

Addendum No. 2

**CITY OF ABERDEEN
ABERDEEN, MARYLAND
DEPARTMENT OF PUBLIC WORKS**

APG WWTP Digester No. 1 Cover Replacement

Engineering Project No. 11215028

Receipt of this Addendum shall be automatically recorded by the City of Aberdeen once each Bidder downloads the Addendum No. 2 file from the City of Aberdeen website. No further action on the part of a Bidder is required to acknowledge receipt.

CHANGE IN BID DATE AND CONTRACT TIMES

- **Bids are due March 5, 2021 at 12:00 PM** via electronic submission Attn: Shawn Brogan Email bid: sbrogan@aberddeenmd.com. Deliver Original bid form and bid bond/security to Shawn Brogan within 3 days of email bid to the City Office, 60 North Parke Street, Aberdeen, Maryland 21001
- Hard Copy if desired by Bidder- Drop-off Bid documents prior to bid time to the City office – currently open Mondays, Wednesdays, and Fridays 8:30 a.m. to 5:00 p.m.
- Questions are due by Tuesday, March 2, 2021 @ 4:00 p.m. to mark.pickering@ghd.com
- Alternate Bid Item – Digester Cover Level Sensors – is required to be completed by bidders for a responsive bid.
- Contract times have been changed to 330 calendar days to substantial completion and 360 days to final completion per the attached Agreement.

General Clarifications and Reminders

1. Correction to Instructions to Bidders ARTICLES 15.02 AND 15.03:

The following documents shall be submitted electronically:

- Bid Form- 00410
- Answers to questions in the bid (if any)
- Electronic File containing required Bid Security
- Statement of Bidders Qualifications, Document **00410A**
- Non-Collusion Affidavit, Document **00410B**
- List of Subcontractors, Document **00410C**

Supplemental Information to Assist Bidders

1. There is a local crane operator that has experience working with the City. For bidders convenience this contact is as follows:
 - Titan Crane Inc. 12230 Pulaski Highway, Joppa, MD 21085
 - Contact: Steve Dietrich (410) 399-1900 or (410) 808-6257
2. This addendum contains a revised Specification Section 03600 – Concrete Repair and Rehabilitation. The existing wall coating is a Tnemec two-part system. The intent of the work is to keep the existing wall coating that has integrity on the wall surface, repair the section that is peeling, and add new wall coating to the bare concrete surface.
3. For the Digester Cover Level Sensors, there are no existing sensors, so there is no demolition of existing. There are spare 120V circuits in the existing panel in the Digester Control Room. Install new circuits to the new level sensors from the existing panel.
4. Both new digester cover level sensors are required to be installed and functional during this contract duration.

Modifications to the Project Manual

1. REPLACE Project Document 00520 – AGREEMENT with the attached document 00520. The contract times have been changed in Article 4.02 to 330 days to substantial completion and 360 days to final completion.
2. REPLACE Specification Section 03600 – CONCRETE REPAIR AND REHABILITATION with the attached Specification Section 03600 in it's entirety and a detail.

Modifications to the Project Drawings

1. Drawing – D-101. REPLACE Note 12 to read “The existing wall coating from top of wall to approximately 6 ft below top of wall is to remain. Repair and integrate existing wall coating and coat the remaining interior concrete surface of the existing digester with an epoxy coating in accordance with Specificaliton 03600 – Concrete Repair and Restoration.”
2. Drawing – D-301. REPLACE Note 1 to read “The existing wall coating from top of wall to approximately 6 ft below top of wall is to remain. Repair and integrate existing wall coating and coat the remaining interior concrete surface of the existing digester with an epoxy coating in accordance with Specificaliton 03600 – Concrete Repair and Restoration.”

END OF ADDENDUM NO. 2

SECTION 00520
AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between _____ (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

- 1.01 Contractor shall complete all Work as indicated in the Contract Documents. The Work is generally described as follows:
- A. Replacement of existing Digester No. 1 Cover with new cover and associated piping, and other miscellaneous items as required by the Contract Documents.

