

**NORTH PARKING GARAGE EXPANSION 1**  
DC VA MEDICAL CENTER  
Washington, D.C.

**BASIS OF DESIGN  
PROJECT REPORT**

Prepared for  
DC VA MEDICAL CENTER  
Facilities Management

16 February 2015

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**Melville Thomas Architects, Inc.**

ARCHITECTURE & PLANNING

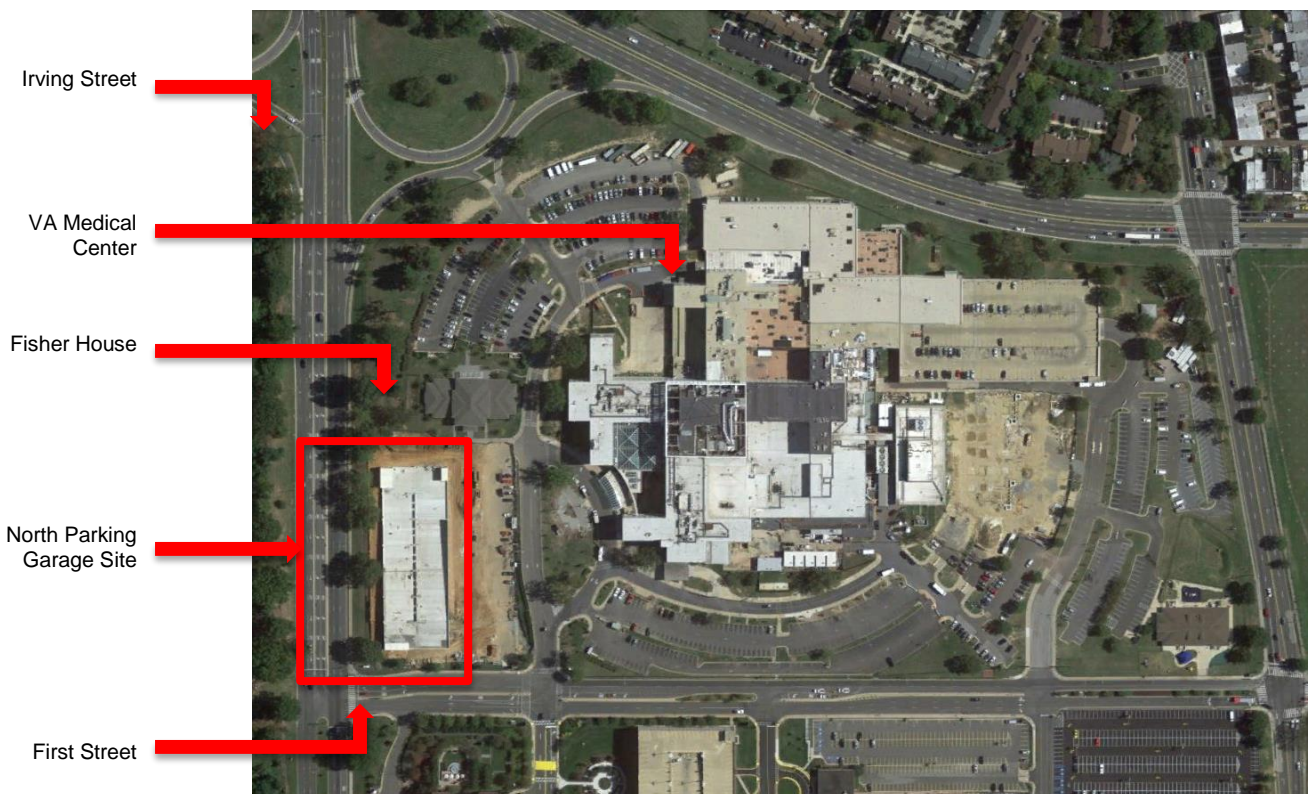


Basis of Design  
North Parking Garage Expansion  
Department of Veterans Affairs Medical Center, Washington, D.C.

1. Project Report

This report has been prepared regarding the North Parking Structure Expansion at the Department of Veterans Affairs Medical Center, Washington, D.C. (DC VAMC). This report has been prepared for the submission of this project to the National Capital Planning Commission for their review and approval.

