



SOLANO COMMUNITY COLLEGE DISTRICT

Pool Deck Repair Project

PROJECT #16-011

Volume 2 of 2

March 10, 2016

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See Project Manual prepared by Aquatic Design Group, Inc.

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SOLANO COMMUNITY COLLEGE DECK REPAIR

PROJECT MANUAL DECEMBER 2015

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SECTION 01110**SUMMARY OF WORK****PART 1 - GENERAL**

All applicable portions of Division 1, including the drawings and general provisions of the contract, the general and supplementary conditions and Division 1 specification sections which apply to work of this section as if printed herein.

1.02 DESCRIPTION

- A. Section Includes:
1. Description of the Work (refer to 1.03).
 2. Duties of the Contractor (refer to 1.04).
 3. Permits and fees (refer to 1.06).
 4. Layout of work (refer to 1.07).

1.03 WORK COVERED BY CONTRACT DOCUMENTS

- A. This project consists of the removal and replacement of the existing slot drainage system. Removal of abandoned lifeguard anchors, installation of two (2) new accessible lift anchors and footings per plan, replacement of concrete lid covers at deep end decking, replacement of mastic at expansion joints per plan and repair of concrete decking. Preparation and installation of new deck coating per plan. Project is located at Solano Community College, 4000 Suisun Valley Road, Fairfield, CA 94534.
- B. Work of this contract generally consists of demolition, new construction and such other items not mentioned that are required by the Contract Documents, law and governmental codes and regulations.
- C. For convenience, the Specifications are divided into sections as set forth in the Table of Contents, but such segregation shall not be considered as limiting the work of any subcontract or trade, and the Owner will not be responsible for any division of work by subcontracts. Unless otherwise provided, the Contractor shall be solely responsible for all subcontract arrangements of work regardless of the locations of provisions in the Specifications.
- D. Compensation for bid items not specifically identified in these Special Provisions shall include all labor, materials, tools, equipment, safety measures, and supervision required to complete the work to grades and dimensions shown on the plans or staked in the field. There shall be no compensation except for bid items specified in the Bidder's Proposal. The cost of all work in the Contract Documents not specifically identified as a bid item or described within a bid item shall be included in related bid items, and no additional compensation shall become due the Contractor by nature of compliance with the Contract Documents except as provided for in the General Conditions of the Contract for Construction, under "Changes in the Work."

1.04 CONTRACTOR DUTIES

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- A. Construct the work under a single prime contract in strict conformity with the Contract Documents.
- B. Accept the site and the character of the work as they exist on the first day of work under this Contract.
- C. Coordinate work of employees and subcontractors.
- D. Expedite the work to assure compliance with schedules.
- E. Coordinate the work with that of other contractors and work done by the Owner.
- F. Comply with orders and instructions of the Owner's Representative.

1.05 CONTRACTOR FURNISHED PRODUCTS

- A. Contractor Responsibilities:
 1. Designate needed submittals and delivery date for each product in progress schedule. Coordinate deliveries with Owner's Representative.
 2. Receive product(s) at site. Store until incorporated into the work.
 3. Inspect deliveries jointly with Owner's Representative, record shortages and damaged or defective items.
 4. Protect product(s) from damage, theft and from exposure to the elements.
 5. Assemble, install, connect, adjust and/or finish product(s) as required under provisions of the Contract Documents.
 6. Repair or replace products damaged or stolen subsequent to receipt, at no cost to the Owner.

1.06 PERMITS AND FEES

- A. The Contractor shall obtain and pay for all permits, fees and licenses required by all government agencies and necessary for successful completion of the work. The Contractor shall maintain copies of all required permits on site and shall, upon request, furnish the Owner with copies thereof.

1.07 LAYOUT OF WORK

- A. Field surveys for control of all grading and construction shall be the responsibility of the Contractor. All such surveys, including construction staking, shall be under the supervision of a California licensed surveyor or civil engineer. Staking shall be performed on all items ordinarily requiring grade and alignment at intervals normally accepted by the agencies and trades involved. Payment for construction survey staking shall be considered as included in the various items of work and no additional allowance will be made thereof. Bench marks shall be provided by the Owner as shown on Drawings.

PART 2 - PRODUCTS

NOT USED

PART 3 – EXECUTION

2015.068

SOLANO COMMUNITY COLLEGE
DECK REPAIR

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NOT USED
END OF SECTION

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SECTION 01330**SUBMITTALS****PART 1 - GENERAL**

All applicable portions of Division 1, including the drawings and general provisions of the contract, the general and supplementary conditions and Division 1 specification sections which apply to work of this section as if printed herein.

1.01 DESCRIPTIONA. Section Includes:

1. Submit to the Architect shop drawings, product data and samples required under the various Sections of these Specifications.
2. Prepare and submit with Construction Schedule, a separate schedule listing dates for submission and dates reviewed shop drawings, product data and samples will be needed for each product.

1.02 PRODUCT HANDLING

- A. Make all submittals of Shop Drawings, Samples, and requests for substitution in accordance with the provisions of these Specifications.

PART 2 - PRODUCTS**2.01 SCHEDULE OF SUBMITTALS**

- A. Compile a complete schedule of all submittals required for the project, complete with major division and subdivision headings and broken into individual trades. Format shall be 8-1/2" x 11". The schedule shall be in such a form as to allow for notations next to each required submittal including, but not necessarily limited to, submission dates, action taken, approvals and re-submittals. Submit such a schedule to the Architect for his comments and approval. The approved Schedule of Submittals shall be kept current at all times and an updated copy shall be kept in the Project Field Office for review.

