REPLACE SELECT FLOORING

437-23-145

November 04, 2022

REVIEWED BY

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VA U.S. Department of Veterans Affairs

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DEPARTMENT OF VETERANS AFFAIRS
VHA PROJECT SPECIFICATIONS

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LIST OF DRAWINGS

The Drawings listed below, and the Scope of Work (SOW) and Photos, are to accompany this specification form, and be included as part of the contract.

Scope of Work (3 Pages): Description of Work and Flooring Replacement Types

Drawing Number:	**Drawing Sheet Name (20 Sheets):**
COVER	Campus Site Plan / Drawing Index
A 101(B40)	Building 40; Main Level Plan – Overall
A 102(B40)	Building 40; Second Level Plan – Overall
A 100.0(M)	Basement Level Plan – Overall
A 101.0(M)	Main Level Plan – Overall
A 101.1(M)	Main Level Plan – Enlarged Building Area B (NW)
A 101.2(M)	Main Level Plan – Enlarged Building Area A/B (W)
A 101.3(M)	Main Level Plan – Enlarged Building Area A (SW)
A 101.4(M)	Main Level Plan – Enlarged Building Area C (NE)
A 101.5(M)	Main Level Plan – Enlarged Building Area D (SE)
A 102.0(M)	Second Level Plan – Overall / Enlarged Bldg Area C
A 103.0(M)	Third Level Plan – Overall / Enlarged Stairwells
A 103.1(M)	Third Level Plan – Enlarged Building Area West
A 103.2(M)	Third Level Plan – Enlarged Building Area East
A 104.0(M)	Fourth Level Plan – Overall
A 104.1(M)	Fourth Level Plan – Enlarged Building Area East
AMC-01(M)	Main Level: Asbestos Containing Material, Flooring
AMC-02(M)	Second Level: Asbestos Containing Material, Flooring
AMC-03(M)	Third Level: Asbestos Containing Material, Flooring
AMC-04(M)	Fourth Level: Asbestos Containing Material, Flooring

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SECTION 00 01 20
SCOPE OF WORK SUMMARY

1. PART I – GENERAL, SCOPE OF CONTRACT

A. Work Requirements:

The Contractor shall provide all labor, materials, and equipment to accomplish the "Replace Select Flooring" project per the construction Drawings, Specifications, and Scope of Work (SOW) document. The Scope of Work (SOW) and Drawings are separate attachments to these project specifications. Collectively, they outline the extent of work, and the execution and work-quality requirements. The project work includes, but is not limited to the following items: (These work requirements, and locations, are expanded on in the SOW and Drawings.)

1. Demolition: Reference project documents. Provide demolition work as outlined, and as required to facilitate new work.
2. Disposal: Remove from the VA site and dispose of all equipment and material not scheduled to be reused.
3. New Construction (Replacement): Reference project documents. Install work at areas noted in Drawings, and as outlined in specifications.
4. Project Coordination: Demolition and construction requires planning and coordination related to minimizing facility disruptions and performing work within an occupied medical facility.

B. Tentative Schedule:

Contract award (D)	Feb 2023
Pre-construction conference	D+10
Notice to Proceed	D+15
Construction Start	D+25
Construction Completion (Base Bid Work)	D+260

C. Cost Range:

1. The anticipated cost range for this project is $500K and $1.0M.

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SECTION 01 00 00
GENERAL REQUIREMENTS

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NOTE: THE MISSING GAPS IN THE TABLE OF CONTENTS NUMBERS ABOVE, REPRESENT SECTIONS THAT HAVE BEEN OMITTED FROM THE VA MASTER SPECFICATIONS BECAUSE THEY ARE NOT APPLICABLE TO THE REPLACE SELECTED FLOORING PROJECT.

SECTION 01 00 00
GENERAL REQUIREMENTS

1.0 NOT USED

1.1 SAFETY REQUIREMENTS

A. Reference Section 01 35 26 – SAFETY REQUIREMENTS for safety and infection control requirements.

1.2 GENERAL INTENTION

A. Contractor shall completely prepare and perform work at each marked area. Construction activities are to include the safety requirement preparation and stagging, demolition and removal of existing materials, finish work, and furnishing all the labor and materials required for the project. Updates shall be as required by these Specifications, and the attached Drawings and Scope of Work.

B. Visits to the site by Bidders are to be scheduled through Contracting OFFICE ONLY. Only one organized site visit shall be conducted per FAR 52.26.27 Alternate 1.

C. All employees of general contractor and subcontractors shall comply with VA security management program and obtain permission of the VA police. Each employee shall be identified by project and employer. Access shall be limited to work locations, as coordinated with COR.

1.3 STATEMENT OF BID ITEM(S)

A. Base Bid, Replace Selected Flooring: Work shall include, but not be limited to the following: all planning, scheduling, and coordination; general construction requirements; demolition; hazardous material abatement; prep work; and, flooring and wall base installation. The Base Bid shall include the total cost for all work summaries as outlined in the Scope of Work (SOW)

1.4 SPECIFICATIONS AND DRAWINGS FOR CONTRACTOR

A. Drawings and contract documents may be obtained from the website where the project solicitation is posted. Any additional copies will be at Contractor's expense.

1.5 CONSTRUCTION SECURITY REQUIREMENTS

A. Security Plan:

1. The security plan defines both physical and administrative security procedures that will remain effective for the duration of project.

2. The General Contractor is responsible in assuring that all workers, including subcontractors and their employees, comply with regulations.

B. Security Procedures:

1. General Contractor's employees shall not enter the project site without appropriate badge. They may be subject to inspection of their personal effects when entering or leaving the project site.

2. Before starting work, the General Contractor shall give a two week notice to the Contracting Officer so security arrangements can be provided for the employees. This notice is separate from notices required for utility shutdowns, as described later in this section.

3. No photography of VA premises is allowed without written permission from the Contracting Officer.

4. VA reserves the right to close or shut down the project site and order General Contractor's employees off the premises, should such an actions be required in the event of a national emergency. The General Contractor may return to the site only with the written approval of the Contracting Officer.

C. Key Control:

1. The Contractor shall utilize seven pin Best Corporation cores, matching what is in use at the Fargo VA, and provides keys, to Contracting Officers Representative (COR) for the purpose of security inspections, for every project area. This includes both General Contractor and Subcontractor tool and storage boxes, and parked machinery. The COR my utilize for emergency action.

2. The General Contractor shall turn over all permanent lock cylinders to the VA locksmith for permanent installation.

D. Document Control:

1. The General Contractor is responsible for the safekeeping of all drawings, project manual and other project information. This information shall be shared only with individuals with a specific need to know as required to accomplish the project.

2. These security documents shall not be removed or transmitted from project site, without the written approval by Contracting Officer.
3. All paper waste or electronic media such as CD's and diskettes shall be shredded and destroyed in a manner acceptable to the VA.

1.6 OPERATIONS AND STORAGE AREAS

A. The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, and it's officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

B. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by Contractor only with approval of Contracting Officer, and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of Contractor and shall be removed by the Contractor at its expense, upon completion of work. With written consent of Contracting Officer, the buildings and utilities may be abandoned.

C. The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

E. Workers are subject to Medical Center rules related to their conduct.

F. Execute work so as to interfere as little as possible with the normal functioning of the Medical Center, including operations of equipment, utility services, fire protection systems, and employee work functions.

G. Use of equipment and tools that transmit vibrations and noises through the building structure, are not permitted in buildings that are occupied by patients and/or medical personnel. Deviation from this approach may be allowable with prior written approval by VA Contracting Officer or COR.

H. Do not store materials and equipment in other than assigned areas.

I. Schedule delivery of materials and equipment to immediate construction areas within buildings, in limited quantities, so negative impacts on work areas and staging areas do not result. Maintain unobstructed access to the Medical Center.

1. Storage of construction materials and equipment will be permitted at designated areas, subject to fire and safety requirements.

J. Phasing / Sequence of Work:

1. The Medical Center must maintain its operation 24 hours a day 7 days a week. Therefore, any interruption in service must be scheduled and coordinated with the COR, to ensure no lapses in operation occur. While work occurring in this project should not impact utilities, other general disruption will occur. It is the Contractor's responsibility to develop a work plan to account for all service and utility outages, and to account for disruptions to egress and building circulation. The work plan shall identify time durations for disruptions, by location. It shall outline any utility and service disruptions, and note interim life safety measures to be used during construction.

2. To ensure such executions, Contractor shall furnish the COR with a schedule of approximate dates on which the Contractor intends to accomplish work in each specific area of site, building or portion thereof. In addition, Contractor shall notify the COR two weeks in advance of the proposed date of starting work in each specific area of site, building or portion thereof. Arrange such dates to ensure accomplishment of this work in successive phases mutually agreeable to COR and Contractor. Currently, is is assumed work will be sequenced by floor level and then by area, unless other sequencing is determined to be more beneficial.

3. Corridors: Work occurring in the primary corridors on the Main and Third Levels should target execution during non-standard business hours. Select portion of the Third Level will have further time reduction in the Corridors due to area sleep schedules. All Corridors will need to be opened daily for circulation, egress, and building operations. Contractor scheduling will need to account specifically for limiting disruptions within these spaces.

J. When a building and/or construction site is turned over to Contractor, Contractor shall accept entire responsibility including upkeep and maintenance therefore:

1. Contractor shall maintain in operating condition existing fire protection and alarm equipment, or make provision to ensure smoke detectors are turned off while Contractor is working and restored when not working. In connection with fire alarm equipment, Contractor shall make arrangements for pre-inspection of site with Fire Department or Company (Department of Veterans Affairs or municipal) whichever will be required to respond to an alarm from Contractor's employee or watchman.

K. To minimize interference of construction activities with flow of Medical Center traffic, comply with the following:

1. Keep roads, walks and entrances to grounds, to parking and to occupied areas of buildings clear of construction materials, debris and standing construction equipment and vehicles.

L. Coordinate the work for this contract with other construction operations as directed by COR. This includes the scheduling of traffic and the use of roadways.

1.8 DISPOSAL AND RETENTION

A. Materials and equipment accruing from work removed and from demolition of buildings, or parts thereof, shall be disposed of as follows:

1. Reserved items which are to remain property of the Government are noted on the drawings or within the SOW are items to be stored until project closeout. Items remaining property of the Government shall be removed or dislodged from present locations in such a manner as to prevent damage which would be detrimental to re-installation and reuse. Store such items where directed by COR.

2. Items not reserved shall become property of the Contractor and be removed by Contractor from the Medical Center.

3. Items of portable equipment and furnishings located in rooms and spaces in which work is to be done under this contract shall remain the property of the Government. When rooms and spaces are vacated by the Department of Veterans Affairs during the alteration period, such items which are NOT required by drawings and specifications to be either relocated or reused will be removed by the Government in advance of work to avoid interfering with Contractor's operation.

1.10 RESTORATION

A. Remove, cut, alter, replace, patch and repair existing work as necessary to install new work. Except as otherwise shown or specified, do not cut, alter or remove any structural work, and do not disturb any ducts, plumbing, steam, gas, or electric work without approval of the COR. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the COR before it is disturbed. Materials and workmanship used in restoring work, shall conform in type and quality to that of original existing construction, except as otherwise shown or specified.

B. Upon completion of contract, deliver work complete and undamaged. Existing work (walls, ceilings, partitions, mechanical and electrical work, floors, lawns, paving, roads, walks, etc.) disturbed or removed as a result of performing the new work, shall be patched, repaired, reinstalled, or replaced with new work, and/or refinished, and left in the same condition that existed before commencing work.

C. At Contractor's own expense, Contractor shall immediately restore to service and repair any damage caused by Contractor's workers to existing piping and conduits, wires, cables, etc., of utility services or of fire protection systems and communications systems (including telephone) which are not scheduled for discontinuance or abandonment.

1.13 LAYOUT OF WORK

A. The Contractor shall lay out the work from Government established base lines and benchmarks, indicated on the drawings or in the SOW, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at Contractor's own expense, all templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through Contractor's negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

(FAR 52.236-17)

1.14 AS-BUILT DRAWINGS

A. The contractor shall maintain two full size sets of as-built drawings which will be kept current during construction of the project, to include all contract changes, modifications and clarifications.

B. All variations shall be shown in the same general detail as used in the contract drawings. To ensure compliance, as-built drawings shall be made available for the COR review, as often as requested.

C. Contractor shall deliver two approved sets of as-built drawings in an electronic version (scanned PDF) within 15 calendar days after each completed phase, and after acceptance of the project by the COR

D. Paragraphs A, B, & C shall also apply to all shop drawings.

1.15 WARRANTY MANAGEMENT

A. Warranty Management Plan: Develop a warranty management plan which contains information relevant to FAR 52.246-21 Warranty of Construction in at least 30 days before the planned pre-warranty conference, submit one set of the warranty management plan. Include within the warranty management plan all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan must be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesman, or of engineering background, not necessarily familiar with this contract. The term “status” as indicated below must include due date and whether item has been submitted or was approved. Warranty information made available during the construction phase must be submitted to the Contracting Officer for approval prior to each monthly invoice for payment. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period will begin on the date of the project acceptance and continue for the product warranty period. A joint 4 month and 9 month warranty inspections will be conducted, measured from time of acceptance, by the Contactor and the Contracting Officer. Include in the warranty management plan, but not limited to, the following:

1. Roles and responsibilities of all personnel associated with the warranty process, including contacts and telephone numbers for the Contractor, subcontractors, manufacturers or suppliers involved.

2. Furnish with each warranty the name, address and telephone number of each of the guarantor’s representatives nearest project location.

3. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers and for all commissioned systems such as fire protection and alarm systems, sprinkler systems and lightning protection systems, etc.

4. The plans for attendance at the 4 and 9-month post construction warranty inspections conducted by the government.

B. Performance Bond: The Performance Bond must remain effective throughout the construction period.

1. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

2. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the contractor’s expenses, the Contracting Officer will have the right to recoup expenses from the bonding company.

3. Following oral or written notification of required construction warranty repair work, the Contractor shall respond in a timely manner. Written verification will follow oral instructions. Failure to respond will be cause for the Contracting Officer to proceed against the Contractor.

C. Pre-Warranty Conference: Prior to contract completion, and at a time designated by the Contracting Officer, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty will be established/ reviewed at this meeting. In connection with these requirements and at the time of the Contractor’s quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor.

This point of contract will be located within the local service area of the warranted construction, be continuously available and be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in conjunction with other portions of this provision.

D. Contractor's Response to Construction Warranty Service Requirements: Following oral or written notification by the Contracting Officer, the Contractor shall respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. Submit a report on any warranty item that has been repaired during the warranty period. Include within the report the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframe specified, the Government will perform the work and back charge the construction warranty payment item established.

1. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.
2. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.
3. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.
4. The "Construction Warranty Service Priority List" is as follows:
   Code 3-Interior
   a. Flooring: Any peeling, unevenness and misalignment of seams, bubbling, separation of seams, adhesion issues, and manufacture defects.
   b. Wall Base: "Bubbling" and/or "waves", unevenness and misalignment of joints, separation of joints, adhesion, and manufacture defects.
   c. All work not listed above.

1.16 USE OF ROADWAYS

A. For hauling, use only established public roads and roads on Medical Center property.

B. When certain buildings (or parts of certain buildings) are required to be completed in advance of general date of completion, all roads leading thereto must be completed and available for use at time set for completion of such buildings or parts thereof.

1.18 TEMPORARY USE OF EXISTING ELEVATORS

A. Use of existing elevators for handling materials and Contractor's personnel will be permitted subject to following provisions:

1. Contractor makes all arrangements with the COR for use of elevators. The COR will ascertain that the elevators are in proper condition. Personnel for operating elevators will not be provided by the Department of Veterans Affairs.

2. Contractor covers and provides maximum protection of following elevator components:

a. Entrance jambs and head, heads soffits, and threshold plates

b. Entrance columns, canopy, return panels and inside surfaces of car enclosure walls jambs, heads soffits and threshold plates.

c. Finish flooring.

3. Place elevator in condition, less normal wear, equal to what existing at when placed in service of Contractor, as approved by Contracting Officer.

1.21 TEMPORARY TOILETS

A. Contractor may have for use of Contractor's workers, such toilet accommodations as may be assigned to Contractor by Medical Center. Contractor shall keep such places clean and be responsible for any damage done thereto by Contractor's workers. Failure to maintain satisfactory condition in toilets will deprive Contractor of the privilege to use such toilet access.

1.22 AVAILABILITY AND USE OF UTILITY SERVICES

A. The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. The Contractor shall carefully conserve any utilities furnished without charge.

B. The Contractor, at Contractor's expense and in a workmanlike manner, in compliance with code and as satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines for use of electricity. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, and other associated paraphernalia and restore the infrastructure as required.

C. Water (for Construction and Testing): Furnish temporary water service.

1. Obtain water by connecting to the Medical Center water distribution system. Provide reduced pressure backflow preventer at each connection, per code. Water is available at no cost to Contractor.

2. Maintain connections, pipe, fittings, drains, and fixtures, and conserve water-use so none is wasted. Failure to stop leakage or other wastes will be cause for revocation (at COR discretion) of use of water from Medical Center's system.

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SECTION 01 32 16.15
PROJECT SCHEDULES

PART 1- GENERAL

1.1 DESCRIPTION:

A. The Contractor shall develop a Critical Path Method (CPM) plan and schedule demonstrating fulfillment of the contract requirements (Project Schedule), and shall keep the Project Schedule up-to-date in accordance with the requirements of this section and shall utilize the plan for scheduling, coordinating and monitoring work under this contract (including all activities of subcontractors, equipment vendors and suppliers). Conventional Critical Path Method (CPM) technique shall be utilized to satisfy both time and cost applications.

1.2 CONTRACTOR'S REPRESENTATIVE:

A. The Contractor shall designate an authorized representative responsible for the Project Schedule including preparation, review and progress reporting with and to the Contracting Officer's Representative (COTR).

B. The Contractor's representative shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the requirements of this specification section.

C. The Contractor’s representative shall have the option of developing the project schedule within their organization or to engage the services of an outside consultant.

1.4 COMPUTER PRODUCED SCHEDULES

A. The contractor shall provide an updated schedule on a monthly basis, and a three week look-ahead at each construction meeting. Provide schedule to the Department of Veterans Affairs (VA), COR.

1.5 THE COMPLETE PROJECT SCHEDULE SUBMITTAL

A. Within 30 calendar days after receipt of Notice to Proceed, Contractor shall submit for the COR / Contracting Officer's review; three blue line copies of the interim schedule on sheets of paper 765 x 1070 mm (30 x 42 inches) and an electronic file in the previously approved CPM schedule program. The submittal shall also include three copies of a computer-produced activity/event ID schedule showing project duration; phase completion dates; and other data, including event cost. Each activity/event on the computer-produced schedule shall contain as a minimum, but not limited to, activity/event ID, activity/event

description, duration, budget amount, early start date, early finish date, late start date, late finish date and total float. Work activity/ event relationships shall be restricted to finish-to-start or start-to-start without lead or lag constraints. Activity/event date constraints, not required by the contract, will not be accepted unless submitted to and approved by the Contracting Officer. The contractor shall make a separate written detailed request to Contracting Officer identifying these date constraints and secure the Contracting Officer’s written approval before incorporating them into the network diagram. The Contracting Officer’s separate approval of the Project Schedule shall not excuse the contractor of this requirement. Logic events (non-work) will be permitted where necessary to reflect proper logic among work events, but must have zero duration. The complete working schedule shall reflect Contractor's approach to scheduling the complete project.

B. The final Project Schedule in its original form shall contain no contract changes or delays which may have been incurred during the final network diagram development period and shall reflect the entire contract duration as defined in the bid documents. These changes/ delays shall be entered at the first update after the final Project Schedule has been approved. The Contractor should provide their requests for time and supporting time extension analysis for contract time as a result of contract changes/delays, after this update, and in accordance with Article, ADJUSTMENT OF CONTRACT COMPLETION.