- a. The Lead Architect for the North Parking Garage Expansion is Melville Thomas Architects, Inc. at 600 Wyndhurst Ave, Suite 315, Baltimore, MD 21210. The principle architect is George Thomas, who can be reached at (410) 433-4400 ext. 102.
- b. The parking garage vertical expansion will be performed at the newly constructed stand-alone precast parking garage located at the north side of the campus.

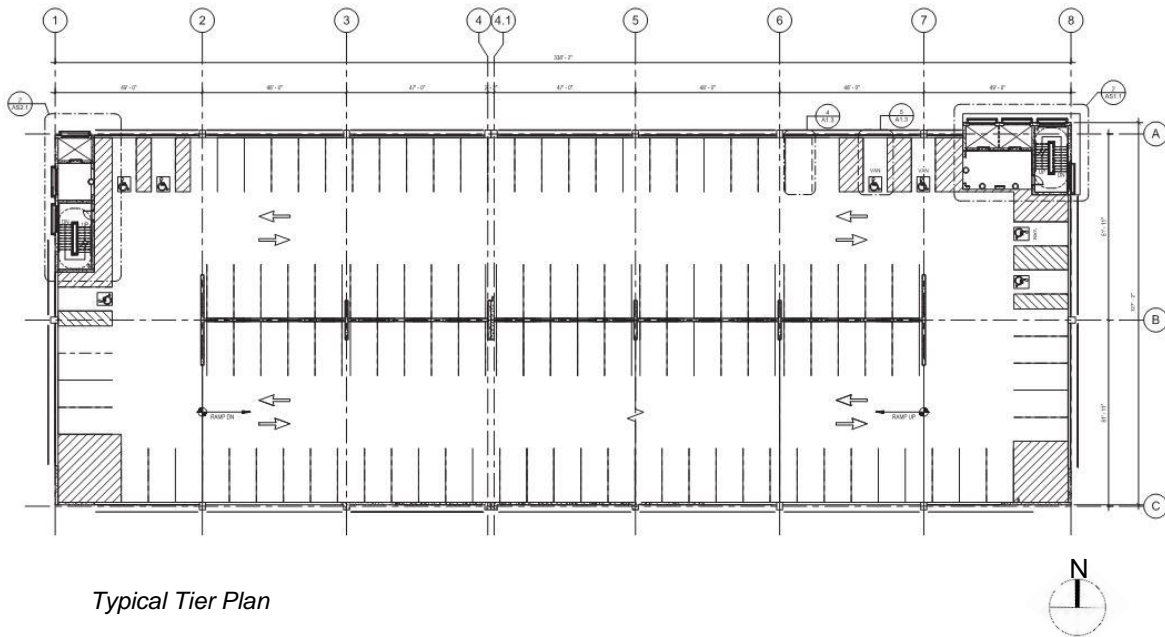


*Vicinity Plan - VA Medical Center*

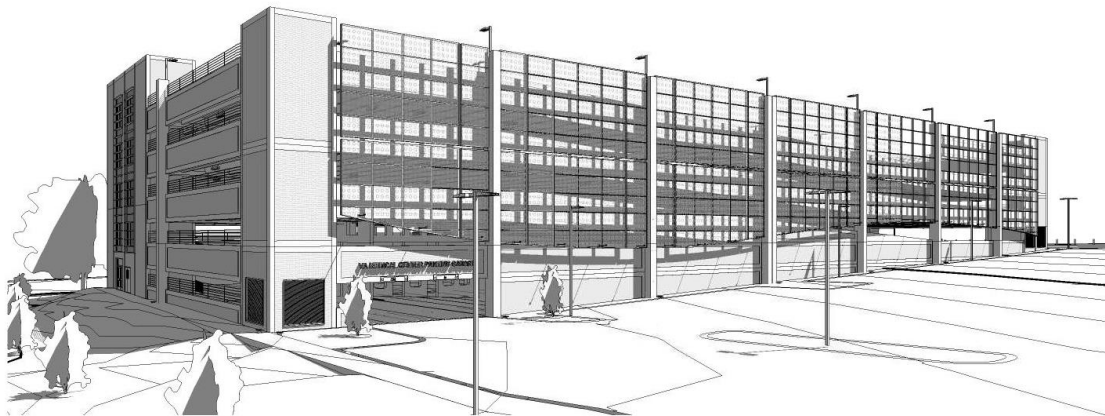


- c. Structure (existing), construction provided approximately 327 parking spaces for patients including 40 accessible spaces. Space distribution by floor included 86 spaces at ground level, 122 spaces on basement level 1, and 119 spaces at basement level 2.