2.02 SHOP DRAWINGS AND PRODUCT INFORMATION SUBMITTALS

- A. Unless otherwise specifically directed by the Architect, make all Shop Drawings accurately to a scale sufficiently large to show all pertinent features of the item and its' method of connection and interface to the Work.
- B. Submit all Shop Drawings in the form of four (4) blueline prints of each Shop Drawing. In the case of Product Information, submit no less than four (4) copies for review. Where contents of submitted product information include data not pertinent to the submittal, clearly indicate which portion is being submitted for review.
- C. Submittals are required on all items to ensure the latest and most complete manufacturer's data is available. The Contractor assumes full responsibility for problems which could have been noted on valid submittals not furnished.

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- D. In the event that an item or items specified by the Architect will not be available in time for installation during orderly progress of the Work, so notify the Architect prior to receipt of bids. Verify that all items specified will be available. Costs of delays because of non-availability of materials will be back-charged as necessary and shall not be borne by the Owner.
- E. Of the four (4) bluelines required; two bluelines will be returned to the Contractor upon completion of the Architect's review, one will be sent to the Owner and the other will be kept on file in the Architect's office.

2.03 SAMPLES

- A. Unless otherwise specifically directed by the Architect, all Samples shall be of the precise article proposed to be furnished.
- B. Submit all Samples in the quantity which is required to be returned, plus one (1) which will be retained by the Architect.

2.04 CALCULATIONS

- A. Where required, the Contractor shall retain a licensed Civil or Structural Engineer to provide structural calculations sufficient to show the adequacy of all members and connections to be reviewed.

2.05 COLORS

- A. Unless the precise color and pattern is specifically described in the Contract Documents, whenever a choice of color or pattern is available in a specified product submit accurate color charts and pattern charts to the Architect for his review and selection.
- B. Unless all available colors and patterns have identical costs and identical wearing capabilities and are identically suitable for the installation, completely describe the relative costs and capabilities of each.

2.06 MANUALS

- A. Where manuals are required to be submitted upon completion of the installation, prepare all such manuals in durable plastic binders approximately 8-1/2" x 11" in size and with at least the following features:
 - 1. Identification readable through the outside of the cover, stating the general nature of the manual and the project to which it pertains.
 - 2. Neatly typewritten Index near the front of the manual, furnishing immediate information as to location in the manual of all data regarding the installation.
 - 3. Complete instruction regarding operation and maintenance of all equipment involved.
 - 4. Complete nomenclature of all replaceable parts, their part numbers, current cost and name and address of the Vendors of the parts.
 - 5. Copy of all guarantees and warranties issued on the installation.

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6. Copy of the approved Shop Drawings with all data concerning changes made during construction.
- B. Where contents of manuals include manufacturer's catalog, clearly indicate the precise items included in this installation and delete, or otherwise clearly indicate, all manufacturer's data with which this installation is not concerned.
- C. Unless otherwise specifically directed by the Architect, deliver two (2) copies of the manual to the Owner and one (1) copy to the Architect.

2.07 RECORD DRAWINGS

- A. Where required by the Contract Documents or where changes to the Contract Documents have been made by change order, revision to clarification drawings, or where minor changes to the Contract were required because of unforeseen conditions or as may be required by the Architect, prepare accurate Record Drawings indicating all pertinent data and dimensions necessary to adequately describe the contract deviations to the Owner for his future use.

2.08 SUBSTITUTIONS

- A. Reference in the Contract Documents to any material, product, or process by name, make or catalog number shall be interpreted as establishing a standard of quality and design intent and not construed as prohibiting substitutions of any other such material, product, or process, provided such substitution is specifically approved by the Architect prior to receipt of bids. Requests for substitutions shall be submitted no later than ten (10) working days prior to bid date.
- B. Acceptance of substitutions will not relieve the Contractor from responsibility for complying with the Contract Documents.
- C. At the discretion of the Architect, testing of samples of materials proposed for substitutions may be required. The testing shall be done by an independent testing laboratory selected by the Owner, the costs of which shall be borne by the Contractor.
- D. At the discretion of the Architect, the Contractor may be required to furnish a written guarantee, in addition to that already required, ensuring the satisfactory performance of the proposed substitutes.
- E. All additional labor and materials which may be required for the proper installation of any substitution, or required as a consequence of any substitution, will be provided at no additional cost to the Owner.
- F. Bids shall be based upon the data given in the Contract Documents, or upon previously approved items or techniques as "approved equals" by the Architect. Where calculations or shop drawings are required for approval, allowance shall be made for meeting the requirements of the Contract Documents and all applicable codes and ordinances.

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- G. Bidders may, in addition, submit separate bids using materials and equipment of other manufacturers, providing the difference in cost is stated for each item proposed to be substituted.
- H. Provide to the Architect all information necessary and required to evaluate proposed substitutions. Do not base bid on the assumptions that a material will be approved as equal by the Architect unless the item has been specifically approved for this Work by the Architect prior to the receipt of bids.
- I. The Contractor assumes full responsibility that substituted items or procedures will meet the job requirements and is responsible for the cost of redesign and of modifications to this and all other parts of the work caused by substituted items.
- J. Submittals will be checked for general conformance with the design concept of the project, but acceptance does not guarantee quantities shown and does not supersede requirements to properly install work. Submittals for proposed alternatives will be judged not only for the acceptability of the items themselves, but of the items as they are used under the conditions of this particular project.

PART 3 - EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS OR SUBSTITUTIONS

- A. Completely identify each submittal and re-submittal by showing at least the following information:
 - 1. Name and address of entity submitting information, plus name and telephone number of individual who may be contacted for further information.
 - 2. Name of project for this Work.
 - 3. Drawing number and Specification Section number to which the submittal applies.
 - 4. Number of all submittals sequentially, whether this is an original submittal or a re-submittal, and if a re-submittal, what number re-submittal.

3.02 COORDINATION

- A. Prior to submittal for Architect's review:
 - 1. Fully coordinate all submittals by determining and verifying all field dimensions and conditions, materials, catalog numbers, and similar data.
 - 2. Coordinate as required with all other trades and with all public agencies involved.
 - 3. Secure all necessary prior approvals and signify by stamp, or other means, that they have been secured.
 - 4. Clearly indicate all deviations from Contract Documents.

