

**Building 2 Deficiencies**  
VA Project No. 600-12-163  
Leo A. Daly Project No. 046-10031-000

VA Long Beach Healthcare System  
Long Beach Medical Center, Long Beach, CA

## CONSTRUCTION DOCUMENTS (100%) SUBMITTAL NARRATIVE

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# Building 2 Deficiencies

## A. PROJECT DESCRIPTION

The project described by this report is the correction of Building 2 Deficiencies as outlined in the Facility Condition Assessment (FCA) document and as approved by the VA through the 25% and 65% Design Review Meetings.

Located in the Central region of the VA Long Beach campus, Building 2 presently houses the Ear, Nose and Throat, Plastic Surgery and Audiology Clinics, related outpatient services and staff offices. In addition to these services, Building 2 provides offices and facilities that support a chapel, laundry facilities, a canteen, retail services, an auditorium and a morgue,

The scope of work for this building focuses on the remedial work necessitated by the items identified by the Facility Condition Assessment (FCA). In addition, recommendations for fire / life safety and accessibility corrections not addressed by FCA or the project scope to date, are identified.





## **B. ARCHITECTURAL NARRATIVE**

## 1.0 Architectural Executive Summary

The subject of this Construction Document Narrative is Building 2 of the VA Long Beach Healthcare System Long Beach Campus.

### 1.1 Objectives

The construction document (CD) phase focuses on coordinating the architecture and engineering required for the construction of the work outlined in the Facility Condition Assessment (FCA) provided by the VA. In addition the project incorporates the VA approved scope changes that reflect the discussion and comments received from the VA at during the two previous design submittals reviews (November 21, 2011 and January 18, 2012). The primary objective of this effort is to resolve the major deficiencies of Building 2 sited in the FCA, without exceeding the budget allotted for the project.

The majority of the project scope to date consists but is not limited to the following:

- Completely renovate all restrooms and make ADA compliant.
- With the exception of the handrails at the exterior metal stairs (NIC), replace all other non-compliant or corroded handrails at the exterior of the building.
- Replace concrete stairs affected by spalling and cracking; replace ramps and curbs as necessary to accommodate the new compliant guardrails / handrails.
- Provide a comprehensive fire, life safety code analysis to verify exiting, code compliancy and occupancy (See section 2.2)
- Update all existing T12 light fixtures with T8 (see Electrical section F)
- Clean all duct-work and update mechanical according to the FCA and VA review directive (see mechanical section E)
- Replace the ceilings and light fixtures at the upper level corridors- match the main corridor at Level 1.
- Replace the built-up roofing over the loading docks and over the Pharmacy a Level 2.
- Update all non-rated doors at the rated corridors.
- Update hardware at the doors in major corridors where hardware is non-compliant or outdated
- Patch and repair areas of concrete spalling and corrosion at the building exterior
- Prepare and paint the entire building exterior

The design for this project is a coordinated team effort, requiring input from mechanical, electrical, plumbing, and structural consultants. The scope of project has been refined based on discussions and reviews with the VA.

## 2.0 Design Narrative

### 2.1 General Description

Building 2 has approximately 94,000 gross square feet on five levels; three full stories (Basement, Levels 1 & 2), a partial fourth story (Level 3) and a small mechanical room on the fifth story (Level 4). There are no known records for the original date of the construction drawings. Record drawings indicate that Building 1 was constructed in 1942. Whereas for Building 2, the earliest available date provided listed on an 'As-Built' drawing set is 1964. It is assumed that construction of Building 2 took place at or around this time.

Building 2 is roughly an "L" shape plan with the main building entrance oriented due North. The plan is organized around a central corridor or spine that passes through a 3-story bridge connecting Building 2 to Building 1. Buildings 1 and 2 are part of a larger complex of interconnected buildings that includes Buildings 7, 8 and 126.

All the other buildings in this complex were similarly constructed over the same time period dating from 1942 through 1964. The architectural style of the buildings reflects the time period of construction, typically California civic vernacular as derived from a pared down modernist style.

### 2.2 Code Analysis

The code analysis undertaken to date includes:

- Per our agreed scope of work, Leo A Daly spot checked walls and surveyed doors for fire ratings along the main building corridors. Based upon our spot checking of the top of wall condition and penetrations of the wall by pipes and conduits, it appears the walls generally conform to fire resistive standards. All ratings are shown on the Fire, Life Safety plans.
- Plumbing code fixture compliancy.
- Occupant load calculations and Occupant Use Types.
- Basic egress code requirements and compliancy per NFPA 101 for existing buildings undergoing renovation and supplemented by NFPA 220 (Types of Construction) and the IBC
- Compliance with area and height requirements of the IBC and NFPA for existing buildings undergoing Renovation (NFPA-101)
- The analysis includes identifying any remaining major building ADA / VA code accessibility and/or NFPA-101 life safety code issues / violations present but not included in the contract (NIC)

### 2.3 Circulation / Interior Spaces

The building circulation is organized by a central north south corridor with a south connecting bridge to buildings 1, thereby providing access to buildings 7, 8 and 126. On the first level, the main corridor is intercepted roughly at the center by a cross corridor that serves to connect to the three outpatient clinics. On the North side of the corridor, large open, public spaces such as the Canteen and Retail Sales Areas, flank the corridor. This basic

pattern of organization continues through the upper levels with the larger spaces becoming successively smaller.

On the second level there is an auditorium and chapel with the remaining area serving as a roof-top deck for both access and exit. A library is located on the third level and two exits are provided by an independent metal stair located on the West Elevation and by way of the central stair core located in Building 1. The north stair core in Building 1 serves as a secondary means of egress for most of the supporting spaces and clinics on all levels in Building 2. Although the basement level has a similar organization, it is generally not a publically occupied floor, primarily providing hospital support facilities such as the hospital laundry, staff lockers, the morgue, mechanical rooms and storage facilities.

