CAPITOL COMPLEX MASTER PLAN

FINDINGS & RECOMMENDATIONS (F & R) NEEDS ASSESSMENT

1570 GRANT BUILDING, 1570 GRANT STREET (DENVER)

NOVEMBER 2014

RNL

FINDINGS & RECOMMENDATIONS (F&R) NEEDS ASSESSMENT

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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 1570 Grant Building at 1570 Grant Street in Denver, Colorado. 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 fair condition. A fair condition rating refers to the fact that the 1570 Grant Building is usable but in serious 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. Modernize elevators. This recommendation encompasses life safety issues and is due to the age of the elevator systems.

   High Level Cost Estimate: $71,420

2. Replace windows. This recommendation encompasses loss of use/reliability issues and overall energy efficiency issues and is due to the age and condition of the windows.

   High Level Cost Estimate: $1,133,406

3. Modify fire sprinkler system. This recommendation encompasses life safety issues and is due to egress issues from the building and fire protection code issues.

   High Level Cost Estimate: $545,534

4. Replace HVAC. This recommendation encompasses loss of use/reliability issues and overall energy efficiency issues and is due to the age of the HVAC systems.

   High Level Cost Estimate: $1,900,098

5. Replace AHU system in basement. This recommendation encompasses loss of use/reliability issues and overall energy efficiency issues and is due to the age of the system.

High Level Cost Estimate: $294,642

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

$5,573,428

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:

$5,643,711

1.0 OVERVIEW

1.0-A ARCHITECTURE OVERVIEW

The 1570 Grant Building, originally known as the Texaco Building, was constructed in 1956. A construction date of 1951 is listed in documents provided by the Owner. The building is located in Denver's North Capitol Hill Neighborhood on the southeast corner of Grant Street and East 16th Avenue. The building was designed by Muchow Associates Architects. The design of this building is an example of the International Style of architecture prevalent in the mid-twentieth century. The building was acquired by the State of Colorado in 2001 and currently serves as government office space. The 1570 Grant Building, a concrete-framed structure with a brick facade, continuous ribbon windows and concrete canopies, is a four-story building with a basement and grosses 47,749 square feet of space.

The architectural assessment of the 1570 Grant Building at 1570 Grant 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 September 10, 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 building 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 related to the age and condition of the windows. Another concern is that the building is not equipped with a fully automatic sprinkler system. These concerns encompass life safety, loss of use/reliability, 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 September 10, 2013 of the office building located at 1570 Grant in Denver, Colorado. The purpose of our condition assessment was to identify structural defects, damage and deterioration.

The building was constructed in 1951. The structural framing consists of two-way concrete slabs and spandrel beams supported by concrete columns. The foundation system is unknown and construction drawings were not available.

The structural framing that was readily observable is in good condition with the exception of the exterior canopies on the east and west sides. Several cracks and spalls were observed on the underside of the canopies. The cracks may have been caused by normal shrinking of the concrete, allowing water to penetrate the surface and cause additional deterioration.

Parapets along the roof edge were non-existent. A fall protection system should be provided for access near exposed edges to meet current safety codes.

1.O-C CIVIL OVERVIEW

The Colorado Department of Health Care Policy and Financing building site is approximately 0.75 acres. The existing site consists of the building, a parking area to the west, a controlled access drive, and street right-of-way including sidewalk and landscaping. The main building entrance is accessed from Grant Street. The condition of the site surrounding the building is consistent with an estimated age of 40+ years.

The site exterior is generally in poor to fair condition. There are numerous locations around the building with broken and cracked concrete in need of repair or replacement. Broken concrete in walking paths is a tripping hazard and a high safety concern. The main concern regarding the building site is a crack observed in the retaining wall on the east side along the parking area. The wall should be analyzed for stability and may require replacement. While the existing building functions in its current state, improvements can be made for wall safety, compliance with regulations, and aesthetic improvements.

1.0-D MECHANICAL, ELECTRICAL, AND PLUMBING OVERVIEW

A site survey for the facility 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 main concerns regarding the Grant St Building are related to the old receptacles and panelboards and the condition of the basement mechanical room. The receptacles, panelboards, and most of the mechanical equipment in the basement is past its useful life and is in need of replacement in order to provide a reliable source of power and air in the building.

The main HVAC equipment like chillers and hot water heating boilers appear to be in good working condition. The main concerns regarding HVAC system are related to the main Air Handling Unit, Cooling tower and the air distribution in the space. The Air Handling Unit and the Cooling tower are at the end of their useful life and need to be replaced. The remote sump for the cooling tower is corroded and is susceptible to leaks. It should be replaced along with the cooling tower. The air distribution system in the spaces is via induction units which are at the end of their useful life and need to be replaced. New Direct Digital Controls should be provided for new induction units. The outside air supply ductwork connected to each induction unit needs to be verified and minimum outside air required as per the code should be provided for each induction unit. The two-pipe hydronic system should be replaced with a four pipe hydronic system for better temperature control and comfort in the spaces. Some modification of the existing duct work would be required to meet the current state regulation to prevent any vandalism/terrorist activity. Some sections of the existing piping and ductwork have missing insulation which should be provided to prevent heating and cooling energy losses. The possibility of relocating the air handling unit from the basement to the roof pent house should be investigated. This will eliminate having main supply and return duct outside the building.

Life safety features like fire and smoke dampers should be verified to ensure the integrity of fire barriers is maintained. The elevator operations need to be modified to meet the current code requirements. Features like elevator recall etc. should be provided.

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 on the desk or in the cubicles to ensure occupants are able to perform their work effectively.

Providing automatic occupancy sensor shutoff power strips for desk equipment that does not need to be on constantly, when a person is away from their desk, will help reduce energy usage.

The new cooling tower will have higher operating efficiency than the existing one which will improve the operating KW/ton of the chiller. The new Air Handling Unit will operate more efficiently thus saving fan energy costs. The new air distribution and hydronic system in the building will improve indoor comfort conditions and will also save heating and cooling energy costs. The new controls for the perimeter induction units will allow occupant control thereby improving comfort conditions and employee productivity. The minor renovations like providing missing insulation on pipes and duct will reduce heating and cooling energy costs.

1.0-E VOICE AND DATA OVERVIEW

The Voice and Data IT/Telecommunications Infrastructure assessment and findings report provides recommendations for the design and construction of the IT/Telecommunications Infrastructure required to support Voice/ Data and other technology systems within the 1570 Grant building. It has been found that much of the building's existing IT/Telecommunications infrastructure is not compliant with current industry standards and best practice installation methods. As well, the current infrastructure is such that it 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 Cat5e cabling has bandwidth limitations as compared to that of more robust, industry standard Cat6/6A cable plant specifications. The complete 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 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. Category 6 UTP cable shall be installed from the telecom outlets and IP field devices to termination hardware in the IDF rooms using the conduit and 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 methods must be applied, including BICSI and TIA/EIA design and construction guidelines. For renovation projects, any applicable State Office of Information Technology (OIT) design criteria documents should be followed.

The following list prioritizes voice/data infrastructure upgrades required:

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

2. Necessary: Replace horizontal copper station cabling with Cat 6

network cabling.

3. Necessary: Replace vertical and network back-bone cabling with appropriate copper and fiber optic cabling.
4. Necessary: Provision voice/data infrastructure to support wireless access points (WAPs), to allow for wireless network coverage throughout facility.

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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 1570 Grant 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 1570 Grant 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: Security considerations for this facility should be considered more critical based on the nature of business conducted, maintaining HIPPA and Health Care policy programs.

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 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.

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2.0 OVERALL BUILDING ASSESSMENT FINDINGS AND RECOMENDATIONS

2.1 ARCHITECTURE

2.1-A EXTERIOR BUILDING ENVELOPE/SITE

General

The 1570 Grant Building is a four-story tall brick building, supported by a concrete structural frame, with ribbon windows generally spanning the length of the building at each story. The building has two entrances; one on the east side and one on the west side. The main Grant Street Entrance is on the west side of the building and consists of a glass storefront with either end clad in a light colored masonry veneer. The entrance is paved in concrete at the entrance landing and continues to a concrete sidewalk that extends to the street. The East Entrance off of the parking lot, located directly behind the building, has two doors leading into the building at either end of the entrance. There is also an exit from the basement level served by an exterior concrete stair at the south end of the east side of the building. The roof contains a one-story elevator penthouse set back from the elevations of the building. Overall, the building envelope is in fair condition.

Front/West Elevation of 1570 Grant Building

Side/North Elevation of 1570 Grant Building

Back/East Elevation of 1570 Grant Building

Side/South Elevation of 1570 Grant Building

Cladding

The brick cladding the majority of the building is in fair condition overall. A number of holes in the brick were noted at the north side of the building under the First Floor windows at the west end (see Fig. 2.1.A.1 and Fig. 2.1.A.2). Cracking along the joints between the brick was also noted at the north side of the east building entrance (see Fig. 2.1.A.3) and at the south side of the building just above grade level (see Fig. 2.1.A.4). Minor spalling was noted at the south side of the building, on the east end (see Fig. 2.1.A.5).

It was reported that exterior wall repairs are on the Capitol Complex list of controlled maintenance projects that need to be addressed.

Fig. 2.1.A.1 Holes in the brick at the north side of the building under the First Floor windows.

Fig. 2.1.A.2 Holes in the brick at the north side of the building under the First Floor windows.

Fig. 2.1.A.3 Cracking along brick joints at the north side of the east building entrance.

Fig. 2.1.A.4 Cracking along the joints between the brick at the south side.

Fig. 2.1.A.5 Minor spalling at the south side of the building, on the east end.

The brick is soiled in a number of locations around the building. In many instances the soiled brick exists under windows (see Fig. 2.1.A.6). There was also soiled brick noted on the south side of the building at grade level (see Fig. 2.1.A.7).

Fig. 2.1.A.6 Typical instance of soiled brick found under the windows.

Fig. 2.1.A.7 Soiled brick at the south side of the building at grade level.

The mortar between the bricks exhibited a minor amount of deterioration in general (see Fig. 2.1.A.8). Specific deterioration was noted at the south side of the building just above grade level (see Fig. 2.1.A.9 and Fig. 2.1.A.10) and at the Penthouse walls on the roof (see Fig. 2.1.A.11 and Fig. 2.1.A.12).

Fig. 2.1.A.8 Minor deterioration of the mortar between the bricks.

Fig. 2.1.A.9 Deterioration of the mortar at the south side.

Fig. 2.1.A.10 Deterioration of the mortar at the south side.

Fig. 2.1.A.11 Deterioration of the mortar and soiling of the brick at the Penthouse walls.

Fig. 2.1.A.12 Deterioration of the mortar and soiling of the brick at the Penthouse walls.

Deterioration of the mortar and spalling was further noted at the concrete foundation located at the south side of the building, on the east end (see Fig. 2.1.A.13 and Fig. 2.1.A.14).

Fig. 2.1.A.13 Deterioration of the mortar and spalling of the concrete foundation at the south side.

Fig. 2.1.A.14 Deterioration of the mortar and spalling of the concrete foundation at the south side.

Cracks in the concrete panels were noted at the northwest, southeast, and southwest corners of the building (see Fig. 2.1.A.15, Fig. 2.1.A.16, and Fig. 2.1.A.17). Cracks in the concrete foundation were also noted at the north side of the building, on the east end, and at the east entrance ramp where there also appeared to be evidence of standing water (see Fig. 2.1.A.18).

Fig. 2.1.A.15 Cracked concrete panel at the northwest corner.

Fig. 2.1.A.16 Cracked concrete panel at the southeast corner.

Fig. 2.1.A.17 Cracked concrete panel at the southwest corner.

Fig. 2.1.A.18 Cracks in concrete foundation along the ramp at the east entrance where there also appeared to be evidence of standing water.

The painted concrete around the exterior of the building is peeling in numerous locations including the concrete cap around the perimeter of the roof (see Fig. 2.1.A.19) and the concrete around the top perimeter of the Penthouse (see Fig. 2.1.A.20).

Fig. 2.1.A.19 Peeling paint at the concrete cap around the perimeter of the roof.

Fig. 2.1.A.20 Peeling paint at the concrete around the perimeter of the Penthouse.

The masonry veneer outside of the main Grant Street Entrance is damaged and missing in spots (see Fig. 2.1.A.21).

Fig. 2.1.A.21 Damaged and missing masonry veneer at the Grant Street Entrance.

