Changes and/or clarifications to the contract documents. Bidders shall acknowledge receipt of this addendum in the space provided therefore in the Bid Form.

CONSTRUCTION MANAGER ITEMS

ITEM 1:  CLARIFICATION OF BID ALTERNATES

1. The contractor shall include in the base bid all Bid Alternates currently shown on the plans, except Bid Alternate #1 as shown on sheet D-2.0.

ITEM 2:  EXISTING ON DECK ITEMS

1. The contractor will be responsible for relocating and storing the existing bleachers during construction and reinstalling them once the pool deck is completed.
2. The contractor is to demo the existing wood shed currently installed on the concrete deck on the west side. The College will remove any items in the shed that they want to keep prior to demolition. The contractor shall replace the existing storage shed with a new storage shed from Cosmos Sheds. This is an 8X10 two-inch double walled vinyl shed. Wind rated 110 mph. Color as selected by the Owner.
3. The contractor shall be responsible to remove, store and protect the existing above ground spa from the pool deck. Location to be coordinated with Construction Manager. The Contractor shall clean, reinstall and test spa.
4. The College will remove existing items from the pool deck such as the items within the wood shed, lanes lines, blue tarps, etc.

ITEM 3:  REPLACE ALL EXISTING ELECTRICAL CONDUITS UNDER DECK
1. All existing conduits below the existing deck shall be replaced and new wires pulled to all remaining electrical devices. Reference Asbuilt drawings for more info.

ARCHITECTURAL SPECIFICATIONS

ITEM 4: 07145 POOL CEMENTITIOUS WATER PROOFING

1. Add specifications section 07145 in its entirety per ADDA-1

ITEM 5: 16000 ELECTRICAL WORK

1. Replace specification section 16000 with the new specification section per ADDA-2

ARCHITECTURAL DRAWINGS

ITEM 6: SHEET A-1.1 – DEMOLITION PLAN

1. Revise keynote 11 to read, “DEMO EXISTING TRENCH DRAINS/CATCHBASINS CAREFUL NOT TO DAMAGE THE EXISTING UNDERGROUND POINTS OF CONNECTION. THE NEW DECK DRAINAGE SYSTEM PER A-1.2 WILL REUSE THE EXISTING POINTS OF CONNECT. THE CONTRACTOR IS TO LOCATE AND DETERMINE THE SIZE OF THE EXISTING SYSTEM.”

2. The existing waterproof membrane shown per detail 1/A-1.1 is to be removed during demolition careful not to damage the structural roof deck of the equipment room.

ITEM 7: SHEET A-1.2 – MODERNIZATION PLAN

1. Replace sheet A-1.2 in its entirety with the revised A-1.2 sheet.
   a. Dimensions have been added showing the layout of the deck score joints.
   b. The new surge chamber has been located dimensionally.
   c. Keynote 17 has been added calling for new waterproof membrane between the equipment room and the pool deck.
   d. Keynote 8 has been revised
   e. A note has been added to detail 4/A-1.2.
   f. The Typical Concrete Score / Joint detail has been revised to match the require bar spacing per the structural drawings.
g. Fill all existing catch basins with concrete to the bottom of all slot drain pipes per revised detail 4/A1.2

SWIMMING POOL DRAWINGS

ITEM 8: SHEET D-2.5 DEMOLITION PLAN

1. Added note to demo plan. The ramp floor only is to be removed at the therapy pool. See SP-1

ITEM 9: SHEET D-4.0 DEMOLITION PLAN

1. Core added for 2" float control conduit. See SP-19
2. Removal of Ozone system note revised. See SP-23
3. Competition pool surge chamber notes revised. See SP-24

ITEM 10: SHEET SP-2.0

1. Gutter cap tile detail reference note added. See attachment SP-26

ITEM 11: SHEET SP-2.2

1. Cold water point of connection note added. See attachment SP-2
2. Bonding detail reference bubble correction. See attachment SP-2
3. Bonding detail shown on Detail 1/SP-2.2 was updated. See attachment SP-3
4. Stainless steel gutter cap tile detail added. See attachment SP-25

ITEM 12: SHEET SP-3.0

1. Note revised on detail 3. See attachment SP-18

ITEM 13: SHEET SP-4.0

1. Equipment housekeeping pads note revised to reflect 6" height. Please refer to note 2 of the equipment room notes. See attachment SP-4
2. Filter system specification is called out on number 2 of the equipment schedule. Face piping size revised to 2". See attachment SP-5
3. Piping revised and piping sizes added. See attachment SP-6
4. Existing heat exchanger system POC's added. See attachment SP-7
5. Piping sizes added. See attachment SP-8
6. Core added for 2" float control conduit. See attachment SP-20

