphere 4 inches in diameter (see Fig. 2.1.B.18). According to Section 1013.4 of the IBC (2012), required guardrails shall not have openings which allow passage of a sphere 4 inches in diameter.

It was noted that a section of the mezzanine platform along the outside edge is not protected with a guardrail system (see Fig. 2.1.B.19). According to Section 1013.2 of the IBC (2012), guards shall be located along open-sided walking surfaces, including mezzanines and stairways, that are located more than 30 inches measured vertically to the floor or grade below at any point within 36 inches horizontally to the edge of the open side.

Fig. 2.1.B.12 Typical instance of handrails that exist on only one side of the stairs throughout the original building.

Fig. 2.1.B.13 Existing stair riser heights observed at the stairway leading to the mezzanine in the IDS Shipping & Receiving space on the southwest side of the original building.

Fig. 2.1.B.14 The height to the top of the railing measured above the stair tread nosing at the stairway leading to the mezzanine in the IDS Shipping & Receiving space on the southwest side of the original building.

Fig. 2.1.B.15 The height to the top of the guardrail along the edge of the mezzanine in the IDS Shipping & Receiving space on the southwest side of the original building.

Fig. 2.1.B.16 The height to the top of the railing measured above the stair tread nosing of the stairway on the east side of the Community College of Denver's welding shop.

Fig. 2.1.B.17 The height to the top of the guardrail along the edge of the mezzanine at the northeast corner of the Community College of Denver's welding shop.

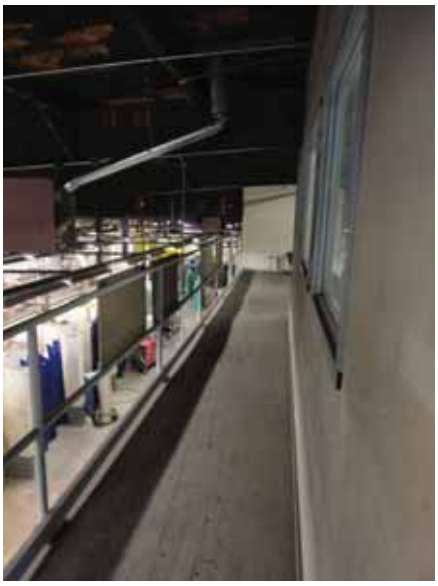

Fig. 2.1.B.18 The distance between the guardrail openings exceeds 4 inches in diameter along the edge of the stairway and mezzanine at the northeast corner of the Community College of Denver's welding shop.

Fig. 2.1.B.19 A section of the IDS Shipping & Receiving mezzanine observed without a guardrail system along the outside edge.

Recommendations for the original building:

- Demolish the original building structure and rebuild as necessary to suit current needs.

OR, if the building cannot be demolished and must remain in use:

- Replace the existing stairway and mezzanine railing systems with new railing systems that comply with the code requirements.
- Install a new handrail system along the wall-side of each stair, where not provided, in order to comply with the code requirement that handrails shall be provided on both sides of stairs and ramps.

- Rework the stairway to the IDS Shipping & Receiving mezzanine area to comply with code requirements.
- Install a guardrail system along the edge of the IDS Shipping & Receiving mezzanine in the southwest corner of the original building where not provided.

Doors

The interior doors observed throughout the west addition are equipped with lever-style door handles.

The majority of the interior doors observed throughout the original building are equipped with lever-style door handles. A few interior doors were observed to have knob-style door handles throughout the original building (see Fig. 2.1.B.20). A number of the egress doors throughout the spaces occupied by the Community College of Denver are equipped with knob-style door handles (see Fig. 2.1.B.21). According to Section 309.4 of the 2003 edition of ICC/ANSI A117.1, the knob-style handles do not meet the requirement that: operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. Section 309.4 further states that the force required to activate operable parts shall be 5.0 pounds (22.2 N) maximum.

Fig. 2.1.B.20 Typical knob-style door handle observed on a few of the interior doors throughout the original building.

Fig. 2.1.B.21 Typical knob-style door handle observed on a number of the egress doors throughout the spaces occupied by the Community College of Denver.

Recommendations for the original building:

- Demolish the original building structure and rebuild as necessary to suit current needs.

OR, if the building cannot be demolished and must remain in use:

- Replace any knob-style handles on the interior doors and egress doors throughout the original building with lever-style handles.

Security

There is a fence on the south side of the building to the west of the area used by the Community College of Denver (see Fig. 2.1.B.22) and a fence surrounding the property which controls access to the portions of the North Campus North Building serving the State of Colorado. A security camera was observed on a light pole on the east end of the south side of the west addition (see Fig. 2.1.B.23). Electronic door entry systems were observed outside of the main entrances to the west addition and to the IDS Shipping & Receiving area (see Fig. 2.1.B.24). A security camera was observed within the secure storage area on the northwest side of the west addition (see Fig. 2.1.B.25). It was reported that more site security is needed.

Fig. 2.1.B.22 Exterior fence controlling access to the North Campus site to the west of the space occupied by the Community College of Denver in the North Building.

Fig. 2.1.B.23 Security camera observed on a light pole on the east end of the south side of the west addition.

Fig. 2.1.B.24 Signage for a security system and an electronic door entry system observed at the entrance to the IDS Shipping & Receiving area.

Fig. 2.1.B.25 Security camera observed in the secure storage area on the northwest side of the west addition.

2.1-C GENERAL ACCESSIBILITY ISSUES

The west addition of the North Campus North Building has a generally accessible building entrance on the south side of the building. Two of the three single-person restrooms serving the west addition appear to generally comply with accessibility standards. The drinking fountain that serves the west addition appears to generally comply with accessibility standards. There were no break rooms observed throughout the areas of the west addition included in the site survey visit. It is unknown if there are any break room sinks and whether or not they are accessible.

The original building does not generally comply with accessibility standards. The change in vertical floor height from the exterior of the building to the interior of the building at the entrances appears to be greater than 1/2-inch in height. The restrooms throughout the original building were not included in the site survey visit. However, according to a report prepared for the State of Colorado Department of Personnel and Administration titled “Due Diligence Report for: North Campus, Denver, Colorado” dated September 15, 2009, the existing restrooms throughout the original building do not generally comply with accessibility standards. The drinking fountains observed throughout the original building are generally not accessible (see

Fig. 2.1.C.1). There were no break rooms observed throughout areas of the original building included in the site survey visit. It is unknown if there are any break room sinks and whether or not they are accessible.

Fig. 2.1.C.1 Typical non-accessible drinking fountain observed throughout the original building.

Recommendations:

- Demolish the original building structure and rebuild as necessary to suit current needs.

OR, if the building cannot be demolished and must remain in use:

- Provide a minimum of one accessible entrance to each separate area of the original building.
- Reconfigure restrooms throughout the original building to provide a minimum of one wheelchair accessible toilet compartment per restroom.
- Replace any knob-style lavatory faucet controls with accessible lever-style faucet controls where not provided throughout the original building.
- Install insulation around accessible lavatory pipes where not provided throughout the original building.
- Reconfigure urinal alcoves to provide the required minimum width per accessibility standards for a forward approach where not provided throughout the original building.
- Replace all non-accessible drinking fountains with accessible drinking fountains throughout the original building.
- Install accessible sinks in the Break Rooms throughout the original building where not provided.

2.1-D ELEVATORS

It is our understanding that there are no elevators in the North Campus North Building.

2.1-E ENVIRONMENTAL

It was reported that asbestos is present in the North Campus North Building.

Based on the construction date of the building, it is possible that surfaces are painted with paint containing lead.

Recommendations:

- Demolish the original building structure, including the abatement of all asbestos, and rebuild as necessary to suit current needs. Test the original building materials for asbestos prior to abatement.

OR, if the building cannot be demolished and must remain in use:

- Test the building materials for asbestos and abate all asbestos throughout the building as necessary.
- Sampling for lead paint must be completed if any painted surfaces will be sanded.

2.1-F PLANNED AND ON-GOING PROJECTS

There are no known planned and on-going architectural projects for the building currently.

2.2 STRUCTURAL

2.2-A EXTERIOR BUILDING ENVELOPE

The exterior of the structure was in fair condition. The lowest portions of metal wall panels at the building's north side have some corrosion. The roll-up doors at the north side are obstructed with approximately 2-4" of deposited sediment (Fig. 2.2.A.1).

Fig. 2.2.A.1

There was some damage to the exterior metal panel skin, likely due to a vehicle colliding with the structure (Fig. 2.2.A.2).

Fig. 2.2.A.2

Exterior downspouts were observed to empty within 1'-0 of the building line (Fig. 2.2.A.3).

Fig. 2.2.A.3

Recommendations:

- Locations with corroded steel should be cleaned of all corrosion and painted with an exterior-grade coating.
- Increase the length of downspouts such that they empty at least 3'-0 from the building line, or add splashblocks of equivalent length.
- Replace damaged metal panels.

Items noted above do not pose any structural loading issues based on the current use. Repairs are to maintain performance and reduce further deterioration.