Essentially there will be minimal changes made to the existing building. It will be altered as required in order to correct the deficiencies listed in the FCA and incorporate any changes from the November 21<sup>st</sup> SD review. There are only a few walls affected by the accessible upgrades to the existing restrooms and none of these new walls will impact the corridors or primary circulation.

#### 2.4 Building Systems

In the major corridors on all levels, the existing T12 fixtures will be replaced with T8 fixtures. The fixtures will match those installed in the Level 1 corridor. In areas where the fixtures cannot be recessed, an identical surface mounted fixture will be used. The fixtures located in the remaining areas of the building will be surveyed, the existing T12 fixtures will either be upgraded with new T8 lamps and electronic ballasts or similarly replaced with new T8 fixtures.

As a result of the fixture replacement strategy outlined above, existing, 2' x 4' lay-in ceilings in the major corridors on the upper levels (2 & 3) and those in the corridors of the clinical areas on Level 1 will be replaced with a 2' x 2' lay-in ceiling system matching those installed in the main corridor on Level 1. Based on the November 21<sup>st</sup> SD review, all wayfinding and directional signage will remain and will be addressed by others at a later date in a comprehensive signage plan.

There are 2 existing air handlers (AHU's S-10 & S-12) installed in 1966 that are in poor condition and will be replaced. The majority of the ductwork in building 2 is thirty-eight or more years old and will be re-insulated and sealed. The control system will be upgraded to direct digital control (DDC) and the mixing air terminal units will be replaced with DDC dual duct air terminal units. In addition, the exhaust fans in the kitchen will be replaced and coordinated with the replacement of the kitchen hood system.

All plumbing fixtures, trim, accessories and supports in the public accessible restrooms being upgraded will be removed and replaced throughout the building per the FCA.

The existing building is partially protected with an automatic fire sprinkler system. However, a new backflow assembly will be installed in the landscaped area just West of the building. Areas that are not currently sprinklered shall have sprinklers added.

#### 2.5 Building Exterior / Building Site

The building sits on a gently sloping site at the center of the Long Beach campus. The main entrance is located on the north side off of Palm Road. With the exception of the installation of the backflow assembly, the replacement of the concrete stairs (photo ref), ramps and the handrails, there is no site work currently listed as part of the scope for this project.

There are numerous areas where embedded handrails are corroded and in some cases severed. The corrosion has exacerbated the spalling of the concrete in those areas. As noted previously, the concrete repair is listed in the FCA, whereas handrail replacement is not listed. Based on the 25% Submittal Review (dated November 21, 2011), all handrails noted in SD, with the exception of those integral to the exterior metal stairs, will be replaced and updated to meet current VA and ADA standards. The replacement handrails will be manufactured with galvanized steel to prevent similar corrosion issues from re-occurring.

The basement mechanical and electrical rooms are accessible from grade via the loading dock located in the northeast corner of the central loading courtyard. The main public entry is accessed from a concrete ramp. Although the ramp appears to meet the VA standards, the handrails are not code compliant and are scheduled to be re-placed. Handrail replacement will result in the replacement of three sets of cast-in-place concrete stairs (loading areas and main entrance) and the two cast-in-place concrete ramps at the main entrance. These stairs and ramps will be replaced and upgraded to meet ADA / VA accessibility requirements.

The building exterior will essentially remain unchanged; the existing cast-in-place concrete will remain. However, areas of spalling and cracking of the façade and any exposed and /or corroded rebar will be treated, patched and repaired. According to the VA directive from the 25% Submittal Review, the building exterior will be completely re-painted following these repairs.

### 3.0 Design Implementation

#### 3.1 Code Assessment:

After completing the code analysis, including the survey of the corridor doors and spot checking corridor walls for ratings, it appears that all major egress corridors generally conform to fire resistive standards. The main basement corridor is two (2) hour rated, whereas, the main corridors on the upper levels (Levels 1-3) are one (1) hour rated corridors. Based on NFPA-101 for existing buildings that are fully sprinklered, the corridors are not required to be rated. In addition, fire rated walls cannot be fully verified and according to

NFPA-101, the corridor walls are considered to be rated a minimum of 1 hour. Where rated corridors exist, any doors not found to comply with that rating will be replaced with a compliant rated door.

Egress through and from central corridors and large assembly areas was evaluated at all Levels. In the basement, the exit door (DCB-12B) leading to the exit stair at the NE corner of the building is non-compliant. There is a floor change of 5" at the door threshold and the door does not have the correct clearances. This area was evaluated and it is not possible to make this exit compliant. A warning sign will be installed adjacent to the doors (DCB-12A & DCB-12B) indicating the non-compliance and the step at the threshold. Additionally there are two (2) doors (DCC2-2-4B and DCC2-2-4C) along the corridor on Level 2 that are non-compliant. These door frames are embedded in an exterior concrete wall and it is not possible to make these compliant without reframing / saw cutting the exterior wall.

With the exception the doors, handrail and stair issues noted above, the exiting generally appears to be in compliance. Each level was divided according to user types and Occupant Loads are tabulated. All travel distance to exits appear to meet the requirements for the user types and the rated areas appear to correspond to required separations.

The additional major code concern remaining is the exterior steel exit stairs (ref. photos 2, 11, & 12). There are four sets of exterior steel stairs- two located along the North east face and two located along the west face just above the central loading dock. These stairs currently serve as a means of egress from assembly areas located on levels two and three. The open tread risers and both the guard and handrails are not code compliant. It is recommended that these issues be addressed at a later date, although they are not listed in the FCA and currently not part of the project scope. In addition all existing stairs require contrasting strips in order to meet accessibility and VA standards (ref. photo 10).