- d. Expansion 1 (proposed), shall be for approximately 310 parking spaces including the appropriate number of additional accessible spaces required by the latest VA guidelines, distributed on each level in closest proximity to the destination points. The vertical expansion shall consist of an additional two and a half supported levels to the existing three-level structure.

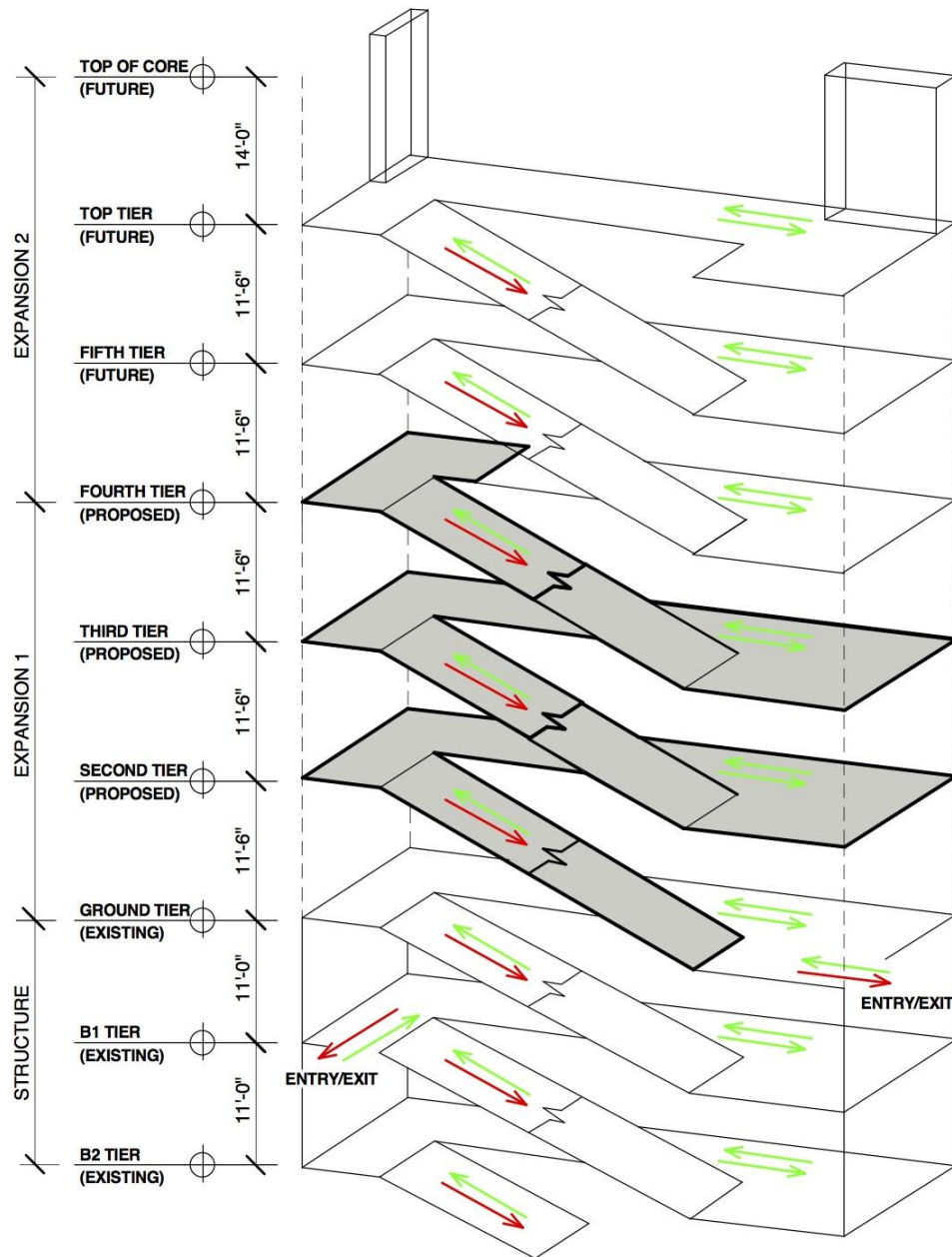


*Typical Tier Plan*



*Perspective – South Facade*

- e. Expansion 2 (future), will provide approximately 310 parking spaces for patients. The last vertical expansion shall consist of an additional two and a half supported levels to the existing five and a half-level structure.



