

# **SHOWER FLOOR RENOVATION BUILDING 520, MENTAL HEALTH CENTER**

**Veterans Affairs Palo Alto Health Care System  
(VAPAHCS)  
Palo Alto Division (PAD): 3801 Miranda Avenue,  
Palo Alto, CA**



**June 17, 2016**

**PROJECT NO. 640-16-124**

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APPENDICES

Appendix 01    Hot-Work Form

Appendix 02

--End of Section--

SECTION 00 01 15  
LIST OF DRAWING SHEETS

The drawings listed below accompanying this specification form a part of the contract:

| <u>Drawing No.</u>       | <u>Title</u>      |
|--------------------------|-------------------|
| ARCHITECTURAL<br>AS-101A | Ground Floor Plan |
| -- END OF SECTION --     |                   |

SECTION 00 73 19  
HEALTH AND SAFETY REQUIREMENTS

1. REGULATORY REQUIREMENTS

Work and use of premises shall be in accordance with 29 CFR 1903 - Inspections, Citations, and Proposed Penalties, 29 CFR 1904 - Recording and Reporting, 29 CFR 1910 - General Industry Standards, 29 CFR 1926 - Safety and Health Regulations for Construction, NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations, and NFPA 70 - National Electrical Code.

2. SUBMITTALS

Government acceptance is required for submittals with a "G" designation.

Fire Safety Plan; G

Qualification of Site Safety and Health Officer; G

3. SITE SAFETY AND HEALTH OFFICER (SSHO)

Provide an SSHO at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement.

The Contractor Quality Control (QC) person cannot be the SSHO on this project, even though the QC has safety inspection responsibilities as part of the QC duties can be the SSHO on this project.

A. Personnel Qualifications

The SSHO shall meet the following requirements:

1. A minimum of five years safety work on similar projects.
2. 30-hour OSHA construction safety class or equivalent within the last five years.
3. An average of at least 24 hours of formal safety training each year for the past five years.

The credentials of the SSHO shall meet the approval of the

CO.

#### B. Personnel Duties

The SSHO shall be at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor.

Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage at no cost to the Government. The project work stoppage will remain in effect pending approval of a suitable replacement.

#### 4. SAFETY MEETINGS

##### B. Pre-Outage Coordination Meeting

Apply for utility outages at least 15 days in advance (major outages, i.e. outages which will affect other builders or will be greater than 4 hours in duration, shall be requested at least 30 days in advance). As a minimum, the request should include the location of the outage, utilities being affected, duration of outage, and any necessary sketches. Once approved, and prior to beginning work on the utility system requiring shut down, attend a pre-outage coordination meeting with the COR and the Public Utilities representative to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

#### 6. FIRE SAFETY PLAN

Establish and maintain a 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 for review for compliance with contract. Prior to worker for the contractor or subcontractors beginning work, that worker shall undergo a safety briefing provided by the general contractor's competent person per OSHA requirements. This briefing

shall include information on the construction limits, means of egress, break areas, work hours, locations of restrooms, use of VA equipment, etc. Provide documentation to the COR that individuals have undergone contractor's safety briefing.

#### 7. HOT WORK

Submit VA application form for and obtain written permit prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices.

Any fire, no matter how small, shall be reported to the responsible fire division immediately.

#### 8. EMERGENCY MEDICAL TREATMENT

Arrange for emergency medical treatment. Government has no responsibility to provide emergency medical treatment. Submit plan to address emergencies to the CO for approval.

#### 9. REGULATORY CITATIONS AND VIOLATIONS.

Notify the COR immediately of any OSHA or other regulatory agency inspection or visit, and provide a copy of each citation or report and the Contractor's response. Correct violations and citations promptly and provide written corrective.

#### 10. UNFORESEEN HAZARDOUS MATERIAL

If potentially hazardous materials (such as PCB, lead paint, and friable and non-friable asbestos), not indicated on plans, are encountered, stop that portion of work and notify the COR immediately. Within 14 calendar days the Government will determine if the material is hazardous. If materials are not hazardous or pose no danger, the Government will direct the Contractor to proceed without change. If materials are hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

--END OF SECTION--



SECTION 01 11 00  
SUMMARY OF WORK

PART 1 GENERAL

Provide complete construction services for renovating specified shower floors in Building 520. There are 58 shower rooms in total, and construction shall be phased to take no more than 4 shower rooms down per phase.

PART 2 PRODUCTS

Provide a new non-slip shower floor coating, Tera-Gem III DQ Colorquartz or epoxy floor coating product equivalent. All products shall be submitted to VA COR for review and approval prior to any installation.

PART 3 EXECUTION

Provide basic demolition and removal of existing shower floor material. Provide concrete preparation, treatment, sealer (2 coats), and vapor barrier to prepare concrete to accept new epoxy floor coating. Provide a 0.5 to 1 percent slope throughout for proper drainage.

--END OF SECTION--

01 14 00  
WORK RESTRICTIONS

PART 1 GENERAL

1.1 WORKING DAYS/HOURS

- A. All construction work on the contract shall be performed between 8:00 am and 4:30pm Monday through Friday, excluding National Holidays, unless approved in writing by the CO.
- B. Work outside regular working hours requires CO approval. Except for emergencies, make application 15 calendar days prior to such work.
  - a) When possible, submit emergency requests at least two days before the scheduled work.
  - b) Notice shall include a detailed description of the type of work to be performed and its location.
- C. The following is a list of Federal Holidays observed by all Federal Installations:

New Year's Day, January 1  
Martin Luther King, Jr, 3rd Monday in January  
Washington's Birthday, 3rd Monday in February  
Memorial Day, Last Monday in May  
Independence Day, July 4  
Labor Day, 1st Monday in September  
Columbus Day, 2nd Monday in September  
Veterans Day, November 11  
Thanksgiving Day, 4th Thursday in November  
Christmas Day, December 25

NOTE: Any of the above holidays falling on a Saturday will be observed on the preceding Friday; holidays falling on a Sunday will be observed on the following Monday. Also included is any date specifically declared by the President of the United States of America as a National Holiday.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

01 14 16  
COORDINATION WITH  
OCCUPANTS

PART 1 GENERAL

1.1 COORDINATION

Building 520 is a mental health center. Work closely with the center staff through the coordination of the COR to ensure that the disturbances are kept to a minimum, that patients are protected, and that in-place controls remain functional. Coordinate all work so the work will progress without interruption and minimum delays.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section -

01 14 19  
USE OF SITE

PART 1 GENERAL

1.1 SECURITY PROCEDURES

- A. Do not enter the project site without appropriate badge.  
Identification badges will be furnished without charge. Report to the Security Office at the Palo Alto Division, Building 6, to begin processing for the security badge. Immediately report instances of lost or stolen badges to the CO. Failure to obtain entry approval will not affect the contract price or time of completion.
- B. All workers may be subject to inspection of their personal effects when entering or leaving the project site.
- C. Furnish a list of contact personnel of the Contractor and subcontractors including addresses and telephone numbers for use in the event of an emergency to the COR. As changes occur and additional information becomes available, correct and change the information contained in previous lists.
- D. For working outside the "regular hours" as defined in the contract and when approved, security escort shall be pre-arranged.
- E. Ensure that no opening in the roof/walls/windows/fence of the building exist at the end of the work day. If the building cannot be secured at the end of the workday, coordinate action with the COR and provide a security watch.
- F. No photography of VA premises is allowed without written permission of the CO, with the exception of photographing Building 361 during various stages of construction. Ensure no VA employees and no VA patients are depicted in photos.
- G. VA reserves the right to close down or shut down the project site and order General Contractor's employees off the premises in the event of a national emergency. Return to the site only with the written approval of the CO.

B. Key Control:

- A. Provide duplicate keys and lock combinations to the COR for the purpose of security inspections. Duplicate keys shall be provided for every area of the project including tool boxes and

parked machines.

- B. Turn over all permanent lock cylinders to the VA locksmith for permanent installation. See Section 08 71 00, DOOR HARDWARE and coordinate.

C. Document Control:

- A. Before starting any work, submit an electronic security memorandum describing the approach to maintaining confidentiality of "sensitive information".
- B. Safekeep of all drawings, project manual and other project information. This information shall be shared only with those with a specific need to accomplish the project.
- C. Certain documents, sketches, videos or photographs and drawings may be marked "Law Enforcement Sensitive" or "Sensitive Unclassified". Secure such information in separate containers and limit the access to only those who will need it for the project. Return this information to the CO upon request. These security documents shall not be removed or transmitted from the project site without the written approval of CO.
- D. All paper waste or no longer needed electronic media files shall be shredded and destroyed in a manner acceptable to the VA.
- E. Notify CO and Site Security Officer immediately when there is a loss or compromise of "sensitive information".

## 1.2 SITE REGULATIONS

Ensure that all employees who will enter the campus are familiar with and abide with VAPAHCS regulations. Limitations include, but are not limited to:

1. Smoking is prohibited within and outside of all buildings on installations except in designated smoking areas. This applies to existing buildings, buildings under construction, and buildings under renovation. Discarding tobacco materials other than into designated tobacco receptacles is considered littering and is subject to fines. The COR will identify designated smoking areas.
2. Do not enter any non-public area unless gaining written permission and being cleared for such entry.

### 1.3 LIMITS OF USE

- A. Hold and save the Government, its officers, and agents free and harmless from liability of any nature occasioned by the Contractor's performance.
- B. Confine all operations (including storage of materials) on Government premises to areas authorized or approved by the CO.
- C. Restrict employees/representatives to the work site and control travel directly to and from the work site.

### 1.4 CONTRACTOR EQUIPMENT

Contractor's equipment shall be conspicuously marked for identification.

### PART 2 PRODUCTS

Not Used

### PART 3 EXECUTION

Not Used

--End of Section--

SECTION 01 30 00  
ADMINISTRATIVE REQUIREMENTS

1.2 CONTRACTOR PERSONNEL REQUIREMENTS

Furnish a list of contact personnel of the Contractor and subcontractors including addresses and telephone numbers for use in the event of an emergency. As changes occur and additional information becomes available, correct and change the information contained in previous lists.

1.3 SUPERVISION

Have at least one qualified supervisor capable of reading, writing, and conversing fluently in the English language on the job site during working hours. In addition, the Quality Control (QC) representative shall have fluent English communication skills.

1.4 PRECONSTRUCTION CONFERENCE

After award of the contract but prior to commencement of any work at the site, meet with the CO to discuss and develop a mutual understanding relative to the administration of the safety program, preparation of the schedule prices, shop drawings, and other submittals, scheduling programming, prosecution of the work, and clear expectations of the "Interim DD Form 1354" Submittal. Major subcontractors who will engage in the work shall also attend.

