

Project Manual

Littleton School District No. 65

1600 South 107th Avenue
Avondale, Arizona 85323

Country Place Elementary School Floor Replacement

10207 Country Place Blvd.
Tolleson, Arizona

ADM Project No. 5509-108



by:
ADM Group, Inc.

March 30, 2017



DIGITALLY SIGNED PER AZBTR

**SECTION 00 0102
PROJECT INFORMATION**

PART 1 GENERAL

1.01 PROJECT IDENTIFICATION

- A. Project Name: Country Place Floor Replacement, located at: 10207 Country Place Blvd., Tolleson, Arizona 85353.
- B. The Owner, hereinafter referred to as Owner: Littleton Elementary School District #65
- C. Owner's Project Manager: Architect.

1.02 PROJECT DESCRIPTION

- A. Summary Project Description: replace VCT flooring with polished concrete in the existing elementary school.

1.03 PROJECT CONSULTANTS

- A. The Architect, hereinafter referred to as Architect: ADM Group, Inc.

1.04 PROCUREMENT TIMETABLE

- A. The Owner reserves the right to change the schedule or terminate the entire procurement process at any time.

1.05 PROCUREMENT DOCUMENTS

- A. Availability of Documents: Complete sets of procurement documents may be obtained:
 - 1. From Owner at the Project Manager's address listed above.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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SECTION 00 5000
CONTRACTING FORMS AND SUPPLEMENTS

PART 1 GENERAL

1.01 CONTRACTOR IS RESPONSIBLE FOR OBTAINING A VALID LICENSE TO USE ALL COPYRIGHTED DOCUMENTS SPECIFIED BUT NOT INCLUDED IN THE PROJECT MANUAL.

1.02 AGREEMENT AND CONDITIONS OF THE CONTRACT

- A. See Section 00 7200 - General Conditions for the General Conditions.
- B. See Section 00 7300 - Supplementary Conditions for the Supplementary Conditions.
- C. The General Conditions are based on AIA A201.

1.03 FORMS

- A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in the Contract Documents.
- B. Post-Award Certificates and Other Forms:
 - 1. Schedule of Values Form: AIA G703.
 - 2. Application for Payment Form: AIA G702 and G703.
- C. Clarification and Modification Forms:
 - 1. Request for Interpretation Form: Refer to section 00 60 00 Project Forms.
 - 2. Supplemental Instruction Form: AIA G710.
 - 3. Work Changes Proposal Request: AIA G709
 - 4. Construction Change Directive Form: AIA G714.
 - 5. Change Order Form: AIA G701.
- D. Closeout Forms:
 - 1. Certificate of Substantial Completion Form: AIA G704.
 - 2. Affidavit of Release of Liens Form: AIA G706A.

1.04 REFERENCE STANDARDS

- A. AIA A201 - General Conditions of the Contract for Construction; 2007.
- B. AIA G701 - Change Order; 2001.
- C. AIA G702 - Application and Certificate for Payment; 1992.
- D. AIA G704 - Certificate of Substantial Completion; 2000.
- E. AIA G710 - Architect's Supplemental Instructions; 1992.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 00 6000
PROJECT FORMS**

COUNTRY PLACE FLOOR REPLACEMENT

THE PROJECT FORMS APPLICABLE TO THIS CONTRACT ARE ATTACHED FOLLOWING THIS PAGE.

1.01 SUBSTITUTION REQUEST FORM (DURING PROCUREMENT)

1.02 REQUEST FOR INTERPRETATION FORM

**1.01 SUBSTITUTION REQUEST FORM
(DURING PROCUREMENT)**

PROJECT: COUNTRY PLACE FLOOR REPLACEMENT

SUBSTITUTION REQUEST NUMBER: _____

TO: _____ **FROM:** _____

DATE: _____

A/E PROPOSAL NUMBER: _____

SPECIFICATION REFERENCE:

A. Specification Title:

B. Section: _____; Page: _____

C. Description:

D. Article/Paragraph: _____

PROPOSED SUBSTITUTION: _____

A. Manufacturer: _____

B. Address: _____

C. Phone: _____

D. Trade Name: _____

E. Model No.: _____

Attached data includes sufficient information, descriptive brochures, drawings, performance and test data, samples or other data as is necessary for complete evaluation and indicates by direct comparison how the proposed substitution differs from that specified.

Attached data also includes a description of changes to the contract documents that the proposed substitution will require for its proper installation. The contractor shall provide for redesign necessitated by the substitution.

THE UNDERSIGNED CERTIFIES:

- A. Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- B. Same warranty will be furnished for proposed substitution as for specified product.
- C. Same maintenance service and source of replacement parts, as applicable, is available.
- D. Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- E. Proposed substitution does not affect dimensions and functional clearance.

- F. Payment will be made for changes to building design, including A/E design, detailing, and construction costs by the substitution. Proposed substitution does not affect dimensions and functional clearances.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Telephone: _____

SUPPORTING DATA ATTACHED:

1.01.01 DRAWINGS

1.01.02 PRODUCT DATA

1.01.03 SAMPLES

1.01.04 TESTS

1.01.05 REPORTS

A/E'S REVIEW AND ACTION:

- A. Substitution Approved (Include in Addendum) _____
- B. Substitution Approved As Noted (Include in Addendum with Notation)

- C. Substitution Rejected Due to Lack of Information _____
- D. Substitution Rejected Due to Evaluation - Not Equivalent to Specified Product

- E. Substitution Request Received Too Late _____

SIGNED BY: _____ ; **DATE:** _____

END OF SUBSTITUTION REQUEST FORM

1.02 REQUEST FOR INTERPRETATION FORM

PROJECT: COUNTRY PLACE FLOOR REPLACEMENT RFI NUMBER: _____
FROM: _____
TO: _____
DATE: _____
A/E PROJECT NUMBER: _____

SPECIFICATION SECTION: _____ PARAGRAPH: _____
DRAWING REFERENCE: _____ DETAIL: _____

REQUEST:

* REQUESTED DATE/TIME FOR RESPONSE:

SIGNED BY:

RESPONSE:

ATTACHMENTS

RESPONSE FROM: _____ TO: _____
* DATE REC'D: _____ * DATE RET'D: _____
SIGNED BY: _____
COPIES: OWNER CONSULTANTS _____ _____ _____ FILE

* CONTRACTOR SHALL ALLOW UP TO 7 WORKING DAYS REVIEW AND RESPONSE TIME FOR RFI'S, UNLESS REVIEW IS REQUIRED OF MULTIPLE CONSULTANTS, THEN THE REVIEW AND RESPONSE PERIOD SHALL BE 10 WORKING DAYS. (SEE SECTION 01 26 13).

END OF REQUEST FOR INFORMATION FORM

END OF SECTION

SECTION 01 1000

SUMMARY

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Country Place Floor Replacement
- B. Owner's Name: Littleton Elementary School District #65.
- C. Architect's Name: ADM Group, Inc..
- D. The Project consists of the construction of replacement of VCT floor finish with polished concrete at existing elementary school.
- E. Base Bid: The bid shall include labor, material, equipment, services and transportation necessary for the construction of the Project.