Recommendations:

- Clean soiled/stained brick around the building exterior, including at the Penthouse level.
- Repair or replace brick with any cracks, spalling, or holes around the building exterior and at the Penthouse level.
- Tuck point the brick around the exterior of the building, including at the Penthouse level.
- Repair any cracks along the joints between the bricks.
- Repair or replace the damaged concrete foundation and mortar located at the south side of the building, on the east end and the cracking in the concrete foundation located along the East Entrance.
- Repair or replace the cracked concrete panels located at the northwest, southeast, and southwest corners of the building.
- Remove loose paint from painted concrete surfaces around the building and Penthouse and repaint all painted concrete surfaces using appropriate materials and methods for an exterior application.
- Repair or replace the damaged or missing light-colored masonry veneer on either side of the Grant Street Entrance.
- Water appears to be pooling along the ramp at the East Entrance. Verify the cause of the pooling and repair as necessary.

Glazing Systems and Doors

The windows are operable and are single pane with no thermal break (see Fig. 2.1.A.22). It was reported that film has been added to the windows due to the fact that half of the building gets too hot and half of the building gets too cold. The paint is generally peeling off of the window frames around the exterior of the building and appears to be the cause of the minor corrosion that was noted during the site visit (see Fig. 2.1.A.23 and Fig. 2.1.A.24). There were also broken windows that were observed, especially on the north side of the building, with cracked glazing (see Fig. 2.1.A.25, Fig. 2.1.A.26, Fig. 2.1.A.27, and Fig.2.1.A.28), fogged glazing (see Fig. 2.1.A.29), and a bent window frame (see Fig. 2.1.A.30).

It was reported that replacement of the windows is on the Capitol Complex list of controlled maintenance projects that need to be addressed.

Fig. 2.1.A.22 Single pane window with no thermal break.

Fig. 2.1.A.23 Corroded window frame with peeling paint.

Fig. 2.1.A.24 Damaged window frame with peeling paint.

Fig. 2.1.A.25 Broken window at the north side.

Fig. 2.1.A.26 Broken window at the north side.

Fig. 2.1.A.27 Broken window at the north side.

Fig. 2.1.A.28 Broken window at the north side.

Fig. 2.1.A.29 Fogged glazing at the north side.

Fig. 2.1.A.30 Bent window frame at the southwest corner with corrosion at the base.

The entrance doors at the east side of the building were noted to have spots of deteriorated or missing weather stripping, allowing air leakage from the building (see Fig. 2.1.A.31). The frame around the exterior door at the north end of the east entrance is soiled and damaged (see Fig. 2.1.A.32 and Fig. 2.1.A.33).

It was reported that the glass storefront and doors at the main Grant Street Entrance need to be replaced. It was further reported that the panic hardware needs to be updated with electrified panic hardware, accessible (ADA) operators with remote actuators need to be installed on the entry doors, and the magnetic door locks need to be replaced.

Fig. 2.1.A.31 Exterior door with areas of deteriorated or missing weather stripping at the east side.

Fig. 2.1.A.32 Soiled and damaged door frame at the north end of the east entrance.

Fig. 2.1.A.33 Soiled and damaged door frame at the north end of the east entrance.

Recommendations:

- Replace existing windows with new energy efficient windows and frames.
- Repair or replace deteriorating, or missing, weather stripping at all exterior doors and their frames, including at the Penthouse, to prevent air leakage.
- Repair or replace the damaged and soiled door frame of the exterior door at the north end of the East Entrance.

- Replace the glass storefront and doors at the main Grant Street Entrance, including new magnetic locks, electrified panic hardware, and accessible (ADA) operators with remote actuators.

Roof

It was reported that the exact age of the roof is unknown but that the roof has not been replaced since the building was acquired by the State in 2001 and is therefore at least 12 years old. It was further reported that there are no known issues related to the roof leaking. The roof is ballasted and is generally in fair condition overall. The ballast is thin in spots (see Fig. 2.1.A.34 and Fig. 2.1.A.35) and the membrane is loose in spots (see Fig. 2.1.A.36).

It was reported that the roof of the Penthouse needs to have the turbine fan removed which will require the hole to be filled. Once the hole is filled, the roofing will either be required to be patched or replaced entirely.

Fig. 2.1.A.34 Area of thin ballast leaving the roof membrane exposed on the roof.

Fig. 2.1.A.35 Area of thin ballast leaving the roof membrane exposed on the roof.

Fig. 2.1.A.36 Spot where the membrane is loose on the roof.

It was noted that there are currently no overflow drains. Some of the drain covers are in good condition and some are showing signs of corrosion (see Fig. 2.1.A.37).

Fig. 2.1.A.37 Drain cover showing signs of corrosion.

The asphalt covering an area of an extended outer edge on east and west sides of the building is deteriorating (see Fig. 2.1.A.38).

Fig. 2.1.A.38 Deteriorating asphalt covering extended outer edges.

The sealant along the flashing and parapet coping is generally deteriorating (see Fig. 2.1.A.39 and Fig. 2.1.A.40). The parapet coping also exhibits signs of standing water (see Fig. 2.1.A.41) and appear to be warping along the south end of the west side of the building and along the south side of the building (see Fig. 2.1.A.42).

Fig. 2.1.A.39 Typical deteriorating sealant found along the flashing.

Fig. 2.1.A.40 Typical deteriorating sealant found along the joints of the parapet coping.

Fig. 2.1.A.41 Typical parapet coping with deteriorating sealant along the joints and with evidence of standing water.

Fig. 2.1.A.42 Warping parapet coping.

The Penthouse Roof shows signs of water damage at the floor (see Fig. 2.1.A.43 and Fig. 2.1.A.44) and at the ceiling (see Fig. 2.1.A.45).

Fig. 2.1.A.43 Signs of water damage on the floor of the Penthouse.

Fig. 2.1.A.44 Signs of water damage on the floor of the Penthouse.

Fig. 2.1.A.45 Signs of water damage at the ceiling of the Penthouse.

Recommendations:

- Add ballast to areas of the roof where the membrane is exposed or loose.
- Monitor condition of drain covers and exhaust pipes for damage and corrosion and replace as necessary.
- Repair or replace the deteriorating asphalt on the areas of the roof's extended outer edge on the east and west sides of the building.
- Remove existing sealant around flashing and at parapet coping joints and replace with new sealant. Sealant, backup materials, and preformed joint fillers shall be nonstaining.
- Repair or replace parapet coping where damaged or warped.
- Repair the slope of the parapet at locations where water is standing instead of draining in order to prevent further damage to the coping materials.
- Replace the Penthouse roof and repair water damage to the interior of the Penthouse. Coordinate the replacement of the Penthouse roof with the removal of the turbine fan noted in the findings.
- The age of the roof is unknown. The roof appears to be in average condition and should be replaced in the next several years. At that time, overflow drains should be added as part of the roof design.

Canopies

There are signs of water damage underneath the concrete canopy at the Grant Street Entrance on the west side of the building (see Fig. 2.1.A.46). The concrete canopy covering the East Entrance is leaking on to the exterior door located at the north end (see Fig. 2.1.A.47). The painted concrete canopies that run the length of the ribbon windows on the east and west sides of the building were observed to have many areas of peeling paint, spalling, and cracking (see Fig. 2.1.A.48, Fig. 2.1.A.49, and Fig. 2.1.A.50). The flashing at the front of the painted concrete canopies above the windows was also noted to have areas of peeling paint.

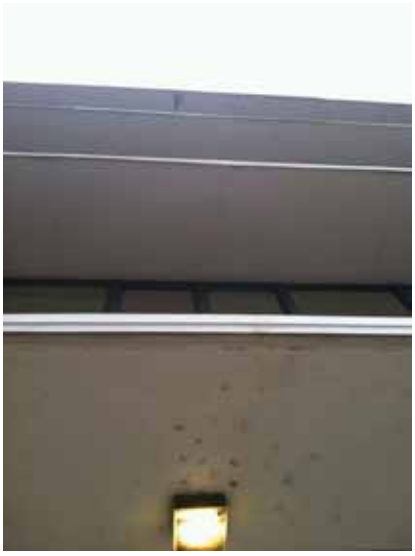

Fig. 2.1.A.46 Water damage observed underneath the Grant Street Entrance canopy.

Fig. 2.1.A.47 Canopy leaking at the north end of the East Entrance.

Fig. 2.1.A.48 Canopies over windows on the west side of the building with peeling paint, cracking, and spalling.

Fig. 2.1.A.49 Canopy over the Basement windows at the south end of the west side of the building.

Fig. 2.1.A.50 Canopies over windows on the east side of the building with peeling paint, cracking, and spalling.

Fig. 2.1.A.51 Flashing with peeling paint at a west window canopy.

Fig. 2.1.A.52 Flashing with peeling paint at the east entrance canopy.

Recommendations:

- Verify cause of water damage under and around the concrete canopies and repair or replace the elements responsible for the damage.
- Remove loose paint from painted concrete canopies and repaint using appropriate materials and methods for an exterior application.
- Repair or replace damaged flashing at concrete canopies.
- Remove loose paint from existing flashing and repaint all flashing at concrete canopies.

Site Elements

The exterior concrete stairway at the south end of the east side of the building, leading from the Basement up to grade level at the parking lot, was observed to have widespread damage including cracking and spalling (see Fig. 2.1.A.53 and Fig. 2.1.A.54).

Fig. 2.1.A.53 Exterior concrete stairway on the east side of the building with cracking and spalling.

Fig. 2.1.A.54 Damage to exterior concrete stairway on the east side of the building.

The stairway leading up to the exterior door at the south end of the East Entrance has spalling at the edge of the lower step which has resulted in a loose railing (see Fig. 2.1.A.55).

Fig. 2.1.A.55 Spalling of the concrete step outside of the exterior door at the south end of the East Entrance.

The retaining wall at the northeast corner of the building has large cracking running the height of the wall (see Fig. 2.1.A.56 and Fig. 2.1.A.57).

Fig. 2.1.A.56 Crack in the northeast retaining wall.

Fig. 2.1.A.57 Crack in the northeast retaining wall.

There is a lid near the front of the building at the southwest corner that is exposed to water (see Fig. 2.1.A.58).

Fig. 2.1.A.58 Lid near the front of the building that is exposed to water.

Recommendations:

- Repair or replace the damaged concrete stairway located on the south end of the east side of the building.
- Repair or replace the spalled concrete step located on the south end of the East Entrance and reattach the handrail.
- Repair or replace the cracked sections of the retaining wall at the northeast corner of the building.
- The concrete paving along the west side of the building appears to be flat. Repairs would include positive drainage away from the building and waterproofing all points of penetration, such as the lid currently exposed to water at the southwest corner of the 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 4 stories tall, has a basement, and has a total floor area of 49,749 square feet. If this building was built today, it would be classified as Occupancy Group B (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) according to IBC's Table 503 and the building would be classified as Construction Type IB, which allows for 11 stories and 160 feet in height, and unlimited floor area. Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum height is increased by 20 feet and the maximum number of stories is increased by one. This building is not equipped throughout with an approved automatic sprinkler system.

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 1570 Grant 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 will 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 a B-type occupancy is 100 feet with an occupant load less than or equal to 30 and is 75 feet with an

occupant load greater than 30. The length of the common path of egress travel would increase to 100 feet for an occupant load greater than 30 if the building were equipped with an approved automatic sprinkler system. During the site visit it appeared that each floor has an occupant load greater than 30 people. The longest common path of egress travel appears to be approximately 111 feet according to the floor plans provided by the Owner and is not in compliance with the 75 feet allowed. Nor would the current longest common path of egress travel be in compliance with the 100 feet allowed if the building were equipped with an approved automatic sprinkler system. The length of the longest common path of egress travel and the occupancy loads of each floor should be verified and addressed 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 occupancy without a sprinkler system is 200 feet. The approximate greatest distance of travel that exists from the most remote point from any of 1570 Grant Building's floor plans to an exit stairway is 135 feet. If the building undergoes extensive renovation, the fire rating of the exit stairways, as discussed below, results in the travel distance through the stairways being included in the exit access travel distance. The approximate greatest distance of travel that exists from the Fourth Floor to an exit discharge to a public way (traveling down through the south stairwell to the First Floor and out through the east exit) is 250 feet. If the building were equipped with an approved fully automatic sprinkler system, the exit access travel distance allowed would increase to 300 feet. However, if the stairways met current required fire-resistance ratings, the greatest distance of travel would only be measured to the exit stairway door (135 feet) instead of to the public way (250 feet).

Doors to the interior exit stairways are labeled as 20 minute fire doors with a minimum latch throw of ½ inch (see Fig. 2.1.B.1). According to Section 1022.2 of the IBC (2012), enclosures for interior exit stairways and ramps shall be constructed as fire barriers in accordance with Section 707. The interior exit stairway and ramp enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the interior exit stairways or ramps shall include any basements, but not any mezzanines. Interior exit stairways and ramps shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. The 1570 Grant Building has 4 stories including a basement and must therefore provide a fire-resistance rating of not less than 2 hours at the interior exit stairways. Further, according to Table 716.5 of the IBC (2012), where fire walls and fire barriers have a required fire-resistance

rating of 2 hours, the minimum fire door and fire shutter assembly rating is 1-1/2 hours.