1.5 AVAILABILITY OF CADD DRAWING FILES

- A. Data contained on the drawing electronic files shall not be used for any purpose other than as a convenience in the preparation of construction data for the referenced project.
- B. These electronic CADD drawing files are not construction documents. Differences may exist between the CADD files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic CADD files, nor does it make representation to the compatibility of these files with the Contractors hardware or software. In the event that a conflict arises between the signed and sealed construction documents prepared by the

Government and the furnished CADD files, the signed and sealed construction documents shall govern. The Contractor is responsible for determining if any conflict exists. Use of these CADD files does not relieve the Contractor of duty to fully comply with the contract documents, including and without limitation, the need to check, confirm, and coordinate the work of all contractors for the project.

1.6 ELECTRONIC MAIL (E-MAIL)

- A. Establish and maintain electronic mail (e-mail) capability along with the capability to open various electronic attachments in Microsoft, Adobe Acrobat, and other similar formats. Within 10 days after contract award, provide the CO a single (only one) e-mail address for electronic communications from the CO related to this contract including, but not limited to contract documents, invoice information, request for proposals, and other correspondence. The CO may also use email to notify the Contractor of project access conditions when emergency conditions warrant, such as hurricanes, terrorist threats, etc. Multiple email address will not be allowed.
- B. It is the Contractor's responsibility to make timely distribution of all CO initiated e-mail within their own organization including field office(s). Promptly notify the CO, in writing, of any changes to this email address.

-- End of Section --



SECTION 01 31 26  
COORDINATION AND MEETINGS

PART 1 GENERAL

1.1 SAFETY

Incorporate safety meetings into the Preconstruction and Weekly Progress Meetings as required by Section 00 73 19 HEALTH AND SAFETY REQUIREMENTS, Article 4. SAFETY MEETINGS.

PART 2 PRODUCTS

2.1 Meeting Minutes

- A. The Government shall be allowed to review meeting minutes and make comments and notes for inclusion by the Contractor in the record of minutes.
- B. These minutes (as amended) will then be emailed back to the COR for approval and for the Government's records.

PART 3 EXECUTION

3.1 PRECONSTRUCTION MEETINGS

- A. After award of the contract but prior to commencement of any work at the site, meet with the CO and Government staff to discuss and develop a mutual understanding relative to the administration of the safety program, preparation of the schedule prices, shop drawings, and other submittals, scheduling programming, and prosecution of the work.
- B. Record minutes and distribute copies within one week after meeting to all participants and those affected by decisions made.

3.2 WEEKLY PROGRESS MEETINGS

- A. During the construction period, make arrangements to meet weekly with the Government. Prepare and send agendas at least 24 hours in advance and preside at these meetings. The focus of these meetings will primarily be on the Contractor's progress on execution of the construction contract. Discuss schedule critical path. If it appears that activities on the longest path(s) which are currently driving the calculated completion date (driving activities), are not progressing

satisfactorily and therefore could jeopardize timely project completion, corrective action must be taken immediately. Corrective action includes but is not limited to: increasing the number of work crews; increasing the number of work shifts; increasing the number of hours worked per shift; and determining if Government responsibility coded activities require Government corrective action

- B. Job superintendent, major subcontractors, scheduler, and other entities as appropriate to agenda topics shall attend each meeting.
- C. Address the status of RFI's, RFP's and submittals.
- D. Record minutes and distribute copies within one week after meeting to all participants and those affected by decisions made.

### 3.3 PRE-INSTALLATION CONFERENCE

1. Convene a meeting not less than thirty days prior to starting work.
2. Attendance:
  - a. Contractor
  - b. COR
  - c. Manufacturer and Installer's Representative
3. Review the following:
  - a. Environmental requirements
    - 1) Air and surface temperature
    - 2) Relative humidity
    - 3) Ventilation
    - 4) Dust and contaminants
  - b. Protection of surfaces not scheduled to be coated
  - c. Inspect and discuss condition of substrate and other preparatory work performed
  - d. Review and verify availability of material; installer's personnel, equipment needed
  - e. Design and patterns and edge conditions.
  - f. Performance of the coating with chemicals anticipated in the area receiving the resinous (urethane and epoxy mortar/cement) flooring system
  - g. Application and repair
  - h. Field quality control
  - i. Cleaning

- j. Protection of coating systems
- k. One-year inspection and maintenance
- l. Coordination with other work

#### 3.4 UTILITY SHUTDOWN MEETINGS

Requested utility shutdown events will require a meeting between the Contractor and VA engineering staff in the process of gaining VA approval. The VA Engineering staff conducts on-going meetings weekly to accommodate these requests - attend these meetings after properly submitting utility shutdown application paperwork.

--End of Section--

SECTION 01 32 16  
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.1 SUBMITTALS

The following shall be submitted in accordance with SUBMITTAL PROCEDURES Section:

Preconstruction Submittals

Preliminary Project Schedule

Construction Submittals

Initial Project Schedule

Periodic Schedule Updates

1.3 PAYMENT

No separate payment will be made for work associated with upkeep and reporting of schedule and construction progress.

1.4 BASIS FOR PAYMENT

The schedule and construction progress reports shall be the basis for measuring Contractor progress. Failure of the Contractor to provide all information, as specified below, shall result in the inability of the CO to evaluate Contractor progress for payment purposes and the disapproval of the entire Project Schedule submission. In the case where Project Schedule revisions have been directed by the CO and those revisions have not been included in the Project Schedule, retainage up to the maximum allowed by contract may be withheld, for each payment period, until revisions to the Project Schedule have been made.

1.6 CRITICAL PATH METHOD (CPM)

The CPM of network calculation shall be used to generate the Project Schedule. Provide the Project Schedule in the Precedence Diagram Method (PDM).

## 1.7 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of neither the Government nor the Contractor.

## PART 2 PRODUCTS

### 2.1 PROJECT SCHEDULE

The Project Schedule submittals shall include an appropriate level of detail. The CO will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule:

- A. Activity Durations: Contractor submissions shall follow the direction of the CO regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods.
- B. Procurement Activities: Tasks related to the procurement of long-lead materials or equipment shall be included as separate activities in the project schedule. Long-lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, and delivery.
- C. Critical Activities: All critical activities shall be listed as separate line activities on the Contractor's project schedule.
- D. Government Activities: Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to: approvals, environmental permit approvals by State regulators, inspections, utility tie-in, Government Furnished Equipment (GFE), and Notice to Proceed (NTP) for phasing requirements.
- E. Responsibility: All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

- F. Work Areas: All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.
- G. Modification or Claim Number: Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number. Whenever possible, changes shall be added to the schedule by adding new activities. Existing activities shall not normally be changed to reflect modifications.
- H. Bid Item: All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.
- I. Phase of Work: All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.
- J. Category of Work: All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as permits, submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.
- K. Feature of Work: All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to, a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.
- L. Scheduled Project Completion: The schedule interval shall extend from NTP to the contract completion date.

- M. Project Start Date: The schedule shall start no earlier than the date on which the NTP was acknowledged. Include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged, and zero day duration.
- N. Constraint of Last Activity: Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. Include as the last activity in the project schedule an activity called "End Project". The "End Project" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.
- O. Early Project Completion: In the event the project schedule shows completion of the project prior to the contract completion date, identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Address each of the activities noted in the narrative report at every project schedule update period to assist the CO in evaluating the Contractor's ability to actually complete prior to the contract period.
- P. Interim Completion Dates: Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.
- Q. Start Phase: Include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.
- R. End Phase: Include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.
- S. Phase X: Include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" activity

shall be logically tied to the earliest and latest activities in the phase.

- T. Default Progress Data Disallowed: Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure to document the Actual Start and Finish dates on the Daily Quality Control report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating will result in the disapproval of the Contractor's schedule and the inability of the CO to evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features which calculate one of these parameters from the other shall be disabled.
- U. Out-of-Sequence Progress: Activities that have posted progress without all preceding logic being satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the CO. Propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule.
- V. Negative Lags: Lag durations contained in the project schedule shall not have a negative value.

### PART 3 EXECUTION

Pursuant to the 00 72 00 CONTRACT CLAUSES, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared by the contractor:

#### 3.1 PROJECT SCHEDULE SUBMISSIONS

Provide the following schedule submissions in appropriate electronic format.

- A. Preliminary Project Schedule Submission: The Preliminary Project Schedule, defining the Contractor's planned operations for the first 30 calendar days shall be submitted for approval within 10 calendar days after the NTP is acknowledged. The approved preliminary schedule shall be used for payment purposes not to exceed 30 calendar days after NTP.



- B. Initial Project Schedule Submission: The Initial Project Schedule shall be submitted for approval within 20 calendar days after NTP. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.
- C. Periodic Schedule Updates: Submit periodic schedule updates based on the result of progress meetings, specified in "Periodic Progress Meetings," and as discussed herein. These submissions shall enable the CO to assess Contractor's progress. Failure or refusal to furnish the information and project schedule data, which in the judgment of the CO or authorized representative is necessary for verifying the Contractor's progress, will be deemed as not providing an estimate upon which progress payment may be made.

### 3.5 SUBMISSION REQUIREMENTS

- A. Indicate the type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project location, data date in schedule data.
- B. Name each file in relation to the schedule data date, and project name. Develop a naming convention that will ensure that the names of the files submitted are unique. Submit the file naming convention to the CO for approval.
- C. Narrative Report: An electronic Narrative Report shall be provided with the preliminary, initial, and each update of the project schedule. This report will serve as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the critical path and the path with the least amount of floats, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.
- D. Approved Changes Verification: Only project schedule changes that have been previously approved by the CO shall be included in the schedule

submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

- E. Schedule Reports: The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Predecessor Activity, Successor Activity, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float, Activity Amount. Actual Start and Actual Finish Dates shall be included for those activities in progress or completed.
- F. Activity Report: A list of all activities sorted according to activity number.
- G. Logic Report: A list of Preceding and succeeding activities for every activity in ascending are ordered by activity number. Proceeding and succeeding activities shall include all information listed above in paragraph Schedule Reports. A blank line shall be left between each activity grouping.
- H. Total Float Report: A list of all incomplete activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.
- I. Earnings Report: The earnings report shall provide a compilation of the Contractor's Total Earnings on the project from the NTP until the most recent Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and CO at the most recent Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; and complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.
- J. Network Diagram: The network diagram shall be required on the initial

schedule submission and on monthly periodic schedule update submissions. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The CO will use, but is not limited to, the following conditions to review compliance with this paragraph:

1. Continuous Flow: Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity number, description, duration, and estimated earned value shall be shown on the diagram.
2. Project Milestone Dates: Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.
3. Critical Path: The critical path shall be clearly shown.
4. Banding: Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.
5. S-Curves: Earnings curves showing projected early and late earnings and earnings to date.

### 3.7 REQUESTS FOR TIME EXTENSIONS

- A. In the event the Contractor requests an extension of the contract completion date, or any interim milestone date, furnish the following to the CO for a determination as to whether or not an extension of time will be granted under the provisions of the contract: justification, project schedule data, and supporting evidence as the CO may deem necessary.
- B. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.
- C. Justification of Delay: The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The CO's determination as to the number of allowable days of contract extension will be based upon the project schedule updates in effect for the time period in

question, and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, will not be a cause for a time extension to the contract completion date.