1.02 WORK BY OWNER

A. OWNER FURNISHED PRODUCTS

- 1. Owner's Responsibilities:
 - a. Arrange for and deliver Owner reviewed Shop Drawings, Product Data, and Samples, to Contractor.
 - b. Arrange and pay for product delivery to site.
 - c. On delivery, inspect products jointly with Contractor.
 - d. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - e. Arrange for Manufacturers' warranties, inspections and service.
- 2. Contractor's Responsibilities:
 - a. Contractor shall give Owner written notice stating dates when Owner-furnished items must be received at the job site to insure Project completion in accordance with established schedule.
 - b. Review Owner-reviewed Shop Drawings, Product data, and Samples
 - c. Receive and unload products at site; inspect for completeness or damage, jointly with Owner.
 - d. Handle, store, assemble, install, connect and finish such products, including furnishing lubricants and fluids and procedures required to render product serviceable and operative.
 - e. Contractor is responsible for the coordination and interface of Owner-Furnished and Installed work with Work of this Contract to provide all required mechanical and electrical rough-ins, openings, supports, dimensions, etc., as required for a complete installation

1.03 OWNER OCCUPANCY

- A. Owner intends to occupy the Project upon Substantial Completion.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.
- D. Owner Operations:
 - 1. At no time during the work shall Contractor place, or cause to be placed, materials or equipment, or other items, at a location which would impede or impair access to or from the present facilities for students, employees or delivery personnel.

1.04 CONTRACTOR USE OF SITE AND PREMISES

- A. Provide access to and from site as required by law and by Owner:
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.

- B. Time Restrictions:
 - 1. Limit conduct of especially noisy exterior work to the hours set by the City of Tolleson.

1.05 PERMITS, FEES AND NOTICES - NO PERMIT IS REQUIRED FOR THIS PROJECT.

1.06 APPROVED APPLICATORS:

- A. Where specific instructions in the Specifications require that a particular product and/or material be applied and/or installed by an "approved applicator" it shall be the Contractor's responsibility to insure that any Subcontractor or Subsubcontractor used for such Work is in fact currently certified by the particular Manufacturer for this type of installation or application.

1.07 APPROVED MANUFACTURERS:

- A. Each Section includes a list of Manufacturers whose equipment is acceptable as to manufacture, subject to conformance with the Contract Documents. Careful checking must be made by the Contractor and the manufacturer or equipment supplier to verify that the equipment will meet all capacities, requirements, space allocations and is suitable to the intended purpose.

1.08 REFERENCE DATA

- A. Reference data made available to the Contractor is for the Contractor's information only, and neither the Owner nor the Architect assumes any responsibility for the Contractor's conclusions.
- B. The Contractor shall establish and maintain all buildings and construction grades, lines, levels, and bench marks. This Work shall be performed by a licensed Civil Engineer or Surveyor under the employ of the Contractor, who shall certify to the Architect that he has performed this service.
- C. The Contractor shall not remove any property line markers or monuments or data established by the Owner.

1.09 ARCHITECTURAL BARRIERS

- A. It is the desire of the Owner that the facilities and improvements constructed under this Contract meet or exceed the intent of applicable public law concerning prohibition of discrimination, and that no individual be discriminated against on the basis of disability in the full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations of this completed Project.
- B. The designers and drafters of these Documents have intended to incorporate those Owner's intentions into these Documents.

1.10 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS

- A. Unless otherwise noted, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.
- B. Section 01 2000 - Price and Payment Procedures.
- C. Section 01 2100 - Allowances.
- D. Section 01 3000 - Administrative Requirements.
- E. Section 01 3216 - Construction Progress Schedule.
- F. Section 01 3553 - Security Procedures.
- G. Section 01 4000 - Quality Requirements.
- H. Section 01 4216 - Definitions.
- I. Section 01 5000 - Temporary Facilities and Controls.
- J. Section 01 5100 - Temporary Utilities.
- K. Section 01 5813 - Temporary Project Signage.
- L. Section 01 6000 - Product Requirements.
- M. Section 01 7000 - Execution and Closeout Requirements.
- N. Section 01 7800 - Closeout Submittals.

PART 2 PRODUCTS - NOT USED
PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Change procedures.

1.02 RELATED REQUIREMENTS

- A. Document 00 7200 - General Conditions and Document 00 7300 - Supplementary Conditions: Additional requirements for progress payments, final payment, changes in the Work.
- B. Section 01 2100 - Allowances: Payment procedures relating to allowances.

1.03 SCHEDULE OF VALUES

- A. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- B. Forms filled out by hand will not be accepted.
- C. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization.
- D. Revise schedule to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. For each item, provide a column for listing each of the following:
 - 1. Item Number.
 - 2. Description of work.
 - 3. Scheduled Values.
 - 4. Previous Applications.
 - 5. Work in Place and Stored Materials under this Application.
 - 6. Authorized Change Orders.
 - 7. Total Completed and Stored to Date of Application.
 - 8. Percentage of Completion.
 - 9. Balance to Finish.
 - 10. Retainage.
- E. Execute certification by signature of authorized officer.
- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. Submit three copies of each Application for Payment.

1.05 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 - 2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and

specifications, a change in Contract Time for executing the change . Contractor shall prepare and submit a fixed price quotation within 7 days.

- D. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
- E. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.06 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 7000.

END OF SECTION

**SECTION 01 2100
ALLOWANCES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Contingency allowance.
- B. Inspecting and testing allowances.

1.02 RELATED REQUIREMENTS

- A. Section 01 2000 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 CONTINGENCY ALLOWANCE

- A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.
- B. Funds will be drawn from the Contingency Allowance by Allowance Use Authorization.
- C. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

1.04 INSPECTING AND TESTING ALLOWANCES

- A. Costs Included in Inspecting and Testing Allowances: Cost of engaging an inspecting or testing agency; execution of inspecting and tests; and reporting results.

1.05 ALLOWANCES SCHEDULE

- A. Owners Contingency Allowance: Include the stipulated sum/price of (\$5,000.00) Five Thousand dollars of the construction contract for use upon Owner's instructions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electronic drawings
- B. Electronic document submittal service.
- C. Preconstruction meeting.
- D. Construction progress schedule.
- E. Progress photographs.
- F. Submittals for review, information, and project closeout.
- G. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. Document 00 7200 - General Conditions: Dates for applications for payment.
- B. Document 00 7300 - Supplementary Conditions: Duties of the Construction Manager.
- C. Section 01 3216 - Construction Progress Schedule: Form, content, and administration of schedules.
- D. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- E. Section 01 7800 - Closeout Submittals: Project record documents.
- F. Section 01 9113 - General Commissioning Requirements: Additional procedures for submittals relating to commissioning.
 - 1. Where submittals are indicated for review by both Architect and the Commissioning Authority, submit one extra and route to Architect first, for forwarding to the Commissioning Authority.
 - 2. Where submittals are not indicated to be reviewed by Architect, submit directly to the Commissioning Authority; otherwise, the procedures specified in this section apply to commissioning submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DRAWINGS

- A. The Architect-Engineer, if requested, will provide the General Contractor with one electronic copy of the Contract Document Drawings for distribution to subcontractors and suppliers as a convenience in the preparation of Shop Drawings and Site Work. The electronic copy will be provided on a compact disk in AutoCad 2012 format.
- B. The Architect-Engineer shall be paid a service fee of \$100.00 per sheet in accordance with the Agreement. This fee shall be paid by the General Contractor upon acceptance of the CD.
- C. Prior to distribution of electronic files the General Contractor will be required to sign an Electronic disclaimer. This disclaimer shall cover all electronic correspondence and drawings provided by ADM Group, Inc., including but not restricted to electronic mail, file attachments, files on disk and FTP file transfers. By accepting this data, recipient acknowledges the following conditions:
 - 1. All data provided by ADM Group, Inc., is restricted to use and reference only to the site and project for which it was originally prepared. Any other uses are prohibited without written authorization from ADM Group, Inc.
 - 2. All electronic correspondence issued by ADM Group, Inc., is not certified or sealed as a professional product of an employee of ADM Group, Inc., and may vary from information contained in sealed hardcopy documents for the same project. It is the recipient's responsibility to verify the conformance of all electronic correspondence with sealed and approved drawings, documents, or actual field conditions as applicable.