Addendum A
Page 3
SADDLEBACK COLLEGE POOL DECK REPLACEMENT
A#04-110606
ITEM 14: SHEET SP-4.1

1. 2" Schedule 80 PVC conduit called out for float control hoses. See attachment SP-9
2. 2" Schedule 80 PVC conduit called out for float control hoses. See attachment SP-10
3. Valve note revised. See attachment SP-11
4. 2" Schedule 80 PVC conduit called out for float control hoses. See attachment SP-11

ITEM 15: SHEET SP-5.0

1. Water supply reference note correction. See attachment SP-12
2. Deck valve box detail reference bubble correction. See attachment SP-12
3. Schedule 80 PVC conduit called out for float control hoses and reference bubbles revised. See attachment SP-12

ITEM 16: SHEET SP-5.1

1. Six (6) band no hub connection revised. See attachment SP-13
2. Six (6) band no hub connection revised. See attachment SP-14
3. Water supply reference note correction. See attachment SP-15
4. Deck valve box detail reference bubble correction. See attachment SP-15

ITEM 17: SHEET SP-6.0

1. Removed bonding detail. See attachment SP-16
2. Moved panel schedule location. See attachment SP-16
3. Note added: Electrical conduit in equipment room and chemical rooms to be coated rigid galvanized steel. See attachment SP-17
4. Note added: Electrical conduit in equipment room and chemical rooms to be coated rigid galvanized steel. See attachment SP-21

ITEM 18: SHEET SP-6.1

1. Electrical conduit note added. See attachment SP-17
2. Electrical conduit note added. See attachment SP-21
3. Electrical conduit note added. See attachment SP-22
PART 1 - GENERAL

1.01 DESCRIPTION

A. Work in this Section. Principal items include:
   1. Swimming pool gutter and surge tank waterproof finish.

1.02 PRODUCT DELIVERY AND STORAGE

A. Deliver manufactured materials to site in manufacturers' original unbroken packages or containers bearing manufacturers' name and brand labels. Keep cementitious materials dry until ready to be used and stored off the ground, under cover, and away from damp surfaces.

1.03 JOB CONDITIONS

A. Apply waterproofing in exterior swimming pool only when ambient temperature is above 40°F and below 90°F, and protect applied coating from rapid drying by sun or wind until curing is completed.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Waterproof Coating: "Thoroseal" cement based, aggregate type, heavy duty, waterproof coating for concrete or masonry, as manufactured by Thoro System Products, or approved equal.

B. Bonding Agent: "Acryl 60" liquid compound of acrylic polymers and modifiers, as manufactured by Thoro System Products, or approved equal.

C. Water: Clean, fresh, from domestic potable source.

2.02 PROPORTIONS AND MIXING

A. Materials are specified on a volume basis and shall be measured in approved containers that will insure that the specified proportions will be controlled and accurately maintained during the progress of the work. Measuring materials with shovels ("shovel count") is not permitted.

B. Waterproof Coating: Mix one 50 pound bag of "Thoroseal" with liquid consisting of 2.666 quarts "Acryl 60" and 5.333 quarts of clean water.

C. Mixing: Perform mixing in approved mechanical mixers of the type in which quantity of water can be controlled accurately and uniformly. Mix to the manufacturer's recommendations for swimming pool applications. Discard material which has begun to set before it is used; re-tempering is not allowed. Do not use any caked or lumpy materials. Completely empty mixer and mixing boxes after each batch is mixed and keep free of old material.

PART 3 - EXECUTION
3.01 PREPARATION OF SURFACES

A. Existing surface to be coated must be smooth and clean. Sandblast entire surface to remove projections, loose particles, foreign matter, and make sufficiently rough to provide a strong mechanical bond. Chip, sandblast, or grind off all defective materials and foreign matter. Repair all cracks with "Waterplug" concrete patch, or approved equal. All areas of loose plaster discovered shall be completely removed down to rough concrete. Prior to coating, thoroughly wash entire surface with 2,000-psi high-pressure water. Wet cementitious base surfaces with a fine fog water spray to produce a uniformly moist condition and check gutter grates and accessories for correct alignment before coating is started. Do not apply coating to base surfaces containing frost. Install temporary coverings as required to protect adjoining surfaces from staining or damage by waterproofing operations.