Overall Parking Garage Isometric

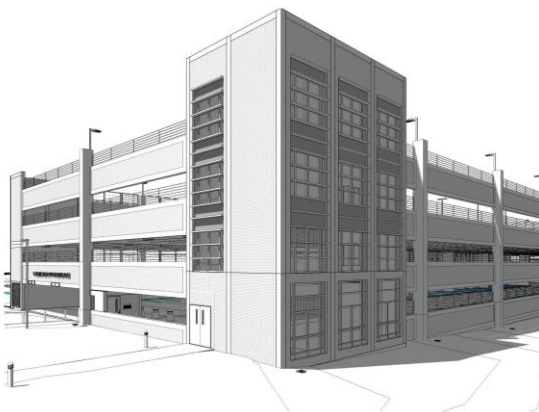
- f. The parking structure will replicate the current garage configuration, which is a two-bay precast structure with two-way, 90 degree parking using a single-helix circulation between parking tiers.
- g. The parking layout will mimic the current garage configuration that is a two-bay precast structure with two-way, 90 degree parking using a single- helix circulation between parking levels.
- h. The typical floor-to-floor height for each level of expansion shall be 11'-6" with a minimum of 8'-4" vertical clearance throughout per latest VA guidelines.



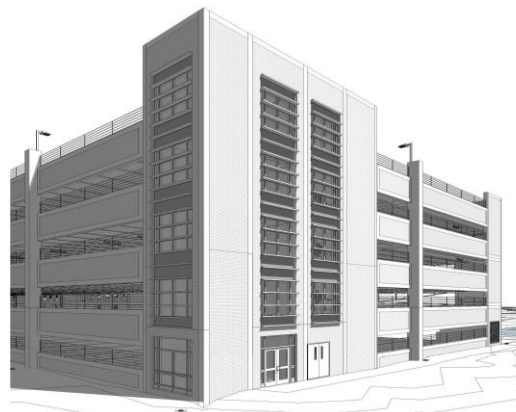
- i. All standard parking spaces to be a minimum of 9'-0" x 18'-0".
- j. Existing vehicular and pedestrian access points to and from the new expanded garage will be coordinated and reconfigured as necessary in conjunction with the adjacent lot to the south of the garage and the current access road at the site.
- k. The primary pedestrian means of egress will remain as is as provided via the two stair/elevator towers currently located and the NE and NW corners of the parking structure. The addition of a second elevator cab at the NE corner tower of the garage will be evaluated based on necessity and demand. Both stair/elevator tower additions will provide for as much passive security as possible with glass back elevators and façade glazing.
- l. The elevator expansion proposed for pedestrian vertical transport shall include stainless steel cabs with glass back for passive security. New and/or additional elevator cab shall include the following features:
  - i. Standard package type with cab interior walls of textured stainless steel.
  - ii. Cab control and hall lanterns to be vandal resistant type.
  - iii. Elevator floor to be rubber tile.
  - iv. Elevator ceiling to be stainless steel with recessed down lights.
  - v. Elevator hoist way entrance doors and frames to be stainless steel.
  - vi. At least one elevator cab will designed to handle stretcher.

## 2. Architecture/Superstructure

- a. The garage superstructure shall utilize precast concrete system of construction.
- b. The exterior facade of the garage will have a suspended perforated metal screen for architectural as well as suicide prevention purposes.
- c. Where precast exterior concrete will be exposed to view, reveals and articulations shall be incorporated that will convey the architectural intent.



*Perspective – Northeast Corner*



*Perspective – Northwest Corner*

### 3. Foundation System

- a. We will investigate and analyze the existing structure to verify and confirm that the superstructure is supported by a foundation system that was designed for the intended expansion.
- b. We will further verify and confirm that all foundations, grade beams, retaining walls and basement walls are embedded a minimum of 36 inches below final exterior grades for frost protection pending geotechnical report completion.