3. Any use of electronic correspondence received from ADM Group, Inc., by recipient shall be at the recipient's full risk. Recipient indemnifies and holds ADM Group, Inc., harmless from damages, claims, or losses resulting from the issue of provided electronic correspondence. In the event of required defense, recipient shall be responsible for any and all legal expenses and attorney's fees. The electronic correspondence received from ADM Group, Inc., is prohibited from further distribution to third parties.
4. Any use of electronic correspondence provided by ADM Group, Inc., is restricted to the purposes for which recipient requested it. Any other uses are prohibited without written authorization from ADM Group, Inc.
5. Recipient acknowledges that all electronic correspondence provided herein by ADM Group, Inc., may change as a result of agency reviews, and that it is recipient's responsibility to make the necessary corrections to conform to the latest approved plan.

3.02 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF) format and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
 1. Besides submittals for review, information, and closeout, this procedure applies to requests for information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
 2. Contractor and Architect are required to use this service.
 3. It is Contractor's responsibility to submit documents in PDF format.
 4. Subcontractors, suppliers, and Architect's consultants will be permitted to use the service at no extra charge.
 5. Users of the service need an email address, Internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
 6. Paper document transmittals will not be reviewed; emailed PDF documents will not be reviewed.
 7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.
 8. Submit paper copies of reviewed submittals at project close-out for record purposes in accordance with Section 01 78 00 - Closeout Submittals
- B. Cost: The cost of the service is to be paid by Contractor; include the cost of the service in the contract sum.
- C. Training: At the request of the Contractor a One, one-hour, web-based training session will be arranged for all participants, with representatives of Architect and Contractor participating; further training is the responsibility of the user of the service.
- D. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.03 PRECONSTRUCTION MEETING

- A. Architect will schedule a meeting after Notice of Award.
- B. Attendance Required:
 1. Owner.
 2. Architect.
 3. Contractor.
- C. Agenda:
 1. Execution of Owner-Contractor Agreement.
 2. Submission of executed bonds and insurance certificates.

3. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
 4. Designation of personnel representing the parties to Contract, Owner and Architect.
 5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 6. Scheduling.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.
- B. Architect will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
- D. Agenda:
 1. Review minutes of previous meetings.
 2. Review of Work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems that impede, or will impede, planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Maintenance of progress schedule.
 7. Corrective measures to regain projected schedules.
 8. Planned progress during succeeding work period.
 9. Maintenance of quality and work standards.
 10. Effect of proposed changes on progress schedule and coordination.
 11. Other business relating to Work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.05 CONSTRUCTION PROGRESS SCHEDULE

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

3.06 PROGRESS PHOTOGRAPHS

- A. Submit new photographs at least once a month, within 3 days after exposure.
- B. Photography Type: Digital; electronic files.
- C. Provide photographs of site and construction throughout progress of Work produced by an experienced photographer, acceptable to Architect.
- D. In addition to periodic, recurring views, take photographs of each of the following events:
 1. Excavations in progress.
 2. Foundations in progress and upon completion.
 3. Structural framing in progress and upon completion.
 4. Enclosure of building, upon completion.

5. Final completion, minimum of ten (10) photos.
- E. Take photographs as evidence of existing project conditions as follows:
 1. Where existing conditions will be affected..
- F. Views:
 1. Provide aerial photographs from four cardinal views at each specified time.
 2. Provide non-aerial photographs from four cardinal views at each specified time, until Date of Substantial Completion.
 3. Consult with Architect for instructions on views required.
- G. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
 1. Delivery Medium: Via email.
 2. File Naming: Include project identification, date and time of view, and view identification.
 3. PDF File: Assemble all photos into printable pages in PDF format, with 2 to 3 photos per page, each photo labeled with file name; one PDF file per submittal.

3.07 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 1. Product data.
 2. Shop drawings.
 3. Samples for selection.
 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.08 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 1. Design data.
 2. Certificates.
 3. Test reports.
 4. Inspection reports.
 5. Manufacturer's instructions.
- B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

3.09 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout:
 1. Project record documents.
 2. Operation and maintenance data.
 3. Warranties.
 4. Bonds.
 5. Other types as indicated.
 6. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

3.10 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review:

1. Small Size Sheets, Not Larger Than 8-1/2 x 11 inches (215 x 280 mm): Submit the number of copies that Contractor requires, plus two copies that will be retained by Architect.
 2. Larger Sheets, Not Larger Than 36 x 48 inches (910 x 1220 mm): Submit the number of opaque reproductions that Contractor requires, plus two copies that will be retained by Architect.
- B. Extra Copies at Project Closeout: See Section 01 7800.
- C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
1. After review, produce duplicates.
 2. Retained samples will not be returned to Contractor unless specifically so stated.

3.11 SUBMITTAL PROCEDURES

- A. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related Work.
 2. Generic, non-project specific information submitted as shop drawings do not meet the requirements for shop drawings.
- B. Transmit each submittal with a copy of approved submittal form.
- C. Transmit each submittal with approved form.
- D. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- E. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- F. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- G. Schedule submittals to expedite the Project, and coordinate submission of related items.
- H. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
- I. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- J. Provide space for Contractor and Architect review stamps.
- K. When revised for resubmission, identify all changes made since previous submission.
- L. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- M. Submittals not requested will not be recognized or processed.

END OF SECTION

SECTION 01 3216
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Construction progress schedule, bar chart type.

1.02 RELATED SECTIONS

- A. Section 01 1000 - Summary: Work sequence.

1.03 REFERENCES

- A. AGC (CPSM) - Construction Planning and Scheduling Manual; 2004.

1.04 SUBMITTALS

- A. Within 10 days after date of Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. Within 10 days after joint review, submit complete schedule.
- C. Submit updated schedule with each Application for Payment.

1.05 QUALITY ASSURANCE

- A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with one years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

1.06 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- D. Provide legend for symbols and abbreviations used.

3.02 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

3.03 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with Architect at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.04 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.

- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.

3.05 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to Subcontractors, suppliers, Architect, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

END OF SECTION

**SECTION 01 3553
SECURITY PROCEDURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Security measures including formal security program, entry control, personnel identification, guard service, and miscellaneous restrictions.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: use of premises and occupancy.

1.03 SECURITY PROGRAM

- A. Protect Work, existing premises and Owner's operations from theft, vandalism, and unauthorized entry.
- B. Initiate program in coordination with Owner's existing security system at project mobilization.
- C. Maintain program throughout construction period until Owner acceptance precludes the need for Contractor security.

1.04 ENTRY CONTROL

- A. Restrict entrance of persons and vehicles into Project site and existing facilities.
- B. Allow entrance only to authorized persons with proper identification.
- C. Contractor shall control entrance of persons and vehicles related to Owner's operations.

