PROJECT: *(Name and Address)*
Renovate & Consolidate Inpatient Functions-
Building 113
Ft Meade VAMC

SI NO.: 004

DATE OF ISSUANCE: 10/20/2023

CONTRACT FOR: 568-14-110

CONTRACT DATED:

ARCHITECT'S PROJECT NO: 211901

OWNER *(Name and Address)*
VA Black Hills Health Care System
Fort Meade, SD

TO CONTRACTOR *(Name and Address)*
MDM Construction
2215 Sheyenne Street
West Fargo, ND 58078

The Work shall be carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Proceeding with the Work in accordance with these instructions indicates your acknowledgment that there will be no change in the Contract Sum or Contract Time.

DESCRIPTION:

Primary Objectives

1. Provide a larger elevator cab to fit two attendants alongside the facility's new medical bed at its largest dimension. (10'-6" deep x 9'-6" wide interior cab clearance)
2. Provide larger elevator doors for improved ease of patient transport and to fit the facility's new medical bed at its largest dimension. (6'-0" wide opening clearance)
3. Adjust 1st and 2nd floor spaces around elevator shaft to accommodate larger elevator cab and shaft while making best use of remaining square footage. Below is a list of affected rooms. See drawings for specifics.
   a. Rooms relocated: ELEVATOR EQUIP (100), LOBBY (C200E)
   b. Rooms removed: LOBBY (C100RD), STORAGE (262A), H.A.C. (262B)
   c. Rooms added: OFFICE (100A), CLOSET (100B), H.A.C. (262)
   d. Rooms adjusted: CORRIDOR (C100D), CORRIDOR (C100DB), CORRIDOR (C100RC), SPECIALTY CARE RECEPTION (188A), BREAKROOM (188H), STORAGE (188G), PATIENT ELEV (EL5)

Secondary Objectives

1. Reuse previously noted fixtures, equipment, casework, finishes, etc. in the new design to reduce the amount of added cost.
2. Clarify casework dimensions and clearances within Specialty Care Reception (188A)
3. Provide additional offices and/or workstations on the 1st level.
4. Clarify weather and moisture prevention at top of elevator shaft.
   a. Parapet with prefinished wall cap to be provided around entire perimeter of elevator roof instead of previously shown prefinished metal gravel stop. (See AE301 & AE302)
   b. Through wall flashing to be provided between EIFS and parapet wall instead of previously shown reglet flashing. (See AE301 & AE302)
   c. Vapor barrier to not be installed beneath roof joists at elevator shaft as was previously shown. (See AE301 & AE302)

d. Building wrap to be installed over exterior CMU walls, elevator roof framing, and parapet walls as shown. (See AE302)

5. Clarify weather and moisture prevention at bottom of elevator shaft.
   a. The gaps created in the crawlspace, between elevator CMU walls and exterior foundation walls, are to be walled off using 8″ thick stacked bond CMU masonry aligned with the exterior face of the shaft.
      - Infill CMU walls are to be stacked bond and NOT part of the shaft wall running bond.
      - Provide standard mortar joint between infill CMU walls and shaft walls.
      - Provide 1″ expansion gap filled with backer rod and sealant between the CMU infill walls and the elevator shaft.
   b. A fluid applied vapor barrier is to be installed on existing exterior foundation walls between existing foundations and new CMU shaft walls. (See AE301 & AE302)
   c. A fluid applied vapor barrier is to be installed on CMU walls facing the existing crawl space beneath the first floor. Extend the fluid applied barrier up the vertical face of the adjacent concrete joist at north wall. (See AE301 & AE302)
   d. Vapor barrier to be installed beneath elevator shaft slab/foundation. (See AE301 & AE302)
   e. Vapor barrier beneath elevator shaft is to wrap up and over elevator foundation and tie into fluid applied systems. (See AE301 & AE302)
   f. A new concrete drainage basin is to be provided in the crawlspace adjacent to the elevator shaft and connect to the elevator sump pit as shown in the drawings.
   g. Vapor barrier beneath drainage basin is to wrap up and over concrete walls as shown in the drawings.
   h. The top of the concrete drainage basin is to be positioned approximately 1″ above existing crawlspace grade.
   i. The top of the metal grate over concrete drainage basin is to be positioned approximately 2″ below existing crawlspace grade and set on top of a concrete ledge as shown in the drawings.
      - This creates a 3″ high concrete curb that can be cut away as needed in future modifications to crawlspace grade and drainage.
6. Provide details for elevator door sill, jamb, and head. (See AE302)
7. Provide details that help clarify how rated systems meet the rated elevator shaft and/or equipment room. (See AE302)

<u>List of Changes/Notes Regarding Components:</u> *(See drawings for specifics)*

Casework

1. A 2′-6″ wall cabinet (WC) is to be removed from the project in Specialty Care Reception (188A).
2. A 2′-9″ base cabinet (BC) is to be removed from the project in Specialty Care Reception (188A).
3. A 2′-9″ wall cabinet (WC) is to be added to the project in Specialty Care Reception (188A).
4. A 1′-3″ base cabinet (BC) is to be added to the project in Specialty Care Reception (188A).
5. A 9′-3″ long x 2′-1″ deep countertop has been added to the project in Specialty Care Reception (188A).
   a. This counter is to be installed in place of the East 8′ counter shown in original drawings.
6. A 11′-2 3/4″ long x 2′-1″ deep countertop has been added to the project in Specialty Care Reception (188A).
   b. This counter is to be installed in place of the North/ East L counter shown in the original drawings.
7. See Specialty Care Reception (188A) elevations for approximate sizing of 3 base and 1 wall filler pieces.
   a. Casework filler pieces for Specialty Care Reception (188A) were shown in the original drawings but not dimensioned.
   b. All casework doors should be able to open 90 degrees after installation of handles.
8. Sloped top(s) are to extend entire length (11′-1 3/4″) of new wall cabinet arrangement in Specialty Care Reception (188A).

Doors

9. Door 100 is to be relocated to the equipment room's new location.
10. Door 188H is now to be named 100B and provide entry into the new Closet (100B).
11. Door 262A is now to be named 100A and provide entry into the new Office (100A).
12. Door 263B is now to be named 262 and provide entry into the new H.A.C. room (262).
13. Door C100RD is to be removed from the project.

Other

14. A larger elevator cab is to be provided.

15. Concrete drainage basin is to be provided in the crawlspace adjacent to the elevator.
16. Metal Grates are to be provided at the elevator sump pit and new crawlspace drainage basin.
17. Two larger elevator doors with radius jambs are to be provided.
18. As shown in the original drawings, card readers are to be provided at patient elevator (EL5) doors as well as the door into the H.A.C. room (262).
19. All wall mounted equipment previously located in H.A.C. (262B) is to be relocated to H.A.C. (262).
20. The mop sink previously located in H.A.C. (262B) is to be relocated to H.A.C. (262).
21. The fire extinguisher in Elevator Equip (100) is to be relocated to the equipment room's new location.
22. Vending machines, previously located in Lobby (C100RD), are now to be located in Corridor (C100DB).
    a. Provide necessary MEP hookups in new infill wall (A31s) where existing door has been removed.

Note: All items that are to be removed from the project and listed above are to be turned over to the owner if already purchased and/or no credits given.

List of Changes/Notes Regarding Finishes: *(See drawings for specifics)*

Corner Guards

1. Added 1 corner guard (CG2) to the project.
2. Added 3 corner guards (CG1) to the project.
3. No corner guards were removed from the project.
4. As shown in the updated drawings, 2 corner guards (CG2) are to be installed in H.A.C. (262).
5. As shown in the updated drawings, 1 corner guard (CG1) is to be installed in Lobby (C200E) at elevator alcove.
6. As shown in the updated drawings, 3 corner guards (CG2) are to be installed in the Breakroom (188H) opening.
7. As shown in the updated drawings, 2 corner guards (CG1) are to be installed in Corridor (C100D) at elevator alcove.
8. As shown in the updated drawings, 2 corner guards (CG2) are to be installed in Corridor (C100DB) at doorway 100.
9. As shown in the original drawings, 2 corner guards (CG2) are to be installed in Corridor (C100RC) to either side of the Specialty Care Reception kiosk.
10. As shown in the updated drawings, 1 corner guard (CG2) is to be installed in Storage (C188G)

Wall Protection & Handrails

1. Wall protection (WP1) is to be installed around the entire interior perimeter of Storage (188G), Elevator Equip (100), Closet (100B), and H.A.C. (262).
2. No wall protection is to be installed within Office (100A).
3. Wall protection (WP1) is to be installed along new shaft furring walls in Break Room (188H) and Corridor C100S. Wall protection to also extend along east existing wall in Break Room 188H as shown in the updated drawings.
4. Wall protection (WP1) and handrail (HR) to extend along wall between doors 100A and C100RC in Corridor (C100RC).
5. Wall protection (WP2) to be installed to either side of elevator door in Corridor (C100D) alcove on the first floor.
6. Handrails and wall protection to wrap corners of elevator door corridor alcove on the first floor if applicable per notes in the updated drawings. Reuse salvaged handrail from demo if possible. Match existing corridor finishes.
7. Wall protection (WP2) to be installed to either side of elevator door in Lobby (C200E) alcove on the 2nd floor. (See AE407 and IN101)
8. Wall protection (WP2) to be installed on the south wall of Lobby (C200E) as shown in the updated drawings. (See AE407 and IN101)
9. Handrail (HR) and wall protection (WP1) from Corridor (C200D) to turn corner at column furring and die into Lobby (C200E) alcove wall. (See IN101)

Ceilings

10. 24"x24" ACT ceilings are to be installed 8'-6" AFF in Break Room (188H), Closet (100B), and Office (100A).

11. A 2hr rated GWB ceiling is to be installed 9′-0″ AFF in Elevator Equipment (100) as shown in the updated drawings (See AE301 & AE302). Verify that ceiling passes under existing structural and MEP systems before installation.
12. 24″x24″ ACT ceiling 8′-0″ AFF is to be installed in Storage (188G). Verify that the new ceiling passes under existing structural and MEP systems before installation.
13. A suspended GWB ceiling 8′-6″ AFF is to be installed in H.A.C. (262).
14. Suspended GWB ceiling soffits 8′-0″ AFF are to be installed above Corridor (C100D) and Lobby (C200E) alcoves above elevator doors as shown in the updated drawings.
15. 24″x24″ ACT ceiling is to be installed 9′-0″ AFF in Lobby (C200E) and is to be part of the continuous system installed in Corridor (C200D).
16. Existing ACT ceilings in Corridor (C100D), Corridor (C100DB), and Corridor (C100S) are to be removed as necessary and salvaged for reinstallation. Replace any damaged grid and tile resulting from construction.
17. Undamaged and/or uncut ACT tiles called out to be demoed in first floor spaces are to be salvaged for future renovations and repairs. Coordinate desired quantity to be salvaged with owner.
18. As shown in the original drawings, 24″x24″ ACT ceilings are to be installed 8′-6″ AFF in Specialty Care Reception (188A).

Floors

19. The floor finish in Elevator Equipment (100) is to be sealed concrete (CONC1).
20. The floor finishes in Office (100A) and Closet (100B) are to be luxury vinyl tile (LVT1).
21. The floor finish in H.A.C. is to be sheet vinyl (SV1) with a coved integral base (INTB).
22. The floor finish in Lobby (C200E) is to be luxury vinyl tile (LVT1) and continuous with the flooring in Corridor (C200D).
23. As shown in the original drawing, the floor finish in the Specialty Care Reception (188A) is to be luxury Vinyl Tile (LVT1).

Wall Base

24. The wall base in Elevator Equipment (100), Office (100A), and Closet (100B) is to be resilient base (RB1).
25. The wall base in H.A.C. is to be a coved integral base (INTB).
26. The wall base in Lobby (C200E) is to be resilient base (RB1) and continuous with the wall base in Corridor (C200D).
27. As shown in the original drawings, the wall base in the Specialty Care Reception (188A) is to be resilient base (RB1).

Paint

28. As shown in the original drawings, all GWB walls, ceilings, bulkheads, and soffits are to be painted (P1) unless otherwise noted in the drawing set.
29. All GWB walls to be painted (P1) in Office (100A) and Closet (100B).
30. All GWB walls and ceilings to be painted (P1) in Storage (188G) and H.A.C (262).
31. As shown in the original drawings, all GWB walls and bulkheads are to be painted (P1) in Break Room (188H).
32. All GWB walls and ceilings to be painted (HP1) in Elevator Equipment (100).
33. All GWB walls, ceilings, bulkheads, and soffits to be painted (P1) in Lobby (C200E) unless otherwise noted.
34. All new or altered GWB walls, ceilings, bulkheads, and to be painted to match existing colors in Corridor (C100D) and Corridor (C100B).
35. All GWB walls, ceilings, bulkheads, and soffits to be painted (P1) in Corridor (C100RC) unless otherwise noted.
36. As shown in the original drawings, all GWB walls, ceilings, bulkheads, and soffits are to be painted (P1) in Specialty Care Reception (188A) unless otherwise noted.

Other

37. The elevator cab finishes selection is unchanged. Size of panels and location of fixtures should adjust to match the new cab size. Confirm changes with Architect and Elevator Manufacturer.
38. Wall covering (WC1) to be installed above wall protection (WP2) in Lobby (C200E) as shown in the updated drawings. (See AE407 and IN101)

List of Changes/Notes Regarding Materials: *(See drawings for specifics)*

1. An under-slab vapor barrier is to be installed beneath the elevator shaft as shown in the updated drawings. Tie into existing vapor barriers in crawlspace if applicable. Wrap barrier up and over foundations as shown in drawings.
2. A fluid applied vapor barrier is to be installed in the crawlspace over the CMU shaft wall and adjacent existing foundations as shown in the updated drawings. The barrier should overlap the under-slab vapor barrier as shown in the added details.
3. A prefinished metal wall cap and wood stud parapet is to be installed around the entire perimeter of the elevator shaft roof as shown in the updated drawings. (Do not use previously shown gravels top flashing).
4. Prefinished through wall flashing is to be installed between top of stud wall and bottom of EIFS system as shown in the updated drawings. (Do not use previously shown Reglet flashing).
5. Building wrap is to be installed behind the EIFS system at elevator shaft roof and parapet. The wrap should overlap with the roof membrane and through wall flashing as shown in the updated details.
6. A vapor barrier is **NOT** to be installed underneath the elevator roof joists as was noted in the original drawings.