3.02 APPLICATION OF WATERPROOFING

A. General: Apply waterproof coating to minimum 1/8-inch thickness at any location. Apply finish coating by hand with tampico fiber brush (do not use a paint brush).

B. Workmanship: Apply waterproof coating in two coats with second coat applied the next day or before material has become too dry or glazed for good bond. Dampen surface immediately ahead of application. Brush on two coats of waterproof coating, each with a minimum of 2 pounds per square yard, for a total of 4 pounds per square yard. Float final brushed on coat with a damp sponge 15 minutes after application to provide a smooth finish without waves, cracks, ridges, pits, projections, or other imperfections. Form coating carefully around curves and angles.

C. Curing: Cure waterproof coating with fine fog water spray applied to finish coat three or four times at 8-hour intervals or as drying conditions require to prevent too rapid drying. Do not fill with water for at least 8 days.

D. Patching and Cleaning Up: Upon completion, cut out and patch loose, cracked, damaged, or defective waterproof coating; patches matching existing coating in texture, color, and finish, flush with adjoining coating. Remove waterproof coating droppings or spattering from all surfaces. Leave surfaces in clean, unblemished condition ready for pool filling. Remove protective coverings from adjoining surfaces. Remove rubbish and debris from the site.

END OF SECTION 07145
SECTION 16000
POOL ELECTRICAL WORK

PART 1 - GENERAL

1.1 REFERENCE

A. Drawings and general provisions of Contract, including General and Supplementary conditions and Division 1, Specifications section, apply to this section.

1.2 DESCRIPTION

A. Provide all labor, material, tools and equipment required to complete the electrical work shown on the drawings and specified herein. A brief outline of the work requirements includes, but is not limited to, the following:

B. No extra work shall be undertaken without written approval of the Owner.

1.3 SUBSTITUTIONS

A. Catalog and manufacturer's number in this Section and on the drawings are for the purpose of establishing standards of quality and types of materials to be used. All manufacturer's names are assumed to be followed by, "or approved equal". Products of other manufacturers may be used if similar and if, in the opinion of the Engineer or Architect, Owner, equal in quality and design, and are specifically approved by the Engineer, Architect, Owner in writing.

1.4 QUALITY ASSURANCE

A. Material and equipment furnished shall be new and of the best quality. All items of a similar purpose shall be by the same manufacturer. Material shall be currently listed and approved by Underwriters Laboratories and shall bear Inspection Labels where inspection standards have been established. Where industry or trade standards are in force, furnished material or equipment shall comply with these standards as a minimum criteria of quality and workmanship. Equipment and material shall comply with local governmental, trade and industry standards. Material shall be delivered to the job site in original unbroken packages, bundles and cartons, as received from manufacturer or wholesaler.

B. REFERENCE STANDARDS: Various codes, specifications and standards are referred to throughout these specifications and indexed by number. In most cases, the year designation has been deleted; it is expected that the material or methods specified shall conform to the latest adopted current code, specification or standard of the designated index number. Tentative standards shall be construed as current unless otherwise noted.

C. Underwriter Laboratories, Inc. (U.L.)

1 Flexible Steel Conduit
6 Rigid Metallic Conduit
### 1.5 SUBMITTALS

#### A. The following information shall be submitted for review prior to the incorporation of any such material or equipment in the project.

#### B. Catalog Cuts

1. Furnish seven (7) copies each item - above.
   a. Snap Switches
   b. Panelboards
   c. Enclosed Switches
   d. Swimming Pool Junction Boxes
e. Circuit Breaker (each frame size and type)

f. Transformers (each)

g. Motor Controllers (each type)

C. SHOP DRAWINGS

1. Furnish seven (7) copies each item - above.

a. Panelboards

b. Transformers

c. Motor Controllers (each type)

D. CERTIFICATES

1. Certification (seven (7) copies of each):

a. Certification of Transformer Manufacturer Tests (60 Hz)

1.6 DRAWINGS

A. The drawings are diagrammatic and shall not be scaled for exact locations. Field conditions, non-interference with other utilities or trades, and architectural, structural and mechanical features shall determine exact locations.

1.7 EXAMINATION OF THE SITE

A. The Contractor shall examine the site and building area where the work is to be performed. By submitting a bid on the work, he shall be deemed to have accepted the site conditions.

1.8 PERMIT

A. This Contractor shall obtain and pay for the required electrical permit.

1.9 RECORD DRAWINGS

A. The Contractor shall maintain, on the job, a set of prints on which all changes in location or runs shall be carefully indicated. At the conclusion of the project, these prints shall be delivered to the Engineer, Architect, Owner.