1.05 PERSONNEL IDENTIFICATION

- A. Maintain a list of accredited persons, submit copy to Owner at beginning of project and on request.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 4000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. References and standards.
- B. Quality assurance submittals.
- C. Control of installation.
- D. Tolerances.
- E. Testing and inspection services.
- F. Manufacturers' field services.

1.02 RELATED REQUIREMENTS

- A. Document 00 7200 - General Conditions: Inspections and approvals required by public authorities.
- B. Section 01 3000 - Administrative Requirements: Submittal procedures.
- C. Section 01 4216 - Definitions.
- D. Section 01 4219 - Reference Standards.
- E. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

- A. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection and/or Testing; 2014a.
- B. IAS AC89 - Accreditation Criteria for Testing Laboratories; 2010.

1.04 SUBMITTALS

- A. Testing Agency Qualifications:
 - 1. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
- B. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.
 - h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Conformance with Contract Documents.
 - k. When requested by Architect, provide interpretation of results.
 - 2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
- C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
 - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

- D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.05 TESTING AND INSPECTION AGENCIES

- A. Contractor shall employ and pay for services of an independent testing agency to perform specified testing.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- C. Contractor Employed Agency:
 - 1. Laboratory: Authorized to operate in Arizona.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

- A. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 - 2. Perform specified sampling and testing of products in accordance with specified standards.
 - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 4. Promptly notify Architect and Contractor of observed irregularities or non-conformance of Work or products.
 - 5. Perform additional tests and inspections required by Architect.
 - 6. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the Work.
 - 3. Agency may not assume any duties of Contractor.

4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- D. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect.
- E. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

3.04 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.05 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 4216
DEFINITIONS

PART 1 GENERAL

1.01 SUMMARY

- A. This section supplements the definitions contained in the General Conditions.
- B. Other definitions are included in individual specification sections and on the drawings.

1.02 DEFINITIONS

- A. Furnish: To supply, deliver, unload, and inspect for damage.
- B. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.
- C. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.
- D. Project Manual: The book-sized volume that includes the procurement requirements (if any), the contracting requirements, and the specifications.
- E. Provide: To furnish and install.
- F. Supply: Same as Furnish.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary telecommunications services.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers, enclosures, and fencing.
- E. Security requirements.
- F. Vehicular access and parking.
- G. Waste removal facilities and services.
- H. Project identification sign.
- I. Field offices.

1.02 RELATED REQUIREMENTS

- A. Section 01 5213 - Field Offices and Sheds.
- B. Section 01 5500 - Vehicular Access and Parking.
- C. Section 01 3553 - Security Procedures.

1.03 TEMPORARY UTILITIES

- A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.
- B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.04 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
 - 1. Email: Account/address reserved for project use.
 - 2. Facsimile Service: Minimum of one dedicated fax machine/printer, with dedicated phone line.

1.05 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

1.06 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.07 EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.08 SECURITY - SEE SECTION 01 3553

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.09 VEHICULAR ACCESS AND PARKING - SEE SECTION 01 5500

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.10 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.11 PROJECT IDENTIFICATION

- A. Provide project identification sign of design and construction indicated on Drawings.
- B. Erect on site at location indicated.
- C. No other signs are allowed without Owner permission except those required by law.

1.12 FIELD OFFICES - SEE SECTION 01 5213

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.
- C. Locate offices a minimum distance of 30 feet (10 m) from existing and new structures.

1.13 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Clean and repair damage caused by installation or use of temporary work.
- B. Restore existing facilities used during construction to original condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 5100
TEMPORARY UTILITIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary Utilities: Electricity, lighting, heat, ventilation, and water.

1.02 TEMPORARY ELECTRICITY

- A. Cost: By Contractor.

1.03 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain lighting for construction operations to achieve a minimum lighting level of 2 watt/sq ft (21 watt/sq m).
- B. Maintain lighting and provide routine repairs.
- C. Permanent building lighting may be utilized during construction.

1.04 TEMPORARY VENTILATION

- A. Utilize existing ventilation equipment. Extend and supplement equipment with temporary fan units as required to maintain clean air for construction operations.

1.05 TEMPORARY WATER SERVICE

- A. Cost of Water Used: By Contractor.
- B. Connect to existing water source.
 - 1. Exercise measures to conserve water.
 - 2. Provide separate metering and reimburse Owner for cost of water used.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5813
TEMPORARY PROJECT SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project identification sign.
- B. Project informational signs.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Responsibility to provide signs.

1.03 REFERENCE STANDARDS

- A. FHWA (SHS) - Standard Highway Signs; Federal Highway Administration; 2004.

1.04 QUALITY ASSURANCE

- A. Design sign and structure to withstand 50 miles/hr (80 km/hr) wind velocity.
- B. Sign Painter: Experienced as a professional sign painter for minimum three years.
- C. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawing: Show content, layout, lettering, color, foundation, structure, sizes and grades of members.

PART 2 PRODUCTS

2.01 SIGN MATERIALS

- A. Structure and Framing: New, MDO Board (Curb-side Board), structurally adequate.
- B. Rough Hardware: Galvanized.
- C. Mesh banner: Mesh Banner including reinforced grommets

2.02 PROJECT IDENTIFICATION SIGN

- A. One painted sign of construction, design, and content shown on Drawings, location designated.
- B. One painted sign, 32 sq ft (2.97 sq m) area, bottom 6 feet (2 m) above ground.
- C. Content:
 - 1. Project number, title, logo and name of Owner as indicated on Contract Documents.
 - 2. Names and titles of authorities.
 - 3. Names and titles of Architect and Consultants.
 - 4. Name of Prime Contractor and major Subcontractors.
- D. Graphic Design, Colors, Style of Lettering: Designated by Architect.
- E. Lettering: Standard Alphabet Series C, as specified in FHWA Standard Highway Signs (SHS).

2.03 PROJECT IDENTIFICATION BANNER

- A. One project site banner, 50 sq ft area, with webbing at top and bottom of banner and reinforced grommets. Design and content shown on Drawings.

2.04 PROJECT INFORMATIONAL SIGNS

- A. Painted informational signs of same colors and lettering as Project Identification sign, or standard products; size lettering to provide legibility at 100 foot (30 m) distance.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install project identification sign within 30 days after date fixed by Notice to Proceed.

- B. Erect at designated location. No other signs to be installed without Owner permission.
- C. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.
- D. Install sign surface plumb and level, with butt joints. Anchor securely.

3.02 MAINTENANCE

- A. Maintain signs and supports clean, repair deterioration and damage.

3.03 REMOVAL

- A. Remove signs, framing, supports, and foundations at completion of Project and restore the area.

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Sustainable design-related product requirements.
- C. Re-use of existing products.
- D. Transportation, handling, storage and protection.
- E. Product option requirements.
- F. Substitution limitations and procedures.
- G. Procedures for Owner-supplied products.
- H. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Lists of products to be removed from existing building.

1.03 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
- B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
- C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.
- D. Reused Products: Reused products include materials and equipment previously used in this or other construction, salvaged and refurbished as specified.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. DO NOT USE products having any of the following characteristics:
 - 1. Made outside the United States, its territories, Canada, or Mexico.
 - 2. Made using or containing CFC's or HCFC's.

2.03 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

- A. Architect will consider requests for substitutions only within 15 days after date of Agreement.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- C. A request for substitution constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- D. Substitution Submittal Procedure:
 - 1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
 - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
 - 3. The Architect will notify Contractor in writing of decision to accept or reject request.