List of Changes/Notes Regarding Rooms and Layout: *(See drawings for specifics)*

Removed

1. Lobby (C100RD) on the 1st level was removed from the project.
   a. Door C100RD is to be removed from the project.
2. Storage (262A) on the 2nd level was removed from the project.
   a. Door 262A is to be renamed and relocated to Office (100A).
3. H.A.C. (262B) on the 2nd level was removed from the project.
   a. Door 262B is to be renamed and installed in H.A.C. (262).
   b. Equipment and fixtures from the room are to be installed in H.A.C. (262).
   c. Card reader is to be installed in front of H.A.C. (262).

Added

4. Office (100A) on the 1st level was added to the project.
   a. The room is to be in the area previously designated Corridor (C100RC) outside Lobby (C100RD).
   b. Use door previously named 262A for entry into the room.
   c. The room is to be connected to Corridor (C100RC).
5. Closet (100B) on the 1st level was added to the project.
   a. The room is to be in the area previously designated Lobby (C100RD).
   b. Use door previously named 188H for entry into the room.
   c. The room is to be connected to Specialty Care Reception (188A).
6. H.A.C (262) on the 2nd level was added to the project.
   a. The room is to be in the area previously designated Lobby (C200E).
   b. Use door previously named 262B for entry into the room.
   c. The room is to be connected to Lobby (C200E) / Corridor (C200D).
   d. Equipment and fixtures from H.A.C. (262B) are to be installed in H.A.C. (262).
   e. Card reader from H.A.C. (262B) is to be installed in front of H.A.C. (262).

Adjusted

7. Patient Elevator (EL5) has shifted and gotten larger.
   a. A larger cab and shaft are to be provided: 12′-7″ deep x 11′-8″ wide shaft clearance allowing for an elevator cab with interior clearances measuring 10′-6″ deep x 9′-6″ wide x 9′-0″ high.
   b. Larger elevator doors are to be provided: 6′-0″ wide x 7′-0″ opening clearance.
   c. As shown in the original drawing, card readers are to be placed adjacent to new elevator doors.
   d. All elevator doors are to be located on the East wall of shaft.
   e. The elevator pit ladder is to be located on the South wall of shaft.
   f. The elevator is to connect to Corridor (C100D) though an added corridor alcove and elevator doors (EL5).
   g. The elevator is to connect to Lobby (C200E), at the end of Corridor (C200D), through an added corridor alcove and elevator doors (EL5).
8. Elevator Equipment (100) on the 1st level is to be relocated.
   a. The room is to be in the area previously designated Lobby (C100RD).

b. Use door 100 for space as previously shown.
c. Door is to be placed in 2hr fire/smoke barrier and needs to be a 90-minute door.
d. The room is to be connected to Corridor (C100DB)

9. Specialty Care Reception (188A) has remained in the same location with some minor adjustments.
   a. Casework along the North wall and East wall was adjusted to allow for door into Closet (100B).
10. Storage (188G) has remained in the same location with minor adjustments.
    a. Square footage was slightly increased.
    b. GWB ceiling to be installed instead of ACT ceiling.
    c. Door is to be installed using the orientation shown in the updated plans.
11. Break Room (188H) has remained in the same location with minor adjustments.
    a. Square footage has decreased.
    b. Door 188H is to be renamed and relocated to Closet (100B).
    c. 3'-6" wide x 8'-0" high framed opening wrapped in GWB to connect Breakroom and Corridor.
12. Crawlspace around elevator shaft was adjusted.
    a. The existing crawlspace access point adjacent to new elevator shaft is to be infilled with CMU.
    b. Gaps created between elevator shaft walls and existing foundation walls are to be walled off using CMU.
    c. A new crawlspace access point is to be created north of the previous access point.
    d. A new concrete drainage basin is to be provided in the crawlspace adjacent to the elevator shaft and connect to the elevator sump pit as shown in the drawings.

ATTACHMENTS:

See the following document for added/revised drawings:

1. ASI 004_Drawings_2023-09-15

Sheets: GI001, GI101, GI102, AD101, AD102, AD111, AD112, AD113, AE100, AE101, AE102, AE103, AE104, AE111, AE112, AE121, AE122, AE201, AE301, AE302, AE406, AE407, AE601, IN101, IN102, IN601, HA101.

See the following documents for added/revised specifications:

1. ASI 004_Specification_071352 MODIFIED BITUMINOUS SHEET WATERPROOFING_2023-09-15
2. ASI 004_Specification_142400 NEW HYDRAULIC ELEVATOR_2023-09-15

ISSUED BY:

	Jesse Klankowski, Project Manager
(Signature)	*(Name & Title)*

cc: Revised sheets attached.

List of Reissued Sheets		
Discipline	**Sheet**	**Sheet Title**
Architectural	GI001	COVER SHEET
Architectural	GI101	LIFE SAFETY PLAN AND SUMMARY
Architectural	GI102	PHASING PLANS
Structural	S-101	PARTIAL FOUNDATION, FLOOR & ROOF FRAMING PLANS
Structural	S-501	SECTIONS
Architectural	AD101	DEMOLITION PLAN - 2ND LEVEL AREA A
Architectural	AD102	DEMOLITION PLAN - 2ND LEVEL AREA B & 1ST LEVEL AND PENTHOUSE
Architectural	AD111	CEILING DEMOLITION PLAN - 1ST LEVEL AREA A
Architectural	AD112	CEILING DEMOLITION PLAN - 1ST LEVEL AREA B AND AREA C
Architectural	AD113	CEILING DEMOLITION PLAN - 2ND LEVEL AREA A
Architectural	AE100	OVERALL FLOOR PLANS
Architectural	AE101	FLOOR PLAN - 2ND LEVEL AREA A
Architectural	AE102	FLOOR PLAN - 2ND LEVEL AREA B & 1ST LEVEL AND PENTHOUSE
Architectural	AE103	ROOF PLAN
Architectural	AE104	ALTERNATE FIRST LEVEL PLANS
Architectural	AE111	EQUIPMENT PLAN - 2ND LEVEL AREA A AND ROOM TYPE SCHEDULE
Architectural	AE112	EQUIPMENT PLAN - 2ND LEVELAREA B & 1ST LEVEL
Architectural	AE121	REFLECTED CEILING PLAN - 2ND LEVEL AREA A
Architectural	AE122	REFLECTED CEILING PLAN - 2ND LEVELAREA B & 1ST LEVEL AREA C
Architectural	AE201	EXTERIOR ELEVATIONS AND WINDOW TYPES
Architectural	AE301	ELEVATOR PLANS AND SECTIONS
Architectural	AE302	ELEVATOR PLANS AND SECTIONS
Architectural	AE406	ENLARGED PLANS AND INTERIOR ELEVATIONS
Architectural	AE407	CORRIDOR INTERIOR ELEVATIONS
Architectural	AE601	DOOR & WINDOW SCHEDULE AND DETAILS
Architectural	IN101	FINISH FLOOR PLAN - 2ND LEVEL AREA A
Architectural	IN102	FINISH FLOOR PLAN - 2ND LEVEL AREA B & 1ST LEVEL AREA C
Architectural	IN601	ROOM FINISH SCHEDULE AND DETAILS
Architectural	HA101	HAZARDOUS PLAN - 2ND LEVEL AREA A

Mechanical	FX101	FIRE PROTECTION
Mechanical	PD101	FIRST FLOOR AREA A WASTE AND VENT DEMOLITION PLAN
Mechanical	PD105	FIRST FLOOR AREA A DOMESTIC PIPING DEMOLITION PLAN
Mechanical	PG101	SECOND FLOOR AREA A MEDICAL GAS PIPING PLAN
Mechanical	PP101	FIRST FLOOR AREA A WASTE AND VENT PLAN
Mechanical	PP103	SECOND FLOOR AREA A WASTE AND VENT PLAN
Mechanical	PP107	SECOND FLOOR AREA A DOMESTIC PIPING PLAN
Mechanical	MD101	FIRST FLOOR AREA C HVAC DEMOLITION PLAN
Mechanical	MD106	FIRST FLOOR AREA A HVAC PIPING DEMOLITION PLAN
Mechanical	MP101	FIRST FLOOR AREA C HVAC PIPING PLAN
Mechanical	MP102	SECOND FLOOR AREA A HVAC PIPING PLAN
Mechanical	MH101	FIRST FLOOR AREA C HVAC PLAN
Mechanical	MJ103	MECHANICAL SCHEDULES
Electrical	ED102	ELECTRICAL DEMOLITION PLANS - 2ND LEVEL - AREA B & 1ST LEVEL - AREA C
Electrical	EL101	LIGHTING PLAN - 2ND LEVEL - AREA A
Electrical	EL102	LIGHTING PLANS
Electrical	EP101	POWER PLAN - 2ND LEVEL - AREA A
Electrical	EP102	POWER PLANS - 2ND LEVEL - AREA B & 1ST LEVEL - AREA C
Electrical	EY101	SIGNAL PLAN - 2ND LEVEL - AREA A
Electrical	EY102	SIGNAL PLANS - 2ND LEVEL - AREA B & 1ST LEVEL - AREA C
Electrical	EJ103	ELECTRICAL SCHEDULES

Albertson Engineering Inc.

605-343-9606
www.albertsonengineering.com
3202 W. Main, Suite C
Rapid City, SD 57702
315 N. Main Ave., Suite 200
Sioux Falls, SD 57104
201 S. Monroe St., Suite 203A
Winner, SD 57580

STRUCTURAL SUPPLEMENTAL INSTRUCTION NO. 1 | ASI #004

Project:	FM Renovate & Consolidate Inpatient Functions VA # 568-14-110
AEI Project #:	2021-007
Engineer:	Albertson Engineering Inc.
Architect:	Stone Group Architects
Date of Issuance:	09/15/2023

GENERAL REMARKS:

The Work shall be carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. If Work described herein requires change in the Contract Sum or Contract Time, said changes shall be arranged for and agreed upon through a separate contract mechanism before proceeding with the Work.

DESCRIPTION:

Sheet S-101 – Partial Foundation, Floor & Roof Framing Plans:

1. Change the size and orientation of the elevator as shown in the attached revised plans.

Sheet S-501 – Sections:

1. Change the details that were affected by the adjusted elevator size and orientation as shown on the attached revised sections sheet.

ATTACHMENTS:

1. Structural Sheets S-101 and S-501.

ISSUED BY THE ENGINEER:

Albertson Engineering, Inc.

David Leppert, PE
Principal
david@albertsonengineering.com

CC: File

WEST PLAINS ENGINEERING, INC.

Architectural Supplemental Instruction

Date:	October 18, 2023	**Project:**	Renovate and Consolidate Inpatient Functions
To:	Jesse Klankowski, Associate AIA Stone Group Architects 1001 Twelve Oaks Center Drive, Suite 1025 Wayzata, MN 55391	**Project #:**	VA #568-14-110 WPE# BR22019
From:	Michael Heinrich, PE/Mike Sigman, PE	**Project Location:**	Ft. Meade, SD
RE:	Elevator Modifications `	**ASI Number:**	ASI-4

The Work shall be carried out in accordance with the following supplementary instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Proceeding with the Work in accordance with these instructions indicates your acknowledgement that there will be no change in the Contract Time. If there is a change in the sum, the A/E will proceed to a Request For Proposal / Proposal Request.

Sheet FX101:

1. Modify fire sprinkler piping and heads for elevator as indicated. Refer to attached sheet FX101.

Sheet PD101, PD105, PG101, PP101, PP103, and PP107:

1. Remove/relocate sanitary, vent, medical gas, and domestic piping as per the attached plans for the installation of a larger elevator.

Sheet MD101, MD106, MP101, MP102, MH101 and MJ103:

1. Remove and install hydronic piping, steam/condensate piping, and HVAC ductwork as per the attached plans for the installation of a larger elevator.

Sheet ED102:

1. Demolition drawing for Area C have been modified for new location of the new elevator. Refer to attached modified sheet ED102.

Sheets EL101, EL102, EP101, EP102, EY101 and EY102:

1. Lighting, Power and Signal drawings for 2nd Level Area A and Area C have been modified for new location of the new elevator. Refer to attached modified sheets for detailed information.

Sheet EJ103:

1. Schedules have been modified for the installation of a larger elevator. Refer to attached modified sheet EJ103.

END OF DOCUMENT – MSH/MRS

Attachments: Revised Sheets FX101, PD101, PD105, PG101, PP101, PP103, PP107, MD101, MD106, MP101, MP102, MH101, MJ103, ED102, EL101, EL102, EP101, EP102, EY101, EY102 and EJ103.

RAPID CITY, SD/POWER ■ SIOUX FALLS, SD ■ BISMARCK, ND ■ CASPER, WY ■ CEDAR RAPIDS, IA
P: (605) 348-7455 ELEC SPECIALTIES P: (701) 751-7322 P: (307) 234-9484 P: (319) 365-0030
F: (605) 348-9445 P: (605) 362-3753 F: (605) 348-9445 F: (307) 234-5494 F: (319) 365-4122
F: (605) 362-3759

ADDED PER ASI 004

SECTION 07 13 52
MODIFIED BITUMINOUS SHEET WATERPROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Modified bituminous sheet material used for exterior below grade waterproofing and split slab waterproofing.

1.2 APPLICABLE PUBLICATIONS

A. Comply with references to extent specified in this section.

B. Federal Specifications (Fed. Spec.):

UU-B-790A Notice 2 v04-1992 Building Paper, Vegetable Fiber: (Kraft, Waterproofed, Water Repellent, and Fire Resistant).

C. ASTM International (ASTM):

C578-19.....Rigid, Cellular Polystyrene Thermal Insulation.

D41/D41M-11(2016).....Asphalt Primer Used in Roofing, Dampproofing and Waterproofing.

D4586/D4586M-07(2018)...Asphalt Roof Cement, Asbestos-Free.

D6380/D6380M-03(2018)...Asphalt Roll Roofing (Organic Felt).

D. American Hardboard Association (AHA):

A135.4-(r2020).....Basic Hardboard.