Additional non-compliant items that are not currently part of the scope are as follows:

1. All Mezzanine stairs at the Reception area on Level 2 (Photo ref. 3 & 5)
2. All restrooms behind the stage area (see 3.2.1)
3. Objects protruding into the Path of Travel along the exterior ramp to the Morgue (Photo ref. 7)

All non-compliant code issues have been identified on the Fire and Life Safety drawings.

3.2 Architectural FCA / Scope Evaluation: (Note: Please refer to Structural, Mechanical, Plumbing, Fire Protection and Electrical Sections for discipline related FCA work)

3.2.1 FCA #112690: All public restrooms and toilet rooms will be reconfigured to meet VA and UFAS standards except for small toilet rooms ancillary to private offices. All accessible fixtures are included in the overall fixture counts and are tabulated with the Fire, Life Safety plans for each level. Drinking fountains were located based on

field surveys. In total, eleven (11) public restrooms throughout the building will be made accessible.

Based on the 25% Submittal Review, the private restroom at the retail office (Rm. 109), those restrooms at the canteen (Rms. 138, 139) and in Audiology (Rm. 156) have been deleted from scope. The large staff restrooms located in the basement are now included in this renovation and an additional Women's restroom on Level 3.

The restrooms located behind the stage area on levels two and three were not included in the design as they were either considered to be staff restrooms and/or are not publically accessible. In the case of the back of stage restrooms, making the restrooms accessible is not an option without extensive re-modeling. (photo 3- Restroom clearance at stage).

The basement and third levels fall into compliance with the installation of new accessible drinking. In general all other levels do not meet the basic fixture count requirements and thus are not in compliance with the current plumbing code. Levels one and two require more restroom fixtures and therefore the restrooms will either require expansion or new restrooms will need to be constructed.

3.2.2 FCA #157081: As part of the accessibility requirements, grabbars will be installed at all restrooms made accessible including 248 and 249.

3.2.3 FCA #157082: As part of the restroom renovations, new accessible roll-in showers will be provided according to the diagram from the ADA guide outlining the basic requirements of an accessible shower stall. (ref. diagram 1)

3.2.4 FCA #157083: Accessible lockers (10 ea.) will be provided as part of this project. The locker rooms will be made accessible and floor height differences will be addressed with the renovation of the adjacent restrooms. All lockers will be replaced and a new accessible configuration is submitted for this area. In addition, accessible benches will be provided in order to meet current VA and ADA standards.

3.2.5 FCA #157084/157085: Accessible counters will be provided at the Audiology reception area (N-159A). In addition, the handrail is scheduled to be replaced at the ramp to the testing rooms in the Audiology area. Replacing this handrail will require demolition and replacement of the existing ramp. (Note: Based on our survey, the existing 1:12 ramp does not meet current VA slope requirement of 1:20).

Due to space constraints and clearances, the replacement ramp in Audiology cannot meet the VA required 1:20 slope, but will surpass the ADA requirement (1:12) and be sloped at 1:15. Based on the 25% Submittal Review, making the counter at the retail store (N140) accessible is no longer part of the project scope. As a result of the work in this area, all carpet in the surrounding area and on the raised floor area will

require replacement. Colors will be coordinated with the area and approved by the VA.

- 3.2.6 FCA #157086: Insulation / protection will be provided for piping under lavatories.
- 3.2.7 FCA #157087 / #157089 / #157091: Outdated door hardware will be replaced at all major corridors throughout the building. Panic hardware will be provided at the exit door in the Medical Library.
- Doors along major corridors not meeting the fire rating or having excessive damage will be replaced.
- 3.2.8 FCA #157088: Level 1: The drinking fountain (DF) at the corridor for the Ear, Nose throat clinic will be replaced with an accessible DF; Level 2: An accessible DF will replace the existing DF in the main corridor adjacent to room 238.
- 3.2.9 FCA #157089: An accessible ramp is designed to access the podium area in the Chapel (247) located on this same level. This ramp will meet the 1:20 VA slope requirement. As a result of this reconfiguration, all flooring will be replaced in the chapel. Colors will be coordinated with the area and approved by the VA prior to installation.
- 3.2.10 FCA #157089: Numerous spalled areas along the West façade and at the other building faces across the façade perimeter are identified for repair. Embedded handrails that are corroded and / or severed will be replaced with a galvanized option designed to meet current VA requirements. As noted previously, the use of galvanized metal will prevent spalling in those areas from reoccurring. (existing condition ref. photos 2, 3 & 9).
- In addition, the entire building exterior will be painted according to the VA Specifications.
- 3.2.11 FCA #51089: According to the 25% Submittal Review, the existing exterior windows are scheduled for replacement with another project and are **no longer part of this project scope (NIC)**.
- 3.2.12 FCA #157092: According to the 25% Submittal Review by the VA, the damaged walls (20 SF) and damaged flooring (2,000 SF) on the basement level are thought to be located in the morgue and will no longer be part of this project scope.
- 3.2.13 FCA #157093: Similarly, based on the 25% Submittal Review by the VA, the kitchen and canteen areas are no longer part of the scope for this project.
- 3.2.14 FCA #112692: The carpet in the A/V Conference area at the Medical Library will be replaced. Color to be coordinated with the VA.

According to the librarian, it is recommended that all carpet in the library be replaced due to damage from the current construction of offices in that area.