3.02 OWNER-SUPPLIED PRODUCTS

- A. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 - 2. Arrange and pay for product delivery to site.
 - 3. On delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- B. Contractor's Responsibilities:
 - 1. Review Owner reviewed shop drawings, product data, and samples.
 - 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 - 3. Handle, store, install and finish products.
 - 4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Prevent contact with material that may cause corrosion, discoloration, or staining.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Cutting and patching.
- D. Cleaning and protection.
- E. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- F. General requirements for maintenance service.

1.02 QUALIFICATIONS

- A. For demolition work, employ a firm specializing in the type of work required.

1.03 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Coordinate space requirements, supports, and mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- C. Coordinate completion and clean-up of work of separate sections.
- D. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine and verify specific conditions described in individual specification sections.
- B. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- C. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- D. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.

3.03 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- D. Make neat transitions between different surfaces, maintaining texture and appearance.

3.04 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
- C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Protect existing systems during new construction.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
- D. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
- E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- G. Clean existing systems and equipment.
- H. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- I. Do not begin new construction in alterations areas before demolition is complete.
- J. Comply with all other applicable requirements of this section.

3.05 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Match work that has been cut to adjacent work.
 - 4. Repair areas adjacent to cuts to required condition.
 - 5. Repair new work damaged by subsequent work.
 - 6. Remove samples of installed work for testing when requested.
 - 7. Remove and replace defective and non-conforming work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

- E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. Patching:
 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 2. Match color, texture, and appearance.
 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.06 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.07 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- E. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.08 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- C. Clean filters of operating equipment.
- D. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.
- E. Clean site; sweep paved areas, rake clean landscaped surfaces.
- F. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.09 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
 1. Provide copies to Architect and Owner.

- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.10 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than two years from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

SECTION 01 7800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 00 7200 - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
 - 2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 3. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
 - 1. Make submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 2. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:

1. Field changes of dimension and detail.
2. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 1. Product data, with catalog number, size, composition, and color and texture designations.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- B. Maintenance Requirements: Include routine procedures and guide for preventative maintenance.
- C. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.

- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrangement of Contents: Organize each volume in parts as follows:
 - 1. Project Directory.
 - 2. Table of Contents, of all volumes, and of this volume.
 - 3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Operation and maintenance data.
 - c. Field quality control data.
 - d. Photocopies of warranties and bonds.

3.06 WARRANTIES AND BONDS

- A. Obtain two (2) year warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 by 11 inch (216 by 279 mm) three D side ring binders with durable plastic covers.
- F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

SECTION 03 3543
POLISHED CONCRETE SYSTEM

PART I - GENERAL

1.01 SUMMARY

- A. Basis of Design: TOP DIAMOND-DMS ARCHITECTURAL polished concrete system.
- B. Complete installation details are provided in the DIAMATIC® Technical Brochures available at www.diamaticusa.com.
- C. Substitutions: Refer to Section 01 6000 - Product Requirements.

1.02 SECTION INCLUDES

- A. Products and procedures for the installation of polished concrete system using a multi-step dry mechanical process and accessories indicated, specified or required to complete system and achieve specified finish:
 - 1. DIAMATIC® Mechanical Diamond Grinding and Polishing Equipment
 - 2. ULTRAFLOR® DIAMATIC® Concrete Treatment Chemicals
- B. Products and procedures for the initial and long term maintenance of the TOP DIAMOND-DMS ARCHITECTURAL Polished concrete system

1.03 SUBMITTALS

- A. Product Data: Submit Manufacturer's technical literature for each product indicated, specified or required. Include manufacturer's technical data, application instructions, recommendations and MSDS.
- B. Installer Qualifications: Data for company, principal personnel, experience, and training. Provide a letter documenting installer's accreditation and certification compliance, as specified under quality assurance.
- C. Maintenance Data: Provide manufacturer's instructions for maintenance of installed work, including methods and frequency recommended for maintaining optimum condition under intended use. These instructions should contain precautions against cleaning products and methods, which may be detrimental to finishes and performance.

1.04 QUALITY ASSURANCE

- A. Basis of Design: Manufacturer Qualifications: TOP DIAMOND-DMS ARCHITECTURAL Polished concrete system consists of a process and products engineered and manufactured by DIAMATIC.
- B. Installer Qualifications:
 - 1. Certified Applicators: Installer must be an approved installer for the TOP DIAMOND- DMS ARCHITECTURAL Polished concrete system, including the use of DIAMATIC® equipment and diamond abrasives, and DIAMATIC® concrete preparation, and chemical hardening and finishing materials.
 - 2. Manufacturer's Certification: Provide letter of certification from both the equipment and chemical manufacturer stating that the installer is a certified applicator and is familiar with proper procedures and installation requirements recommended by manufacturer.
 - 3. Installer must be experienced in performing specified work similar in design, products and scope of this project, with a documented track record of successful, in-service performance and with sufficient production capabilities, facilities and personnel to produce specified work.
 - 4. A factory-trained, competent supervisor must be maintained on site during all times during which specified work is performed.
 - 5. Manufacturer's personnel should be present during the pre-construction conference to insure quality control standards are in compliance.
 - 6. Installer must provide written documentation from the manufacturer confirming the Installer's current accreditation and training from DIAMATIC on installation of the polished

concrete system and related equipment and processes. Failure to provide current accreditation will void any warranty implied or otherwise associated with the system.

- C. Mock-Up: Before performing the work in this section, an adequate on-site mock-up of the polished concrete system representative of specified process, surface, finish, color and joint design/treatments must be installed for review and approval. These mock-ups should be installed using the same Installer personnel who will perform work. Approved mock-ups may become part of completed work, if undisturbed at time of substantial completion.
- D. Static Coefficient of Friction: A reading of not less than 0.5 for level floor surfaces shall be achieved and documented, as determined by certified an NFSI walkway auditor using the ANSI B-101 quality control test.
- E. Test Reports: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified, or as accepted or directed by the Owner and/or Architect. All test data shall be recorded and submitted upon completion of job.
 - 1. ASTM E1155, Standard Test Method for Determining Floor Flatness and Levelness using the F number system
 - 2. ASTM D-523, Standard Test Method for Measurement of Gloss of High-Gloss Surfaces by Abridged Goniophotometry
 - 3. ACI 302 1 R-04 Guide for Concrete Floor and Slab Construction
- F. Pre-Installation Conference: Prior to the installation of the polished concrete system, an on-site conference shall be conducted to review specification requirements.
 - 1. Comply with requirements in Division 1, Section "Project Management and Coordination".
 - 2. Required attendees include the Owner, Architect, General Contractor, Subcontractor, and DMS representative as required in 1.04-B section d, Quality Assurance.
 - 3. The minimum agenda shall include:
 - a. Tour of work area, inspection and discussion of preparation of substrate and other pre-Installation conditions and issues.
 - b. Review of System requirements, including drawings, specifications and other contract documents.
 - c. Review of required submittals and completion status.
 - d. Review and finalization of installation schedule, and verification of availability of required materials, trained Installer personnel, equipment and facilities to execute specification and avoid delays.
 - e. Limit access to work area by other trades to reduce possible damage to the floor before, during and after completion.
 - f. Review of required inspection, testing, certification and material usage accounting procedures.
 - g. Review of power requirements and responsibility
 - h. Review of governing regulations and requirements for insurance, certifications, inspection and testing, if applicable.
 - i. Review of temporary protection requirements during and after installation.
 - j. Review of cleaning procedures during and after installation.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in original containers, bearing manufacturer's labels indicating brand name and directions for storage, factory numbered and sealed until ready for installation.
- B. Maintain copies of all chemical MSDS, and Technical data sheets for all products.
- C. Store all materials in a dry, climate-controlled environment at a minimum of 55°F (13°C) and maximum of 85°F (29°C).