C. Within 30 calendar days after receipt of the complete project interim Project Schedule and the complete final Project Schedule, the Govt Rep or Contracting Officer will do one or both of the following:
   1. Notify Contractor concerning his actions, opinions, and objections.
   2. Meet with the Contractor at or near the job site for joint review, correction or adjustment of the proposed plan will be scheduled if required. Within 14 calendar days after the joint review, Contractor shall revise and shall submit three blue line copies of the revised Project Schedule, three copies of the revised computer-produced activity/event ID schedule and a revised electronic file as specified by the Contracting Officer. The revised submission will be reviewed by the Contracting Officer and, if found to be as previously agreed upon, will be approved.

D. The approved baseline schedule and the computer-produced schedule(s) generated shall constitute the approved baseline schedule until subsequently revised in accordance with requirements of this section.

E. The Complete Project Schedule shall contain work activities/events for each area of work, outlining the demolition and installation durations.

1.7 PROJECT SCHEDULE REQUIREMENTS

A. Show on the schedule the sequence of work activities/events required for complete performance of all work items. The Contractor Shall:

1. Show activities/events as:
   a. Contractor's time required for shop drawing submittals, templates, fabrication, delivery and other similar pre-construction work.
   b. Contracting Officer's review and approval of shop drawings, equipment schedules, samples, templates, or other similar pre-construction and constriction items.
   c. Interruption of VA Facilities utilities, delivery of Government furnished equipment, and rough-in drawings, project phasing and any other specification requirements.
   e. VA inspection and acceptance activity/event with minimum durations of five workdays at the end of each phase and immediately preceding any VA move activity required by contract phasing for that phase.

2. Show not only the activities/events for actual construction work for each trade category of the project, but also trade relationships to indicate the movement of trades from one area, floor, or building, to another area, floor, or building, for at least five trades who are performing major work under this contract.

3. Break up the work into activities/events of a duration no longer than 20 work days each or one reporting period, except as to non-construction activities/events (i.e., procurement of materials, delivery of equipment, concrete and asphalt curing) and any other activities/events for which the COTR may approve the showing of a longer duration. The duration for VA approval of any required submittal, shop drawing, or other submittals will not be less than 20 work days.

4. Describe work activities/events clearly, so the work is readily identifiable for assessment of completion. Activities/events labeled "start," "continue," or "completion," are not specific and will not be allowed. Lead and lag time activities will not be acceptable.

5. The schedule shall be generally numbered in such a way to reflect either discipline, phase or location of the work.

B. The Contractor shall submit the following supporting data in addition to the project schedule:
   1. The appropriate project calendar including working days & holidays.
   2. The planned number of shifts per day.
   3. The number of hours per shift.

   Failure of the Contractor to include this data shall delay the review of the submittal until the Contracting Officer is in receipt of the missing data.

C. To the extent that the Project Schedule or any revised Project Schedule shows anything not jointly agreed upon, it shall not be deemed to have been approved by the COTR. Failure to include any element of work required for the performance of this contract shall not excuse the Contractor from completing all work required within any applicable completion date of each phase regardless of the COTR's approval of the Project Schedule.

D. Compact Disk Requirements and CPM Activity/Event Record Specifications: Submit to the VA an electronic file(s) containing one file of the data required to produce a schedule, reflecting all the activities/events of the complete project schedule being submitted.

1.8 PAYMENT TO THE CONTRACTOR:

A. Monthly, the contractor shall submit an application and certificate for payment using VA Form 10-6001a or AIA application and certificate for payment documents G702 & G703, as requested by the Contracting Officer, reflecting updated schedule activities and cost data in accordance with the provisions of the following Article, PAYMENT AND PROGRESS REPORTING. The Contractor shall be entitled to a monthly progress payment upon approval of estimates as determined from the currently approved updated project schedule. Monthly payment requests shall include: a listing of all agreed upon project schedule changes and associated data; and an electronic file (s) of the resulting monthly updated schedule.

B. Approval of the Contractor's monthly Application for Payment shall be contingent, among other factors, on the submittal of a satisfactory monthly update of the project schedule.

1.9 PAYMENT AND PROGRESS REPORTING

A. Monthly schedule update meetings will be held on dates mutually agreed to by the COTR and the Contractor. Contractor and their CPM consultant (if applicable) shall attend all monthly schedule update meetings. The Contractor shall accurately update the Project Schedule and all other data required and provide this information to the COTR three work days in advance of the schedule update meeting. Job progress will be reviewed to verify:

1. Actual start and/or finish dates for updated/completed activities.
2. Remaining duration for each activity/event started, or scheduled to start, but not completed.
3. Logic, time and cost data for change orders, and supplemental agreements that are to be incorporated into the Project Schedule.
4. Changes in activity/event sequence and/or duration which have been made, pursuant to the provisions of following Article, ADJUSTMENT OF CONTRACT COMPLETION.
5. Completion percentage for completed and partially completed events.
6. Logic and duration revisions required by this specification section.
7. Activity durations and percentages shall be updated independently.

B. After completion of the joint review, the contractor shall generate an updated computer-produced calendar-dated schedule and supply the Contracting Officer’s representative with reports in accordance with the Article, COMPUTER PRODUCED SCHEDULES, specified.

C. After completing the monthly schedule update, the contractor’s representative or scheduling consultant shall rerun all current period contract change(s) against the prior approved monthly project schedule. The analysis shall only include original workday durations and schedule logic agreed upon by the contractor and COR for the contract change(s). When there is a disagreement on logic and/or durations, the Contractor shall use the schedule logic and/or durations provided and approved by the COR. After each rerun update, the resulting electronic project schedule data file shall be appropriately identified and submitted to the VA in accordance to the requirements listed in articles 1.4 and 1.7. This electronic submission is separate from the regular monthly project schedule update requirements and shall be submitted to the COR within fourteen (14) calendar days of completing the regular schedule update. Before inserting the contract changes durations, care must be taken to ensure that only the original durations will be used for the analysis,

not the reported durations after progress. In addition, once the final network diagram is approved, the contractor must recreate all manual progress payment updates on this approved network diagram and associated reruns for contract changes in each of these update periods as outlined above for regular update periods. This will require detailed record keeping for each of the manual progress payment updates.

D. Following approval of the CPM schedule, the VA, the General Contractor, its approved CPM Consultant, RE office representatives, and all subcontractors needed, as determined by the SRE, shall meet to discuss the monthly updated schedule. The main emphasis shall be to address work activities to avoid slippage of project schedule and to identify any necessary actions required to maintain project schedule during the reporting period. The Government representatives and the Contractor should conclude the meeting with a clear understanding of those work and administrative actions necessary to maintain project schedule status during the reporting period. This schedule coordination meeting will occur after each monthly project schedule update meeting utilizing the resulting schedule reports from that schedule update. If the project is behind schedule, discussions should include ways to prevent further slippage as well as ways to improve the project schedule status, when appropriate.

1.10 RESPONSIBILITY FOR COMPLETION

A. If it becomes apparent from the current revised monthly progress schedule that phasing or contract completion dates will not be met, the Contractor shall execute some or all of the following remedial actions:
   1. Increase construction manpower in such quantities and crafts as necessary to eliminate the backlog of work.
   2. Increase the number of working hours per shift, shifts per working day, working days per week, the amount of construction equipment, or any combination of the foregoing to eliminate the backlog of work.
   3. Reschedule the work in conformance with the specification requirements.

B. Prior to proceeding with any of the above actions, the Contractor shall notify and obtain approval from the COTR for the proposed schedule changes. If such actions are approved, the representative schedule revisions shall be incorporated by the Contractor into the Project Schedule before the next update, at no additional cost to Government.

1.11 CHANGES TO THE SCHEDULE

A. Within 30 calendar days after VA acceptance and approval of any updated project schedule, the Contractor shall submit a revised electronic file (s) and a list of any activity/event changes including predecessors and successors for any of the following reasons:

1. Delay in completion of any activity/event or group of activities/ events, which may be involved with contract changes, strikes, unusual weather, and other delays will not relieve the Contractor from the requirements specified unless the conditions are shown on the CPM as the direct cause for delaying the project beyond the acceptable limits.
2. Delays in submittals, deliveries, or work stoppage are encountered which make rescheduling of the work necessary.
3. The schedule does not represent the actual prosecution and progress of the project.
4. When there is, or has been, a substantial revision to the activity/ event costs regardless of the cause for these revisions.

B. CPM revisions made under this paragraph which affect the previously approved computer-produced schedules for Government furnished equipment, vacating of areas by the VA Facility, contract phase(s) and sub phase(s), utilities furnished by the Government to the Contractor, or any other previously contracted item, shall be furnished in writing to the Contracting Officer for approval.

C. Contracting Officer's approval for the revised project schedule and all relevant data is contingent upon compliance with all other paragraphs of this section and any other previous agreements by the Contracting Officer or the VA representative.

D. The cost of revisions to the project schedule resulting from contract changes will be included in the proposal for changes in work as specified in FAR 52.243 – 4 (Changes, and will be based on the complexity of the revision or contract change, man hours expended in analyzing the change, and the total cost of the change.

E. The cost of revisions to the Project Schedule not resulting from contract changes is the responsibility of the Contractor.

1.12 ADJUSTMENT OF CONTRACT COMPLETION

A. The contract completion time will be adjusted only for causes specified in this contract. Request for an extension of the contract completion date by the Contractor shall be supported with a justification, CPM data and supporting evidence as the COTR may deem necessary for determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. Submission of proof based on revised activity/event logic, durations (in work days) and costs is obligatory to any approvals. The schedule must clearly display that the Contractor has used, in full, all the float time available for the work involved in this request. The Contracting Officer's determination as to the total number of days of contract extension will be based upon the current computer-produced calendar-dated schedule for the time period in question and all other relevant information.

B. Actual delays in activities/events which, according to the computer-produced calendar-dated schedule, do not affect the extended and predicted contract completion dates shown by the critical path in the network, will not be the basis for a change to the contract completion date. The Contracting Officer will within a reasonable time after receipt of such justification and supporting evidence, review the facts and advise the Contractor in writing of the Contracting Officer's decision.

C. The Contractor shall submit each request for a change in the contract completion date to the Contracting Officer in accordance with the provisions specified under FAR 52.243 – 4 (Changes). The Contractor shall include, as a part of each change order proposal, a sketch showing all CPM logic revisions, duration (in work days) changes, and cost changes, for work in question and its relationship to other activities on the approved network diagram.

D. All delays due to non-work activities/events such as RFI’s, WEATHER, STRIKES, and similar non-work activities/events shall be analyzed on a month-by-month basis.

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SECTION 01 33 23

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 – GENERAL

1.1 DESCRIPTION

A. This specification defines the general requirements and procedures for submittals. A submittal is information submitted for VA review to establish compliance with the contract documents.

B. Detailed submittal requirements are found in the technical sections of the contract specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective technical specifications at no additional cost to the government.

C. VA approval of a submittal does not relieve the Contractor of the responsibility for any error which may exist. The Contractor is responsible for fully complying with all contract requirements and the satisfactory construction of all work, including the need to check, confirm, and coordinate the work of all subcontractors for the project. Non-compliant material incorporated in the work will be removed and replaced at the Contractor's expense.

1.2 DEFINITIONS

A. Preconstruction Submittals: Submittals which are required prior to issuing contract notice to proceed or starting construction. For example, Certificates of insurance; Surety bonds; Site-specific safety plan; Construction progress schedule; Schedule of values; Submittal register; List of proposed subcontractors.

B. Shop Drawings: Drawings, diagrams, and schedules specifically prepared to illustrate some portion of the work. Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be integrated and coordinated.

C. Product Data: Catalog cuts, schedules, diagrams, performance charts, illustrations, instructions, and brochures, which describe and depict size, physical appearance, and other characteristics of materials, systems, or equipment for some portion of the work. Samples of warranty language when the contract requires extended product warranties.

D. Samples: Physical examples of materials, equipment, or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged. Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project. Field samples and mock-ups constructed to establish standards by which the ensuing work can be judged.

E. Design Data: Calculations, mix designs, analyses, or other data pertaining to a part of work.

F. Test Reports: Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work. Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

G. Certificates: Document required of Contractor, or of a manufacturer, supplier, installer, or subcontractor through Contractor. The purpose is to document procedures, acceptability of methods, or personnel qualifications for a portion of the work.

H. Manufacturer's Instructions: Pre-printed material describing installation of a product, system, or material, including special notices and MSDS concerning impedances, hazards, and safety precautions.

I. Manufacturer's Field Reports: Documentation of the testing and verification actions taken by manufacturer's representative at the job site on a portion of the work, during or after installation, to confirm compliance with manufacturer's standards or instructions. The documentation must indicate whether the material, product, or system has passed or failed the test.

J. Operation and Maintenance Data: Manufacturer data that is required to operate, maintain, troubleshoot, and repair equipment, including manufacturer's help, parts list, and product line documentation. This data shall be incorporated in an operations and maintenance manual.

K. Closeout Submittals: Documentation necessary to properly close out a construction contract. For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a phase of construction on a multi-phase contract.

1.3 SUBMITTAL REGISTER

A. The submittal register will list items of equipment and materials for which submittals are required by the specifications. This list may not be all inclusive and additional submittals may be required by the specifications. The Contractor is not relieved from supplying submittals required by the contract documents but which have been omitted from the submittal register.

B. The submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract.

C. The VA will provide the initial submittal register in electronic format. Thereafter, the Contractor shall track all submittals by maintaining a complete list, including completion of all data columns, including dates on which submittals are received and returned by VA. An example of the preferred format may be made available to the Contractor.

D. The Contractor shall update the submittal register as submittal actions occur and maintain the submittal register at the project site until final acceptance of all work by Contracting Officer.

E. The Contractor shall submit formal monthly updates to the submittal register in electronic format. Each monthly update shall document actual submission and approval dates for each submittal.

1.4 SUBMITTAL SCHEDULING

A. Submittals are to be scheduled, submitted, reviewed, and approved prior to the acquisition of the material or equipment.

B. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow time for potential resubmittal.

C. No delay costs or time extensions will be allowed for time lost in late submittals or resubmittals.

D. All submittals are required to be approved prior to the start of the specified work activity.

1.5 SUBMITTAL PREPARATION

A. Each submittal is to be complete and in sufficient detail to allow ready determination of compliance with contract requirements.

B. Collect required data for each specific material, product, unit of work, or system into a single submittal. Prominently mark choices, options, and portions applicable to the submittal. Partial submittals will not be accepted for expedition of construction effort. Submittal will be returned without review if incomplete.

C. If available product data is incomplete, provide Contractor-prepared documentation to supplement the data and satisfy submittal requirements.

D. All irrelevant or unnecessary data shall be removed from the submittal to facilitate accuracy and timely processing. Submittals that contain the excessive amount of irrelevant or unnecessary data will be returned without review.

E. Provide a transmittal form for each submittal with the following information:

1. Project title, location and number.
2. Construction contract number.
3. Date of the drawings and revisions.
4. Name, address, and telephone number of subcontractor, supplier, manufacturer, and any other subcontractor associated with submittal.
5. List paragraph number of the specification section and sheet number of the contract drawings by which the submittal is required.
6. When a resubmission, add alphabetic suffix on submittal description. For example, submittal 18 would become 18A, to indicate resubmission.
7. Product identification and location in project.

F. The Contractor is responsible for reviewing and certifying all submittals are in compliance with contract requirements before submitting for VA review. Proposed deviations from the contract requirements are to be clearly identified. All deviations submitted must include a side-by-side comparison of items being proposed against items specified. Failure to point out deviations will result in the VA requiring removal and replacement of such work at the Contractor's expense.

G. Stamp, sign, date each submittal transmittal form indicating action taken.

H. Stamp used by the Contractor on the submittal transmittal form to certify that the submittal meets contract requirements is to be similar to the example of the following page:

CONTRACTOR
(Firm Name)
_____Approved
_____Approved with corrections as noted on submittal data and/or attached sheets(s)
SIGNATURE: _____
TITLE: _____
DATE: _____

1.6 SUBMITTAL FORMAT AND TRANSMISSION

A. Provide submittals in electronic format, with the exception of material samples. Use PDF as the electronic format, unless otherwise specified or directed by the Contracting Officer.

B. Compile the electronic submittal file as a single, complete document. Name the electronic submittal file specifically according to its contents.

C. Electronic files must be of sufficient quality that all information is legible. Generate PDF files from original documents so that the text included in the PDF file is searchable and can be copied. If documents are scanned, Optical Character Resolution (OCR) routines are required.

D. E-mail electronic submittal documents smaller than 5MB in size to e-mail addresses as directed by the Contracting Officer.

E. Provide electronic documents over 5MB through an electronic FTP file sharing system. Confirm that the electronic FTP file sharing system can be accessed from the VA computer network. The Contractor is responsible for setting up, providing, and maintaining the electronic FTP file sharing system for the construction contract period of performance.

F. Provide hard copies of submittals when requested by the Contracting Officer. Up to 3 additional hard copies of any submittal may be requested at the discretion of the Contracting Officer, at no additional cost to VA.

1.7 SAMPLES

A. Submit two sets of physical samples showing range of variation, for each required item.

B. Where samples are specified for selection of color, finish, pattern, or texture, submit the full set of available choices for the material or product specified.

C. When color, texture, or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

D. Before submitting samples, Contractor is to ensure the materials or equipment will be available in quantities required for the project. No change or substitution will be permitted after a sample is been approved.

E. The VA reserves the right to disapprove any material or equipment which previously has proven unsatisfactory in service.

F. Physical samples supplied maybe requested back for use in the project after reviewed and approved.

1.8 OPERATION AND MAINTENANCE DATA

A. Submit data specified for a given item within 30 calendar days after the item is delivered to the contract site.

B. In the event the Contractor fails to deliver O&M Data within the time limits specified, the Contracting Officer may withhold from progress payments 50 percent of the price of the item with which such O&M Data are applicable.

1.9 TEST REPORTS

A. COR may require specific test after work has been installed or completed which could require contractor to repair test area at no additional cost to contract.

1.10 VA REVIEW OF SUBMITTALS AND RFIS

A. The VA will review all submittals for compliance with the technical requirements of the contract documents. Review will be only for conformance with the applicable codes, standards, and contract requirements.

B. Period of review for submittals begins when the VA COR receives submittal from the Contractor.

C. Period of review for each resubmittal is the same as for the initial.

D. VA review period is 15 working days for submittals.

E. VA review period is 10 working days for RFIs.

F. The VA will return submittals to Contractor with the following notations:
   1. "Approved": authorizes the Contractor to proceed w/ the work covered.
   2. "Approved as noted": authorizes the Contractor to proceed with the work covered provided the Contractor incorporates the noted comments and makes the noted corrections.
   3. "Disapproved, revise and resubmit": indicates noncompliance with the contract requirements or that submittal is incomplete. Resubmit with appropriate changes and corrections. No work shall proceed for this item until resubmittal is approved.
   4. "Not reviewed": indicates submittal does not have evidence of being reviewed and approved by Contractor or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals after taking appropriate action.

1.11 APPROVED SUBMITTALS

A. The VA approval of submittals is not to be construed as a complete check, and indicates only that the general method of construction, materials, detailing, and other information are satisfactory.

B. VA approval of a submittal does not relieve the Contractor of the responsibility for any error which may exist. The Contractor is responsible for fully complying with all contract requirements and the satisfactory construction of all work, including the need to check, confirm, and coordinate the work of all subcontractors for the project. Non-compliant material incorporated in the work will be removed and replaced at the Contractor’s expense.

C. After submittals have been approved, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

D. Retain a copy of all approved submittals at project site, including approved samples.

1.12 WITHHOLDING OF PAYMENT

A. Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

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SECTION 01 35 26
SAFETY REQUIREMENTS

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SECTION 01 35 26
SAFETY REQUIREMENTS

1.1 APPLICABLE PUBLICATIONS:

A. Latest publications listed below form part of this Article to extent referenced. Publications are referenced in text by basic designation.