- 3.2.15 FCA #112693 / #112094: The built-up roofs over the two loading docks are both slated for replacement per the FCA. In addition, all leaks in the roof above the pharmacy area located on level 2 will be repaired.
- 3.2.16 FCA #112694: All existing directional and way-finding signage is no longer part of the scope for this project and as noted previously, will be addressed by the VA at a later date through a more coordinated planning effort.

Note: All finish materials required to meet the FCA will be coordinated with the VA and its users through the subsequent design phases of the project.

#### 4.0 Project Phasing

The detailed phasing for this project is outlined in the drawings and specifications. The phases are critical to maintaining the building operation throughout construction and the phasing is mostly built around life-safety and the replacement of the air handling units. The replacement of these air handling units (AHU) will require the use of temporary air handling units and temporary shutdown of airflow to both Buildings 1 and 2. The shutdown will be coordinated with the VA after-hours and also with the schedule / function of the spaces affected.

Additional phasing will be required to maintain building exiting (Phase I) and access to the public restrooms. These restroom upgrades will be staggered and coordinated with the VA to assure that the needs of its staff and patients are met wherever possible. In addition, the replacement of all ramps and stairs serving as exit components will be coordinated with the VA to ensure that the minimum number of exits/entries are maintained.

#### 5.0 Recommendations

It is the recommendation of the VA move forward with the corrections of the Building 2 deficiencies as proposed with these documents.

## C. ARCHITECTURAL EXHIBIT

Building	Sketch or Exhibit Number	Sketch or Exhibit Title
	B2 Exhibit A	Photos



Figure 608.2.2  
 Standard Roll-In Type Shower Compartment Size and Clearance

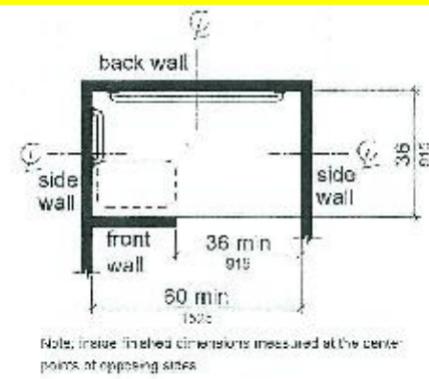


Figure 608.2.3  
 Alternate Roll-In Type Shower Compartment Size and Clearance

### 1. Typical Accessible Shower Stall Options



2. Spalling at Exterior Stair



3. Limited Clearance Restroom Behind Stage



3. Corroded Hand-rail



4. Non-Compliant Handrail



5. Non-compliant Mezzanine Stair



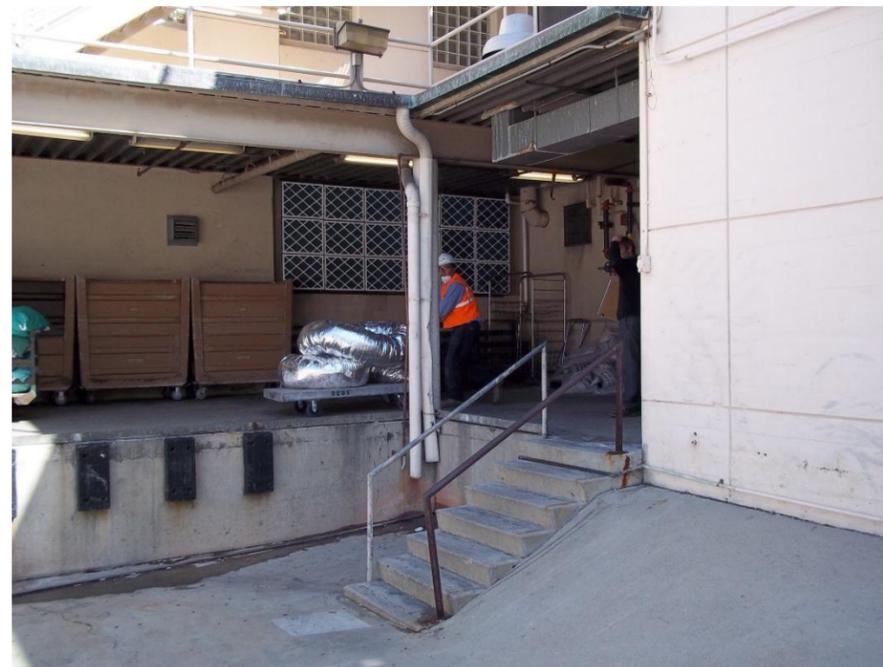
6. Non-compliant Handrail at Ramp near main entrance



7. Objects protruding are not compliant



8. Non-accessible shower @ Locker Area



9. Damaged, non-compliant handrail @ Loading Dock Stair



10. Damaged, non-compliant handrail @ basement stair to Canteen



11. Non-compliant exterior stairs at Library



12. Non-compliant exterior stairs at Auditorium



13. Non-compliant handrail at basement stairs



14. Corroded Steel Patio Doors near Chapel

## **D. STRUCTURAL NARRATIVE**

**STRUCTURAL SURVEY AND EVALUATION**

**1.0 Exterior Building Condition**

A structural observation visit was performed on October 6, 2011 around the exterior of the building. Items requiring repair and/or patching are noted below:

Location #	Floor	Description
1	2nd	Concrete spalling at the 2nd floor stair landing connection.
2	2nd	Concrete spalling at the 2nd floor stair landing connection.
3	Ground	Concrete spalling at the exterior ramp handrails. Rusting and shearing off of exterior ramp handrails.
4	Ground	Concrete spalling at the exterior ramp handrails. Rusting and shearing off of exterior ramp handrails.
5	Ground	Concrete spalling at canopy over loading dock.
6	Ground	Concrete spalling at the exterior ramp handrails.
7	Ground	Concrete spalling at exterior stairs
8	2nd	Concrete spalling at the 2nd floor stair landing connection.
9	3rd	Deterioration at 3rd floor stair landing connection.
10	Basement	Canopy over loading dock. Bent steel beam and concrete spalling of supporting columns.