According to Section 1015.2.1 of the IBC (2012), where two exits or exit access doorways are required from any portion of the exit access, the exit doors or exit access doorways shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served (1570 Grant Building's diagonal dimension of the building = 162'-8-3/4" divided by 2 = 81'-4-3/8") measured in a straight line between exit doors or exit access doorways. (The straight line distance between the two doors of the interior exit stairways is 59'-6-1/4" which is less than the 81'-4-3/8" required.

Areas of rescue assistance exist at each level in the North Stair only and did not appear to have a two-way communication system as per Section 1007.63 of the IBC (2012) requiring that areas of refuge be provided with a two-way communication system. There may be an issue with the maximum travel distance permitted since occupants traveling from the most remote point of the floor plan would have to travel the entire length of the building and the building is not equipped with an approved fully automatic sprinkler system. There may also be an issue with the exterior area for assisted rescue located at the north end of the East Entrance. This area has steps from the landing down to the level of the parking lot and is therefore not an accessible route. This exterior area of assisted rescue must comply with Section 1007.7.3 of the ICB (2012) requiring that each exterior area for assisted rescue be sized to accommodate wheelchair spaces in accordance with Section 1007.6.1.

Fig. 2.1.B.1 Fire rating label on interior exit stairway door.

Recommendations:

- Install new doors to the interior exit stairways with the required 1-1/2-hour fire rating per IBC (2012) code requirements. Verify the fire rating of the wall assembly within the stairways and bring up to code as necessary.
- Verify the size of the landing outside of the north end of the East Entrance for compliance with code requirements for exterior areas for assisted rescue.
- Install an approved two-way communication system at all areas of refuge and assisted rescue.

Fire Suppression Systems

The building is not equipped with a fully automatic sprinkler system. It was reported that the fire alarm and detection system is new following a building audit dated September 2010.

Recommendations:

- Install a fully automatic sprinkler system per the International Building Code (2012) and the National Fire Protection Association Standards requirements and coordinate with the timing of the complete renovation of the building recommended in this report.

Stairs and Ramps

The stair dimensions and details observed during the site visit generally comply with the code requirements for existing stairs with the exception of the railing systems. The stairways currently have railing systems on only one side of the stairs (see Fig. 2.1.B.2). 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 top of the railings are too low in height. The top of the horizontal handrail above finish floor at the Roof Level landing is approximately 31-3/4 inches (see Fig. 2.1.B.3). 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 top of

the handrail above the stair nosing is approximately 29-1/2 inches (see Fig. 2.1.B.4). 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. The current handrail system exceeds guardrail opening limitations, easily allowing passage of a sphere 4 inches in diameter (see Fig. 2.1.B.5). 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.

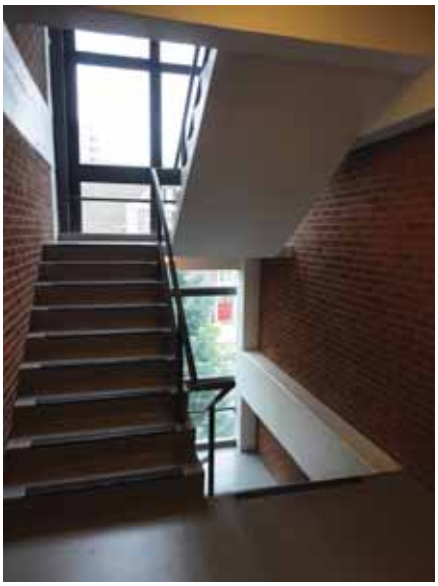

Fig. 2.1.B.2 Handrails currently exist on only one side of the stairs.

Fig. 2.1.B.3 Measurement to top of railing above finish floor at the Roof Level landing is approximately 31-3/4 inches.

Fig. 2.1.B.4 Measurement to top of railing above the stair nosing is approximately 29-1/2 inches.

Fig. 2.1.B.5 The spacing between the handrail posts, or guardrails, is not to code, easily allowing passage of a sphere 4 inches in diameter.

The railing at the south exterior stair of the East Entrance is loose due to spalling of the concrete stair tread at the base of the handrail post (see Fig. 2.1.B.6). According to Section 1012.1 of the IBC (2012), handrails for stairways and ramps shall be adequate in strength and attachment in accordance with Section 1607.8.

Fig. 2.1.B.6 Loose railing at the south exterior stair of the East Entrance.

There appears to be evidence of water pooling along the East Entrance ramp (see Fig. 2.1.B.7). According to Section 1010.8.2 of the IBC (2012), outdoor ramps and outdoor approaches to ramps shall be designed so that water will not accumulate on walking surfaces.

Fig. 2.1.B.7 Water accumulating at the East Entrance ramp.

Recommendations:

- Replace the existing stairway railing system with a new railing system that complies with the code requirement for handrail height and of a maximum of 4 inches of space between guardrails.
- Install a new handrail system along the wall-side of each stair in order to comply with the code requirement that handrails shall be provided on both sides of stairs and ramps.
- Repair the spalling concrete stair tread at the south exterior stair of the East Entrance and reattach the railing post to provide a secure handrail per code requirements.
- Verify the cause of apparent water accumulation at the East Entrance ramp and repair or replace damaged building components as necessary to prevent future occurrences.

Doors

The interior doors throughout the building appear to be to code with lever-style door handles noted throughout.

Security

There is a reception desk located in the main lobby of the Grant Street Entrance on the First Floor. Visitors are required to check in and escorts are required to tour the building. It was reported that the security requirements for this building are higher than normal due to the requirements of the Health Care Policy programs and HIPPA.

2.1-C GENERAL ACCESSIBILITY ISSUES

The majority of the restrooms in the building appear to comply with accessibility standards with the exception of the non-accessible bathrooms on the Third Floor. The bathrooms on the third floor do not have accessible toilet stalls (see Fig. 2.1.C.1) and the lavatory pipes are not wrapped with insulation (see Fig. 2.1.C.2). It was noted that there are no automatic door openers available at any of the restrooms throughout the building.

The Basement Floor has two sets of bathrooms. There are non-accessible bathrooms as well as Locker Rooms with accessible toilets, lavatories, and shower facilities. The accessible toilet stalls and lavatories in the Locker Rooms have floor mats which appear to create a potential tripping hazard and issues with safe access (see Fig. 2.1.C.3 and Fig. 2.1.C.4). According to Section 302.2 of ICC/ANSI A117.1-2003, carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. The pile shall be 1/2 inch maximum in height and exposed edges shall be fastened to the floor and shall have trim along the entire length of the exposed edge. The edge trim must comply with Section 303.3 which states that changes in level greater than 1/4 inch in height shall be beveled with a slope not steeper than 1:2. The floor mats currently in the locker rooms have vertical sides, appear to be greater than 1/4 inch in height, and do not appear to be securely attached to the floor.

Fig. 2.1.C.1 Non-accessible toilet stall.

Fig. 2.1.C.2 Accessible lavatory pipes without protective insulation.

Fig. 2.1.C.3 Mats on the floor outside of the showers provide issues with approaching the accessible toilet compartment.

Fig. 2.1.C.4 Mats on the floor provide issues with approaching the accessible lavatory.

The drinking fountains throughout the building appear to comply with general accessibility requirements.

The sinks in the break rooms on each floor were typically non-accessible (see Fig. 2.1.C.5).

Fig. 2.1.C.5 Typical non-accessible sink found in the break rooms throughout.

Recommendations:

- Demo each floor to the core shell. Complete renovation of these spaces, including the restrooms. All renovations and updates to comply with accessibility guidelines throughout.

OR the following list of recommendations should be implemented:

- Reconfigure non-accessible restrooms on the Third Floor to include required wheelchair maneuvering clearances and a minimum of one accessible toilet stall per restroom where possible.
- Install a minimum of one accessible lavatory with accessible fixtures per restroom on the Third Floor where not provided and wrap the lavatory pipes with insulation.
- Install accessible sinks in the break rooms throughout where possible.
- Replace existing floor mats in the Locker Rooms on the Basement Floor with floor mats in compliance with ICC/ANSI A117.1-2003.

2.1-D ELEVATORS

It was reported that all of the building systems have been upgraded since the property was purchased in 2001 with the exception of the air distribution system. The age of the elevator cabs and equipment is unknown.

Recommendations:

- Verify the age and condition of the elevator cabs, electrical, and mechanical equipment to determine if any warranty is still in effect and to develop a timeline for upgrading the system.

2.1-E ENVIRONMENTAL

It was reported that asbestos is present in the open ceiling in the basement and in the thermal system insulation in the gym, vending room, and weight room. It was also reported that asbestos may be present in the air handler room.

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

Recommendations:

- Thoroughly test the 1570 Grant Building for the presence of asbestos. Abate any asbestos found in the building.
- 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 concrete canopies at each floor are showing signs of water damage. Several cracks and spalls were observed on the underside of the canopies (Fig. 2.2.A.1). The cracks appear to be relatively uniformly spaced and are likely due to temperature changes and shrinkage. Water has penetrated into the cracks, causing corrosion and spalling of the concrete.

Fig. 2.2.A.1

Cracks in the foundation wall at the northeast corner were observed (Fig 2.2.A.2). The cracks have been previously patched and are very minor at this time.

Fig. 2.2.A.2

The concrete on the east entrance stairs has spalled at the handrail post (Fig. 2.2.A.3). No reinforcing is present in the concrete and the post is only embedded about 2 inches. The railing is very loose and is noticeably leaning.

Fig. 2.2.A.3

Significant cracks were observed in the concrete panels at the northwest, southwest, and southeast corners of the building (Fig. 2.2.A.4). After further investigation, the panels were believed to be non-structural (veneer) and do not pose a structural concern. The cracking was likely caused by differential temperature changes due to the glass panels directly in front of them.

Fig. 2.2.A.4

Cracks were observed along the concrete beam at the roof level on the south face (Fig. 2.2.A.5). The cracks will allow water into the concrete and cause additional deterioration. To prevent further moisture intrusion and deterioration, the cracks should be sealed.

Fig. 2.2.A.5

The mortar joints in the penthouse walls were deteriorated (Fig. 2.2.A.6). The joints in the brick masonry bearing wall are showing signs of deterioration due to the elements and should be re-pointed.

Fig. 2.2.A.6

Recommendations:

- Inject the cracks in the concrete canopies with urethane grout to prevent further water intrusion. The roofing membrane may need to be repaired or replaced to keep water from reaching the concrete surface. All loose concrete shall be removed at the spalled locations.
- Inject the foundation wall cracks with urethane grout to prevent further water intrusion.
- Remove and replace the railing at the east entrance stairs and provide a properly designed and detailed connection to the concrete.
- Remove all loose concrete at the concrete beam cracks on the south face at the roof and patch with a cementitious repair mortar. Epoxy inject all cracks.
- Re-point the deteriorated mortar joints at the penthouse brick masonry bearing wall.

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 overall condition of the structural framing that was readily observable was good. Minor cracking was observed at the stairwell landings.

Cracks and signs of water intrusion were observed in the basement at the south west corner (Fig. 2.2.B.1). The cracks are minor, but should be repaired to prevent water from entering the concrete and causing further deterioration.


Fig. 2.2.B.1

Standing water was observed in the mechanical room and the concrete overlay is cracked and loose (Fig. 2.2.B.2). The water does not flow towards a drain and sits on the concrete slab. The concrete overly is deteriorated and should be removed.


Fig. 2.2.B.2

Recommendations:

- Inject the cracks in the basement ceiling at the southwest corner with urethane grout to prevent water intrusion and further deterioration.
- Remove the concrete overlay in the mechanical room and slope concrete surface to the floor drains.

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-C FALL PROTECTION

Parapets were non-existent along the edges of the roof and no anchors were provided for fall protection. Parapets should be at least 42 inches tall or fall protection provided for access near the exposed edges to meet current safety codes.

Recommendations:

- Design and install fall protection systems for safe access near exposed edges.

2.2-D PLANNED AND ON-GOING PROJECTS

N/A

2.3 CIVIL

2.3-A EXTERIOR BUILDING ENVELOPE/SITE

General

The Colorado Department of Health Care Policy and Financing is located at the southeast corner of 16th Avenue and Grant Street with an address of 1570 Grant Street in Denver, Colorado. The building is bordered by a parking lot to the west and east, a church to the north, and a multi-family residential complex to the south. The site is approximately 0.75 acres. The existing site consists of the building, a small parking lot, a controlled access drive, and street right-of-way including sidewalk and landscaping. There is an alleyway located to the east of the building separating the building parking areas. The main building entrance is accessed from Grant Street (Fig. 2.3.A.1). The site surrounding the building is consistent with a building approximately 40+ years old. NOTE: Description of existing infrastructure is based on public utility information provided by the City and County of Denver.