### 4. Precast Concrete Superstructure Expansion

- a. A similar long span, precast superstructure design using double tee floor system to support the anticipated live loads and dead loads for the parking garage shall be provided for the expansion.
- b. The superstructure expansion will be comprised of architectural precast spandrels, columns, wall panels and shear walls on the exterior and structural grey precast for the interior columns, light walls, shear walls and double tees.
- c. Cast in place concrete washes 3 feet in width shall be provided around the perimeter of the garage as well as along interior column lines perpendicular to tee stems for structural and positive drainage purposes.
- d. Construction type for the expansion is expected to be II-B. The floor construction shall NOT require fire resistance rating. However, the stair tower shafts shall remain enclosed and separated with 2-hr fire enclosure from the rest of the structure.
- e. Precast stairs shall have abrasive nosing inserts in the stair threads for slip resistance as well as a light broom finish on stair treads and landings.
- f. Double tee floors will be sloped and warped for positive drainage to floor drains. A minimum of 3/16" per foot slope will be provided.
- g. All connection hardware shall be hot dipped galvanized except for tee-to-tee flange connectors, which shall be stainless-steel Vector connectors by JVI or approved equal.
- h. Tee-to-tee flange connectors to be stainless steel Vector connectors by JVI or approved equal.
- i. Durability design shall incorporate corrosion inhibitor admixtures into the concrete mix.
- j. Exposed welded connections shall be minimized.
- k. All horizontal and vertical joints of walls and panels at the stair/elevator tower shall be grouted for fire-rating resistance.

### 5. Miscellaneous Metals

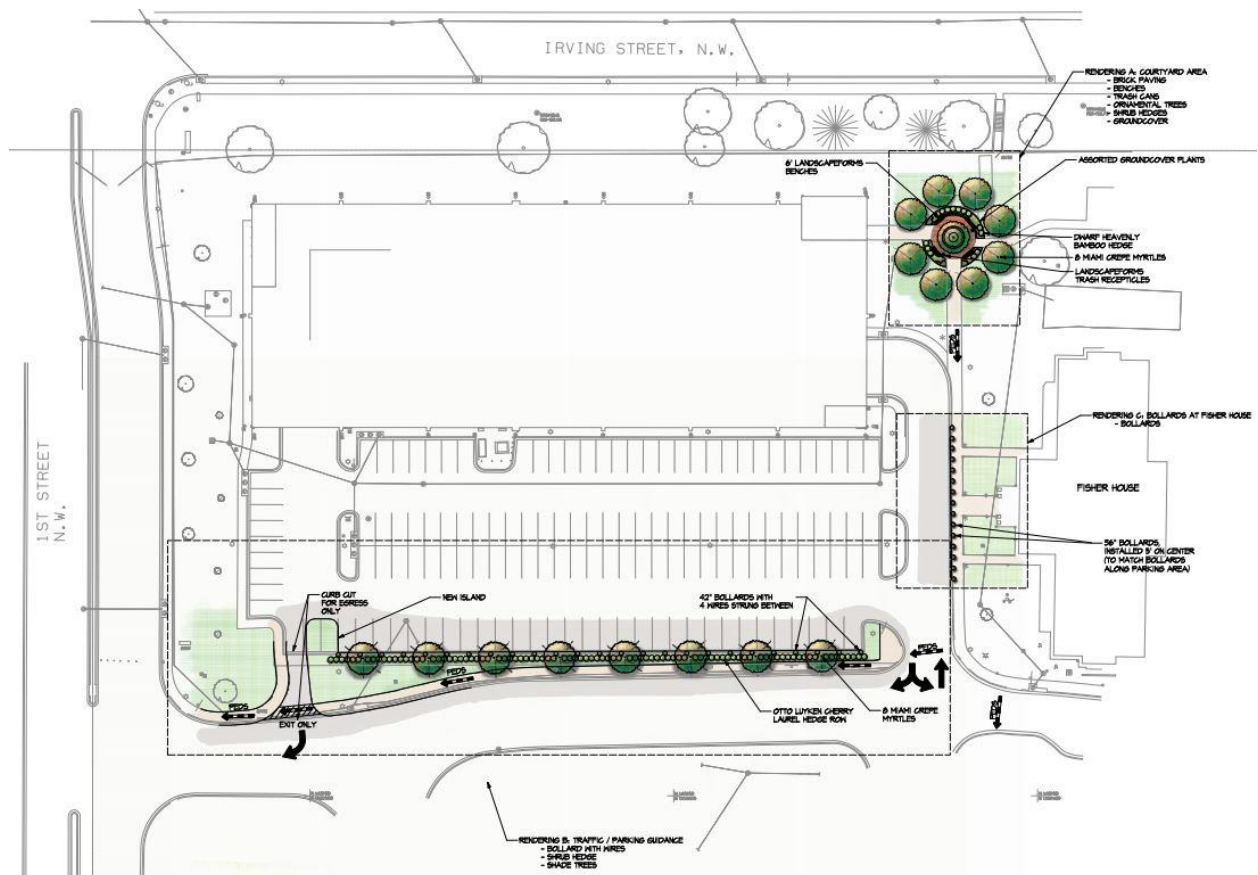
- a. Galvanized and painted steel stair guards and handrails at all stairs will be provided.