1.1 Proposed Repair / Upgrade - Locations 1, 2, 5, 7, 8, 9 (Photos 1, 2, 7, 8, 10, 11, 12, 13)

For the localized areas of spalled concrete, we recommended the following procedure (preliminary):

- Demolish spalled and/or cracked concrete until sound concrete is reached.
- Roughen existing surface to minimum 1/4" amplitude.

- At the stair landing connections, note any further corrosion and deterioration of the existing structural steel framing to the engineer of record for further action.
- Drill & epoxy #3 rebar into existing concrete to tie into new concrete.
- Apply bonding agent to existing surface and pour back with non-shrink epoxy grout, minimum 7,000psi strength.

Please also see progress drawings SF101 thru SF104.

1.2 Proposed Repair / Upgrade - Locations 3, 4, 6 (Photos 3, 4, 5, 6, 9)

Due to the level of corrosion and deterioration of the existing steel handrails, demolition and replacement of the handrails/concrete curbs at these locations have been coordinated with the architect. Please also see progress drawing SF101 and SF301 for proposed new handrail details.

1.3 Proposed Repair / Upgrade - Location 10 (Photos, 14, 15)

Please see progress drawings SF100 and SF301 for proposed repair and strengthening details.

**2.0 Replacement of AHU (4 units)**

Please see progress drawings SF104 and SF302 for anchorage design.

**3.0 Updated / New Overhead Support of Utilities**

Final design, location, and specifications of the new overhead utilities supports and bracing to be shown on M/E/P drawings.

**4.0 Miscellaneous Non-Structural Cracking**

Please see note section "EPOXY CRACK INJECTION" on SF000 for proposed patch and allowances.

**5.0 Non-Structural Ceiling Framing**

The new ceilings (hard-lid and suspended tile type) as proposed on the architectural design will be coordinate to include the appropriate hangers and ceiling bracing.

## B. STRUCTURAL EXHIBITS

	Sketch or Exhibit Number	Sketch or Exhibit Title
	PHOTO 1	Location 1 – 2nd Floor Stair Landing
	PHOTO 2	Location 2 – 2nd Floor Stair Landing
	PHOTO 3	Location 3 – Exterior Ramp Rail
	PHOTO 4	Location 3 – Exterior Ramp Rail
	PHOTO 5	Location 4 – Exterior Ramp Rail
	PHOTO 6	Location 4 – Exterior Ramp Rail
	PHOTO 7	Location 5 – Concrete Canopy Edge
	PHOTO 8	Location 5 – Concrete Canopy Edge
	PHOTO 9	Location 6 – Loading Dock Stair Rail
	PHOTO 10	Location 7 – Exterior Steps
	PHOTO 11	Location 7 – Exterior Steps
	PHOTO 12	Location 8 – 2nd Floor Stair Landing
	PHOTO 13	Location 9 – 3rd Floor Stair Landing
	PHOTO 14	Location 10 – Basement Loading Dock
	PHOTO 15	Location 10 –Basement Loading Dock



Photo 1 - Location 1 – 2nd Floor Stair Landing



Photo 2 - Location 2 – 2nd Floor Stair Landing

Photo 3 - Location 3 - Exterior Ramp Rail



Photo 4 - Location 3 - Exterior Ramp Rail



Photo 5 - Location 4- Exterior Ramp Rail



Photo 6 - Location 4- Exterior Ramp Rail



Photo 7 - Location 5 - Concrete Canopy Edge



Photo 9 - Location 6 - Loading Dock Stair Rail



Photo 8 - Location 5 - Concrete Canopy Edge



Photo 10 - Location 7 - Exterior Steps



Photo 11 - Location 7 - Exterior Steps



Photo 13 - Location 9 - 3rd Floor Stair Landing



Photo 12 - Location 8 - 2nd Floor Stair Landing



Photo 14 - Location 10 - Basement Loading Dock





Photo 15 - Location 10 - Basement Loading Dock

## **E. MECHANICAL, PLUMBING, FIRE PROTECTION (MPF) NARRATIVE**

## 1.0 Mechanical Executive Summary

- 1.1 This narrative addresses the alterations to the mechanical systems to correct the deficiencies in Building 2 as noted in the VA Capital Asset Inventory of FCAs and improve ventilation to the morgue as requested by the facility.
- 1.1.1 Reconfigure and Renovate Restrooms.
- 1.1.2 Replace Air Handling Units (S-10 and S-12).
- 1.1.3 Clean, Repair, and Insulate Ductwork.
- 1.1.4 Upgrade control system to Direct Digital Control (DDC).
- 1.1.5 Replace mixing air terminal units with DDC dual duct air terminal units.
- 1.1.6 Improve morgue ventilation

## 2.0 Mechanical System Narrative

- 2.1 Existing Conditions
- 2.1.1 The following are the exhaust fans serving the building that are in the scope of work.
- 2.1.1.1 E-16 is located in Mechanical Room 439 at the 4<sup>th</sup> floor of Building 1 and serves the Basement, 2<sup>nd</sup>, and 3<sup>rd</sup> floors of Building 2 .
- 2.1.1.2 E-17 is located at the roof above Mechanical Room 439 and serves the Autopsy Rooms of the Morgue in the Basement of Building 2.
- 2.1.1.3 E-19 is located on the west low roof above the 1<sup>st</sup> floor and serves the West half of the 1<sup>st</sup> floor of Building 2..
- 2.1.1.4 E-20 is located on the east low roof above the 2<sup>nd</sup> floor and serves the East half of the 1<sup>st</sup> floor of Building 2 and the 2<sup>nd</sup> Floor Pharmacy.
- 2.1.2 The following are the air handling units serving the building that are in the scope of work.
- 2.1.2.1 S-10 is located in the Mechanical Room 439 at the 4<sup>th</sup> floor of Building 1. Unit is 100% outside air with chilled water cooling coil and steam heating coil. Unit has pneumatic controls. This unit serves the morgue and the Southwest corner of the 1<sup>st</sup> floor of Building 2. This unit also serves a portion of Building 1.