Fig. 2.3.A.1 – Grant Street Entrance

Grading and Drainage

The site slopes generally from the southeast to northwest at grades ranging from 1-8%. The high point of the site is at the southeast corner, in the parking area. The site slopes west towards Grant Street at approximately 2% and north towards 16th Avenue at approximately 4-5%. Existing runoff

is conveyed overland away from the building towards the streets. Runoff is collected by street inlets (Fig. 2.3.A.2) and conveyed by storm sewer north within Grant Street.

The Grant Street entrance is accessed via steps or a steep ramp (Fig. 2.3.A.3). There is also an entrance accessed from the rear parking area (Fig. 2.3.A.4). The building is set back from the public sidewalk and treelawn (Fig. 2.3.A.5). Landscaped areas are flat containing grass, established trees and bushes.

The foundation of the building appears to be stable. Settlement was not observed.

Fig. 2.3.A.2 – Street Inlet

Fig. 2.3.A.3 – Sherman Street Entrance Ramp and Steps

Fig. 2.3.A.4 – Rear Parking Entrance Ramp and Steps

Fig. 2.3.A.5 – Public Sidewalk and Treelawn

The site is located in the Denver Storm Drainage Master Plan Basin 4600-01 (Central Business District). This basin consists of 2.67 square miles and conveys the 2, 5, and 100 year storm event via both storm sewer and roadway conveyance. Runoff from the major basin is conveyed westerly to Cherry Creek, ultimately discharging to the South Platte River. Within this basin, storm sewer facilities typically are designed to convey the 5-year rainfall event at a minimum and it is assumed the same for this area of the City.

The effective Flood Insurance Rate Map (FIRM Map Number 0800460201G, effective date November 17, 2005) 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. There are multiple utility lines located nearby within the public streets. There is an 8" water line located within Grant Street and a 12" water line located within 16th Avenue. There are no known pressure problems at this time.

The building is served by a sanitary sewer service line connecting to a 12" sanitary sewer main within 16th Avenue. Sanitary sewer is routed westerly at a 0.6% slope. There is also a sanitary sewer line located to the east of the site within the alleyway. This sewer is 9" in size and is routed northerly at a 0.5% slope and connects to the 12" line within E. 16th Avenue via a manhole. There are no known sanitary sewer capacity problems at this time.

The storm sewer within Grant Street is 60". This sewer is routed northerly at a slope of 0.43%. There is an existing 18" storm sewer line within 16th Avenue. This sewer is routed westerly and connects to the 60" line within Grant Street.

The location of existing dry and regulated utilities (electric and telecommunications) is unknown.

Site Paving

Numerous locations of broken concrete and concrete cracking was observed. Repair or replace broken or cracked concrete.

Fig. 2.3.A.6 Site Concrete Crack

Fig. 2.3.A.7 Sidewalk Crack, Recommended for Replacement

Fig. 2.3.A.8 Broken Site Concrete, Recommended for Replacement

Recommendations:

- Concrete cracks approximately 1/8 inch wide or smaller showing no differential movement can be sealed using an approved joint sealant. Cracks should be routed and cleaned per an approved industry method prior to sealing.
- Concrete panels showing numerous excessive cracking and/or differential movement should be replaced.
- Replacement of concrete shall be completed in full stone segments, i.e. to the nearest joint location. Repair the subgrade materials and place new curb & gutter or sidewalk. Replace backfill materials and repair/replace any landscaping/paving disturbed during repair operations.

2.3-B CODE ISSUES

There is a large crack in the retaining wall on the east side of the site along the parking area (Fig. 2.3.B.1). The crack is of concern and the wall should be analyzed for stability. The wall may need replacement.

Figure Fig. 2.3.B.1 Crack in Retaining Wall

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

Site slopes were analyzed by visual inspection and topography provided by the City and County of Denver for drainage and ingress and egress. The landscaped areas surrounding the building are generally flat. Current geotechnical recommendations and standard practice for slopes away from the building are 10:1 for 10 feet and 2% in hardscape areas. The building does not appear to have these slopes but no adverse impacts to the building foundation were noted. If problems occur, landscaped areas should be re-graded to provide slope away from the building and area drains should be installed. All improvements within the public right-of-way should comply with and be coordinated with the City and County of Denver.

Recommendations:

- Replace retaining wall if necessary.
- Re-grade landscaped areas to current geotechnical recommendations for slopes away from the building.
- Install area drains where proper slopes away from the building cannot be met.
- Install handrails in ADA paths where slopes exceed 5%.

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 Department of Health Care & Financing building appears to have been built sometime between 1940 and 1950 and purchased by the state about 10 years ago. Feeding the building is a 30+ year old 300kVA, 208/120V utility transformer from Xcel. Since this building was purchased after the tunnels were complete, the transformer does not connect to the utilities feeding most of the other buildings in the complex. The utility transformer feeds a 1200amp, 208/120V switchboard in the main basement electrical room (see Fig. 2.4.A.1). Each floor (one to four) has at least three electrical panels; one in the women's room door, one in the janitor closet and one by the stair door. The panelboard by the stair door on each floor appears to be 30+ years old.

Fig. 2.4.A.1 – Main Switchgear

Recommendations:

- All panelboards past their useful life should be replaced. At minimum, all the panelboards by the stairs need to be replaced with new ones. In addition, replace the conductors feeding the panels and their loads.

Lighting

The lighting fixtures appear to be less than 10 years old and are T8 fluorescent type (see Fig. 2.4.A.2). It was reported that this building is a candidate for an LED lighting upgrade. The building is on a building management system that controls the times the lights are on in the open office spaces. There is an override button located by the entry way of every space (see Fig. 2.4.A.3).

Fig. 2.4.A.2 – Open Office Lighting

Fig. 2.4.A.3 – Lighting override switch

Most of the emergency lighting appears to be frog eye type and exit signs are located throughout. The exit signs, and the emergency lighting appears inadequate, there is dim lighting in the stair well.

Fire Alarm

The fire alarm system appears to be less than five years old and has full detection in the building with elevator recall. The fire alarm system appears to be up to code.

Fig. 2.4.A.4 – Fire alarm control panel

General Power

Receptacles in the office spaces appear to be less than 10 years old. The receptacles in the mechanical and basement spaces are in bad condition and past useful life (see Fig. 2.4.A.5).

Fig. 2.4.A.5 – Burned out receptacle

Fig. 2.4.A.6 – Receptacle and switch past useful life

Recommendations:

- Replace all of the 30+ year old receptacles and wire from associated panelboards.

Electrical for Mechanical Systems

The elevator appears to be due for a cab upgrade. Some out of service equipment has been abandoned and will decay over time.

Fig. 2.4.A.7 – Abandoned conduit

Emergency Power

No emergency generator is provided with this building. All life safety equipment is backed up by battery.

MECHANICAL SYSTEMS

The HVAC system for the building consists of two water cooled "Trane" screw chillers located in the basement mechanical room, one cooling tower located on the roof (see Fig. 2.4.A.8) with remote sump in the basement and two "Aerco" condensing boilers located in the basement boiler room. The hydronic distribution is variable primary for both the chilled water and hot water system. The cooling capacity of each chiller is approximately 80 tons and the input heating capacity of each boiler is approximately two million Btu/hr. The hydronic distribution system is a two-pipe variable flow system. Aqua-stats have been installed on main supply and return water piping for automatic heating and cooling changeover. Chilled water distribution consists of one pump while the hot water distribution has two pumps operating on lead/lag basis. Condenser water circulation is via one pump located in the basement near the tower sump. Controls in the building are Siemens Direct Digital Controls.

The air distribution in the spaces is via central Air Handling Unit (AHU) located in the basement mechanical room. Each floor has perimeter induction units for space heating/cooling. These units do not have any DDC controls. Each unit is provided with a manual adjustable knob for heating and cooling selection. Primary air from central AHU to each induction unit is delivered via various duct risers along the perimeter of the building. Connection from riser to the unit is via 6" round duct. The return air from each floor is via single return air grille connected to return air duct riser installed outside the building. Return air fan is located in the basement. On each floor, two Fan Coil Units (FCU) have been added, one serving the north zone and the other serving the south zone, to meet the interior heating and cooling demand. These FCUs' have their own control thermostat. There are four AHUs' in the basement serving the Wellness Center and other areas including first floor lobby area. The elevator machine room on the roof is served by a window ac unit. Most of the motors have VFD's which help with energy efficiency.

The building has a 2" domestic water supply and a 2" fire service. Stand pipes and fire pump is provided. Domestic hot water is provided via a 100 gallon gas fired heater in the boiler room.

The cooling tower remote sump located in the basement is at the end of its useful life. The tank body and the pipe is corroded and rusted at many places (see Fig. 2.4.A.8, Fig. 2.4.A.9, Fig. 2.4.A.10).

The existing AC window unit for the elevator machine room appears to be undersized and is not in working condition. The unit is not able to maintain the space at the required temperature (see Fig. 2.4.A.11).

The existing condenser water pump is installed directly on the floor (see Fig. 2.4.A.12) without any housekeeping pad.

During the site visit, it was noted that the main toilet exhaust fan on the roof was making excessive vibration and the top cover was loose (see Fig. 2.4.A.13).

The main air handling unit appears to be at the end of its useful life. The supply duct work from the unit has two 90 degree bends at the discharge. This results in pressure drop and more energy consumption. Replace the discharge duct work with new ductwork using new fittings which will reduce the pressure drop. The main return fan also appears to be at the end of its useful life. More energy efficient fans are available which could reduce energy consumption (see Fig. 2.4.A.14).

Insulation is missing on the free-cooling heat exchanger piping (see Fig. 2.4.A.15).

Presently no heat is provided in the janitor closet even though it has an outside wall and glass window (see Fig. 2.4.A.16). The existing perimeter induction units do not appear to operate efficiently and condition the space properly. Also, the units do not have any automatic temperature control. It was indicated by the maintenance staff that the building has heating/ cooling problems in some spaces. The interior office partition does not match the perimeter unit location and as a result, some of the units are blocked off by the partition (see Fig. 2.4.A.17, Fig. 2.4.A.18). No insulation is provided for main supply and return chilled/hot water piping in the risers (see Fig. 2.4.A.19). The outside air intake louver is at ground level which is susceptible to vandalism / terrorism activity (see Fig. 2.4.A.22).

Old out of service equipment is abandoned at place. Abandoned equipment takes space away from existing equipment and future equipment see (Fig. 2.4.A.23).

The existing 2-pipe system does not provide required comfort conditions, especially during swing seasons. Presently ½" hot/cold water pipe serves two perimeter units. There is not enough water flow to meet the space heating and cooling demand.

Fig. 2.4.A.8 - Cooling Tower

Fig. 2.4.A.9 - Inside view of tower sump

Fig. 2.4.A.10 - Rusting on outside of tower sump

Fig. 2.4.A.11 - Existing window ac unit

Fig. 2.4.A.12 - Condenser water pump motor installed directly on floor

Fig. 2.4.A.13 - Toilet Exhaust Fan

Fig. 2.4.A.14 - SA duct from AHU

Fig. 2.4.A.15 - Missing insulation on Heat Exchanger Piping

Fig. 2.4.A.16 - Janitor closet

Fig. 2.4.A.17 – Induction Unit blocked

Fig. 2.4.A.18 - Perimeter units blocked by office partitions

Fig. 2.4.A.19 - Un-insulated piping in the riser

Fig. 2.4.A.20 - No belt guard provided for AHU

Fig. 2.4.A.21 – Pipe penetration through ductwork/no sealing around pipes

Fig. 2.4.A.22 – Outside air intake at ground level

Fig. 2.4.A.23 – Abandoned heater

Recommendations:

- Provide new cooling tower: Existing cooling tower is at the end of its useful life and should be replaced with a new high efficiency cooling tower. The cooling tower sump had leaked in the past and patch work has been done on the sump to stop the leak. The fill material is scaled and clogged thereby reducing the effectiveness of the cooling tower. No vibration spring isolators have been provided for the existing tower.
- Provide new remote sump for cooling tower.
- Provide new DX split ac unit for elevator machine room.
- Provide housekeeping pad for condenser water pump.
- Verify fan belts and hood cover for main toilet exhaust fan on the roof.
- Provide a new central AHU in the basement.
- Investigate the possibility of relocating the Air Handling Unit from basement to the roof pent house and have main supply and return ducts within the building.
- Provide insulation on the Heat Exchanger Piping to improve efficiency of the heat exchanger.
- Provide heat in the janitor closet located on the exterior zone of the building.
- Replace perimeter induction units on each floor with new units.
- Insulate main supply and return piping.
- Provide 4-pipe hydronic distribution system. This will improve comfort and also reduce energy consumption.
- Verify existing piping system.
- Verify existing supply air ductwork and ensure enough airflow is provided at each terminal unit.
- Provide fire damper at return air grille on each floor.
- Provide new direct digital controls for all perimeter units. This will improve comfort and reduce energy consumption.
- Remove abandoned gas piping above the electrical switchgear in the basement.
- Provide belt guard on AHU serving wellness center. Insulate chilled/ hot water piping connected to the AHU.
- Re-route piping passing through the duct work.
- Investigate the possibility of providing a main outside air louver at high level.