B. American Society of Safety Engineers (ASSE):

A10.1-2011.....Pre-Project & Pre-Task Safety & Health Planning

A10.34-2012.....Protection of the Public on or Adjacent to Construction Sites

A10.38-2013.....Basic Elements of an Employer's Program to Provide a Safe and Healthful Work Environment American National Standard Construction and Demolition Operations

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

E84-2013.....Surface Burning Characteristics of Building Materials

D. The Facilities Guidelines Institute (FGI):

FGI Guidelines-2010Guidelines for Design and Construction of Healthcare Facilities

E. National Fire Protection Association (NFPA):

10-2018.....Standard for Portable Fire Extinguishers

30-2018.....Flammable and Combustible Liquids Code

51B-2019.....Standard for Fire Prevention During Welding, Cutting and Other Hot Work

70-2020.....National Electrical Code

70B-2019.....Recommended Practice for Electrical Equipment Maintenance

70E-2018 .....Standard for Electrical Safety in the Workplace

99-2018.....Health Care Facilities Code

241-2019.....Standard for Safeguarding Construction, Alteration, and Demolition Operations

F. The Joint Commission (TJC)

TJC Manual .....Comprehensive Accreditation and Certification Manual

G. U.S. Nuclear Regulatory Commission

10 CFR 20 .....Standards for Protection Against Radiation

H. U.S. Occupational Safety and Health Administration (OSHA):

29 CFR 1910 .....Safety and Health Regulations for General Industry

29 CFR 1926 .....Safety and Health Regulations for Construction Industry

1.2 DEFINITIONS:

A. Critical Lift. A lift with the hoisted load exceeding 75% of the crane's maximum capacity; lifts made out of the view of the operator (blind picks); lifts involving two or more cranes; personnel being hoisted; and special hazards such as lifts over occupied facilities, loads lifted close to power-lines, and lifts in high winds or where other adverse environmental conditions exist; and any lift which the crane operator believes is critical.

B. OSHA "Competent Person" (CP). One who is capable of identifying existing and predictable hazards in the surroundings and working conditions which are unsanitary, hazardous or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them (see 29 CFR 1926.32(f)).

C. "Qualified Person" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

D. High Visibility Accident. Any mishap which may generate publicity or high visibility.

E. Accident/Incident Criticality Categories:

1. No impact – near miss incidents that should be investigated but are not required to be reported to the VA;

2. Minor incident/impact – incidents that require first aid or result in minor equipment damage (less than $5000). These incidents must be investigated but are not required to be reported to the VA;

3. Moderate incident/impact: Any work-related injury/illness that results:
   a. Days away from work (time lost after day of injury/illness onset);
   b. Restricted work;
   c. Transfer to another job;
   d. Medical treatment beyond first aid;
   e. Loss of consciousness;

4. A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (5) above or,

5. Any incident that leads to major equipment damage (greater than $5k).

F. These incidents must be investigated and are req'd to be reported to VA;

1 Major incident/impact – Any mishap that leads to hospitalizations, fatalities, amputations, or losses of an eye as a result of work activities. Or, any incident which leads to major property damage (greater than $20K) and/or may generate publicity or high visibility. These incidents must be investigated and are required to be reported to the VA as soon as practical, but not less than 2 hours after event.

G. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.

1.3 REGULATORY REQUIREMENTS:

A. In addition to the detailed requirements included in the provisions of this contract, comply with 29 CFR 1926, comply with 29 CFR 1910 as incorporated by reference within 29 CFR 1926, comply with ASSE A10.34, and all applicable laws, criteria, ordinances, rules, and regulations. Submit matters of interpretation of standards for resolution before starting work. Where the requirements of this specification, applicable laws, ordinances, regulations, criteria, and referenced documents vary, the most stringent requirements govern except with specific approval and acceptance by the Contracting Officer Representative.

1.4 ACCIDENT PREVENTION PLAN (APP):

A. The APP (aka Construction Safety & Health Plan) shall interface with the Contractor's overall safety and health program. Include any portions of the Contractor's overall safety and health program referenced in the APP in the applicable APP element and ensure it is site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all worksite safety and health of each subcontractor(s). Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out.

B. The APP shall be prepared as follows:

1. Written in English by a qualified person who is employed by the Prime Contractor articulating the specific work and hazards pertaining to the contract (model language can be found in ASSE A10.33). Specifically articulating the safety requirements found within these VA contract safety specifications.

2. Address both Prime Contractors and the subcontractors work operations.

3. State measures to be taken to control hazards associated with materials, services, or equipment provided by suppliers.

4. Address all the elements/sub-elements and in order as follows:

a. SIGNATURE SHEET. Title, signature, and phone number of following:

1) Plan preparer (Qualified Person such as corporate safety staff person or contracted Certified Safety Professional with construction safety experience);

2) Plan approver (company/corporate officers authorized to obligate the company);

3) Plan concurrence (e.g., Chief of Operations, Corporate Chief of Safety, Corporate Industrial Hygienist, project manager or superintendent, project safety professional). Provide concurrence of other applicable corporate and project personnel (Contractor).

b. BACKGROUND INFORMATION. List the following:

1) Contractor;

2) Contract number;

3) Project name;

4) Brief project description, description of work to be performed, and location; phases of work anticipated (these require an AHA).

c. STATEMENT OF SAFETY AND HEALTH POLICY.

1) Provide a copy of current corporate/company Safety and Health Policy Statement, detailing commitment to providing a safe and healthful workplace for all employees. The Contractor's written safety program goals, objectives, and accident experience goals for this contract should be provided.

d. RESPONSIBILITIES AND LINES OF AUTHORITIES. Provide the following:

1) A statement of the employer's ultimate responsibility for the implementation of his SOH program;

2) Identification and accountability of personnel responsible for safety at both corporate and project level. Contracts specifically requiring safety or industrial hygiene personnel shall include a copy of their resumes.

3) The names of Competent and/or Qualified Person(s) and proof of competency/qualification to meet specific OSHA Competent/Qualified Person(s) requirements must be attached.;

4) Requirements that no work shall be performed unless a designated competent person is present on the job site;

5) Requirements for pre-task Activity Hazard Analysis (AHAs);

6) Lines of authority;

7) Policies and procedures regarding noncompliance with safety requirements (to include disciplinary actions for violation of safety requirements) should be identified;

e. SUBCONTRACTORS AND SUPPLIERS.

If applicable, provide procedures for coordinating SOH activities with other employers on the job site:

1) Identification of subcontractors and suppliers (if known);

2) Safety responsibilities of subcontractors and suppliers.

f. TRAINING.

1) Site-specific SOH orientation training at the time of initial hire or assignment to the project for every employee before working on the project site is required.

2) Mandatory training and certifications that are applicable to this project (e.g., explosive actuated tools, crane operator, rigger, crane signal person, fall protection, electrical lockout/NFPA 70E, machine/equipment lockout, confined space, etc…) and any requirements for periodic retraining/recertification are required.

3) Procedures for ongoing safety and health training for supervisors and employees shall be established to address changes in site hazards/conditions.

4) OSHA 10-hour training is required for all workers on site and the OSHA 30-hour training is required for Trade Competent Persons (CPs)

g. SAFETY AND HEALTH INSPECTIONS.

1) Specific assignment of responsibilities for a minimum daily job site safety and health inspection during periods of work activity: Who will conduct (e.g., "Site Safety and Health CP"), proof of inspector's training/qualifications, when inspections will be conducted, procedures for documentation, deficiency tracking system, and follow-up procedures.

2) Any external inspections/certifications that may be required (e.g., contracted CSP or CSHT)

h. ACCIDENT/INCIDENT INVESTIGATION & REPORTING.

The Contractor shall conduct mishap investigations of all Moderate and Major as well as all High Visibility Incidents. The APP shall include accident/incident investigation procedure and identify person(s) responsible to provide the following to the Contracting Officer Representative or Government Designated Authority:

1) Exposure data (man-hours worked);
2) Accident investigationreports;
3) Project site injury and illness logs.

i. PLANS (PROGRAMS, PROCEDURES) REQUIRED.

Based on a risk assessment of contracted activities and on mandatory OSHA compliance programs, the Contractor shall address all applicable occupational, patient, and public safety risks in site-specific compliance and accident prevention plans. These Plans shall include but are not be limited to procedures for addressing the risks associates with the following:

1) Emergency response;

2) Fire Prevention;

3) Medical Support;

4) Posting of emergency telephone numbers;

5) Asbestos abatement;

6) Demolition plan (to include engineering survey);

C. Submit the APP to the Contracting Officer Representative for review for compliance with contract requirements in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP.

D. Once accepted by the COR the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer in accordance with FAR Clause 52.236-13, *Accident Prevention*, until the matter has been rectified.

E. Once work begins, changes to the accepted APP shall be made with the knowledge and concurrence of the Contracting Officer Representative Should any severe hazard exposure, i.e. imminent danger, become evident, stop work in the area, secure the area, and develop a plan to remove the exposure and control the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate/remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public and the environment.

1.5 ACTIVITY HAZARD ANALYSES (AHAS):

A. AHAs are also known as Job Hazard Analyses, Job Safety Analyses, and Activity Safety Analyses. Before beginning each work activity involving a type of work presenting hazards not experienced in previous project operations or where a new work crew or sub-contractor is to

perform the work, the Contractor(s) performing that work activity shall prepare an AHA (Example electronic AHA forms can be found on the US Army Corps of Engineers web site)

B. AHAs shall define the activities being performed and identify the work sequences, the specific anticipated hazards, site conditions, equipment, materials, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level of risk.

C. Work shall not begin until the AHA for the work activity has been accepted by the Contracting Officer Representative and discussed with all engaged in the activity, including the Contractor, subcontractor(s), and Government on-site representatives at preparatory and initial control phase meetings.

1. The names of the Competent/Qualified Person(s) required for a particular activity (for example, excavations, scaffolding, fall protection, other activities as specified by OSHA and/or other State and Local agencies) shall be identified and included in the AHA. Certification of their competency/qualification shall be submitted to the Government Designated Authority (GDA) for acceptance prior to the start of that work activity.

2. The AHA shall be reviewed and modified as necessary to address changing site conditions, operations, or change of competent/qualified person(s).

   a. If more than one Competent/Qualified Person is used on the AHA activity, a list of names shall be submitted as an attachment to the AHA. Those listed must be Competent/Qualified for the type of work involved in AHA and familiar with current site safety issues.

   b. If a new Competent/Qualified Person (not on the original list) is added, the list shall be updated (an administrative action not requiring an updated AHA). The new person shall acknowledge in writing that he or she has reviewed the AHA and is familiar with current site safety issues.

3. Submit AHAs to the Contracting Officer Representative for review for compliance with contract requirements in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES for review at least 15 calendar days prior to the start of each phase. Subsequent AHAs

as shall be formatted as amendments to the APP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

4. The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

5. Develop the activity hazard analyses using the project schedule as the basis for the activities performed. All activities listed on the project schedule will require an AHA. The AHAs will be developed by the contractor, supplier, or subcontractor and provided to the prime contractor for review and approval and then submitted to the Contracting Officer Representative.

1.6 PRECONSTRUCTION CONFERENCE:

A. Contractor representatives who have a responsibility or significant role in implementation of the accident prevention program, as required by 29 CFR 1926.20(b)(1), on the project shall attend a preconstruction conference to gain a mutual understanding of its implementation. This includes the project superintendent, subcontractor superintendents, and any other assigned safety and health professionals.

B. Discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, establish a schedule for the preparation, submittal, review, and acceptance of AHAs to preclude project delays.

C. Deficiencies in the submitted APP will be brought to the attention of the Contractor within 14 days of submittal, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Do not begin work until there is an accepted APP.

1.7 "SITE SAFETY AND HEALTH OFFICER" (SSHO) AND "COMPETENT PERSON" (CP):

A. The Prime Contractor shall designate a minimum of one SSHO at each project site that will be identified as the SSHO to administer the Contractor's safety program and government-accepted Accident Prevention Plan. Each subcontractor shall designate a minimum of one CP in compliance with 29 CFR 1926.20 (b)(2) that will be identified as a CP to administer their individual safety programs.

B. Further, all specialized Competent Persons for the work crews will be supplied by the respective contractor as required by 29 CFR 1926 (i.e. Asbestos, Electrical, Cranes, & Derricks, Demolition, Fall Protection, Fire Safety/Life Safety, Ladder, and Rigging.

C. These Competent Persons can have collateral duties as subcontractor's superintendent and/or work crew lead persons as well as fill more than one specialized CP role (i.e. Asbestos, Electrical, Cranes, & Derricks, Demolition, Fall Protection, Fire Safety/Life Safety, Ladder, Rigging, Scaffolds, and Trenches/Excavations). However, the SSHO has be a separate qualified individual from the Prime Contractor's Superintendent and/or Quality Control Manager with duties only as the SSHO.

D. The SSHO or an equally-qualified Designated Representative/alternate will maintain a presence on the site during construction operations in accordance with FAR Clause 52.236-6: *Superintendence by the Contractor*. CPs will maintain presence during their construction activities in accordance with above mentioned clause. A listing of the designated SSHO and all known CPs shall be submitted prior to the start of work as part of the APP with the training documentation and/or AHA as listed in Section 1.8 below.

E. The repeated presence of uncontrolled hazards during a contractor's operations will result in the designated CP being deemed incompetent and result in the required removal of the employee in accordance with FAR Clause 52.236-5: Material and Workmanship, Paragraph (c).

1.8 TRAINING:

A. The designated Prime Contractor SSHO must meet the requirements of all applicable OSHA standards and be capable (through training, experience, and qualifications) of ensuring that the requirements of 29 CFR 1926.16 and other appropriate Federal, State and local requirements are met for the project. As a minimum the SSHO must have completed the OSHA 30-hour Construction Safety class and have five (5) years of construction industry safety experience or three (3) years if he/she possesses a Certified Safety Professional (CSP) or certified Construction Safety and Health Technician (CSHT) certification or have a safety and health degree from an accredited university or college.

B. All designated CPs shall have completed the OSHA 30-hour Construction Safety course within the past 5 years.

C. In addition to the OSHA 30 Hour Construction Safety Course, all CPs with high hazard work operations such as operations involving asbestos,

electrical, cranes, demolition, work at heights/fall protection, fire safety/life safety, ladder, rigging, scaffolds, and trenches/excavations shall have a specialized formal course in the hazard recognition & control associated with those high hazard work operations. Documented "repeat" deficiencies in the execution of safety requirements will require retaking the requisite formal course.

D. All other construction workers shall have the OSHA 10-hour Construction Safety Outreach course and any necessary safety training to be able to identify hazards within their work environment.

E. Submit training records associated with the above training requirements to the Contracting Officer Representative for review for compliance with contract requirements in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES 15 calendar days prior to the date of the preconstruction conference for acceptance.

F. Prior to any worker for the contractor or subcontractors beginning work, they shall undergo a safety briefing provided by the SSHO or his/her designated representative. As a minimum, this briefing shall include information on the site-specific hazards, construction limits, VAMC safety guidelines, means of egress, break areas, work hours, locations of restrooms, use of VAMC equipment, emergency procedures, accident reporting etc... Documentation shall be provided to the Contracting Officer Representative that individuals have undergone contractor's safety briefing.

G. Ongoing safety training will be accomplished in the form of weekly documented safety meeting.

1.9 INSPECTIONS:

A. The SSHO shall conduct frequent and regular safety inspections (daily) of the site and each of the subcontractors CPs shall conduct frequent and regular safety inspections (daily) of the their work operations as required by 29 CFR 1926.20(b)(2). Each week, the SSHO shall conduct a formal documented inspection of the entire construction areas with the subcontractors' "Trade Safety and Health CPs" present in their work areas. Coordinate with, and report findings and corrective actions weekly to Contracting Officer Representative.

B. A Certified Safety Professional (CSP) with specialized knowledge in construction safety or a certified Construction Safety and Health

Technician (CSHT) shall randomly conduct a monthly site safety inspection. The CSP or CSHT can be a corporate safety professional or independently contracted. The CSP or CSHT will provide their certificate number on the required report for verification as necessary.

1. Results of the inspection will be documented with tracking of the identified hazards to abatement.
2. The COR will be notified immediately prior to start of the inspection and invited to accompany the inspection.
3. Identified hazard and controls will be discussed to come to a mutual understanding to ensure abatement and prevent future reoccurrence.
4. A report of the inspection findings with status of abatement will be provided to the Contracting Officer within one week of the onsite inspection.

1.10 ACCIDENTS, OSHA 300 LOGS, AND MAN-HOURS:

A. The prime contractor shall establish and maintain an accident reporting, recordkeeping, and analysis system to track and analyze all injuries and illnesses, high visibility incidents, and accidental property damage (both government and contractor) that occur on site. Notify the Contracting Officer Representative as soon as practical, but no more than four hours after any accident meeting the definition of a Moderate or Major incidents, High Visibility Incidents, , or any weight handling and hoisting equipment accident. Within notification include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Contracting Officer Representative determine whether a government investigation will be conducted.

B. Conduct an accident investigation for all Minor, Moderate and Major incidents as defined in paragraph DEFINITIONS, and property damage accidents resulting in at least $20,000 in damages, to establish the root cause(s) of the accident. Complete the VA Form 2162 (or equivalent), and provide the report to the COR within 5 calendar days of the accident. The Contracting Officer Representative will provide copies of any required or special forms.

C. A summation of all man-hours worked by the contractor and associated sub-contractors for each month will be reported to the Contracting Officer Representative monthly.

D. A summation of all Minor, Moderate, and Major incidents experienced on site by the contractor and associated sub-contractors for each month will be provided to the Contracting Officer Representative monthly. The contractor and associated sub-contractors' OSHA 300 logs will be made available to the Contracting Officer Representative as requested.

1.11 PERSONAL PROTECTIVE EQUIPMENT (PPE):

A. PPE is governed in all areas by the nature of the work the employee is performing. For example, specific PPE required for performing work on electrical equipment is identified in NFPA 70E, Standard for Electrical Safety in the Workplace.

B. Mandatory PPE includes:

1. Hard Hats – unless written authorization is given by the COR in circumstances of work operations that have limited potential for falling object hazards such as during finishing work or minor remodeling. With authorization to relax the requirement of hard hats, if a worker becomes exposed to an overhead falling object hazard, then hard hats would be required in accordance with the OSHA regulations.

2. Safety glasses - unless written authorization is given by the Contracting Officer Representative or Govt Designated Authority in circumstances of no eye hazards, appropriate safety glasses meeting the ANSI Z.87.1 standard must be worn by each person on site.

3. Appropriate Safety Shoes – based on the hazards present, safety shoes meeting the requirements of ASTM F2413-11 shall be worn by each person on site unless written authorization is given by the Contracting Officer Representative or Govt Designated Authority in circumstances of no foot hazards.

4. Hearing protection: Use hearing protection at all times in designated noise hazardous areas or when performing noise hazardous tasks.

1.12 INFECTION CONTROL

A. Infection Control is critical in all medical center facilities. Interior construction activities causing disturbance of existing dust, or creating new dust, must be conducted within ventilation-controlled areas that minimize the flow of airborne particles into patient areas.

4. Class IV requirements:

   a. During Construction Work:

      1) Obtain permit from Contracting Officer Representative.

      2) Isolate HVAC system in area where work is being done to prevent contamination of duct system.

      3) Complete all critical barriers i.e. drywall, plywood, plastic, to seal area from non-work areas or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. Install construction barriers and ceiling protection carefully, outside of normal work hours.

      4) Maintain negative air pressure, 0.01 inches of water gauge, within work site utilizing HEPA equipped air filtration units and continuously monitored with a digital display, recording and alarm instrument, calibrated upon installation, maintained with periodic calibration, and monitored by the Contractor.

      5) Construct anteroom and require all personnel to go through this room and be vacuumed using a HEPA vacuum cleaner before leaving work site, or wear cloth or paper coveralls that are removed each time they leave the work site.

      6) Seal holes, pipes, conduits, and punctures.

      7) All personnel entering work site are required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area.

   b. Upon Completion:

      1) Do not remove barriers from work area until completed project is inspected by COR or Govt Designated Authority with thorough cleaning by the VA Environmental Services.

      2) Remove construction barriers and ceiling protection outside of normal work hours, carefully to minimize spreading dirt and debris associated with construction.

      3) Contain construction waste before transport in tightly covered containers.

4) Cover transport receptacles or carts. Tape covering unless solid lid.

5) Vacuum work area with HEPA filtered vacuums.

6) Wet mop area with cleaner/disinfectant.

7) Upon completion, restore HVAC system where work occurred.

8) Return permit to Contracting Officer Representative.