2.1.2.2 S-12 is located in Mechanical Room 439 at the 4<sup>th</sup> floor of Building 1. Unit is 100% outside air with chilled water cooling coil and steam heating coil. Unit has pneumatic controls. This unit serves the 2<sup>nd</sup> and 3<sup>rd</sup> floors of Building 2.

- 2.1.3 The morgue and the Southwest corner of the first floor of Building 2 are served by S-10. The Autopsy Rooms have a dedicated E-17. The ventilation of the autopsy rooms is currently at 8-air changes per hour. This is less than the 12-air changes per hour required in the VA Design Guidelines. The existing exhaust fan has a HEPA filter on the roof prior to the fan inlet. Existing exhaust grilles in the Autopsy rooms sre located near the floor. Specimen Storage 46 is currently served by E-16 and not the dedicated exhaust.
- 2.1.4 Ductwork is galvanized steel installed in 1966. The systems are double duct system with hot deck and cold deck.
- 2.1.5 Control system in the building is pneumatic.
- 2.1.6 Temperature zone control for double duct space is by pneumatic mixing dampers.

## 3.0 Mechanical Design Narrative

- 1.1 Reconfigure and renovate restrooms.
- 1.1.1 New ceiling exhaust grilles and ceiling diffuser will be installed in coordination with revised reflected ceiling plan. New branch ductwork will be installed connecting new grilles and diffusers to existing main ductwork.
- 1.2 Replace Air Handling Units
- 1.2.1 Air handling units shall be replaced in phases, one air handling unit at a time. The air handling units to be replaced are S-10 and S-12.
- 1.2.2 Mechanical contractor shall arrange for temporary air conditioning unit of capacity noted on MS101. A recommended location for the temporary unit is shown on MS101 ductwork running to the unit and intercepting existing main ductwork inside the building. Shutdown of existing air handling unit for interconnection of temporary ductwork shall be coordinated with the facility to minimize disruption.
- 1.2.3 Chilled water and steam piping shall be removed back to coil isolation valve at cooling and heating coils.
- 1.2.4 Ductwork shall be removed as indicated on the drawings and capped.

- 1.2.5 Air handling units shall be disassembled in room. Mechanical contractor shall coordinate removal path and schedule of disassembled unit removal to minimize disruption to the facility.
- 1.2.6 New air handling unit shall be shipped in pieces and assembled in room by Mechanical Contractor. Unitary pieces too large to fit through doors (such as fan assembly) shall be assembled by manufacturer's representative on site.
- 1.2.7 New chilled water, steam, and ductwork shall connect existing systems to new air handling units as indicated on the drawings.
- 1.3 Clean, Repair, and Insulate Ductwork
  - 1.3.1 Prior to commencing remodel work, the Test and Balance Contractor shall:
    - 1.3.1.1 Perform a pre-read air balance of all air distribution in the building to provide a baseline for comparison with record documentation and drawings.
    - 1.3.1.2 Pressure test ducts between the existing air handling units and the mixing dampers to 2.5-inches water gauge. Sections of ductwork that do not pass pressure test shall be repaired and/or resealed. Ductwork insulation shall be repaired as necessary by Mechanical Contractor.
  - 1.3.2 HVAC System Cleaning Agency shall be hired by Mechanical Contractor. HVAC System Cleaning shall be coordinate with facility to minimize disruption to the facility.
- 1.4 Upgrade control system to Direct Digital Control (DDC).
  - 1.4.1 Each new air handling units shall be provided with new unitary controller. Unitary controller shall interface with campus Johnson Controls Metasys system per the riser diagram on the drawings. Johnson Controls shall provide programming and graphics to the campus DDC system for the new air handling units and new dual duct air terminal units.
  - 1.4.2 DDC building controller and interface to campus DDC system shall be installed at a time to be operational when the 1<sup>st</sup> air handling unit is operational.
  - 1.4.3 New unitary controllers for air handling units shall be installed at a time to be operational when corresponding air handling unit is operational.
- 1.5 Replace mixing air terminal units with DDC dual duct air terminal units.
  - 1.5.1 New dual duct air terminal unit shall be installed to replace existing mixing dampers as indicated on the drawings.
  - 1.5.2 Johnson Controls shall provide and ship air terminal unit controller to air terminal unit manufacturer for installation in the factory. Air terminal unit controllers shall be 24-volt.
    - 1.5.2.1 Prior to installation of air terminal units, power distribution units shall be installed to provide 24-volt power to new dual duct air terminal units.
  - 1.5.3 Existing mixing dampers shall be removed. Pneumatic tubing shall be removed back to main and capped at tee. New dual duct air terminal unit shall be installed at same location as removed mixing damper. Insulated flexible duct work shall connect the dual duct air terminal unit to the hot deck and the cold deck.
  - 1.5.4 DDC programming for zone shall be in place prior to installation of new air terminal unit.
  - 1.5.5 Work shall be performed off hours to avoid disruption.
- 1.6 Phasing
  - 1.6.1 The building will remain in operation and by occupied during the construction process. Disruptive work and activities shall be performed during building off hours, (6:00pm to 6:00am). Refer to drawings for additional information for phasing diagram, impairment of existing systems, and utility shutdowns.
  - 1.6.2 The following items are recommendations to order and phase work to minimize disruptions. Contractor shall be responsible for phasing construction in an expedient manner. Contractor shall provide phasing plan to VA Project Engineer for approval prior to commencing work.
  - 1.6.3 Phase 1A:
    - 1.6.3.1 Perform initial Test and Balance to verify as-built drawings and existing airflows. Task may be performed during normal hours if acceptable to VA.
    - 1.6.3.2 Pressure Test Ductwork. Work to be done off-hours to avoid disruption.
  - 1.6.4 Phase 1B: Prepare site for installation of Temporary Air Handling Unit
    - 1.6.4.1 Install chilled water piping connection at Basement Level.
    - 1.6.4.2 Install isolation dampers into existing ductwork at Mechanical Room 439..