2.4-B CODE ISSUES

ELECTRICAL CODE ISSUES

The disconnect switch in the fourth floor women's room closet only has 11" of working space (see Fig. 2.4.B.1). The National Electrical Code (NEC) states a 208V piece of equipment shall have 36" of working space.

There appears to be a water issue with the pipes above the main electrical gear (see Fig. 2.4.B.2). These pipes either need to be relocated or need a pan provided to ensure no water comes into contact with the electrical gear.

As piping and cabling has been installed throughout the years, the penetrations through the walls have not been properly sealed (see Fig. 2.4.B.3 and Fig. 2.4.B.4). This violates the fire code because in the instance of a fire, the penetrations will allow it to travel through the building.

All electrical junction boxes are required to be sealed. Many boxes in the basement mechanical room have knockout seals that were open (see Fig. 2.4.B.5).

In the basement mechanical room, Chiller #2 control cabinet does not have the proper clearance to open the door completely to work on the equipment in a safe manner (see Fig. 2.4.B.6).

Fig. 2.4.B.1 – Disconnect switch without proper working space

Fig. 2.4.B.2 – Plastic keeping water from electrical gear

Fig. 2.4.B.3 – Penetrations not fire sealed

Fig. 2.4.B.4 - Penetrations not fire sealed

Fig. 2.4.B.5 – Open junction boxes

Fig. 2.4.B.6 – Ductwork in front of chiller control panel

Recommendations:

- Provide a new A/C unit for the penthouse elevator machine room. The existing unit appears undersized and is no longer blowing cold air.
- A complete remodel of the basement mechanical room. Most of the electrical equipment does not have proper working clearance.
- Provide required space for the disconnect switch in the 4th floor women's restroom.
- Relocate the pipes above the main electrical gear away from the water closet issue or provide a pan to keep water off.

MECHANICAL CODE ISSUES

- It is our understanding that all fire/smoke protection systems have been inspected by Denver Fire Department and the building fire protection system is acceptable to AHJ.
- Provide fire sprinkler system.
- Air distribution in the building and minimum outside air required in all spaces is not adequate.
- The openings around duct and pipes passing through rated wall are not sealed with fire rated material (see Fig. 2.4.B.7).

Fig. 2.4.B.7 – Opening in walls around duct and pipe penetrations

Recommendations:

- Provide sprinkler system in the building.
- Verify air distribution in the building and ensure minimum outside air required per code is provided in all spaces.
- Verify duct penetrations in fire walls and ensure fire dampers are provided at missing locations.

2.4-C PLANNED AND ON-GOING PROJECTS

The fire sprinkler system, HVAC, and AHU system in the basement have been identified as requiring replacement. No date has been established for this work at present.

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 for 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 1570 Grant 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 2nd IDF room on each floor, vertically stacked as a 2nd 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 major code issues in the building related to the existing voice/data IT/Telecommunications Infrastructure.

Recommendations:

For new renovation work, applicable codes are below, but may not be limited to those listed:

- 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 1570 Grant 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 the security considerations for this facility should be considered more critical based on the nature of business conducted, maintaining HIPPA and Health Care policy programs. 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 1570 Grant 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.

The State's existing wireless duress alarm system infrastructure should be expanded where needed to support new locations of wireless duress buttons. CSP Central Command Center monitors a wide network of wireless duress buttons at multiple, local State facilities in Denver. This is accomplished using wireless mesh coverage by use of repeaters located on the State facilities. Fixed point wireless duress buttons may be located at designated points within the building, for staff use in emergency situations. The duress system will utilize wireless duress buttons, which transmit RF signals to an infrastructure of wireless RF receivers and repeaters. System repeaters will be provided where necessary to boost the strength of the wireless signals. Duress alarms in the building are to incorporate this technology, and duress alarms within the complex will be monitored by the existing CSP head-end system.

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 1570 Grant 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

Wireless 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, wireless 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 1570 Grant building currently.

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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

There are generally accessible restrooms available on each floor with the exception of the Third Floor. See 2.1-C General Accessibility Issues.

3.0-C ARCHITECTURAL FINISHES AND INTERIOR COMPONENTS

General Architecture Findings

The floor plans throughout the building consist of open office space combined with enclosed office space and conference rooms along the perimeter of the building. The layout of the floor plan changes with each level. During the site survey visit, employees indicated the need for more conference rooms. One of the two stairways is located at the northeast corner of the building and the second stairway is located just to the south side of the building's center. The building's service core is arranged around the central stairway with the elevators to the west and the restrooms, janitor closets, and break rooms located to the east and along the outer perimeter of the building.

It was reported that asbestos is present in the open ceiling in the basement and in the thermal system insulation in the gym, vending room, and weight room. It was also reported that asbestos may be present in the air handler room. All asbestos within the building should be abated and all personnel should be removed from affected areas during construction.

Ceiling Finishes

The 2x2 acoustic ceiling tiles in the main Grant Street Entrance are in generally fair condition. The 2x4 acoustic ceiling tiles throughout the elevator lobby, main corridors, break rooms, restrooms, and throughout the office spaces included in the site survey visit are in fair to poor condition overall, with signs of sagging, damage, staining, and deterioration (see Fig. 3.0.C.1, Fig. 3.0.C.2, and Fig. 3.0.C.3). The gypsum board ceilings throughout the building are in generally fair condition overall. There is an area of the gypsum board ceiling in the basement in poor condition, consisting of water damage along the west side of Room 026 Wellness Center Weight Room (see Fig. 3.0.C.4).

Fig. 3.0.C.1 Sagging 2x4 acoustic ceiling tiles.

Fig. 3.0.C.2 Stained 2x4 acoustic ceiling tiles.

Fig. 3.0.C.3 Damaged 2x4 acoustic ceiling tiles.

Fig. 3.0.C.4 Water damage to the ceiling along the west side of Room 026

Wall Finishes

The main Grant Street Entrance consists of both painted gypsum board in fair condition and masonry veneer cladding the walls in fair to poor condition. The masonry veneer is dirty and pulling away from the wall in some locations (see Fig. 3.0.C.5 and Fig. 3.0.C.6). The gypsum board walls throughout the remaining spaces included in the site visit are in generally fair condition with typical areas of scuffed paint noted (see Fig. 3.0.C.7). There is an area of unpatched gypsum board at a previously removed wall outlet noted on the Third Floor (see Fig. 3.0.C.8). There is also an area of gypsum board near the drinking fountain outside of the Women's Restroom on the Fourth Floor with obvious water damage (see Fig. 3.0.C.9). The 4x4 inch tile wainscoting and gypsum board walls in the restrooms are in generally fair condition.

Fig. 3.0.C.5 Dirty masonry veneer cladding the Grant Street Entrance lobby walls.

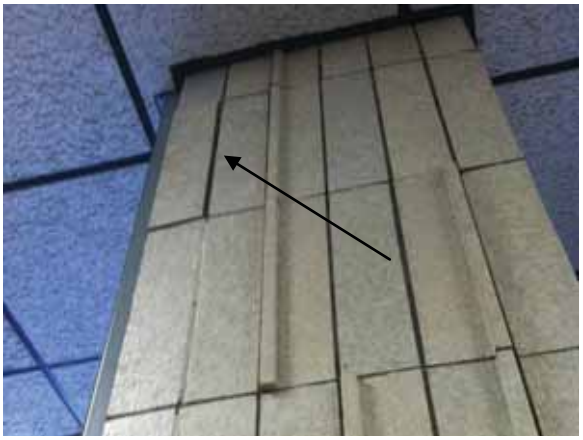

Fig. 3.0.C.6 Masonry veneer pulling away from the walls of the Grant Street Entrance lobby.

Fig. 3.0.C.7 Areas of scuffed paint on the painted gypsum board walls.

Fig. 3.0.C.8 Unpatched gypsum board at a previously removed wall outlet on the Third Floor.

Fig. 3.0.C.9 Water damage at wall near the drinking fountain outside of the Women's Restroom on the Fourth Floor.

Floor Finishes

The terrazzo flooring in the Grant Street Entrance lobby is in fair condition overall with some wear noted at the base of the first step leading up to the elevator lobby (see Fig. 3.0.C.10). The elevator lobby on the First Floor has six-inch square floor tile in generally fair condition. The one-foot square linoleum tile throughout the Break Rooms included in the site visit is in generally fair to poor condition with areas of discoloration and damage noted (see Fig. 3.0.C.11 and Fig. 3.0.C.12). There was also an area of damaged one-foot square linoleum flooring noted in the middle of Room 013 C Vending/Storage in the basement (see Fig. 3.0.C.13). The one-inch square and two-inch square floor tile throughout the restrooms is in generally fair condition overall. The carpet throughout the remaining spaces included in the site visit is in generally poor condition with areas that are worn out, soiled, and pulling loose, creating a potential tripping hazard (see Fig.

3.0.C.14, Fig. 3.0.C.15 and Fig. 3.0.C.16). Some of the areas with loose seams have been taped, also creating a potential tripping hazard (see Fig. 3.0.C.17). The vinyl baseboard is pulling away from the wall in spots on the Basement Floor (see Fig. 3.0.C.18).

Fig. 3.0.C.10 Worn terrazzo floor at the base of the first step in the Grant Street Entrance lobby.

Fig. 3.0.C.11 Discolored linoleum tile in noted in a Break Room.

Fig. 3.0.C.12 Damaged linoleum tile noted in the entryway of a Break Room.

Fig. 3.0.C.13 Damaged flooring in Room 013 C Vending/Storage in the basement.

Fig. 3.0.C.14 Typical carpet flooring in generally poor condition.

Fig. 3.0.C.15 Typical soiled and stained carpet flooring.

Fig. 3.0.C.16 Typical carpet flooring pulling loose at the seams.

Fig. 3.0.C.17 Typical carpet flooring in generally poor condition and with tape covering the loose seams.

Fig. 3.0.C.18 Vinyl baseboard pulling away from the wall on the Basement Floor.

Other

General damage to the doors of the Break Rooms was noted during the site survey visit (see Fig. 3.0.C.19).

Fig. 3.0.C.19 Damaged door noted at a Break Room.

Recommendations:

- Demo each floor to the core shell. Complete renovation of these spaces, including the restrooms.

OR the following list of recommendations should be implemented:

- Replace ceiling tiles where stained or damaged. Replace areas of the dropped acoustic ceiling where sagging with a new dropped acoustic ceiling to match existing.
- Repair or replace any damaged gypsum board walls and ceilings throughout, including the damaged gypsum board ceiling on the west side of Room 026.
- Paint the gypsum board walls and ceilings throughout.
- Clean the masonry veneer cladding the walls in the Grant Street Entrance lobby and repair or replace any veneer with damage or pulling away from the wall.
- Clean and reseal the travertine flooring in the Grant Street Entrance lobby and the 6x6 inch tile in the elevator lobby and corridor leading to the East Entrance.
- Clean and reseal the tile flooring in the restrooms. Repair or replace any areas of damaged tile.
- Clean, repair, or replace the one-foot square linoleum tile in the Break Rooms and Room 013 C Vending/Storage in the basement.
- Replace all carpet throughout.
- Repair or replace any damaged doors to the Break Rooms throughout.

MARTIN / MARTIN
CONSULTING ENGINEERS

3.0-D STRUCTURAL

No structural concerns were noted on the First Floor through the Fourth Floor. On the Basement Floor, minor cracking was observed in the concrete ceiling at the southwest corner. Signs of water intrusion were present. The cracks are not a structural concern at this time. See section 2.2 for structural observations and recommendations for all floors.