2.2-B BUILDING INTERIOR

The structural framing that was readily observable is in fair condition. The majority of the steel framing appears to have been coated with some sort of thermal spray-on insulation. This coating prevented close examination of significant portions of the structure. The anchorage of this coating is beginning to fail, and subsequently small to medium pieces of insulation are falling from the structure.

An interior steel beam supporting a landing in the eastern half of the building has a proportionally large hole cut through the beam web (Fig. 2.2.B.1).

Fig. 2.2.B.1

At the easternmost end of the landing referenced in Fig. 2.2.A.1, a portion of guardrail is missing (Fig. 2.2.B.2).

Fig. 2.2.B.2

Recommendations:

- Retain a licensed engineer to analyze the steel beam with a hole to determine its structural adequacy and provide enhancement details as required.
- Install a guardrail at the entire length of the landing.

Items noted above may pose a structural loading issue, depending on the outcome of the recommended analysis of the steel landing beam.

2.2-C FALL PROTECTION

The roof of the building was sloped and no fall protection was provided. A fall protection system should be installed along the roof to meet current safety codes.

2.2-D PLANNED AND ON-GOING PROJECTS

N/A

2.3 CIVIL

2.3-A EXTERIOR BUILDING ENVELOPE/SITE

General

The State of Colorado North Campus contains three buildings originally considered "temporary" buildings; the west, north and east buildings. This assessment report covers the north building. The north building of the State of Colorado North Campus site is located at the northwest corner of East 62nd Avenue and Downing Street with an address of 6321 North Downing Street in Adams County, Colorado (Fig. 2.3.A.1). The building is bordered by the west and east buildings of the North Campus to the south and a variety of industrial development to the north, east and west. The north building of the North Campus site is approximately 1.97 acres. The existing site consists of the building, parking lot and street right-of-way including sidewalk. There is no landscaping on the north building site with the exception of a few trees growing out of the asphalt. The main building entrance is accessed from the south side (Fig. 2.3.A.2). The site surrounding the building is consistent with a building approximately 30 years old.

NOTE: Descriptions of existing infrastructure contained herein are based on public utility information provided by the North Washington Street Water and Sanitation District and Adams County. Unless noted otherwise, no detailed survey information was reviewed as part of this site analysis. Estimates of drainage patterns, site grades, and slopes are based upon visual observation or information provided by others, i.e. Google Earth.

Figure 2.3.A.1 – North Building of North Campus Vicinity Map

Figure 2.3.A.2 – North Building, South Entrance

Grading and Drainage

The site slopes generally from west to east. The high point of the site is directly west of the west building of the North Campus. Runoff to the north, west and south drains overland to a series of pans and is collected by inlets north of the building or drains off-site. Storm sewer conveys collected runoff easterly and then northerly towards East 64th Avenue. Runoff on the east side of the building drains overland towards Downing Street.

The main entrance to the building is located on the south side and is accessed via a parking lot (Fig. 2.3.A.3). There is another entrance on the north side (Fig. 2.3.A.4) along with a series of garage doors (Fig. 2.3.A.5 to Fig. 2.3.A.7). All the building entrances are at grade and appear to meet ADA accessibility guidelines. The entire site surrounding the building is paved.

No obvious signs of building settlement were observed. The foundation of the building appears to be stable.

Figure 2.3.A.3 –South Entrance Parking Lot

Figure 2.3.A.4 – North Entrance

Figure 2.3.A.5 – Garage Entrance

Figure 2.3.A.6 – Garage Entrance

Figure 2.3.A.7 – Garage Entrance

Previous drainage studies are not available for this site at this time. It is assumed that drainage facilities and conveyances are designed for the 5-year and the 100-year rainfall events, per the Adams County Drainage Criteria. The site appears to ultimately discharge to the South Platte River.

The effective Flood Insurance Rate Map (FIRM Ma Number 08001C0611H, effective date March, 5, 2007) shows the property lies within Zone X, areas designated as outside of the 500-year floodplain. To our knowledge, there are no known existing flood control problems or drainage issues.

Utility Services

The building utility demands are unknown at this time. The building water service line appears to connect to a 6-inch water main located in Downing Street. The water main routes water northerly towards East 64th Avenue. There is one fire hydrant located near the building. It is southeast of the building near the intersection of East 62nd Avenue and Downing Street. There are no known water pressure problems at this time.

The building is serviced by an 8-inch sanitary sewer line located in Downing Street. This line runs northerly towards East 64th Avenue. There are no known sanitary sewer capacity problems at this time.

Existing storm sewer collects site runoff from two main inlets located on the northeast side of the site. These inlets collect site runoff from all three buildings on campus. The inlets route runoff northerly within Downing Street towards East 64th Avenue. There are no known storm sewer problems at this time.

Existing dry and regulated utilities (electric and telecommunications) are assumed to be located in Downing Street.

Site Paving

The site asphalt was noted to be in very poor condition (Fig. 2.3.A.8 and Fig. 2.3.A.9). Numerous locations of depressions and cracking were observed. It is recommended that the entire site be re-paved to improve the surface drainage and maintain the site posterity.

Figure 2.3.A.8 – Poor Site Asphalt Condition

Figure 2.3.A.9 – Poor Site Asphalt Condition

Recommendations:

- Remove existing asphalt. Re-grade and re-surface the site with new asphalt for proper drainage.

2.3-B CODE ISSUES

The site exterior was analyzed for general conformance with ADA; however a complete accessibility audit is not included in the scope of services. The site appears to comply with current standards for entrance accessibility.

Site slopes were analyzed by visual inspection and topography was evaluated using Google Earth. Current geotechnical recommendations and standard practice for slopes away from the building are 10:1 for 10 feet and 2% in hardscape areas. Since the site is all hardscape, the site generally meets these slopes (Fig. 2.3.B.1). Ponding was observed at one location to the west of the building in the parking lot (Fig 2.3.B.2). Ponding at this location is a minor concern but causes a safety hazard. Stagnant water provides an opportunity for mold and mildew growth, which is slippery in a walking path. In the winter, the water will freeze and become ice. Ponding of water will also create more opportunity for asphalt cracking and deterioration. It is recommended that this area be re-graded and re-paved to provide positive drainage.

Figure 2.3.B.1 – Building Perimeter

Figure 2.3.B.2 – Standing Water

Recommendations:

- Re-grade and re-pave site to re-establish drainage paths.
- Install area drains at low points and where proper slopes cannot be met.
- Remove asphalt curb shown in Figure 2.3.B.2.

2.3-C PLANNED AND ON-GOING PROJECTS

There are no known site planned and on-going projects at this time.

2.4 MECHANICAL, ELECTRICAL, AND PLUMBING

2.4-A OVERVIEW OF EXISTING SYSTEMS

ELECTRICAL SYSTEMS

The power for this building provided by Xcel energy is supplied through a set of three 100kVA transformers for a total of 300kVA.

The electrical service comes in the east side of the building and branches out to feed the panels and transformers throughout the building.

Fig. 2.4.A.1 – Utility transformer

Fig. 2.4.A.2 – Service Entrance

Fig. 2.4.A.3 – Panelboards

Fig. 2.4.A.4 - Panelboards

Lighting

The lighting system throughout the building consists of a combination of linear T8 fluorescent and recessed T8 fluorescent luminaires. Some of the luminaires appear to be in good working condition and others appear to be in poor working condition and need to be replaced.

Very few to no automatic occupancy controls were observed. The parking lot and exterior lighting are a combination of newer LED and older metal halide luminaires (see Fig. 2.4.A.8).

The exit signs appear to be in good condition. Emergency egress lighting is provided by twin-head wall packs located throughout the building (see Fig. 2.4.A.10). One of the exit signs observed had an open cover and was missing its battery (see Fig. 2.4.A.11). This unit should be repaired or replace with new.

Fig. 2.4.A.5 – Linear luminaires located in the open office space

Fig. 2.4.A.6 – Recessed lensed luminaires located in the student class room

Fig. 2.4.A.7 – Linear luminaires located in the welding shop

Fig. 2.4.A.8 – Wall mounted LED luminaire

Fig. 2.4.A.9 – Pole mounted metal halide luminaire

Fig. 2.4.A.10 – Twin-head wall pack emergency luminaire

Fig. 2.4.A.11 – Exit sign

Fire Alarm

The fire alarm system is an older Fire Lite system with full detection and pull stations. The devices are functioning. The facility's staff member stated during the walk that this system needs to be replaced to be brought up to the new standard Notifier fire alarm system.

Fig. 2.4.A.12 – Fire alarm panels

Fig. 2.4.A.13 – Smoke detector

Fig. 2.4.A.14 – Heat detector

General Power

Most receptacles appear to be in good working condition; however, some of the spaces have receptacles that are in bad condition.

There are two electric vehicle charging stations on the south side of the building (see Fig. 2.4.A.17).