1.3 PREINSTALLATION MEETINGS

A. Conduct preinstallation meeting at project site minimum 30 days before beginning Work of this section.

1. Required Participants:
   a. Contracting Officer's Representative.
   b. Architect/Engineer.
   c. Contractor.
   d. Installer.
   e. Manufacturer's field representative.
   f. Other installers responsible for adjacent and intersecting work, including substrate and flashing installers.
2. Meeting Agenda: Distribute agenda to participants minimum 3 days before meeting.
   a. Installation schedule.
   b. Installation sequence.
   c. Preparatory work.
   d. Protection before, during, and after installation.

e. Installation.

f. Terminations.

g. Transitions and connections to other work.

h. Inspecting and testing.

i. Other items affecting successful completion.

3. Document and distribute meeting minutes to participants to record decisions affecting installation.

1.4 SUBMITTALS

A. Submittal Procedures: Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Submittal Drawings: Show size, configuration, and installation details.

C. Manufacturer's Literature and Data:

1. Description of each product.

2. Installation instructions.

3. Warranty.

D. Samples:

1. Waterproofing and Flashing Sheet: 200 mm (8 inch) square, each type and color.

2. Insulation: 200 mm (8 inch) square.

E. Test reports: Certify products comply with specifications.

F. Certificates: Certify products comply with specifications.

G. Qualifications: Substantiate qualifications comply with specifications:

1. Installer with project experience list.

1.5 QUALITY ASSURANCE

A. Installer Qualifications:

1. Regularly installs specified products.

2. Installed specified products with satisfactory service on five similar installations for minimum five years.

a. Project Experience List: Provide contact names and addresses for completed projects.

1.6 DELIVERY

A. Deliver products in manufacturer's original sealed packaging.

B. Mark packaging, legibly. Indicate manufacturer's name or brand, type, color, production run number, and manufacture date.

C. Before installation, return or dispose of products within distorted, damaged, or opened packaging.

1.7 STORAGE AND HANDLING

A. Store products indoors in dry, weathertight conditioned facility.

B. Protect products from damage during handling and construction operations.

1.8 FIELD CONDITIONS

A. Environment:

1. Product Temperature: Minimum 4 degrees C (40 degrees F) for minimum 48 hours before installation.
2. Weather Limitations: Install waterproofing only during dry current and forecasted weather conditions.

1.9 WARRANTY

A. Construction Warranty: FAR clause 52.246-21, "Warranty of Construction."

B. Manufacturer's Warranty: Warrant waterproofing system against material and manufacturing defects and agree to repair any leak caused by a defect in the waterproofing system materials or workmanship of the installer.

1. Warranty Period: 10 years.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Waterproofing System: Modified bituminous sheet material for exterior below grade and split slab waterproofing.

2.2 PRODUCTS - GENERAL

A. Provide each product from one manufacturer.

B. Sustainable Construction Requirements:

1. Insulation Recycled Content: Rigid Foam: 9 percent total recycled content, minimum.

2.3 BITUMINOUS SHEET

A. Cold applied waterproofing membrane composed primarily of modified bituminous material prefabricated in sheet form designed for below grade exterior and split slab waterproofing. Sheet reinforced with fibers at manufacturer's option.

B. Thickness: Not less than 3.0mm (120 mils), plus or minus 0.13 mm (5 mils), and bonded to 0.1 mm (4 mil) thick plastic sheet.

C. Provide release sheet to prevent bonding of bituminous sheet to itself.

2.4 PROTECTION MATERIAL

A. Polystyrene Insulation: ASTM C578, Type I or VIII, 13 mm (1/2 inch) minimum thickness.

B. Hardboard: AHA A135.4, Service Type, 6 mm (1/4 inch) thick.

C. Waterproofed Building Paper: Fed. Spec. UU-B-790A Notice 2, Type I, Grade C.

2.5 ACCESSORIES

A. Patching Compound: Factory-prepared, non-shrinking, fast-setting, cementitious adhesive compound containing no ferrous metal or oxide.

B. Primer: ASTM D41/D41M.

C. Roof Cement: ASTM D4586/D4586M.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine and verify substrate suitability for product installation.

1. Concrete surfaces cured minimum time recommended by waterproofing manufacturer.
2. Substrate to be dry as recommended by waterproofing manufacturer.

B. Protect existing construction and completed work from damage.

C. Correct substrate deficiencies.

1. Fill voids, joints, and cracks with patching compound.

D. Clean substrates. Remove contaminants capable of preventing full adhesion.

E. Priming:

1. Prime concrete and masonry surfaces.
2. Application method, amount of primer and condition or primer before installation of bituminous sheet as recommended by primer manufacturer.
3. Reprime when required according to manufacturer's instructions.

3.2 INSTALLATION - GENERAL

A. Install products according to manufacturer's instructions and approved submittal drawings.

1. When manufacturer's instructions deviate from specifications, submit proposed resolution for Contracting Officer's Representative consideration.

3.3 WATERPROOFING INSTALLATION

A. Bituminous Sheet Installation:

1. Remove release sheet before application.
2. Lay bituminous sheet from low point to high point so laps shed water.
3. Treat expansion, construction and control joints and evident working cracks as expansion joints. Apply bituminous sheet in double

thickness over joint by first applying a strip of bituminous sheet minimum 200 mm (8 inches) wide, centered over joint.

4. Lap seams minimum 50 mm (2 inches).
5. Lay succeeding sheet with laps and roll or press into place.
6. Repair misaligned or inadequately lapped seams according to manufacturer's instructions.
7. Seal seams and terminations according to sheet manufacturer's instructions.

B. Corner Treatment:

1. At inside and outside corners, apply double cover using an initial strip minimum 280 mm (11 inches) wide, centered along axis of corner.
2. Cover each strip completely by the regular application of bituminous sheet.
3. Provide a fillet or cant on inside corners.
4. Form cants using patching compound.
5. Do not use wood, fiber, and insulating materials for cants.

C. Projection Treatment:

1. Apply a double layer of bituminous sheet around pipes and similar projections at least 150 mm (6 inches) wide.
2. At drains, apply a bead of roof cement over a double layer of bituminous sheet under clamping rings.

D. Patching:

1. Repair tears, punctures, air blisters, and inadequately lapped seams, according to manufacturer's instructions before protection course is applied.

E. Permanent Protection:

1. Vertical Surfaces:
   a. Install hardboard, polystyrene insulation, or roll roofing protection material.
   b. Extend protection full height from footing to top of backfill.
   c. If graded backfill is used, use roll roofing or hardboard.

F. Horizontal Surfaces:

1. Install roll roofing protection under concrete wearing courses.
2. Install roll roofing, hardboard, or polystyrene insulation under earth backfill.

3. Where no concrete wearing course occurs or when surfaces will bear heavy traffic and will not immediately be covered with a wearing course, use protection specified for vertical surfaces.

G. Temporary Protection:

1. When waterproofing materials are subjected to damage by sunlight and cannot be immediately protected as specified, protect waterproofing materials by waterproof building paper or suitable coating approved by manufacturer of waterproofing system used.

3.4 FIELD QUALITY CONTROL

A. Inspection:

1. Do not cover waterproofed surfaces by other materials or backfill until work is approved by Contracting Officer's Representative.

3.5 CLEANING

A. Remove excess adhesive before adhesive sets.

B. Clean exposed waterproofing surfaces. Remove contaminants and stains.

3.6 PROTECTION

A. Protect waterproofing from construction operations.

B. Remove protective materials immediately before acceptance.

C. Repair damage.

- - - E N D - - -

SECTION 14 24 00
ELECTRIC HYDRAULIC ELEVATORS

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies the engineering, furnishing, and installation of the complete electric hydraulic elevator system as described herein and as indicated on the contract drawings.

B. Items listed in the singular apply to each and every elevator in this specification except where noted.

D. Service/Passenger Elevator EL5 shall be oil hydraulic, microprocessor control system, and power operated two speed side opening car and hoistway doors. Elevator shall have Class "C3" loading.

Basis of Design OTIS HYD-MRL-HR-PWBO 5000MRL or equal.

ELEVATOR SCHEDULE	
Elevator Number	EL5
Overall Platform Size	
Clear Inside Platform	
Rated Load - kg (lb)	3629 kg (8000 lb)
Contract Speed - m/s (fpm)	0.381 m/s (75 fpm)
Total Travel - m (ft)	3.842 m (12'-7 ¼")
Floors Served	2
Number of Openings	2
Entrance Type & Size	4'-0" x 7'-0"
Plunger Size	

1.2 RELATED WORK

A. Section 01 33 23 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FAR 52.236-21) and, SPECIAL NOTES (VAAR 852.236-91), in GENERAL CONDITIONS.

B. Section 07 84 00, FIRESTOPPING: Sealing around penetrations to maintain the integrity of fire-rated construction.

C. Color and patterns of plastic laminate: ROOM FINISH SCHEDULE AND DETAILS, SHEET IN601.

D. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: General electrical requirements that are common to more than one section.
E. Section 26 05 19, LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES (600 VOLTS AND BELOW): Low Voltage power and lighting wiring.
F. Section 26 05 26, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS: Requirements for personnel safety and to provide a low impedance path for possible ground fault currents.
G. Section 26 05 33, RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS: Conduits for cables and wiring.
H. Section 26 05 73, OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY: Requirements for installing the over-current protective devices to ensure proper equipment and personnel protection.
I. Section 26 22 00, LOW-VOLTAGE TRANSFORMERS: Low voltage transformers.
J. Section 26 24 16, PANELBOARDS: Low voltage panelboards.
K. Section 26 43 13, TRANSIENT-VOLTAGE SURGE SUPPRESSION: Surge suppressors installed in panelboards.
L. Section 26 51 00, INTERIOR LIGHTING: Fixture and ballast type for interior lighting.

1.3 QUALIFICATIONS

A. Approval by the CO is required for products or services of proposed manufacturers, suppliers and installers and shall be contingent upon submission by Contractor of a certificate stating the following:
   1. Elevator contractor is currently and regularly engaged in the installation of elevator equipment as one of his principal products.
   2. Elevator contractor shall have five (5) years of successful experience, trained supervisory personnel, and facilities to install elevator equipment specified herein.
   3. Elevator Mechanic (Installer) shall have passed a Mechanic Examination approved by the U.S. Department of Labor and have technical qualifications of at least five years of experience in the elevator industry or 10,000 hours of field experience working in the elevator industry with technical update training. Apprentices shall be actively pursuing Certified Elevator Mechanic status. Certification shall be submitted for all workers employed in this capacity.
B. Welding at the project site shall be made by welders and welding operators who have previously qualified by test as prescribed in American Welding Society Publications AWS Dl.1 to perform the type of

work required. Certificates shall be submitted for all workers employed in this capacity. A welding or hot work permit is required for each day and shall be obtained from the VAMC safety department. Request permit one day in advance.

C. Electrical work shall be performed by a Licensed Master Electrician and Licensed Journeymen Electricians as requirements by NEC. Certificates shall be submitted for all workers employed in this capacity.

D. Approval will not be given to elevator contractors and manufacturers who have established on prior projects, either government, municipal, or commercial, a record for unsatisfactory elevator installations, have failed to complete awarded contracts within the contract period, and do not have the requisite record of satisfactorily performing elevator installations of similar type and magnitude.

E. Approval of Elevator Contractor's equipment will be contingent upon their providing factory training, engineering and technical support, including all manuals, wiring diagrams, and tools necessary for adjusting, maintenance, repair, and testing of equipment to the VA for use by the VA's designated Elevator Maintenance Service Provider. Identifying an elevator maintenance service provider that shall render services within two hours of receipt of notification, together with certification that the quantity and quality of replacement parts stock is sufficient to warranty continued operation of the elevator installation.

F. Equipment within a group of electric hydraulic elevators shall be the product of the same manufacturer.

G. The Contractor shall provide and install safety devices that have been subjected to tests witnessed and certified by an independent professional testing laboratory that is not a subsidiary of the firm that manufactures supplies or installs the equipment.

1.4 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification. Elevator installation shall meet the requirements of the latest editions published and adopted by the United States Department of Veterans Affairs on the date contract is signed.

B. Federal Specifications (Fed. Spec.):

J-C-30B – Cable and Wire, Electrical (Power, Fixed Installation)

J-C-580 – Cord, Flexible, and Wire, Fixture

W-S-610 – Splice Connectors

W-C-596F - Connector, Plug, Electrical; Connector, Receptacle, Electrical

W-F-406E - Fittings for Cable, Power, Electrical and Conduit, Metal, Flexible

HH-I-558C - Insulation, Blankets, Thermal (Mineral Fiber, Industrial Type)

W-F-408E - Fittings for Conduit, Metal, Rigid (Thick-Wall and Thin-wall EMT Type)

RR-W-410 - Wire Rope and Strand

TT-E-489J - Enamel, Alkyd, Gloss, Low VOC Content

QQ-S-766 - Steel, Stainless and Heat Resisting, Alloys, Plate, Sheet and Strip

C. American Society of Mechanical Engineers (ASME):

A17.1 - Safety Code for Elevators and Escalators

A17.2 - Inspectors Manual for Electric Elevators and Escalators

D. National Fire Protection Association:

NFPA 13 - Standard for the Installation of Sprinkler Systems

NFPA 70 - National Electrical Code (NEC)

NFPA 72 - National Fire Alarm and Signaling Code

NFPA 101 - Life Safety Code

NFPA 252 - Fire Test of Door Assemblies

E. International Building Code (IBC)

F. American Society for Testing and Materials (ASTM):

A1008/A1008M-09 - Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High Strength Low-Alloy with Improved Formability

E1042-02 - Acoustically Absorptive Materials Applied by Trowel or Spray

G. Manufacturer's Standardization Society of the Valve and Fittings Industry (MSS):

SP-58 - Pipe Hangers and Supports

H. Society of Automotive Engineers, Inc. (SAE):

J517-91 - Hydraulic Hose, Standard

I. Gages:

For Sheet and Plate: U.S. Standard (USS)

For Wires: American Wire Gauge (AWG)

J. American Welding Society (AWS):

D1.1 - Structured Welding Code - Steel

K. National Electrical Manufacturers Association (NEMA):

LD-3 - High-Pressure Decorative Laminates

L. Underwriter's Laboratories (UL):

486A - Safety Wire Connectors for Copper Conductors

797 - Safety Electrical Metallic Tubing

M. Institute of Electrical and Electronic Engineers (IEEE)

N. Regulatory Standards:

VA Barrier Free Design Handbook H-18-13

VA Seismic Design Manual H-18-8

1.5 SUBMITTALS

A. Submit in accordance with Specification Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, and SAMPLES.

B. Before execution of work, furnish information to evidence full compliance with contract requirements for proposed items. Such information shall include, as required: Manufacturer's Name, Trade Names, Model or Catalog Number, Nameplate Data (size, capacity, and rating) and corresponding specification reference (Federal or project specification number and paragraph). All submitted drawings and related elevator material shall be forwarded to the Contracting Officer.