1.06 SITE CONDITIONS

- A. Comply with manufacturer's written instructions for substrate temperature and moisture content, ambient temperature and humidity, ventilation and other conditions affecting the floor finish.
- B. Close areas to traffic during and after polished concrete system application for a time period recommended by DMS (Diamatic Management Services)

- C. Inspect the existing substrate and document unsatisfactory conditions in writing. Verify that surfaces and site conditions are ready to receive work. Correct unacceptable conditions prior to installation of System. Commencement of work constitutes acceptance of substrate conditions.
- D. Existing concrete must be cured for a sufficient time period as recommended by the manufacturer before the application can begin, typical 28 days.
- E. Protect existing concrete and the new polished concrete system from contamination by petroleum, oil, hydraulic fluid, acid and acidic detergents, paint and other liquid dripping from trades and equipment working over these substrates. If construction equipment must be used on these substrates, diaper all components that may drip fluids.
- F. Prohibit the placement and storage of construction materials over new polished concrete system to include ferrous metals and steel members.
- G. Prohibit vehicle parking and pipe cutting operations over concrete before and after the polished concrete system.
- H. Moisture Vapor Testing
 - 1. Test existing concrete for moisture vapor transmission according to methods indicated in ASTM F1869. Acceptable results: not more than 5 pounds per 1,000 square feet in 24 hours.
 - 2. Test existing concrete for relative humidity using in situ probes according to ASTM F2170. Acceptable results: not more than 80%.

PART 2 - PRODUCTS

2.01 SYSTEM INTEGRITY

- A. The TOP DIAMOND-DMS ARCHITECTURAL Polished concrete system is an engineered and integrated complete installation system requiring strict adherence to all specified installation processes, equipment, diamond abrasives, concrete preparation, joint treatment and chemicals to achieve the intended result. Any substitutions from the specified products and/or processes will void the system warranty.

2.02 MATERIALS

- A. DIAMATIC® EQUIPMENT
 - 1. DIAMATIC® BMG-780: Planetary Grinder and Polisher, Large Platform: 32" planetary floor polisher. Head pressure of 600 lbs.
 - 2. DIAMATIC® Micro Polisher MPS-727 - Burnisher: Specific weight and RPM are required to reach temperature of 100°F for application of FLOR-FINISH application.
 - 3. Vacuums: Dust Collection must be designed for filtering of concrete dust. Minimum air speed of 300 CFM for Large and Medium Platform equipment.
 - 4. DIAMATIC® BDC-3140P
 - 5. Power generator capable of supplying a minimum output of 45kw and above and capable of generating 480/240 Volt three phase power.
 - 6. DIAMATIC® Diamond Abrasives and Blades
 - a. Metal Bonded Diamonds - 30/40, 60/80, Grit of soft, medium and hard bonded metal.
 - 1) Note: Concrete has hardness levels of soft, medium and hard. The hardness of the concrete will determine the required hardness of the metal bonded diamonds:
 - (a) Hard Concrete: Soft metal bonded diamonds
 - (b) Medium Concrete: Medium metal bonded diamonds
 - (c) Soft Concrete: Hard metal bonded diamonds
 - 2) Transitional Diamonds, - #0, #1, #2 Grit.
 - 3) Hybrid Flex-res Resin Bonded Diamonds -50, 100, 200, 400, 800, 1500, 3000 Grit.
 - 4) FLOR-GRIT Diamond Impregnated Pads - 100, 400, 800, 1500, 3000 Grit.
- B. ULTRAFLOOR® DIAMATIC® CONCRETE TREATMENT CHEMICALS
 - 1. DIAMATIC® FLOR-SIL™ Lithium Densifier for standard concrete and terrazzo surfaces

2. DIAMATIC® FLOR-COLOR™ Micronized Water Borne High Performance Dye
 3. DIAMATIC® FLOR-FINISH Stain and Wear Protection Treatment (high-gloss) Powered by Dow Corning.
 4. DIAMATIC® FLOR-FINISH-L Stain and Wear Protection Treatment (low-gloss) Powered by Dow Corning
- C. DIAMATIC® PROTECTION MATERIALS
1. To prevent minor damage from light trade traffic during build out of site, DIAMATIC® PRIMO-COVER Protective Floor Covering or equal for the flooring shall be installed.
 2. A substitute floor protection material must be approved by DIAMATIC in advance of the system installation.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Inspect all concrete substrates and conditions under which the polished concrete system to be installed.
- B. Verify that all surfaces and site conditions are ready to receive work; document and correct conditions detrimental to timely and proper installation of work. Beginning work constitutes acceptance of substrate condition.
- C. Inspect to mock-up panel to insure it is satisfactory and meets all of the owner's requirements.
- D. Conduct pre-installation conference, per Section 1.3 F.

3.02 PREPARATION

- A. DEMOLITION
 1. Clear surfaces of any debris and construction materials.
 2. If a generator is not provided by the Installer, power connections for the equipment of the polished concrete system shall be located and prepared by general contractor.
 3. Using the appropriate mechanical means and methods, remove existing floor coverings and coatings, including but not limited to carpet VCT, ceramic tile and grout, wood, epoxy/urethane, quartz, mastic, adhesives, paint or other non-concrete floor materials. Adhesives must be removed to their penetrated depth.
 - a. Note: The mechanical removal of resilient flooring, backing, lining felt, cutback and other adhesives can be hazardous, as certain materials may contain asbestos or crystalline silica. Do not sand, dry sweep, dry scrape, drill, saw, bead blast, grind, mechanically chip or pulverize these materials, as harmful dust may result. Inhalation of this dust may cause asbestosis or other bodily harm. Please consult the adhesive manufacturer, the Resilient Floor Covering Institute (www.rfci.com) and all applicable government agencies for rules and regulations concerning the handling and removal asbestos-containing materials.
 - b. Prevent any damage to concrete slab surface during demolition from chipping hammers. Existing flooring should be removed mechanically with walk-behind or ride-on scraping equipment.
 4. Prepare the existing concrete mechanically via scarification, shot blasting or other means, including diamond grinding by using aggressive, metal bonded DIAMATIC® Polycrystalline diamonds (18/20 Grit or 30/40 Grit), to remove all contaminants and provide a sound concrete surface free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil and other contaminants.
 5. Chemical preparation of the substrate is NOT acceptable, including but not limited to acid etching, sweeping compounds, solvents and adhesive removers.
 6. Suppress dust during demolition with the use of dust collection equipment to reduce or eliminate airborne concrete and substrate dust.
 7. Where existing concrete is cracked, damaged, spalled, not within specified tolerance, or contains unacceptable levels of contaminants or moisture vapor, the Installer of the polished concrete system will evaluate conditions and proceed with appropriate system components.