Fig. 2.4.A.15 – Receptacle located in the weld shop

Fig. 2.4.A.16 – Receptacle located in the student class room

Fig. 2.4.A.17 – Electric Vehicle Charging Station

Welding and Machine Shop

The weld shop and machine shop used by the community college are on the east side of the building. They are both areas where the students are able to weld, grind, cut, and machine various types of metals. The 2011 National Electrical Code provides requirements for areas that have combustible dust. Since aluminum, iron, tin, and titanium are all listed in the code as hazards, if the amount produced is high enough, the electrical equipment in the room would need to be rated for this environment. During the site visit, none of the areas had an excessive amount of metal dust observed. One way to keep dust down is by having a good routine of housekeeping. It appears that good housekeeping is being followed in both of these spaces. Since the welding and machine shop will be moving to a new facility in the near future these rooms may be repurposed in the next year or so. Refer to the mechanical sections for ventilation and fire protection requirements and architectural sections for building construction requirements.

Fig. 2.4.A.18 – Aluminum pipe tag

Fig. 2.4.A.19 – Various metal stock used in the shop

Recommendations:

- The electrical load capacity feeding this building appears to be less than other buildings of this size and use. Verify with the utility company the peak demand and assess if the service is adequately sized. If found to be undersized, a full power upgrade may be required to meet the current use of the building. Since no problems were documented during the site visit, after the weld and machine shop moves out, the building's service capacity may be adequate.
- Automatic lighting controls are recommended throughout the building. This would conserve energy in the offices, storage, hallways, break, and conference rooms. Some of the older luminaires should be updated. We recommend replacing the fluorescent luminaires with LED luminaires as project budgets allow. LED luminaires have more control options such as dimming, individual controls, and daylighting. LED luminaires also reduce maintenance cost.
- A fire alarm system replacement is recommended. Since Notifier is the standard system for the state, it is recommended to provide an addressable Notifier system as an upgrade.

MECHANICAL SYSTEMS

This building's heating and cooling is provided by rooftop units (RTUs). Some of the units are original with the building and some have been replaced in last few years (see Fig. 2.4.A.20 and Fig. 2.4.A.21). The new

units are installed on top of existing curb using curb adaptors. The new units meet the current energy efficiency standards. The units appeared to maintained in good condition but some units need maintenance work like replacing filters, installing condensate p trap etc. (see Fig. 2.4.A.30 and Fig. 2.4.A.32).The original RTUs appear to be at the end of their useful life and should be replaced with new efficient units (see Fig. 2.4.A.29). The older units are not high efficiency units.

A portion of the building that is used for storage of printing press paper has a mezzanine floor. The mezzanine is also being used as storage and office space. The HVAC system for the storage portion primarily consists of DX gas fired rooftop units connected to the supply and return ductwork in the space. The storage area is provided with gas fired unit heater for heating (see Fig. 2.4.A.22, Fig. 2.4.A.37 and Fig. 2.4.A.38).

The portion of the building occupied by the community college is primarily used as lab spaces including a welding shop, grinding shop, and machine shop (see Fig. 2.4.A.26 and Fig. 2.4.A.34). The mezzanine floor is being used as a locker room (see Fig. 2.4.A.35). Also located in this portion of the building is a large PVC fuel storage tank (see Fig. 2.4.A.25), which per lab supervisor is empty and not being used. The HVAC system for this portion of the building consists of DX gas fired RTUs and a ventilation system consisting of an exhaust fan (see Fig. 2.4.A.24) and a makeup air fan. Each welding booth is provided with a snorkel for fume exhaust. Two direct evaporative coolers are provided to condition the spaces. The exhaust fans and evaporative coolers are rusted and appear to be at the end of their useful life (see Fig. 2.4.A.23). The original RTUs are at the end of their useful life and should be replaced. The lab supervisor indicated that they have plans to move to a new building in 2014.

The building is not provided with a sprinkler system; only heat detectors are provided. The building has separate domestic water entry. Domestic hot water is generated by an electric hot water heater (Fig. 2.4.A.27). The main fire entry to the building is on the east side of the building. The main gas meter is also located on the east side (see Fig. 2.4.A.28). The gas piping on the roof is rusted and needs cleaning and painting (see Fig. 2.4.A.31).

The mail sorting area was not accessible during the site visit (see Fig 2.4.A.33).

Fig. 2.4.A.20 – Rooftop units

Fig. 2.4.A.21 – New RTU installation

Fig. 2.4.A.22 – Gas fired unit heater

Fig. 2.4.A.23 – Evaporative cooler

Fig. 2.4.A.24 – Welding shop exhaust fan

Fig. 2.4.A.25 – Waste gasoline storage tank

Fig. 2.4.A.26 – Machine shop layout

Fig. 2.4.A.27 – Electric hot water heater

Fig. 2.4.A.28 – Gas entry/ meter

Fig. 2.4.A.29 – Existing RTU

Fig. 2.4.A.30 – Existing unit, outside air filter damaged

Fig. 2.4.A.31 – Gas piping on roof

Fig. 2.4.A.32 – No trap on condensate drain

Fig. 2.4.A.33 – Mail sorting room

Fig. 2.4.A.34 – Welding shop layout

Fig. 2.4.A.35 – Mezzanine locker room

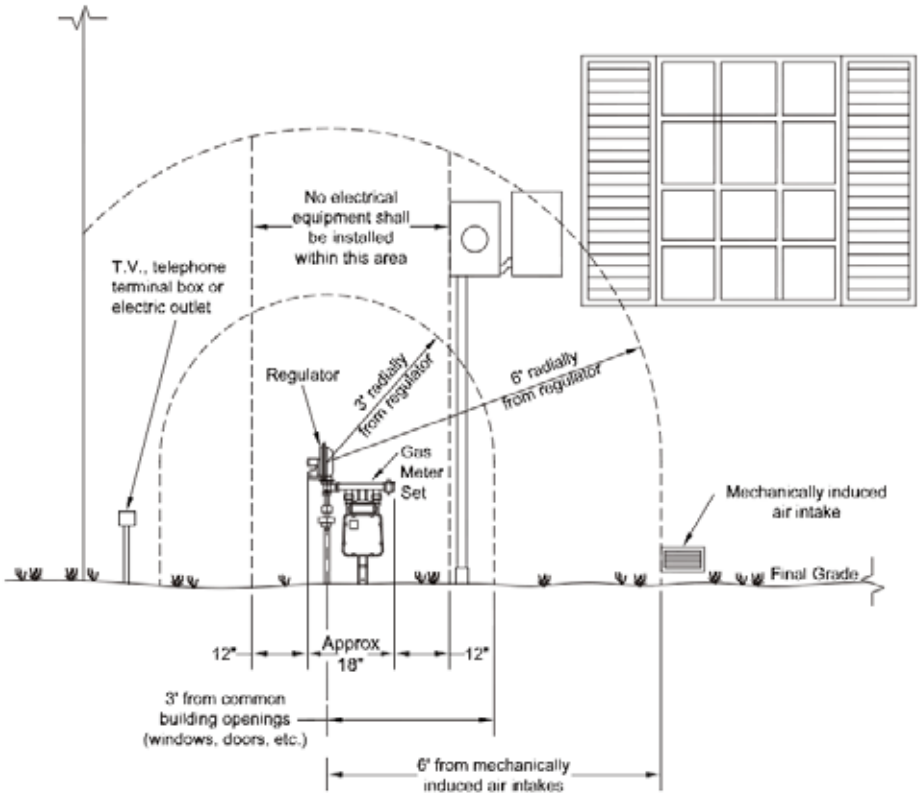

Fig. 2.4.A.36 – Xcel energy requirements

Fig. 2.4.A.37 – First level storage

Fig. 2.4.A.38 – Mezzanine level storage

Recommendations:

- The condenser fins for the original RTUs are damaged. The units appear to be at the end of their useful life. Plan for replacement of old RTUs with new efficient units, which will result in energy cost savings.
- Xcel Energy rebates may be available for RTU replacement.
- Provide local exhaust for grinding/machine shop.
- The outside air intake filters for the RTU is falling apart and needs replaced. Provide a new filter.
- The gas piping on the roof is rusted. Clean and paint the piping to minimize weather effect on piping. Also provide piping identification tags.
- A RTU condensate drain trap is missing. Provide trap to meet RTU requirements.

- The mail sorting area was not accessible during the site visit. Verify that adequate ventilation is provided for this area as per the code.
- Verify that ventilation provided in the welding shop is as required by current code. Minimum exhaust airflow of 0.5 cfm/sq.ft is required by code.
- Verify ventilation provided to mezzanine floor locker room. Even though the locker room is open to the welding shop on one side, it appears that ventilation is not sufficient in locker room. Minimum exhaust airflow of 0.25 cfm/sq. ft. is required by code.
- The exhaust fan appears to be too close to the gas meter/regulator. Verify radial distance between the gas regulator and exhaust fan is as per Excel energy requirements (see Fig 2.4.A.36).
- Consider providing sprinklers for fire suppression in the storage areas.
- Since the building has a gas supply, replace the existing electric domestic water heater with a gas fired heater (see Fig 2.4.A.27). This will result in energy cost savings.
- Since the waste gasoline storage tank is not being used, arrange for a de-commissioning of the tank and remove it from the building.

2.4-B CODE ISSUES

ELECTRICAL CODE ISSUES

We recommend a good routine of housekeeping for the the Welding and Machine Shop to ensure that combustible dust does not accumulate on the electrical gear. This will help increase the safety in the building. However, any issues may be resolved if the community college relocates and the space is used for something else.