B. Barriers shall be erected as required based upon classification (Class III & IV required) and shall be constructed as follows:

1. Class III & IV - closed door with masking tape applied over the frame and door is acceptable for work that is contained in a single room.

2. Construction, demolition, or reconstruction not capable of containment in a single room must have the following barriers erected and made presentable on hospital occupied side:

a. Class III and IV (where dust control is the only hazard, and an agreement is reached with the Resident Engineer and Medical Center) - Airtight plastic barrier extending from floor to ceiling. Seams must be sealed with tape to prevent dust and debris from escaping.

b. Class III & IV: Drywall barrier erected with joints covered or sealed to prevent dust and debris from escaping.

c. Class III & IV: Seal all penetrations in existing barrier.

d. Class III & IV: Barriers at penetration of ceiling envelope, chases and ceiling spaces to stop movement air and debris.

e. Class IV only: Anteroom or double entrance openings allowing for removal of protective clothing, or vacuum off clothing.

f. Class III & IV: At elevators shafts or stairways within the field of construction, overlapping flap minimum of two feet wide of polyethylene enclosures for personnel access.

C. Products and Materials:

1. Sheet Plastic: With prior approval of the COR Fire retardant polystyrene, 6-mil thickness meeting local fire codes.

2. Barrier Doors: Self Closing One-hour fire-rated solid core wood in steel frame, painted.

3. Dust proof one-hour fire-rated drywall.

4. High Efficiency Particulate Air-Equipped filtration machine rated at 95% capture of 0.3 microns including pollen, mold spores, and dust particles. HEPA filters should have ASHRAE 85, or other prefilter, to extend the useful life of the HEPA. Provide both primary & secondary filtration units. Maintenance of equipment and replacement of filters will be in accordance with manufacturer's instructions.

5. Exhaust Hoses: Heavy duty, flexible steel reinforced; Ventilation Blower Hose.

6. Adhesive Walk-off Mats: Provide min size mats of 24 x 36.

7. Disinfectant: Hospital-approved disinfectant or equivalent.

8. Portable Ceiling Access Module.

D. Before construction begins, all contractor personnel involved in construction or renovation activity shall be educated and trained in infection prevention measures established by medical center.

E. A dust control program will be establish and maintained as part of the contractor's infection preventive measures in accordance with the FGI Guidelines for Design and Construction of Healthcare Facilities. Prior to start of work, prepare a plan detailing project-specific dust protection measures with associated product data, including periodic status reports, and submit to COR for review for compliance with contract requirements in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.

F. Medical center Infection Control personnel will monitor for airborne disease (e.g. aspergillosis) during construction. A baseline of conditions will be established by the medical center prior to the start of work and periodically during construction to determine impact of work activities on indoor air quality, with the safe thresholds established.

H. In general, the following preventive measures shall be adopted during construction to keep down dust and prevent mold.

1. Contractor shall verify that construction exhaust to exterior is not reintroduced to the medical center through intake vents,

or building openings. HEPA filtration is required where the exhaust dust may reenter the medical center.

2. Exhaust hoses shall be exhausted so dust is not reintroduced to the medical center.
3. Adhesive Walk-off/Carpet Walk-off Mats shall be used at all interior transitions from the construction area to occupied medical center area. These mats shall be changed as often as required to maintain clean work areas directly outside construction area at all times.
4. Vacuum and wet mop all transition areas from construction to the occupied medical center at the end of each workday. Vacuum shall utilize HEPA filtration. Maintain surrounding areas frequently. Remove debris as it is created. Transport outside the construction area in containers with tightly fitting lids.
5. The contractor shall not haul debris through patient-care areas without prior approval of the Resident Engineer and the Medical Center. When, approved, debris shall be hauled in enclosed dust proof containers or wrapped in plastic and sealed with duct tape. No sharp objects shall be allowed to cut through the plastic. Wipe down the exterior of the containers with a damp rag to remove dust. All equipment, tools, material, etc. transported through occupied areas shall be made free from dust and moisture by vacuuming and wiping down.
6. There shall be no standing water during construction. This includes water in equipment drip pans and open containers within the construction areas. All accidental spills must be cleaned up and dried within 12 hours. Remove and dispose of porous materials that remain damp for more than 72 hours.
7. At completion, remove construction barriers and ceiling protection carefully, outside of normal work hours. Vacuum and clean all surfaces free of dust after the removal.

I. Final Cleanup:

1. Upon completion of project, or as work progresses, remove all construction debris from above ceiling, vertical shafts and utility chases that have been part of the construction.

2. Perform HEPA vacuum cleaning of all surfaces in construction area. This includes walls, ceilings, cabinets, furniture (built-in or free standing), partitions, flooring, etc.
3. All new air ducts shall be cleaned prior to final inspection.

1.13 TUBERCULOSIS SCREENING

A. Contractor shall provide written certification that all contract employees assigned to the work site have had a pre-placement tuberculin screening within 90 days prior to assignment to the worksite and been found have negative TB screening reactions. Contractors shall be required to show documentation of negative TB screening reactions for any additional workers who are added after the 90-day requirement before they will be allowed to work on the work site. NOTE: This can be the Center for Disease Control (CDC) and Prevention and two-step skin testing or a Food and Drug Administration (FDA)-approved blood test.

1. Contract employees manifesting positive screening reactions to the tuberculin shall be examined according to current CDC guidelines prior to working on VHA property.
2. Subsequently, if the employee is found without evidence of active (infectious) pulmonary TB, a statement documenting examination by a physician shall be on file with employer (construction contractor), noting that the employee with a positive tuberculin screening test is without evidence of active (infectious) pulmonary TB.
3. If the employee is found with evidence of active (infectious) pulmonary TB, the employee shall require treatment with a subsequent statement to the fact on file with the employer before being allowed to return to work on VHA property.

1.14 FIRE SAFETY

A. Fire Safety Plan: Establish and maintain a site-specific fire protection program in accordance with 29 CFR 1926. Prior to start of work, prepare a plan detailing project-specific fire safety measures, including periodic status reports, and submit to COR or Government Designated Authority for review for compliance with contract requirements in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. This plan may be an element of the Accident Prevention Plan.

B. Site and Building Access: Maintain free and unobstructed access to facility emergency services and for fire, police and other emergency response forces in accordance with NFPA 241.

C. Separate temporary facilities, such as trailers, storage sheds, and dumpsters, from existing buildings and new construction by distances in accordance with NFPA 241. For small facilities with less than 20 feet exposing overall length, separate by 10 feet.

D. Temporary Construction Partitions:

1. Install and maintain temporary construction partitions to provide smoke-tight separations between the areas that are described in phasing requirements and adjoining areas. Construct partitions of gypsum board or treated plywood (flame spread rating of 25 or less in accordance with ASTM E84) on both sides of fire retardant treated wood or metal steel studs. Extend the partitions through suspended ceilings to floor slab deck or roof. Seal joints and penetrations. At door openings, install Class C, ¾ hour fire/smoke rated doors with self-closing devices.

2. Install one-hour fire-rated temporary construction partitions as shown on drawings to maintain integrity of existing exit stair enclosures, exit passageways, fire-rated enclosures of hazardous areas, horizontal exits, smoke barriers, vertical shafts and openings enclosures.

3. Close openings in smoke barriers and fire-rated construction to maintain fire ratings. Seal penetrations with UL listed through-penetration firestop.

E. Means of Egress: Do not block exiting for occupied buildings, including paths from exits to roads. Minimize disruptions and coordinate with Contracting Officer Representative.

F. Egress Routes for Construction Workers: Maintain free and unobstructed egress. Inspect daily. Report findings and corrective actions weekly to COR or Govt Designated Authority.

G. Fire Extinguishers: Provide and maintain extinguishers in construction areas and temporary storage areas in accordance with 29 CFR 1926, NFPA 241 and NFPA 10. Where an extinguisher is covered of removed for construction, use a temporary stand.

H. Flammable and Combustible Liquids: Store, dispense and use liquids in accordance with 29 CFR 1926, NFPA 241 and NFPA 30.

I. Existing Fire Protection: Do not impair automatic sprinklers, smoke and heat detection, and fire alarm systems, except for portions immediately under construction, and temporarily for connections. Provide fire watch for impairments more than 4 hours

in a 24-hour period. Request interruptions in accordance with Article, OPERATIONS AND STORAGE AREAS, and coordinate with Contracting Officer Representative or Government Designated Authority. All existing or temporary fire protection systems (fire alarms, sprinklers) located in construction areas shall be tested as coordinated with the medical center. Parameters for the testing and results of any tests performed shall be recorded by the medical center and copies provided to the Resident Engineer.

J. Smoke Detectors: Prevent accidental operation. Remove temporary covers at end of work operations each day. Coordinate with COR or Government Designated Authority.

K. Hot Work: Perform and safeguard hot work operations in accordance with NFPA 241 and NFPA 51B. Coordinate with Resident Engineer. Obtain permits from COR at least 24 hours in advance. Designate contractor's responsible project-site fire prevention program manager to permit hot work.

L. Fire Hazard Prevention and Safety Inspections: Inspect entire construction areas weekly. Coordinate with, and report findings and corrective actions weekly to Contracting Officer Representative or Government Designated Authority.

M. Smoking: Smoking is prohibited in any VA facility and on campus.

N. Dispose of waste and debris in accordance with NFPA 241. Remove from building(s) daily.

1.15 ELECTRICAL

A. All electrical work shall comply with NFPA 70 (NEC), NFPA 70B, NFPA 70E, 29 CFR Part 1910 Subpart J – General Environmental Controls, 29 CFR Part 1910 Subpart S – Electrical, and 29 CFR 1926 Subpart K in addition to other references required by contract.

B. All qualified persons performing electrical work under this contract shall be licensed journeyman or master electricians. All apprentice electricians performing under this contract shall be deemed unqualified persons unless they are working under the immediate supervision of a licensed or master electrician.

C. All electrical work will be accomplished de-energized and in the Electrically Safe Work Condition (refer to NFPA 70E for Work Involving Electrical Hazards, including Exemptions to Work Permit). Any Contractor, subcontractor or temporary worker who fails to fully comply with this requirement is subject to immediate

termination in accordance with FAR clause 52.236-5(c). Only in rare circumstance where achieving an electrically safe work condition prior to beginning work would increase or cause additional hazards, or is infeasible due to equipment design or operational limitations is energized work permitted. The Chief Engineer with approval of the Medical Center Director will make the determination if the circumstances would meet the exception outlined above. An AHA and permit specific to energized work activities will be developed, reviewed, and accepted by the VA prior to the start of that activity.

1. Development of a Hazardous Electrical Energy Control Procedure is required prior to de-energization. A single Simple Lockout/ Tagout Procedure for multiple work operations can only be used for work involving qualified person(s) de-energizing one set of conductors or circuit part source.
2. Personal Protective Equipment (PPE) and electrical testing instruments will be readily available for inspection by the COR or Government Designated Authority.
3. Verification of the absence of voltage after de-energization and lockout/tagout is considered “energized electrical work” (live work) under NFPA 70E, and shall only be performed by qualified persons wearing appropriate shock protective (voltage rated) gloves and arc rate personal protective clothing and equipment, using Underwriters Laboratories (UL) tested and appropriately rated contact electrical testing instruments or equipment appropriate for the environment they will be used.
4. Personal Protective Equipment (PPE) and electrical testing instruments will be readily available for inspection by COR.

D. Before beginning any electrical work, an Activity Hazard Analysis (AHA) will be conducted to include Shock Hazard and Arc Flash Hazard analyses (NFPA Tables can be used only as a last alterative and it is strongly suggested a full Arc Flash Hazard Analyses be conducted). Work shall not begin until the AHA for the work activity and permit for energized work has been reviewed and accepted by the Contracting Officer Representative or Government Designated Authority and discussed

with all engaged in the activity, including the Contractor, subcontractor(s), and Government on-site representatives at preparatory and initial control phase meetings.

E. Ground-fault circuit interrupters. GFCI protection shall be provided where an employee is operating or using cord- and plug-connected tools related to construction activity supplied by 125-volt, 15-, 20-, or 30- ampere circuits. Where employees operate or use equipment supplied by greater than 125-volt, 15-, 20-, or 30- ampere circuits, GFCI protection or an assured equipment grounding conductor program shall be implemented in accordance with NFPA 70E - 2015, Chapter 1, Article 110.4(C)(2).

1.16 FALL PROTECTION – INTENTIONALLY OMITTED

1.17 SCAFFOLDS AND OTHER WORK PLATFORMS – INTENTIONALLY OMITTED

1.18 EXCAVATION AND TRENCHES – INTENTIONALLY OMITTED

1.19 CRANES – INTENTIONALLY OMITTED

1.20 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

A. All installation, maintenance, and servicing of equipment or machinery shall comply with 29 CFR 1910.147 except for specifically referenced operations in 29 CFR 1926 such as concrete & masonry equipment [1926.702(j)], heavy machinery & equipment [1926.600(a)(3)(i)], and process safety management of highly hazardous chemicals (1926.64). Control of hazardous electrical energy during the installation, maintenance, or servicing of electrical equipment shall comply with Section 1.15 to include NFPA 70E and other VA specific requirements discussed in the section.

1.21 CONFINED SPACE ENTRY – INTENTIONALLY OMITTED

1.22 WELDING AND CUTTING – INTENTIONALLY OMITTED

1.23 LADDERS

A. All Ladder use shall comply with 29 CFR 1926 Subpart X.

B. All portable ladders shall be of sufficient length and shall be placed so that workers will not stretch or assume a hazardous position.

C. Manufacturer safety labels shall be in place on ladders.

D. Step Ladders shall not be used in the closed position.

E. Top steps or cap of step ladders shall not be used as a step.

F. Portable ladders, used as temporary access, shall extend at least 3 ft (0.9 m) above the upper landing surface.

1. When a 3 ft (0.9-m) extension is not possible, a grasping device (such as a grab rail) shall be provided to assist workers in mounting and dismounting the ladder.

2. In no case shall the length of the ladder be such that deflection under a load would, by itself, cause the ladder to slip from support.

G. Ladders shall be inspected for visible defects on a daily basis and after any occurrence that could affect their safe use. Broken or damaged ladders shall be immediately tagged "DO NOT USE," or with similar wording, and withdrawn from service until restored to a condition meeting their original design.

1.24 FLOOR & WALL OPENINGS – INTENTIONALLY OMITTED

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SECTION 01 42 19
REFERENCE STANDARDS

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies the availability and source of references and standards specified in the project manual under paragraphs APPLICABLE PUBLICATIONS and/or shown on the drawings.

1.2 AVAILABILITY OF SPECIFICATIONS LISTED IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS FPMR PART 101-29 (FAR 52.211-1) (AUG 1998)

A. The GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29 and copies of specifications, standards, and commercial item descriptions cited in solicitation may be obtained for a fee by submitting a request to – GSA Federal Supply Service, Specifications Section, Suite 8100, 470 East L'Enfant Plaza, SW, Washington, DC 20407, Phone (202) 619-8925, Facsimile (202) 619-8978.

B. If the General Services Administration, Department of Agriculture, or Department of Veterans Affairs issued this solicitation, a single copy of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained free of charge by submitting a request to the addressee in paragraph (a) of this provision. Additional copies will be issued for a fee.

1.3 AVAILABILITY FOR EXAMINATION OF SPECIFICATIONS NOT LISTED IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS (FAR 52.211-4) (JUN 1988)

The specifications and standards cited in this solicitation can be examined at the following location:

DEPARMENT OF VETERANS AFFAIRS
Office of Construction & Facilities Management
Facilities Quality Service (00CFM1A)
425 Eye Street N.W, (sixth floor)
Washington, DC 20001
Telephone Numbers: (202) 632-5249 or (202) 632-5178
Between 9:00 AM - 3:00 PM

1.4 AVAILABILITY OF SPECIFICATIONS NOT LISTED IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS (FAR 52.211-3) (JUN 1988)

The specifications cited in this solicitation may be obtained from the associations or organizations listed below.

AAMA	American Architectural Manufacturer's Association http://www.aamanet.org
AGC	Associated General Contractors of America http://www.agc.org
AGMA	American Gear Manufacturers Association, Inc. http://www.agma.org
AIA	American Institute of Architects http://www.aia.org
AISC	American Institute of Steel Construction http://www.aisc.org
ANSI	American National Standards Institute, Inc. http://www.ansi.org
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers http://www.ashrae.org
ASME	American Society of Mechanical Engineers http://www.asme.org
ASTM	American Society for Testing and Materials International http://www.astm.org
CISCA	Ceilings and Interior Systems Construction Association https://www.cisca.org
EPA	United States Environmental Protection Agency https://www.epa.gov
GSA	General Services Administration https://www.gsa.gov
ICC	International Code Council https://shop.iccsafe.org

ICAC	Institute of Clean Air Companies http://www.icac.com
NFPA	National Fire Protection Association https://www.nfpa.org
NIH	National Institute of Health https://www.nih.gov
NIST	National Institute of Standards and Technology https://www.nist.gov
OSHA	Occupational Safety and Health Administration Department of Labor https://www.osha.gov
RFCI	Resilient Floor Covering Institute https://www.rfci.com
TCNA	Tile Council of North America https://www.tcnatile.com
UBC	The Uniform Building Code (See ICC)
UL	Underwriters' Laboratories Incorporated https://www.ul.com

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SECTION 01 45 00
QUALITY CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies requirements for Contractor Quality Control (CQC) for Design-Bid-Build (DBB) or Design-Build (DB) construction projects. This section can be used for both project types.

1.2 APPLICABLE PUBLICATIONS

A. The publication listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

B. ASTM International (ASTM)

1. D3740 - (2012a) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
2. E329 - (2014a) Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.

1.3 SUBMITTALS

Government approval is required for all submittals. CQC inspection reports shall be submitted under this Specification section and follow the Applicable Specification section naming convention.

1. Preconstruction Submittals
   a. Interim CQC Plan
   b. CQC Plan
   c. Additional Requirements for Design Quality Control (DQC) Plan
2. Design Data
   a. Discipline-Specific Checklists
   b. Design Quality Control
3. Test Reports
   a. Verification Statement

PART 2 PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

Establish and maintain an effective quality control (QC) system that complies with the FAR Clause 52.246.12 titled "Inspection of Construction". QC consists of plans, procedures, and organization necessary to produce an end product which complies with the Contract requirements. The QC system covers all design and construction operations, both onsite and offsite, and be keyed to the proposed design and construction sequence. The project superintendent will be held responsible for the quality of work and is subject to removal by the Contracting Office or Authorized designee for non-compliance with the quality requirements specified in the Contract. In this context the highest-level manager responsible for the overall activities at the site, including quality and production is the project superintendent. The project superintendent maintains a physical presence at the site at all times and is responsible for all construction and related activities at the site, except as otherwise acceptable to the Contracting Officer.

3.2 CQC PLAN:

A. Submit the CQC Plan no later than 30 days after receipt of Notice to Proceed (NTP) proposed to implement the requirements of the FAR Clause 52.246.12 titled "Inspection of Construction". The Government will consider an Interim CQC Plan to match timeline established immediately above for 60 days of operation after NTP. Design and/or construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an Interim plan applicable to the particular feature of work to be started. Work outside of the accepted Interim CQC Plan will not be permitted to begin until acceptance of a CQC Plan or another Interim CQC Plan containing the additional work scope is accepted.

B. Content of the CQC Plan: Include, as a minimum, the following to cover all design and construction operations, both on and offsite, including work by subcontractors, designers of record consultants, architects/ engineers (A/E) firms, fabricators, suppliers, and purchasing agents:

1. A description of the QC organization, including a chart showing lines of authority and acknowledgement that the CQC staff will implement the three-phase control system for all aspects of the work specified. Include CQC System Manager that reports to the project superintendent.