C. Shop Drawings:

1. Complete scaled and dimensioned layout in plan and section view showing the arrangement of equipment and all details of each and every elevator unit specified including:
   a. Complete layout showing location of storage tank/pump assembly, controller, piping layout, outside diameter of cylinder/plunger assembly, size of car platform, car frame members, and support assembly.
   b. Car, guide rails, brackets, buffers, and other components located in hoistway.
   c. Rail bracket spacing and maximum vertical forces on guide rails in accordance with H-18-8 for Seismic Risk Zone 2 or greater.
   d. Reaction at points of support and buffer impact loads.
   e. Weight of principal parts.
   f. Top and bottom clearances and over travel of the car.
   g. Location of main line switch/shunt trip circuit breaker, switchboard panel, light switch, and feeder extension points in the machine room.

2. Drawings of hoistway entrances and doors showing details of construction and method of fastening to the structural members of the building.
   a. Sill details including sill support.

D. Samples:
1. One each of stainless steel, 75 mm x 125 mm (3 in. x 5 in.).
2. One each of baked enamel, 75 mm x 125 mm (3 in. x 5 in.).
3. One each of color floor covering.
4. One each of protection pads, 75 mm x 125 mm (3 in. x 5 in.) if used.
5. One each car and hoistway Braille plate sample.
6. One each car and hall button sample.
7. One each car and hall lantern/position indicator sample.
8. One each wall and ceiling material finish sample.
9. One each car lighting sample.

E. Name of manufacturer, type or style designation, and applicable data of the following equipment shall be shown on the elevator layouts:
1. Storage tank/pump assembly.
2. Pump and motor, HP and RPM rating, Voltage, Starting and Full Load Ampere, Number of phases, and Gallons per minute.
3. Controller.
4. Starters and Overload Current Protection Devices.
5. Car Safety Device; Rupture Valve and Manual Shut Off Valves.
6. Electric Door Operator; HP, RPM, Voltage, and Ampere rating of motor.
7. Hoistway Door Interlocks.
8. Car Buffers; maximum and minimum rated load, maximum rated striking speed and stroke.
9. Cab Ventilation Unit; HP rating and CFM rating.

F. Complete construction drawings of elevator car enclosure, showing dimensioned details of construction, fastenings to platform, car lighting, ventilation, ceiling framing, top exits, and location of car equipment.

G. Complete dimensioned detail of vibration isolating foundations for storage tank/pump assembly.

H. Dimensioned drawings showing details of:
1. All signal and operating fixtures.
2. Car slide guides/roller guides.
3. Hoistway door tracks, hangers, and sills.

4. Door operator, infrared curtain units.

I. Cut sheets or drawings showing details of controllers and supervisory panels.

J. Furnish certificates as required under: Paragraph "QUALIFICATIONS".

1.6 WIRING DIAGRAMS

A. Provide three complete sets of paper and one electronic set of field wiring and straight line wiring diagrams showing all electrical circuits in the hoistway, machine room and fixtures. Install one set coated with an approved plastic sealer and mounted in the elevator machine room as directed by the Contracting Officers Representative.

B. In the event field modifications are necessary during installation, diagrams shall be revised to include all corrections made prior to and during the final inspection. Corrected diagrams shall be delivered to the Contracting Officers Representative within thirty (30) days of final acceptance.

C. Provide the following information relating to the specific type of microprocessor controls installed:

1. Owner's information manual, containing job specific data on major components, maintenance, and adjustment.
2. System logic description.
3. Complete wiring diagrams needed for field troubleshooting, adjustment, repair and replacement of components. Diagrams shall be base diagrams, containing all changes and additions made to the equipment during the design and construction period.
4. Changes made during the warranty period shall be noted on the drawings in adequate time to have the finalized drawings reproduced for mounting in the machine room no later than six months prior to the expiration of the warranty period.

1.7 ADDITIONAL EQUIPMENT

A. Additional equipment required to operate the specified equipment manufactured and supplied for this installation shall be furnished and installed by the contractor. The cost of the equipment shall be included in the base bid.

1.8 TOOL CABINET

A. Provide a metal parts/tool cabinet, having two shelves and hinged doors. Cabinet size shall be 1200 mm (48 in.) high, 750 mm (30 in.) wide, and 450 mm (18 in.) deep.

1.9 PERFORMANCE STANDARDS

A. The elevators shall be capable of meeting the highest standards of the industry and specifically the following:
   1. Contract speed is high speed in either direction of travel with rated capacity load in the elevator. Speed variation under all load conditions, regardless of direction of travel, shall not vary more than five (5) percent.
   2. The controlled rate of change of acceleration and retardation of the car shall not exceed 0.1G per ft/s/s and the maximum acceleration and retardation shall not exceed 0.2G per ft/s/s.
   3. Starting, stopping, and leveling shall be smooth and comfortable without appreciable steps of acceleration and deceleration.

B. Passenger/Service door operators shall open the car door and hoistway door at 75 cm (2.5 ft) per second and close at 30 cm (1 ft) per second. Freight door operators shall open and close at 30 cm (1 ft) per second.

C. Floor level stopping accuracy shall be within 3 mm (.125 in.) above or below the floor, regardless of load condition.

D. Noise and Vibration Isolation: All elevator equipment including their supports and fastenings to the building, shall be mechanically and electrically isolated from the building structure to minimize objectionable noise and vibration transmission to car, building structure, or adjacent occupied areas of building.

E. Sound Isolation: Noise level relating to elevator equipment operation in machine room shall not exceed 80 decibels. All db readings shall be taken three (3) feet off the floor and three (3) feet from equipment.

F. Airborne Noise: Measured noise level of elevator equipment during operation shall not exceed 50 decibels in elevator lobbies and 60 decibels inside car under any condition including door operation and car ventilation exhaust blower on its highest speed.

1.10 WARRANTY

A. Submit all labor and materials furnished in connection with elevator system and installation to terms of "Warranty of Construction" articles of FAR clause 52.246-21. The one year Warranty shall commence after final inspection, completion of performance test, and upon full acceptance of the installation and run concurrent with the guarantee period of service.

B. During warranty period if a device is not functioning properly in accordance with specification requirements, more maintenance than the

contract requires keeping device operational, device shall be removed and a new device meeting all requirements shall be installed as part of work until satisfactory operation of installation is obtained. Period of warranty shall start anew for such parts from date of completion of each new installation performed, in accordance with foregoing requirements.

1.11 POWER SUPPLY

A. For power supply in each machine room, see Specification 26 05 19, Electrical specifications, and Electrical drawings.

B. Main Line Disconnect Switch/Shunt Trip Circuit Breaker for each controller shall be located inside the machine room at the strike side of the machine room door and lockable in the "Off" position.

C. Surge Suppressors to protect the elevator equipment.

1.12 EMERGENCY POWER SUPPLY

A. Emergency power supply, its starting means, transfer switch for transfer of elevator supply from normal to emergency power, two pair of conductors in a conduit from an auxiliary contact on the transfer switch (open or close contacts as required by Controller Manufacturer) to terminals in the group elevator controller and other related work shall be provided by the Electrical Contractor.

B. Upon loss of normal power supply there shall be a delay before transferring to emergency power of 10 seconds minimum to 45 seconds maximum, the delay shall be accomplished through an adjustable timing device.

C. Prior to the return of normal power an adjustable timed circuit shall be activated that will cause all cars to remain at a floor if already there or stop and remain at the next floor if in flight. Actual transfer of power from emergency power to normal building power shall take place after all cars are stopped at a floor with their doors open.

D. Car lighting circuits shall be connected to the emergency power panel.

1.13 EVEVATOR MACHINE ROOM AND MACHINE SPACE

A. Provide a machine room that meets the requirements of ASME A17.1, NEC, and IBC.

B. Provide stairs and landing for access to the machine room. The landing shall be large enough to accommodate full opening of the door plus 60 cm (24 in.).

C. Locate the light switch on the lock side of the door inside the machine room.

D. Locate sprinkler pipes to provide seven 210 cm (7 ft) head clearance. Do not locate sprinkler heads, heat detectors, and smoke detectors directly over elevator equipment.

1.14 HOISTWAY LIGHTING - OPTIONAL

A. Provide lighting with 3-way switches at the top and bottom of the hoistway accessible from elevator hoistway entrance prior to entering the pit or stepping onto the car top.

B. Lighting shall illuminate top of elevator cab when it is at the top floor and the pit when at the bottom floor.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Where stainless steel is specified, it shall be corrosion resisting steel complying with Fed. Spec. QQ-S-766, Class 302 or 304, Condition A with Number 4 finish on exposed surfaces. Stainless steel shall have the grain of belting in the direction of the longest dimension and surfaces shall be smooth and without waves. During installation all stainless steel surfaces shall be protected with a suitable material.

B. Where cold rolled steel is specified it shall be low-carbon steel rolled to stretcher level standard flatness, complying with ASTM A109.

2.2 MANUFACTURED PRODUCTS

A. Materials, devices, and equipment furnished shall be of current production by manufacturers regularly engaged in the manufacture of such items. The elevator equipment, including controllers, door operators, and supervisory system shall be the product of manufacturers of established reputation, provided such items are capably engineered and produced under coordinated specifications to ensure compatibility with the total operating system.

B. Manufacturers of equipment assemblies which include components made by others shall assume complete responsibility for the final assembled unit. Components shall be compatible with each other and with the total assembly for the intended service.

C. Mixing of manufactures related to a single system or group of components shall be identified in the submittals.

D. If key operated switches are furnished in conjunction with component of this elevator installation, furnish four (4) keys for each individual switch or lock. Provide different key tumblers for different switch and lock functions. Each and every key shall have a tag bearing a stamped or etched legend identifying its purpose.

2.3 CONDUIT AND WIREWAY

A. Install electrical conductors, except traveling cables, in rigid zinc-coated steel or aluminum conduit, electrical metallic tubing or metal wireways. Rigid conduit smaller than 18.75 mm (.75 in.) or electrical metallic tubing smaller than 12.5 mm (.50 in.) electrical trade size shall not be used. All raceways completely embedded in concrete slabs, walls, or floor fill shall be rigid steel conduit. Wireway (duct) shall be installed in the hoistway and to the controller and between similar apparatus in the elevator machine room. Fully protect self-supporting connections, where approved, from abrasion or other mechanical injury. Flexible metal conduit not less than 9.375 mm(.375 in.) electrical trade size may be used, not exceeding 45 cm (18 in.) in length unsupported, for short connections between risers and limit switches, interlocks, and for other applications permitted by NEC.

B. All conduits terminating in steel cabinets, junction boxes, wireways, switch boxes, outlet boxes and similar locations shall have approved insulation bushings. Install a steel lock nut under the bushings if they are constructed completely of insulating materials. Protect the conductors at ends of conduits not terminating in steel cabinets or boxes by terminal fittings having an insulated opening for the conductors.

C. Rigid conduit and EMT fittings using set screws or indentations as a means of attachment shall not be used.

D. Connect motors or other items subject to movement, vibration or removal to the conduit or EMT systems with flexible, steel conduits.

2.4 CONDUCTORS

A. Conductors shall be stranded or solid coated annealed copper in accordance with Federal Specification J-C-30B for Type RHW or THW. Where 16 and 18 AWG are permitted by NEC, single conductors or multiple conductor cables in accordance with Federal Specification J-C-580 for Type TF may be used provided the insulation of single conductor cable and outer jacket of multiple conductor cable is flame retardant and moisture resistant. Multiple conductor cable shall have color or number coding for each conductor. Conductors for control boards shall be in accordance with NEC. Joints or splices are not permitted in wiring except at outlets. Tap connectors may be used in wireways provided they meet all UL requirements.

B. Provide all conduit and wiring between machine room, hoistway, and fixtures.

C. All wiring must test free from short circuits or ground faults. Insulation resistance between individual external conductors and between conductors and ground shall be a minimum of one megohm.

D. Where size of conductors is not given, voltage and amperes shall not exceed limits set by NEC.

E. Provide equipment grounding. Ground the conduits, supports, controller enclosure, motor, platform and car frame, and all other non-current conducting metal enclosures for electrical equipment in accordance with NEC. The ground wires shall be copper, green insulated and sized as required by NEC. Bond the grounding wires to all junction boxes, cabinets, and wire raceways.

F. Terminal connections for all conductors used for external wiring between various items of elevator equipment shall be solderless pressure wire connectors in accordance with Federal Specification W-S-610. The Elevator Contractor may, at his option, make these terminal connections on #10 gauge or smaller conductors with approved terminal eyelets set on the conductor with a special setting tool, or with an approved pressure type terminal block. Terminal blocks using pierce-through serrated washers are not acceptable.

2.5 TRAVELING CABLES

A. All conductors to the car shall consist of flexible traveling cables conforming to the requirements of NEC. Traveling cables shall run from the junction box on the car directly to the controller. Junction boxes on the car shall be equipped with terminal blocks. Terminal blocks having pressure wire connectors of the clamp type that meet UL 486A requirements for stranded wire may be used in lieu of terminal eyelet connections. Terminal blocks shall have permanent indelible identifying numbers for each connection. Cables shall be securely anchored to avoid strain on individual terminal connections. Flame and moisture resistant outer covering must remain intact between junction boxes. Abrupt bending, twisting and distortion of the cables shall not be permitted.

B. Provide spare conductors equal to 10 percent of the total number of conductors furnished, but not less than 5 spare conductors in each traveling cable.

C. Provide shielded wires for the auto dial telephone system within the traveling cable, five (5) pair shielded wires for card reader, one (1)

RG-6 Ethernet cable for Wi-FI, two (2) pair 14 gauge wires for 110 Volt power, and wire for video display monitor if specified.

D. If traveling cables come into contact with the hoistway or elevator due to sway or change in position, provide shields or pads to the elevator and hoistway to prevent damage to the traveling cables.