Recommendations:

- Ensure all rooms have the right rating.

MECHANICAL CODE ISSUES

Ventilation in the spaces appears to be less than minimum code requirement.

Gas piping painting and identification is not to code.

Recommendations:

- Verify ventilation requirement of each space as required by code and ensure minimum ventilation is provided.
- Paint the gas piping and provide piping identification tags.

2.4-C PLANNED AND ON-GOING PROJECTS

It was reported that the community college will be relocating to a new facility next year.

2.5 VOICE AND DATA

2.5-A OVERVIEW OF EXISTING SYSTEMS

Findings

Note SMW was not scoped for this task, for this building or the remaining building assessments. SMW provided voice/data survey and assessment scope for the Capitol Annex Building (1375 Sherman Street) and the Centennial Building (1313 Sherman Street) only.

Recommendations:

The recommendations and guidelines within this section shall establish the Basis of Design for the IT Infrastructure portion of the renovation of the North building.

The building should be provisioned with the following pathways, spaces and cable media.

Telecommunications Rooms (i.e. Spaces)

1. Main Equipment Room (MDF) / Entrance Facility Room (EF)

- One consolidated Main Equipment Room (MDF) / Entrance Facility Room (EF) shall be installed within the building.
- This main MDF room will include both the Building Entrance Facility for supporting outside plant cabling and raceways and will be the main equipment room for installation of the low voltage and communications systems' (also referred to as the Technology systems) head end equipment.
- The MDF room shall be a minimum of 12' x 16' in size, capable of supporting the installation of one row of racks, with approximately six (6) equipment racks / cabinets.
- The MDF room shall be installed on the first floor of the building. Avoid the basement due to potential flooding.

2. Telecommunications Rooms (IDFs)

- A minimum of one (1) telecommunications room (i.e. IDF rooms) will need to be installed on each floor and should be vertically stacked, floor-to-floor. Buildings with larger floor plates may require a second IDF room on each floor, vertically stacked as a second riser within the building.
- The IDF rooms shall be a minimum of 10' x 12' in size, capable of supporting the installation of one row of four (4) equipment racks.

3. Telecommunications Room Locations

- The TIA Standards requires one IDF room per floor and it shall be located as close as possible to the center of the area being served, preferably in the core area.
- Additional IDF rooms are required per floor when the floor area served exceeds 10,000 square feet or the horizontal distribution distance to the field device or telecom outlet exceeds 295 feet (or 90 meters).
- Telecommunications rooms should not share a common wall with an electrical room due to potential electromagnetic interference (EMI) issues. If it is imperative due to constraints to place both of these rooms adjacent, then a double wall with a 1 foot internal separation should be considered or the layout of the electrical room should preclude mounting of equipment on the common wall.

Telecommunications Pathways (i.e. Conduit/Raceways)

1. Backbone Pathways

- Telecommunications pathways will need to be installed from the MDF room to each IDF room within the building.
- Provide a minimum of three (3) 4-inch conduits from the MDF room to each IDF riser within the building.
- Provide a minimum of three (3) 4-inch conduit sleeves vertically between stacked IDF rooms.
- Provide a telecommunications pathway up to the roof of the building to support future satellite antennas.

2. Horizontal Pathways

- Telecommunications pathways will need to be installed from telecom outlets and IP field devices to the IDF room serving the floor.
- Provide cable tray on each floor within the accessible ceiling spaces of the main corridors as the primary pathways from IDF rooms to telecommunications outlets and field devices.
- Cable tray shall be ladder type aluminum tray with a 9" rung spacing and a width of 18 inches in main corridors and 12 inches in secondary cable tray segments. Cable trays shall be 4 inches in depth.
- For facilities designated as historic buildings, alternate cable routing may require the use of surface mounted conduit and wireways, to comply with historic preservation codes. In these cases, the cable installation design must be coordinated with the State prior to construction.
- At the telecom outlet locations, provide 4" square back boxes that are 2-1/8" deep with a 1" conduit installed within the wall to the nearest accessible ceiling space, for routing cabling to cable tray.
- If outlets need to be surface mounted then provide 1" surface mounted raceway from the back box to the main telecom distribution pathways.

Telecommunications Cabling

1. Telecommunications Backbone Cables

- Furnish and install a 24-strand singlemode fiber cable and a 24-strand multimode fiber cable from the MDF room to each IDF room in the building. The multimode fiber cable will be OM4 50 micron laser optimized optical fiber.
- Install fiber optic cable in a 1-1/4" innerduct end to end.
- Furnish and install a 50-pair or 100-pair copper backbone cable from the MDF room to each IDF room in the building.

2. Telecommunications Horizontal Cabling

- Furnish and install a Category 6 unshielded, twisted pair (UTP) horizontal cable from telecom outlets and IP field devices to termination hardware in the IDF rooms.

3. Cabling within Single Occupancy Offices

- Provide a minimum of two telecommunications outlets, located on opposite walls, each with two data jacks. Install two Category 6 horizontal cables to each outlet from the IDF room serving the area.

4. Wireless Access Points (WAPs)

- For ceiling mounted WAPs, install two Category 6 horizontal cables to each WAP from the IDF room serving the area.
- Provide WAPs at 20-45 spacing or at approximately 25-foot centers on each floor, mounted in accessible ceilings.

2.5-B CODE ISSUES

Findings

It is our understanding there are currently no code issues in the building related to the existing voice/data IT/Telecommunications Infrastructure.

Recommendations:

For new renovation work, codes which would be applicable would include buy may not be limited to:

- International Code Council (ICC)
- National Electrical Code (NEC)
- Telecommunications Industry Association (TIA)
- Electronic Industries Alliance (EIA)
- Institute of Electrical and Electronics Engineers (IEEE)
- American National Standards Institute (ANSI)
- Underwriters Laboratories (UL)
- State/Local Governing Authorities Having Jurisdiction

2.5-C PLANNED AND ON-GOING PROJECTS

It is our understanding there are no known planned and/or on-going IT/ Telecommunications Infrastructure projects for the North building currently.

2.6 SECURITY SYSTEMS

2.6-A OVERVIEW OF EXISTING SYSTEMS

Findings

Note: SMW not scoped for this task, did not provide survey work for Security.

It was reported that consideration should be given to the investigation of a site security plan. It was also reported that Hirsch access control card readers need to be upgraded.

For general security findings, see 2.1-B Code Issues: Security.

Recommendations:

The security systems design guidelines outline electronic security systems infrastructure which would enhance security operations and provide a safe and secure environment for persons and assets within the North building. The purpose of this recommendations report is to provide a description of electronic security system parameters which would provide a safe and secure environment for all those persons and assets within the facilities. It is intended to provide valuable information to both technical and non-technical readers for ongoing coordination with security program requirements.

The security systems should be planned and designed to allow the security personnel the operational flexibility to provide various levels of security based on the threat level at a given time. The systems must further provide capability to deliver the highest quality technology today and in the future for system expansion and change. Security system design shall employ various security technologies. Integrated security systems must be capable to function independently if required, as well as be monitored and controlled from CSP Central Command Center.

Recommended electronic security systems to be considered for implementation and/or upgrade include access control, intrusion detection, duress alarm, intercom, video surveillance, and emergency call system. These applications make it possible for security personnel to view activity both inside and outside the facilities from a central monitoring location or a network-connected security workstation at another location, so they can provide an appropriate response. Care shall be taken to ensure that

interior and exterior common circulation areas accessible to both staff and public will be properly monitored. Electronic security control and monitoring applications shall be implemented as appropriate to provide a safe and secure environment to the facility as a whole. This report is not designed as a specification, but rather as an outline to provide information on recommended security systems technology and design criteria.

The following security design methodologies, criteria and guidelines should be considered and used in development of the security program and physical/electronic security design for the building:

- Industry Standard / Best Practice Design
- Crime Prevention through Environmental Design (CPTED)
- Layered Security / Concentric Circles of Protection
- Integrated Design – Physical/Electronic/Operational
- ASIS Facilities Physical Security Measures
- IESNA G-1-03 Guideline for Security Lighting
- Unified Facilities Criteria UFC 4-010-01
- State of Colorado Design Standards, as applicable

The access control system (ACS) will be an expansion of the existing campus wide system currently installed throughout other State buildings, and utilize similar ACS door controllers and peripheral equipment. New proximity type card readers shall operate with the existing proximity card credentials. Door devices are to wire through a consolidation junction box above door, and be routed to nearest IDF room where door controllers and power supplies are located. ACS door controllers installed in telecommunications IDF rooms will connect to the buildings LAN for communication with the ACS server. New security equipment to be located within IDF rooms must be coordinated with State IT technical staff. Each access controlled door should be equipped with card reader, electrified lock, door position switch, and request to-exit-motion device (or hardware integral request-to-exit switch). All doors described as a card reader controlled access door will be outfitted with the standard equipment listed, unless specifically defined elsewhere to vary from this configuration. It is recommended that for new controlled doors, magnetic locks and electronic strikes not be used. Electrified lever sets and panic hardware should be equipped with request-to-exit switch in exit hardware. Specific

door hardware requirements for each controlled door location are to be coordinated with the State. The ACS shall also serve as the primary security management system for monitoring intrusion alarms. Intrusion alarms such as door status and motion detection alarms are to be integrated with and monitored through the access control security management system. Alarm device additions and modifications shall be coordinated with State during the design phase. Security personnel shall be able to monitor security system alarm notification devices through network connected client workstations, where authorized.