1.6.5 Phase 2: Replace Air Handling Unit S-12

1.6.5.1 Temporary air handling unit shall not be removed from site until new air handling unit is functional and commissioned.

1.6.6 Phase 3: Replace Air Handling Unit S-10

1.6.6.1 Temporary air handling unit shall not be removed from site until new air handling unit is functional and commissioned.

1.7 Fire Protection

1.7.1 Fire Dampers and Combination/Fire Smoke Dampers were not added as a part of this project. The area of work does not modify ductwork passing through rated walls.

1.7.2 Duct mounted smoke detectors are installed with the new air handling units to provide automatic shut off of air moving systems.

**4.0 Plumbing and Fire Protection (Suppression) Executive Summary**

4.1 This narrative addresses the alterations to the plumbing, and fire sprinkler systems to correct the deficiencies in Building 2 as noted in the VA Capital Asset Inventory of FCAs.

4.1.1 Plumbing Systems

4.1.1.1 Reconfigure and Renovate Restrooms.

4.1.2 Fire Protection (Sprinkler) Systems

4.1.2.1 Provide backflow prevention to the building.

4.1.2.2 Provide fire sprinklers to portions of the building that do not have fire sprinklers.

**5.0 Plumbing System Narrative**

5.1 Existing Conditions

5.1.1 Domestic water piping is copper and in good condition. Main sanitary sewer piping in the basement was replaced in 1996.

5.1.2 Domestic hot water is generated in the basement by steam from the central plant.

5.2 Design Narrative

5.2.1 New plumbing fixtures shall be provided in the renovated restrooms in coordination with the drawings. New branch domestic water, sanitary sewer, and vent piping shall connect the new plumbing fixtures to existing main domestic water, sanitary sewer, and vent piping.

5.3 Phasing

5.3.1 The building will remain in operation and by occupied during the construction process. Disruptive work and activities shall be performed during building off hours, (6:00pm to 6:00am). Refer to drawings for additional information for phasing diagram, impairment of existing systems, and utility shutdowns.

5.3.2 The following items are recommendations to phase work to minimize disruptions. Contractor shall be responsible for phasing construction in an expedient manner. Contractor shall provide phasing plan to VA Project Engineer for approval prior to commencing work.

5.3.3 Phase 2:

5.3.3.1 Replace floor drain in Mechanical Room 439. Work below floor level shall be done off hours.

5.3.3.2 Replace plumbing fixtures in toilet rooms. Coordinate order of restroom replacement with General Contractor. Branch piping to new plumbing fixtures shall be installed first. Plumbing Contractor shall coordinate tie in of new branch piping to existing main with facility. Any shutdown of utilities shall occur off hours or at a time scheduled to minimize disruption to the facility.

**6.0 Fire Protection (Suppression)**

The following address the fire protection requirements for the fire sprinkler and suppression systems. Refer to other sections of the narrative for other fire protection components and requirements.

6.1 Existing Conditions

6.1.1 The building is partially protected with by an automatic fire sprinkler system. Fire sprinkler water piping enters the West side of the building. A post indicator valve is in the landscape area at the Northwest corner of the building.

6.2 Design Narrative

- 6.2.1 Provide new double check reduced pressure backflow assembly in the landscape area to the West of the building. To minimize disruption to the building, new fire water piping shall connect the backflow preventer to the domestic water loop and the backflow preventer to the fire riser in the building.
- 6.2.2 Provide wet-pipe fire sprinkler system to areas currently not provided with fire sprinkler system. Areas requiring fire sprinklers are indicated on fire sprinkler drawings.
- 6.3 Phasing
  - 6.3.1 The building will remain in operation and be occupied during the construction process. Disruptive work and activities shall be performed during building off hours, (6:00pm to 6:00am). Refer to drawings for additional information for phasing diagram, impairment of existing systems, and utility shutdowns.
  - 6.3.2 The following items are recommendations to phase work to minimize disruptions. Contractor shall be responsible for phasing construction in an expedient manner. Contractor shall provide phasing plan to VA Project Engineer for approval prior to commencing work.
  - 6.3.3 Phase 1: Install new backflow assembly. Branch connection of new backflow assembly to existing fire line shall be coordinated with the facility to minimize disruption. Fire watch shall be provided as necessary.
  - 6.3.4 Phase 2: Provide fire sprinklers to areas that are currently not protected. Work shall be performed off hours to avoid disruption.



## **F. ELECTRICAL NARRATIVE**

## 1.0 Electrical Executive Summary

### 1.1 Existing Conditions:

- 1.1.1 Building 2 was constructed in the mid 1960's as indicated on available old electrical plans. There were partial power and lighting systems improvements since then as observed. The building is attached to Building 1 and the electrical power distribution system is not independently fed from a sub-station.
- 1.1.2 The existing lighting system is on 120V. No afterhour automatic shut-off or occupancy sensor is found during the site survey.
- 1.1.3 The existing mechanical equipment located in the 4<sup>th</sup> floor mechanical room are fed from a 480V 3-phase distribution.