3.03 TIMING OF SUBMITTALS

- A. Make all submittals within ten (10) days of the date of the award of the contract for the Work, and far enough in advance of scheduled dates of installation to provide adequate time for all required reviews, both by the Architect and his consultants, for securing necessary approvals, for possible revision and re-submittal, and for placing of orders and securing delivery. In scheduling, allow a minimum of ten (10) full working days for the

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Architect's review. Cost of delays occasioned by the tardiness of submittals will be back-charged as necessary.

3.04 ARCHITECT'S REVIEW

- A. The Architect's review will be only for conformance with the design concept and with the information given in the Contract Documents. The Architect's review and approval of Shop Drawings and Samples shall not relieve the Contractor of responsibility for deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submittal and the Architect has given written approval to the specific deviation, nor shall the Architect's approval relieve the Contractor from responsibility for errors and omissions in the Shop Drawings and Samples. Should the Architect be required to review any submittal more than three (3) separate times due to the inadequacy of the submittal and due to no fault of the Architect, the Contractor shall render to the Architect the Architect's direct cost for review of all subsequent re-submittals.

3.05 COMPLIANCE WITH APPROVALS

- A. Do not commence any portion of the Work requiring approval of Shop Drawings or Samples by the Architect until the submittal has been approved by the Architect. All such portions of the Work shall be in accordance with the approved Shop Drawings and Samples.

END OF SECTION

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SECTION 01500**TEMPORARY FACILITIES AND CONTROLS****PART 1 - GENERAL**

All applicable portions of Division 1, including the drawings and general provisions of the contract, the general and supplementary conditions and Division 1 specification sections which apply to work of this section as if printed herein.

1.01 DESCRIPTION

- A. Section Includes: Temporary facilities and controls required for this work include, but are not limited to: temporary utilities such as water, electricity and telephone; field offices and sheds; haul roads; enclosures such as fences, barricades, and canopies; sanitary facilities; scaffolding and safety equipment. All such temporary facilities shall be located for convenience and safety and maintained in a safe and sanitary condition at all times until completion of the Contract, then removed from the site and disposed of as required or as directed.

1.02 COMPLIANCE WITH CODES AND REGULATIONS

- A. Compliance with all requirements of pertinent safety regulations is described in the General Conditions of the Contract for Construction and shall include, but not necessarily be limited to: Federal Occupational Health Administration (OSHA) and latest edition, Uniform Building Code (with California Amendments) and ADA (American Disability Act).

1.03 PRODUCT HANDLING

- A. Use all means necessary to maintain all temporary facilities and controls in proper and safe condition throughout progress of the work. In the event of damage or loss, immediately make all repairs and replacements necessary and at no additional cost to the Owner.

PART 2 - PRODUCTS**2.01 TEMPORARY UTILITIES**

- A. General:
1. Provide and pay all costs for all utilities required for performance of the work.
 2. Provide safe distribution of required utilities to the job areas for use of all trades.
- B. Temporary Water: Furnish and install all necessary temporary piping and, upon completion of the work, remove all such temporary piping.
- C. Temporary Electricity: Furnish and install all necessary temporary wiring; furnish and install distribution boxes within 100 feet of each portion of the work so located that the individual trades may use their own construction-type extension cords to obtain adequate power and lighting at all points where required by inspectors and for safety.

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- D. Telephone: Maintain in the Contractor's field office or in a protected location on the job site for the use of the subcontractors; the telephone may be coin operated.

2.02 ACCESS FACILITIES

- A. The Contractor shall provide access facilities to the construction area as are necessary and required for carrying out the work and the same shall be kept passable at all times. Contractor shall be responsible for any damage to streets, curbs and sidewalks due to the use of such facilities, and such damaged portions shall be repaired as required to place them in the same condition as existed prior to the commencement of the work. Contractors shall comply in every respect with applicable Building Codes regarding the use of public streets and sidewalks and provide the proper barricading and lighting of public thoroughfares surrounding the construction activities.

2.03 ENCLOSURES, FENCES, BARRICADES AND CANOPIES

- A. Furnish, install, and maintain for the duration of construction, all required scaffolds, fences, barricades, canopies, warning signs, steps, bridges, platforms and other temporary construction necessary for proper completion of the work in compliance with all pertinent safety regulations. In addition, it is recommended that all existing improvements which are not to be altered or removed be protected by means of temporary barricades or other suitable means.

2.04 PUMPING

- A. Keep the site, excavations, and structures free of accumulation of water at all times, whether from underground seepage, rainfall, drainage, or broken utility lines.

2.05 SANITARY FACILITIES

- A. Furnish and install all required temporary toilet buildings with sanitary toilets for use of all workmen. Comply with all minimum requirements of the Health Department or other public agency having jurisdiction. Maintain in a sanitary condition at all times.

2.06 FIRE PROTECTION

- A. Temporary fire extinguishers shall be provided and available at the job site in accordance with the appropriate NFPA Bulletins and good practice.

PART 3 - EXECUTION

3.01 SPECIAL CONDITIONS OF THE SITE

- A. The area to be set aside for the use of the Contractor is indicated on the Drawings as "Limit of Work." Except for sub-surface utility work, curb and gutter, temporary roads and any other work specifically shown or noted, the Contractor shall confine his exterior operations within the limits-of-work so indicated.
- B. Work shall not proceed for the site or buildings until all temporary work such as utilities, barricades, field office and sanitary facilities are furnished and installed.

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- C. Parking of vehicles by construction personnel shall be limited to areas outside the limits-of-work in locations as designated by the Owner's Representative.

3.02 MATERIAL STORAGE AND PROTECTION

- A. During the progress of the work, products and materials shall be neatly stored in accordance with the appropriate manufacturer's recommendations and shall be properly cared for and protected from weather, vandalism and theft.
- B. All installed products and materials shall be adequately protected until such time as the Owner accepts the Project.