2. The name, qualifications (in resume format) duties, responsibilities, and authorities of each person assigned a CQC function.
3. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the Contract. Letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities will be issued by the CQC System Manager. Furnish copies of these letters to the Contracting Officer or Authorized designee.
4. Procedures for scheduling, reviewing, certifying, and managing submittals including those of subcontractors, designers of record, consultants, A/E's offsite fabricators, suppliers and purchasing agents. These procedures must be in accordance with Section 01 33 23 Shop Drawings, Product Data, and Samples.
5. Control, verification, and acceptance of testing procedures for each specific test, to include test name, specification paragraph requiring test, feature of work to be tested, test frequency, and responsible party for each test. (Laboratory facilities approved by the Contracting Officer or Authorized designee are required to be used)
6. Procedures for tracking Preparatory, Initial, and Follow-Up control phases and control, verification, and acceptance tests including documentation.
7. Procedures for tracking design and construction deficiencies from identification through acceptable corrective action. Establish verification procedures to identified deficiencies were corrected.
8. Reporting procedures, including proposed reporting formats.
9. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks has separate control requirements, and is identified by different trades or disciplines, or it is work by the same trade in a different environment. Although each section of specifications can generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list will be agreed upon during the Coordination meeting.

10. Coordinate schedule work with Special Inspections required by Section 01 45 35 Special Inspections, the Statement of Special Inspections and Schedule of Special Inspections. Where the applicable Code issue by the International Code Council (ICC) calls for inspections by the Building Official, the Contractor must include the inspections in the CQC Plan and must perform the inspections required by the applicable ICC. The Contractor must perform these inspections using independent qualified inspectors. Include the Special Inspection Plan requirements in the CQC Plan.

C. Acceptance of Plan: Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction. The Government reserves the right to require the Contractor to make changes in the CQC Plan and operations including removal of personnel as necessary, to obtain the quality specified.

D. Notification of Changes: After acceptance of the CQC Plan, notify the Contracting Officer or Authorized designee in writing of any proposed change. Proposed changes are subject to acceptance by the Government prior to implementation by the Contractor.

1.3 COORDINATION MEETING:

After the Preconstruction Conference Post-award Conference before start of design or construction, and prior to acceptance by the Government of the CQC Plan, meet with the Contracting Officer or Authorized designee to discuss the Contractor's quality control system. Submit the CQC Plan a minimum of 5 business days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details must be developed, including the forms for recording the CC operations, design activities (if applicable), control activities, testing, administration of the system for both on and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting will be prepared by the Government, signed by both the Contractor and Contracting Officer or Authorized designee and will become a part of the contract file. There can be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings or address deficiencies in the CQC system or procedures which can require corrective action by Contractor.

1.4 QUALITY CONTROL ORGANIZATION:

A. Personnel Requirements: The requirements for the CQC organization are a Safety and Health Manager, CQC System Manager, a Design Quality Manager (if applicable), and sufficient number of additional qualified personnel to ensure safety and Contract compliance. The Safety and Health Manager shall satisfy the requirements of Specification 01 35 26 Safety Requirements and reports directly to a senior project (or corporate) official independent from the CQC System Manager. The Safety and Health Manager will also serve as a member of the CQC Staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff maintains a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure Contract compliance. The CQC staff will be subject to acceptance by the Contracting Officer or Authorized designee. Provide adequate office space, filing systems, and other resources as necessary to maintain an effective and fully functional CQC organization. Promptly complete and furnish all letters, material submittals, shop drawings submittals, schedules and all other project documentation to the CQC organization. The CQC organization is responsible to maintain these documents on site at all times, unless otherwise acceptable to the Govt.

B. CQC System Manager: Identify as CQC System Manager an individual within the onsite work organization that is responsible for overall management of CQC and has the authority to act in all CQC matters for the Contractor. The CQC system Manager is required to be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 5 years of construction experience on construction similar to the scope of this Contract. The CQC System manager shall be on site daily during construction, and shall be employed by the General Contractor. Identify in the plan an alternate to serve in the event of the CDQC System Manager's absence. The requirements for the alternate are the same as the CQC System Manager.

C. CQC Personnel: In addition to CQC personnel specified elsewhere in the contract, provide as part of the CQC organization specialized personnel to assist in the CQC System Manager for the following areas, as applicable: environmental, materials technician submittals clerk,

Commissioning Agent/LEED specialist, and architectural. The individuals or specified technical companies are directly employed by the General Contractor and cannot be employed by a supplier or subcontractor on this project. These individuals can perform other duties but need to be allowed sufficient time to perform the specialized personnel's assigned quality controls duties as described in the CQC Plan. A single person can cover more than one area provided that the person is qualified to perform QC activities, and the workload allows.

EXPERIENCE MATRIX

Area	Qualifications
Environmental	Grad Environmental Engineer w/ 3 yrs experience
Submittals	Submittal Clerk with 1 year experience
Design Quality Control Manager	Registered Architect or Professional Engineer

D. Additional Requirements: In addition to the above experience and education requirements, the CQC System Manager and Alternate CQC System Manager are required to have completed the Construction Quality Management (CQM) for Construction course. If the CQC System Manager does not have a current specification, obtain the CQM for Contractors course identification within 90 days of award. This course is periodically offered by the Naval Facilities Engineering Command and the Army Corps of Engineers. Contact the Contracting Officer or Authorized designee for information on the next scheduled class.

E. Organizational Changes: Maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer or Authorized designee for acceptance.

1.5 SUBMITTALS AND DELIVERABLES:

Submittals have to comply with the requirements in Section 01 33 23 Shop Drawings, Product Data, and Samples. The CQC organization is responsible for certifying that all submittals and deliverables are in compliance with the contract requirements. When Section 01 91 00 General Commissioning Requirements is included in the contract, the submittals required by the section have to be coordinated with the Section 01 33 23 Shop Drawings, Product Data, and Samples to ensure adequate time is allowed for each type of submittal required.

1.6 CONTROL:

A. CQC is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control are required to be conducted by the CQC System Manager for each definable feature of the construction work as follows:

1. Preparatory Phase: This phase is performed prior to beginning work on each definable feature of work after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase includes:
   a. A review of each paragraph of applicable specifications, references codes, and standards. Make available during the preparatory inspection a copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field. Maintain and make available in the field for use by Govt personnel until final acceptance of work.
   b. Review of the Contract drawings.
   c. Check to assure that all materials and equipment have been tested, submitted, and approved.
   d. Review of provisions that have been made to provide required control inspection and testing.
   e. Review Special Inspections required by Section 01 45 35 Special Inspections, that Statement of Special Inspections and the Schedule of Specials Inspections.
   f. Examination of the work area to assure that all req'd preliminary work has been completed and is in compliance with the Contract.
   g. Examination of required materials, equipment, and sample work to assure that they are on hand conform to approved shop drawings or submitted data, and are properly stored.
   h. Review of the appropriate Activity Hazard Analysis (AHA) to assure safety requirements are met.
   i. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards, contract defined or industry standard if not contract defined, for that feature of work.
   j. Check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
   k. Discussion of the initial control phase.

l. The Government needs to be notified at least 48 hours or 2 business days in advance of beginning the Preparatory control phase. Include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. Document the results of the Preparatory phase actions by separate minutes prepared by the CQC System Manager and attach to the daily CQC report. Instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

B. Initial Phase: This phase is accomplished at the beginning of a definable feature of work. Accomplish the following:

1. Check work to ensure that it is in full compliance with contract requirements. Review minutes of the Preparatory meeting.
2. Verify adequacy of controls to ensure full contract compliance. Verify the required control inspection and testing is in compliance with the contract.
3. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
4. Resolve all differences.
5. Check safety to include compliance with an upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
6. The Government needs to be notified at least 48 hours or 2 business days in advance of beginning the initial phase for definable features of work. Prepare separate minutes of this phase by the CQC System Manager and attach to the daily CQC report. Indicate the exact location of initial phase for definable feature of work for future reference and comparison with Follow-Up phases.
7. The initial phase for each definable feature of work is repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.
8. Coordinate scheduled work with Special Inspections required by Section 01 45 35 Special Inspections, the Statement of Special Inspections, and the Schedule of Special Inspections.

C. Follow-Up Phase: Perform daily checks to assure control activities, including control testing, are providing continued compliance with contract requirements until the completion of the particular feature of work. Record the checks in the CQC documentation. Conduct final Follow-Up checks and correct all deficiencies prior to the start of additional features of work which may be affected by the deficient work. Do not build upon nor conceal non-conforming work. Coordinate scheduled work with Special Inspections required by Section 01 45 35 Special Inspections, the Statement of Special Inspections, and the Schedule of Special Inspections.

D. Additional Preparatory and Initial Phases on the same definable features of work if: the quality ongoing work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

1.7 TESTS

A. Testing Procedure: Perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and acceptance test when specified. Procure the services of a Department of Veteran Affairs approved testing laboratory or establish an approved testing laboratory at the project site. Perform the following activities and record and provide the following data:

1. Verify that testing procedures comply with contract requirements.
2. Verify that facilities and testing equipment are available and comply with testing standards.
3. Check test instrument calibration data against certified standards.
4. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
5. Record results of all tests taken, both passing and failing on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the unique sequential control number identifying the test. If approved by the Contracting Officer or Authorized designee, actual test reports are submitted later

with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to the Contracting Officer or Authorized designee. Failure to submit timely test reports as stated results in nonpayment for related work performed and disapproval of the test facility for this Contract.

1.8 COMPLETION INSPECTION

A. Punch-Out Inspection: Conduct an inspection of the work by the CQC system Manager near the end of the work, or any increment of the work established by the specifications. Prepare and include in the CQC documentation a punch list of items which do not conform to the approved drawings and specifications. Include within the list of deficiencies the estimated date by which the deficiencies will be corrected. Make a second inspection the CQC System Manager or staff to ascertain that all deficiencies have been corrected. Once this is accomplished, notify the Government that the facility is ready for the Government Pre-Final Inspection.

B. Pre-Final Inspection: The Government will perform the Pre-Final Inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. Ensure that all items on this list have been corrected before notifying the Government, so that a Final Acceptance Inspection with the customer can be scheduled. Correct any items noted on the Pre-Final Inspection in a timely manner. These inspections and any deficiency corrections required by this paragraph need to be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate construction completion dates.

C. Final Acceptance Inspection: The Contractor’s QC Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer’s Authorized designee is required to be in attendance at the Final Acceptance Inspection. Additional Government personnel can also be in attendance. The Final Acceptance Inspection will be formally scheduled by the Contracting Officer’s or Authorized designee based upon results of the Pre-Final Inspection. Notify the Contracting Officer through the Resident Engineer office at least 14 days prior to the Final Acceptance Inspection and include Contractor’s

assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date schedule for the Final Acceptance Inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance w/ FAR Clause 52.246-12 titled "Inspection of Construction".

1.9 DOCUMENTATION

A. Quality Control Activities: Maintain current records providing factual evidence that required QC activities and tests have been performed. Include in these records the work of subcontractors and suppliers on an acceptable form that includes, as a minimum, the following information:

1. The name and area of responsibility of the Contractor/Subcontractor
2. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
3. Test and control activities performed with results and references to specification/drawing requirements. Identify the Control Phase (Preparatory, Initial, and/or Follow-Up). List deficiencies noted, along with corrective action.
4. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specification/drawing requirements.
5. Submittals and deliverables reviewed, with Contract reference, by whom, and action taken.
6. Offsite surveillance activities, including actions taken.
7. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
8. Instructions given/received and conflicts in plans / specifications.
9. Provide documentation of design quality control activities. For independent design reviews, provide, as a minimum, identification of the Independent Technical Reviewer (ITR) team, the ITR review comments, responses, and the record of resolution of the comments.

B. Verification Statement: Indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. Cover both conforming and

deficient features and include a statement that equipment and materials incorporated in the work and workmanship comply with the Contract. Furnish the original and one copy of these records in report form to the Government daily with 1 week after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, prepare and submit on report for every 7 days of no work and on the last day of a no work period. All calendar days need to be accounted for throughout the life of the contract. The first report following a day of no work will be for that day only. Reports need to be signed and dated by the CQC System Manager. Include copies of test reports and copies of reports prepared by all subordinate QC personnel within the CQC System Manager Report.

1.10 SAMPLE FORMS

Templates of various quality control reports can be found on the Whole Building Design Guide website at https://www.wbdg.org/FFC/NAVGRAPH/01%2045%2000.00%2020_quality_control_reports.pdf

1.11 NOTIFICATION OF NONCOMPLIANCE: The Contracting Officer or Authorized designee will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor should take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site will be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer can issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders will be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

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SECTION 01 58 16
TEMPORARY INTERIOR SIGNAGE

PART 1 GENERAL

DESCRIPTION

A. This section specifies temporary interior signs, outlining closures and/or redirecting pedestrian traffic, in non-emergencies situations.

PART 2 PRODUCTS

2.1 TEMPORARY SIGNS

A. Fabricate from 50 Kg (110 pound) mat finish white paper.
(Or from a material approved in writing by COR)

B. Cut to 100 mm (4-inch) wide by 300 mm (12 inch) long size tag.

C. Punch 3 mm (1/8-inch) diameter hole, or at an appropriate size as required to support the ties or mounting approach utilized.

D. Reinforce holes with gummed cloth washer or other suitable material capable of preventing tie pulling through paper edge.

E. Ties: Steel wire 0.3 mm (0.0120-inch) thick, or plastic zip ties. Trim as required to provide a clean visual support. Or, utilize tape, installed in a manner that accounts for aesthetic visual properties.

PART 3 EXECUTION

3.1 INSTALLATION

A. If applicable, install temporary signs attached to room door frame or room door knob, lever, or pull for doors on corridor openings.

B. If applicable, install temporary signs to temporary plastic construction partitions, suspend from ceilings or existing walls, or utilize temporary posts or bollards to (re)direct pedestrian traffic. The intend of the approach utilized may vary by project phase, duration of closure, building location, and overall impact to the facility.

C. Mark on signs with felt tip marker having approximately 3 mm (1/8-inch) wide stroke for clearly legible numbers or letters.

D. Display signs between 54 and 66 inches above finished floor.

E. Coordinate sign language and locations for each closure are with COR.

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SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies the requirements for the management of non-hazardous building construction and demolition waste.

B. Waste disposal in landfills shall be minimized to the greatest extent possible. Of the inevitable waste generated, as much of the material as economically feasible shall be salvaged, recycled, or reused.

C. Contractor shall use all reasonable means to divert construction and demolition waste from landfills and incinerators, and facilitate their salvage and recycle not limited to the following:

1. Waste Management Plan development and implementation.
2. Techniques to minimize waste generation.
3. Sorting and separating of waste materials.
4. Salvage of existing materials and items for reuse or resale.
5. Recycling of materials that cannot be reused or sold.

D. At a minimum the following categories shall be diverted from landfills:

1. Clean dimensional wood and palette wood.
2. Green waste (biodegradable landscaping materials).
3. Cardboard, paper and packaging.
4. Plastics (eg, ABS, PVC).
5. Carpet and/or pad.

1.2 RELATED WORK

A. Section 02 41 00, DEMOLITION.

B. Section 01 00 00, GENERAL REQUIREMENTS.

1.3 QUALITY ASSURANCE

A. Contractor shall practice efficient waste management when sizing, cutting and installing building products. Processes shall be employed to ensure the generation of as little waste as possible. Construction / Demolition waste includes products of the following:

1. Excess or unusable construction materials.
2. Packaging used for construction products.
3. Poor planning and/or layout.
4. Construction error.
5. Over ordering.

6. Weather damage.
7. Contamination.
8. Mishandling.
9. Breakage.

B. Establish and maintain the management of non-hazardous building construction and demolition waste set forth herein. Conduct a site assessment to estimate the types of materials that will be generated by demolition and construction.

C. Contractor shall develop and implement procedures to recycle construction and demolition waste.

D. Contractor shall be responsible for implementation of any special programs involving rebates or similar incentives related to recycling. Any revenues or savings obtained from salvage or recycling shall accrue to the contractor.

E. Contractor shall provide all demolition, removal and legal disposal of materials. Contractor shall ensure that facilities used for recycling, reuse and disposal shall be permitted for the intended use to the extent required by local, state, federal regulations.

F. Contractor shall assign a specific area to facilitate separation of materials for reuse, salvage, recycling, and return. Such areas are to be kept neat and clean and clearly marked in order to avoid contamination or mixing of materials.

G. Contractor shall provide on-site instructions and supervision of separation, handling, salvaging, recycling, reuse and return methods to be used by all parties during waste generating stages.

H. Record on daily reports any problems in complying with laws, regulations and ordinances with corrective action taken.

1.4 TERMINOLOGY

A. Class III Landfill: A landfill that accepts non-hazardous resources such as household, commercial and industrial waste resulting from construction, remodeling, repair and demolition operations.

B. Clean: Untreated and unpainted; uncontaminated with adhesives, oils, solvents, mastics and like products.

C. Construction and Demolition Waste: Includes all non-hazardous resources resulting from construction, remodeling, alterations, repair and demolition operations.

D. Disposal: Acceptance of solid wastes at legally operating facility for the purpose of land filling (includes Class III landfills & inert fills).

E. Inert Solids/Inert Waste: Non-liquid solid resources including, but not limited to, soil and concrete that does not contain hazardous waste or soluble pollutants at concentrations in excess of water-quality objectives established by a regional water board, and does not contain significant quantities of decomposable solid resources.

F. Mixed Debris: Loads that include commingled recyclable and non-recyclable materials generated at the construction site.

G. Mixed Debris Recycling Facility: A solid resource processing facility that accepts loads of mixed construction and demolition debris for the purpose of recovering re-usable and recyclable materials and disposing non-recyclable materials.

H. Permitted Waste Hauler: A company that holds a valid permit to collect and transport solid wastes from individuals or businesses for the purpose of recycling or disposal.

I. Recycling: The process of sorting, cleansing, treating, and reconstituting materials for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating or thermally destroying solid waste.

   1. On-site Recycling – Materials that are sorted and processed on site for use in an altered state in the work, i.e. concrete crushed for use as a sub-base in paving.
   2. Off-site Recycling – Materials hauled to a location and used in an altered form in the manufacture of new products.

J. Recycling Facility: An operation that can legally accept materials for the purpose of processing the materials into an altered form for the manufacture of new products. Depending on the types of materials accepted and operating procedures, a recycling facility may or may not be required to have a solid waste facilities permit or be regulated by the local enforcement agency.

K. Reuse: Materials that are recovered for use in the same form, on-site or off-site.

L. Return: Give back reusable items / unused products to vendors for credit.

M. Salvage: To remove waste materials from the site for resale or re-use by a third party.

N. Source-Separated Materials: Materials that are sorted by type at the site for the purpose of reuse and recycling.

O. Solid Waste: Materials that have been designated as non-recyclable and are discarded for the purposes of disposal.

P. Transfer Station: A facility that can legally accept solid waste for the purpose of temporarily storing the materials for re-loading onto other trucks and transporting them to a landfill for disposal, or recovering some materials for re-use or recycling.

1.5 SUBMITTALS

A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, and SAMPLES, furnish the following:

B. Prepare and submit to the COR a written demolition debris management plan. The plan shall include, but not be limited to, the following:

1. Procedures to be used for debris management.
2. Techniques to be used to minimize waste generation.
3. Analysis of the estimated job site waste to be generated:
   a. List of material and quantity to be salvaged, reused, recycled.
   b. List of material and quantity proposed to be taken to landfill.
4. Detailed description of Means/Methods for material handling.
   a. On site: Material separation, storage, and/or protection where applicable.
   b. Off site: Transportation means and destination. Include list of materials and the destination.
      1) Description of materials to be site-separated and self-hauled to designated facilities.
      2) Description of mixed materials to be collected by designated waste haulers and removed from the site.
         a) The names and locations of mixed debris reuse and recycling facilities or sites.

b) The names and locations of trash disposal landfill facilities or sites.

c) Documentation that the facilities or sites are approved to receive the materials.

C. Designated Manager responsible for instructing personnel, supervising, documenting and administer over meetings relevant to the Waste Management Plan.

D. Monthly summary of construction and demolition debris diversion and disposal, quantifying all materials generated at the work site and disposed of or diverted from disposal through recycling.

E. Target waste diversion rate by material and an overall diversion rate.

F. Final report documenting the results of implementation of the preconstruction waste management plan.

1.6 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced by the basic designation only. In the event that criteria requirements conflict, the most stringent requirements shall be met.

1.7 RECORDS

A. Maintain records to document the quantity of waste generated; the quantity of waste diverted through sale, reuse, or recycling; and the quantity of waste disposed by landfill or incineration.

