

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

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--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 AS-101A	Ground Floor Plan
-- 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 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 -

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--

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB																						
1	SUBMITTAL REGISTER																								CONTRACT NUMBER																									
2	(ER 415 1-10)														TITLE AND LOCATION										CONTRACTOR						SPECIFICATION SECTION																			
3																																																		
4																																																		
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6	ACTIVITY NO	TRANS- MITTAL NO.	ITEM NO	SPECIFICATI ON PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	DATA	INSTRUC TIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	O&M INFORMATION	GOVERNMENT APPROVED	REVIEWER	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION																											
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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 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 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 EXECUTIO

NOT USED

--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 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 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/ 0.4mm on concrete	0.1 perms
Tensile Modulus	ASTM D638	1.9X10 ⁵ psi
Percent Elongation	ASTM D638	12 percent
Cure Rate	Per manufactures Data	4 hours Tack free with 24hr recoat window
Bond Strength	ASTM D7234	100 percent bond to 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.
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 >.65 wet
Impact Resistance	ASTM D4226	> 160 in. lbs
Abrasion Resistance	ASTM D4060 CS-17	0.03 gm maximum weight loss
Thermal Coefficient of Linear Expansion	ASTM C531	17×10^{-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. 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:

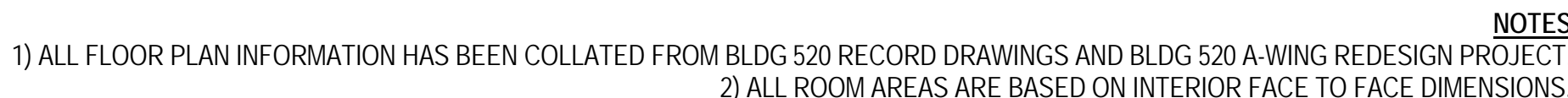
FOLLOWING COMPLETION OF HOT WORK

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.



2) ALL ROOM AREAS ARE BASED ON INTERIOR FACE TO FACE DIMENSIONS