The video surveillance system (VSS) will implement IP digital HD type cameras integrated with the existing VSS. Where analog head-end equipment is located, IP camera digital signals are to be decoded to analog video signal. This will allow for future migration from any older analog equipment to an IP based network video solution. IP security video shall be managed by the existing server/recorders, and new network video recorders are to be installed where required to support the addition of new cameras. It is recommended for renovation work that older technology analog camera be replaced with IP digital security camera, connected to the VSS via building LAN. Security cameras may be made up of both fixed field of view and pan-tilt-zoom (PTZ) type, and should be IP, minimum HD quality, and be Power-over-Ethernet (PoE) devices. Camera network cabling shall pull to nearest IDF room, providing connectivity to the building LAN. IP camera network cabling shall terminate to building PoE network switches. Security personnel shall be able to monitor the security video surveillance system through network connected client workstations, where authorized.

Fixed point duress buttons may be located at designated points within the building, for staff use in emergency situations. Duress alarm buttons should be provided where appropriate, typically at public interface counters and other locations as designated. Duress alarm buttons may be interfaced to the security alarm management system, or intrusion alarm system, and report to a central monitoring station if required.

An Intercom Communication System (ICS) should be implemented to enhance security operations in the facility, for security personnel, staff and visitors. It is strongly recommended that an Intercom over IP (IoIP) Communications solution be used for this application. And IoIP system would provide superior audio quality utilizing the latest digital technology, and provide much greater flexibility for locating both master and sub-stations anywhere on the local area network via IP communications. Security personnel in CSP CCC would be provided with two-way audio communications to any remote building IP intercom sub-station.

Within the building, new head-end security control equipment is to be located in IDF or technology rooms, as coordinated with State IT technical staff. Equipment may include ACS control panels, power supplies, duress alarm panels, network video recorders, and UPS units. All critical electronic security equipment must be backed-up with emergency power circuits or UPS units. State security personnel and other authorized staff may remotely monitor access control events, system alarms, and security video through network connected client workstations. For building renovation work, requirements for security device additions/upgrades and specific security system functionality are to be coordinated with State security personnel during design and construction phases.

The security systems described above are generally controlled and monitored centrally, primarily from Colorado State Patrol's Central Command Center (CCC), located in Denver CO. The above listed security applications must be evaluated during renovation project schematic design phases to confirm applicability to the most current State electronic security systems standards. For any renovation work, security contractors should be pre-qualified prior to bidding, and will be required to work very closely with State security personnel during installation, commissioning and testing phases. All security installation work, construction standards, and operation requirements are to be closely coordinated with the State by the electronic security integrator.

Electronic security systems provided for the North building shall be an extension of existing State facility security system infrastructure, as described earlier in the report. It is generally recommended that the building be provided with electronic security applications and equipment as listed below:

Access controlled doors:

- Main entry
- Suite entries on each floor
- IDF rooms, recommended
- Sensitive spaces

Intrusion alarms:

- Access controlled doors

- Emergency egress only doors
- Perimeter doors

Intercom stations:

- Main entry, recommended
- Receiving dock door, recommended

Duress alarms:

- Public interface counters
- Cash handling locations
- Loading docks

Video surveillance cameras:

- Perimeter entry/exit doors
- Entry lobby/reception
- Elevator lobbies
- Emergency exit doors
- Loading docks
- Building exteriors

Security system cabling should generally share cable routes with that of the building structured network cabling system. The network cabling paths and riser locations generally provides the most direct route through a facility, and typically contain sufficient space for security cabling requirements. For facilities designated as historic buildings, alternate cable routing may require the use of surface mounted conduit and wireways, to comply with historic preservation codes. In these cases, the cable installation design must be coordinated with the State prior to construction. Data cabling required for IP security cameras should be provided and installed by the Telecommunications Contractor. This is the recommended design and construction method for provisioning of the IP camera network cabling to

support the VSS cabling infrastructure. State IT construction standards for network and security cabling types and jacket color must be adhered to. Security cabling should never be exposed and should be contained in protective conduit wherever cable is accessible to vandalism, accidental damage, or where it traverses any unsecured space. Security cabling shall be plenum rated where required by codes.

The security conduit pathway system should be coordinated with the electrical distribution system in order to maintain separation from motors or transformers, separation between parallel runs of telecommunications and electrical cabling, and separation from fluorescent lights.

Basic Security Conduit requirements:

- All security cabling located in in-accessible spaces shall be installed in conduit.
- All exposed security system cabling and shall be installed in conduit.
- All security system conduits shall be minimum ¾" unless otherwise required.
- All penetrations of rated walls shall be fire-stopped in an approved manner to prevent the passage of flame, smoke, and gas.

Head-end security control equipment shall generally be located in Intermediate Distribution Frame (IDF) rooms, or other technology rooms. Security equipment locations within IDF rooms must be coordinated with State IT technical staff during design phase. This equipment may include access control panels, duress equipment, power supplies, network video recorders, and UPS units. Specific requirements and locations within the rooms will be determined during the design phase. Security cabling within IDF rooms shall be piped to wire gutters and or security equipment panels. Within IDF rooms, it is anticipated a 4'x8' section of wall space shall be reserved for security equipment, and supplied with fire treated plywood backboard. All security equipment in the room should be located away from potential sources of electro-mechanical interference (EMI) and water infiltration. Rack mounted security equipment may share space in telecommunication equipment racks, where appropriate, and as coordinated State IT personnel. One dedicated 120VAC 20A power circuit shall generally be required at each security wall board location and at each security equipment rack. In the event of loss of building power, all mission critical electronic security equipment requiring continuous 120VAC power shall be

provided with back-up UPS units. All UPS units shall be stand-alone units dedicated for security, and shall be sized accordingly based on required run time.

2.6-B CODE ISSUES

Findings

It is our understanding there are currently no code issues in the building related to existing electronic security systems.

Recommendations:

For new renovation work, codes which would be applicable would include but may not be limited to:

- International Code Council (ICC)
- Americans with Disabilities Act (ADA)
- National Fire Alarm and Signaling Code (NFPA 72)
- National Fire Protection Association Life Safety Code (NFPA 101)
- National Electrical Code (NEC)
- Telecommunications Industry Association (TIA)
- Electronic Industries Alliance (EIA)
- American National Standards Institute (ANSI)
- Underwriters Laboratories (UL)
- City of Denver Access Control Code
- State/Local Governing Authorities Having Jurisdiction

2.6-C PLANNED AND ON-GOING PROJECTS

It is our understanding there are no known planned and/or on-going Security System projects for the North building currently.

3.0 FLOOR-BY-FLOOR ASSESSMENT FINDINGS AND RECOMENDATIONS

3.0-A CODE ISSUES

See 2.1-B Code Issues

3.0-B GENERAL ACCESSIBILITY ISSUES

See 2.1-C General Accessibility Issues

3.0-C ARCHITECTURAL FINISHES AND INTERIOR COMPONENTS

Ceiling Finishes

The majority of the west addition has a ceiling that is open to the structure above and appears to be in fair condition overall. A few of the office areas included in the site survey visit were noted to have 2x4 acoustic ceilings in fair condition overall.

The Personnel & Administration Integrated Document Solutions (IDS) Shipping & Receiving area is located in the southwest corner of the original building and includes a mezzanine level with office and storage space and the north-south corridor between the original building and the west addition. These areas have 2x4 acoustic ceilings throughout in poor condition overall with soiling, deterioration, and overall sagging noted during the site survey visit (see Fig. 3.0.C.1 and Fig. 3.0.C.2).

The areas of the original building currently occupied by the Community College of Denver have areas of the ceiling open to the structure above in generally poor condition overall and small classroom and office areas with 2x4 acoustic ceilings in fair to poor condition overall. The areas of the ceiling open to the structure above were noted to have widespread evidence of water damage and deteriorating insulation (see Fig. 3.0.C.3). The 2x4 acoustic ceilings in some of the small classroom and office areas were noted to be worn and deteriorating (see Fig. 3.0.C.4).

Fig. 3.0.C.1 Deteriorating 2x4 acoustic ceiling tiles with evidence of water damage observed in the north-south corridor on the west side of the original building and adjacent to the west addition.

Fig. 3.0.C.2 Deteriorating and sagging acoustic ceiling tiles with evidence of water damage in the IDS Shipping and Receiving area in the southwest corner of the original building.

Fig. 3.0.C.3 Typical deterioration noted at the open ceilings throughout the areas occupied by the Community College of Denver.

Fig. 3.0.C.4 Deteriorating acoustic ceiling tiles noted in the areas occupied by the Community College of Denver.

Wall Finishes

The gypsum board walls throughout the west addition are in fair condition overall. The masonry block wainscoting at the walls throughout the west addition are in fair condition overall with areas of minor wear-and-tear noted. There was an unfinished portion of the wall noted during the site survey visit (see Fig. 3.0.C.5). It is unknown whether there is a purpose for leaving a portion of this wall open.