PART 2 - PRODUCTS

2.1 MATERIALS

A. List of each material and quantity to be salvaged, recycled, reused.

B. List of each material and quantity proposed to be taken to a landfill.

C. Material tracking data: Receiving parties, transportation costs, dates removed, weight tickets, tipping fees, manifests, invoices, net total costs or savings.

PART 3 - EXECUTION

3.1 COLLECTION

A. Provide all necessary containers, bins and storage areas to facilitate effective waste management.

B. Clearly identify containers, bins and storage areas so that recyclable materials are separated from trash and can be transported to respective recycling facility for processing.

C. Hazardous wastes shall be separated, stored, disposed of according to local, state, federal regulations.

3.2 DISPOSAL

A. Contractor shall be responsible for transporting and disposing of materials that cannot be delivered to a source-separated or mixed materials recycling facility to a transfer station or disposal facility that can accept the materials in accordance with state and federal regulations.

B. Construction or demolition materials with no practical reuse or that cannot be salvaged or recycled shall be disposed of at a landfill or incinerator.

3.3 REPORT

A. With each application for progress payment, submit a summary of construction and demolition debris diversion and disposal including beginning and ending dates of period covered.

B. Quantify all materials diverted from landfill disposal through salvage or recycling during the period with the receiving parties, dates removed, transportation costs, weight tickets, manifests, invoices. Include the net total costs or savings for each salvaged or recycled material.

C. Quantify all materials disposed of during the period with the receiving parties, dates removed, transportation costs, weight tickets, tipping fees, manifests, invoices. Include the net total costs for each disposal.

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SECTION 02 21 13
WORK AREA SURVEYS

1.1 SUMMARY

A. Section Includes:

1. Collecting and documenting the existing building conditions, via vision inspections and video surveys, to outline the conditions inside the construction area of work, and the conditions where material and labor is routed to and from work areas. Existing condition surveys shall occur prior to start of work, for each area.

1.2 SUBMITTALS

A. Submittal Procedure: Section 01 33 23, Shop Drawings, Products, & Samples.

B. Survey Drawings / Video / Pictures:

1. Video and Photos: Record existing building conditions, outlining the work areas and building condition subject to damage from construction.
2. Drawings: If required to support the video or pictures, provide two sets of full-sized prints, linking survey locations to images and/or videos that outline existing condition prior to the start of work.
3. Electronic Files: Any submitted drawing file shall utilize computer aided design (CAD), submitted as a PDF.

PART 2 - PRODUCTS (N/A)

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate with the Contracting Officer's Representative for site and building access, preforming survey reviews for each phased work area, five to ten days prior to the start of work in a given area.

3.2 SURVEY DRAWING REQUIREMENTS

A. Consult Contracting Officer's Representative (COR) to confirm required survey scale and drawing size.

1. Drawing Size: Maximum 760 by 1070 mm (30 by 42 inches).
2. Enlarged Detail Areas: Scale as required to present dimensional data and survey information clearly. Maintain orientation aligned with smaller scale view.
3. Plan Orientation: North at top of drawing sheet.

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SECTION 02 41 00
DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION:

A. This section specifies demolition and removal of material, portions of buildings, utilities, and/or debris, to and from trash dumps.

1.2 RELATED WORK:

B. Safety Requirements: Section 01 35 26 Safety Requirements Article, ACCIDENT PREVENTION PLAN (APP).

C. Disconnecting utility services prior to demolition: Section 01 00 00, GENERAL REQUIREMENTS.

D. Reserved items that are to remain the property of the Government: Section 01 00 00, GENERAL REQUIREMENTS.

E. Asbestos Removal: Section 02 82 13.19, ASBESTOS FLOOR & MASTIC ABATEMENT.

H. Construction Waste: Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT.

I. Infectious Control: Section 01 35 26, SAFETY REQUIREMENTS.

1.3 PROTECTION:

A. Perform demolition in such manner as to eliminate hazards to persons and property; to minimize interference with use of adjacent areas, utilities and structures, or interruption of use of such utilities; and to provide free passage to and from such adjacent areas within the facility. Comply with GENERAL CONDITIONS Article, ACCIDENT PREVENTION.

B. Provide safeguards, including barricades, temporary barriers, warning signs, and other similar items that are required for protection of all personnel and facility users during demolition and removal operations. Comply with Section 01 00 00, GENERAL REQUIREMENTS.

E. Prevent spread of flying particles and dust. Sprinkle rubbish and debris with water to keep dust to a minimum. Do not use water if it results in hazardous or objectionable condition such as, but not limited to; ice, flooding, or pollution. Vacuum and dust the work area daily.

F. In addition to previously listed fire and safety rules to be observed in performance of work, include following:

1. Coordinate and develop demolition plans and execution with COR.
2. Keep hydrants clear and accessible at all times. Prohibit debris from accumulating within a radius of 4500 mm (15 feet) of hydrants.

G. Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent

of the work. The contractor shall take necessary precautions to avoid damages to existing items to remain in place, to be reused, or to remain the property of the Medical Center; any damaged items shall be repaired or replaced as approved by Resident Engineer. Contractor shall coordinate the work of this section with all other work and shall construct and maintain temporary barriers and other demolition systems as required.

I. The work shall comply with the requirements of Section 01 00 00, GENERAL REQUIREMENTS and Section 01 35 26, SAFETY REQUIREMENTS.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 DEMOLITION:

A. All debris material shall become property of Contractor and shall be disposed of by him/her daily, off the Medical Center Property to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the Resident Engineer or COR. Contractor shall dispose debris in compliance with applicable federal, state or local permits, rules and/or regulations.

B. Remove and legally dispose of all materials from trash dumps. Locations of trash dumps is to be determined, however they are typically located at the southwest edge on the campus. Materials removed shall become property of contractor and shall be disposed of in compliance with applicable federal, state or local permits, rules and/or regulations.

C. The requirements for removal of hazardous material shall be outlined in the Hazardous Materials specifications.

3.2 CLEAN-UP:

On completion of work of this section and after removal of all debris, leave site in clean condition satisfactory to Resident Engineer or COR. Clean-up shall include off the Medical Center disposal of all items and materials not required to remain property of the Government, as well as all debris and rubbish resulting from demolition operations.

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SECTION 02 82 13.19
ASBESTOS FLOORING AND MASTIC ABATEMENT

PART 1 - GENERAL

1.1 SUMMARY OF WORK CONDITIONS

A. Drawings are provided for each floor to outline locations where known Asbestos Containing Material (ACM) is present in the existing flooring materials. This includes Drawings AMC-1, AMC-2, AMC-3, and AMC-4. None of the known ACM locations are scheduled to receive new flooring. Thus, the Replace Select Flooring work scope does not include abatement work. However, areas scheduled for flooring demolition and replacement abut locations where ACM is present. At these abutting locations, the Contractor is to inform all workers of the adjacent material properties and ensure the ACM materials are not disturbed. To avoid disrupting the ACM, flooring transition strips shall be utilized between the new floor and existing abutting floor material.

B. Quantity Estimates, For Reference Only:

Flooring and Mastic: 105 SF on Main Level; 205 SF on Third Level
Flooring Only: 305 SF Main Level, two different locations;
33 SF Third Level, two different locations;
20 SF Fourth Level;
Mastic Only: 25 SF Fourth Level
Note: Second Level quantities are not provided.

C. Related Work:

1. Section 02 41 00, DEMOLITION
2. Division 09, FINISHES

1.2 STOP WORK - ASBESTOS IMPACT

A. If the Contracting Officer; their field representative; the facility Safety Officer or their designee, or the VA Professional Industrial Hygienist/Certified Industrial Hygienist (VPIH/CIH) presents a verbal **Stop Work - Asbestos Concern**, the Contractor/Personnel shall immediately stop all work in areas adjacent to the ACM concern while maintaining HEPA filtered negative pressure air flow within the work area, and adequately wet any exposed ACM, or potential ACM. If a verbal Stop Work - Asbestos Concern Order is issued, the VA shall follow-up with a written order to the Contractor as soon as it is practicable. Contractor shall not resume any work activity until authorized to do so in writing by VA Contracting Officer. The work stoppage will continue until conditions have been corrected to the satisfaction of the VA.

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SECTION 07 19 00
CONCRETE SEALER

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section Includes: Water repellent sealer for concrete surfaces.

1.2 REFERENCE STANDARDS

A. ASTM 413 - “Water Absorption of Chemical Resistant Concrete/Masonry”

B. ASTM C140 - “Masonry Absorption Test for Light Weight Block”. ASTM requires that water absorption cannot exceed 1% after 2 days of immersion.

C. ASTM C672 - “Scaling Resistance”.

D. AS 1012.21-1999 - "Water Absorption of Hardened Concrete".

E. NCHRP 244 – Cube Test – “Accelerated Weathering Test”. Standard of not exceeding 25% of untreated cube absorbed chloride.

F. Blue Dye Test - “Blue Dye Absorption Test”.

1.3 SUBMITTALS

A. Comply with Section 01 33 23, SHOP DRAWING, PRODUCT DATA, AND SAMPLES.

B. Product Data: Submit manufacturer's technical data sheets and printed documentation stating physical characteristics.

C. Manufacturer’s printed installation instructions, including preparation requirements of an existing concrete surface.

1.4 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer Qualifications: Company with minimum five years of experience in manufacturing of specified products.

2. Applicator Qualifications: Company with minimum of two years of experience in application of specified products on projects of similar size and scope, and acceptable to product manufacturer.

   a. Successful completion of a minimum of projects of similar size and complexity to specified Work.

B. Field Tests: Submit samples of joint materials that will be in contact or with sealers, primers, or cleaners to tests as follows:

1. Stain Testing: Perform testing on interior joint sealants to determine if sealer, primers, or cleaners will stain the joint sealants. No sealer work is to start until results of these tests have been submitted to the Contracting Officer Representative (COR) and the COR has given written approval to proceed with the work.

B. Field Sample / Mockup:

1. Install at Project Site, at a pre-selected area in the building, an area for a field sample, as directed by COR.

   a. Apply material in accordance with manufacturer's written application instruction.

2. Field sample / Mockup, if approved, will serve as a standard for judging workmanship on remainder of Project.

3. Maintain field sample during construction for workmanship comparison.

4. Obtain COR written approval of field sample before start of material application, including approval of aesthetics, texture, color, location, and appearance.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Store in unopened containers in a clean, dry area between 40 and 90 degrees F, and out of direct sunlight.

1.6 WARRANTY

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

B. Provide manufacturer standard warranty protection from the date of application from original purchaser - 10 year minimum.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products from the following manufacture: (Or Approved Equal)

1. Eco-Wares/Envirosafe Mfg. 7634-B Progress Circle, West Melbourne, FL 32904; Phone: 866-874-8070; www.eco-wares.com

B. Specifications are based on the above product characteristics. Other manufacturer products shall comply with minimum levels of material and detailing indicated in Specifications. Architect will be sole judge of appropriateness of substitutions.

2.2 MATERIALS

A. High-performance, penetrating water dispersed polyester polymer and water-borne polyurethane that when dry, fills the voids and coats the interior particles of the matrix on concrete surfaces preventing damage from freeze/thaw cycles. Safe for indoor or exterior use.

1. Product: Trojan Masonry & Concrete Sealer (Or Approved Eq)

B. Sealer shall have the following minimum performance:
   1. Flash Point: non-flammable, or > 212 degrees Fahrenheit
   2. State: Liquid
   3. Color: Translucent – No color
   4. Vapor Pressure: (Air + 1) - N/A
   5. Solubility in Water: Dilutable
   6. Boiling Point: 100 degrees Celsius / 212 degrees Fahrenheit
   7. Freezing Point: 0 degrees Celsius / 32 degrees Fahrenheit Water
   8. Specific Gravity: (Water=1) - 1.10 @ 20 degrees Celsius
   9. Evaporation Rate: Same as Water
   10. Percent Solids by Weight: 10.5%
   11. pH: 6 to 9
   12. Volatile Organic Compounds: 5.9 g/L
   13. Freeze Thaw Resistance: Improved verifiable resistance under testing.

C. Low Gloss Finish Sealer: High-performance, penetrating water dispersed polyester polymer and water-borne polyurethane that when dry, fills the voids and coats the interior particles of the matrix on concrete surfaces with acrylic added to the formula that settles on the surface to provide a low gloss sheen. Safe for indoor or exterior use.

   1. Acceptable Product: Trojan Ultra Masonry & Concrete Sealer

2.5 POROUS SURFACES:

A. Chemical cleaners compatible with any horizontal joint sealants, and acceptable with the manufacturer of joint sealants and/or sealant backing rod material. Cleaners to be free of oily residues and other substances capable of staining or harming sealant joints and joint substrate materials, and adjacent non-porous surfaces. Formulated to promote, or not negatively impact, adhesion of sealant and substrates.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Prepare surfaces in accordance with manufacturer instructions.

B. Surfaces shall be clean. Remove dust, dirt, oil, chemical films, prior sealers, and other contaminates prior to application.

C. If surface does NOT absorb water, then there is possibly another sealer applied to the surface and sealer should not be applied without additional prep work.

D. Interior Surfaces: use a wet vacuum to remove excess water.

3.2 APPLICATION

A. Apply sealer in accordance with manufacturer’s instructions.

B. Stir material thoroughly before and during application.

C. Back-roll to even out material and remove puddles in low spots.

D. On some old and extremely porous surfaces a second coat of may need to be applied to completely seal the surface.

E. Surface temperature shall be above 45 degrees F before applying.

F. Allow to dry thoroughly before traffic is allowed onto floor.

G. Painting over a Trojan treated area shall use oil-base, epoxy, acrylic, or urethane paint. Do not use latex paint over a Trojan coated surface since latex paint makes a weak bond, especially in exterior applications.

H. Always maintain a 'wet edge' when applying this product. A pH reading should be taken before starting application to be sure that the pH is between 6 & 8. Avoid applying to a hot surface impacted by the sun.

1. All interior surfaces must use Enviro Etch first to allow for adequate and even absorption of Trojan Color Sealer.

3.3 SAFETY

A. Safe storage, handling and use dictate that adequate health and safety precautions be observed with this product. User is specifically directed to consult the current Material Safety Data Sheet for this product as well as precautions contained on product labeling.

3.4 PROTECTION

A. Protect sealer from damage during construction.

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SECTION 09 05 16
SUBSURFACE PREPARATION FOR FLOOR FINISHES

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies subsurface preparation requirements for areas to receive the installation of applied flooring. This section includes removal of existing floor coverings, testing concrete for moisture and pH, remedial coatings for concrete floor slabs having unsatisfactory moisture or pH conditions, and floor leveling and repair as required.

1.2 RELATED WORK

A. Section 09 65 16 Resilient Sheet Flooring and Section 09 68 00 Carpeting.

1.3 SUBMITTALS

A. Submit as per Section 01 33 23, Shop Drawings, Products, and Samples.

B. Written approval material manufacturer and the pending flooring manufacturer confirming product compatibility with existing substrate.

C. Product Data:
   1. Moisture remediation system
   2. Underlayment Primer
   3. Cementitious Self-Leveling Underlayment
   4. Cementitious Trowel-Applied Underlayment (Not suitable for resinous floor finishes)

D. Test Data:
   1. Moisture test and pH results performed by a qualified independent testing agency or warranty holding manufacturer’s technical representative.

1.4 DELIVERY AND STORAGE

A. Deliver materials in containers with labels legible and intact and grade-seals unbroken.

B. Store material to prevent damage or contamination.

1.5 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in text by basic designation only.

B. ASTM International (ASTM):

D638-14(2014).....Standard Test Method for Tensile Properties of Plastics

D4259-18(2019).....Standard Practice for Preparation of Concrete by Abrasion Prior to Coating Application.

C109/C109M-20b(2020)....Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens

7234-19(2020).....Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers

E96/E96M-16(2016).....Standard Test Methods for Water Vapor Transmission of Materials

F710-1e1(2020).....Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

F1869-16a.....Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

F2170-19a(2020).....Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in situ Probes

C348-20(2020).....Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars

C191-19(2020).....Standard Test Method for Time of Setting of Hydraulic Cement by Vicat Needle

PART 2 - PRODUCTS

2.1 CEMENTITIOUS TROWEL-APPLIED UNDERLAYMENT (NOT FOR RESINOUS FLOORS)

A. Underlayment shall be calcium aluminate cement-based, containing Portland cement. Gypsum-based products are unacceptable.

B. Compressive Strength: Minimum 4000 psi in 28 days.

C. Trowel-applied underlayment shall not contain silica quartz (sand).

D. Dry Time: Underlayment shall receive the application of floor covering in 15-20 minutes.

PART 3 - EXECUTION

3.1 ENVIRONMENTAL REQUIREMENTS

A. Maintain ambient temperature of work areas at not less than 16 degree C (60 degrees F), without interruption, for not less than 24 hours before testing and not less than three days after testing.

B. Maintain higher temperatures for a longer period of time where required by manufacturer's recommendation.

C. Do not install materials when the temperatures of the substrate or materials are not within 60-85 degrees F/16-30 degrees C.

3.2 SURFACE PREPARATION

A. Existing concrete slabs with existing floor coverings:

1. Conduct visual observation of existing floor covering for adhesion, water damage, alkaline deposits, and other defects.
2. Remove existing floor covering and adhesives. Comply with local, state and federal regulations and the RFCI Recommended Work Practices for Removal of Resilient Floor Coverings, as applicable to the floor covering being removed.

B. Concrete shall meet the requirements of ASTM F710 and be sound, solid, clean, and free of dirt, oil, grease, curing compounds, and substances that may act as a bond-breaker before application. As required, prepare slab by mechanical methods. No chemicals or solvents shall be used.

C. General: Prepare and clean substrate per manufacturer's instructions.

D. Prepare concrete substrates per ASTM D4259 as follows, utilizing one of the following actions: Note: The selected action shall be approved, in writing, by VA Infection Control prior to execution of work.

1. Wet abrasive blasting.
2. Vacuum-assisted abrasive blasting.
3. Centrifugal-shot abrasive blasting.
4. Comply with manufacturer's written instructions.

E. Repair damaged and deteriorated concrete per manufacturer's instructions.

F. Verify that concrete substrates are dry.

G. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with application only after substrates have maximum moisture-vapor-emission rate of per flooring manufactures project specific recommendation.

H. Perform in situ probe test, ASTM F2170. Proceed with application only after substrates do not exceed a maximum potential equilibrium relative humidity per manufacture’s project specific written recommendation.

I. Provide a written report showing test placement and results.

J. Prepare joints in accordance with material manufacturer’s instructions.

K. Alkalinity: Measure surface pH in accordance with procedures provided in ASTM F710 or as outlined by qualified testing agency or flooring manufacturer’s technical representative.

L. Tolerances: Subsurface shall meet the flatness and levelness tolerance specified on drawings or recommended by the floor finish manufacturer. Tolerance shall also not to exceed 1/4" deviation in 10'. As required, install underlayment to achieve required tolerance.

M. Other Subsurface: For all other subsurface conditions, such as wood or metal, contact the floor finish or underlayment manufacturer, as appropriate, for proper preparation practices.

3.4 CEMENTITOUS UNDERLAYMENT:

A. Install cementitious underlayment as req'd to correct surface defects, floor flatness or levelness corrections to meet tolerance requirements, address non-moving cracks or joints, and provide a smooth surface for the installation of floor covering.

B. Mix and apply in accordance with manufacturer's instructions.

3.5 PROTECTION

A. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by use of plywood, tempered hardwood, or other suitable protection.

3.6 FIELD QUALITY CONTROL

A. When specified, product field sampling shall be conducted by qualified, independent testing agent.

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SECTION 09 06 00
SCHEDULE FOR FINISHES / MATERIAL ESTIMATES

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section contains a coordinated tracking system for the material selections from other specification sections. Each is shown below, identified with a supporting abbreviated material name and/or finish code, placed in a room finish type schedule. A summary of the material quantities is also provided. The noted quantities are Government estimates. The final material quantities utilized for bidding and final installation are to be determined and verified by the Contractor.

