



ADDENDUM NO. 01
Tokay High School Pool Renovation
PROJECT NUMBER: 0825-8425-600-10

October 29, 2024

- 1. ALL WORKMANSHIP, MATERIALS, APPLIANCES AND EQUIPMENT**
which may be included in the following items shall be the same relative quality as described for similar work set forth in the original or main specifications of which these Addendum items shall be considered a part.
- 2. PROJECT MANUAL**
 - a. DOCUMENT 03.36.10 – Swimming Pool Shotcrete**

* * * END OF ADDENDUM * * *

DIVISION 3: CONCRETE
SECTION 03 36 10 - SWIMMING POOL SHOTCRETE
PART 1- GENERAL

- 1.1 Division 1 and the General Conditions apply to all Work in this Section.
- A. Work Included:
1. Shotcrete as detailed on the Construction Documents required for swimming pool structures.
 2. Shotcrete is herein differentiated from Gunitite. Shotcrete is a "ready-mix" emulsion where water is added at the batch plant, and the emulsion will be pumped through a hose to the applicator. In contrast, Gunitite is defined as a dry mixture pumped through a hose where a nozzleman injects water as the mix is applied. Only shotcrete is allowed per this specification (the wet-mix process)
- 1.2 Quality Assurance:
- A. All Work of this Section shall be performed by or under the supervision of the swimming pool contractor/subcontractor (C-53).
- B. Qualifications of Workers:
1. To be eligible as a bidder, the Contractor shall have had at least three (3) years of experience in shotcrete construction and shall be able to list at least five (5) installations of this type and size, which, upon investigation, have been found to have been completed satisfactorily. Improper Work will be immediately rejected.
 2. Use only thoroughly trained and experienced superintendents, gun operators, nozzle operators, and finishers with at least three (3) years of experience who are completely familiar with the materials and methods specified.
- C. Standards: Unless indicated, provide shotcrete per American Concrete Institute Standard ACI 506. In addition, conform to recommendations in "Shotcrete," brochure G-84 as published by the Gunitite Contractors Association, Sylmar, CA. **CBC, Chapter 1924A.**
- D. Mix Design: The shotcrete subcontractor shall submit a mix design **per CBC, chapter 19 Method "A" per table 19A-A-7**, for approval by **the District Representative and DSA** before any placement of shotcrete. Mix design shall indicate the aggregate source and cement brands and admixtures used. All mix designs shall consider the character of locally available aggregate and make adjustments as necessary to conform with specified design criteria.
- E. Testing and Inspection: At least three (3) cores shall be taken from the completed Work for each day of shotcrete operation **or before each 50 cubic yards placed per Chapter 1924A.10 of CBC.** The testing will be performed by District's Testing Lab and comply with Section CBC 1924.10. Continuous inspection of the shotcrete operation by a deputy inspector provided by the District shall be required. Inspecting pneumatically placed concrete Work shall comply with Section 1924.11 of the California Code of Regulations. Coring, sampling, soaking, and testing per CBC 1924.10
- 1.3 Submittals:
- A. Provide submittals per Section **01 30 00**
- B. Materials List: Within fifteen (15) days after issuance of Notice to Proceed and before shotcrete materials are delivered to the project site, submit to the District Representative a complete list of materials proposed to be used in this portion of the Work, showing manufacturer's name and catalog number of all items such as admixtures and curing membranes, and the name and address of the ready-mix supplier proposed.
- C. Provide a resume for nozzleman and a list of representative projects.
- D. Chosen curing method.

- 1.04 Product Handling:
- A. Protection: Use all means necessary to protect shotcrete materials before, during, and after installation and protect the installed Work of all other trades.
 - B. Replacements: In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the Owner.

PART 2- PRODUCTS

- 2.01 Materials:
- A. Cement:
 - 1. Cement shall be Type V Portland Cement conforming to ASTM C150. The cement type shall be the same for all shotcrete work.
 - B. Aggregate:
 - 1. ASTM C33, washed hard, dense, durable, clean, sharp sand from the approved pit, free of organic matter and opaline, feldspar, or siliceous magnesium substances and containing not more than 3% by weight of deleterious substances. When tested for organic impurities by the ASTM C40 method, the fine aggregate color is not darker than the reference standard color. When tested for soundness by the ASTM C88 method, loss after five cycles is not over 10% of fine aggregate.
 - C. Water:
 - 1. Potable, clean, fresh, free from acid, alkali, organic matter, or other impurities detrimental to the shotcrete.
 - D. Admixtures:
 - 1. Admixtures shall only be used upon review by the District Representative.