The IDS Shipping & Receiving area located in the southwest corner of the original building and the north-south corridor on the west side of the original building and adjacent to the west addition have gypsum board walls in fair condition with general wear-and-tear noted throughout and concrete block walls in fair condition overall with general wear-and-tear and an area of damage observed. There is an area of gypsum board wall that has been patched but not finished (see Fig. 3.0.C.6). There is an area where the joints between the concrete blocks are cracking (see Fig. 3.0.C.7).

The areas of the original building currently occupied by the Community College of Denver have metal panels and overhead rolling doors with deteriorating insulation in poor condition along the exterior walls (see Fig. 3.0.C.8 and Fig. 3.0.C.9) and gypsum board, wood paneling, and concrete block walls throughout the interior spaces. The gypsum board walls are in fair condition throughout with areas of wear-and-tear noted (see Fig. 3.0.C.10). The concrete block walls are in fair condition throughout with areas of wear-and-tear and cracking along the joints between the blocks noted (see Fig. 3.0.C.11).

Fig. 3.0.C.5 An unfinished section of wall observed at the masonry block wainscoting in the west addition.

Fig. 3.0.C.6 An area of patched but unfinished gypsum board observed in the IDS Shipping & Receiving area located in the southwest corner of the original building.

Fig. 3.0.C.7 Cracking observed at a concrete block wall in the IDS Shipping & Receiving area located in the southwest corner of the original building.

Fig. 3.0.C.8 Deteriorating insulation covering the metal panels and overhead rolling doors at the exterior walls throughout the areas of the original building occupied by the Community College of Denver.

Fig. 3.0.C.9 Deteriorating insulation at the exterior walls and other areas of the original building occupied by the Community College of Denver.

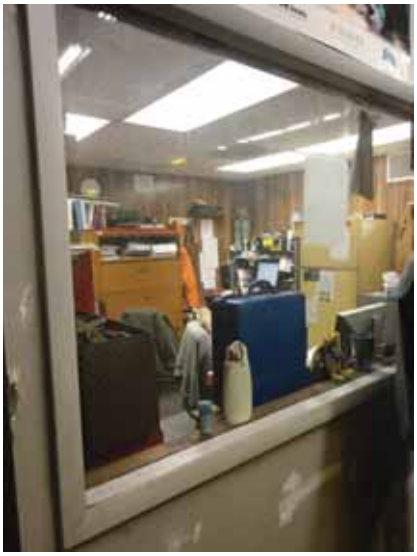

Fig. 3.0.C.10 Wear-and-tear noted at the gypsum board walls throughout the spaces occupied by the Community College of Denver.

Fig. 3.0.C.11 Cracking observed at a concrete block wall in an area occupied by the Community College of Denver.

Floor Finishes

The concrete flooring observed throughout the west addition is generally soiled and showing evidence of wear-and-tear with cracking noted (see Fig. 3.0.C.12 and Fig. 3.0.C.13). There are a few floor rugs that were noted to be taped down to the concrete flooring (see Fig. 3.0.C.14). An approved method of securing the floor rugs should be employed to prevent a potential tripping hazard or the floor rugs should be replaced with a more appropriate solution.

The concrete flooring throughout the north-south corridor along the west side of the original building and the IDS Shipping & Receiving area located in the southwest corner of the original building is generally soiled and showing evidence of wear-and-tear with cracking noted (see Fig. 3.0.C.15). The linoleum flooring throughout the IDS Shipping & Receiving mezzanine office and storage areas is in poor condition overall with soiling, deterioration, and damage noted (see Fig. 3.0.C.16). The rubber flooring on the stair treads leading up to the IDS Shipping & Receiving mezzanine office and storage areas is generally soiled and showing evidence of wear-and-tear with cracking noted (see Fig. 3.0.C.17).

The concrete flooring throughout the areas of the original building occupied by the Community College of Denver are in fair condition overall with general soiling and areas of cracking (see Fig. 3.0.C.18). The protective coating was observed to be deteriorating at the concrete floors throughout the original building (see Fig. 3.0.C.19). The flooring throughout the mezzanine locker

room and walkways in the areas of the original building occupied by the Community College of Denver appears to be painted plywood. Linoleum or vinyl flooring appears to be deteriorating from the painted plywood floors in the mezzanine locker area and is creating a potential tripping hazard (see Fig. 3.0.C.20). The painted plywood appears to be warping and deteriorating throughout the mezzanine walkways included in the site survey visit and is creating a potential tripping hazard (see Fig. 3.0.C.21).

Standing water was observed at the concrete flooring in the northeast corner of the original building (see Fig. 3.0.C.22).

Fig. 3.0.C.12 Generally soiled concrete flooring observed throughout the west addition.

Fig. 3.0.C.13 Cracking concrete flooring observed in areas of the west addition.

Fig. 3.0.C.14 Floor rugs taped to the concrete flooring and creating a potential tripping hazard in areas of the west addition.

Fig. 3.0.C.15 Typical instance of cracking concrete flooring observed in the north-south corridor on the west side of the original building and throughout the IDS Shipping & Receiving area located in the southwest corner of the original building.

Fig. 3.0.C.16 Soiled, deteriorating, and damaged linoleum flooring observed throughout the IDS Shipping & Receiving mezzanine office and storage areas.

Fig. 3.0.C.17 Soiled and damaged rubber flooring on the stairway leading up to the IDS Shipping & Receiving mezzanine office and storage areas.

Fig. 3.0.C.18 Typical instance of cracking concrete flooring observed throughout the original building.

Fig. 3.0.C.19 General deterioration of the protective coating at the concrete floors observed throughout the original building.

Fig. 3.0.C.20 Deteriorating linoleum or vinyl flooring observed in the mezzanine locker room, currently used by Denver Community College, is creating a potential tripping hazard.

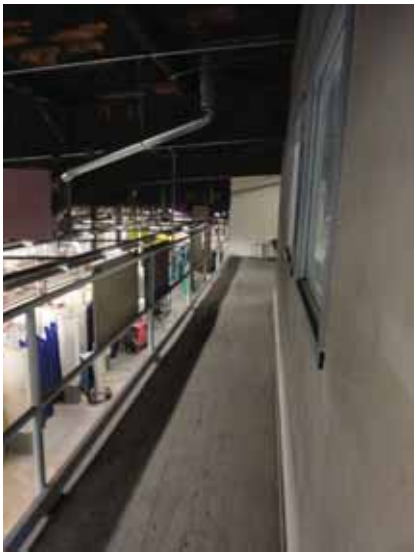

Fig. 3.0.C.21 The painted plywood floors appear to be warping and deteriorating at the mezzanine walkways included in the site survey visit of the original building.

Fig. 3.0.C.22 Standing water observed at the concrete flooring in the northeast corner of the original building.

Other

The doors throughout the west addition are in fair condition overall with general wear-and-tear noted (see Fig. 3.0.C.23). The doors observed throughout the original building are in fair condition overall with wear-and-tear noted (see Fig. 3.0.C.24). It was reported that renovation/refinishing/replacements of the doors is on the Capitol Complex list of controlled maintenance projects that need to be addressed.

The wood carriage at the stairway leading to the IDS Shipping & Receiving mezzanine office and storage areas was noted to be damaged along the outside face at the base of the stair (see Fig. 3.0.C.17). The damage was likely due to a collision with warehouse equipment during normal operations within the space.

Fig. 3.0.C.23 General wear-and-tear observed at the doors throughout the west addition.

Fig. 3.0.C.24 General wear-and-tear observed at the doors throughout the original building.

Recommendations for the west addition:

- Clean the soiled areas of the concrete flooring throughout the west addition periodically to prevent build-up.
- Repair or replace the areas of cracking or otherwise damaged concrete flooring throughout the west addition.
- Use an approved method of securing the floor rugs in the corridors throughout the west addition to prevent a potential tripping hazard or replace the floor rugs with a more appropriate solution to solve the needs of this area.
- Refurbish all interior doors and door frames throughout the west addition.

Recommendations for the original building:

- Demolish the original building structure and rebuild as necessary to suit current needs.

OR, if the building cannot be demolished and must remain in use:

- Replace the 2x4 acoustic ceilings throughout the original building.
- Replace the deteriorating metal roof panels and insulation throughout the original building as part of the complete roof tear-off and replacement recommended in 2.1-A Exterior Building Envelope/Site.
- Repair or replace any deteriorating or damaged gypsum board walls throughout the original building.
- Repair or replace deteriorating or damaged concrete block walls throughout the original building.
- Replace the deteriorating metal wall panels, overhead rolling doors, and insulation throughout the original building as part of the complete replacement of the building skin and exterior doors recommended in 2.1-A Exterior Building Envelope/Site.
- Repair or replace any cracking or otherwise damaged concrete flooring throughout the original building.
- Clean the soiled areas of the concrete flooring throughout the original building periodically to prevent build-up.
- Recoat the surfaces of the concrete flooring throughout the original building with deterioration of the protective coating. Ensure that the

new protective coating serves the needs of the area being served. For example, machine shops require a non-slip surface.