3.03 CONDITIONS AT THE SITE

- A. The Contractor shall make all necessary inspections of the job site and of the work to be fully aware of the conditions of all temporary facilities and controls at all times.
- B. The Contractor shall take all steps necessary to prohibit any part of the premises, the buildings, or structures to be overloaded by setting thereon any material or equipment, or performing thereon any of his work, which could cause any loss, damage, and/or injury to person or property.
- C. The Contractor shall make a close inspection of all materials as delivered and shall promptly return all defective materials without waiting for their rejection by the Architect.

3.04 REMOVAL

- A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the work. Remove all such temporary facilities and controls as rapidly as progress of the work will permit, or as directed by the Architect.

3.05 RESTORATION OF AREAS

- A. Upon completion of the project, all temporary facilities shall be removed from the site and all areas not otherwise improved but which were adversely affected by the Contractor's work shall be returned to their original condition to the satisfaction of the Architect.

3.06 FINAL SITE CLEAN-UP

- A. Prior to final inspection, thoroughly clean the entire site and restore to a neat, acceptable condition. Remove from the entire site all construction waste and unused materials, dunnage, loose rock and stones, excess earth, roots, weeds, and all debris of any description resulting from the work. Hose down and scrub where necessary all new concrete and asphalt pavement and paved walks, and all existing concrete and asphalt pavement and walks dirtied as a result of the work. Thoroughly remove mortar drippings from concrete walks and other pavements, where they occur.

END OF SECTION

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SECTION 01770**CLOSEOUT PROCEDURES****PART 1 - GENERAL**

All applicable portions of Division 1, including the drawings and general provisions of the contract, the general and supplementary conditions and Division 1 specification sections which apply to work of this section as if printed herein.

1.01 DESCRIPTION

- A. Section Includes: The work includes, but is not necessarily limited to, performing all operations necessary for and properly incidental to closing out the project and assisting in Owner's final inspection as hereinafter specified.

1.02 FINAL COMPLETION

- A. When the Contractor considers the work, or a designated portion of the work complete, submit written request to Owner's Representative for inspection. By submittal of request, Contractor certifies that:
1. Contract Documents have been reviewed.
 2. Work has been completed in accordance with the Contract Documents and is ready for inspection.
 3. Equipment systems have been tested, adjusted, balanced and are fully operational.
- B. Submit request a minimum of five (5) working days in advance of requested inspection date. Contractor shall be responsible for allowing sufficient time during contract period to complete inspections and any corrections.
- C. Should Owner's Representative inspection find work incomplete, Owner's Representative will notify Contractor in writing, listing observed deficiencies.
- D. Contractor shall remedy listed deficiencies and send a request for final inspection. At the Owner's option, a reinspection(s) of the work to identify additional deficiencies, if any, may be required. Owner's costs associated with reinspection(s) are subject to provisions of Article 1.04 of this Section.
- E. When Owner confirms work is complete, and close-out submittals as referred to in Article 1.05 of this Section are provided, Owner's Representative will notify Contractor of date of completion in writing.

1.03 REINSPECTIONS

- A. Should status of completion of work require reinspection(s) by Owner due to failure of work to comply with Contractor's claims on initial inspection, Owner may deduct the amount of compensation for reinspection services from final payment to Contractor. Observed deficiencies in excess of ten (10) will be reason for reinspection.

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- B. Inspections initiated at the request of the Owner will not be subject to the provisions of this Article.

1.04 CLOSE-OUT SUBMITTALS

- A. Project Record Documents
- B. Operation and Maintenance Data
- C. Warranties and Guarantees
- D. Spare Parts and Maintenance Materials
- E. Evidence of Payment and Lien Releases along with a list of all subcontractors which contributed labor or materials to the project.
- F. Other data and materials as may be required in individual Sections of the Specifications.

1.05 APPLICATION FOR FINAL PAYMENT

- A. Submit application for final payment in accordance with provisions of the Contract for Construction.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION

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SECTION 02050**DEMOLITION****PART 1 - GENERAL**

All applicable portions of Division 1, including the drawings and general provisions of the contract, the general and supplementary conditions and Division 1 specification sections which apply to work of this section as if printed herein.

1.01 DESCRIPTION**A. Section Includes:**

1. Demolition and removal of a portion of decking at the swimming pool to allow for the installation of new pool slot drains and anchors and footings for future accessible lifts.

- B. Site Visitation: In preparing a proposal, visit the site, carefully examine the Drawings and Specifications, and determine that the work can be properly executed in accordance with the Contract Documents. No allowance will be made for any error through negligence in observing the site conditions.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION**3.01 TREATMENT OF EXISTING FACILITIES**

- A. Protection: Use necessary procedures, caution and covering to protect from damage existing facilities, equipment and accessories not noted to be replaced or restored. Maintain active utilities traversing the project site in operating condition.
- B. Replacement: In the event of damage, immediately notify the Owner, and make all repairs and replacements necessary to the approval of the Engineer without change in contract amount or time.

3.02 REMOVAL OF DEBRIS

- A. All items noted for demolition shall be immediately removed from the project site and hauled and dumped in compliance with all local codes and regulations, including payment of any associated fees.

3.03 SAFETY BARRICADES

- A. Provide substantial barricades around and at all areas and openings as soon as such areas and openings are created. Barricades must be adequate to block access and give warning to the general public.

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3.04 CLEAN-UP

- A. Upon completion of the work of this Section, immediately remove all broken concrete, debris and rubbish occasioned by this work to the approval of the Engineer.

END OF SECTION

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SECTION 13152**SWIMMING POOL CONCRETE****PART 1 – GENERAL**

All applicable portions of Division 1, including the drawings and general provisions of the contract, the general and supplementary conditions and Division 1 specification sections which apply to work of this section as if printed herein.