3.0-E VOICE AND DATA

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

3.0-F SECURITY SYSTEMS

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

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4.0 LEVELS OF RENOVATION NEEDED

Building: 1570 Grant Building, 1570 Grant Street (Denver)

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

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5.0 COST ESTIMATES

SUMMARY OF SUMMARIES with Flex Space

Item No.	Description	SF	Total	$/SF
1	1570 Grant Renovation	47,749	4,990,233	104.51
2	Contingency on Above		w/ Above	
	Base Price Subtotal:	**47,749**	**4,990,233**	**105**
3	Flex Space		Excluded	
4A	IT Relocation	47,749	120,446	2.52
4B	IT Relocation	47,749	49,902	1.05
5	Contingency on Above		Excluded	
	Equipment \ Art Subtotal:		**170,349**	**4**
	Base Price \ Equipment \ Art Subtotal:		**5,160,582**	**108**
6	Escalation - 6.75% per year		Excluded	
7	Contingency on Above		Excluded	
	Escalation Subtotal:		**Excluded**	
	Base Price \ Equipment \ Art Subtotal:		**5,160,582**	**108**
8	Design Fees at 8% per State of CO Standards		412,847	8.65
9	Contingency on Above		Excluded	
	Design Fee Subtotal:		**412,847**	**8.65**
	Base Price \ Equipment \ Art \ Design Fee Subtotal:		**5,573,428**	**117**

PROJECTED COST OF CONSTRUCTION IN 2014 DOLLARS	**5,573,428**	**117**

ADD ALTERNATE				
10	Move Management	47,749	57,809	1.21
11	FF&E (FF&E SF & $25\SF Allowance per Architect)	34,561	864,025	25.00
12	Escalation - 6.75% per year		Excluded	
13	Contingency on Above		Excluded	
	Subtotal:		**921,834**	
	Add Alternate Subtotal:		**921,834**	**19**

SYSTEM BY SYSTEM SUMMARY

Item No.	Description	SF	Total	$/SF
1A	Add Fire Sprinkler System w/ New Alarm	47,749	545,534	11.42
1B	Escalation		Excluded	
	System 1 Add Fire Suppression w/ New Alarm Subtotal:		**545,534**	**11**
2A	Modernize Elevators	47,749	71,420	1.50
2B	Escalation		Excluded	
	System 2 Modernize Elevators Subtotal:		**71,420**	**1**
3A	Replace HVAC	47,749	1,900,098	39.79
3B	Escalation		Excluded	
	System 3 Replace HVAC Subtotal:		**1,900,098**	**40**
4A	Replace Windows	47,749	1,133,406	23.74
4B	Escalation		Excluded	
	System 4 Replace Windows Subtotal:		**1,133,406**	**24**
5A	Replace AHU System in Basement	47,749	294,642	6.17
5B	Escalation		Excluded	
	System 5 Replace AHU Subtotal:		**294,642**	**6**
6A	Balance of Project Scope	47,749	1,110,209	23.25
6B	Escalation		Excluded	
	Balance of Scope Subtotal:		**1,110,209**	**23.25**
	System by System Subtotal:		**5,055,310**	**106**
7	Flex Space		Excluded	
8A	IT Relocation	47,749	120,446	2.52
8B	Public Art	47,749	49,902	1.05
9	Contingency on Above		Excluded	
	Equipment \ Art Subtotal:		**170,349**	**3.57**
	Systems \ Equipment \ Art Subtotal:		**5,225,658**	**109**
10	Design Fees at 8% per State of CO Direction		418,053	8.76
11	Contingency on Above		Excluded	
	Design Fee Subtotal:		**418,053**	**8.76**
	Base Price \ Equipment & Art \ Design Fee Subtotal:		**5,643,711**	**118**

PROJECTED COST OF CONSTRUCTION IN 2014 DOLLARS	**5,643,711**	**118**

ADD ALTERNATE				
12	Move Management	47,749	57,809	1.21
13	FF&E (FF&E SF & $25\SF Allowance per Architect)	34,561	864,025	25.00
14	Escalation - 6.75% per year		Excluded	
15	Contingency on Above		Excluded	
	Subtotal:		**921,834**	**19**
	Add Alternate Subtotal:		**921,834**	**19**

FF&E DETAILED ESTIMATE - BASE

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project Amount	Total Project CSI Sec. Total	Comments
01 50 00	**Temporary Facilities and Controls**					Excluded	
	Flex Space for Multiple Moves and\or Tenant Holdover			Excluded Per Owner			
	General Condtions & General Requirements Subtotal					**Excluded**	
11 90 00	**Owner Furnished Equipment**					Excluded	
11 99 00	**A\V & IT Equipment**					69,259	
	AV / IT @ Large Conference Rooms	-	EA	5,230.00	Excluded		
	VOIP Telephone System	191	EA	280.00	53,479		
	New PC Computer Workstations	19	EA	810.00	15,780		
	State of CO Servers, Routers, Wireless Access and IT Equipment not w/Above				Excluded		
	Equipment Subtotal					**69,259**	
12 99 00	**Furnishings**					864,025	
	New Employee Workstations	34,561	EA	25.00	864,025		
	Minor Repair to Existing Employee Workstations		EA	160.00	Excluded		
	Furnishings @ Large Conference Rooms	-	EA	4,150.00	Excluded		
	Furnishings @ Medium Conference Rooms	-	EA	2,905.00	Excluded		
	Furnishings @ Small Conference Rooms	-	EA	1,260.00	Excluded		
12 99 99	**Art**					49,902	
	Art in Public Places @ 1.0% of Construction Cost	1	LS	49,902.33	49,902		
	Furnishings Subtotal					**913,927**	
13 49 00	**Radiation Protection**					Excluded	
	Special Construction Subtotal					**Excluded**	
27 10 00	**Structured Cabling**					51,187	
	Teledata Cabling System Conduit & Wire Upgrades				w/Const Cost		
	Teledata Cabling Terminations, Testing & Tone-Out	191	EA	268.00	51,187		
27 41 00	**Audio-Visual Systems**					Excluded	
27 53 00	**Distributed Systems**					Excluded	
	Communications Subtotal					**51,187**	
	Total FF&E, IT & A/V					**1,034,374**	
34 99 99	**Move Management**					57,809	
	Moving Labor, Material, Equipment & Supervision	191	EA	243.00	46,412		
	Relocate Existing PC Computer Workstations	175	EA	65.00	11,397		
	Transportation Subtotal					**57,809**	
	Total FF&E, IT, & Move Management					**1,092,183**	

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	

DETAILED ESTIMATE - SUMMARY

CSI Division	Description		Project GSF	47,749
		$/GSF	Section Totals	Total w/Burdens
02	Existing Conditions	0.05	2,601	
03	Concrete	0.40	19,072	
04	Masonry		Excluded	
05	Metals	0.93	44,501	
06	Woods & Plastics	1.13	54,018	
07	Thermal & Moisture	0.79	37,866	
08	Doors & Glazing	17.44	832,903	
09	Finishes	6.79	324,347	
10	Specialties	2.45	117,044	
11	Equipment		Excluded	
12	Furnishings	0.06	2,971	
13	Special Construction		Excluded	
14	Conveying Systems	0.52	25,000	
21	Fire Supression	3.22	153,752	
22	Plumbing	1.78	84,874	
23	HVAC	26.88	1,283,656	
26	Electrical	4.33	206,675	
27	Communications	2.30	110,014	
28	Security		w/26000	
31	Earthwork	3.02	144,000	
32	Exterior Improvements	2.53	120,759	
33	Utilities		Excluded	
34	Transportation		Excluded	
SUBTOTAL: CONSTRUCTION COST DETAIL		**74.64**	**3,564,054**	
	General Conditions (GC's Onsite Overhead)	9.80%	349,277	
	Materials Testing	1.00%	39,133	
	Design & Preconstruction Contingency	10.00%	395,247	
	Owner's Construction Contingency (after NTP)	5.00%	217,386	
	Permits	1.90%	86,737	
SUBTOTAL: DIRECT CONSTRUCTION COSTS		**97.42**	**4,651,834**	
	General\Professional Liability Insurance	0.90%	41,867	
	Builder's Risk Insurance	1.50%	70,406	
	Performance & Payment Bond	1.10%	52,405	
	Bid Bond	0.20%	9,633	
	Tap Fees & Other Owner Soft Costs		Excluded	
	GC's Offsite Overhead & Profit (Fee)	3.40%	164,089	
	Escalation\Year (to Mid-Point of Construction)	6.75%	ject Summary	
SUBTOTAL: DIRECT & INDIRECT CONSTRUCTION COSTS		**104.51**	**4,990,233**	

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
01 45 00	Quality Control					By Owner	
01 50 00	Temporary Facilities and Controls					w/General Conditions	
01 50 20	Temporary Parking and Staging Yard					w/General Conditions	
01 50 30	Weather Protection and Conditions					w/General Conditions	
01 60 00	Mock-Ups (Physical & Digital)					w/General Conditions	
01 62 00	Crane Service					w/Trades	
01 74 00	Cleaning					w/General Conditions	
	General Condtions & General Requirements Subtotal					**w/Summary**	
02 10 00	Hazardous Material Removal					Excluded	
02 25 00	Building Shoring					w/051200	
	Shoring @ Existing Building during Demolition (if any)				w/Below		
02 41 13	Selective Site Demolition					2,601	
	Selective Demoliton @ Existing Site (Allowance)	1,156	SF	2.25	2,601		
02 41 19	Structure Demolition					w/051200	
	Existing Conditions Subtotal					**2,601**	
03 07 00	Drilled Piers (Caissons)					Excluded	
03 07 10	Helical Pier / Screw Pile					Excluded	
03 20 00	Concrete Reinforcing Steel					Excluded	
	Reinforcing at CIP Concrete				w/03300		
	Reinforcing at CMU Walls				w/04200		
03 30 00	Cast-in-Place Concrete					19,072	
	Concrete Patching @ Existing Building -Medium Repairs (Allowance)	1,432	SF	13.31	19,072		
03 35 00	Concrete Finishes					Excluded	
	Concrete Subtotal					**19,072**	
04 20 00	Masonry					Excluded	
	Cleaning & Caulking @ Brick Veneer at Exterior Skin	-	SF	0.78	Excluded		

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
	Repair @ Existing Brick Veneer @ Exterior Skin	-	SF	6.83	Excluded		
	Replace Existing Brick Veneer @ Exterior Skin	-	SF	22.31	Excluded		
04 40 00	**Stone**					**Excluded**	
	Cleaning & Caulking @ Stone Veneer at Exterior Skin	-	SF	1.09	Excluded		
	Repair @ Existing Stone Veneer @ Exterior Skin	-	SF	18.71	Excluded		
	Replace Existing Stone Veneer @ Exterior Skin	-	SF	22.31	Excluded		
	Masonry Subtotal					**Excluded**	
05 12 00	**Structural Steel**					**6,357**	
	Structural Upgrades @ Existing Building - Minor Repairs (Allowance)	-	SF	6.34	Excluded		
	Structural Upgrades @ Existing Building -Medium Repairs (Allowance)	477	SF	13.31	6,357		
	Structural Upgrades @ Existing Building -Major Repairs (Allowance)	-	SF	25.36	Excluded		
	Steel Joists					**w/051200**	
	Steel Joists (if any)				w/Above		
05 30 00	**Metal Deck**					**w/051200**	
	Metal Declk (if any)				w/Above		
05 34 00	**Acoustical Metal Decking**					**Excluded**	
05 40 00	**Cold-Formed Metal Framing**					**Excluded**	
05 44 00	**Cold-Formed Metal Trusses**					**Excluded**	
05 45 23	**Metal Supports - Unistrut**					**Excluded**	
05 50 00	**Miscellaneous Metal Fabrications**				**-**	**Excluded**	
05 52 00	**Metal Railings**					**38,144**	
	Repair Existing Metal Railings	2,865	SF	13.31	38,144		
05 58 50	**Equipment Screens**				**-**	**Excluded**	
05 59 00	**Entrance Canopy**				**-**	**Excluded**	
05 80 00	**Expansion Control**				**-**	**Excluded**	
	Metals Subtotal					**44,501**	
06 10 00	**Rough Carpentry**					**24,352**	
	Blocking & Backing at Interior Reno (Allowance)	47,749	SF	0.51	24,352		
06 15 00	**Wood Decking**					**Excluded**	
06 22 00	**Millwork / Finish Carpentry**					**29,666**	
	New Reception Desk (Allowance)	1	LS	10,000.00	10,000		