- Replace the linoleum flooring throughout the IDS Shipping & Receiving mezzanine office and storage areas. Replace any damaged linoleum flooring throughout other areas of the original building not included in the site survey visit.
- Replace the rubber flooring on the stair treads in the IDS Shipping & Receiving mezzanine office and storage areas as part of the complete replacement recommended in 2.1-B Code Issues. Protect the new stairway from future damage by providing concrete guard posts/ bollards along the base.
- Replace the plywood flooring throughout the mezzanine areas of the original building occupied by Denver Community College. Replace any other areas of plywood flooring not included in the site survey visit.
- Clean the concrete flooring and repair or replace any damage or deterioration where standing water was observed at the northeast corner of the original building. Determine the cause of the water damage and repair as necessary.
- Refurbish all interior doors and door frames and replace all knob-style door handles with lever-style handles. Replace doors as necessary.

MARTIN / MARTIN CONSULTING ENGINEERS

3.0-D STRUCTURAL

See section 2.2 for structural observations and recommendations for all floors.

SM&W SHEN MILSOM WILKE

3.1-E VOICE AND DATA

Refer to Section 2.5-A for IT/Telecom Infrastructure general recommendations, as applicable to each floor.

3.1-F SECURITY SYSTEMS

Refer to Section 2.6-A for Security System general recommendations, as applicable to each floor.

4.0 LEVELS OF RENOVATION NEEDED

Building: North Campus: North Building, 6321 North Downing Street (Denver)					
Priority	Main System	Sub System	Renovation Needed		
			Minimal	Moderate	Extensive
1	Exterior Enclosure	Roof			√
1	Exterior Enclosure	Fall Protection (roof)			√
1	Exterior Enclosure	Walls			√
1	Exterior Enclosure	Doors			√
1	Infrastructure	Lighting			√
1	Infrastructure	Fire Alarm			√
1	Infrastructure	Tele/Com			√
1	Interior	Finishes - Flooring			√
1	Interior	Finishes Ceiling			√
1	Interior	Finishes - Wall			√
1	Site	Drainage			√
1	Site	Pavement			√
1	Code	Exits			√
1	Infrastructure	Fire Sprinkler		√*	
2	Infrastructure	HVAC		√	
2	Infrastructure	Power		√	
2	Infrastructure	Security Access/IDS		√	
2	Infrastructure	Security Video		√	
2	Interior	ADA-Restrooms		√	
2	Interior	ADA-Drinking Fountains		√	
2	Interior	ADA-Door Levers		√	
2	Interior	Doors		√	
2	Site	Lighting		√	
3	Exterior Enclosure	Windows	√		
3	Infrastructure	Structural Framing	√		
	Code	Dead End Corridors			
	Code	Exit Stairways			
	Environmental	Asbestos	(present, per Owner)		
	Exterior Enclosure	Penthouse			
	Exterior Enclosure	Sealant / Grout			
	Exterior Enclosure	Signage			
	Infrastructure	Elevator(s)			
	Interior	ADA-Sinks (Break Rooms)			
	Site	Utilities			

* An approved fully automatic sprinkler system must be installed throughout the original building **if** a High-hazard Group H occupancy exists. Alternatively, the code issues related to the Group F-2 occupancy may require an automatic sprinkler system. See 2.1-B Code Issues.

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5.0 COST ESTIMATES

SUMMARY OF SUMMARIES

Item No.	Description	SF	Total	$/SF
1	6321 Downing - North Campus North Bldg	23,630	2,560,391	108.35
2	Contingency on Above		w/ Above	
	Subtotals:	**23,630**	**2,560,391**	**108**
3A	IT \ Teledata (Relocate Exstg Only)	23,630	21,911	0.93
3B	Move Management		Excluded	
3C	Flex Space		Excluded	
3D	Public Art		Excluded	
4	Contingency on Above		Excluded	
	Equipment \ Art Subtotal:		**21,911**	**1**
	Base Price \ Equipment \ Art Subtotal:		**2,582,302**	**109**
5	Escalation - 6.75% per year		Excluded	
6	Contingency on Above		Excluded	
	Escalation Subtotal:		**Excluded**	
	Base Price \ Equipment \ Art Subtotal:		**2,582,302**	**109**
7	Design Fees at 8% per State of CO Direction		206,584	8.74
8	Contingency on Above		Excluded	
	Design Fee Subtotal:		**206,584**	**8.74**
	Base Price \ Equipment \ Art \ Design Fee Subtotal:		**2,788,886**	**118**

PROJECTED COST OF CONSTRUCTION IN 2014 DOLLARS	**2,788,886**	**118**

ADD-ALTERNATE				
9	FF&E (FF&E SF & $25\SF Allowance per Architect)	21,753	543,825	25.00
10	Move Management		Excluded	
11	Escalation - 6.75% per year		Excluded	
12	Contingency on Above		Excluded	
	Subtotals:		**543,825**	
	ADD-ALTERNATE SUBTOTAL:		**543,825**	**25**

SYSTEM BY SYSTEM SUMMARY

Item No.	Description	SF	Total	$/SF
1A	Add Fire Sprinkler System	23,630	150,686	6.38
1B	Escalation		Excluded	
	System 1 w/ Escalation Subtotal:		**150,686**	**6**
2A	Replace Fire Alarm	23,630	60,888	2.58
2B	Escalation		Excluded	
	System 2 w/ Escalation Subtotal:		**60,888**	**3**
3A	Replace Roof	23,630	378,738	16.03
3B	Escalation		Excluded	
	System 3 w/ Escalation Subtotal:		**378,738**	**16**
4A	Upgrade Lights	23,630	185,071	7.83
4B	Escalation		Excluded	
	System 4 w/ Escalation Subtotal:		**185,071**	**8**
5A	Replace Original Building Skin, Doors & Windows	23,630	341,604	14.46
5B	Escalation		Excluded	
	System 5 w/ Escalation Subtotal:		**341,604**	**14**
6A	Balance of Project Scope	23,630	1,672,388	70.77
6B	Escalation		Excluded	
	System 6 Balance of Scope Subtotal:		**1,672,388**	**71**
	System by System Total Project 2014 Dollars Subtotal:		**2,789,376**	**118**
7	IT \ Teledata (Relocate Exstg Only)		21,911	0.93
8	Move Management		Excluded	
9	Flex Space		Excluded	
10	Public Art		Excluded	
11	Contingency on Above		Excluded	
	Equipment \ Art Subtotal:		**21,911**	**1**
	Systems \ Equipment \ Art Subtotal:		**2,811,287**	**119**
12	Design Fees at 8% per State of CO Direction		224,903	9.52
13	Contingency on Above		Excluded	
	Design Fee Subtotal:		**224,903**	**10**
	Base Price \ Equipment & Art \ Design Fee Subtotal:		**3,036,190**	**128**

PROJECTED COST OF CONSTRUCTION IN 2014 DOLLARS	**3,036,190**	**128**

ADD-ALTERNATES				
14	FF&E (FF&E SF & $25\SF Allowance per Architect)	21,753	543,825	25.00
15	Move Management		Excluded	
16	Escalation - 6.75% per year		Excluded	
17	Contingency on Above		Excluded	
	Subtotals:		**543,825**	
	ADD-ALTERNATES SUBTOTAL:		**543,825**	**25**

DETAILED ESTIMATE - SUMMARY

				23,630
Item No.	**Description**	**$/SF**	**Total**	**Total w/Burdens**
DIV 2	EXISTING CONDITIONS	0.66	15,495	21,856
DIV 3	CONCRETE	2.40	56,712	79,992
DIV 4	STONE & MASONRY		EXCLUDED	
DIV 5	METALS	4.91	115,926	163,512
DIV 6	WOODS & PLASTICS	2.47	58,338	82,284
DIV 7	THERMAL PROTECTION	18.84	445,169	627,905
DIV 8	OPENINGS, DOORS, WINDOWS	1.82	43,000	60,651
DIV 9	FINISHES	3.56	84,066	118,575
DIV 10	SPECIALITIES		EXCLUDED	
DIV 11	EQUIPMENT		EXCLUDED	
DIV 12	FURNISHINGS		EXCLUDED	
DIV 13	SPECIAL CONSTRUCTION		EXCLUDED	
DIV 14	CONVEYING SYSTEMS		EXCLUDED	
DIV 21	FIRE SUPPRESSION	3.63	85,777	120,987
DIV 22	PLUMBING	0.85	20,000	28,210
DIV 23	HVAC	12.50	295,375	416,623
DIV 26	ELECTRICAL	11.59	273,872	386,293
DIV 27	COMMUNICATIONS	2.72	64,274	90,657
DIV 31	EARTHWORK		EXCLUDED	
DIV 32	EXTERIOR IMPROVEMENTS	10.89	257,250	362,848
DIV 33	UTILITIES		EXCLUDED	
DIV 34	TRANSPORTATION		EXCLUDED	
	Subtotal Direct Construction Costs	**76.82**	**1,815,253**	**2,560,391**
	Allowance for Historical / Memorial Markers		0	
	Direct Cost Subtotal with GFP	**76.82**	**1,815,253**	
	Material Testing	0.35%	6,353	
	Owner's Design & Preconstruction Contingency	10.00%	181,525	
	Owner's Construction Contingency (after NTP)	5.00%	90,763	
	Permits	1.90%	34,490	
	Total Direct Construction Costs	**90.07**	**2,128,384**	
	Standard General Conditions (GC's Onsite Overhead)		228,985	
	Subtotal NET Construction Cost	**99.76**	**2,357,369**	
	GC's Off-Site Overhead & Profit	4.60%	108,439	
	GC's General Liability Insurance	0.90%	21,216	
	Construction Cost w/o Bonds & Escalation	**105.25**	**2,487,024**	
	Builder's Risk Insurance	1.50%	37,305	
	Performance & Payment Bond	1.20%	29,844	
	Bid Bond	0.25%	6,218	
	Tap Fees		Excluded	
	Bidding Reserves		Excluded	
	Total Estimated Cost of Construction	**108.35**	**2,560,391**	