ARTICLE 2 – THE PROJECT

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:
- Aberdeen Proving Ground Wastewater Treatment Plant Digester No. 1 Cover Replacement**

ARTICLE 3 – ENGINEER

- 3.01 The Project has been designed by GHD Inc.
- 3.02 The Owner has retained GHD Inc. (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

- 4.01 *Time of the Essence*
- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.
- 4.02 *Contract Times: Days*
- A. The Work will be substantially completed within 330 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 360 days after the date when the Contract Times commence to run.
- 4.03 *Liquidated Damages*
- A. Contractor and Owner recognize that time is of the essence and that Owner will suffer financial and other losses if the Work is not completed within the times specified herein, plus any

This document is a MODIFIED version of EJCDC® C-520, Copyright © 2013 by the National Society of Professional Engineers, American Society of Civil Engineers, and American Council of Engineering Companies, or is based in part on excerpts from EJCDC documents. Those portions of the text that originated in published EJCDC documents remain subject to the copyright.

extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner \$2,000.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$2,000.00 for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. To 50% of work completed, as determined by Engineer and recommended to Owner, payment by Owner will be in amount equal to 90% of Work completed and 90% of materials and equipment not incorporated in the Work but delivered, suitably stored, and accompanied by documentation satisfactory to Owner as provided in paragraph 14.02 of the General Conditions.

This document is a MODIFIED version of EJCDC® C-520, Copyright © 2013 by the National Society of Professional Engineers, American Society of Civil Engineers, and American Council of Engineering Companies, or is based in part on excerpts from EJCDC documents. Those portions of the text that originated in published EJCDC documents remain subject to the copyright.

- b. When the Work is 50% completed as determined by Engineer, one half of the amount retained by the Owner shall be returned to the Contractor; provided that the Engineer approves the application for such payment and, provided further, the Contractor is making satisfactory progress and there is no specific cause for greater withholding. The sum or sums withheld by the Owner from the Contractor after the Work is 50% completed shall be equal to 5% of the Work completed and 5% of the materials and equipment not incorporated in the work (but delivered, suitably stored and accompanied by documentation satisfactory to Owner as provided in paragraph 14.02 of the General Conditions), based on the Contractor's Application for Payment. In the event a dispute arises between Owner and Contractor on the project to which the Agreement relates, which dispute is based upon increased costs claimed by Contractor, additional retainage in the sum of one and one-half times the amount of any possible liability may be withheld from Contractor until such time as a final resolution is agreed to by all parties directly or indirectly involved, unless the Contractor causing the additional claim furnishes a bond satisfactory to the Owner to indemnify the Owner against the claim. All such monies retained by the Owner may be withheld from the Contractor until Substantial Completion of the Work.
2. When the Contractor considers that the Work has been Substantially Completed, he shall submit a request for final inspection and an application for final payment. The Engineer shall make final inspection within thirty (30) days of receipt of the Contractor's request for final inspection and an application for final payment. If the Engineer determines that the Work is substantially completed, the Engineer shall issue a certificate of completion and a final certificate for payment and Owner shall make payment in full within forty-five (45) days except as provided below, less one and one-half (1½) times the amount required to complete any then-remaining uncompleted minor items, which amount shall be certified by the Engineer. The certificate given by the Engineer shall list in detail each uncompleted item and a reasonable cost of completion. Final payment of any amount withheld for the completion of the minor items shall be paid upon completion of the items in the certificate of the Engineer. In the event a dispute arises between Owner and Contractor on the project to which the Agreement relates, which dispute is based upon increased costs claimed by Contractor, additional retainage in the sum of one and one-half times the amount of any possible liability may be withheld from the Contractor until such time as a final resolution is agreed to by all parties directly or indirectly involved, unless the Contractor causing the additional claim furnishes a bond satisfactory to the Owner to indemnify the Owner against the claim.
3. Payment to Subcontractors. In the absence of sufficient reasons, within twenty (20) days of the receipt of payment by the Contractor, the Contractor shall pay all subcontractors with which it has contracted their earned share of the payment the Contractor has received.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

- 7.01 No allowance for interest shall be paid with respect to progress payments prior to issuance by Engineer of certificate of completion and a final certificate for payment. The final payment due the Contractor from the Owner after the Engineer has issued a certificate of completion and a final certificate for payment shall bear interest accordance with the commonwealth procurement act.