1.2 ROOM FINISH SCHEDULE / MANUFACTURES

A. The final selected Manufacturer trade names and numbers shall be identified during the submittal process, linking this formal name with the abbreviated acronyms outlined in the schedule below. As material selections are finalized, the Contractor will fill out the schedule below, tracking final material selections for each location in one location – via this Room Finish Schedule.

B. Material selections will not be finalized until all required interior finish samples are provided for review, as final selections will need to be confirmed collectively. The last provided finish sample and submittal data shall represent the time frame for when the submittal review process shall begin, per 01 33 23 Shop Drawings, Product Data and Samples, for all interior finish materials.

1.3 SUBMITALS

A. Submit in accordance with SECTION 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES—provide three (physical) material samples for color approvals of materials and finishes specified within the project specification manual. Photos and printouts of the material samples will not be considered.

2.1 DIVISIONS 07 / 09 – FINISHES SCHEDULE

A. SECTION 07 19 00, CONCRETE SEALER

FINISH CODE	Location(s)	Finish	Mfg. Color Name/No.	Govt Estimated Qty
CS-1	1B-120 1B-116	Flat	TBD	Bid Option 01: 2,700 sf

B. SECTION 09 30 13, CERAMIC/PORCELAIN TILING

PORCELAIN TILE (PTILE-1)					
FINISH CODE	Location	Size	Pattern	Mfg. Color Name/No.	Govt Estimated Qty
PTile-1	2C-46			TBD	Total RSF: 85 sf Bid Option 02: 85 sf

PORCELAIN TILE GROUT (GRT-1)					
FINISH CODE	Location	Joint Size	Grout Type	Mfg. Color Name/No.	Govt Estimated Qty
GRT-1	2C-46	TBD	Epoxy	TBD	Bid Option 02: (SF of Tile noted above)

C. SECTION 09 65 13, RESILIENT BASE & ACCESSORIES / RESILIENT STAIR TREADS

VINYL BASE (VB) / RESILIENT SHEET FLOORING (RSF)					
Finish Code	Item	Location(s)	Height / Type	Mfg. Color Name/No	Govt Estimated Qty
VB-1	Vinyl Base	CPT Locations / See Plan	4" (Flat)	TBD	No Estimate Provided
VB-2	Vinyl Base	Stair Landings / See Plan	4" (Cove)	TBD	No Estimate Provided
RST-1	Resilient Stair Treads / Risers	See Plan	N/A	TBD	No Estimate Provided

D. SECTION 09 65 16, RESILIENT SHEET FLOORING

RESILIENT SHEET FLOORING (RSF)					
FINISH CODE	Location(s)	Wall Base	Seam Type	Mfg. Color Name/No.	Govt Estimated Qty
RSF-1	See Plan / TBD	Integral	Hot Welded	TBD	Total RSF: 35,450 sf Bid Option 01: N/A Bid Option 02: 2,500 sf Bid Option 03: 11,200 sf Bid Option 04: N/A Bid Option 05: 1,460 sf
RSF-2	See Plan / TBD	Integral	Hot Welded	TBD	
RSF-3	See Plan / TBD	Integral	Hot Welded	TBD	
RSF-4	See Plan / TBD	Integral	Hot Welded	TBD	
RSF-5	See Plan / TBD	Integral	Hot Welded	TBD	
RSF-6	See Plan / TBD	Integral	Hot Welded	TBD	

E. SECTION 09 68 00, CARPETING

CARPETING (CPT)				
FINISH CODE	Location(s)	Pattern	Mfg. Color Name/No.	Govt Estimated Qty
CPT-1	See Plan / TBD	TBD	TBD	Total CPT: 11,900 sf Bid Option 01: N/A Bid Option 02: 460 sf Bid Option 03: 275 sf Bid Option 04: 4,000 sf Bid Option 05: 3,700 sf
CPT-2	See Plan / TBD	TBD	TBD	

SECTION 09 30 13
CERAMIC/PORCELAIN TILING

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies interior ceramic, porcelain and quarry tile; thin-set applications and crack isolation membranes.

1.2 RELATED WORK

A. Section 09 65 16, RESILIENT SHEET FLOORING.

1.3 SUBMITTALS

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

B. Samples:

1. Floor and Base tiles, each type, each color, and each size.

C. Product Data:

1. Ceramic and/or porcelain tile, marked to show each type, size, and shape required.
2. Chemical resistant mortar and grout (epoxy and furan).
3. Dry-set portland cement mortar and grout.
4. Divider strip.
5. Elastomeric membrane and bond coat.
6. Reinforcing tape.
7. Latex-portland cement mortar and grout.
8. Commercial portland cement grout.
9. Slip resistant tile.
10. Waterproofing isolation membrane.

D. Certification:

1. Master grade certificate, ANSI A137.1.
2. Manufacturer's certificates indicating that the following materials comply with specification requirements:
   a. Chemical resistant mortar and grout (epoxy and furan).
   b. Modified epoxy emulsion.
   c. Commercial portland cement grout.
   d. Dry-set portland cement mortar and grout.
   e. Elastomeric membrane and bond coat.
   f. Latex-portland cement mortar and grout.

E. Installer Qualifications:

1. Submit letter stating installer’s experience.

1.4 DELIVERY AND STORAGE

A. Deliver materials in containers with labels legible and intact and grade-seals unbroken.

B. Store material to prevent damage or contamination.

1.5 QUALITY ASSURANCE

A. Installers to be from a company specializing in performing installation of products specified and have a minimum of three years' experience.

B. Each type and color of tile to be provided from a single source.

C. Each type and color of mortar, adhesive, and grout to be provided from the same source.

1.6 WARRANTY

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

1.7 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in text by basic designation only.

B. American National Standards Institute (ANSI):

A10.20-06(R2016).....Safe Operating Practices for Tile, Terrazzo and Marble Work

A108/A118/A136.1:2019...Installation of Ceramic Tile

A108.01-18.....Subsurfaces and Preparations by Other Trades

A108.02-19.....Materials, Environmental, and Workmanship

A108.1A-17.....Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar

A108.1B-17.....Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar

A108.1C-17.....Contractors Option; Installation of Ceramic Tile in the Wet-Set method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar

A108.4-09.....Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive

A108.5-10 .....Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar

A108.6-10.....Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy

A108.8-10.....Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout

A108.9-10.....Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout

A108.10-17.....Grout in Tilework

A108.13-16.....Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone

A108.17-16.....Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone

A118.1-19.....Dry-Set Portland Cement Mortar

A118.3-13.....Chemical Resistant, Water Cleanable Tile-Setting and –Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive

A118.4-19.....Modified Dry-Set Cement Mortar

A118.5-16.....Chemical Resistant Furan Mortars and Grouts

A118.6-19.....Standard Cement Grouts for Tile Installation

A118.7-1.....High Performance Cement Grouts for Tile Install

A118.8-16.....Modified Epoxy Emulsion Mortar/ Grout

A118.12-14.....Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation

A118.13-14.....Bonded Sound Reduction Membranes for Thin-Set Ceramic Tile Installation

A118.15-19.....Improved Modified Dry-Set Cement Mortar

A137.1-17.....American National Standard Specs for Ceramic Tile

C. ASTM International (ASTM):

A666-15.....Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar

C109/C109M-20b.....Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 inch. or [50-mm] Cube Specimens)

C348-20.....Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars

C627-18.....Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester

C979/C979M-16.....Pigments for Integrally Colored Concrete
C1002-18.....Steel Self-Piercing Tapping Screws for the Application of Panel Products
C1027-19.....Test Method for Determining Visible Abrasion Resistance of Glazed Ceramic Tile
C1127/C1127M-15.....Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with an Integral Wearing Surface
C1178/C1178M-18.....Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel

D. Code of Federal Regulation (CFR):
40 CFR 59.....Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating

E. Tile Council of North America, Inc. (TCNA):
Handbook for Ceramic Tile Installation (2020)G. TCNA DCOF AcuTest-2012,Dynamic Coefficient of Friction Test

PART 2 - PRODUCTS

2.1 TILE

A. Basis of Design: Flooring Product: Ceramic Tileworks; (Or Approved Eq)
1. Opt 01, Floor: Pattern: Timeless (Match Finish); Color: Amani Grey.
2. Opt 02, Floor: Pattern: Stonerock (Matte Finish); Color: Ash Stone.
3. Wall Base Tile: Coved Bottom; Match Floor Color; Height: Cut to Fit

B. Comply with ANSI A137.1, Standard Grade, except as modified:
1. Inspection procedures listed under the Appendix of ANSI A137.1.
2. Abrasion Resistance Classification:
a. Tested in accordance with values listed in Table 1, ASTM C1027.
b. Class IV, 6000 revolutions for areas excluding corridors / kitchens.
3. Slip Resistant Tile for Floors:
a. Coefficient of friction, when tested in accordance with ANSI A137.1 and measured per the TCNA DCOF AcuTest.
1) Equal to or greater than .42 for level interior tile floors that will be walked on when wet.
b. Porcelain Paver Tile: Matte surface finish.

4. Factory Blending: For tile with color variations, within the ranges selected during sample submittals blend tile in factory and package so tile units taken from one (1) package show the same range in colors as those taken from other packages and match approved samples.

5. Factory-Applied Temporary Protective Coating:
   a. Protect exposed face surfaces (top surface) of tile against adherence of mortar and grout by pre-coating with a continuous film of hot applied petroleum paraffin wax.
   b. Do not coat unexposed tile surfaces.
   c. Pre-wax tiles set or grouted with furan or epoxy or latex mortars.

C. Porcelain Paver Tile: Nominal 8 mm (5/16 inch) thick, with cushion edges. Porcelain tile produced by the dust pressed method are to be made of approximately 50 percent feldspar; the remaining 50 percent is to be made up of various high-quality light firing ball clays yielding a tile with a water absorption rate of 0.5 percent or less and a breaking strength of between 176 to 181 kg (390 to 400 pounds).

2.2 SETTING MATERIALS OR BOND COATS

A. Conform to TCNA Handbook for Ceramic Tile Installation.

B. Portland Cement Mortar: ANSI A108.02.

2.3 GROUTING MATERIALS

A. Basis of Design: Laticte-Spectralock Pro (Or Approved Eq)

B. Grout Color: TBD

C. Coloring Pigments:
   1. Pure mineral pigments, lime proof and nonfading, complying with ASTM C979/C979M.
   2. Coloring pigments may only be added to grout by the manufacturer.
   3. Job colored grout is not acceptable.
   4. Use is required in Commercial Portland Cement Grout, Dry-Set Grout, and Latex-Portland Cement Grout.

D. Epoxy Tile Grout: ANSI A118.7 with a VOC content of 65 g/L or less when calculated according to 40 CFR 59.

2.4 PATCHING AND LEVELING COMPOUND

A. Portland cement base, polymer-modified, self-leveling compound, manufactured specifically for resurfacing and leveling concrete floors. Products containing gypsum are not acceptable.

B. Provide a patching and leveling compound with the following minimum physical properties:

1. Compressive strength - 25 MPa (3500 psig) per ASTM C109/C109M.
2. Flexural strength - 7 MPa (1000 psig) per ASTM C348 (28 day value).
3. Tensile strength – 4.1 MPa (600 psi) per ANSI 118.7.
4. Density – 1.9.

C. Capable of being applied in layers up to 38 mm (1-1/2 inches) thick without fillers and up to 101 mm (4 inches) thick with fillers, being brought to a feather edge, and being trowelled to a smooth finish.

D. Primers, fillers, and reinforcement as required by manufacturer for application and substrate condition.

E. Ready for use in 48 hours after application.

2.5 WATER

A. Clean, potable and free from salts and other injurious elements to mortar and grout materials.

2.6 CLEANING COMPOUNDS

A. Specifically designed for cleaning masonry and concrete and which will not prevent bond of subsequent tile setting materials including patching and leveling compounds and elastomeric waterproofing membrane and coat.

B. Materials containing acid or caustic Material are not acceptable.

2.7 FLOOR MORTAR BED REINFORCING

A. ASTM A1064/A1064M welded wire fabric without backing, MW3 x MW3 (2 x 2-W0.5 x W0.5).

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Patching and Leveling:

1. Mix and apply patching and leveling compound in accordance with manufacturer's instructions.
2. Fill holes and cracks and align concrete floors that are out of required plane with patching and leveling compound.

3. Apply leveling coats of material compatible with wall surface and tile setting material to wall surfaces, other than concrete and masonry that are out of required plane. Maintain slope to drain.

B. Existing Floors:

1. Remove existing composition floor finishes and adhesive. Prepare surface by grinding, chipping, self-contained power blast cleaning or other suitable mechanical methods to completely expose uncontaminated concrete or masonry surfaces. Follow safety requirements of ANSI A10.20.

3.2 PORCELAIN TILE INSTALLED WITH LATEX PORTLAND CEMENT BONDING MORTAR

A. Due to the denseness of porcelain tile use latex portland cement bonding mortar that meets the requirements of ANSI A108.01. Mix bonding mortars in accordance with manufacturer's instructions. Provide liquid ratios and comply with dwell times during the placement of bonding mortar and tile.

3.3 GROUTING

A. Workmanship:

1. Install and cure grout in accordance with the applicable standard.
2. Epoxy Grout: ANSI A108.6.

3.4 CLEANING:

A. Thoroughly sponge and wash tile. At glazed tiles, polish surfaces with clean dry cloths.

B. Methods and materials used are not permitted to damage or impair appearance of tile surfaces.

C. The use of acid or acid cleaners on glazed tile surfaces is prohibited.

D. Clean tile grouted with epoxy, furan and commercial portland cement grout and tile set in elastomeric bond coat as recommended by the manufacturer of the grout and bond coat.

E. Ensure cleaning products are approved by installed tile manufacture.

3.5 PROTECTION

A. Keep traffic off tile floor, until grout and setting material is fully set and cured. Do not reopen room for use until inspections are final.

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SECTION 09 65 13
RESILIENT BASE & ACCESSORIES / RESILIENT STAIR TREADS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes:

1. Resilient Base (RB) adhered to interior partitions at carpeted areas, and above landings in enclosed stairwell – excludes treads.
2. Resilient stair treads (RST) adhered to interior stairwell treads, risers, landings, and horizonal stairwell extensions.

1.2 RELATED REQUIREMENTS

A. Specification Section 09 65 16, Resilient Sheet Flooring

B. Section 09 68 16, Carpeting.

1.3 APPLICABLE PUBLICATIONS

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

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

C. ASTM International (ASTM):

F1344-15.....Rubber Floor Tile.

F1859-14e1.....Rubber Sheet Floor Covering without Backing.

F1860-14e1.....Rubber Sheet Floor Covering with Backing.

F1861-16.....Resilient Wall Base.

D4259-18.....Preparation of Concrete by Abrasion Prior to Coating Application.

D. Federal Specifications (Fed. Spec.):

RR-T-650E (1994)..... Treads, Metallic & Non-Metallic, Skid Resistant.

E. International Concrete Repair Institute (ICRI):

310.2R-2013.....Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair.

1.4 SUBMITTALS

A. Submittal Procedures: Section 01 33 23, Shop Drawings, Product Data, and Samples.

B. Manufacturer's Literature and Data:

1. Description of each product.
2. Adhesives and primers indicating manufacturer's recommendation for each application.
3. Installation instructions.

C. Samples:
   1. Resilient Base: 6 inches long, each type and color.
   2. Resilient Stair Treads: 6 inches long, each type and color.

D. Operation and Maintenance Data:
   1. Care instructions for each exposed finish product.

1.5 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.

1.6 STORAGE AND HANDLING

A. Store products indoors in dry, weathertight facility.

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

1.7 FIELD CONDITIONS

A. Environment:
   1. Product Temperature: Minimum 21 degrees C (70 degrees F) for minimum 48 hours before installation.
   2. Work Area Ambient Temperature Range: 21 to 27 degrees C (70 to 80 degrees F) continuously, beginning 48 hours before installation.
   3. Install products when building is permanently enclosed and when wet construction is completed, dried, and cured.

1.8 WARRANTY

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

PART 2 - PRODUCTS

2.1 PRODUCTS

A. Provide each product from one manufacturer and from one production run.

2.2 RESILIENT BASE

A. Resilient Base: 3 mm (1/8 inch) thick, 100 mm (4 inches) high.
   1. Type: Vinyl; use one type throughout.
   2. ASTM F1861, Type TP thermoplastic rubber / Type TV thermoplastic vinyl, Group 2 - layered.

B. Applications:
   1. Carpet Flooring Wall Locations: Style A – Straight (Color 01)
   2. Resilient Sheet Flooring Stair Landings: Style B – Cove (Color 02)

C. Product(s): Equal to Johnsonite/ Tarkett, or ROPPE, (2) Colors: TBD. Color 01: Fawn #80; Color 02: TBD. Note: The final color selection for each location is to be confirmed with submittal samples.

2.3 RESILIENT STAIR TREADS, RISERS, AND LANDINGS

A. Basis of Design: Tarkett, Splash Speckled; Color: Oak Alley (HNSP-VF2) or Sandhill Crane (HRTSP-VF6). Final selection confirmed via samples.

B. Resilient Stair Treads: Rubber, skid-resistant abrasive strip nosing, 5 mm (3/16 inch) thick nosing wear surface tapered to 3 mm (1/8 inch) thick at riser.

B. Fed. Spec. RR-T-650, Composition A, Type 2.

C. Abrasive Strips: Design for access by visually impaired.

D. Nosing: Flexible, accommodating angle between tread and riser; shape suiting sub-tread.

E. Size: Single piece full stair tread width and depth.

2.4 ADHESIVES

A. Adhesives: Low pollutant-emitting, water-based type recommended by adhered product manufacturer for each application.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine and verify substrate suitability for product installation.

B. Protect existing construction and completed work from damage.

C. Remove existing base to permit new installation.
   1. Dispose of removed materials.

D. Correct substrate deficiencies.
   1. Fill cracks, pits, and depressions with leveling compound.
   2. Remove protrusions; grind high spots.
   3. Apply leveling compound to achieve 3 mm (1/8 inch) in 3 m (10 feet) max surface variation.

E. Clean substrates. Remove contaminants capable of affecting installed product's performance.

F. Allow substrate to dry and cure.

3.2 INSTALLATION GENERAL

A. Install products according to manufacturer's instructions.
   1. When instructions deviate from specifications, submit proposed resolution for Project Engineer consideration.

3.3 RESILIENT BASE INSTALLATION

A. Applications:
   1. Install resilient base in rooms scheduled on drawings.
   2. Install resilient base on casework and other curb supported fixed equipment.
   3. Extend resilient base into closets, alcoves, and cabinet knee spaces, and around columns within scheduled room.

B. Lay out resilient base with minimum number of joints.
   1. Length: 600 mm (24 inches) minimum, each piece.
   2. Locate joints 150 mm (6 inches) minimum from corners and intersection of adjacent material.

C. Installation:
   1. Apply adhesive uniformly for full contact between resilient base and substrate.
   2. Set resilient base w/ hairline butted joints aligned along top edge.

D. Field form corners and end stops.
   1. V-groove back of outside corner.
   2. V-groove face of inside corner and notch cove for miter joint.

E. Roll resilient base ensuring complete adhesion.

3.4 RESILIENT STAIR TREAD INSTALLATION

A. Install resilient stair treads without a joints on any stair tread.

B. Install full width resilient stair treads onto each immediate landing before transitioning to a matching flooring material.

C. Apply adhesive uniformly for full contact between each resilient stair tread and the substrate.
   1. Roll resilient stair treads and landings ensuring complete adhesion.

3.5 CLEANING

A. Remove excess adhesive before adhesive sets.

B. Clean exposed resilient base surfaces. Remove contaminants and stains.
   1. Clean with mild detergent. Leave surfaces free of detergent residue.

C. Polish exposed resilient base to gloss sheen.

3.6 PROTECTION

A. Protect products from construction traffic and operations.

B. Maintain protection until directed by Project Engineer.

C. Replace damaged products and re-clean.

D. Damaged Products include cut, gouged, scraped, torn, and unbonded areas.

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SECTION 09 65 16
RESILIENT SHEET FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Welded seam sheet flooring (WSF) with heat welded seams and integral cove base.