- B. Joint Fill (Indoor)
 - 1. All joint fill materials shall be installed in accordance with the written recommendations provided in the approved manufacturer's technical data.
 - 2. For the best results all joints should be filled after the first pass of metal bonded diamonds, but before any further grinding continues.
 - 3. If the joint filling will occur after the polishing process, apply DIAMATIC® FLOR- SIL or, tape, or soap to the edge of the concrete to keep the joint filler from staining the concrete.

3.03 GLOSS ATTAINMENT (ASTM E430)

- A. Gloss readings are not to be obtained through the use of any microfilming products, sealers, coatings, enhancers or as the result of resin transfer from resin bond abrasives.
- B. Readings shall be taken not less than 10' (3 m) on center in field areas and within 1' (0.3 m) of floor area perimeters. In no case shall a reading be below 2% of specified minimum sheen:
 - 1. Level A Sheen - Low Gloss reading of 30 to 40. 400 grit diamond finish.
 - 2. Level B Sheen - Medium Gloss reading of 41 to 55. 800 grit diamond finish.
 - 3. Level C Sheen - High Gloss reading of 56 or higher. 1500 grit or higher.
- C. For instructions on achieving gloss levels, refer to the appropriate sub-section of section 3.04 below.

3.04 POLISHING

- A. CUT LEVELS
 - 1. LEVEL 1 CUT / A light cut that removes the surface paste exposing the fine aggregates near the surface. Also referred to as a cream finish. Note that a Level 1 cut will require high F-numbers to achieve, Min FF 50.
 - 2. LEVEL 2 CUT / A slightly deeper cut the exposes the fine aggregates and begins to expose the coarse aggregates. Also referred to as a salt and pepper finish.
 - 3. LEVEL 3 CUT / A deep cut that exposes the coarse aggregates in the surface.
- B. SPECIFIED POLISHED FLOOR DETAILS
 - 1. Specified Floor Finish shall have a Cut Level of "Level 2, salt & pepper"
 - 2. Specified Floor Finish shall have a Gloss Level of "Level B, medium gloss"
 - 3. See addendum for specific steps.

3.05 POLISHING ADDENDUM

- A. Level B (Medium gloss reading of 41 - 55) Level 2 Cut
 - 1. GRIND/POLISH #1: DIAMATIC 30/40 Grit Metal Bonded Diamonds.
 - 2. GRIND/POLISH #1: DIAMATIC 60/80 Grit Metal Bonded Diamonds.
 - 3. Broom and vacuum the floor to remove all residual dust.
 - 4. GRIND/POLISH #2: DIAMATIC #1 Transitional Diamonds, Ceramic Bonded.
 - 5. Broom and vacuum the floor to remove all residual dust.
 - 6. GRIND/POLISH #3: DIAMATIC 200 Grit Resin Bonded Diamonds.
 - 7. Broom and vacuum the floor to remove all residual dust.
 - 8. Apply DIAMATIC FLOR-SIL™ per application instructions at a rate of 400 square feet per gallon.
 - 9. Allow DIAMATIC FLOR-SIL™ to dry 1 hour before continuing on to the next step.
 - 10. GRIND/POLISH #4: DIAMATIC 400 Grit Resin Bonded Diamonds.
 - 11. Broom and vacuum the floor to remove all residual dust.
 - 12. GRIND/POLISH #5: DIAMATIC 800 Grit Resin Bonded Diamonds.
 - 13. Broom and vacuum the floor to remove all residual dust.
 - 14. MICROPOLISH/BURNISH #1: FLOR-GRIT 800 Diamond Impregnated Pad.
 - 15. Dry mop the floor clean to remove all debris.
 - 16. Apply DIAMATIC FLOR-FINISH (High Gloss) per application instructions at a rate of 2,500- 3,000 square feet per gallon.
 - 17. Allow to dry a minimum of 15-30 minutes.
 - 18. MICROPOLISH/BURNISH #2: FLOR-GRIT 800 Diamond Impregnated Pad.

19. Dry mop the floor clean to remove all debris.
20. Apply DIAMATIC FLOR-FINISH (High Gloss) per application instructions at a rate of 3,000 square feet per gallon, 90 degrees to the first application.
21. Allow to dry a minimum of 15 minutes.
22. MICROPOLISH/BURNISH #3: FLOR-GRIT 1500 Diamond Impregnated Pad.

3.06 EDGES

- A. Where desired, polished edge work of all areas shall be done with a 5" or 7" DIAMATIC Hand Held or Walk Behind polishing tool. The edge polishing process will match the corresponding steps outlined above for the desired gloss level, and each edge polishing step shall be done immediately after the matching main polishing step.
- B. NOTE: All grinding and polishing completed with grinder/polisher equipment connected to a dust collector.

3.07 ACCEPTANCE

- A. Remove all installation materials and any foreign materials resulting from the installation, from the site.
- B. Clean adjacent surfaces and materials.
- C. Perform post job walk to ensure that the TOP DIAMOND-DMS ARCHITECTURAL polished concrete system has been completed per the process spec.
- D. Take pictures of final product for documentation and submittal, if requested or required.

3.08 PROTECTION

- A. Prevent any spills or stains from coming into contact with the floor. Clean any spills that may occur as quickly as possible.
- B. Protect the finished polished concrete system from continuing construction and build out as needed by installing the DIAMATIC ECONO- COVER Protective Floor Covering or APPROVED equal.
 1. The installation of the DIAMATIC® Protective Covering must be approved by DIAMATIC in advance of the system installation.
 2. If the DIAMATIC® Protective Cover is damaged during use, then that section must be cut out and replaced to maintain the integrity of the protective covering.
 3. The DIAMATIC® Protective Cover can be removed after build out is complete.

3.09 ONGOING MAINTENANCE

- A. Restrict using water on the surface for 72 hours after initial installation. The surface should not be cleaned using a string mop for 60 days to avoid streaking of the FLOR-FINISH. Avoid using mats or treated coverings for a minimum of 14 days to allow the finish to fully cure.
- B. DO NOT USE cleaners that are acidic or have citrus (de-limonene) or butyl compounds. Although the polished concrete system is chemical and stain resistant, the application of these high acid cleaners may etch the surface and cause a residual stain. Regular maintenance and cleaning will help prolong surface shine.
- C. Daily Maintenance
 1. Once the system is fully cured out (min. 72 hours), routinely sweep, dry mop, use of a high quality micro-fiber dust mop is the best method. A neutral pH cleaner only may be used when soils or stains must be removed. Any standing water should be removed immediately after cleaning.
 2. An auto-scrubber may be used if equipped with a vacuum system to remove any standing water. The equipment tank should be filled with clean water only, NO CHEMICALS. The scrubber should be equipped with a soft pad only, DO NOT USE A BRUSH attachment.
- D. Weekly Maintenance
 1. An auto-scrubber may be used if equipped with a vacuum system to remove any standing water. The equipment tank should be filled with clean water only, NO CHEMICALS. The scrubber should be equipped with a soft pad only, DO NOT USE A BRUSH attachment.

2. Use of a BURNISHER equipped with a FLOR-GRIT pad may be used as needed to restore gloss to specified levels. An 800 or 1500 grit pad is recommended.
- E. Extended Maintenance
1. After thorough cleaning a coat of the DIAMATIC® FLOR-FINISH may be applied to restore original gloss and increase the stain resistance on the surface. Follow all technical data instructions for proper application or consult the original floor installer for assistance.
 2. Use of a BURNISHER equipped with a FLOR-GRIT pad may be used after the application of the FLOR-FINISH to restore gloss to specified levels. An 800 or 1500 grit pad is recommended.