- b. Metal pipe guards as required will be provided to protect drain risers and electrical conduit that will be subject to vehicular impact will be provided.
- c. Metal guards at all structural members subject to vehicular impact will be provided.

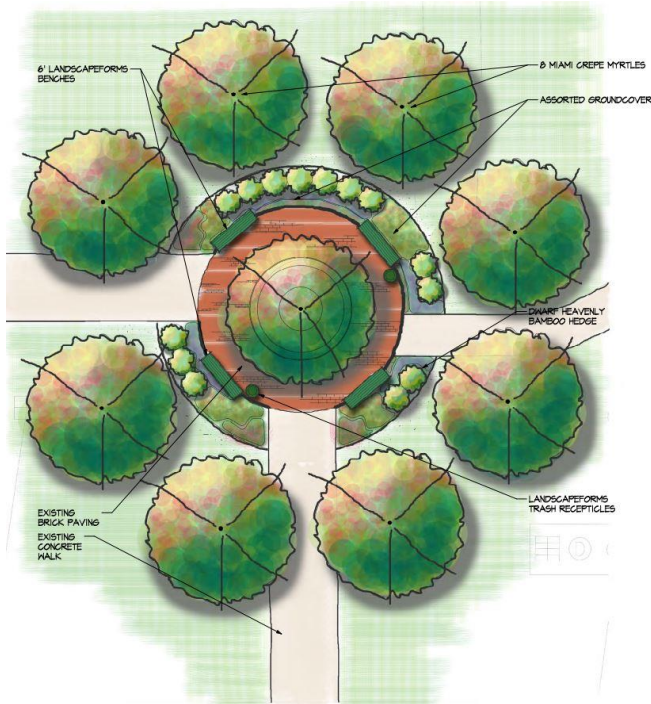
## 6. Garage Waterproofing Systems

- a. Elastomeric traffic deck coating membrane will be provided over rooms and occupied spaces.
- b. Penetrating saline sealer will be applied to all driving and parking areas and flat floor landings of stairs.
- c. Tee-to-tee joints will be fully caulked as well as cast-in-place concrete wash-tooled joints.
- d. Expansion joint assemblies will be provided where required to account for volume change movements.

## 7. Site Development Landscape Plan



Overall Rendered Site Plan



Rendering C – Bollards At Fisher House



Rendering A – Courtyard Area



Rendering B – Trees Along Street

## 8. Environmental Documentation

See “New North Parking Structure” submission from September 2, 2010.

## 9. Historic Preservation Documentation

See “New North Parking Structure” submission from September 2, 2010.



## 10. Floodplain Management and Wetlands Protection

See “New North Parking Structure” submission from September 2, 2010.

## 11. Mechanical

- a. The basis for this design is standard engineering practice and the following criteria:
  - i. Relevant VA Directives, Design Manuals and Technical Specifications
  - ii. International Mechanical Code (Latest Version)
- b. The scope of work for the new parking garage expansion is being designed as an open structure that will not require mechanical ventilation systems other than enclosed stairwell ventilation.