PART 1 GENERAL**1.01 WORK INCLUDED**

- A. Forming for cast-in-place concrete associated with swimming pool decking.
- B. Reinforcement for cast-in-place concrete associated with swimming pool decking.
- C. Cast-in-place concrete for swimming pool decking.

1.02 QUALITY ASSURANCE

- A. Qualifications of Workers:
 - 1. The entity performing the work of this Section shall have been successfully engaged in the respective trade for at least five (5) years immediately prior to commencement of the Work.
 - 2. For actual construction operations, use only trained and experienced workers with a minimum of three (3) years experience with the materials and methods specified.
 - 3. Provide at least one person who shall be present at all times during execution of the work of this Section, with a minimum of five (5) years experience with the type of materials being installed, the referenced standards, and who shall direct all Work performed under this Section.
- B. Standards:
 - 1. In addition to complying with the California Building Code (latest edition), comply with all pertinent recommendations contained in "Recommended Practice for Concrete Formwork," Publication ACI 347 of the American Concrete Institute.
 - 2. In addition to complying with California Building Code (latest edition), comply with all pertinent recommendations contained in "Manual of Standard Practice for Detailing Reinforced Concrete Structures," Publication ACI 315 of the American Concrete Institute.
 - 3. In addition to comply with all local codes and regulations, comply with all pertinent recommendations contained in American Society for Testing and Materials (ASTM); ASTM C 920 "Standard Specification for Elastomeric Joint Sealants."
 - 4. Where provisions of applicable codes and standards conflict with the requirements of this Section, the more stringent provisions shall govern.

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- C. Tolerances: Construct all swimming pool concrete straight, true, plumb and square within a tolerance horizontally of one in 200 and vertically of one in 2000.

1.03 SUBMITTAL AND SUBSTITUTIONS

- A. Provide submittals in conformance with the requirements of Section 01330.
- B. Samples and Certificates, Concrete Reinforcement:
1. Provide all data and access required for testing as described in the Specifications.
 2. All material shall bear mill tags with heat number identification. Mill analysis and report shall be made available upon request.
 3. Material not so labeled and identifiable may be required by the Owner's Representative to be tested by the testing laboratory selected by the Owner's Representative and at no additional cost to the Owner, in which case random samples will be taken for one series of tests from each 2-1/2 tons or fraction thereof of each size and kind of reinforcing steel.
 4. Design mix from batch plant demonstrating previous use history and associated strengths at 28 days.
 5. The Contractor shall submit a mix design stamped and signed by a licensed engineer for approval by the Owner's Representative prior to any placement of concrete.
- C. Submit proof of qualifications as specified in Article 1.02.A of this Section.
- D. Submit reinforcing shop drawings for pool walls, gutters, floors, dike walls and balance tanks, etc. as shown on the construction drawing.

1.04 PRODUCT HANDLING

- A. Delivery: Deliver materials to the Project Site in the manufacturer's original unopened containers with all labels intact and legible.
- B. Storage: Store materials under cover in a manner to prevent damage and contamination, and store only the specified materials at the Project Site.
- C. Protection: Use all means necessary to protect the swimming pool concrete before, during, and after installation and to protect the installed Work specified in other Sections.
- D. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner's Representative.

PART 2 – PRODUCTS

2.01 CONCRETE FORMWORK

- A. Form Materials:
1. Form Lumber: All form lumber in contact with exposed concrete shall be new except as allowed for reuse of forms in Part 3 of this Section, and all form

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lumber shall be one of the following, a combination thereof, or an equal approved in advance by the Owner's Representative.

- a. "Plyform," Class I or II, bearing the label of the Douglas Fir Plywood Association; "Inner-Seal" Form as manufactured by Louisiana-Pacific, or approved equal.
- b. Douglas Fir-Larch, number two grade, seasoned, surfaced four sides.

2. Form Release Agent: Colorless, non-staining, free from oils; chemically reactive agent that shall not impair bonding of paint or other coatings intended for use.

B. Ties and Spreaders:

1. Type: All form ties shall be a type which do not leave an open hole through the concrete and which permits neat and solid patching at every hole.
2. Design: When forms are removed, all metal reinforcement shall be not less than two (2) inches from the finished concrete surface.
3. Wire Ties and Wood Spreaders: Do not use wire ties or wood spreaders.

- C. Alternate Forming Systems: Alternate forming systems may be used subject to the advance approval of the Owner's Representative.

2.02 CONCRETE REINFORCEMENT

- A. Bars: Bars for reinforcement shall conform to "Specifications for Deformed Billet-Steel Bars for Concrete Reinforcement," ASTM A-615, Grade 60.
- B. Wire Fabric: Wire fabric shall conform to "Specifications for Wire Fabric for Concrete Reinforcement," ASTM A-185.
- C. Tie Wire: Tie wire for reinforcement shall conform to "Specifications for Stainless Steel Wire for Concrete Reinforcement," 16 gauge tie wire.

2.03 CAST-IN-PLACE CONCRETE

A. Concrete:

1. All concrete, unless otherwise specifically permitted by the Owner's Representative, shall be transit-mixed in accordance with ASTM C94. Concrete for water retaining structures that do not receive a waterproofing finish such as ceramic tile or swimming pool plaster shall contain an integral waterproofing admixture.
2. The control of concrete production shall be under the supervision of a recognized testing agency, selected by the Owner.
3. Quality: All concrete shall have the following minimum compressive strengths at twenty-eight (28) days and shall be proportioned within the following limits:
 - a. 3,000 psi minimum compressive strength.
 - b. 1" maximum size aggregate.
 - c. 6.0 minimum sacks of cement per cubic yard.*
 - d. 4" maximum slump.

* For estimate only: to be determined by mix design.