### 1.2 Scope of Work

1.2.1 The scope of work is as described under the FCA (facility condition assessment deficiency correction), which includes public restrooms reconfiguration & renovation, drinking foundation addition, T12 fluorescent lamp replacement, auditorium stage & house dimming systems replacement, air handlers replacement, direct digital control system addition, HVAC mixing boxes replacement and fire alarm system replacement. A fire alarm system performance specification will be prepared for a design-build by a contractor.

### 1.3 Site Work

- 1.3.1 All site survey has been substantially completed.
- 1.3.2 It is impractical and interrupting to remove existing ceiling luminaires during the regular office hour to examine the condition of existing wires. When (7) existing breaker panels' cover were removed to verify for spare breakers, the existing wires were exposed. They are mostly THHN type and appear to be in good condition.

## 2.0 Electrical Narrative

### 2.1 Facility Condition Assessment Deficiency Corrections

#### 2.1.1 Public Restrooms Reconfiguration and Renovation

These restrooms are located in the basement and on Level 1, 2 and 3. They will be remodeled to meet ADA requirements. New surface mounted wraparound luminaire will be at the ceiling for general illumination. New wall mounted luminaire will be used to cover the sink area. All new luminaires will employ T8

and electronic ballasts. . 120V power will be added to each restroom for the automatic faucets and flush valves.

#### 2.1.2 Drinking Fountain Addition

All related existing receptacles will be replaced with new simplex receptacles. At locations with no existing outlet, a new receptacle will be installed.

#### 2.1.3 T12 Fluorescent Lamp Replacement

There are T8 lamps already employed in some newer or old luminaires. The remaining 75% of luminaires equipped with T12 lamps throughout the entire building will be replaced with new compatible luminaires using T8 lamps and energy efficient electronic ballasts. Existing luminaires, even those had been retrofitted with T8 lamps and ballast but are in poor condition, will be replaced with new. The existing wiring per some spot check at the breaker panels is still in good condition. The existing wiring and control systems will remain the same.

##### 2.1.3.1 Corridor Lighting

All the basement corridor luminaires will be replaced with new in kind. Additional units will be added on the opposite side to increase the lighting level. Level 1 main corridor has been renovated and no new work is required. The side corridors on Level 1 and main corridors on Level 2 & 3 will have new recessed 2x2 luminaires to match those existing units on Level 1.

##### 2.1.3.2 Non-Corridor Area Lighting

Majority of these existing luminaires will have new T8 replacement lamps and electronic ballasts. Existing luminaires in poor condition will be replaced with new units, like for like. Broken lenses will be replaced with new and in kind.

#### 2.1.4 Auditorium House and Stage Dimming Systems Replacement

The existing house Lutron dimming panel located in a room on the upper level adjacent to the stage is 19 years old per the nameplate data. A compatible modern Lutron dimming unit will be installed in its place with a pre-set control and (2) local push button stations. The stage dimming system will be replaced with new at the same location. The new system will be specified with the same circuits to match the existing system . (1) Local control station will be called out in the existing cabinet on the stage and a plug-in jack for future control console in the existing projector room.

#### 2.1.5 Obsolete Zinsco Panels Replacement

This scope is eliminated for VA currently has another contract to replace them.

#### 2.1.6 Overdutied Panels Replacement

This scope is eliminated for VA currently has another contract to replace them.

#### 2.1.7 Air Handlers Replacement

(2) Existing air handlers on the 4th floor mechanical room will need to be replaced. One new unit has higher HP than the existing. New wiring in conduit between the new VFD and the existing source within the room will be specified at each location. Each VFD specified by the mechanical will have a built-in main power disconnect switch. The installation phasing sequence will be coordinated with the mechanical. A temporary air handler unit located near the Loading Dock will be used during the construction. A suggested 480V power source will be shown on the plan at the basement level. However, the contractor will need to coordinate with VA for the final connection point.

Due to the increased load and future ventilation need of the Morgue area, the existing feeder serving the 4<sup>th</sup> floor mechanical room will be upsized.

#### 2.1.8 Direct Digital Control System Addition

This new control system will cover the entire building's mechanical equipment. 120V branch circuits will be available at various locations per the mechanical design to provide control power.

#### 2.1.9 HVAC Mixing Boxes Replacement

Approximate (240) air mixing boxes will be replaced with DDC controlled mixing boxes. 120V branch circuits will be installed at selected locations by the mechanical engineer to power control transformers, which in turn to feed a number of mixing boxes with LV wiring.

#### 2.1.10 Exhaust Fans Replacement

This scope is eliminated for the kitchen area becomes Not-in-Contract per the VA instruction.

#### 2.1.11 Transfer Switch Addition

The design team was informed by VA Long Beach that the related transfer switch is located in Building 126. Thus, this deficiency item is removed from the scope.

#### 2.1.12 Kitchen Equipment Repair and Replacement

The design team was informed by the VA Long Beach kitchen personnel that the related equipment is in good working order. Thus, this deficiency item is removed from the scope.

#### 2.1.13 Morgue Exhaust Fan Addition

This scope is cancelled.

#### 2.1.14 Fire Alarm System

The existing fire alarm equipment is an analog system by Faraday. The control panel is located in the basement level of Building 1. The trouble and alarm status of this Faraday system is monitored by an EST panel which reports to the VA central system through a fiber-optic cable link. A performance specification for a fully automatic addressable fire alarm system to cover the entire Building 2 will be prepared.