## 12. Electrical

- a. The basis for this design is standard engineering practice and the following criteria:
  - i. Current VA Design and Construction Procedures, Master Specifications, Handbooks and Design Guides
  - ii. Current VA Electrical Design Manual
  - iii. International Building Code (2009)
  - iv. National Electrical Code (2011)
  - v. American National Standard institute (ANSI) Standards.
  - vi. Energy Conservation Code
  - vii. VA Parking Design Manual
- b. The scope of work includes the design of electrical power, lighting, communications and fire alarm systems for the parking garage expansion. Scope of electrical work includes: replacement of open parking lot pole mounted lighting, new parking garage light fixtures and controls, ground fault protected weatherproof receptacles, branch circuit wiring, Life Safety and Security Systems and Communication Systems devices and expansions of existing systems within the garage. In addition, scope also includes garage interface with Building 1 and 6 existing systems.
- c. There is an existing pad mounted transformer located at the southern edge of the existing garage and a generator is located next to the transformer. A block wall is being placed between the utility and standby services to protect against physical damage to both. Both UG services travel to the existing electrical room located in B2. Existing step down transformers and 120/208volt panels located in the existing electrical room have been reviewed for design capacity and modified as required for the parking garage expansion. A new electrical room is being added to the new third tier plan. A new panel is being added into that room for additional loads. The prior design provided for expansion, and this project is instituting some of that work.
- d. New lighting design for the garage is based upon enclosed LED lighting fixtures, which will offer the highest energy efficiencies and longest lamp life for this application. Alternate deduct, reduces this specification to energy efficient fluorescent fixtures. Controls are designed that will operate these fixtures in dimmed mode with minimal power consumption. Local motion detectors will bring the fixtures to full light output as pedestrians or cars approach, returning to low-energy dimmed mode once traffic passes.

In addition, since the garage is an open structure, photo-controls are designed to turn off the interior perimeter lighting during daylight hours.

- e. A fire alarm system expansion has been designed for the new tiers, consisting of manual pull stations and speaker/strobe indicating appliance and smoke detectors in elevator lobbies, top of shaft of modified elevators and in the police office. All devices are wired to the existing garage fire alarm system. The existing FACP is located in the B2 Tier electrical room. The existing FACP is currently incompatible with the umbrella facility fire alarm system and is being replaced as part of the scope of work.
- f. Additional CCTV security cameras are located to provide full coverage of the garage spaces. These cameras are tied into the existing security observation system. Existing termination backboards are located in the B2 level equipment room. Additional remote monitor and power amplifier equipment has been located in the new police room.
- g. Communications systems provided for the parking garage, including telephones for emergency use and public address speakers are connected to the existing campus systems. Existing termination backboards are located in the B2 level equipment room.
- h. All garage Life Safety and Security, Communications systems are being fed back to Building 6 via the existing UGC duct-bank as shown on existing facility documents.
- i. Expansion of head-end equipment, if required, is intended as part of the scope of this project.
- j. The existing elevators and machine rooms shall remain and are designed for expansion with no electrical impact.

### 13. Fire Protection

- a. The basis for this design is standard engineering practice and the following criteria:
  - i. Relevant VA Directives, Design Manuals and Technical Specifications
  - ii. Life Safety Code (NFPA 101)
  - iii. Installation of Sprinkler Systems (NFPA 13)
  - iv. VA Fire Protection Design Manual
- b. The scope of work for the new parking garage expansion is being designed as an open structure that does not require any fire sprinkler systems.
- c. A dry standpipe system will be designed in accordance with the aforementioned design criteria.

### 14. Plumbing

- a. The basis for this design is standard engineering practice and the following criteria:
  - i. Relevant VA Directives, Design Manuals and Technical Specifications
  - ii. International Plumbing Code (Latest Version)
- b. The scope of work includes the existing storm piping will be extended to new tiers as required.

## 15. Deduct Alternates

### DEDUCT ALT. #1 - PERFORATED METAL SCREEN WALLS

BASE: Perforated metal screen with accent lighting as shown on the drawings.