1.2 RELATED REQUIREMENTS

A. Section 09 65 13, RESILIENT BASE AND ACCESSORIES.

1.3 APPLICABLE PUBLICATIONS

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

B. ASTM International (ASTM):

1. D4259-88(2012) - Abrading Concrete.
2. E648-15e1 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
3. E662-15a - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
4. F1303-04(2014) - Sheet Vinyl Floor Covering with Backing. *(Reference relates to area where flooring is to match the adjacent.)*
5. F1516-18 – Sealing Seams of Resilient Flooring Products by Heat Weld
6. F1913-04(2014) - Vinyl Sheet Floor Covering Without Backing. *(Reference relates to the typical flooring application.)*

C. International Concrete Repair Institute (ICRI):

1. 310.2R-13 - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays, and Concrete Repair.

D. SCS Global Services (SCS): FloorScore

1.4 SUBMITTALS

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

1. Show size, configuration, and fabrication and installation details.

B. Manufacturer's Literature and Data:

1. Description of each product.
2. Applications and installation instructions.
3. Warranty.

C. Samples:
   1. Sheet material, 38 mm by 300 mm (1-1/2 inch by 12 inch), of each color and pattern with welded seam using specified seam weld.
   2. Cap strip and fillet strip, 300 mm (12 inches) for integral base.
   3. Shop Drawings and Certificates: Layout of joints showing patterns where joints are expressed, and type and location of obscure type joints. Indicate orientation of directional patterns.
   4. Certificates: Quality Control Certificate Submittals and lists specified in paragraph, QUALIFICATIONS.
   5. Edge strips: 150 mm (6 inches) long each type.

D. Qualifications: Substantiate qualifications comply with specifications.
   1. Installers, with project experience list.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A company specializing in installation with minimum three (3) years' experience and employs experienced flooring installers who have retained, and hold a current INSTALL Certification, or a certification from a comparable certification program.
   1. Installers to be certified by INSTALL or a comparable certification program with the following minimum criteria:
      a. Dept of Labor approved 4-year apprenticeship, 160 hours / yr.
      b. Career long training.
      c. Manufacturer endorsed training.
      d. Fundamental journeyman skills certification.

B. Mockup: Build floor tile mockup to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution
   1. Size: 100 square feet for each product application, locations TBD.
   2. COR approved mockup may become part of the completed Project if undisturbed at time of Substantial Completion.

C. Furnish product type materials from the same production run.

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, and weathertight facility.

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

C. Acclimate to the interior conditions as recommended by manufacture.

1.8 FIELD CONDITIONS

A. Environment:

1. Work Area Ambient Temperature Range: Minimum 18 to 38 degrees C (65 to 100 degrees F) continuously, beginning 48 hours before installation. Maintain room temperature above 18 degrees C (65 degrees F) after installation.
2. Install products when building is permanently enclosed and when wet construction is completed, dried, and cured.

1.9 WARRANTY

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

B. Manufacturer's Warranty: Warrant resilient sheet flooring against material and manufacturing defects; Warranty Period: Manufacture’s standard warranty, 15 years. (10 years minimum.)

PART 2 - PRODUCTS

2.1 SYSTEM PERFORMANCE

A. Sheet Flooring:

1. Critical Radiant Flux: ASTM E648; 0.45 watts/sq. cm or more, Class I.
2. Smoke Density: ASTM E662; less than 450.

2.2 PRODUCT TYPE – GENERAL (TYPICAL SHEET VINYL APPLCIATION, UNO)

A. Basis of Design: Marmoleum Linear, Striato; Colors TBD (Up to 3)

1. Mar-01: TBD
2. Mar-02: TBD
3. Mar-03: Marmoleum, Striato (Linear); Color: Cliffs of Moher; Location: Building Area 1E (See Drawing A101.5)

B. Basis of Design: Marmoleum Marbled, Terra / Vivace; Colors TBD (Up to 3)

1. Mar-04: TBD
2. Mar-05: TBD
3. Mar-06: Marmoleum, Vivace (Marbled); Color: 3421 Oyster Mountain; Location: Lab Testing 1A-30 (See Drawing A101.3)

C. Provide each vinyl sheet color and pattern from the same production run.

D. Sustainable Construction Requirements:

1. Low Pollutant-Emitting Materials:
    a. Flooring Adhesives and Sealants.
    b. Vinyl Sheet Flooring.

2.3 RESILIENT SHEET FLOORING - TYPICAL SHEET VINYL APPLCIATION

A. Resilient Sheet Flooring (RSF): ASTM F1913; Vinyl, without backing.
(Typical: Color / pattern is integral through body of flooring material.)

1. Wear Surface: Smooth.
2. Thickness: Minimum, 2 mm (0.080 inches).
3. Heat Welded Joints.

B. Sheet Size: Maximum size produced by manufacturer to minimize joints.

2.4 ACCESSORIES

A. Welding Rod: Flooring manufacturer's standard, in color matching field color of sheet flooring.

B. Adhesives: Water resistant type, as recommended by the manufacturer for application related to project type.

C. Base Accessories: *(The below accessories are not required in AREA 1E)*

1. Fillet Strip: 19 mm (3/4 inch) radius fillet strip compatible with flooring material.
2. Cap Strip: Zero edge extruded flanged reducer strip compatible with the flooring material.

D. Leveling Compound:

1. Cementitious type with latex or polyvinyl acetate resins additive.

E. Primer: Type recommended by adhesive or flooring manufacturer.

F. Edge Strips: *(The below edge strips are not required in AREA 1E)*

1. Extruded aluminum, mill finish, mechanically cleaned.
2. 28 mm (1-l/8 inch) wide, 6 mm (1/4 inch) thick, bevel one edge to 3 mm (1/8 inch) thick.
3. Drill and counter sink edge strips for flat head screws. Space holes near ends and approximately 225 mm (9 inches) on center.
4. Fasteners: Stainless steel, type to suit application.

G. Sealant:

1. As recommended by manufacture for hospital application.
2. Compatible with flooring; Color match for adjacent flooring.

H. Polish: Product type recommended by flooring manufacturer to suit a hospital occupancy application, and the anticipated traffic loads.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine and verify substrate suitability for product installation.

B. Protect existing construction and completed work from damage.

C. Remove existing sheet flooring to permit new installation.

1. Do not use solvents for removing adhesives.
2. Dispose of removed materials.

D. Ensure interior finish work such as plastering, drywall finishing, concrete, terrazzo, ceiling work, and painting work is complete and dry before installation.

1. Complete mechanical, electrical, and other work above ceiling line.
2. Ensure heating, ventilating, and air conditioning systems are installed and operating in order to maintain temperature and humidity requirements.

E. Correct substrate deficiencies.

1. Fill cracks, pits, and dents with leveling compound.
2. Grind, sand, or cut away protrusions. Grind high spots.
3. Level flooring substrate to 3 mm (1/8 inch) maximum variation.

F. Clean substrates. Remove contaminants capable of affecting subsequently installed product's performance.

1. Mechanically clean concrete floor substrate according to ASTM D4259.
2. Surface Profile: ICRI 310.2R CSP 3 to CSP 4.

G. Perform flooring manufacturer’s recommended bond, substrate moisture content, and pH tests.

H. Broom or vacuum clean substrates immediately before flooring install.

I. Primer: Apply primer according to manufacturer’s instructions.

3.2 INSTALLATION - GENERAL

A. Install products according to manufacturer's instructions.

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

3.3 INSTALLATION OF FLOORING

A. Flooring Layout:

1. Arrange pattern in one direction with side and end joints pattern matching.
2. Extend flooring wall-to-wall, under cabinets, casework, laboratory and pharmacy furniture, and other equipment for a seamless flooring and integral base installation.

3. Arrange sheets to minimize seams.
4. Locate seams in inconspicuous and low traffic areas, minimum 150 mm (6 inches) away from parallel joints in flooring substrates.

B. Match edges of flooring for color shading and pattern at seams.

C. Install flooring flush with adjacent floor finishes.

D. Extend flooring and integral base into toe spaces, door reveals, closets, and other similar openings. Coordinate with Drawings.

E. Install flooring fully adhered to substrate.
1. Air pockets or loose edges are not acceptable.
2. Trim sheet materials tight to flooring penetrations; seal joints at pipe with waterproof sealant as recommended by the manufacture. Color match with each flooring color.

F. Butt joints tight, without gaps and bulges.

G. Installation of Edge Strips:
1. Install edge strips at flooring terminations and transitions to other floor finishes.
2. Locate edge strips under center lines of doors unless otherwise indicated.
3. Set edge strips in adhesive and mechanically fasten to substrate.

3.4 INTEGRAL COVE BASE INSTALLATION

A. Set preformed fillet strip at floor intersection with walls and other vertical surfaces.

B. Extend flooring over fillet strip and 4 inches up wall surface.

C. Form straight or radius internal and external corners to suit Application.

D. Adhere base to wall surface.

E. Terminate base exposed top edge with cap strip. Seal cap strip to wall with sealant.

F. Weld joints as specified for flooring.

3.5 HEAT WELDING

A. Heat weld joints of flooring and base using welding rod.

B. Rout joint, insert welding rod into routed space, and fuse flooring and welding rods for seamless, watertight installation.
1. Fuse joints for seamless weld.

C. Finish joints flush, free from voids, and recessed or raised areas.

3.6 CLEANING

A. Remove excess adhesive before adhesive sets.

B. Clean and polish materials.

C. Vacuum floor thoroughly.

D. Perform initial maintenance according to floor manufacturer's written instructions.

1. Delay washing flooring until adhesive is fully set and welded joints can contain wash water.

3.7 PROTECTION

A. Protect flooring from traffic and construction operations.

B. Keep traffic off sheet flooring for minimum 24 hours after install.

C. Cover flooring with reinforced kraft paper, and plywood or hardboard.

D. Remove protective materials immediately before acceptance.

E. Repair damage.

F. Apply polish to vinyl flooring.

G. Buff flooring to uniform sheen.

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SECTION 09 68 00
CARPETING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section specifies carpet, molding, adhesives, and other items required for complete installation.

1.2 RELATED WORK

A. Section 09 05 16, SUBSURFACE PREPARATION FOR FLOOR FINISHES: Testing of Concrete Floors Before Installation.

B. Section 09 65 13, RESILIENT BASE AND ACCESSORIES: Resilient Wall Base.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: A company specializing in carpet installation with a minimum three (3) years' experience and employing experienced flooring installers who have retained, and currently hold, an INSTALL Certification, or a certification from a comparable certification program, and a valid OSHA 10 certification.

1. Installers to be certified by INSTALL or a comparable certification program with the following minimum criteria:
   a. US Department of Labor approved four (4) year apprenticeship program, 160 hours a year.
   b. Career long training.
   c. Manufacturer endorsed training.
   d. Fundamental journeyman skills certification.

B. Mockup: Install 3.04 x 3.04 meter (10 x 10 feet) minimum mockup to verify selections made under sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation. COR approved mockups may become part of the completed Project if undisturbed at the time of Substantial Completion.

1.4 SUBMITTALS

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

B. Product Data:

1. Manufacturer's catalog data and printed documentation stating physical characteristics, durability, resistance to fading and flame resistance characteristics for each type of carpet material and installation accessory.

2. Manufacturer’s printed installation instructions for the carpet, including preparation of installation substrate, seaming techniques and recommended adhesives and tapes.

C. Samples:

1. Carpet: "Production Quality" samples 305 x 305 mm (12 x 12 inches) of carpets, showing quality, pattern and color specified.
2. Floor Edge Strip (Molding): 6 inches long of each color and type.
3. Base Edge Strip (Molding): 6 inches long of each color specified.

D. Maintenance Data: Carpet manufacturer’s maintenance instructions describing recommended type of cleaning equipment and material, spotting and cleaning methods and cleaning cycles.

E. Installer’s Qualifications.

F. Manufacturer’s warranty.

1.5 DELIVERY AND STORAGE

A. Deliver carpet in manufacturer’s original wrappings and packages clearly labeled with manufacturer’s brand name, size, dye lot number and related information. Transport carpet to job site in a manner that prevents damage and distortion that might render it unusable. When bending or folding is unavoidable for delivery purposes, unfold carpet and lay flat immediately.

B. Deliver adhesives in containers clearly labeled with manufacturer’s brand name, number, installation instructions, safety instructions and flash points.

C. Store in a clean, dry, well-ventilated area, protected from damage and soiling. Before installation, acclimate carpet to the atmospheric conditions of the areas in which it will be installed for 2 days prior to installation.

1.6 WARRANTY

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

B. Manufacturer Warranty: Manufacturer shall warranty their carpet for a minimum of ten (10) years from date of installation and final acceptance by the Government. Submit manufacturer warranty.

1.7 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to extent referenced. Publications referenced in text by basic designation only.

B. American National Standards Institute (ANSI):

ANSI/NSF 140-10.....Sustainable Carpet Assessment Standard

C. American Association of Textile Chemists and Colorists (AATCC):

16-04.....Colorfastness to Light

134-11.....Electric Static Propensity of Carpets

165-08.....Colorfastness to Crocking: Textile Floor Coverings-AATCC Crockmeter Method

174-11.....Antimicrobial Activity Assessment of New Carpets

D. ASTM International (ASTM):

D1335-17e1.....Tuft Bind of Pile Yarn Floor Coverings

D3278-20.....Flash Point of Liquids by Small Scale Closed-Cup Apparatus

D5116-17.....Determinations of Organic Emissions from Indoor Materials/Products

D5252-20.....Operation of the Hexapod Tumble Drum Tester

D5417-16.....Operation of the Vettermann Drum Tester

E648-19ae1.....Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

E. Code of Federal Regulation (CFR):

40 CFR 59.....Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating

F. The Carpet and Rug Institute (CRI):

CIS.....Carpet Installation Standard

G. International Standards and Training Alliance (INSTALL)

H. International Organization for Standardization (ISO):

2551-81.....Machine-Made Textile Floor Coverings

I. U.S. Consumer Product and Safety Commission (CPSC):

16 CFR 1630.....Surface Flammability of Carpets and Rugs

PART 2 - PRODUCTS

2.1 CARPET

A. Physical Characteristics:

1. Carpet shall be free of visual blemishes, streaks, poorly dyed areas, fuzzing of pile yarn, spots or stains, and other physical and manufacturing defects.
2. Basis of Design: (Or Approved Equals)
   a. Mohawk Flooring; Pattern: Datum BT284, Color: Granite
      Locations: (Office / Nonpublic Areas / Library / Auditorium)
   b. Shaw Flooring; Pattern: Arrange 5T294, Color: Shiny Pebble 94761
      Locations: (Waiting Areas / Areas Open to Corridors)
3. Carpet Type / Characteristics:
   a. Carpet Construction: Tufted (16/oz) Pattern: Linear
   b. Carpet Type: Modular, Glue-Down
   c. Pile Type: Multi-Level Pattern-Loop
   d. Pile Fiber: Commercial 100 percent branded (federally registered trademark), nylon continuous filament.
4. Static Control: Provide static control to permanently regulate static buildup to less than 3.5 kV when tested at 20 percent relative humidity and 21 degrees C (70 degrees F) in accordance with AATCC 134.
5. Backing Materials: Provide backing for glue-down. For healthcare installations, provide impervious moisture backing that is 100 percent PVC free.
6. Appearance Retention Rating (ARR): Carpet to be tested and have the minimum 3.5 – 4.0 severe ARR when tested in accordance with either the ASTM D5252 (Hexapod) or ASTM D5417 (Vettermann) test methods using the number of cycles for short, and long term, tests as specified in the ASTM standard.
7. Tuft Bind: Comply with ASTM D1335 for tuft bind force required to pull a tuft or loop free from carpet backing with a minimum 36 N (8 pound) average force for modular carpet tile.
8. Colorfastness to Crocking: Dry and wet crocking and water bleed, comply w/ AATCC 165 Color Transference Chart for colors, minimum class 4 rating.

9. Colorfastness to Light (AATCC 16, Option 3): Color change between the exposed and unexposed carpet areas equivalent to a minimum of Grade 4 on the Gray Scale for Color Change after an exposure of 40 AFU (AATCC fading units) for all specified colors.
10. Delamination Strength: Minimum of 2.5 lb./inch between backing.
11. Flammability and Critical Radiant Flux Requirements:
    a. Comply with 16 CFR 1630.
    b. Test Carpet in accordance with ASTM E648.
    c. Class I: Min critical radiant flux of 0.45 watts per square centimeter (2.9 watts per square inch).
    d. Carpet in corridors, exits and Medical Facilities to be Class I.
12. Average Pile Yarn Density (APYD): Minimum APYD 7500.
13. VOC Limits: Comply with the following limits, per ASTM D5116:
    a. Carpet, Total VOCs: 0.5 mg/square meter x hour
    b. Carpet, 4-PC (4-Phenylcyclohexene): 0.05 mg/square meter x hour
    c. Carpet, Formaldehyde: 0.05 mg/square meter x hour.
    d. Carpet, Styrene: 0.4 mg/square meter x hour

2.2 ADHESIVE AND CONCRETE PRIMER

A. Provide water resistant, mildew resistant, nonflammable, and non-staining adhesives and concrete primers for carpet installation. Provide release adhesive for modular tile carpet as recommended by the carpet manufacturer. Provide adhesives flashpoint of minimum 60 degrees C (140 degrees F) in accordance with ASTM D3278.

2.3 SEAMING TAPE

A. Provide tape for seams as recommended by the carpet manufacturer for the type of seam used in installation. Do not use sealants that contain 1,1,1-trichloroethane or toluene.

2.4 EDGE STRIPS (MOLDING)

A. Vinyl Edge Strip:
    1. In low traffic areas, use beveled floor flange 2 inches wide minimum.
    2. Beveled surface to finish flush with carpet for a tight joint, and opposant edge to be flush with floor finish.
    3. Color to match adjacent wall base, or as approved by COR.

2.5 SURFACE PREPARATION

A. Contractor to prepare and test surfaces to receive carpet and adhesives as per Section 09 05 16, SUBSURFACE PREPARATION FOR FLOOR FINISHES.

2.6 GENERAL INSTALLATION

A. Isolate area of installation from rest of building.
B. Perform all work by manufacturer’s approved installers. Perform install in accordance with the manufacturer’s printed instructions and CRI CIS.
C. Protect edges of carpet meeting hard surface flooring with molding and install in accordance with molding manufacturer’s printed instructions.
D. Follow ventilation, personal protection, and other safety precautions recommended by the adhesive manufacturer. Continue ventilation during installation and for at least three (3) days following installation.
E. Do not permit traffic or movement of furniture or equipment in carpeted area for 24 hours after installation.
F. Complete other work that would damage the carpet prior to carpet install.
G. Follow manufacturer's recommendations for matching pattern and texture.
H. Cut openings in carpet where required for installing equipment, pipes, outlets, and penetrations. Bind or seal cut edge of sheet carpet. Use additional adhesive to secure carpets around vertical projections.

2.7 MODULAR TILE INSTALLATION

A. Install per CRI CIS, Adhesive Application.
B. Lay carpet modules with pile in same direction unless specified otherwise in Section 09 06 00, SCHEDULE FOR FINISHES.
C. Install carpet modules so that cleaning methods and solutions do not cause dislocation of modules.
D. Lay carpet modules uniformly to provide tight flush joints free from movement when subject to traffic.

2.8 EDGE STRIPS INSTALLATION

A. Install edge strips over exposed carpet edges onto adjacent floor finish.
B. Anchor vinyl edge strip to floor with adhesive. Apply adhesive to edge strip and insert carpet into lip and press lip down over carpet.

2.9 PROTECTION AND CLEANING

A. Once a carpet installation is complete, clean up scrap materials and debris, and vacuum the area, using manufacturer-approved equipment. Inspect seams carefully for evenness and protruding backing yarns. Inspect perimeter of installation for an acceptable finished appearance.

B. Protect installed carpet if furniture is being moved, by laying plywood, fiberboard or porous non-staining sheeting material for minimum time practical. Based on manufacturer guidelines, protect carpet from rolling or foot traffic. Protect against other materials, renovation work, or construction activities, including dust, debris, paint, and contractor traffic. Maintain projection until carpet is ready for its final use.

C. Do not move furniture or equipment onto unprotected carpeted surfaces.

D. Just before final acceptance, remove protection and vacuum carpet clean.

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