This document is a MODIFIED version of EJCDC® C-520, Copyright © 2013 by the National Society of Professional Engineers, American Society of Civil Engineers, and American Council of Engineering Companies, or is based in part on excerpts from EJCDC documents. Those portions of the text that originated in published EJCDC documents remain subject to the copyright.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor’s safety precautions and programs.
 - F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
 - G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
 - H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
 - I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
 - J. Contractor’s entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

- 9.01 *Contents*
- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 7, inclusive).

This document is a MODIFIED version of EJCDC® C-520, Copyright © 2013 by the National Society of Professional Engineers, American Society of Civil Engineers, and American Council of Engineering Companies, or is based in part on excerpts from EJCDC documents. Those portions of the text that originated in published EJCDC documents remain subject to the copyright.

2. Performance bond (pages 1 to 3, inclusive).
 3. Payment bond (pages 1 to 3, inclusive).
 4. General Conditions (pages 1 to 72, inclusive).
 5. Supplementary Conditions (pages 1 to 28, inclusive).
 6. Specifications as listed in the table of contents of the Project Manual.
 7. Drawings (not attached but incorporated by reference) consisting of 15 sheets with each sheet bearing the following general title: Aberdeen Proving Ground Wastewater Treatment Plant Digester No. 1 Cover Replacement.
 8. Addenda (numbers ___ to ___, inclusive).
 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages ___ to ___, inclusive).
 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed above are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

<p>This document is a MODIFIED version of EJCDC® C-520, Copyright © 2013 by the National Society of Professional Engineers, American Society of Civil Engineers, and American Council of Engineering Companies, or is based in part on excerpts from EJCDC documents. Those portions of the text that originated in published EJCDC documents remain subject to the copyright.</p>
--

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

This document is a MODIFIED version of EJCDC® C-520, Copyright © 2013 by the National Society of Professional Engineers, American Society of Civil Engineers, and American Council of Engineering Companies, or is based in part on excerpts from EJCDC documents. Those portions of the text that originated in published EJCDC documents remain subject to the copyright.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____
(where applicable)

This document is a MODIFIED version of EJCDC® C-520, Copyright © 2013 by the National Society of Professional Engineers, American Society of Civil Engineers, and American Council of Engineering Companies, or is based in part on excerpts from EJCDC documents. Those portions of the text that originated in published EJCDC documents remain subject to the copyright.

SECTION 03600

CONCRETE REPAIR AND REHABILITATION

PART 1 GENERAL

1.01. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02. SUMMARY

- A. Section Includes:
 - 1. Concrete restoration.
 - 2. Attached detail for wall repair of existing coating.

1.03. SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Restoration methods: Submit a written description of concrete restoration methods to be utilized. Include description of materials to be used, surface preparation methods, environmental restraints and equipment to be utilized.

1.04. QUALITY ASSURANCE

- A. Manufacturer's Technical Representative: Installer to have concrete restoration products Manufacturer's Technical Representative on site to advise and approve concrete preparation methods, material application procedures and curing and protection procedures.
- B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
- C. Preinstallation Inspection:
 - 1. Contractor must coordinate with Owner and Engineer to conduct a concrete coating preinstallation inspection. The purpose of this meeting is to review the condition of the existing concrete and determine the need for and the limits of repair work that must be completed prior to application of the coating system. Each entity directly concerned with the concrete restoration coating application must attend, including, but not limited to, the following:
 - a. Contractor's superintendent.
 - b. Concrete restoration subcontractor.
 - c. Concrete restoration materials manufacturer's representative.
 - d. Engineer.

- e. Resident Project Representative.
 - f. Owner.
- D. Sample area: Prepare a sample restoration area showing typical surface finish, bonding, texture, tolerances, and standard of workmanship.
- 1. Prepare a sample area of approximately 100 sq. ft. in the location as directed by Engineer.
 - 2. Approved sample area may become part of the completed Work if accepted by Engineer.

1.05. DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage, mixing with other components, and application.
- B. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture or other detrimental effects.

1.06. PROJECT CONDITIONS

- A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature and moisture content, ambient temperature and humidity, ventilation, and other conditions affecting concrete restoration performance.