DEDUCT: Delete perforated metal screen and supporting structure as shown on Drawing(s) 05/A2.1 and 03/A2.2, delete accent lighting as shown on Drawings(s) 01/A2.4, 02/A2.4, 11/A5.2 and 02/E1.4

### DEDUCT ALT. #2 - ELEVATOR LOBBY UPGRADES

BASE: Elevator finishes as shown on the drawings.

DEDUCT: Delete exposed aggregate finish on concrete floor as shown in Drawing(s) 01/A3.1, 01/A3.2, 04/A5.2 and 05/A5.2 and substitute smooth trowel finish, delete suspended metal ceilings as shown on Drawing(s) A4.1 and A4.2, provide substitute light fixtures as shown on fixture schedule E0.0 and Drawing(s) A4.1 and A4.2.

### DEDUCT ALT. #3 - SITE IMPROVEMENTS

BASE: All site work shown on the drawings.

DEDUCT: Provide only the site work shown on Drawing(s) 01/CS3.1 and CS3.2.

### DEDUCT ALT. #4 - LANDSCAPE AND SITE FURNISHINGS

BASE: All landscape work and site furnishings shown on the drawings.

DEDUCT: Provide only the landscape work and site furnishings shown on Drawing(s) 01/LP7.0 and LP7.1.

### DEDUCT ALT. #5 - AUTOMATIC DOOR OPENING DEVICES

BASE: All automatic door opening devices shown on the drawings and hardware schedule.

DEDUCT: Provide manual door closer as specified in Spec Section(s) 087100. Delete electrical feeds shown on Drawing(s) 01/E2.1, 01/E2.4 and 02/E2.4.

### DEDUCT ALT. #6 - CARD READERS

BASE: All card readers shown on the drawings and hardware schedule.

DEDUCT: Provide manual door locks/latches as specified in Spec Sections(s) 087100. Delete electrical feeds shown on Drawing(s) 02/E2.2, 01/E2.4 and 02/E3.2.

### DEDUCT ALT. #7 - BARRIER CABLE SYSTEM

BASE: Barrier cable system as shown on the drawings.

DEDUCT: Delete barrier cables at exterior openings as shown on Drawing(s) A2.1, A2.2 and 06/A2.4.

### DEDUCT ALT. #8 – CRASH BARRIER, BOLLARDS AND SECURITY GATES

BASE: All crash barriers, bollards, and security gates shown on the drawings.  
DEDUCT: Delete all crash barriers, bollards, and security gates shown on Drawing(s) 01/CS3.0, 04/LP7.1 and 05/LP7.1.

#### DEDUCT ALT. #9 - SITE FENCING

BASE: All site fencing shown on the drawings.  
DEDUCT: Delete all site fencing shown on Drawing(s) 01/CS3.0 and 08/LP7.1.

#### DEDUCT ALT. #10 -INTERIOR GARAGE BARRIER FENCING

BASE: All cable type barrier fencing shown on the drawings.  
DEDUCT: Provide chain link barrier fencing shown on Drawing(s) S2.1 and 06/S3.3.

#### DEDUCT ALT. #11 - SECURITY CAMERAS

BASE: Security cameras as shown on the drawings.  
DEDUCT: Delete security cameras and appurtenances (conduit, junction boxes, and power) shown on Drawing(s) E3.3, E3.4 and 02/E3.5.

#### DEDUCT ALT. #12 - LED LIGHTING

BASE: LED lighting as shown on the drawings.  
DEDUCT: Provide substitute light fixtures as shown on fixture schedule E0.0 and as shown on Drawing(s) E1.4, E1.5 and E1.6.

#### DEDUCT ALT. #13 - SECURITY BOOTH

BASE: Security booth as shown on the drawings.  
DEDUCT: Delete security booth and appurtenances shown on Drawing(s) A4.3, 02/E1.4, 03/E2.2 and 01/E2.3.

#### DEDUCT ALT. #14 - PARKING TIERS

BASE: 2-1/2 new tiers parking tiers as shown on the drawings.  
DEDUCT: Delete 1/2 tier and connecting ramp as shown on Drawing(s) 02/A1.2, 02/A1.6, A2.1, A2.2, 01/S1.5, 02/M1.3, 02/P1.3, 03/FP1.3, 02/E1.6, 02/E2.4 and 02/E3.4.