D. Submission Requirements: Submit a justification for each request for a change in the contract completion date of less than 14 calendar days based upon the most recent schedule update at the time of the NTP or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

1. A list of affected activities, with their associated project schedule activity number.
2. A brief explanation of the causes of the change.
3. An analysis of the overall impact of the changes proposed.
4. A sub-network of the affected area.
5. Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

E. Additional Submission Requirements: For any requested time extension of over 14 calendar days, the CO may request an interim update with revised activities for a specific change request. Provide this update within 4 days of the CO's request.

### 3.8 DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time, submit proposed schedule revisions to the CO within 14 calendar days of the NTP being issued. The proposed revisions must be approved by the CO prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the CO may furnish the Contractor with suggested revisions to the project schedule. Include these revisions in the project schedule until revisions are submitted and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions, advise the CO within 14 calendar days of receipt of the revisions. Regardless of the objections, continue to update the schedule with the CO's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 14 calendar days of receipt of the CO's proposed revisions, the Contractor

will be deemed to have concurred with the CO's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

--END OF SECTION--

SECTION 01 33 00  
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 INTRODUCTION

This section describes the procedures and formats for preparing and presenting project submittal information. Submittal content requirements are included elsewhere in these specifications.

1.2 PAYMENTS FOR SUBMITTALS

No separate payment will be made for submittal activities. Project submittal activities are an associated subsidiary obligation of the contract line items.

PART 2 PRODUCTS

(NOT USED)

PART 3 EXECUTION

3.1 GENERAL

- A. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings.
- B. Each submittal shall be in sufficient detail to allow ready determination of compliance with contract requirements.
- C. Proposed deviations from the contract requirements shall be clearly identified.
- D. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered.
- E. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS), existing laws and regulations, and Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT.
- F. Provide an electronic version of submittals unless waived by COR. The preferred electronic version would be as a file from such commonly used programs as MS Word 2010, Excel 2010, or AutoCad 2014 as appropriate and pdf file.
- G. Contract Clauses "FAR 52.236-5, Material and Workmanship," paragraph

(b) apply to all submittals.

### 3.7 SCHEDULING

#### A. General

Submittals covering component items forming a system or items that are interrelated shall be submitted concurrently.

#### B. Control of Submittals

Carefully control procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register".

### 3.8 SUBMITTAL PROCEDURES

#### A. Transmittal of Submittals

All submittals shall be transmitted through the COR.

#### B. Submittal Copies

Provide 4 copies each for "Government Approved" submittals and 2 copies each for "Information Only" submittals unless otherwise noted. Also provide the electronic versions for each submittal.

#### C. Deviations

1. For submittals which include proposed deviations requested by the Contractor:

- a. Set forth in writing the reason for any deviations and annotate such deviations on the submittal.
- b. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

### 3.9 APPROVED SUBMITTALS

- A. The CO's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory.
- B. Approval will not relieve the Contractor of the responsibility for any error which may exist.

### 3.10 WITHHOLDING OF PAYMENT

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

### 3.11 DISAPPROVED SUBMITTALS

- A. Make all corrections required by the CO and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal.
- B. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, the Contractor is directed to give notice in accordance with the Contract Clause "Changes" promptly to the CO.

### 3.12 SUBMITTAL FORMS

#### A. Submittal Register

Submit a submittal register for all required submittals within 20 calendar days after NTP. Include due dates that assure compliance with the approved project schedule.

#### B. Transmittal Form

List specification paragraph and sheet number of the contract drawings pertinent to the data submitted for each item.

--END OF SECTION--



[illegible]

SECTION 01 33 23  
SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- 1.1 Submit for approval all of the items specifically mentioned under the separate sections of the specification, with information sufficient to evidence full compliance with contract requirements. Materials, fabricated articles, and the like to be installed in permanent work shall equal those of approved submittals. After an item has been approved, no change in brand or make will be permitted unless:
- A. Satisfactory written evidence is presented to, and approved by CO, that manufacturer cannot make scheduled delivery of approved item or;
  - B. Item delivered has been rejected and substitution of a suitable item is an urgent necessity or;
  - C. Other conditions become apparent which indicates approval of such substitute item to be in best interest of the Government.
- 1.2 Forward submittals in sufficient time to permit proper consideration and approval action by Government. Time submission to assure adequate lead time for procurement of contract - required items. Delays attributable to untimely and rejected submittals will not serve as a basis for extending contract time for completion.
- 1.3 Submittals will be reviewed for compliance with contract requirements by Architect-Engineer, and action thereon will be taken by the COR on behalf of the CO.
- 1.4 The Government reserves the right to require additional submittals, whether or not particularly mentioned in this contract. If additional submittals beyond those required by the contract are furnished pursuant to request therefor by CO, adjustment in contract price and time will be made in accordance with Articles titled CHANGES (FAR 52.243-4) and CHANGES - SUPPLEMENT (VAAR 852.236-88).
- 1.5 Schedules called for in specifications and shown on shop drawings shall be submitted for use and information of Department of Veterans Affairs and Architect-Engineer. However, the Contractor shall assume responsibility for coordinating and verifying schedules. The CO and the Architect- Engineer assumes no responsibility for checking schedules

or layout drawings for exact sizes, exact numbers and detailed positioning of items.

- 1.6 Submittals must be submitted by the Contractor only and shipped prepaid. The CO assumes no responsibility for checking quantities or exact numbers included in such submittals.
  - A. Submit samples required by Section 09 06 00, SCHEDULE FOR FINISHES, in quadruplicate. Submit samples in single units unless otherwise specified. Submit shop drawings, schedules, manufacturers' literature and data, and certificates in quadruplicate, except where a greater number is specified.
  - B. Submittals will receive consideration only when covered by a transmittal letter signed by Contractor. Letter shall be sent via first class mail and shall contain the list of items, name of Medical Center, name of Contractor, contract number, applicable specification paragraph numbers, applicable drawing numbers (and other information required for exact identification of location for each item), manufacturer and brand, ASTM or Federal Specification Number (if any), and such additional information as may be required by specifications for particular item being furnished. In addition, catalogs shall be marked to indicate specific items submitted for approval.
    1. A copy of letter must be enclosed with items, and any items received without identification letter will be considered "unclaimed goods" and held for a limited time only.
    2. Each sample, certificate, manufacturers' literature, and data shall be labeled to indicate the name and location of the Medical Center, name of Contractor, manufacturer, brand, contract number, and ASTM or Federal Specification Number as applicable and location(s) on project.
    3. Required certificates shall be signed by an authorized representative of manufacturer or supplier of material, and by Contractor.
  - C. If submittal samples have been disapproved, resubmit new samples as soon as possible after notification of disapproval. Such new

samples shall be marked "Resubmitted Sample" in addition to containing other previously specified information required on label and in transmittal letter.

- D. Approved samples will be kept on file by the COR at the site until completion of contract, at which time such samples will be delivered to Contractor as Contractor's property. Where noted in technical sections of specifications, approved samples in good condition may be used in their proper locations in contract work. At completion of contract, samples that are not approved will be returned to Contractor only upon request and at Contractor's expense. Such request should be made prior to completion of the contract. Disapproved samples that are not requested for return by Contractor will be discarded after completion of contract.
- E. Submittal drawings (shop, erection or setting drawings) and schedules, required for work of various trades, shall be checked before submission by technically qualified employees of Contractor for accuracy, completeness and compliance with contract requirements. These drawings and schedules shall be stamped and signed by Contractor certifying to such check.

1. Each drawing shall have proper descriptive title, including Medical Center location, project number, manufacturer's number, reference to contract drawing number, detail Section Number, and Specification Section Number.
2. A space 120 mm by 125 mm (4-3/4 by 5 inches) shall be reserved on each drawing to accommodate approval or disapproval stamp.
3. Submit drawings, ROLLED WITHIN A MAILING TUBE, fully protected for shipment.
4. One reproducible print of approved or disapproved shop drawings will be forwarded to Contractor.
5. When work is directly related and involves more than one trade, shop drawings shall be submitted to Architect-Engineer under one cover.

- 1.7 Samples shop drawings, test reports, certificates, and manufacturers' literature and data, shall be submitted for approval

to the COR.

- 1.8 At the time of transmittal to the Architect-Engineer, also send a copy of the complete submittal directly to the COR.

--END OF SECTION--

SECTION 01 35 33  
INFECTION CONTROL

PART 1      GENERAL

1.1      SUMMARY

- A. Implement the requirements the ICRA team. The ICRA team will monitor dust in the vicinity of the construction work and may require the Contractor to take corrective action immediately if the safe levels are exceeded.
- B. Establish and maintain a dust control program as part of the contractor's infection preventive measures in accordance with the guidelines provided by ICRA team as specified here. Prior to start of work, prepare a plan detailing project-specific dust protection measures, including periodic status reports, and submit to the COR for review for compliance with contract requirements.
  - 1. All personnel involved in the construction or renovation activity shall be educated and trained in infection prevention measures established by the medical center.
- C. The ICRA team will monitor for airborne disease (e.g. aspergillosis) as appropriate during construction. A baseline of conditions will be established by the medical center prior to the start of work and periodically during the construction stage to determine impact of construction activities on indoor air quality. In addition:
  - 1. The COR and the ICRA team will review pressure differential monitoring documentation to verify that pressure differentials in the construction zone and in the patient-care rooms are appropriate for their settings. The requirement for negative air pressure in the construction zone will depend on the location and type of activity. Upon notification, implement corrective measures to restore proper pressure differentials as needed.
  - 2. In case of any problem, the medical center, along with assistance from the contractor, will conduct an environmental assessment to find and eliminate the source.
- D. In general, preventive measures shall be adopted during construction to keep down dust and prevent mold.

1. Dampen debris to keep down dust and provide temporary construction partitions in existing structures where directed by COR. Block off ducts and diffusers to prevent circulation of dust into occupied areas during construction.

E. 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 the 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.

1.2 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL

PROCEDURES:

Dust Control Program

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

(Not Used)

--END OF SECTION--

SECTION 01 45 01  
QUALITY CONTROL

PART 1 GENERAL

1.1 INTRODUCTION

This section describes the plans, procedures, and organization associated with Contractor Quality Control (CQC).

1.2 PAYMENT PROCEDURES

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all associated costs will be included in the applicable Bid Schedule unit or lump-sum prices.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation. Submittals having an "I" designation are for information only. The following shall be submitted in accordance with SUBMITTAL PROCEDURES Section:

SD-01: Preconstruction Submittals

Contractor Quality Control Plan; G

SD-06: Test Reports

Daily Quality Control (CQC) Reports; I

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Establish and maintain an effective quality control (QC) system in compliance with the Contract Clause titled "Inspection of Construction." QC consists of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. Cover all construction operations, both onsite and offsite, and be keyed to the proposed construction sequence. The project superintendent will be held responsible for the quality of work and is subject to removal by the CO for non-compliance with the quality requirements specified in the contract. In this context, the highest level manager responsible for the



overall construction activities at the site, including quality and production, is the project superintendent. The project superintendent must maintain 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 CO.