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
	Millwork at New Large Conf Rooms (Allowance)	-	LF	375.00	Excluded		
	Millwork at New Medium Conf Rooms (Allowance)	-	LF	375.00	Excluded		
	Millwork at New Small Conf Rooms (Allowance)				Excluded		
	Millwork at New Large Break Rooms (Allowance)	-	LF	250.00	Excluded		
	Millwork at New Small Break Rooms (Allowance)	-	LF	250.00	Excluded		
	Solid Surface Countertops @ New Restrooms	325	SF	55.00	17,875		
	Additional Millwork not w/Above @ Full Reno + 25% of Med Reno (Allowance)	1,194	SF	1.50	1,791		
06 60 00	**FRP Panels**					**Excluded**	
	FRP Panels @ New Janitor's Closets	-	SF	5.33	Excluded		
	Woods & Plastics Subtotal					**54,018**	
07 11 00	**Dampproofing**					**Excluded**	
07 13 00	**Waterproofing**					**Excluded**	
07 18 00	**Traffic Coatings**					**Excluded**	
07 21 00	**Building Insulation**					**10,171**	
	2" Rigid Insulation @ Exterior Walls @ New Skin Materials	5,189	SF	1.96	10,171		
07 24 00	**EIFS**					**Excluded**	
	Cleaning & Caulking @ 3 Coat Stucco System at Exterior Skin	-	SF	0.41	Excluded		
	Repair @ Existing 3 Coat Stucco System to Match @ Exterior Skin	-	SF	2.78	Excluded		
	Replace Existing 3 Coat Stucco System to Match @ Exterior Skin	-	SF	9.89	Excluded		
07 32 00	**Tile Roof**				-	**Excluded**	
07 41 00	**Metal Wall Panels**					**Excluded**	
07 41 50	**Metal Roof Panels**					**Excluded**	
07 50 00	**Membrane Roofing**					**6,494**	
	Caulking & Minor Roof Repair @ Existing Roof Membrane	9,550	SF	0.68	6,494		
	Patching @ Existing Roof Membrane	-	SF	1.89	Excluded		
	New Roofing Membrane @ Existing Roof to be Replaced	-	SF	9.89	Excluded		
07 60 00	**Flashing and Sheetmetal**					**Excluded**	
	Flashing @ Roofing System				w/074150		
07 72 00	**Roof Accessories**					**Excluded**	
	Roof Access Hatch\Ladder				Excluded		
	Roof Access Ladders				Excluded		
	Roof Curbs @ RTUs				Excluded		
07 76 00	**Roof Pavers**					**Excluded**	
	2'-0"x 2'-0" Roof Access Pavers				Excluded		
	Conc Paver\Pedestal System				Excluded		

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
07 81 00	**Spray on Fireproofing**					**Excluded**	
07 81 10	**Intumescent Fireproofing**					**Excluded**	
07 84 00	**Firestopping**					**2,578**	
	Firestopping	47,749	SF	0.05	2,578		
07 90 00	**Joint Sealants**					**18,622**	
	Joint Sealants	47,749	SF	0.39	18,622		
	Thermal & Moisture Subtotal					**37,866**	
08 10 00	**Steel Doors and Frames**					**21,281**	
	HM Doors						
	3'-0"x 7'-0" HM Exterior Door				Excluded		
	3'-0"x 7'-0" HM Interior Door				Excluded		
	PR 3'-0"x 7'-0" HM Interior Doors				Excluded		
	HM Frames						
	3'-0"x 7'-0" HM Door Frame	95	EA	211.33	20,182		
	6'-0"x 7'-0" HM Door Frame	4	EA	274.73	1,099		
	Add for HM Frames @ Masonry Openings				Excluded		
	Add for Sidelites & Transoms				Excluded		
	HM Glazing Frames				Excluded		
08 20 00	**Wood Doors**				-	**35,176**	
	3'-0"x 7'-0" SC WO Wood Door	95	EA	339.87	32,457		
	PR 3'-0"x 7'-0" SC WO Wood Doors	4	EA	679.74	2,719		
	Add for Vision Lites & Transoms				Excluded		
08 31 00	**Access Doors**					**Excluded**	
	Access Doors @ Ceilings & Walls				w/091120		
08 33 00	**Coiling Doors and Grilles**					**Excluded**	
	Fire Shutter @ South Lobby (Allowance)		LF	950.00	Excluded		
08 36 00	**Overhead Doors**					**Excluded**	
	8'-0"x 10'-0" OH Door		EA	2,711.16	Excluded		
	Electric Operator @ Above		EA	700.00	Excluded		
08 43 00	**Entrances & Storefronts**					**695,573**	
	Cleaning & Caulking @ Storefront & Punch Window Glazing at Exterior Skin	-	SF	1.22	Excluded		
	Repair @ Existing Storefront & Punch Window Glazing to Match @ Exterior Skin	-	SF	18.66	Excluded		
	Replace Existing Storefront & Punch Window Glazing to Match @ Exterior Skin	12,018	SF	57.88	695,573		
08 44 00	**Curtain Wall Assemblies**					**Excluded**	
	Cleaning & Caulking @ Storefront & Punch Window Glazing at Exterior Skin	-	SF	1.22	Excluded		
	Repair @ Existing Storefront & Punch Window Glazing to Match @ Exterior Skin	-	SF	31.06	Excluded		
	Replace Existing Storefront & Punch Window Glazing to Match @ Exterior Skin	-	SF	89.11	Excluded		
08 45 00	**Translucent Wall and Roof Assemblies**					**Excluded**	
08 46 00	**Automatic Entrances**					**Excluded**	

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
08 62 00	**Unit Skylights**					**Excluded**	
					Excluded		
08 62 50	**Tubular Daylighting Devices**					**Excluded**	
08 70 00	**Door Hardware**					**77,642**	
	Hardware @ Single Leaf Exterior Door				Excluded		
	Hardware @ PR of Exterior Doors				Excluded		
	Hardware @ Single Leaf Interior Door	95	EA	462.71	44,188		
	Hardware @ PR of Interior Doors	4	EA	925.42	3,702		
	Hardware @ Storefront Doors				Excluded		
	Add for Card Key Access Hardware	1	EA	647.88	648		
	Add for ADA Door Operator @ Single Leaf	4	EA	1,341.22	5,365		
	Add for ADA Door Operator @ PR of Doors	1	EA	1,711.56	1,712		
	Add for Panic Hardware @ Single Leaf	7	EA	896.33	6,274		
	Add for Panic Hardware @ Pair of Doors	1		1,792.66	1,793		
	Add for Kickplates, etc. @ Restroom Doors	13	EA	322.47	4,192		
	Add for Closers, etc. @ Single Leafs	14	EA	621.77	8,705		
	Add for Closers, Astral, etc. @ PR of Doors	1	EA	1,064.23	1,064		
08 81 00	**Interior Glass Walls, Partitions & Glazing**					**3,231**	
	Interior Storefront Glazing						
	Interior Storefront Glazing @ Renovation	18	SF	43.48	779		
	PR 3'-0"x 7'-0" Storefront Doors @ Interior		EA	2,411.24	Excluded		
	3'-0"x 7'-0" Storefront Door @ Interior		EA	1,126.11	Excluded		
	Interior Glass						
	0'-6"x 2'-0" Std Vision Lites @ Interior Doors	24	EA	23.56	562		
	0'-6"x 2'-0" Wire Glass Lites @ Fire-rated Doors	14	EA	63.28	886		
	2'-0"x 2'-0" Std Vision Lites @ Interior Doors	10	EA	52.72	503		
	2'-0'x 2'-0" Wire Glass Lites @ Fire-rated Doors	5	EA	104.88	501		
	FireLite Glazing				Excluded		
08 90 00	**Louvers and Vents**					**w/233000**	
	Louvers & Vents @ HVAC				w/Below		
	Doors & Glazing Subtotal					**832,903**	
09 21 00	**Plaster**					**w/072400**	
	3 Coat Cementituous Stucco System @ Exterior				w/Above		
09 25 00	**Gypsum Board**					**59,123**	
	25 GA Mtl Stds w/Gyp BD (2) Sides @ Interior	1,164	SF	6.14	7,146		
	25 GA Mtl Stds w/Gyp BD (2) Sides + STC 60 Batt @ Interior	627	SF	7.17	4,493		
	25 GA Furring w/Gyp BD (1) Side + STC 60 Batt	90	SF	5.94	532		
	Add for Impact Resistant Gyp Bd	36	SF	0.67	24		
	Add for Water Resistant Gyp Bd @ Restroom Walls	5,091	SF	0.61	3,106		
	Add for Water Resistant Gyp Bd @ Restroom Ceilings	1,260	SF	0.61	769		
	CH Stud System @ HVAC Duct Chases (Allowance)	-	SF	7.61	Excluded		
	Gyp Bd (1) Side @ Int of 18 GA Exterior Wall Framing	21,850	SF	1.26	27,531		
	Suspended Gyp Bd Ceilings (Allowance)	1,499	SF	7.21	10,806		
	Gyp Bd Closure Wall Systems @ Soffits & Ceiling Ht Changes (Allowance)	27	LF	23.16	622		
	Gyp Bd Column Wraps @ Interior Columns (4 Sides)	48	LF	14.33	691		

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
	Gyp Bd Column Wraps @ Exterior Columns (3 Sides)	22	LF	11.33	248		
	Gyp Bd Perimeter Beam Wraps & Window\Skylight Reveals	55	LF	6.23	340		
	Gyp Bd Detailing not w/Above	1	LS	2,815.37	2,815		
09 31 00	**Ceramic Tile**					**50,616**	
	2"x 2" Ceramic Floor Tile @ Restrooms	1,260	SF	12.44	15,674		
	24"x 24" Porcelain Floor Tile @ Lobby				Excluded		
	24"x24" Porcelain Floor Tile @ Stair Treads				Excluded		
	18"x 18" Porcelain Floor Tile @ Rest Rooms				Excluded		
	18"x 18" Porcelain Floor Tile @ Toilet Rms				Excluded		
	18"x 18" Porcelain Wall Tile @ Rest Rooms to 5'-0"H	2,546	SF	10.63	27,060		
	Add for Porcelain Wall Tile Above 5'-0"H @ Wet Walls @ Restrooms	445	SF	10.63	4,735		
	Shower Pans & Curbs				Excluded		
	Tile Cove Base @ Rest Rooms	509	LF	6.18	3,146		
09 50 00	**Acoustical Ceilings**					**9,271**	
	New 2'x4' Armstrong Dune Second Look ACT (or Equal)	3,037	SF	2.89	8,778		
	New 2' x 2' Premium ACT (Allowance)	143	SF	3.44	493		
09 64 00	**Wood Flooring**					**Excluded**	
	Wood Flooring				Excluded		
09 65 00	**Resilient Flooring**					**567**	
	Sheet Vinyl w/Heat Welded Seams				Excluded		
	3MM Linoleum w/Heat Welded Seams @ Breakrooms				Excluded		
	Standard Rubber Base	358	LF	1.21	433		
	VCT - Simple Random Pattern	-	SF	1.66	Excluded		
	24"x 24" Std Rubber Tile Flooring				Excluded		
	Rubber Tile Flooring @ Integral Tread & Riser				Excluded		
	Resilient Transition Strips	39	LF	3.44	134		
09 65 66	**Rubber Sports Flooring**					**Excluded**	
09 67 00	**Fluid Applied Flooring**					**Excluded**	
	Epoxy Sealer @ Conc Flr @ Janitor's Closet & Mech\Elec\IT Rooms	-	SF	5.94	Excluded		
09 68 00	**Carpet**					**151,865**	
	28 oz Direct Glue Carpet	46,489	SF	3.11	144,633		
	Add for Waste at Above (Assume 5%)	2,324	SF	3.11	7,232		
	Carpet Tile				Excluded		
	Add for Waste at Above (Assume 5%)				Excluded		
09 84 00	**Acoustical Wall Panels**					**Excluded**	
	Acoustic Panels @ Large Conf Rooms (Allowance)	-	SF	12.08	Excluded		
09 90 00	**Paint & Wallcovering**					**24,942**	
	Paint Existing Stairs, Landings and Railings				Excluded		
	Paint Existing Steel Ladders				Excluded		
	Paint 3'-0"x 7'-0" HM Frame	95	EA	48.33	4,615		
	Paint 6'-0"x 7'-0" HM Frame	4	EA	51.29	205		
	Stain & Seal 3'-0"x 7'-0" SD Wood Door (SC Doors Prefinished)				Excluded		
	Paint Interior CMU Partitions				Excluded		
	Paint Gyp Bd @ Partitions & Exterior Wall	25,521	SF	0.53	13,526		
	Dryerase Paint @ One Wall\Conf Room	-	SF	8.61	Excluded		