1.07. WARRANTY

- A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

PART 2 PRODUCTS

2.01. CONCRETE RESTORATION MATERIALS

- A. Concrete restoration materials shall be compatible materials from a single manufacturer. The existing wall coating is a Tnemec system. All materials supplied shall be compatible with the existing Tnemec system.
- B. Resurfacer: A three component, epoxy modified cementitious mortar, designed for surfacing, patching and filling voids and bugholes in concrete substrates. Use up to ¼" per lift.
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. Tnemec Series 218 MortarClad
 - 2. Color: greenish gray.
 - 3. Compressive Strength: ASTM C 579- No less than 5137 psi compressive strength
 - 4. Splitting Tensile Strength: ASTM C 496 – No less than 640 psi

5. Bond Strength: ASTM C 882 – Not less than 1040 psi bond strength
 6. Flexural Strength: ASTM C 580 – No less than 1289.5 psi flexural strength
- C. Fiberglass Reinforced Epoxy coating:
1. Products: Subject to compliance with requirements, provide the following:
 - a. Tnemec Perma-Shield FR Series 436
 2. Color: 5020 Gray
 3. Adhesion: ASTM D 4541 – Exceeds cohesive strength of concrete substrate (500 psi)
 4. Abrasion: ASTM D 4060 – No more than 74.6 mg loss
 5. Compressive Strength: ASTM D 695 – No less than 8,866 psi
 6. Severe Wastewater Analysis Test: ASTM G210 – No less than 83.7% retention of electrical impedance after 28 days exposure
 7. Water Absorption: ASTM C 413 – No absorption
- D. Glaze Coat Epoxy:
1. Subject to compliance with requirements, provide the following:
 - a. Tnemec Series 435 Perma-Glaze
 2. Color: 5020 Gray
 3. Abrasion: ASTM D 4060 – No more than 124 mg loss after 1,000 cycles.
 4. Adhesion: ASTM D 4541 – No less than 1,806 psi adhesion (on steel)
 5. Compressive Strength: ASTM D 695 – No less than 9,427 psi
 6. Severe Wastewater Analysis Test: ASTM G 210 – No less than 100% retention of electrochemical impedance after 287 days
- E. Cementitious Repair Mortar:
1. Cementitious Repair Mortar shall be a single component, rapid setting, hydraulic cementitious resurfacer capable of building from ¼" to 4" per lift.
 2. Available Products:
 - a. Tnemec Series 217 MortarCrete
 - b. Time to topcoat: 12 hours

PART 3 EXECUTION

3.01. EXAMINATION

- A. Examine substrates, with Installer and Manufacturer's Technical Representative present, for conditions affecting performance of concrete waterproofing and protective mortar.
- B. Proceed with application only after unsatisfactory conditions have been corrected.

3.02. PREPARATION

- A. Existing Concrete: Verify concrete dryness in accordance with ASTM F 1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" (moisture vapor transmission should not exceed three pounds per 1,000 square feet in a 24 hour period), F 2170 "Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes" (relative humidity should not exceed 80%), or D 4263 "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method" (no moisture present). Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Abrasive blast, shot-blast, water jet or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers and other contaminants and to provide a minimum ICRI-CSP 5 surface profile
- B. Existing Coatings: Abrasive blast clean to remove all loose coatings. Provide uniform angular surface profile of at least 1 mil on all sound coatings.
- C. Cut appropriate terminations at all leading edges of coatings systems. Typical detail is 1/4"x 1/4" saw cut. Consult Tnemec Detail PLS-1 attached to the end of this section.
- D. Cementitious Repair Mortar: Apply to areas of deterioration greater than 1/4". Scarify using abrasive blast or mechanical abrasion after full cure, prior to overcoating.

3.03. EPOXY MODIFIED CEMENTITIOUS MORTAR

- A. Apply to all exposed concrete surfaces.
- B. Start protective mortar application in presence of manufacturer's technical representative.
- C. Minimum ambient and substrate temperatures are 45 degrees F and rising at the time of application.
- D. Thickness: 1 coat at 1/16" minimum.
- E. Apply by trowel or by spray application. Follow all manufacturer's written installation procedures.

3.04. FIBERGLASS REINFORCED EPOXY COATING

- A. Apply to all areas that have received epoxy modified cementitious mortar.
- B. Start epoxy coating application in presence of manufacturer's technical representative.
- C. Minimum ambient and substrate temperatures are 50 degrees F at the time of application.