### 3.2 QUALITY CONTROL PLAN

Submit the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction" within 30 calendar days after NTP. The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. 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 features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

#### A. Content of the CQC Plan

Include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

1. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff will implement the three phase control system for all aspects of the work specified. Include a CQC System Manager who 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 shall be issued by the CQC System Manager. Copies of these letters shall be furnished to the Government.

4. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures must be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.
5. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities approved by the Contracting Officer shall 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 construction deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been 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 may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list shall be agreed upon during the coordination meeting.

#### B. 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 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.

#### C. Notification of Changes

After acceptance of the CQC Plan, notify the CO in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

### 3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, meet with the CO or the COR and discuss the Contractor's quality control system. Submit the CQC Plan a minimum of seven calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite 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 the Contracting Officer and will become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

### 3.4 QUALITY CONTROL ORGANIZATION

#### 3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager must receive direction and authority from the CQC System Manager and 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 shall maintain 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. 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 drawing submittals, schedules, and all other project documentation to the CQC organization. The CQC organization shall be responsible for maintaining these documents and records at the site at all times.

#### 3.4.2 CQC System Manager

Identify as CQC System Manager an individual within the onsite work organization who is responsible for overall management of CQC and has the authority to act in all CQC matters for the Contractor. The CQC System Manager must be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of five years construction experience on construction similar to this contract, or a construction person with a minimum of ten years in related work. This CQC System Manager shall be on the site at all times during construction and be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties. Identify in the plan an alternate to serve in the event of the CQC System Manager's absence. The requirements for the alternate are the same as the CQC System Manager.

#### 3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: electrical, civil, structural, submittals clerk. These individuals shall be directly employed by the prime Contractor and shall not be employed by a supplier or subcontractor on this project; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals must have no other duties other than quality control.

#### 3.4.4 Additional Requirement

In addition to the above experience and education requirements the CQC System Manager must have completed the course entitled "Construction

Quality Management for Contractors" within the last five years.

#### 3.4.5 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 CO for acceptance.

#### 3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, must comply with the requirements in Section 01 33 00 SUBMITTAL PROCEDURES. The CQC manager is responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

#### 3.6 CONTROL

Contractor Quality Control 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 must be conducted by the CQC System Manager for each definable feature of the construction work as follows:

##### 3.6.1 Preparatory Phase

This phase is performed prior to beginning work on each definable feature of work, after all required plans/documents/materials have been approved/accepted, and after copies are at the work site. This phase includes:

- a. A review of each paragraph of applicable specifications, reference 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 Government personnel until final acceptance of the work.
- b. Review of the contract drawings.
- c. Check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required

control inspection and testing.

- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. 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.
- g. Review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. Checking to ensure that the portion of the plan for the work to be performed has been accepted by the CO.
- j. Discussion of the initial control phase.

The Government shall be notified at least 24 hours 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.

#### 3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. Accomplish the following:

- a. Check work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. 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 future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

#### 3.6.3 Follow-up Phase

Perform daily checks to assure control activities, including control testing, are providing continued compliance with contract requirements until 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.

#### 3.6.4 Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same definable features of work if: the quality of on-going 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.

### 3.7 TESTS

#### 3.7.1 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 shall include operation and/or acceptance tests when specified. Procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. Perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. 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 sequential control number identifying the test.

If approved by the CO, actual test reports may be 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 CO. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

### 3.8 DOCUMENTATION

Maintain current records that provide factual evidence that required quality control activities and/or tests have been performed. Include in these records the work of subcontractors and suppliers on an acceptable form which includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and who the work was performed by. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity



number.

- d. Test and control activities performed with results and references to specifications/drawings requirements. Identify the control phase (Preparatory, Initial, Follow-Up). List the deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.
- k. Indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered.
- l. 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. As a minimum, prepare and submit one report for every 7 days of no work and on the last day of a no work period. All calendar days must 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 must be signed and dated by the CQC System Manager. Include copies of test reports and copies of reports prepared by all subordinate quality control personnel within the CQC System Manager Report.

### 3.9 CQC REPORTS

CQC reports, including daily reports, shall be generated in accordance with the QUALITY CONTROL SYSTEM Section. CQC reports shall be submitted in

paper format with wet signature certification.

#### 3.10 NOTIFICATION OF NONCOMPLIANCE

The CO will notify the Contractor of any detected noncompliance with the foregoing requirements. 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 CO may 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.

--End of Section--

SECTION 01 51 00  
TEMPORARY UTILITIES

PART 1     GENERAL

1.1 TEMPORARY WIRING

Provide temporary wiring in accordance with NFPA 241 and NFPA 70, Article 305-6(b), Assured Equipment Grounding Conductor Program. Include frequent inspection of all equipment and apparatus.

PART 2     PRODUCTS

(not used)

PART 3     EXECUTION

3.1     AVAILABILITY AND USE OF UTILITY SERVICES

- A. The Government will make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. The amount to be paid by the Contractor for chargeable electrical services will be the prevailing rates charged to the Government. Carefully conserve any utilities that are furnished without charge. Normal office electrical, heating, and plumbing needs will be provided by the government; all construction related energy needs (including, but not limited to, welders, cranes, etc.) will be metered and paid by the Contractor.
- B. At Contractor's expense and in a workmanlike manner satisfactory to the CO, install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of electricity used in construction for the purpose of determining charges. Before final Government acceptance of the work, remove all the temporary connections, distribution lines, meters, and associated paraphernalia.
- C. Install meters at Contractor's expense and furnish the Medical Center a monthly record of the Contractor's usage of electricity. Before completion of the work and final acceptance of the work by the Government, notify the CO, in writing, 5 working days before termination is desired. The Government will take a final meter

reading.

D. Office heat will be provided by the Government (as long as the Contractor conserves its use); temporary heat necessary to prevent injury to work and materials through dampness and cold shall be provided by the Contractor. Use of open salamanders or any temporary heating devices which may be fire hazards or may smoke and damage finished work will not be permitted. Maintain minimum temperatures as specified for various materials.

E. Water (for Construction and Testing):

1. Obtain water by connecting to the Medical Center water distribution system. Provide reduced pressure backflow preventer at each connection. Water is available at no cost to the Contractor as long as not being wasted (as determined by the COR).
2. Maintain connections, pipe, fittings and fixtures and conserve water-use so none is wasted.

### 3.2 Sanitation

Provide and maintain within the construction area minimum field-type sanitary facilities approved by the CO and periodically empty wastes into a municipal, district, or station sanitary sewage system, or remove waste to a commercial facility. Obtain approval from the system owner prior to discharge into any municipal, district, or commercial sanitary sewer system. Any penalties and fines associated with improper discharge will be the responsibility of the Contractor. Coordinate with the CO and follow station regulations and procedures when discharging into the station sanitary sewer system. Maintain these conveniences at all times without nuisance. Include provisions for pest control and elimination of odors.

### 3.3 TELEPHONE AND DATA COMMUNICATIONS EQUIPMENT

Make arrangements for and pay all costs for telephone and wireless internet facilities desired. The installation, repair, and service for the equipment will be provided by the Contractor.

#### 3.4 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. 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 COR.

- A. Smoke Detectors: Prevent accidental operation. Remove temporary covers at end of work operations each day. Coordinate with COR.

--END OF SECTION--

SECTION 01 55 00  
TEMPORARY VEHICLE ACCESS AND PARKING

PART 1 GENERAL

1.1 Motor Vehicle Restrictions:

- A. Specific parking areas will NOT be assigned for workers on this construction project. Contractors, including maintenance contractors and workers, are specifically prohibited from parking in those spaces reserved for Engineering Vehicles or lawn areas. Contractor employee parking shall not interfere with existing and established parking requirements of the government installation.

PART 2 PRODUCTS

2.1 TEMPORARY TRAFFIC CONTROL

A. Barricades

Erect and maintain temporary barricades to limit public access to hazardous areas.

B. Traffic Control Signs

Provide and install traffic control signs. Remove at the end of the project as directed by the COR.

PART 3 EXECUTION

3.1 Haul Roads

Use only established roadways, or provide temporary roadways when and as authorized by the COR.

- A. 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.
- B. Construct temporary haul roads with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic are to be avoided.
- C. Provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic.
- D. Control haul road dust by watering.

### 3.2 TRAFFIC PROVISIONS

#### A. Maintenance of Traffic

1. Make all notifications and obtain any permits required for modification to traffic movements outside Station's jurisdiction. Contractor may move oversized and slow-moving vehicles to the worksite provided requirements of the highway authority have been met.
2. Maintain traffic on at least half of the roadway width at all times. Wherever excavation for new utility lines cross existing roads, at least one lane must be open to traffic. Obtain approval from the COR prior to starting any activity that will obstruct traffic.

#### B. Protection of Traffic

1. Protect the traveling public from damage to person and property.
2. Investigate the adequacy of existing roads and their allowable load limit. 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.
3. When it is necessary to cross curbs or sidewalks, protect them from damage. Method and scheduling of required cutting, altering and removal of existing roads, walks, and entrances must be approved by the COR. Repair or pay for the repair of any damaged curbs, sidewalks, or roads.
4. Coordinate the work for this contract with other construction operations as directed by the COR. This includes the scheduling of traffic and the use of roadways.
5. When buildings are required to be completed in advance of general date of completion, all roads leading there must be completed and available for use at time of that building's completion.

### 3.3 Dust Control

Dust control methods and procedures shall be approved by the CO. Treat dust abatement on access roads with applications of calcium chloride, water sprinklers, or similar methods or treatment.

--END OF SECTION--



SECTION 01 57 19  
TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.1 SUMMARY

Minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. Comply with all applicable Federal, State, and local environmental laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.2 PAYMENTS

No separate payment will be made for activities associated with environmental protection. Environment protection is an associated subsidiary obligation of the contract line items.

1.3 SUBMITTALS

The following shall be submitted in accordance with SUBMITTAL PROCEDURES Section:

SD-01: Preconstruction Submittals

|                               |   |
|-------------------------------|---|
| Environmental Protection Plan | G |
|-------------------------------|---|

SD-06: Test Reports

|  |   |
|--|---|
| Condition Survey Report                    | G |
| Hazardous Waste Manifests                  | I |
| Non-Hazardous Solid Waste Diversion Report | I |

1.4 ENVIRONMENTAL PROTECTION PLAN

Submit an Environmental Protection Plan as soon as possible after receipt of the Notice to Proceed, but no fewer than 15 days prior to commencing construction activities or delivery of materials to the site. The purpose of the Environmental Protection Plan is to present and describe all known or potential environmental issues which the Contractor must address during construction. Address each topic at a level of detail commensurate with the

environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, meet with the CO for the purpose of discussing the implementation of the initial Environmental Protection Plan, possible subsequent additions and revisions to the Plan including any reporting requirements, and methods for administration of the Contractor's environmental Plans. The Environmental Protection Plan shall remain current and be maintained onsite by the Contractor.