E. Hardware cloth may be installed from the hoistway suspension point to the elevator pit to prevent traveling cables from rubbing or chafing and securely fastened and tensioned to prevent buckling. Hardware cloth is not required when traveling cable is hung against a flat wall.

2.6 CONTROLLER AND SUPERVISORY PANEL

A. UL/CSA Labeled Controller: Mount all assemblies, power supplies, chassis switches, and relays on a steel frame in a NEMA Type 1 General Purpose Enclosure. Cabinet shall be securely attached to the building structure.

B. Properly identify each device on all panels by name, letter, or standard symbol which shall be neatly stencil painted or decaled in an indelible and legible manner. Identification markings shall be coordinated with identical markings used on wiring diagrams. The ampere rating shall be marked adjacent to all fuse holders. All spare conductors to controller and supervisory panel shall be neatly formed, laced, and identified.

2.7 MICROPROCESSOR CONTROL SYSTEM

A. Provide a microprocessor control system with absolute position/speed feedback to control dispatching, signal functions, door operation, and pump motor control. Complete details of the components and printed circuit boards, together with a complete operational description, shall be submitted for approval. Provide closed transition SCR soft start.

B. Controller manufacturer shall provide factory training, engineering and technical support, including all manuals, wiring diagrams, and tools necessary for adjusting, maintenance, repair, and testing of equipment to the VA for use by the VA's designated Elevator Maintenance Service Provider.

C. Provide a low oil control feature that shall shut off the motor and pump and return the elevator to the lowest landing. Upon reaching the lowest landing, doors will open automatically allowing passengers to leave the elevator, and then doors shall close. All control buttons, except the door open button, alarm bell button, and the call for help button shall be made ineffective.

2.8 EMERGENCY POWER OPERATION

A. The control system for Elevator(s) shall provide for the operation of at least one car per elevator group on emergency power upon failure of the normal power supply.

B. Auxiliary equipment on elevator controllers, wiring between associated elevator controllers and wiring between elevator controllers and remote selector panel as required to permit the elevators to operate as detailed, shall be provided by the Elevator Contractor.

C. Upon loss of normal power supply there shall be a delay before transferring to emergency power of 10 seconds minimum to 45 seconds maximum, the delay shall be accomplished through an adjustable timing device. Following this adjustable delay the associated elevators shall function as follows:

D. Prior to the return of normal power an adjustable timer circuit shall activate that will cause all cars to remain at a floor if already there or stop and remain at the next floor if in flight. Actual transfer of power from auxiliary power to normal building power shall take place after all cars are stopped at a floor with their doors open.

2.10 FIREFIGHTER'S SERVICE

A. Provide Firefighter's Service.

1. Main Floor:
2. Alternate Floor:
3. Verify main and alternate floors with Contract Officer's Representative.

2.11 INDEPENDENT SERVICE

A. Provide a legibly and indelibly labeled "INDEPENDENT SERVICE", two-position key operated switch on the face of the main car operating panel that shall have its positions marked "ON" and "OFF". When the switch is in the "ON" position, the car shall respond only to calls registered on its car dispatch buttons and shall bypass all calls registered on landing push buttons. The car shall start when a car call is registered, car call button or door close button is pressed, car and hoistway doors are closed, and interlock circuits are made. When switch is returned to "OFF" position, normal service shall be resumed.

2.12 MEDICAL EMERGENCY SERVICE – PATEINCE CARE FACLITIES ONLY

A. Provisions shall be made for calling elevator(s) to any floor served by the elevator on an emergency basis, operating independently from the dispatch signals and landing call signals.

B. Install card reader/key switch in the floor landing push button fixture above the push buttons.

C. Provide a call registered light indicator adjacent to card reader/key switch. The card reader/key switch at the landings and in the car shall only be operable by authorized personnel with a valid VA ID badge/key.

D. When card reader/key switch is activated at any floor, the call register light indicator shall illuminate at the call floor and inside the elevator only. The elevator control system shall instantly select an elevator to respond to the medical emergency call. Immediately upon selection, all car calls shall be cancelled. If car is traveling away from the medical emergency call, it shall slow down and stop at the nearest floor, maintain closed doors, reverse direction and proceed nonstop to the medical emergency call floor. If the car is traveling toward the medical emergency call floor, it shall proceed to that floor nonstop. If at the time of selection it is slowing down for a stop, the car shall stop, maintain doors closed, and start immediately toward the medical emergency floor.

E. Arriving at the medical emergency floor, the car shall remain with doors open for 30 seconds. After this interval has expired and the car has not been placed on medical emergency operation inside the car, the car shall automatically return to normal service.

F. Provide an LED illuminated indicator light next to the Medical Emergency card reader/key switch the same size as the Fire Service indicator.

1. Locate a “Medical Emergency” card reader/key switch above call buttons in the main car operating panel for selecting medical emergency service. Activation of the card reader will allow the car to accept a car call for any floor, close doors, and proceed nonstop to the floor desired.
2. After medical emergency call has been completed the elevator shall return to normal operation after an adjustable time of 30 to 90 seconds has expired.

G. In the center of the rear cab panel provide a back lighted "MEDICAL EMERGENCY" LED illuminated display that shall flash on and off continuously when the car is assigned to this operation and until it is restored to normal service. "MEDICAL EMERGENCY" indicator shall be a photographic negative type 1800 mm (72 in.) to center above the floor,

150 mm (6 in.) wide X 75 mm (3 in.) high, with 12.5 mm (.50 in.) high letters legible only when illuminated.

H. If the car being operated on "Independent Service", the medical emergency service indicator lights in the car operating panel and rear wall shall be illuminated, buzzer shall sound, and the "Audio Voice" system shall direct the attendant to return the car to automatic operation.

I. If the car is out of service and unable to answer medical emergency calls, the call register light shall not illuminate.

J. Each card reader/key switch shall have its identity legible and indelible engraved in faceplates. All lettering shall be 6 mm (.25 in.) high, filled with black paint.

K. When Phase I fire recall is activated it shall over-ride elevators on medical emergency service and return them to the main or alternate fire service recall floor. When the fire emergency floor has been identified the attendants may complete their medical emergency run on Phase II firefighter's operation if life safety is not affected.

2.13 SEISMIC REQUIREMENTS

A. Meet the requirements of VA Seismic Design Manual H-18-8.

2.14 PUMP, MOTOR, AND VALVE ASSEMBLY

A. Provide pump assembly for the control of the elevator self-contained in a unit fabricated of structural steel. The unit shall consist of a hydraulic fluid pump, AC motor, oil control valves, muffler, piping, and fittings installed below the tank or in the tank.

B. Enclose V-belt power unit on four open sides with not less than 16 gauge steel removable panel sections. Provide a 50 mm (2 in.) minimum, 100mm (4 in.) maximum air space between the top of the panels and bottom of tank. Line panels on the interior side with one-inch rigid acoustical insulation board. Install expanded metal sheave/belt guard that can be easily removed with hand tools for servicing and inspection.

C. Control valves shall be electronically controlled. Hydraulic fluid flow shall be controlled to insure speed variation of not more than five (5) percent under all load conditions in either direction of travel.

D. Pump shall be designed for hydraulic elevator service, having a steady discharge without pulsation to give smooth and quiet operation. Pump output shall be capable of lifting elevator car with rated capacity, with a speed variation of no more than five (5) percent between no load

and full load. Hydraulic fluid by-pass shall discharge directly into storage tank.

E. Provide motor specifically designed for elevator service, synchronous speed not in excess of 1800 RPM, not to exceed nameplate full load current by more than 10%, and rated 120 starts per hour without exceeding a rise of 40 degrees C.

F. Provide isolation units of rubber to prevent transmission of pump and motor vibration to the building.

2.15 HYDRAULIC SYSTEM

A. Construct the storage tank of sheet steel, welded construction, and a steel cover with means for filling, a minimum one-inch protected vent opening, and a valve drain connection. Tank shall be sized to pass through machine room door as shown on drawings. Provide marked gauge to monitor hydraulic fluid level. Tank shall be sized to hold volume of hydraulic fluid required to lift elevator to stop ring, plus a reserve of not less than ten gallons. Provide a baffle in the bottom of the tank to prevent entry of any sediment or foreign particles into hydraulic system. Baffle shall also minimize aeration of hydraulic fluid. Permissible minimum hydraulic fluid level shall be clearly indicated. Hydraulic fluid shall be of good grade to assure free flow when cool, and have minimum flash point of 380-400 degrees F. Provide initial supply of hydraulic fluid for operation of elevator.

1. Provide a means to maintain the fluid viscosity in the reservoir, pump, and control valve at a recommended operating temperature.
2. Provide a data plate on the tank framing indicating the characteristics of the hydraulic fluid used.

B. Furnish and install connections between the storage tank, pump, muffler, operating valves, and cylinder complete with necessary valves, pipe supports, and fittings. Pipe shall be minimum schedule 40 steel with threaded, flanged, or welded mechanical couplings. Size of pipe and couplings between cylinder and pumping unit shall be such that fluid pressure loss is limited to 10 percent.

C. Hydraulic system working pressure shall not exceed 500 psi under any load condition. Do not subject valves, piping, and fittings to working pressure greater than those recommended by the manufacturer.

D. Support all horizontal piping. Place hangers or supports within 300 mm (12 in.) on each side of every change of direction of pipe line and space supports not over 3.0 m (10 ft) apart. Secure vertical runs

properly with iron clamps at sufficiently close intervals to carry weight of pipe and contents. Provide supports under pipe to floor.

1. Provide all piping from machine room to hoistway, including necessary supports or hangers. If remote piping is underground or in damp inaccessible areas, install hydraulic piping thru PVC sleeve.

E. Install pipe sleeves where pipes pass through walls or floors. Set sleeves during construction. After installation of piping, equip the sleeves with snug fitting inner liner of fire rated insulation.

F. Install blowout-proof, non-hammering, oil-hydraulic muffler in the hydraulic fluid supply pressure line near power unit in machine room. Design muffler to reduce to a minimum any pulsation or noises that may be transmitted through the hydraulic fluid into the hoistway.

G. Locate the manual lowering valve, easily accessible, properly identified, and not concealed within the storage tank. Mark the operating handle in red.

H. Provide an automatic shut-off valve in the oil supply line at the cylinder inlet. Weld inlet pipe to cylinder, threaded to receive shut-off valve. Activate the automatic shut-off valve when there is more than a ten percent increase in high speed in the down direction. When activated, this device shall immediately stop the descent of the elevator, and hold the elevator. The exposed adjustments of the automatic shut-off valve shall have their means of adjustment sealed after being set to their correct position.

I. Provide external tank shut-off valve to isolate hydraulic fluid during maintenance operations.

J. Provide shut-off valves in the pit near the cylinder and in the machine room capable of withstanding 150 percent of design operating pressure. Each manual valve shall have an attached handle.

K. Provide oil-tight drip pan for assembled pumping unit, including storage tank. Pan shall be not less than 16 gauge sheet steel, with one-inch sides.

L. Components of the hydraulic system shall be factory certified to withstand pressure equal to twice the calculated working pressure.

2.16 HYDRAULIC PLUNGER ASSEMBLY

A. Cylinder and plunger shall be sized to lift gross load the height specified. Factory test the plunger assembly at a pressure equal to twice the calculated working pressure, for strength and to insure freedom from leakage. Provide bottom of cylinder head with internal

guide bearing and top of cylinder head with removable packing gland. Victaulic type packing gland head shall not be permitted.

1. Provide a bleeder valve located below the cylinder flange to release air or other gases from the system.
2. Equip cylinder with drip ring below the packing gland to collect leakage of hydraulic fluid.
3. Bolt the cylinder mounting brackets to footing channels that support the buffers.

B. Install a flexible tubing scavenger line with an electrically operated pump between the piston drip ring and oil storage tank. Scavenger line, pump and strainers shall operate independently of hydraulic fluid pressure. Equip scavenger pump with a water float designed to prevent operation of the pump should the pit flood and designed to be manually reset. Secure pump and reservoir to the pit channels.

C. Plunger shall be heavy seamless steel tubing, turned smooth and true to within plus or minus .38 mm (0.015 in.) tolerance and no diameter change greater than .07 mm (0.003 in.) per-inch of length. Where plunger is multi-piece construction, machine the joints to assure perfectly matching surfaces.

1. Secure plunger to underside of platform supporting beams with fastenings capable of supporting four times the weight of the plunger. The platen plate shall incorporate piston to car vibration isolation.
2. Provide a stop ring welded or screwed to the bottom of plunger that shall prevent the plunger from leaving its cylinder.
3. Isolate plunger head from the platen plate to prevent corrosion or electrolysis.
4. Protect plunger, repair or replace if gouged, nicked or scored.

2.17 HYDRAULIC CYLINDER CASING AND WELL HOLE

A. The casing shall be iron or steel not less than 9.375 mm (.375-in.) thick, at least 15 cm (6 in.) larger in diameter than the cylinder.

B. Provide PVC casing liner to fit inside steel casing. Fabricate liner with watertight bottom and a top flange gasket to seal plunger flange and form a complete, watertight, electrically non-conductive encasement of the entire unit.

C. Provide suitable well hole to accommodate casing. Coordinate the drilling of well hole and setting of the cylinder with construction of

concrete pit. Provide watertight joint between the casing and the pit floor at bottom of pit.

D. Base bid on drilling hole in dirt, sand, rock, gravel, loam, boulders, hardpan, water, or other obstacles. Include the removal of all dirt and debris.

2.18 CAR BUFFERS

A. Provide a minimum of two spring buffers for each elevator. Securely fasten buffers and supports to the pit channels and in the alignment with striker plates on elevator. Buffers shall have a permanently attached metal plate indicating its stroke and load rating. Buffer anchorage shall not puncture pit waterproofing.

B. Furnish pipe stanchions and struts as required to properly support the buffer.

2.19 GUIDE RAILS, SUPPORTS, AND FASTENINGS

A. Guide rails for car shall be planed steel T-sections and weigh 27.5 kg/m (18.5 lb/ft) .

B. Securely fasten guide rails to the brackets or other supports by heavy duty steel rail clips.

C. Provide car rail brackets of sufficient size and design to insure substantial rigidity to prevent spreading or distortion of rails under any condition.