B. Record drawings shall be kept in accordance with the appropriate sections of the General or Special Conditions of the Specifications.

1.10 ELECTRIC SERVICE

A. The building will be served from the Owners (4800 volt) (4160 volt) distribution system. Accomplish connections as indicated.

1.11 TEMPORARY UTILITIES

A. The Contractor may use the power and water available in the building for lighting and small hand tools. Toilet facilities in the building may be used by contractor
1.12 COOPERATION
   A. The Electrical Contractor shall cooperate fully with the other trades involved and coordinate his work with the work of other trades.

1.13 BARRICADES
   A. Furnish proper barricades at all excavations. Barriers shall be lighted.

1.14 CUTTING AND PATCHING
   A. All cutting and patching required by the installation of the electrical work shall be done by this Contractor. Do not cut or drill structural members without written permission of the Structural Engineer.

1.15 MATERIAL AND EQUIPMENT
   A. Materials and equipment furnished under this Section of the Specifications shall be standard products of manufacturers regularly engaged in the manufacture of such products, and shall be the manufacturer's latest standard design that complies with the Specifications' requirements.

1.16 PROTECTION
   A. Protect all work, materials and equipment from damage from any cause whatever, and provide adequate and proper storage facilities during the progress of the work. Provide for the safety and good conditions of all work until final acceptance of the work, and replace all damaged or defective work, materials and equipment before requesting final payment.

1.17 CLEAN-UP
   A. This Contractor shall clean all trash and debris from the site and building area which has been caused as a result of the electrical construction.

1.18 GUARANTEE
   A. All material and equipment furnished and installed under this Section shall be guaranteed by the Contractor for a period of one (1) year from the date of acceptance of the work. Should any trouble develop during this period, due to defective materials or faulty workmanship, the Contractor shall furnish all necessary labor and materials to correct the trouble at no additional cost to the Owners.

PART 2 - MATERIALS AND EQUIPMENT

2.1 CONDUIT
   A. Rigid Metal Conduit shall be rigid steel or rigid aluminum conduit conforming to U.L.
B. Electrical Metallic Tubing (EMT) shall conform to U.L. Standard 797.

C. Flexible Metal Conduit shall conform to U.L. Standard 1 (for dry areas indoors).

D. Electrical plastic conduit shall be made of PVC Schedule 40 or Schedule 80, as called for, and shall conform to NEMA TC-2 with fittings conforming to NEMA TC-3.

E. Plastic utilities duct for underground use shall be of PVC materials; conforming to NEMA TC-6.

F. Liquid tight flexible conduit shall be listed by Underwriters Laboratories, Inc., and shall bear their listing mark.

G. Flexible Metal Conduit, boxes and fittings for hazardous area shall conform to U.L. Standard 886.

H. Fittings, boxes, covers and outlets for conduit system shall conform to the following specifications:

1. Fittings for outdoor work and exposed indoor work shall be of cast or malleable iron or cast aluminum, and shall have threaded hubs.

2. Fittings for rigid metallic conduit and electrical Tubing shall conform to U.L. Standard 514. Rigid conduit shall be used with threaded fittings only. Split couplings are not acceptable.

3. Fittings for electrical metallic tubing (EMT) for sizes 2" through 1" shall be either "drive-on," "push-on" or wrench tightened compression type which shall provide pull-on force resistance and electrical continuity as required by U.L. Standard 514. Drive-on fittings shall contain grips which engage the conduits as the fitting is forced on. No indenting fittings or adjustable set screw type fittings shall be used. Fittings for EMT larger than 1" shall be compression type.

4. Fittings for flexible metal conduit shall conform to U.L. Standard 514B and shall be cadmium or zinc coated.

5. Cast metal conduit outlets shall conform to U.L. Standard 514B and shall be cadmium or zinc coated if of ferrous metal. Cast boxes shall be the size required for the conduits entering.

6. Junction boxes and covers shall conform to U.L. Standard 514A (for non-hazardous areas). Boxes shall be 4" square by 1-1/2" deep or larger if required by the number of wires or conduits entering.

I. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
2.2 WIRES AND CABLES

A. Conductors shall be copper. The cable and conduit sizing indicated or specified is for copper. Insulated wires and cables manufactured more than six (6) months prior to date of delivery to the site shall not be used.

B. For service to 600 volts and below, wires and cables shall have 600 volts insulation and shall conform to U.L. Standard 83. Wires and cables shall be type THW or THWN. Conductor sizes shall be as indicated. Where sizes are not indicated, they shall be No. 12 AWG minimum. All wiring shall be color coded for phase identification.