#### A. Contents of Environmental Protection Plan

The Environmental Protection Plan shall include, but shall not be limited to:

1. Name of person (and alternate persons as needed) within the Contractor's organization who is (are) responsible for ensuring adherence to the Environmental Protection Plan.
2. Name and qualifications of person (and alternate persons as needed) responsible for manifesting hazardous waste to be removed from the site, if applicable.
3. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.
4. Description of the Contractor's environmental protection personnel training program.
5. The name of the individual who will responsible for reporting any unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. This individual shall immediately notify the CO in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. Any spill or release of a hazardous substance will be properly documented. These procedures are supplemental to the requirements of EM 385-1-1.
6. A Pesticide Treatment Plan which shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition,

formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, regional and local pest-management record keeping and reporting requirements. Follow Army Regulation 200-5 Pest Management, Chapter 2, Section III "Pest Management Records and Reports" for data required to be reported. The plan shall be updated as information becomes available during construction.

7. Environmental Protection Plan Appendix: Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached, as an appendix, to the Environmental Protection Plan.

#### 1.8 NOTIFICATION

The CO will notify the Contractor of any observed noncompliance with Federal, State, or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection Plan. After receipt of such notice, inform the CO of the proposed corrective action and take such action when approved by the CO.

#### PART 2 PRODUCTS

NOT USED.

#### PART 3 EXECUTION

##### 3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

Obtain all necessary environmental permits and commitments not explicitly furnished by the Government in the project's Plans and/or specifications. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices unless explicitly listed in the Specifications as Government furnished. Pay all fines/fees for violation or non-compliance with Federal, State, Regional, and local laws and regulations.

##### 3.2 WORK AREA LIMITS

Prior to commencing construction activities, mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

### 3.3 WATER RESOURCES

See SECTION 01 57 23, TEMPORARY STORM WATER POLLUTION CONTROL.

### 3.4 AIR RESOURCES

Equipment operation, activities, or processes shall be in accordance with all Federal, State, and local air emission and performance laws and standards.

#### A. Particulates

Dust particles, aerosols, and gaseous by-products from construction activities, and processing and preparation of materials, such as from asphaltic batch plants, shall be controlled at all times, including weekends, holidays, and when work is not in progress. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. Have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with all State and local visibility regulations.

#### B. Odors

Odors from construction activities shall be controlled at all times.

The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

C. Burning

Burning will not be allowed on the project site unless specified in other sections of the specifications or authorized in writing by the CO. The specific time, location, and manner of burning shall be subject to approval.

3.5 NOISE

Keep construction activities under surveillance and control to minimize environment damage by noise. Comply with the provisions of the State of California rules.

A. Reduction of Noise

Minimize noise using every action possible. Perform noise-producing work in less sensitive hours of the day or week as directed by the COR. Maintain noise-produced work at or below the decibel levels and within the time periods specified.

B. Perform construction activities involving repetitive, high-level impact noise only between 8:00 a.m. and 5:00 p.m. unless otherwise permitted by local ordinance and the COR. Repetitive impact noise on the property shall not exceed the following dB limitations:

| Time Duration of Impact Noise       | Sound Level in dB |
|-------------------------------------|-------------------|
| More than 12 minutes in any hour    | 70                |
| Less than 30 seconds of any hour    | 85                |
| Less than three minutes of any hour | 80                |
| Less than 12 minutes of any hour    | 75                |

C. Provide sound-deadening devices on equipment and take noise abatement measures that are necessary to comply with the requirements of this contract, consisting of, but not limited to, the following:

1. Limit maximum permissible construction equipment to noise levels at 15 m (50 feet).
2. Use shields or other physical barriers to restrict noise transmission.

3. Provide soundproof housings or enclosures for noise-producing machinery.
  4. Use efficient silencers on equipment air intakes.
  5. Use efficient intake and exhaust mufflers on internal combustion engines that are maintained so equipment performs below noise levels specified.
  6. Line hoppers and storage bins with sound deadening material.
  7. Conduct truck loading, unloading, and hauling operations so that noise is kept to a minimum.
- D. Measure sound level for noise exposure due to the construction at least once every five successive working days while work is being performed above 55 dB(A) noise level. Measure noise exposure at the property line or 15 m (50 feet) from the noise source, whichever noise level is greater. Measure the sound levels on the A weighing network of a General Purpose sound level meter at slow response. Submit the recorded information to the COR noting any problems and the alternatives for mitigating actions.

| EARTHMOVING   | DBA | MATERIALS HANDLING | DBA           |
|---------------|-----|--------------------|---------------|
| Front Loaders | 75  | Concrete Mixers    | 75            |
| Backhoes      | 75  | Concrete Pumps     | 75            |
| Dozers        | 75  | Cranes             | 75            |
| Tractors      | 75  | Derricks Impact    | 75            |
| Scrapers      | 80  | Pile Drivers       | 95            |
| Graders       | 75  | Jack Hammers       | 75            |
| Trucks        | 75  | Rock Drills        | 80            |
| Pavers        | 80  | Pneumatic Tools    | 80            |
| STATIONARY    |     |                    |               |
| Pumps         | 75  | Blasting           | Not Permitted |
| Generators    | 75  | Saws               | 75            |
| Compressors   | 75  | Vibrators          | 75            |

### 3.6 PREVIOUSLY USED EQUIPMENT

Clean all previously used construction equipment prior to bringing it

onto the project site. Ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. Consult with the USDA jurisdictional office for additional cleaning requirements.

### 3.7 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. Conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

--END OF SECTION--

SECTION 01 66 19  
MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.1 DESCRIPTION

1.1.1 Requirements Included

- A. Products
- B. Transportation and Handling
- C. Storage and Protection
- D. Substitutions and Product Options

1.1.2 Related Requirements

Section 01 33 00 SUBMITTAL PROCEDURES

1.2 QUALITY ASSURANCE

Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Manufacturer's Recommendations

1. Comply with manufacturer's recommendations on product handling, storage, and protection.
  - a. Maintain packaged materials with seals unbroken and labels intact until time of use.
  - b. Promptly remove damaged materials and unsuitable items from the job site, and promptly replace with material meeting the specified requirements at no additional cost to the Government.
2. The Government may reject as non-complying such material and products that do not bear satisfactory identification as to manufacturer, grade, quality, and other pertinent information.
3. Promptly inspect shipment to assure that products comply with requirements, quantities are correct, and products are undamaged.



#### 1.4 JOB CONDITIONS

##### A. Storage and Protection

1. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
2. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.
3. After installation, provide coverings to protect products from damage from traffic and construction operations, remove when no longer needed.
4. Maintain finished surfaces clean, unmarred, and suitable protected until accepted by the Government.

##### B. Repairs and Replacements

1. In event of damage, promptly make replacements and repairs to the satisfaction of, and at no cost to, the Government.
2. Additional time required to secure replacements and to make repairs will not be considered by the Government to justify an extension in the Contract Time of Completion.

#### 1.5 ALTERNATIVES

##### A. Product Options

1. Within 10 days after date of Contract, submit complete list of major products proposed, with name of manufacturer, trade name, and model.
2. Options:
  - a. Products specified by reference standards or by description only: Any product meeting those standards.
  - b. Products specified by naming one of more manufacturers with substitute paragraph: Submit a request for substitution for any manufacturer not specifically named.
  - c. Products specified by naming several manufacturers: Products of named manufacturers meeting specifications; no options or substitutions allowed.
  - d. Products specified by naming only one manufacturer: No options, no substitutions allowed.

##### B. Substitutions

1. Only within 10 days after date of contact will Government consider requests from Contractor for substitutions. Subsequently, substitutions will be considered only when a product becomes unavailable due to no fault of Contractor.
2. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
3. Request constitutes a representation that Contractor:
  - a. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
  - b. Shall provide the same warranty for substitution as for specified product.
  - c. Shall coordinate installation and make other changes that may be required for work to be complete in all respects.
  - d. Waives claims for additional costs that may be incurred.
4. Indicating or implying substitutions on shop drawing or product data submittals without separate written request is not sufficient to seek permissions for substitutions.
5. The Government will determine acceptability of proposed substitution, and will notify Contractor of acceptance or rejection in writing.
6. The Government can, at his option, require as a condition of acceptance of a substitution that the Contractor provide a credit to the Government for the difference in cost of product(s) or components, or systems proposed as a substitution.
7. If, upon Government's review of a substitution, it is determined that the substitution is not acceptable, for whatever reason, supply the specified product or products.

PART 2 PRODUCT

NOT USED

PART 3 EXECUTION

NOT USED

--End of Section--

SECTION 01 73 29  
CUTTING AND PATCHING

PART 1 GENERAL

1.1 SUMMARY

This Section contains additional provisions for cutting, patching, and restoration of general construction, mechanical, and electrical work.

1.2 QUALITY ASSURANCE

- A. Skilled Mechanics: Accomplish all work of cutting, removal, demolition, relocation, patching, and other restoration by using only mechanics skilled in the trade.
- B. Structural Work: Where removals, demolition, cutting, and similar work involves structural consideration, avoid damage and preserve the safety of the structure and all personnel.

Utilize competent and qualified technical assistance to develop safe methods and techniques to accomplish the work, including for temporary shoring and supports, methods of removal, and other considerations.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

3.1 INSPECTION

- A. Inspect existing conditions including elements subject to damage or movement during cutting and patching.
- B. After uncovering, inspect conditions.
- C. Beginning of cutting or patching means acceptance of existing conditions.

3.2 TEMPORARY PROTECTION

- A. Provide temporary bracing, shoring, needling, and support during demolition, cutting, remodeling, and related new construction and

protect of persons and property in place. Provide adequate supports for the loads to be carried, with loads properly distributed, and properly transferred to lower levels and sound bearing.

### 3.3 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

### 3.4 TERMINATIONS

- A. Drawings generally indicate the extent of demolition, removals, relocations, and cutting. The drawings shall not be construed as indicating all required work or indicating all conditions or details which might be encountered to accomplish the work of this Contract.
- B. Cut-off, terminate, cap, or otherwise discontinue services that will be abandoned or removed at a previous junction of their systems - no dead-legs shall remain.
- C. Accomplish terminations and rerouting without additional cost to the Owner.

### 3.5 PATCHING, REMODELING, REPLACEMENTS, AND RESTORATION

- A. Patch or otherwise restore disturbed existing construction as indicated

on the drawings and schedules, or as required to restore surfaces. Patching or restoration shall be carried to natural breaks (i.e., corners) wherever possible. Where existing construction is disturbed, patch surfaces so that transitions are indisquishable. Repair any damage to existing construction which is to remain.

- B. Patching work shall be done by skilled mechanics experienced in the particular type of work involved.

--End of Section--

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. Waste material that is salvable, recyclable, or reusable shall be salvaged, recycled, or reused.
- C. Use:
  - 1. Waste Management Plan development and implementation.
  - 2. Techniques to minimize waste generation.
  - 3. Sorting and separating of waste materials.
- D. At a minimum the following waste categories shall be diverted from landfills:
  - 1. Soil.
  - 2. Inerts (e.g. concrete, masonry, and asphalt).
  - 3. Clean dimensional wood and palette wood.
  - 4. Green waste (biodegradable landscaping materials).
  - 5. Engineered wood products (plywood, particle board and I-joists, etc.).
  - 6. Metal products (eg, steel, wire, beverage containers, etc.).
  - 7. Cardboard, paper, and packaging.
  - 8. Bitumen roofing materials.
  - 9. Plastics (eg, ABS, PVC).
  - 10. Carpet and/or pad.
  - 11. Gypsum board.
  - 12. Insulation.
  - 13. Paint.