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4. Cement: All cement shall be Portland Cement conforming to ASTM C-150, type II, and shall be the product of one manufacturer.
 5. Aggregates:
 - a. Shall conform to "Standard Specifications for Concrete Aggregates," ASTM C33, except as modified herein.
 - b. Coarse Aggregate: Clean sound washed gravel or crushed rock. Crushing may constitute not more than 30% of the total coarse aggregate volume. Not more than 5% flat, thin, elongated or laminated material nor more than 1% deleterious material shall be present. 1" aggregate graded from 1/4" to 1", fineness modulus 6.90 to 7.40. 1-1/2" graded from 1/2" to 1-1/2", fineness modulus 7.80 to 8.20.
 - c. Fine Aggregate: Washed natural sand of hard, strong particles and shall contain not more than 1% of deleterious material, fineness modulus 2.65 to 3.05.
 6. Water: Clean, fresh, free from acid, alkali, organic matter or other impurities liable to be detrimental to the concrete (potable).
 7. Admixtures: Admixtures shall be used upon approval of the Owner's Representative.
 - a. Air-entraining admixture: Conform to ASTM C260.
 - b. Water-reducing admixture: Conform to ASTM C494.
 - c. Waterproofing admixture: Conform to ASTM C494.
- B. Construction Joints: Use keyform for slab pour joints. Either preformed galvanized or PVC construction joint forms of a standard manufacturer may be used. Install per manufacturer's recommendations and tool edges of slabs. All expansion joints must be the full depth of the concrete section in which they are located .
- C. Waterstops: PVC bulb-type for use between concrete pours / lifts, conforming with ASTM D 570, D 624, and D 638. Provide in configuration(s) as recommended by manufacturer for specific application. Greenstreak, W.R. Meadows, or approved equal.
- D. Curing Materials:
1. Liquid Membrane (covered slab): Chlorinated rubber membrane forming, curing-sealing compound conforming to ASTM C309.
 2. Liquid Membrane (exposed slab): Clear methyl and butyl methacrylate non-staining, membrane forming, curing-sealing compound conforming to ASTM C309.
- E. Cement Grout and Drypack:
1. Cement Grout: Mix 1 part by volume of Portland Cement, 1/2 part by volume of water and fine aggregate enough to make mixture flow under its' own weight.
 2. Drypack: Mix 1 part by volume of Portland Cement, 1/2 part by volume of water and fine aggregate enough to make a stiff mix that will mold into a ball. Mix no more than can be used in 30 minutes.
- F. Non Shrink Grout:
1. 'Fastest' non shrink grout no. 1585-09-20 exceeds ASTM C928 R-3 and ASTM C1107. 5,000 PSI at 7 days 'Fastest' or approved equal.

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- G. Zinc Rich Paint:
1. Rust Oleum 'Brite' zinc paint or approved equal. For application to embedded rebar with rust prior to concrete encasement.
- H. Pool Concrete Deck Coating Finish
1. Acceptable Manufacturer: SUNDEK Products Inc, U.S.A which is located at 805 Ave H Suite 508; Arlington TX 76011; ASD. Toll Free Tel: 877-478-6335. Color to be selected from standard signature colors.
 2. Materials
 - a. Sundek Premix:
 - 1.) Copolymer modified thin set cement coating to be used in conjunction with Sundek Additive, available in Tan, Grey, Red and White colors.
 - b. Sundek Primer/Additive:
 - 1.) Vinyl acetate emulsion with 53% solids content.
 - c. Sundek Finish Coat:
 - 1.) Water base acrylic color effect available in 16 standard colors or any customer color choice as special order.
 - d. Sundek Clear Finish Coat
 - 1.) Water based acrylic clear coat with 20% solids.
 3. Preparation
 - a. Clean concrete surface with high pressure power washer.
 - b. Remove dirt, grease, oil, curing compounds or other foreign substances, which may prevent proper bonding.
 - c. Provide protective masking at all adjacent areas not to be coated.
 - d. Repair cracks, surface damage and any corrective measures on concrete.
 4. Application
 - a. Spray or roll on Sundek Primer/Additive on area to be coated. Allow to dry and become transparent.
 - b. Sundek Base Coat (Required for blending repairs and profiling rough concrete systems.)
 - 1.) Apply Sundek basecoat using squeegee or trowel uniformly on area to be coated to a minimum thickness of 1/16" and allow drying.
 - c. Spray Sundek Classic Texture Premix thru hopper gun with air pressure at 12 lbs.
 - d. Knock down sprayed texture after it loses its gloss to provide a non-slip finish.
 - e. Spray Sundek Finish Coat to surface once is completely dry by roller or airless type sprayer and allow drying completely.

2.04 OTHER MATERIALS

- A. All other materials, not specifically described but required for proper completion of the work of this Section, shall be as selected by the Contractor subject to the advance review by the Owner's Representative.

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PART 3 – EXECUTION**3.01 SURFACE CONDITIONS****A. Inspection:**

1. Prior to 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 all Work may be constructed in accordance with all applicable codes and regulations, the referenced standards, and the original design.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Owner's Representative.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.
3. Failure to notify the Owner's Representative and give written notice of discrepancies shall constitute acceptance by the Contractor of existing conditions as fit and proper to receive work.

3.02 CONCRETE FORMWORK**A. Construction of Forms:**

1. **General:** Construct all required forms to be substantial, sufficiently tight to prevent leakage of concrete paste, and able to withstand excessive deflection when filled with wet concrete.
2. **Layout:**
 - a. Form for all required cast-in-place concrete to the shapes, sizes, lines and dimensions indicated on the Drawings.
 - b. Exercise particular care in the layout of forms to avoid necessity for cutting concrete after placement.
 - c. Make proper provisions for all openings, offsets, recesses, anchorages, blocking and other features of the Work as shown or required.
 - d. Perform all forming required for Work of other trades and do all cutting and repairing of forms required to permit such installation.
 - e. Carefully examine the Drawings and Specifications and consult with other trades as required relative to providing for pipe and conduit penetrations, reglets, chases and other items in the forms.
3. **Imbedded Items:** Set all required steel frames, angles, bolts, inserts and other such items required to be anchored in the concrete prior to concrete being placed.
4. **Bracings:**
 - a. Properly brace and tie the forms together so as to maintain position and shape and to ensure safety to workmen.
 - b. Construct all bracing, supporting members and centering of ample size and strength to safely carry, without excessive deflection, all dead and live loads to which they may be subjected.
 - c. Properly space the forms apart and securely tie them together, using metal spreader ties that give positive tying and accurate spreading.