D. Guide rails shall extend from channels on pit floor to within 76 mm (3 in.) of the underside of the concrete slab or grating at top of hoistway with a maximum deviation of 3.2 mm (.125 in.) from plumb in all directions. Provide a minimum of 19 mm (.75 in.) clearance between bottom of rails and top of pit channels.

E. Guide rail anchorages in pit shall be made in a manner that will not reduce effectiveness of the pit waterproofing.

F. In the event inserts or bond blocks are required for the attachment of guide rails, the Contractor shall furnish such inserts or bond blocks and shall install them in the forms before the concrete is poured. Use inserts or bond blocks only in concrete or block work where steel framing is not available for support of guide rails. Expansion-type bolting for guide rail brackets will not be permitted.

G. Guide rails shall be clean and free of any signs of rust, grease, or abrasion before final inspection. Paint the shank and base of the T-section with two field coats of manufacturer’s standard enamel.

2.20 NORMAL AND FINAL TERMINAL STOPPING DEVICES

A. Mount terminal slowdown switches and direction limit switches on the elevator or in hoistway to reduce speed and bring car to an automatic stop at the terminal landings.
   1. Switches shall function with any load up to and including 100 percent of rated elevator capacity at any speed obtained in normal operation.
   2. Switches, when opened, shall permit operation of elevator in reverse direction of travel.

B. Mount final terminal stopping switches in the hoistway.
   1. Switches shall be positively opened should the car travel beyond the terminal direction limit switches.
   2. Switches shall be independent of other stopping devices.
   3. Switches, when opened, shall remove power from pump motor and control valves preventing operation of car in either direction.

2.21 CROSSHEAD DATA PLATE AND CODE DATA PLATE

A. Permanently attach a non-corrosive metal Data Plate to car crosshead.

B. Permanently attach a Code Data Plate, in plain view, to the controller.

2.22 WORKMAN'S LIGHTS AND OUTLETS

A. Provide duplex GFCI protected type receptacles and lamp, with guards on top of elevator car and beneath platform. The receptacles shall be in accordance with Fed. Spec. W-C-596 for Type D7, 2-pole, 3-wire grounded type rated for 15 amperes and 125 volts.

2.23 CARTOP OPERATING DEVICE

A. Provide a cartop operating device.

B. The device shall be activated by a toggle switch mounted in the device. The switch shall be clearly marked "INSPECTION" and "NORMAL" on the faceplate, with 6 mm (.25 in.) letters.

C. Movement of the elevator shall be accomplished by the continuous pressure on a direction button and a safety button.

D. Provide an emergency stop switch, push to stop/pull to run.

E. Provide permanent identification for the operation of all components in the device.

F. The device shall be permanently attached to the elevator crosshead on the side of the elevator nearest to the hoistway doors used for accessing the top of the car.

2.24 LEVELING DEVICE

A. Car shall be equipped with a two-way leveling device to automatically bring the car to within 3 mm (.125 in.) of exact level with the landing for which a stop is initiated regardless of load in car or direction.

B. If the car stops short or travels beyond the floor, the leveling device, within its zone shall automatically correct this condition and maintain the car within 3 mm (.125 in.) of level with the floor landing regardless of the load carried.

2.25 EMERGENCY STOP SWITCHES

A. Provide an emergency stop switch, push to stop/pull to run, for each top-of-car device, pit, machine spaces, service panel and firefighter's control panel inside the elevator. Mount stop switches in the pit adjacent to pit access door, at top of the pit ladder 1200 mm (48 in.) above the bottom landing sill and 1200 mm (48 in.) above the pit floor adjacent to the pit ladder.

B. Each stop switch shall be red in color and shall have "STOP" and "RUN" positions legibly and indelibly identified.

2.26 MAIN CAR OPERATING PANEL

A. Locate the main car operating panel in the car enclosure on the front return panel for passenger/service elevators and the front of the side wall for freight elevators. The top floor car call push button shall not be more than 1200 mm (48 in.) above the finished floor. Car call push buttons and indicator lights shall be round with a minimum diameter of 25 mm (1 in.), LED white light illuminated.

B. One piece front faceplate with edges beveled 15 degrees or swing return panel shall have the firefighter's service panel recessed into the upper section and the service operation panel recessed into the lower section fitted with hinged doors. Doors shall have concealed hinges, be in the same front plane as the faceplate and fitted with cylinder type key operated locks. Secure the faceplate with stainless steel tamperproof screws.

C. All terminology and tactile symbols on the faceplate shall be on square or rectangular plates recessed into the faceplate with its surface flush with the surface of the faceplate. Use 6 mm (.25 in.) letters to identify all devices in the faceplate. The handicapped markings with contrasting background shall be 12.5 mm (.50 in.) high raised .075 mm (.030 in.) on the plate. Surface mounted plates are not acceptable.

D. The upper section shall contain the following items in order listed from top to bottom:

1. Elevator number, 12.5 mm (.50 in.) high with black paint for contrast.
2. Capacity plate information with black paint for contrast with freight loading class and number of passengers allowed.
3. LED illuminated digital car position indicator with direction arrows.
4. Emergency car lighting system consisting of a rechargeable battery, charger, controls, and LED illuminated light fixture. The system shall automatically provide emergency light in the car upon failure or interruption of the normal car lighting service, and function irrespective of the position of the light control switch in the car. The system shall be capable of maintaining a minimum illumination of 1.0 foot-candle when measured 1200 mm (48 in.) above the car floor and approximately 300 mm (12 in.) in front of the car operating panel, for not less than four (4) hours.
5. Firefighter's Emergency Operation Panel shall be 1650 mm (66 in.) minimum to 1800 mm (72 in.) maximum to the top of the panel above finished floor.
6. Firefighter's Emergency Indicator Light shall be round with a minimum diameter of 25 mm (1 in.).
7. Medical Emergency card reader/key switch marked "MEDICAL EMERGENCY" with two positions labeled "ON" and "OFF" and Medical Emergency Indicator Light located next to the card reader/key switch shall be round with a minimum diameter of 25 mm (1 in.). Instruction for Medical Emergency operation shall be engraved below the card reader/key switch and light.
8. Key operated Independent Service Switch or switch inside service panel.
9. Provide a Door Hold Button on the faceplate next to the Independent Service Key Switch. It shall have "DOOR HOLD" indelibly marked on the button. Button shall light when activated. When activated, the door shall stay open for a maximum of one minute. To override door hold timer, push a car call button or door close button.
10. Complete set of round car call push buttons, minimum diameter of 25 mm (1 in.), and LED white light illuminated, corresponding to the floors served. Car call buttons shall be legibly and indelibly

identified by a floor number and/or letter not less than 12.5 mm (.50 in.) high in the face of the call button.

11. Door Open and Door Close buttons shall be located below the car call buttons. They shall have "OPEN" and "CLOSE" legibly and indelibly identified by letters in the face of the respective button. The Door Open button shall be located closest to the door jamb.
    a. Rear Door Open and Rear Door Close buttons shall be located below the Front Door Open and Front Door Close buttons. They shall have "REAR OPEN" and "REAR CLOSE" legibly and indelibly identified by letters in the face of the respective button.
12. Red Emergency Alarm button that shall be located below the car operating buttons. Mount the emergency alarm button not lower than 875 mm (35 in.) above the finished floor. It shall be connected to audible signaling devices. Provide audible signaling devices including the necessary wiring.
13. Emergency Help push button shall activate two way communications by Auto Dial telephone system that is compatible with the VAMC's telephone system. Help button shall be LED white light illuminated and flash when call is acknowledged. Legibly and indelibly label the button "HELP" in the face of the button with 12.5 mm (.50 in.) high letters.

E. The service operation panel, in the lower section shall contain the following items:
1. Light switch labeled "LIGHTS" for controlling interior car lighting with its two positions marked "ON" and "OFF".
2. Inspection switch that will disconnect normal operation and activate hoistway access switches at terminal landings. Switch shall be labeled "ACCESS ENABLE" with its two positions marked "ON" and "OFF".
3. Three position switch labeled "FAN" with its positions marked "HIGH", "LOW" and "OFF" for controlling car ventilating blower.
4. Two position, spring return, toggle switch or push button to test the emergency light and alarm device. It shall be labeled "TEST EMERGENCY LIGHT AND ALARM".
5. Two position emergency stop switch, when operated, shall interrupt power supply and stop the elevator independently of regular

operating devices. Emergency stop switch shall be marked "PUSH TO STOP" and "PULL TO RUN".

2.27 AUXILIARY CAR OPERATING PANEL

A. Provide an auxiliary car operating panel in the side wall of the elevator between the handrails immediately adjacent to the front entrance column strike jamb. The auxiliary car operating panel shall contain only those controls essential to passenger (public) operation. The auxiliary car operating panel faceplate shall match the main car operating panel faceplate in material and general design. Secure the faceplate with stainless steel tamperproof screws.

1. Complete set of round car call push buttons, minimum diameter 25 mm (1 in.), and LED white light illuminated, corresponding to the floors served. Car call button shall be legibly and indelibly identified by a floor number and/or letter not less than 12.5 mm (.50 in.) high in the face of the call button corresponding to the nu
2. Mount door "OPEN" and door "CLOSE" buttons closest to the door jamb and mount the alarm button no lower than 875 mm (35 in.) above the finished floor. The Door Open button shall be located closest to the door.
3. Cross-connect all buttons in the auxiliary car operating panels to their corresponding buttons in the main car operating panel. Registration of a car call shall cause the corresponding button to illuminate in the main and auxiliary car operating panel.
4. Emergency Help push button shall activate two way communications by auto dial telephone that is compatible with the VAMC's telephone system. Help button shall be LED white light illuminated and flash when call is acknowledged. Legibly and indelibly label the button "HELP" in the face of the button with 12.5 mm (.50 in.) high letters.

B. All terminology and tactile symbols on the faceplate shall be on square or rectangular plates recessed into the faceplate with its surface flush with the surface of the faceplate. Use 6 mm (.25 in.) letters to identify all devices in the faceplate. The tactile symbols with contrasting background shall be 12.5 mm (0.5 in.) high raised .075 mm (.030 in.) on the plate. Surface mounted plates are not acceptable.

2.28 CAR POSITION INDICATOR

A. Provide an alpha-numeric digital car position indicator in the main car operating panel, consisting of numerals and arrows not less than 63 mm (2.5 in.) high, to indicate position of car and direction of car travel. Locate position indicator at the top of the main car operating panel, illuminated by light emitting diodes.

2.29 AUDIO VOICE SYSTEM

A. Provide digitized audio voice system. Audio voice shall announce floor designations, direction of travel, and special announcements. The voice announcement system shall be a natural sounding human voice that receives messages and shall comply with ADA requirements for audible car position indicators. The voice announcer shall have two separate volume controls, one for the floor designations and direction of travel, and another for special announcements. The voice announcer shall have a full range loud speaker, located on top of the cab. The audio voice unit shall contain the number of ports necessary to accommodate the number of floors, direction messages, and special announcements. Install voice announcer per manufacturer's recommendations and instructions. The voice system shall be the product of a manufacturer of established reputation. Provide manufacturer literature and list of voice messages.

1. Fire Service Message
2. "Please do not block doors."
3. Provide special message as directed by Contracting Officers Representative.

2.30 AUTO DIAL TELEPHONE SYSTEM

A. Furnish and install a complete ADA compliant auto dial telephone that is compatible with the VAMC's telephone system.

B. Provide a two-way communication device in the car with automatic dialing, tracking and recall features with shielded wiring to car controller in machine room. Provide dialer with automatic rollover capability with two numbers.

C. "HELP" button shall illuminate and flash when call is acknowledged. Button shall match floor push button design.

D. Provide "HELP" button tactile symbol signage and Braille adjacent to button mounted integral with car operating panels.

E. The auto dial system may be located in the main or auxiliary car operating panel. The speaker and unit shall be mounted on the backside of the perforated stainless steel plate cover.

F. Each elevator shall have individual phone numbers.

G. If the operator ends the call, the passenger shall be able to redial the telephone immediately.

2.31 CORRIDOR OPERATING DEVICES

A. Fabricate faceplates for elevator operating and signal devices from not less than 3 mm (.125 in.) thick flat stainless steel with all edges beveled 15 degrees.

B. Corridor push button faceplates shall be sized to accommodate corridor pictograph on faceplate. The centerline of the landing push buttons shall be 105 cm (42 in.) above the corridor floor.

C. Elevator Corridor Call Station Pictograph shall be engraved in the faceplate.

D. Fasten all car and corridor operating device and signal device faceplates with stainless steel tamperproof screws.

E. All terminology and tactile symbols on the faceplate shall be raised .030 inch with contrasting background, on square or rectangular plates recessed into the faceplate with its surface flush with the surface of the faceplate. The handicapped markings with contrasting background shall be 12.5 mm (0.5 in.) high raised .075 mm (.030 in.) on the plate, square or rectangular in shape. Use 6 mm (.25 in.) letters to identify all other devices in the faceplate. Surface mounted plates are not acceptable.

F. Provide one risers of landing call buttons for each elevator or group of elevators as shown on contract drawings.

G. Each button shall contain an integral registration LED white light which shall illuminate upon registration of a call and shall extinguish when that call is answered.

H. The direction of each button shall be legibly and indelibly identified by arrows not less than 12.5 mm (.50 in.) high in the face of each button. Provide a corresponding Braille plate on the left side of each button.

I. Landing push buttons shall not re-open the doors while the car and hoistway doors are closing at that floor, the call shall be registered for the next available elevator. Calls registered shall be canceled if

closing doors are re-opened by means of "DOOR OPEN" button or infrared curtain unit.

J. Provide emergency power indicator light, medical emergency card reader/key switch and indicator light, fire service recall key switch and indicator light, fire recall instruction, communication failure light, audible enunciator, and reset key switch in a separate fixture at the designated main floor.

K. Submit design of hall pushbutton fixtures for approval.

2.32 DIGITAL CORRIDOR ARRIVAL LANTERN/POSITION INDICATOR

A. Provide elevator with combination corridor lantern/position indicator digital display mounted over the hoistway entrances at each and every floor in healthcare facilities. For non-healthcare facilities provide combination fixtures only at main and alternate fire recall floors. Provide each terminal landing with "UP" or "DOWN", minimum 63 mm (2.5 in.) high digital arrow lanterns and each intermediate landing with "UP" and "DOWN" digital arrow lanterns. Each lens shall be LED illuminated of proper intensity, so shielded to illuminate individual lens only. The lenses in each lantern shall be illuminated green to indicate "UP" travel and red to indicate "DOWN" travel. Lanterns shall signal in advance of car arrival at the landing indicating the direction of travel. Corridor lanterns shall not be illuminated when a car passes a floor without stopping. Each lantern shall be equipped with an audible electronic chime which shall sound once for "UPWARD" bound car and twice for "DOWNWARD" bound car. Audible signal shall not sound when a car passes the floor without stopping. Provide adjustable sound level on audible signal. Car riding lanterns are not acceptable.