1.2 QUALITY ASSURANCE

- A. 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. Implement any special programs involving rebates or similar incentives related to recycling. Any revenues or savings obtained from salvage or recycling will accrue to the Contractor.
- C. Provide all demolition, removal, and legal disposal of materials. 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.
- D. 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.
- E. Provide on-site instructions and supervision of separation, handling, salvaging, recycling, and reuse and return methods to be used.

### 1.3 SUBMITTALS

- A. Prepare and submit to the COR a written Demolition Debris Management Plan. The plan shall include, but is not be limited to, the following information:
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 each material and quantity to be salvaged, reused, or recycled.
    - b. List of each material and quantity proposed to be taken to a landfill.
  4. Detailed description of the Means/Methods to be used for material handling.
    - a. On site: Material separation, storage, protection

where applicable.

b. Off site: Transportation means and destination. Include list of materials.

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.

c. The names and locations of mixed debris reuse and recycling facilities or sites.

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

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

5. Designation of manager responsible for instructing personnel, supervising, documenting and administer over meetings relevant to the Waste Management Plan.

B. 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.

#### 1.4 RECORDS

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. Records shall be kept in accordance with the LEED Reference Guide and LEED Template.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

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

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

C. Material tracking data: Receiving parties, dates removed transportation costs, weight tickets, tipping fees, manifests, invoices, net total costs, and 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. Transport and dispose 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, and invoices. Include the net total costs for each disposal.

--END OF SECTION--

SECTION 01 77 00  
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 INTRODUCTION

This section describes

1.2 PAYMENT

Separate payment will not be made for closeout procedures. Associated costs will be included in the most applicable Bid Schedule unit or lump-sum prices.

PART 2 PRODUCTS

(NOT USED)

PART 3 EXECUTION

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Prepare 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 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.

3.8.2 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 inspection with VA staff 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 must 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 completion dates.

### 3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the COR shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from VA Engineering staff, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the CO based upon results of the Pre-Final inspection. Notify the CO at least 14 days prior to the final acceptance inspection and include the Contractor's assurance that all specific items previously identified as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the CO to bill the Contractor for the Government's additional inspection cost.

-- END OF SECTION --

SECTION 01 78 29  
FINAL SITE SURVEY

PART 1 GENERAL

1.1 CLEANUP

Prior to final acceptance:

Remove signs of temporary construction facilities and remove construction materials.

Clean interior and exterior spaces within project. Include laydown space boundaries, and access paths. Clean equipment, fixtures, and interior surfaces to a sanitary condition; remove dust, dirt, , stains, foreign substances, and temporary labels. Use only nonhazardous cleaning materials. Sweep paved areas and rake clean landscaped areas. Remove waste and rubbish from the site. Recycle, salvage, and return construction and demolition waste from project in accordance with the Waste Management Plan. Promptly and legally transport and dispose of any trash.

PART 2 PRODUCTS  
(NOT USED)

PART 3 EXECUTION  
(NOT USED)

--END OF SECTION--

SECTION 01 78 36  
WARRANTIES

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

Warranty Management Plan

Four sets of the warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. Furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.

Warranty Tags

Four record copies of the warranty tags showing the layout and design.

1.2 WARRANTY MANAGEMENT

A. Warranty Management Plan

Develop a warranty management plan which contains information relevant to FAR Clause 52.246-21, WARRANTY OF CONSTRUCTION. At least 30 days before the planned pre-warranty conference, submit the warranty management plan for Government approval. 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 tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished.

Warranty information made available during the construction phase must be

submitted to the COR for approval prior to each monthly pay estimate. 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 project acceptance and continue for the full product warranty period. A joint 4-month and 9-month warranty inspection will be conducted, measured from time of acceptance, by the Contractor, CO, and the COR. The warranty management plan shall include, but shall not be limited to, the following:

1. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, sub-contractors, manufacturers or suppliers involved.
2. Listing and status of delivery of all Certificates of Warranty for extended warranty items, and for all commissioned systems.
3. A list for each warranted equipment, item, feature of construction, or system indicating:
  - a. Name of item.
  - b. Model and serial numbers.
  - c. Location where installed.
  - d. Name and phone numbers of manufacturers or suppliers.
  - e. Names, addresses, and telephone numbers of sources of spare parts.
  - f. Warranty period durations, and starting and expiration dates.
  - g. Cross-reference to warranty certificates as applicable.
  - h. Summary of maintenance procedures required to keep the warranty in force.
  - i. Cross-reference to specific pertinent Operation and Maintenance manuals.
  - j. Organization, names, and phone numbers of persons to call for warranty service.
  - k. Typical response time and repair time expected for various warranted equipment.
4. The Contractor's plans for attendance at the 4 and 9-month post-construction warranty inspections conducted by the Government.
5. Procedure and status of tagging of all equipment covered by extended warranties.
6. Copies of instructions to be posted near selected pieces of

equipment where operation or maintenance procedures are critical for warranty.

### 1.3 PRE-WARRANTY CONFERENCE

Prior to contract completion, and at a time designated by the CO, meet with the CO 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 CO 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 contact 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.

### 1.4 CONTRACTOR'S RESPONSE TO CONSTRUCTION WARRANTY SERVICE REQUIREMENTS

Following oral or written notification by the CO, respond to construction warranty service requirements. 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 timeframes specified, the Government will perform the work and back-charge the construction warranty payment item established.

### PART 2 PRODUCTS

Not used.

### PART 3 EXECUTION

Not used.

--END OF SECTION --

SECTION 01 78 39  
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

As-Built Record of Equipment and Materials

Four copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

SD-11 Closeout Submittals

Record Drawings; G

Drawings showing final as-built conditions of the project. The final CADD record drawings shall consist of one set of electronic CADD drawing files (AutoCad 2014), two full-size printed sets, and electronic 1/2 size pdf's of the approved final working Record drawings.

1.2 Computer Aided Design and Drafting (CADD) Drawings

Only employ personnel proficient in the preparation of CADD drawings to modify the contract drawings, record as-built conditions, or prepare additional new drawings.

A. Record Drawing

Within 20 days after Government approval of all of the working record drawings for a phase of work, prepare the final CADD record drawings for that phase of work and submit an electronic copy and two sets of full-size printed drawings for Government review and approval. The Government will return one set of prints annotated with any necessary corrections. Within 10 days, revise the CADD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 20 days of substantial completion of all phases of work, submit the final record drawing package for the entire project. Submit one set of electronic files in AutoCad (2014), one set of electronic files in pdf format, two full-size



drawing sets, and one set of the approved working record drawings. They must be complete in all details and identical in form and function to the contract drawing files supplied by the Government. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. Paper prints, drawing files, and storage media submitted will become the property of the Government upon final approval. Failure to submit final record drawing files and marked prints as specified will be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final record drawings must be accomplished before final payment is made to the Contractor.

#### B. Payment

No separate payment will be made for record drawings required under this contract, and all costs accrued in connection with such drawings are considered a subsidiary obligation of the Contractor.

#### C. Construction Contract Specifications

Furnish final record (as-built) construction contract specifications, including modifications thereto, 30 days after transfer of the completed facility.

### PART 2 PRODUCTS

#### 2.1 PROJECT RECORD DOCUMENTS

##### Working Record and Final Record Drawings

Revise 2 sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. Keep these working as-built marked drawings current on a weekly basis and at least one set available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction must be accurately and neatly recorded as they occur by means of details and notes. United States National CAD Standard® (NCS) shall be followed. The title block and drawing border to be used for any new final record drawings must be identical to that used on the contract drawings. The Contractor will be furnished "as-built" drawings in AutoCad 2014 or above. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). Provide all program files and hardware necessary to prepare final record drawings. The CO will review final record drawings for accuracy and

compliance and return them to the Contractor for required corrections.

- A. All CAD changes shall be made on the layer/level as the original item.
- B. When final revisions have been completed, show the wording "AS-BUILT" followed by the name of the Contractor in letters at least 3/16 inch high on the cover sheet drawing.

### PART 3 EXECUTION

Prepare final record (as-built) drawings in AutoCAD after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final record (as-built) drawings will be jointly reviewed for accuracy and completeness by the COR and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final record drawings as specified, the CO will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the record drawings. This monthly deduction will continue until an agreement can be reached between the COR and the Contractor regarding the accuracy and completeness of updated drawings. Show on the working and final record drawings, but not limited to, the following information:

1. Location of utilities.
2. The location and dimensions of any changes within the building structure.
3. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures, or utilities if any changes were made from contract plans.
4. Changes in details of design or additional information obtained from working drawings including, but not limited to, fabrication, erection, installation plans and placing details, pipe sizes, insulation material, and dimensions of equipment foundations.
5. The topography, invert elevations, and grades of drainage installed or affected as part of the project construction.
6. Where contract drawings or specifications present options, show only the option selected for construction on the final as-built prints.

7. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, furnish a contour map of the final borrow pit/spoil area elevations.

--END OF SECTION--

SECTION 02 41 00  
DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies demolition and removal of buildings, portions of buildings, utilities, other structures and debris from trash dumps shown.

1.2 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 of structures.
- B. Provide safeguards, including warning signs, barricades, temporary fences, warning lights, and other similar items that are required for protection of all personnel during demolition and removal operations.
- C. Maintain fences, barricades, lights, and other similar items around exposed excavations until such excavations have been completely filled.
- D. Provide enclosed dust chutes with control gates from each floor to carry debris to truck beds and govern flow of material into truck. Provide overhead bridges of tight board or prefabricated metal construction at dust chutes to protect persons and property from falling debris.
- 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. Before beginning any demolition work, survey the site and examine the drawings and specifications to determine the extent of the work. 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 the COR. Coordinate the work of this section with all other work and construct and maintain shoring, bracing, and supports as required. Ensure that structural elements are not overloaded and be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under this contract. Provide new supports and reinforcement

for existing construction weakened by demolition or removal works. Repairs, reinforcement, or structural replacement must have COR's approval.

## PART 2 - PRODUCTS (NOT USED)

## PART 3 - EXECUTION

### 3.1 DEMOLITION

- A. Debris, including brick, concrete, stone, metals and similar materials shall become property of Contractor and shall be disposed of by him daily, off the Medical Center to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the COR. Break up concrete slabs below grade that do not require removal from present location into pieces not exceeding 600 mm (24 inches) square to permit drainage. Dispose debris in compliance with applicable federal, state or local permits, rules and/or regulations.

### 3.2 CLEAN-UP:

On completion of work of this section and after removal of all debris, leave site in clean condition satisfactory to COR. Clean-up shall include off the Medical Center Property 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.