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5. Wetting: Keep forms sufficiently wetted to prevent joints from opening up before concrete is placed.
- B. Plywood Forms:
1. Design: Nail the plywood panels directly to studs and apply in a manner to minimize the number of joints.
 2. Joints: Make all panel joints tight butt joints with all edges true and square.
- C. Footing Forms:
1. Wood Forms: All footing forms shall be wood unless otherwise specifically approved by the Owner's Representative, or as specified in paragraph 3.02(C)(2).
 2. Earth Forms:
 - a. Side walls for footings may be of earth provided the soil will stand without caving and the sides of the bank are made with a neat cut to the minimum dimensions indicated on the Drawings.
 - b. For excavation and backfill of earth forms, conform with applicable provisions of the Specifications.
- D. Reuse of Forms:
1. Reuse of forms shall be subject to advance approval of the Owner's Representative.
 2. Except as specifically approved in advance by the Owner's Representative, reuse of forms shall in no way delay or change the schedule for placement of concrete from the schedule obtainable if all forms were new.
 3. Except as specifically approved in advance by the Owner's Representative, reuse of forms shall in no way impart less structural stability to the forms nor less acceptable appearance to finished concrete.
- E. Removal of Forms:
1. General:
 - a. In general, side forms of footings may be removed seven (7) days after placement of concrete, but time may be extended if deemed necessary by the Owner's Representative.
 - b. Forms for footings, foundations, grade beams, slabs, walls, and other formed concrete may be removed fourteen (14) days after placement of concrete.
 2. Removal:
 - a. Use all means necessary to protect workers, passersby, the installed Work of other trades and the complete safety of the structure.
 - b. Cut nails and tie wires or form ties off flush, and leave all surfaces smooth and clean.
 - c. Remove metal spreader ties on exposed concrete by removing or snapping off inside the wall surface and pointing up and rubbing the resulting pockets to match the surrounding areas.
 - d. Flush all holes resulting from the use of spreader ties and sleeve nuts using water, and then solidly pack throughout the wall thickness with cement grout applied under pressure by means of a grouting gun; grout shall be one part Portland Cement to 2-1/2 parts sand; apply grout

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immediately after removing forms.

3.03 CONCRETE REINFORCEMENT

A. Bending:

1. General:

- a. Fabricate all reinforcement in strict accordance with the Drawings.
- b. Do not use bars with kinks or bends not shown on the Drawings.
- c. Do not bend or straighten steel in a manner that will injure the material. (When opposite end is already encased in concrete.)

2. Design:

- a. Bend all bars cold.
- b. Make bends for stirrups and ties around a pin having a diameter of not less than two (2) times the minimum thickness of the bar.
- c. Make bends for other bars, including hooks, around a pin having a diameter of not less than six (6) times the minimum thickness of the bar.

B. Placing:

1. General: Before the start of concrete placement, accurately place all concrete reinforcement, positively securing and supporting by concrete blocks, metal chairs or spacers, or by metal hangers.

2. Clearance:

- a. Preserve clear space between bars of not less than one and one-half (1-1/2) times the nominal diameter of the round bars.
- b. In no case let the clear space be less than one and one-half (1-1/2) inches nor less than one and one-third (1-1/3) times the maximum size of the aggregate.
- c. Provide the following minimum concrete covering of reinforcement:
 - i. Concrete deposited against earth: three (3) inches.
 - ii. Concrete below grade deposited against forms: two (2) inches.
 - iii. Concrete elsewhere: As indicated on Drawings or otherwise approved by the Owner's Representative.

3. Splicing:

a. Horizontal Bars:

- i. Place bars in horizontal members with minimum lap at splices sufficient to develop the strength of the bars.
 - ii. Bars may be wired together at laps except at points of support of the member, at which points preserve clear space described above.
 - iii. Whenever possible, stagger the splices of adjacent bars.
 - iv. Splice sixty (60) bar diameters minimum.
- b. Wire Fabric: Make all splices in wire fabric at least one and one-half (1-1/2) meshes wide.
 - c. Other Splices: Make only those other splices that are indicated on the Drawings or specifically approved by the Owner's Representative.
4. Dowels: Place all required steel dowels and securely anchor them into position before concrete is placed.
 5. Obstructions: In the event conduits, piping, inserts, sleeves and other items interfere with placing reinforcement as indicated on the Drawings or otherwise

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required, immediately consult with the Owner's Representative and obtain approval of a new procedure prior to placing concrete.

- C. **Cleaning Reinforcement:** Steel reinforcement, at the time concrete is placed around it, shall be free from rust scale, loose mill scale, oil, paint and all other coatings which will destroy or reduce the bond between steel and concrete.

3.04 CAST-IN-PLACE CONCRETE

A. Conveying and Placing Concrete:

1. Before placing concrete, mixing and conveying equipment shall be well cleaned, and the forms and space to be occupied by concrete shall be thoroughly cleaned and wetted. Ground water shall be removed until the completion of the work.
2. No concrete shall be placed in any unit of work until all formwork has been completely constructed, all reinforcement has been secured in place, all items to be built into concrete are in place, and form ties at construction joints tightened.
3. Concrete shall be conveyed from mixer to place of final deposit in such a way to prevent the separation or loss of ingredients. It shall be placed as nearly as practicable in its' final position to avoid rehandling or flowing. Concrete shall not be dropped freely where reinforcing bars will cause segregation, nor shall it be dropped freely more than six (6) feet. Use tremies, spouts and dump boxes in deep sections. Vibrators are not acceptable for facilitating concrete transport.
4. Concrete shall be tamped and spaded to insure proper compaction into all parts of forms and around reinforcement. A mechanical vibrator shall be used to thoroughly compact the concrete. Vibration must be by direct action in the concrete and not against forms or reinforcement. All expansion joints must be the full depth of the concrete section in which they are located.