END OF SECTION

SECTION 03 9000
POLISHED CONCRETE MAINTENANCE

PART I - GENERAL

1.01 SUMMARY

- A. Basis of Design for Maintenance System: ULTRAFLOOR® DIAMATIC® Polished Concrete Maintenance System.
- B. Complete installation details are provided in the DIAMATIC® Technical Brochures available at www.diamaticusa.com.
- C. Substitutions: Refer to Section 01 6000 - Product Requirements.

1.02 SECTION INCLUDES

- A. Products and procedures for the initial and long term maintenance of the polished concrete maintenance system.

1.03 SUBMITTALS

- A. Product Data: Submit Manufacturer's technical literature for each product indicated, specified or required. Include manufacturer's technical data, application instructions, recommendations and MSDS.
- B. Maintenance Data: Provide manufacturer's instructions for maintenance of installed work, including methods and frequency recommended for maintaining optimum condition under intended use. These instructions should contain precautions against cleaning products and or methods, which may be detrimental to finishes and performance.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: The ULTRAFLOOR® DIAMATIC® Polished Concrete System consists of a process and products engineered and manufactured by DIAMATIC.
- B. Installer Qualifications:
 - 1. Installer must be an approved installer for the ULTRAFLOOR® Polished Concrete System, including the use of DIAMATIC® concrete treatments including the maintenance chemical treatments and application procedures.
 - 2. A factory-trained, competent supervisor must be maintained on site during all times during which specified work is performed.
 - 3. A current list of qualified installers may be obtained through DIAMATIC MANAGEMENT SYSTEMS, DIAMATIC® USA 866-295-5512
- C. Static Coefficient of Friction: A reading of not less than 0.5 for level floor surfaces shall be achieved and documented, as determined by certified an NFSI walkway auditor using the ANSI B-101 quality control test.
- D. Test Reports: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified, or as accepted or directed by the Owner and/or Architect. All test data shall be recorded and submitted upon completion of job.
 - 1. ASTM D-523, Standard Test Method for Measurement of Gloss of High-Gloss Surfaces by Abridged Goniophotometry
 - 2. Post installation inspection to verify that the system was installed correctly and that all surfaces are performing as expected. Any touch-up or repairs should be completed before instituting any maintenance program.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in original containers, bearing manufacturer's labels indicating brand name and directions for storage, factory numbered and sealed until ready for installation.
- B. Maintain copies of all chemical MSDS, and Technical data sheets for all products.
- C. Store all materials in a dry, climate-controlled environment at a minimum of 55°F (13°C) and maximum of 85°F (29°C).

PART 2 - PRODUCTS

2.01 SYSTEM INTEGRITY

- A. The ULTRAFLOOR® DIAMATIC® Polished Concrete Maintenance System is an engineered and integrated complete system. Any variance or substitutions from this system must be approved in writing from DIAMATIC in advance of its use or the warranty will be void.

2.02 MATERIALS

- A. DIAMATIC® EQUIPMENT
 1. DIAMATIC MPS-27 weighted burnisher / micro polisher
 2. DIAMATIC FLOR-GRIT PADS, diamond impregnated pads
 3. Other approved equipment would include an Auto-Floor Scrubber equipped with a soft or diamond impregnated pad for cleaning and buffing the surface.
- B. ULTRAFLOOR® DIAMATIC® CONCRETE TREATMENT CHEMICALS
 1. DIAMATIC® FLOR-SIL™ Lithium Densifier for standard concrete and terrazzo surfaces (used during installation only)
 2. DIAMATIC® FLOR-FINISH Stain and Wear Protection Treatment (high-gloss) Powered by Dow Corning.
 3. DIAMATIC® FLOR-FINISH-L Stain and Wear Protection Treatment (low-gloss) Powered by Dow Corning
- C. DIAMATIC® PROTECTION MATERIALS
 1. To prevent minor damage from light trade traffic during build out of site, DIAMATIC® PRIMO-COVER Protective Floor Covering or equal for the flooring shall be installed. (to provide protection to nay areas not currently in use or under restoration)

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Inspect all concrete substrates and conditions under which the ULTRAFLOOR® DIAMATIC® polished concrete maintenance system will be used.
- B. Verify that all surfaces and site conditions are ready to receive work; document and correct conditions detrimental to timely and proper installation of work. Beginning work constitutes acceptance of substrate condition.

3.02 GLOSS ATTAINMENT (ASTM E430)

- A. Gloss readings are not to be obtained through the use of any microfilming products, sealers, coatings, enhancers or as the result of resin transfer from resin bond abrasives.
- B. Readings shall be taken not less than 10' (3 m) on center in field areas and within 1' (0.3 m) of floor area perimeters. In no case shall a reading be below 2% of specified minimum sheen:
 1. Level A Sheen - Low Gloss reading of 30 to 40.
 2. Level B Sheen - Medium Gloss reading of 41 to 55.
 3. Level C Sheen - High Gloss reading of 56 or higher.
- C. For instructions on maintaining specific gloss levels, refer to the appropriate sub-section of section 3.03 below.

3.03 GENERAL MAINTENANCE

- A. Restrict using water on the surface for 72 hours after initial installation. The surface should not be cleaned using a string mop for 60 days to avoid streaking of the FLOR-FINISH. Avoid using mats or treated coverings for a minimum of 14 days to allow the finish to fully cure.
- B. DO NOT USE cleaners that are acidic or have citrus (de-limonene) or butyl compounds. Although the ULTRAFLOOR® DIAMATIC® Polished Concrete System is chemical and stain resistant, the application of these high acid cleaners may etch the surface and cause a residual stain. Regular maintenance and cleaning will help prolong surface shine.

- C. Specific maintenance requirements may vary for each project depending on the use and amount of traffic on the surface. Consult your ULTRAFLOOR® Certified installer for specific maintenance requirements.

3.04 DAILY MAINTENANCE

- A. Once the system is fully cured out (min. 72 hours), routinely sweep, dry mop, use of a high quality micro-fiber dust mop is the best method. A neutral pH cleaner only may be used when soils or stains must be removed. Any standing water should be removed immediately after cleaning.
- B. An auto-scrubber may be used if equipped with a vacuum system to remove any standing water. The equipment tank should be filled with clean water only, NO CHEMICALS. The scrubber should be equipped with a soft pad only, DO NOT USE A BRUSH attachment.

3.05 WEEKLY MAINTENANCE

- A. An auto-scrubber may be used if equipped with a vacuum system to remove any standing water. The equipment tank should be filled with clean water only, NO CHEMICALS. The scrubber should be equipped with a soft pad only, DO NOT USE A BRUSH attachment.
- B. Use of a BURNISHER equipped with a FLOR-GRIT pad may be used as needed to restore gloss to specified levels. An 800, 1500, or 3000 grit pad is recommended.

3.06 EXTENDED MAINTENANCE

- A. After thorough cleaning a coat of the DIAMATIC® FLOR-FINISH may be applied to restore original gloss and increase the stain resistance on the surface. Follow all technical data instructions for proper application or consult the original floor installer for assistance.
- B. Use of a BURNISHER equipped with a FLOR-GRIT pad may be used after the application of the FLOR-FINISH to restore gloss to specified levels. An 800, 1500, or 3000 grit pad is recommended.

END OF SECTION