--END OF SECTION--

SECTION 09 67 23.20  
RESINOUS (EPOXY BASE) WITH VINYL CHIP BROADCAST (RES-2)

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies Resinous (Resinous epoxy base with vinyl chip flake broadcast) flooring with integral cove base:

1.2 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
1. Description of each product to be provided.
  2. Application and installation instructions.
  3. Maintenance Instructions: Submit manufacturer's written instructions for recommended maintenance practices.
- C. Qualification Data: For Installer.
- D. Sustainable Submittal:
1. Product data for products having recycled content, submit documentation indicating percentages by weight of post-consumer and pre-consumer recycled content.
    - a. Include statements indicating costs for each product having recycled content.
  2. Product data for field applied, interior, paints, coatings, and primers, include printed statement of VOC content indicating compliance with environmental requirements.
- E. Samples:
1. Each color and texture specified in Section 09 06 00, SCHEDULE FOR FINISHES.
  2. Samples for verification: For each (color and texture) resinous flooring system required, 6 inches (152 mm) square, applied to a rigid backing by installer for this project.
  3. Sample showing construction from substrate to finish surface in thickness specified and color and texture of finished surfaces. Finished flooring must match the approved samples in color and texture.
- F. Shop Drawings: Include plans, sections, component details, and attachment to other trades. Indicate layout of the following:
1. Patterns.

2. Edge configurations.

G. Certifications and Approvals:

1. Manufacturer's certification of material and substrate compliance with specification.
2. Manufacturer's approval of installers.
3. Contractor's certificate of compliance with Quality Assurance requirements.

H. Warranty: As specified in this section.

1.4 QUALITY ASSURANCE

A. Manufacture Certificate: Have manufacture certify that a particular resinous flooring system has been manufactured and in use for a minimum of five years.

B. Installer Qualifications: Engage an experienced installer (applicator) who is experienced in applying resinous flooring systems similar in material, design, and extent to those indicated for this project for a minimum period of five years, whose work has resulted in applications with a record of successful in-service performance, and who is acceptable to resinous flooring manufacturer.

1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated.
2. Installer shall have completed at least ten projects of similar size and complexity. Include list of at least five projects. List must include owner (purchaser); address of installation, contact information at installation project site; and date of installation.
3. Installer's Personnel: Employ persons trained for application of specified product.

C. Source Limitations:

1. Obtain primary resinous flooring materials including primers, resins, hardening agents, grouting coats and finish or sealing coats from a single manufacturer.
2. Provide secondary materials, including patching and fill material, joint sealant, and repair material of type and from source recommended by manufacturer of primary materials.

D. Manufacturer's Field Services: Provide manufacturer's representative to provide technical assistance and guidance for surface preparation and application of resinous flooring systems.

- E. Contractor Job Site Log: Document daily; the work accomplished environmental conditions and any other condition event significant to the long term performance of the urethane and epoxy mortar/cement flooring materials installation. Maintain these records for one year after completion.

#### 1.5 MATERIAL PACKAGING DELIVERY AND STORAGE

- A. Deliver materials to the site in original sealed packages or containers, clearly marked with the manufacturer's name or brand, type and color, production run number and date of manufacture.
- B. Protect materials from damage and contamination in storage or delivery, including moisture, heat, cold, direct sunlight, etc.
- C. Maintain temperature of storage area between 60 and 80 degrees F (15 and 26 degrees C).
- D. Keep containers sealed until ready for use.
- E. Do not use materials beyond manufacturer's shelf life limits.
- F. Package materials in factory pre-weighed and in single, easy to manage batches sized for ease of handling and mixing proportions from entire package or packages. No On site weighing or volumetric measurements are allowed.

#### 1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.
  - 1. Maintain material and substrate temperature between 65 and 85 degrees F (18 and 30degrees C) during resinous flooring application and for not less than 24 hours after application.
  - 2. Concrete substrate shall be properly cured. Standard cure time a minimum of 30 days. A vapor barrier must be present for concrete subfloors on or below grade.
    - a. Resinous flooring applications where moisture testing resulting in readings exceeding limits as defined in this specification under part 3, section 3.4, paragraph B, shall employ an multiple component 15 mil thick system designed to suppress excess moisture in concrete.



- b. Application at a minimum thickness of 15 mils, over properly prepared concrete substrate as defined in section 3.4.
- c. Moisture suppression system must meet the design standards as follows:

| Property                                  | Test                                    | Value   |
|---|---|---|
| Tensile Strength                          | ASTM D638                               | 4,400 psi                                       |
| Volatile Organic Compound Limits (V.O.C.) | EPA & LEED                              | 25 grams per liter                              |
| Permeance                                 | ASTM E96 @ 16mils/<br>0.4mm on concrete | 0.1 perms                                       |
| Tensile Modulus                           | ASTM D638                               | 1.9X10 <sup>5</sup> psi                         |
| Percent Elongation                        | ASTM D638                               | 12 percent                                      |
| Cure Rate                                 | Per manufactures<br>Data                | 4 hours Tack free<br>with 24hr recoat<br>window |
| Bond Strength                             | ASTM D7234                              | 100 percent bond to<br>concrete failure         |

- B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.
- C. Close spaces to traffic during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends a longer period.

#### 1.7 WARRANTY

- A. Work subject to the terms of the Article "Warranty of Construction" FAR clause 52.246-21.
- B. Warranty: Manufacture shall furnish a single, written warranty covering the full assembly (including substrata) for both material and workmanship for an extended period of three years from date of installation, or provide a joint and several warranty signed on a single document by manufacturer and applicator jointly and severally warranting the materials and workmanship for a period of three years from date of installation. A sample warranty letter must be included with bid package or bid may be disqualified.

## 1.8 APPLICABLE PUBLICATIONS

- A. The publication listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. ASTM Standard C722-04 (2012), "Standard Specification for Chemical-Resistant Monolithic Floor Surfacing," ASTM International, West Conshohocken, PA, 2006, DOI: 10.1520/C0722-04R12, [www.astm.org](http://www.astm.org).
1. Specification covers the requirements for aggregate-filled, resin-based, monolithic surfacings for use over concrete.
- C. American Society for Testing and Materials (ASTM):
- C413 (2012).....Absorption of Chemical-Resistant Mortars,  
Grouts, Monolithic Surfacing, and Polymer  
Concretes
- C531 (2012).....Linear Shrinkage and Coefficient of Thermal  
Expansion of Chemical-Resistant Mortars,  
Grouts, Monolithic Surfacing, and Polymer  
Concretes
- D638 (2010).....Tensile Properties of Plastics
- D790 (2010).....Flexural Properties of Unreinforced and  
Reinforced Plastics and Electrical Insulating  
Materials
- D1308 (2013).....Effect of Household Chemicals on Clear and  
Pigmented Organic Finishes
- D2240 (2010).....Rubber Property-Durometer Hardness
- D4060(2010).....Abrasion Resistance of Organic Coatings by the  
Taber Abraser
- D4226 (2011).....Impact Resistance of Rigid (Poly-Vinyl  
Chloride) (PVC) Building Products
- D4259 (2012).....Abrading Concrete to alter the surface profile  
of the concrete and to remove foreign materials  
and weak surface laitance
- C7234 (2012).....Pull-Off Adhesion Strength of Coatings on  
Concrete Using Portable Pull-Off Adhesion  
Testers
- E96/E96M (2013).....Water Vapor Transmission of Materials
- F1679.....Variable Incidence Tribometer for determining  
the slip resistance

F1869 (2011).....Measuring Moisture Vapor Emission Rate of  
Concrete Subfloor Using Anhydrous Calcium  
Chloride

F2170 (2011).....Determining Relative Humidity in Concrete Floor  
Slabs Using in situ Probes

## PART 2 - PRODUCTS

### 2.1 SYSTEM DESCRIPTION FOR RES-2 (BROADCAST VINYL CHIP FLAKE)

#### A. System Descriptions:

1. Monolithic, multi-component epoxy chemistry resinous flooring system. Primer with broadcast quartz aggregates. High-performance multi-component solvent free epoxy undercoat, Vinyl chip flake broadcast media in desired flake size (1/8 inch, 1/4 inch). High performance multi component epoxy and solvent free sealers.

B. Products: Subject to compliance with applicable fire, health, environmental, and safety requirements for storage, handling, installation, and clean up.

C. System Components: Verify specific requirements as systems vary by manufacturer. Verify build up layers of broadcast and installation method. Verify compatibility with substrate. Use manufacturer's standard components, compatible with each other and as follows:

#### 1. Primer with Broadcast quartz (primer coat):

- a. Resin: epoxy.
- b. Formulation Description: Multiple component high solids.
- c. Application Method: squeegee, back roll and broadcast.
- d. Thickness of coat(s): 2-3mil. (Thicker system with epoxy or urethane trowel applied mortars nominal 3/16 to 1/4 inch for applying needed slopes for drainage.)
- e. Number of Coats: One.
- f. Aggregates: Quartz broadcast into wet epoxy primer.

#### 2. Undercoat: (body coat)

- a. Resin: Epoxy.
- b. Formulation Description: Pigmented multi-component, high solids.
- c. Application Method: Notched squeegee and Back roll
- d. Number of Coats: One.
- e. Aggregates: vinyl chip flake broadcast into wet Undercoat.
- f. Thickness of coat(s): 20-30mil.
- g. Number of Coats: One.

3. Sealer coat:

- a. Resin: Epoxy.
- b. Formulation Description: Multiple component high solids, no solvent UV stable.
- c. Type/Finsh: Clear Gloss.
- d. Thickness of coat(s): 2-3mil.
- e. Number of Coats: two.
- f. Application: Squeegee and finish roll.

D. System Characteristics:

- 1. Color and Pattern: As selected by COR from manufacturer's standard colors.
- 2. Integral cove base: 1 inch (25.4 mm) radius epoxy mortar cove keyed into concrete substrate and or resinous flooring mortar system. No fillers integral cove base must be troweled in place with specified resinous mortar base.
- 3. Overall System Thickness: Nominal 2 to 3 mm.
- 4. Finish: anti-slip.
- 5. Temperature Range: Systems vary by manufacturer; approximate range from a minimum of 45 to 150 degrees F.