- B. Construction Joints / Expansion Joints: Construction joints and expansion joints shall be provided at locations and in the manner shown on the Drawings. With exception of existing concrete / new shotcrete joints, use PVC bulb-type waterstops appropriate for design condition between all concrete pours / lifts to avoid cold joints. Waterstops shall be placed in such a way to protect reinforcing steel from rust and oxidation.

- C. Slab Finishes: Concrete slabs shall be compacted and screeded uniformly to grades shown. Push large aggregates below the surface with a screen tamper, screed and bull float. As soon as the surface becomes workable, it shall be wood floated, then troweled and finished with a medium broom uniform finish in a neat and workmanlike manner.

D. Protection and Curing:

1. Concrete shall be protected from injurious action of the elements and defacement of any nature during construction.
2. All forms must be kept wet to prevent drying out of the concrete.
3. All concrete surfaces including footings must be kept wet for at least seven (7) days after concrete is placed.
4. Apply the appropriate curing materials, as specified in 2.03 of this Section, immediately after finishing slabs. Application shall be as specified by the manufacturer.

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- E. Form Removal:
1. Take care in removing forms so that surfaces are not marred or gouged and that corners are true, sharp and unbroken.
 2. No steel spreaders, ties or other metal shall project from or be visible on any concrete surfaces.
- F. Defective Work:
1. Should the strength of any concrete for any portion of the work indicated by tests of molded cylinders and core tests fall below minimum 28 days strength specified or indicated, concrete will be deemed defective work and shall be replaced.
 2. Concrete work that is not formed as indicated, is not true to intended alignment, not plumb or level where so intended, not true to intended grades or elevations, not true to specified or selected finish, contains sawdust shavings, wood, or embedded debris, which exhibits cracks or contains fine or coarse sulfide particles, or expansive aggregates detrimental to performance or appearance of the concrete shall be deemed defective.
 3. Promptly perform work required to replace and properly clean (by sandblasting if necessary) any defective concrete panels (control joint or expansion joint to control joint or expansion joint), at Contractor's expense, including all expense of additional inspection, tests, or supervision made necessary as a result of defective concrete.

3.05 CLEAN-UP

- A. Upon completion of the Work of this Section, immediately remove all swimming pool concrete materials, debris and rubbish occasioned by this Work to the approval of the Owner's Representative.

END OF SECTION

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SECTION 13156**SWIMMING POOL EQUIPMENT****PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Swimming pool equipment items required for this Work as indicated on the Drawings and specified herein.

1.02 QUALITY ASSURANCE

- A. Qualifications of Workers:
1. The entity performing the work of this Section shall have been successfully engaged in the respective trade for at least five (5) years immediately prior to commencement of the Work.
 2. For actual construction operations, use only trained and experienced workers with a minimum of three (3) years experience with the materials and methods specified.
 3. Provide at least one person who shall be present at all times during execution of the work of this Section, with a minimum of five (5) years experience with the type of materials being installed, the referenced standards, and who shall direct all Work performed under this Section.
- B. All equipment supplied or work performed shall comply with regulations governing public swimming pools and spas as contained within Chapter 31 of California Building Code, latest edition.

1.03 SUBMITTALS AND SUBSTITUTIONS

- A. Provide submittals in conformance with the requirements of Section 01330.
- B. Required submittals include:
1. Swimming Pool Deck Equipment as specified in Article 2.01 of this Section.
- C. Submit proof of qualifications as specified in Article 1.02.A of this Section.
- D. The equipment shown on the plans represent the first listed items in the technical specifications. The Contractor shall be responsible for all required field coordination and installation of any approved equal product to provide a fully working and warranted system. The Contractor shall submit detailed shop drawings for any products used other than the first listed specified items. Contractor provided shop drawings shall include details and quality equal to the original plans and construction documents. The Contractor shall provide any and all required engineering including but not limited to structural and anchorage requirements for any proposed equipment other than the first listed specified equipment. The Contractor is responsible to provide a factory certified

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representative(s) to start-up and provide on-site training for all swimming pool mechanical equipment provided.

1.04 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect swimming pool equipment items before, during and after installation and to protect the installed work specified in other Sections.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner's Representative.

PART 2 – PRODUCTS

2.01 DECK EQUIPMENT

- A. Future Owner Supplied Accessible Lift(s): Disabled Lift: Spectrum Traveler XRC 500#27610 'Swim Lift' self-operated, or approved equal. Furnish footings and two (2) anchors as part of base bid.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

- A. Inspection:
 - 1. Prior to installing the items 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 the swimming pool equipment items may be installed in strict accordance with original design, pertinent codes and regulations, and the manufacturers' recommendations.
- B. Discrepancies:
 - 1. In the event of discrepancy, immediately notify the Owner's Representative.
 - 2. Do not proceed with installation in areas of discrepancy until all such discrepancies are fully resolved.
 - 3. Failure to notify the Owner's Representative and give written notice of discrepancies shall constitute acceptance by the Installer of existing conditions as fit and proper to receive its Work.

3.02 INSTALLATION

- A. Supply and install items of swimming pool equipment in strict accordance with applicable codes and regulations, the original design, and the manufacturer's published recommendations, anchoring firmly and securely for long life under hard use.
- B. Coordinate with other trades to insure all imbedded items are set plumb and flush. Railing

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ends must have anchor sockets and escutcheon plates. Be certain that deck equipment is properly bonded prior to imbedding.

3.03 CLEAN-UP

- A. Upon completion of swimming pool equipment, remove all debris, materials and equipment occasioned by this Work to the approval of the Owner's Representative.

END OF SECTION