PART 3- EXECUTION

- 3.01 Execution:
- A. Inspection:
 - 1. Before all Work of this Section, carefully inspect the installed Work of other trades and verify that all such Work is complete to the point where this installation may properly commence.
 - 2. Verify that items embedded in shotcrete are in place and that shotcrete may be placed to the lines and elevations shown on the Drawings, with all required clearance from reinforcement. Bond any metal items.
 - B. Discrepancies:
 - 1. If a discrepancy is encountered, immediately notify the District Representative.
 - 2. Only proceed with installation in areas of discrepancy once all such discrepancies are fully resolved.
 - 3. Please notify the District Representative and give written notice of discrepancies that shall constitute acceptance by the Contractor of existing conditions as fit and proper to receive the Work.
 - 4. Be sure reinforcement is properly placed and free of rust and scale. No bars larger than #5's can be used, and non-contact splices are required. Only apply concrete if these conditions are met.
- 3.02 Preparation:
- A. General:
 - 1. Thoroughly clean all areas where shotcrete is placed to ensure proper bonding of shotcrete.
 - 2. Where shotcrete is placed against smooth surfaces (i.e., cast-in-place concrete),

- sandblast or thoroughly roughen surfaces to receive shotcrete to provide a clean aggregate surface, ensuring proper bond between materials.
3. Construction joints shall conform to CBC 1906A.4
- B. Ground Wires: To be used as screeds, adequate ground wires shall be installed to establish the thickness and surface planes of the shotcrete work. Ground wires shall be placed so that they are tight and true to line and grade and in such a manner that they can be easily tightened and easy for the shotcrete applicator to utilize for conformance.
- 3.03 Proportioning and Mixing:
- A. Accurately control the proportion of water to Portland cement to produce thorough and uniform hydration of the shotcrete that, when shot, forms a homogeneous mass containing neither sags nor dry sand formation.
 1. Strength: Minimum 4,500 psi 28-day compressive strength unless otherwise indicated.
 - B. Discontinue shotcrete work if the time between the addition of mixing water to cement and aggregate, or cement to aggregates, and placement of shotcrete exceeds 90 minutes when the ambient temperature is below 85 degrees F or exceeds 60 minutes when the ambient temperature is above 85 degrees F.
- 3.04 Shotcrete Placing, Finishing, and Curing:
- A. Operations: Use a positive displacement method to apply the wet process mix, shotcrete. The use of Compressed air may be used to increase the exit velocity. A minimum of 100 psi in a hose, a minimum of three times the internal diameter of the largest aggregate size. The wet mix nozzle is typically a rubber tip, an air injection ring, a control valve, and a housing. Use the nozzle prescribed by the mix design.
 - B. Placing: Hold the nozzle perpendicular to and 2-1/2 to 3 feet from the surface when shooting reinforcing. Hold the nozzle at reinforcing bars to direct shotcrete behind bars and shoot each side of each bar separately. A nozzleman's helper equipped with an air jet shall precede the nozzle and blow out rebound or sand lodged behind bars, on forms, or placed shotcrete. Material shall emerge from the nozzle in a uniform flow. If the flow becomes intermittent, direct the nozzle away from the surface until the flow is again steady and constant. Placing shotcrete horizontal members from the top is prohibited unless approved methods are employed to eliminate rebound. Do not reuse rebound or loose sand for any purpose.
 - C. Puddled Shotcrete: Use "puddled shotcrete," in which the air pressure is reduced and the water content is increased to facilitate placing in difficult locations is not allowed. Where difficult shooting conditions occur, obtain good results by maintaining correct air pressure and water ratio and reducing material supply. Do not place shotcrete where the nozzle stream cannot be placed directly onto the involved and intended surface.
 - D. Construction Joints: Form joints with sloping beveled edges. Square-edged construction joints are not allowed. Clean and dampen the hardened joint surfaces before placing additional shotcrete.
 - E. Finishing: Rod exposed surfaces to true planes and lines on reaching the thickness and plane established by forms and ground wires. Tamp and wood float surfaces level and provide a rough raked finish.
 - F. Curing: Keep shotcrete continuously damp for at least seven days after placing. Use sealed curing sheeting or other approved curing methods where water curing is not feasible. Do not use curing compounds of any kind. Submit a shop drawing indicating the curing method.
- 3.05 Defective Work:

- A. Cut out, remove and replace, or repair to the satisfaction of the District Representative, shotcrete not meeting compressive strength requirements, not true, plumb or level, not to required elevations, containing cracks detrimental to performance or appearance, containing shavings, debris, or voids.
 - B. Promptly perform the Work required to repair, patch, replace, render properly cleaned surfaces (by sandblasting if necessary) or otherwise make good any defective shotcrete at the Contractor's expense, including the expense of additional inspection, tests, etc. or supervision made necessary as a result of defective shotcrete.
- 3.06 Clean-Up:
- A. Upon completion of the Work of this Section, immediately remove all shotcrete materials, debris, and rubbish occasioned by this Work upon review of the District Representative.

END OF SECTION