- D. Allow for proper cure time between installation of protective mortar coating and colored epoxy coating.
- E. Apply by spray application. Follow all manufacturer's written recommendations.
- F. Apply one coat of at least 100 mils.

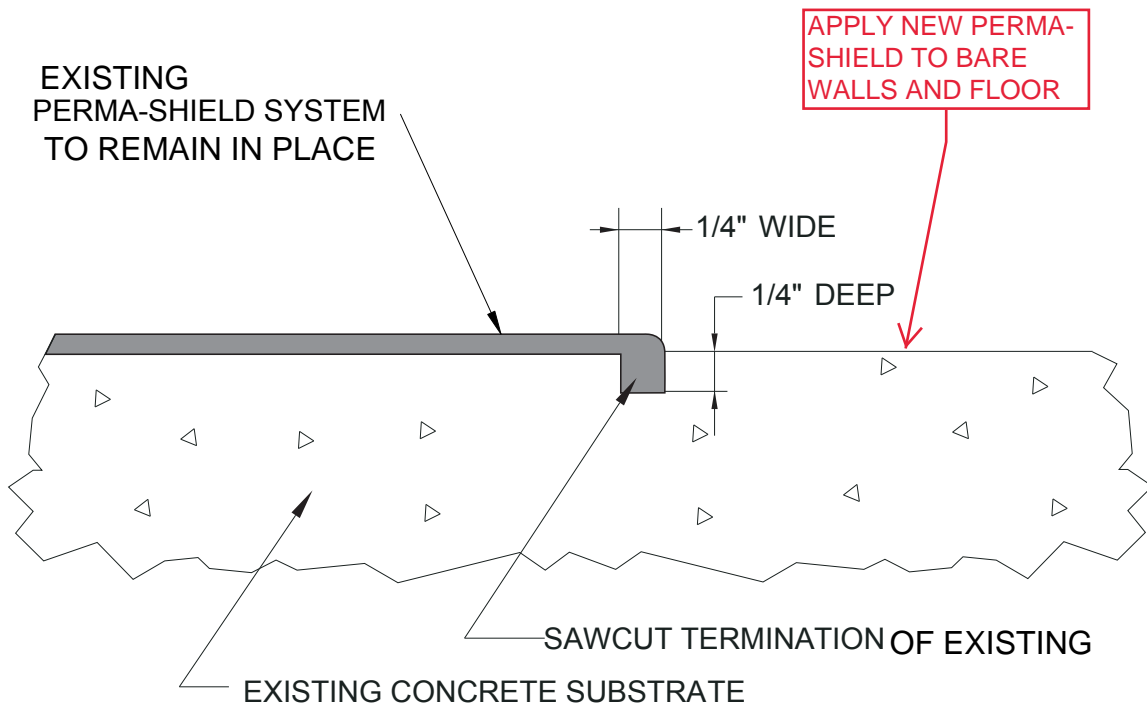
3.05. GLAZE COAT EPOXY

- A. Apply to scarified pre-existing coating (from prior phase). Allow for at least a 12" overlap onto new coating surface.
- B. Start epoxy coating application in presence of manufacturer's technical representative.
- C. Minimum ambient and substrate temperatures are 50 degrees F at the time of application.
- D. Allow for proper cure time between installation of protective mortar coating and colored epoxy coating.
- E. Apply by spray or roll application. Minimum 20 mils DFT. Follow all manufacturer's written recommendations.

3.06. REPAIRS

- A. Defective Coating: Repair and patch defective concrete restoration areas, including areas that have not bonded to concrete substrate.

END OF SECTION



NOTE:

1. BRUSH OR TROWEL SERIES 434, 435 OR 436 INTO SAWCUT TERMINATION
2. ON VERTICAL APPLICATIONS SERIES; 435 WILL REQUIRE SERIES 211 - 211 FUMED SILICA OR APPLIED IN 2 OR MORE COATS TO FILL THE 1/4" SAW CUT.
3. REMOVE PEELING COATING AND SAWCUT AROUND PERIMETER AS SHOWN TO CREATE A FILL JOINT FOR THE NEW COATING

TNEMEC PERMA-SHIELD STANDARD LINING DETAILS

LEADING EDGE TERMINATION DETAIL

NO. PLS-1

REV. 0