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
	Paint Exposed Structure @ Janitor's Closet & Mech\Elec\IT Rooms	-	SF	1.21	Excluded		
	Paint Suspended Gyp Bd Ceiling @ Restrooms w/Epoxy	1,260	SF	2.86	3,604		
	Paint Suspended Gyp Bd Ceiling @ w/Latex	239	SF	0.83	198		
	Paint Gyp Bd Closure Wall System	27	LF	3.44	92		
	Gyp Bd Column Wraps @ Interior Columns (4 Sides)	48	LF	4.72	228		
	Gyp Bd Column Wraps @ Exterior Columns (3 Sides)	22	LF	3.54	77		
	Gyp Bd Perimeter Beam Wraps & Window\Skylight Reveals	55	LF	2.36	129		
	Paint Breaks @ Accent Walls				w/Above		
	Painting @ Gyp Bd not w/Above (Allowance)	1	LS	2,267	2,267		
09 95 00	**Finishes Protection / Punchlist / Cleanup**					**2,964**	
	Existing Finishes Protection, Punchlist, Tenant MACs & Final Clean (Allowance)	1	LS	2,964	2,964		
09 90 00	**Architectural Theming & Enhancements**					**25,000**	
	Interior Finishes Upgrades not w/Above (Allowance)	1.0	LS	25,000.00	25,000		
	Finishes Subtotal					**324,347**	
10 11 00	**Visual Display Surfaces**					**Excluded**	
	Whiteboards				Excluded		
	Cork\Bulletin Boards				Excluded		
	Magnetic Surfaces				Excluded		
10 12 00	**Display Cases**					**Excluded**	
	Sports Trophy & Award & Other Display Cases				Excluded		
10 14 00	**Signage**					**7,010**	
	Code Required ID Signage	124	EA	56.36	7,010		
	Wayfinding Signage (Allowance)				Excluded		
	Brushed Aluminum Building ID Letters w/Pin Mounts @ Ext & Int (Allowance)				Excluded		
	Logo @ Building ID - Interior & Exterior (Allowance)				Excluded		
10 21 13	**Toilet Compartments**					**64,962**	
	Ceiling Mtd Std Phenolic Std Toilet Partition	37	EA	1,266.33	46,854		
	Ceiling Mtd ADA Phenolic Toilet Partition	5	EA	1,524.89	7,624		
	Phenolic Urinal Partition	29	EA	361.48	10,483		
10 22 13	**Wire Mesh Partitions**					**Excluded**	
	Wire Mesh Partitions @ Storage & Other Locations				Excluded		
10 22 39	**Operable Partitions**					**Excluded**	
	Operable Partitions				Excluded		
10 26 00	**Wall & Corner Guards**					**Excluded**	
	2"x 2'x 4'-0" Vinyl Corner Guard w/Aluminum Retainer	-	EA	61.22	Excluded		
	2"x 2'x 4'-0" Stainless Steel Corner Guards	-	EA	118.16	Excluded		
10 28 00	**Toilet Accessories**				-	**40,955**	
	SS Soap Dispenser	23	EA	77.63	1,785		
	SS Recessed Paper Towel Dispenser\Waste Receptacle	35	EA	192.09	6,723		
	SS Recessed Seat Cover Dispenser	35	EA	86.33	3,022		
	SS Toilet Paper Dispenser - Multiroll	13	EA	85.62	1,113		
	SS Toilet Paper Dispenser - Single Roll		EA	35.18	Excluded		
	SS Sanitary Napkin Dispenser	5	EA	234.23	1,171		
	SS Sanitary Napkin Disposer	12	EA	64.18	770		
	36" Grab Bar - Cncld Mnting w/ Snap Flange @ ADA Units	5	EA	71.90	360		

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
	42" Grab Bar - Cncld Mnting w/ Snap Flange @ ADA Units	5	EA	98.63	493		
	2'-0"x 4'-0" SS Frame & Mirror @ Toilet Rooms	23	EA	101.77	2,341		
	Electric Hand Dryers	13	EA	664.71	8,641		
	Baby Changing Station	35	EA	415.31	14,536		
10 43 00	**Emergency Aid Specialties**					**4,118**	
	Defibrilator & Cabinet	5	EA	823.64	4,118		
10 44 00	**Fire Extinguishers**					**Excluded**	
	Fully Recessed Fire Extinguisher & Cabinet	-	EA	364.53	Excluded		
10 51 13	**Metal Lockers**					**Excluded**	
	New Metal Lockers				Excluded		
10 51 26	**Phenolic Lockers**					**Excluded**	
	New Phenolic Lockers				Excluded		
10 51 53	**Locker Room Benches**					**Excluded**	
	New Phenolic Locker Room Benches				Excluded		
10 56 00	**Storage Assemblies**					**Excluded**	
	12"D Prefinished Melamine Shelving @ Janitor's Closets (5 EA\LF)	-	LF	27.43	Excluded		
	12"D Prefinished Melamine Storage Closet				Excluded		
	Mop Holder & Shelf @ Janitor's Closets	-	EA	288.61	Excluded		
10 71 13	**Exterior Sun Control Devices**					**Excluded**	
	Prefinished Aluminum Sun Shades @ Exterior Glazing				Excluded		
10 73 43	**Transportation Stop Shelters**					**Excluded**	
					Excluded		
	Specialties Subtotal					**117,044**	
11 14 00	**Pedestrian Control Equipment**					**Excluded**	
11 17 00	**Automatic Banking Systems**					**Excluded**	
11 21 23	**Vending Equipment**					**Excluded**	
11 23 26	**Commercial Washers & Dryers**					**Excluded**	
11 40 00	**Food Service Equipment**					**Excluded**	
11 45 00	**Residential Appliances**					**Excluded**	
	Residential Refrigerator\Freezer	-	EA	1,143.24	Excluded		
	Residential Microwave w/Direct Vent Hood	-	EA	626.31	Excluded		
	Residential Microwave w/o Vent Hood	-	EA	423.57	Excluded		
	Residential Range\Oven	-	EA	893.44	Excluded		
	Residential Undercounter Oven\Warming Drawer	-	EA	1,619.14	Excluded		
	Residential Dishwasher	-	EA	684.11	Excluded		
11 52 13	**Projection Screens**					**Excluded**	

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
					Excluded		
11 52 23	Audio-Visual Equipment Supports					w/066000	
11 53 00	Laboratory Equipment					Excluded	
					Excluded		
11 66 13	Exercise Equipment					Excluded	
					Excluded		
11 66 23	Gymnasium Equipment					Excluded	
11 66 43	Scoreboards					Excluded	
11 70 00	Healthcare Equipment					Excluded	
11 82 00	Solid Waste Handling Equipment					Excluded	
11 90 00	Owner Furnished Equipment					Excluded	
11 99 00	A\V & IT Equipment					w/Summary	
	Equipment Subtotal					**Excluded**	
12 21 00	Window Coverings					2,971	
	Mechoshades @ Exterior Glazing (Electrically Operated)	300	SF	9.89	2,971		
12 48 00	Floor Mats					Excluded	
	Recessed Aluminum Entrance Grid		SF	22.13	Excluded		
12 60 00	Multiple Seating					Excluded	
12 99 00	Furnishings					w/Summary	
	Furnishings Subtotal					**2,971**	
13 49 00	Radiation Protection					Excluded	
	Special Construction Subtotal					**Excluded**	
14 20 00	Elevators					25,000	
	Elevator Service & Repair (Allowance)	1	LS	25,000.00	25,000		
	Conveying Systems Subtotal					**25,000**	
21 13 00	Fire Protection					153,752	
	Fire Sprinker System (Minimal Upgrade)	-	SF	0.85	Excluded		
	Fire Sprinker System (Medium Upgrade)	-	SF	1.67	Excluded		

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
	Fire Sprinker System (Replacement)	47,749	SF	3.22	153,752		
	Fire Supression Subtotal					**153,752**	
22 40 00	**Plumbing**					**84,874**	
	Plumbing (Minimal Upgrade)	-	SF	1.78	Excluded		
	Plumbing (Medium Upgrade)	-	SF	3.14	Excluded		
	Plumbing (Replacement)	11,937	SF	7.11	84,874		
	Plumbing Subtotal					**84,874**	
23 30 00	**HVAC**					**1,283,656**	
	HVAC System (Minimal Upgrade)	-	SF	5.25	Excluded		
	HVAC System (Medium Upgrade)	-	SF	11.75	Excluded		
	HVAC System (Replacement)	42,974	SF	29.33	1,260,436		
	Connections/Demoltion at Existing HVAC System	4,775	SF	0.89	4,250		
	Systems Commissioning	1	LS	18,970.28	18,970		
	HVAC Subtotal					**1,283,656**	
26 00 00	**Electrical**					**206,675**	
	Lighting System (Minimal Upgrade)	-	SF	1.44	Excluded		
	Lighting System (Medium Upgrade)	-	SF	2.91	Excluded		
	Lighting System (Replacement)	-	SF	6.22	Excluded		
	One-line\Distribution & Branch Power System (Minimal Upgrade)	-	SF	0.85	Excluded		
	One-line\Distribution & Branch Power System (Medium Upgrade)	-	SF	1.56	Excluded		
	One-line\Distribution & Branch Power System (Replacement)	15,757	SF	6.71	105,731		
	Special Systems (Paging, Security, etc.) System (Minimal Upgrade)	-	SF	0.26	Excluded		
	Special Systems (Paging, Security, etc.) System (Medium Upgrade)	-	SF	0.97	Excluded		
	Special Systems (Paging, Security, etc.) System (Replacement)	15,757	SF	1.67	26,315		
	Fire Alarm System (Minimal Upgrade)	-	SF	0.26	Excluded		
	Fire Alarm System (Medium Upgrade)	-	SF	0.51	Excluded		
	Fire Alarm System (Replacement)	47,749	SF	1.12	53,479		
	Connections/Demoltion at Existing Electrical Systems	4,775	SF	0.47	2,244		
	Mech Equipment Connections	1	LS	18,906.53	18,907		
26 31 00	**Photovoltaic Collectors**					**Excluded**	
26 41 00	**Lightning Protection**					**Excluded**	
	Electrical Subtotal					**206,675**	
27 10 00	**Structured Cabling**					**110,014**	
	Teledata Cabling System (Minimal Upgrade)	-	SF	0.67	Excluded		
	Teledata Cabling System (Medium Upgrade)	-	SF	1.21	Excluded		
	Teledata Cabling System (Replacement)	38,199	SF	2.88	110,014		
	Teledata Cabling Terminations, Testing & Tone-Out @ Above				w/FF&E		
	New Cable Tray/Raceways at Above Cabling				Excluded		
27 41 00	**Audio-Visual Systems**					**Excluded**	
27 52 00	**Healthcare Communications and Monitoring Systems**					**Excluded**	

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
27 53 00	Distributed Systems					Excluded	
	Communications Subtotal					**110,014**	
28 70 00	Security Systems					w/26000	
	Security Subtotal					**w/26000**	
30 04 70	Construction Surveying				w/General Conditions		
31 23 19	Dewatering					Excluded	
31 30 00	Earthwork					144,000	
	Site Earthwork - Blended Crew\Equipment Rate (Allowance)	120	HR	1,200.00	144,000		
	Excavate for Continuous Footings & Stemwalls		CY	4.53	Excluded		
	Backfill @ Footings		CY	7.24	Excluded		
	Export Spoils (Assume 1 Hour Truck RT)		CY	10.14	Excluded		
	Import & Place 4" Structural Fill Under SOG		TN	18.11	Excluded		
	Rock Excavation				Excluded		
31 31 20	Temporary Erosion Control					Excluded	
	Temporary Erosion Control Measures				Excluded		
31 40 00	Shoring System					Excluded	
	Shoring @ Site				Excluded		
31 48 00	Underpinning					Excluded	
	Underpinning @ Existing Building				Excluded		
	Earthwork Subtotal					**144,000**	
32 12 16	Asphaltic Concrete Paving					Excluded	
32 13 00	Rigid Paving					Excluded	
32 14 00	Unit Pavers					Excluded	
32 16 00	Curb & Gutter					Excluded	
32 16 23	Sidewalks					118,259	
	Hardscape at Existing Site (Allowance)	11,560	SF	10.23	118,259		
32 17 00	Lightpole Bases					Excluded	
32 17 23	Pavement Markings					Excluded	
32 31 00	Fences and Gates					Excluded	

CSI Section	Description	Quantity	Unit	Unit Cost	Total Project		Comments
					Amount	CSI Sec. Total	
32 31 17	Site Enclosures					Excluded	
32 32 13	CIP Retaining Walls					Excluded	
32 32 23	Modular Retaining Walls					Excluded	
32 32 50	Stone Retaining Walls					Excluded	
32 39 00	Site Furnishings					2,500	
	New Site Furnishings Allowance	1	LS	2,500.00	2,500		
32 39 13	Site Signage					Excluded	
32 90 00	Landscaping					Excluded	
	Native Seed (Allowance)	-	SF	0.81	Excluded		
	Softscape & Irrigation (Allowance)	-	SF	4.77	Excluded		
	Exterior Improvements Subtotal					120,759	
33 10 00	Site Utilities					Excluded	
	New Wet\Dry Utilities (Allowance)	-	LF	121.00	Excluded		
33 30 00	Sanitary Sewerage Utilities					Excluded	
33 40 00	Storm Drainage Utilities					Excluded	
33 46 00	Foundation Drain System					Excluded	
33 47 00	Detention Ponds					Excluded	
	Utilities Subtotal					Excluded	
34 41 00	Traffic Signals					Excluded	
	Transportation Subtotal					Excluded	
	SUBTOTAL: DIRECT CONSTRUCTION COST ONLY					3,564,054	
	General Conditions					w/Summary	
	GC's Offiste Overhead & Profit					w/Summary	
	Other GC & Owner Soft Costs					w/Summary	
	CONSTRUCTION TOTAL COST					w/Summary	