E. Physical Properties:

- 1. Physical Properties of flooring system when tested as follows:

| Property                                   | Test                | Value                                |
|--|---------------------|--------------------------------------|
| Tensile Strength                           | ASTM D638           | 5,200 psi                            |
| Volatile Organic Compound Limits (V.O.C.)  | EPA & LEED          | Below 100 g/l                        |
| Flexural Strength                          | ASTM D790           | 4,000 psi                            |
| Water Absorption                           | ASTM C413           | 0.056 percent                        |
| Coefficient of friction dry/slip index wet | ASTM F1679          | >.79 dry<br>>.65 wet                 |
| Impact Resistance                          | ASTM D4226          | > 160 in. lbs                        |
| Abrasion Resistance                        | ASTM D4060<br>CS-17 | 0.03 gm maximum weight loss          |
| Thermal Coefficient of Linear Expansion    | ASTM C531           | $17 \times 10^{-6}$ in/in degrees F  |
| Hardness Shore D                           | ASTM D2240          | 85 to 90                             |
| Bond Strength                              | ASTM D7234          | 100 percent bond to concrete failure |

F. Chemical Resistance in accordance ASTM D1308 - 02(2007) "Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes". ASTM International, West Conshohocken, PA, 2006, DOI:

10.1520/D1308-02R07, [www.astm.org](http://www.astm.org). No effect to the following exposures:

1. Acetic acid (5 percent)
2. Ammonium hydroxide (10 percent)
3. Citric Acid (50 percent)
4. Fatty Acid
5. Motor Oil, 20W
6. Hydrochloric acid (20 percent)
7. Sodium Chloride
8. Sodium Hypochlorite (10 percent)
9. Sodium Hydroxide (30 percent)
10. Sulfuric acid (25 percent)
11. Urine, Feces
12. Hydrogen peroxide (10 percent)

## 2.2 SUPPLEMENTAL MATERIALS

- A. Textured Top Coat: Type recommended or produced by manufacturer of seamless resinous flooring system, slip resistance.
- B. Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service or joint conditioned indicated.
- C. Waterproof Membrane: Type recommended or produced by manufacturer of resinous floor coatings for this type of service.
- D. Crack Isolation Membrane: Type recommended or produced by manufacturer of resinous flooring for conditions.
- E. Anti-Microbial Additive: Incorporate anti-microbial chemical additive to prevent growth of most bacteria, algae, fungi, mold, mildew, and yeast.
- F. Patching and Fill Material: Resinous product of or approved by resinous coating manufacturer for application indicated. Resinous based materials only. Cementitious or single component product are not expectable.

## 2.3 BASE CAP STRIP

- A.—Zinc cove strip.
- B. Shape for 2mm depth of base material, "J" or "L" configuration.

C. Finish:

1. Finish exposed surfaces in accordance with NAAMM Metal Finishes Manual.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where monolithic resinous system with integral base is to be installed with the COR.
- B. Moisture Vapor Emission Testing: Perform moisture vapor transmission testing in accordance with ASTM F1869 to determine the MVER of the substrate prior to commencement of the work. See section 3.4, 3.

3.2 PROJECT CONDITIONS

- A. Maintain temperature of rooms (air and surface) where work occurs, between 70 and 90 degrees F (21 and 32 degrees C) for at least 48 hours, before, during, and 24 hours after installation. Maintain temperature at least 70 degrees F (21 degrees C) during cure period.
- B. Maintain relative humidity less than 75 percent.
- C. Do not install materials until building is permanently enclosed and wet construction is complete, dry, and cured.
- D. Maintain proper ventilation of the area during application and curing time period.
  1. Comply with infection control measures of the VA Medical Center.

3.3 INSTALLATION REQUIREMENTS

- A. The manufacturer's instructions for application and installation shall be reviewed with the VA COR for the seamless resinous (urethane and epoxy mortar) flooring system with integral cove base.
- B. Have manufacture technical representative approve substrate.

3.4 PREPARATION

- A. General: Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry, and neutral Ph substrate for resinous flooring application.
- B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring.

1. Prepare concrete substrates as follows:
    - a. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
    - b. Comply with ASTM D4259 requirements, unless manufacturer's written instructions are more stringent.
  2. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written recommendations.
  3. Verify that concrete substrates are dry.
    - a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with application only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours or per manufacturer's recommendations (whichever is more stringent).
    - b. MVT threshold for monolithic resinous flooring shall not exceed 3 lbs/1000 square feet (0.0001437 kPa) in a 24 hour period.
    - c. When MVT emission exceeds this limit, apply manufacturer's recommended vapor control primer or other corrective measures as recommended by manufacturer prior to application of flooring or membrane systems.
    - d. Perform in situ probe test, ASTM F2170. Proceed with application only after substrates do not exceed a maximum potential equilibrium relative humidity of 85 percent.
    - e. Provide a written report showing test placement and results.
  4. Verify that concrete substrates have neutral Ph and that resinous flooring will adhere to them. Perform tests recommended by manufacturer. Proceed with application only after substrates pass testing.
- C. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.
- D. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.
- E. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written recommendations. Allowances should be included for flooring manufacturer recommended joint fill material, and concrete crack treatment.
- F. Prepare wall to receive integral cove base:

1. Verify wall material is acceptable for resinous flooring application, if not, install material (e.g. cement board) to receive base.
2. Fill voids in wall surface to receive base, install undercoats (e.g. water proofing membrane, and/or crack isolation membrane) as recommended by resinous flooring manufacturer.
3. Install base prior to flooring if required by resinous flooring manufacturer.
4. Grind, cut or sand protrusions to receive base application.

### 3.5 APPLICATION

- A. General: Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
  1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
  2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
- B. Apply Primer: over prepared substrate at manufacturer's recommended spreading rate for all areas to receive integrated cove base.
- C. Apply cove base: Trowel to wall surfaces at a 1 inch radius, before applying flooring. Apply according to manufacturer's written instructions and details including those for taping, mixing, priming, and troweling, sanding, and top coating of cove base. Round internal and external corners.
- D. Apply Primer: over prepared substrate at manufacturer's recommended spreading rate.
- E. Trowel mortar base: Mix mortar material according to manufacturer's recommended procedures. Climatic and non-climatic resinous flooring systems may vary slightly on mode of application. Application should be based upon the following: Uniformly spread mortar over substrate using a specially designed screed box adjusted to manufacturer's recommended height. Metal trowel (hand or power) single mortar coat in thickness indicated for flooring system, grout to fill substrate voids. When cured, sand to remove trowel marks and roughness.



- F. Broadcast: Immediately broadcast quartz silica aggregate into the primer using manufacturer's spray caster. Strict adherence to manufacturer's installation procedures and coverage rates is imperative.
- G. Under Coat: Mix base material according to manufacturer's recommended procedures. Uniformly spread mixed material over previously primed substrate using manufacturer's installation tool. Roll material with strict adherence to manufacturer's installation procedures and coverage rates.
- H. Broadcast: Immediately broadcast vinyl flakes into the body coat. Strict adherence to manufacturer's installation procedures and coverage rates is imperative.
- I. First Sealer: Remove excess un-bonded flakes by lightly brushing and vacuuming the floor surface. Mix and apply sealer with strict adherence to manufacturer's installation procedures.
- J. Second Sealer: Lightly sand first sealer coat. Mix and apply second sealer coat with strict adherence to manufacturer's installation procedures.

### 3.6 TOLERANCE

- A. From line of plane: Maximum 1/8 inch (3.18 mm) in total distance of flooring and base. Broadcast resinous flooring system will contour substrate. Deviation and tolerance are subject to concrete tolerance.
- B. From radius of cove: Maximum of 1/8 inch (3.18 mm) plus or 1/16-inch (1.59 mm) minus.

### 3.7 ENGINEERING DETAILS

- A. Chase edges to "lock" the flooring system into the concrete substrate along lines of termination.
- B. Penetration Treatment: Lap and seal resinous system onto the perimeter of the penetrating item by bridging over compatible elastomer at the interface to compensate for possible movement.
- C. Trenches: Continue flooring system into trenches to maintain monolithic protection. Treat cold joints to assure bridging of potential cracks.
- D. Treat floor drains by chasing the flooring system to lock in place at point of termination.

- E. Treat control joints to bridge potential cracks and to maintain monolithic protection. Treat cold joints and construction joints to bridge potential cracks and to maintain monolithic protection on horizontal and vertical surfaces as well as horizontal and vertical interfaces.
- F. Discontinue Resinous floor system at vertical and horizontal contraction and expansion joints by installing backer rod and compatible sealant after coating installation is completed. Provide sealant type recommended by manufacturer for traffic conditions and chemical exposures to be encountered.

### 3.8 CURING, PROTECTION AND CLEANING

- A. Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process.
- B. Close area of application for a minimum of 24 hours.
- C. Protect resinous flooring materials from damage and wear during construction operation.
  - 1. Cover flooring with kraft type paper.
  - 2. Optional 6 mm (1/4 inch) thick hardboard, plywood, or particle board where area is in foot or vehicle traffic pattern, rolling or fixed scaffolding and overhead work occurs.
- D. Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer.

--End of Section--

ATTACHMENT

VA Palo Alto Health Care System  
HOT WORK PERMIT

**A. Safety & Emergency Management Service Completes**

Date: \_\_\_\_\_

Requester (Section or Company Name): \_\_\_\_\_

Building/Department/Floor: \_\_\_\_\_

COTR/Permit Requestor: \_\_\_\_\_

Description of work: \_\_\_\_\_

Special Precautions (other than these listed): \_\_\_\_\_

Permit expires on: \_\_\_\_\_

Authorized by: \_\_\_\_\_

Date/Time Issued: \_\_\_\_\_

Date/Time Expires: \_\_\_\_\_

ATTENTION

Before any cutting and welding, ensure that the contractor/employee has inspected the work area and the COTR or permit requestor has confirmed that precautions have been taken to prevent fire. The location where this work is to be done has been examined and necessary precautions have been taken as identified on this permit. (See other side).

**B. CONTRACTOR/PERMIT REQUESTOR COMPLETES:**

**PRIOR TO INITIAL START UP**

This certifies the actions have been taken as indicated on this permit and the COTR/permit requestor has reviewed the work area.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

ATTACHMENT (cont.)

VA Palo Alto Health Care System  
HOT WORK PERMIT (cont.)

**PRECAUTIONS**

- ☐ Sprinklers in service (Required for hot work).
- ☐ Cutting and welding equipment in good repair.

**WITHIN 35 FT. OF WORK**

- ☐ Floors swept clean of combustibles.
- ☐ Combustible floors wetted down, covered with damp sand, metal or other shields.
- ☐ No combustible material or flammable liquids present.
- ☐ Combustibles and flammable liquids protected with covers, guards or metal shields.
- ☐ All wall and floor openings covered.
- ☐ Covers suspended beneath work to collect sparks.

**WORK ON WALL OR CEILINGS**

- ☐ Construction noncombustible and without combustible covering.
- ☐ Combustibles moved away from opposite side.

**WORK ON ENCLOSED EQUIPMENT (Tanks, containers, drums, ducts, etc.)**

- ☐ Equipment cleaned of all combustibles.
- ☐ Containers purged of flammable vapors with an inert gas.

**FIRE WATCH**

- ☐ Provided during and 30 minutes after hot work operation.
- ☐ Appropriate class fire extinguisher readily available.
- ☐ Trained in use of equipment and in sounding fire alarm.

**C. SUPERVISOR/FIRE WATCH COMPLETES:**

**FOLLOWING COMPLETION OF HOT WORK**

Work area and all adjacent areas to which sparks and heat might be affected (including floors above and below and on opposite sides of walls) were inspected **30 MINUTES** after the work was completed and were found fire safe.

\_\_\_\_\_  
Signature  
(Supervisor or Fire Watch)

\_\_\_\_\_  
Date/Time

**Return this completed form to the Safety and Emergency Management Service** after the final check-up is completed and the permit has been signed above.