B. Install alpha-numeric digital position indicator between the arrival lanterns. Indicator faceplate shall be stainless steel. Numerals shall be not less than 63 mm (2.5 in.) high with direction arrows. Cover plates shall be readily removable for re-lamping. The appropriate direction arrow shall be illuminated during entire travel of car in corresponding direction.

2.33 HOISTWAY ACCESS

A. Provide hoistway access switches for elevator at top terminal landing to permit access to top of car, and at bottom terminal landing to permit access to pit. Elevators with side slide doors, mount the access key switch 180 cm (6 ft) above the corridor floor in the wall next to the strike jamb.

B. Exposed portion of each access switch or its faceplate shall have legible, indelible legends to indicate "UP", "DOWN", and "OFF" positions.

C. Each access switch shall be a constant pressure cylinder type lock having not less than five pins or five stainless steel disc combination with key removable only when switch is in the "OFF" position.

D. Lock shall not be operable by any other key which will operate any other lock or device used for any other purpose at the VA Medical Center.

E. Arrange the hoistway switch to initiate and maintain movement of the car. When the elevator is operated in the down direction from the top terminal landing, limit the zone of travel to a distance not greater than the top of the car crosshead level with the top floor. Submit design and location of access switches for approval.

F. Provide emergency access for all hoistway entrances, keyways for passenger and service elevators.

2.34 HOISTWAY ENTRANCES: PASSENGER/SERVICE ELEVATORS

A. Provide complete entrances with sills, sill supports, hangers, hanger supports, tracks, angle struts, unit frames, door panels, fascia plates, toe guards, hardware, bumpers, sight guards, and wall anchors.

B. Provide one piece extruded stainless steel sills grooved for door guides and recessed for fascia plates. Sills shall have overall height of not less than 19 mm (.75 in.) set true, straight, and level, with hoistway edges plumb over each other, and top surfaces flush with finished floor. Hoistway entrance frames and sills shall be grouted solid full length after installation.

C. Construct hanger supports of not less than 9.375 mm (.375 in.) thick steel plate, and bolted to strut angles.

D. Structural steel angles 75 mm x 75 mm x 9.375 mm (3 in. x 3 in. x .375 in.) shall extend from top of sill to bottom of floor beam above, and shall be securely fastened at maximum 45 cm (18 in.) on center and at each end with two bolts.

E. Provide jambs and head soffits, of not less than 14-gauge stainless steel. Jambs and head soffits shall be bolted/welded construction and provided with three anchors each side. Side jambs shall be curved. Radius of curvature shall be 88 mm (3.5 in.). Head jamb shall be square, and shall overhang corridor face of side jambs by 6 mm (.25 in.). Rigidly fasten jambs and head soffits to building structure and

grouted solid. After installation, protect jambs and head soffits to prevent damage to finish during construction.

F. Provide raised numerals or letters on cast, rear mounted plates for all openings. Numerals shall be a minimum of 50 mm (2 in.) high, located on each side of entrance frame, with centerline of 150 cm (5 ft) above the landing sill. The number plates shall contain Braille.

G. Provide unique car number on every elevator entrance at designated main fire service floor level, minimum 75 mm (3 in.) in height.

H. Provide passenger entrances with single speed center opening horizontal sliding doors and service entrances with two speed side opening horizontal sliding doors.

1. Door panels shall be flush hollow metal construction, not less than 32 mm (1.25 in.) thick, consisting of one continuous piece 16-gauge stainless steel on corridor side wrapped around the leading edge. Separate two plates by a sound-deadening material, and reinforce by steel shapes welded to the plates at frequent intervals. Reinforce panels as required for installation of hangers, power-operating and door-opening devices. Top and bottom of door panels shall have continuous stiffener channels welded in place. Reinforcement of the door panels shall be a minimum of 1.0 mm (0.04 in.) in thickness and of the hat section type.

2. Hang doors on two-point suspension hangers having sealed ballbearing sheaves not less than 75 mm (3 in.) in diameter, made of non-metallic sound-reducing material. Equip hangers with adjustable ball-bearing rollers to take upward thrust of panels. Upthrust rollers shall be capable of being locked in position after adjustment to a maximum of .38 mm (.015625 in.) clearance. Provide the hanger sheaves with steel fire stops to prevent disengagement from tracks. Do not use hangers that are constructed integrally with the door panels.

3. Provide two removable laminated phenolic gibs or other approved material guides and a separate fire gib at the bottom of door panel.

4. Reinforce each door panel for interlock mechanism, drive assembly, and closer. Provide relating devices to transmit motion from one door panel to the other.

5. One door panel for each entrance shall bear a BOCA label, Underwriters' label or labels from other accredited test

laboratories may be furnished provided they are based on fire test reports and factory inspection procedures acceptable to the COR.

6. Fasten sight guard of 14-gauge stainless steel, extending full height of panel, to leading edge of fast speed panel of two-speed doors .

I. Provide 14-gauge sheet steel fascia plates in hoistway to extend vertically from head of hanger support housing to sill above. Plates shall be three (3) inches wider than door opening of elevator and reinforced to prevent waves and buckles. Below bottom terminal landing and over upper terminal landing provide shear guards beveled back to and fastened to the wall.

J. Equip each hoistway door with an electrical/mechanical interlock, functioning as hoistway unit system, to prevent operation of car until all hoistway doors are locked in closed position.

K. Wiring installed from the hoistway riser to each door interlock shall be NEC type SF-2 or equivalent.

2.35 CAR GUIDES

A. Install on car frame four adjustable roller guides flexible sliding swivel guide shoes , each assembled on a substantial metal base, to permit individual alignment to the guide rails.

B. Each guide shall consisting of not less than three (3) wheels, each with a durable, resilient oil-resistant material tire rotating on ball bearings having sealed-in lubrication. Assemble rollers on a substantial metal base and mount to provide continuous spring pressure contact of all wheels with the corresponding rail surfaces under all conditions of loading and operation. Secure the roller guides at top and bottom on each side of car frame and counterweight frame. All mounting bolts shall be fitted with nuts, flat washers, split lock washers, and if required, beveled washers.

C. Provide sheet metal guards to protect rollers on top of car and counterweight.

D. Minimum diameter of car rollers shall be 150 mm (6 in.) unless the six wheel roller guide is used. The entire elevator car shall be properly balanced to equalize pressure on all guide rollers. Cars shall be balanced in post-wise and front-to-back directions. Test for this balanced condition shall be witnessed at time of final inspection.

E. Equip car with an auxiliary guiding device for each guide shoe/roller which shall prevent the car from leaving the rails in the event that

the normal guides fail. These auxiliary guides shall not, during normal operation, touch the guiding surfaces of the rails. Fabricate the auxiliary guides from hot rolled steel plate and mount between the normal guide shoes and the car frames. The auxiliary guides may be an extension of the normal guide shoe mounting plate if that plate is fabricated from hot rolled steel. The portion of the auxiliary guide which shall come in contact with the rail guiding surfaces in the event of loss of the normal guides shall be lined with an approved bearing material to minimize damage to the rail guiding surfaces.

F. Alternate Guide Shoes for service and freight elevators:

1. Provide each shoe with renewable non-metallic gibs of durable material having low coefficient of friction and long-wearing qualities, when operated on guide rails receiving infrequent, light applications of rail lubricant. Gibs containing graphite or other solid lubricants are not acceptable.
2. Flexible guide shoes of approved design, other than swivel type, may be used provided they are self-aligning on all three faces of the guide rails.
3. Provide spring take-up in car guide shoes for side play between rails.

2.36 CAR FRAME: PASSENGER/SERVICE ELEVATORS

A. Car frame shall be constructed of channel stiles, crosshead, gussets, and braces securely bolted and/or welded. The entire assembly shall be constructed to withstand unequal loading of platform. Car frame members shall be constructed to relieve the car enclosure of all strains.

2.37 CAR PLATFORM: PASSENGER/SERVICE ELEVATORS

A. Construct the car platform to meet the requirements of class loading specified. The platform shall be designed to withstand the forces developed under the loading conditions specified. Provide car entrances with extruded aluminum sill or better with machined or extruded guide grooves. Cover underside and all exposed edges of wood filled platform with sheet metal of not less than 27-gauge, with all exposed joints and edges folded under. Fire resistant paint is not acceptable. Platform shall have flexible composition flooring not less than 3 mm (.125 in.) thick. For color, see Drawings. Adhesive material shall be type recommended by manufacturer of flooring. Lay flooring flush with threshold plate and base.

B. Provide a platform guard (toe guard) of not less than 12-guage sheet-steel on the entrance side, extend 75 mm (3 in.) beyond each side of entrance jamb. Securely brace platform guard to car platform, and bevel bottom edge at a 60-75 degree angle from horizontal. Install platform in the hoistway, so that the clearance between front edge and landing threshold shall not exceed 32 mm (1.25 in.).

C. Isolate the platform from the car frame by approved rubber pads or other equally effective means.

D. Provide adjustable diagonal brace rods to hold platform firmly within car suspension frame.

E. Balance car front to back and side to side. Provide balancing frame and weights, properly located, to achieve the required true balance.

F. Provide a bonding wire between frame and platform.

2.38 CAR ENCLOSURE: PASSENGER/SERVICE ELEVATORS

A. Car enclosure shall have a dome height inside the cab of 2440 mm (8 ft).

B. Securely fasten car enclosure to platform by through bolts located at intervals of not more than 450 mm (18 in.) running through an angle at the base of panels to underside of platform.

C. Front return wall panel, entrance columns, entrance head-jamb, and transom shall be 14-gauge stainless steel. Transom shall be full width of cab. Side and rear walls shall be constructed of 14-gauge cold rolled steel. Coat exterior of walls with mastic sound insulation material approximately 2.5 mm (.10 in.) thick followed by a prime coat of paint.

D. Side and rear walls of passenger elevators may have raised panels covered in fire rated materials approved for use in elevator interior.

E. Side and rear walls of service elevators, up to the center line of the top handrail, shall be covered with stainless steel. Side and rear walls to the ceiling shall be covered with stainless steel applied directly to the cab walls or raised panels . Submit a method of fastening panels to steel walls.

F. Construct canopy of not less than 12-gauge steel.

G. Provide car top railings.

H. Provide a hinged top emergency exit cover. Exit shall be unobstructed when open and shall have mechanical stops on the cover. Provide an exit switch to prevent operation of the elevator when the emergency exit is open.

I. Provide duplex, GFCI protected receptacle in car. Locate flush-mounted receptacle on the centerline of the main car operating panel, 150 mm (6 in.) above the car floor.

J. Lighting for passenger/service elevators:

1. Provide stainless steel hanging ceiling frame. Construct frame of 3.125 mm (.125 in.) thick x 37.5 mm (1.50 in.) wide x 37.5 mm (1.50 in.) high "T" and "L" sections, divide ceiling into six panels.
2. Provide LED illuminated car light fixtures above the ceiling panels. Maintain a minimum light level of 50-foot candles at 90 cm (36 in.) above the finished floor.

K. Optional lighting for service elevators:

1. Provide car with indirect LED lamps mounted front to rear in lighting coves along each side of the cab ceiling, no hanging ceiling.
2. Equip the lighting cove with asymmetrical reflectors having specular finish. Maintain a minimum light level of 50-foot candles 90 cm (36 in.) above finished floor at the car operating panels.
3. Enclose the entire vertical space between the light trough outer edge and the cab canopy with approved opaque white or clear lumicite sheeting. Lumicite sheeting shall be removable for cleaning and re-lamping.

L. Provide a blower unit arranged to exhaust through an opening in the canopy. Provide a stainless or chrome plated fan grill around the opening. Provide 2-speed fan with rated air displacement of 250 cfm and 400 cfm at respective speeds. Mount fan on top of car with rubber isolation to prevent transmission of vibration to car structure. Provide screening over intake and exhaust end of blower. Provide a 3-position switch to control the unit in the service panel.

M. Provide car enclosure with two sets of handrails with centerlines 75 cm and 105 cm (30 in. and 42 in.) above the car floor.

1. Locate handrails 37.5 mm (1.50 in.) from cab wall. Install handrails on side walls only for front and rear openings . Conceal all handrail fastenings. Handrails shall be removable from inside the car enclosure.
2. Provide service elevators with flat stock handrails with the ends at the entrance turned back to the wall.

N. Provide passenger car with single speed center opening horizontal sliding doors and service car with two-speed side opening horizontal sliding doors constructed the same as hoistway doors.

O. Provide one set of protective pads for service elevator of sufficient length to completely cover two sides, rear walls and front return of cab interior. Pads shall consist of a minimum of 6 mm (.25 in.) thick glass fiber insulation securely sewn between flame resistant vinyl coated coverings. Color of the covering shall be approved by the Contracting Officers Representative. Provide stainless steel pad buttons or hooks, spaced at intervals of not more than 150 mm (18 in.) to adequately support pads.

2.39 POWER DOOR OPERATORS: PASSENGER/SERVICE ELEVATORS

A. Provide a high-speed heavy duty door operator to automatically open the car and hoistway doors simultaneously when the car is level with the floor, and automatically close the doors simultaneously at the expiration of the door-open time. Provide microprocessor door control with circuitry to constantly monitor and automatically adjust door operation based upon velocity, position, and motor current. Motor shall be of the high-internal resistance type, capable of withstanding high currents resulting from stall without damage to door operator/motor. The door operator shall be capable of opening a car door and hoistway door simultaneously, at a speed of 75 cm (2.5 ft) per second. Closing speed of the doors shall be 30 cm (1 ft) per second. Reversal of direction of the doors from the closing to opening operation, whether initiated by obstruction of the infrared curtain or the door "OPEN" button, shall be accomplished within 37.5 mm (1.5 in.) maximum of door movement. Emphasis is placed on obtaining quiet interlock and door operation; smooth, fast, dynamic braking for door reversals, and stopping of the doors at extremes of travel.