DETAILED ESTIMATE

Estimate By:	Kyle Hoiland
Date:	22-Apr-14
Reviewed By:	Chris Squadra
Date:	22-Apr-14

Building GSF: 23,630 **Total Cost:** $1,815,253

DIV 02	Description	Quantity	Unit	TOTALS Cost/Unit	TOTALS Total Cost
	EXISTING CONDITIONS / BUILDING DEMOLITION				
	Remove Existing Metal Siding & Insulation	11,068	SF	1.40	15,495
	Asbestos Abatement or Other Hazardous Material (Allowance)				Excluded
	SUBTOTAL EXISTING CONDITIONS/DEMOLITION				**15,495**

DIV 03	Description	Quantity	Unit	TOTALS Cost/Unit	TOTALS Total Cost
	CONCRETE / FOUNDATIONS				
	Repair Concrete Cracking & Spalling @ Interior Slabs / Concrete Walls / Ceilings	11,815	SF	4.80	56,712
	SUBTOTAL FOUNDATIONS				**56,712**

DIV 04	Description	Quantity	Unit	TOTALS Cost/Unit	TOTALS Total Cost
	MASONRY				
	SUBTOTAL MASONRY				**EXCLUDED**

DIV 05	Description	Quantity	Unit	TOTALS Cost/Unit	TOTALS Total Cost
	METALS				
	New Metal Siding	11,068	SF	4.80	53,126
	New Metal Bollards w/ Concrete	24	EA	950.00	22,800
	Replace Existing Stairs w/ New Stairs (Allowance)	1	AL	25,000.00	25,000
	Replace Existing Guardrails & Railings (Allowance)	1	AL	15,000.00	15,000
	SUBTOTAL METALS				**115,926**

DIV 06	Description	Quantity	Unit	TOTALS Cost/Unit	TOTALS Total Cost
	WOODS				
	Rough Carpentry Wood Materials for Safety & Repairs	23,630	SF	1.25	29,538
	Rough Carpentry Labor	600	HRS	48.00	28,800
	**Time & materials for miscellaneous building shoring, safety railings/barricades, blocking, substrate repairs*				
	SUBTOTAL WOODS				**58,338**

DIV 07	Description	Quantity	Unit	TOTALS Cost/Unit	TOTALS Total Cost
	THERMAL & MOISTURE PROTECTION				
	Remove & Replace Roof System	23,630	SF	9.60	226,848

	Metal Siding, Fascia, Flashings, & Trims Repair (Allowance)	1	AL	15,000.00	15,000
	Scuppers, Gutters & Downspouts Repairs (Allowance)	1	AL	10,000.00	10,000
	Insulation Repairs @ Impacted Areas	1	AL	10,000.00	10,000
	Miscellaneous Caulking & Sealants @ Interior	5,000	LF	5.00	25,000
	New Concrete Epoxy Sealer Throughout	23,630	SF	6.70	158,321
	SUBTOTAL THERMAL				**445,169**

DIV 08	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	OPENINGS				
	Door Replacement As Needed (Allowance)	12	EA	500.00	6,000
	Hardware Replacement As Needed (Allowance)	12	EA	1,000.00	12,000
	Windows Replacement As Needed (Allowance)	1	LS	25,000.00	25,000
	SUBTOTAL OPENINGS				**43,000**

DIV 09	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	INTERIOR FINISHES				
	Gyp Bd Wall Patching	11,815	SF	1.10	12,997
	Gyp Bd Ceiling Patching	2,363	SF	3.10	7,325
	ACT Ceiling Repair / Tile Replacement	3,545	SF	3.21	11,378
	Gyp Bd Detailing @ Int Soffits, Cols, etc.	1	LS	2,500.00	2,500
	Replace All Carpet				Excluded
	Clean/Repair Natural Stone/Tile Flooring				Excluded
	Repair/Replace VCT	1,200	SF	1.80	2,160
	Vinyl Base	2,500	LF	2.20	5,500
	Clean/Repair Natural Stone/Tile @ Walls	500	SF	12.40	6,200
	Paint Gyp Bd Walls & Ceilings w/2 Coats Latex	14,178	SF	0.60	8,507
	Miscellaneous Accent Painting Allowance	1	LS	2,500.00	2,500
	ADA Compliance Modifications (Allowance)	1	AL	25,000.00	25,000
	SUBTOTAL INTERIOR FINISHES				**84,066**

DIV 10	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	SPECIALITIES				
	SUBTOTAL SPECIALTIES				**EXCLUDED**

DIV 11	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	EQUIPMENT				
	SUBTOTAL EQUIPMENT				**EXCLUDED**

DIV 12	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	FURNISHINGS				
	SUBTOTAL FURNISHINGS				**EXCLUDED**

DIV 13	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	SPECIAL CONSTRUCTION				

SUBTOTAL SPECIAL CONSTRUCTION					**EXCLUDED**

DIV 14	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	CONVEYING SYSTEMS				
	SUBTOTAL CONVEYING SYSTEMS				**EXCLUDED**

DIV 21	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	FIRE SUPPRESSION				
	Fire Sprinklers - Full Replacement	23,630	SF	3.63	85,777
	Backflow Prevention				Excluded
	FDC				Excluded
	Booster Pump (Allowance)				Excluded
	SUBTOTAL FIRE SUPPRESSION				**85,777**

DIV 22	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	PLUMBING				
	Demo Existing Plumbing				Excluded
	Plumbing Systems - Full Replacement				Excluded
	Provide ADA Fixtures, where necessary (Allowance)	4	EA	2,500.00	10,000
	Insulation @ Lavatory & Mechanical Piping	1	AL	10,000.00	10,000
	SUBTOTAL PLUMBING				**20,000**

DIV 23	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	HVAC				
	HVAC - Full Replacement	23,630	SF	12.50	295,375
	Upgrade HVAC Controls				w/ Above
	SUBTOTAL HVAC				**295,375**

DIV 26	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	ELECTRICAL				
	Demo Existing Electrical Outlets & Replace	23,630	SF	1.00	23,630
	Replace Panels	23,630	SF	4.21	99,482
	New Electrical Wiring & Conduit @ New Lighting	23,630	SF	1.98	46,787
	Remove Light Fixtures throughout Building	23,630	SF	1.00	23,630
	Replace Light Fixtures w/ LED	23,630	SF	2.50	59,075
	Replace Emergency GenSet				Excluded
	UPS System				Excluded
	Solar Photovoltaic System				Excluded
	Wind Turbine System				Excluded
	Replace Lightning Protection System	23,630	SF	0.90	21,267
	SUBTOTAL ELECTRICAL				**273,872**

DIV 27	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	DATA / COMMUNICATIONS				
	Fire Alarm System - New System	23,630	SF	1.80	42,534
	Data & Communications Conduit - Bring up to Code	23,630	SF	0.92	21,740
	Data & Communications Equipment				Excluded
	A/V Equipment				Excluded
	SUBTOTAL COMMUNICATIONS				**64,274**

DIV 032	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	SITE IMPROVEMENTS				
	Paving				
	Minor Grading for New Paving	1	LS	25,000.00	25,000
	Remove & Replace Existing Asphalt Road around Bldg	50,000	SF	4.22	211,000
	Concrete Replacement at Sidewalks	2,500	SF	6.50	16,250
	Concrete Sidewalks - Seal Cracks	1	LS	5,000.00	5,000
	New 6" x 18" F.R. Concrete Curb & Gutter				Excluded
	New 4" Sidewalk				w/ Above
	Landscape				
	Fine Grade Topsoil				Excluded
	Sod Repair				Excluded
	Irrigation Repair				Excluded
	SUBTOTAL SITE IMPROVEMENTS				**257,250**

DIV 33	Description	Quantity	Unit	TOTALS	
				Cost/Unit	Total Cost
	SITE CIVIL/MECHANICAL UTILITIES				
	Secondary Utilities to Building				
	2" Copper Water Line (Incl. Valves, Connections, Trenching w/ Bedding)				Excluded
	6" Sewer Service				Excluded
	Gas Line Trenching				Excluded
	Electrical Service				Excluded
	Phone & Data Service Trenching				Excluded
	SUBTOTAL SITE CIVIL/MECHANICAL UTILITES				**EXCLUDED**

TOTAL COST -					**1,815,253**
					77

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