B. Equip car doors with electric contact that prevents operation of car until doors are closed unless car is operating in leveling zone or hoistway access switch is used. Locate door contact to prevent its being tampered with from inside of car.

C. Car and hoistway doors shall be manually operable in an emergency without disconnecting the power door operating equipment unless the car is outside the unlocking zone.

1. It shall not be possible for the doors to open by power unless the elevator is within the leveling zone.

2. Provide infrared curtain unit. The device shall cause the car and hoistway doors to reverse automatically to the fully-open position should the unit be actuated while the doors are closing. Unit shall function at all times when the doors are not closed, except during firefighter's operation.

D. Should the doors be prevented from closing for more than a predetermined adjustable interval of 20 to 60 seconds by operation of the curtain unit, the doors shall stay open, the audio voice message and a buzzer located on the car shall sound only on automatic operation. Do not provide door nudging.

1. If an obstruction of the doors should not activate the photo-electric door control device and prevent the doors from closing for more than a predetermined adjustable interval of 15 to 30 seconds, the doors shall reverse to the fully open position and remain open until the "Door Close" button re-establishes the closing cycle.

E. Provide door "OPEN" and "CLOSE" buttons. When the door "OPEN" button is pressed and held, the doors, if in the open position, shall remain open and if the doors are closing, they shall stop, reverse and re-open. Momentary pressure of the door "CLOSE" button shall initiate the closing of the doors prior to the expiration of the normal door open time.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine work of other trades on which the work of this Specification depends. Report defects to the Contracting Officers Representative in writing that may affect the work of elevator contractor.

B. Examine elevator hoistway openings for plumb, level, in line, and that elevator pit is proper size, waterproofed and drained with necessary access door, and ladder.

C. Examine machine room for proper illumination, heating, ventilation, electrical equipment, and beams are correctly located complete with access stairs and door.

D. If the Elevator Contractor requires changes in size or location of trolley beams or their supports and trap doors, etc., to accomplish their work, he must make arrangements, subject to approval of the Contracting officer, and include additional cost in their bid.

E. Work required prior to the completion of the elevator installation:

1. Supply of electric feeder wires to the terminals of the elevator control panel, including circuit breaker.
2. Provide light and GFCI outlets in the elevator pit and machine room.
3. Furnish electric power for testing and adjusting elevator equipment.
4. Furnish circuit breaker panel in machine room for car and hoistway lights and receptacles.
5. Supply power for cab lighting and ventilation from an emergency power panel specified in Division 26, ELECTRICAL.
6. Machine room enclosed and protected from moisture, with self-closing, self-locking door and access stairs.
7. Provide fire extinguisher in machine room.

F. Provide to General Contractor for installation; inserts, anchors, bearing plates, brackets, supports and bracing including all setting templates and diagrams for placement.

3.2 ARRANGEMENT OF EQUIPMENT

A. Arrange equipment in machine room so that major equipment components can be removed for repair or replacement without dismantling or removing other equipment in the same machine room. Locate controller near and visible to its respective hoisting machine.

3.3 WORKMANSHIP, INSTALLATION, AND PROTECTION

A. Installations shall be performed by Certified Elevator Mechanics and Apprentices to best possible industry standards. Details of the installation shall be mechanically and electrically correct. Materials and equipment shall be new and without imperfections.

B. Recesses, cutouts, slots, holes, patching, grouting, refinishing to accommodate installation of equipment shall be included in the Contractor's work. All new holes in concrete shall be core drilled.

C. Structural members shall not be cut or altered. Work in place that is damaged or defaced shall be restored equal to original new condition.

D. Finished work shall be straight, plumb, level, and square with smooth surfaces and lines. All machinery and equipment shall be protected against dirt, water, or mechanical injury. At final completion, all work shall be thoroughly cleaned and delivered in perfect unblemished condition.

E. Sleeves for conduit and other small holes shall project 50 mm (2 in.) above concrete slabs.

F. Hoist cables that are exposed to accidental contact in the machine room and pit shall be completely enclosed with 16-gauge sheet metal or expanded metal guards.

G. Exposed gears, sprockets, and sheaves shall be guarded from accidental contact.

3.4 CLEANING

A. Upon completion of installation and prior to final inspection, all equipment shall be thoroughly cleaned of grease, oil, cement, plaster, dust, and other debris.

B. Clean machine room and equipment.

C. Perform hoistway clean down.

D. Prior to final acceptance remove protective coverings from finished or ornamental surfaces. Clean and polish surfaces with regard to type of material.

3.5 PAINTING AND FINISHING

A. All equipment, except specified as architectural finish, shall be painted one coat of approved color, conforming to manufacturer's standard.

B. Hoist machine, motor, shall be factory painted with manufacturer's standard finish and color.

C. Controller, sheave, car frame and platform, counterweight, beams, rails and buffers except their machined surfaces, cams, brackets and all other uncoated ferrous metal items shall be painted one factory primer coat or approved equal.

D. Stencil or apply decal floor designations not less than 100 mm (4 in.) high on hoistway doors, fascia or walls within door restrictor areas. The color of paint used shall contrast with the color of the surfaces to which it is applied.

E. Elevator pump/motor machine, controller, main line switch/shunt trip circuit breaker, bolster channel, and cross head of car shall be identified by 100 mm (4 in.) high numerals and letters located as directed. Numerals shall contrast with surrounding color and shall be stenciled or decaled.

F. Hoistway Entrances of Passenger, and Service Elevators:

1. Door panels shall be given rust resistant treatment and a factory finish of one coat of baked-on primer and one factory finish coat of baked-on enamel.

2. Fascia plates, top and bottom shear guards, dust covers, hanger covers, and other metalwork, including built-in or hidden work and structural metal, (except stainless steel entrance frames and surfaces to receive baked enamel finish) shall be given one approved prime coat in the shop, and one field coat of paint of approved color.

G. Hoistway Entrances of Freight Elevators:
1. Metal surfaces of doors and frames shall receive shop prime coat.
2. Finish painting, after installation, shall be one coat of paint of approved color.

H. Elevator Cabs for Passenger and Service Elevators:
1. Interior and exterior steel surfaces shall be given rust resistant treatment before finish is applied.
2. Interior steel surfaces shall be factory finished with one coat of paint of approved color.
3. Give exterior faces of car doors one finish coat of paint of approved color.

I. Elevator Cabs for Freight Elevators:
1. Give interior of cab one prime coat and a minimum of one coat of paint of approved color.
2. Give exterior of cab one prime coat and one finish coat of paint of approved color.
3. All surfaces of door frames, door panels, and cab interior surfaces that become damaged or marred shall be restored to original condition before final acceptance of work.

3.6 PRE-TESTS AND TESTS

A. Pre-test the elevators and related equipment in the presence of the Contracting Officers Representative or his authorized representative for proper operation before requesting final inspection. Conduct final inspection at other than normal working hours, if required by Contracting Officers Representative.
1. Procedure outlined in the Inspectors Manual for Hydraulic Elevators, ASME A17.2 shall apply.
a. Final test shall be conducted in the presence of and witnessed by a third party ASME QEI-1 Certified Elevator Inspector, contracted by the VA.

b. Government shall furnish electric power including necessary current for starting, testing, and operating machinery of each elevator.

2. Contractor shall furnish the following test instruments and materials on-site and at the designated time of inspection: properly marked test weights, oil pressure gauge, voltmeter, amp probe, thermometers, direct reading tachometer, megohm meter, vibration meter, sound meter, light meter, stop watch, and a means of two-way communication.

B. Inspection of workmanship, equipment furnished, and installation for compliance with specification.

C. Full-Load Run Test: Elevators shall be tested for a period of one hour continuous run with full contract load in the car. The test run shall consist of the elevator stopping at every floor, in either direction of travel, for not less than five or more than ten seconds per floor.

D. Speed Test: The actual speed of the elevator shall be determined in both directions of travel with full contract load and no load in the elevator. Speed shall be determined by certified tachometer. The actual measured speed of the elevator with all loads in either direction shall be within five (5) percent of specified rated speed. Full speed runs shall be quiet and free from vibration and sway.

E. Temperature Rise Test: The temperature rise of the pump motor shall be determined during the full load test run. Temperatures shall be measured by the use of thermometers. Under these conditions, the temperature rise of the equipment shall not exceed 50 degrees Centigrade above ambient temperature. Test shall start when all machine room equipment is within 5 degrees Centigrade of the ambient temperature. Other tests for heat runs on motors shall be performed as prescribed by the Institute of Electrical and Electronic Engineers.

F. Car Leveling Test: Elevator car leveling devices shall be tested for accuracy of leveling at all floors with no load in car and with contract load in car in both directions of travel. Accuracy of floor level shall be within plus or minus 3 mm (.125 in.) of level with landing floor for which the stop has been initiated regardless of load in car or direction of travel. The car leveling device shall automatically correct over travel as well as under travel and shall maintain the car floor within plus or minus 3 mm (.125 in.) of level with the landing floor regardless of change in load.

G. Insulation Resistance Test: The elevator's complete wiring system shall be free from short circuits and ground faults and the insulation resistance of the system shall be determined by use of megohm meter, at the discretion of the Elevator Inspector conducting the test.

H. Overload Devices: Test all overload current protection devices in the system at final inspection.

I. Limit Stops:

1. The position of the car when stopped by each of the normal limit switches with no load and with contract load in the car shall be accurately measured.
2. Final position of the elevator relative to the terminal landings shall be determined when the elevator has been stopped by the final limits. The lower limit stop shall be made with contract load in the elevator. Elevator shall be operated at inspection speed for both tests. Normal limit stopping devices shall be inoperative for the tests.

J. Working Pressure: Verify working pressure of the hydraulic system by pressure gauge placed in the system line. Take readings with no load and full load in car.

K. Test automatic shut-off valve for proper operation.

L. Operating and Signal System: The elevator shall be operated by the operating devices provided and the operation signals and automatic floor leveling shall function in accordance with requirements specified. Starting, stopping and leveling shall be smooth and comfortable without appreciable steps of acceleration or deceleration.

M. Performance of the Elevator supervisory system shall be witnessed and approved by the elevator inspector and a representative of the Contracting Officers Representative.

N. Evidence of malfunction in any tested system or parts of equipment that occurs during the testing shall be corrected, repaired, or replaced at no additional cost to the Government, and the test repeated.

O. If equipment fails test requirements and a re-inspection is required, the Contractor shall be responsible for the cost of re-inspection; salaries, transportation expenses, and per-diem expenses incurred by the elevator inspector and the representative of the Contracting Officers Representative.

3.7 INSTRUCTION OF VA PERSONNEL

A. Provide competent instruction to VA personnel regarding the operation of equipment and accessories installed under this contract, for a period equal to one eight hour work day. Instruction shall commence after completion of all work and at the time and place directed by the Contracting Officers Representative.

B. Written instructions in triplicate relative to care, adjustments and operation of all equipment and accessories shall be furnished and delivered to the Contracting Officers Representative in independently bound folders. DVD recordings will also be acceptable. Written instructions shall include correct and legible wiring diagrams, nomenclature sheet of all electrical apparatus including location of each device, complete and comprehensive sequence of operation, complete replacement parts list with descriptive literature, and identification and diagrams of equipment and parts. Information shall also include electrical operation characteristics of all circuits, relays, timers, electronic devices, and related characteristics for all rotating equipment.

C. Provide supplementary instruction for any new equipment that may become necessary because of changes, modifications or replacement of equipment or operation under requirements of paragraph entitled "Warranty of Construction".

3.8 INSPECTION AND MAINTENANCE SERVICE: GUARANTEE PERIOD OF SERVICE

A. Furnish complete inspection and maintenance service on entire elevator installation for a period of one (1) year after completion and acceptance of all the elevators in this specification by the Contracting Officers Representative. This maintenance service shall run concurrently with the warranty. Maintenance work shall be performed by Certified Elevator Mechanics and Apprentices.

B. This contract will cover full maintenance including emergency call back service, inspections and servicing the elevators listed in the schedule of elevator. The Elevator Contractor shall be required to perform the following:

1. Bi-weekly systematic examination of equipment.
2. During each maintenance visit the Elevator Contractor shall clean, lubricate, adjust, repair and replace all parts as necessary to keep the equipment in like new condition and proper working order.

3. Furnishing all lubricant, cleaning materials, parts and tools necessary to perform the work required. Lubricants shall be only those products recommended by the manufacturer of the equipment.
4. As required, motors, controllers, selectors, leveling devices, operating devices, switches on cars and in hoistways, hoistway doors and car doors or gate operating device, interlock contacts, guide shoes, guide rails, car door sills, hangers for doors, car doors or gates, and signal system shall be cleaned, lubricated and adjusted.
5. Guide rails and bottom of platforms shall be cleaned every three months. Car tops and machine room floors shall be cleaned monthly. Accumulated rubbish shall be removed from the pits monthly. A general cleaning of the entire installation including all machine room equipment and hoistway equipment shall be accomplished quarterly. Cleaning supplies and vacuum cleaner shall be furnished by the Contractor.
6. Maintain the performance standards set forth in this specification.
7. The operational system shall be maintained to the standards specified hereinafter including any changes or adjustments required to meet varying conditions of hospital occupancy.
8. Maintain smooth starting and stopping and accurate leveling at all times.

C. Maintenance service shall not include the performance of work required as a result of improper use, accidents, and negligence for which the Elevator Contractor is not directly responsible.

D. Provide 24 hour emergency call-back service that shall consist of promptly responding to calls within two hours for emergency service should a shutdown or emergency develop between regular examinations. Overtime emergency call-back service shall be limited to minor adjustments and repairs required to protect the immediate safety of the equipment and persons in and about the elevator.

E. Service and emergency personnel shall report to the Contracting Officers Representative or his authorized representative upon arrival at the hospital and again upon completion of the required work. A copy of the work ticket containing a complete description of the work performed shall be given to the Contracting Officers Representative.

F. The Elevator Contractor shall maintain a log book in the machine room. The log shall list the date and time of all bi-weekly examinations and all trouble calls. Each trouble call shall be fully described including

the nature of the call, necessary correction performed or parts replaced.

G. Written "Maintenance Control Program" shall be in place to maintain the equipment in compliance with ASME A17.1.

- - - E N D - - -