C. Grounding Conductors shall be soft drawn bare copper, or insulated copper wire as indicated, with green colored insulation or green plastic identification bands. Grounding bonding equipment shall conform to U.L. Standard 467.

D. Connectors and Terminals conforming to U.L. Standard 486 shall be designated for use with the specific associated conductor material, and shall provide uniform compression over the entire contact surface. Terminal lugs shall be used on all standard conductors.

E. Electrical Tapes used for electrical insulation and other purposes in wire and cable splices, terminations, repairs and miscellaneous purposes shall conform to the requirements of U.L. Standard 510.

F. Signal and miscellaneous control wire, use 600 V, U.L. designation type THW, unless otherwise specified.

G. Use OZ Mfg. Co., Type "B" insulated bushings at all locations where #1 wire or larger enters or leaves equipment boxes.

2.3 OUTLET BOXES

A. Outlet boxes for concealed work shall be galvanized or sherardized, one piece, pressed steel, knockout type.

B. Light outlet shall be 4" octagon, 4" square or larger box depending upon the number of wires or conduits therein, and shall be equipped with 3/8" malleable iron fixture stud, and plaster ring. Plaster ring shall have 3" round opening with two (2) tapped mounting ears.

C. Switch outlets shall be 4" square box for single-gang, 5" square box for two (2) gang, and special one (1) piece gang box for more than two (2) switches with plaster ring for mounting switch or pilot light.

D. Receptacles, outlet shall be 4" square, or larger box depending upon the number or wires or conduits therein, with single gang or larger plaster ring to suit the device installed. Where special box is specified herein or otherwise required for a particular device, same shall be furnished.
E. Swimming Pool Junction boxes above deck or in remote wall mounting shall be cast bronze with integral ground lugs, hubs and neoprene gasket. Strain relief must be provided for light fixture.

2.4 SWITCHES

A. Lighting switches shall be single pole, 3-way or 4-way, as indicated, 20 amp., 120/277 volt, AC only and shall conform to U.L. Standard 20. Switch plates shall comply with U.L. Standard 514 or Standard 20. Stainless steel .040".

2.5 RECEPTACLES

A. Receptacles shall be the automatic self-grounding type and shall conform to NEMA WD-1. Unless otherwise indicated, configuration shall be 5-15R. Receptacle cover plates shall comply with U.L. Standard 514 and shall be of [stainless steel .040"] . Receptacles shall be specification grade.

2.6 RELAYS

A. All relays shall be Cutler Hammer Type 9575, Allen Bradley Bulletin #700 Type D, or Square "D" Type 8501 except for lighting control or as otherwise indicated on the drawings. All relays for control lighting circuits shall be mechanically held with coil for three (3) wire operation, ASCO #917, Zenith Series MSC or equal.

2.7 TIME CLOCKS

A. Time clocks shall be motor driven in sheet metal enclosure unless built into panelboards or switchboard.

B. Time clock shall have spring wound carryover feature, kept wound by clock motor, which will operate clock for a minimum of 10 hours in the event of a power outage. Clock motor shall operate on 120 volts, 60 Hz, AC unless otherwise indicated on the drawings. Contacts shall be rated 40 amperes, 120 volts AC.

C. Where clock controls a contactor requiring three (3) wire control, use SPDT contact arrangement.

D. Where clocks operate in parallel with momentary contact control switches, contacts shall have momentary contact adapters, or clocks designed with momentary contacts, Tork 1847 Series (see drawings for control diagram).

E. For control of lighting (exterior and yard) 24-hour astronomical dial with skip-a-day feature.

F. For control of heating, ventilating and air conditioning equipment, seven (7) day dial with omitting device.

2.8 TERMINAL CABINETS

A. Furnish and install where shown on the plans, flush steel cabinets with hinged door for each section, equipped with lock and key. Key shall match those of
panelboards.

B. Furnish terminal strips in all sections except telephone. Terminal strips shall be stud type with sufficient pairs of terminals for all conductors, plus 10% spares.

C. Wireway and gutters. Where indicated on drawings, approved metal wireways shall be furnished complete with necessary complement of fittings connectors and accessory parts. Wireway shall be of the "lay-in" type with standard knockouts and with screw covers for full channel access. Wireway cross-sectional dimensions shall be sized to accommodate all the wiring noted on the plans. All sheet metal parts shall be coated with a rust inhibitor and finished in baked enamel. Gutters used outdoors shall be NEMA 3R.

2.9 PULL BOXES

A. Furnish and install pull boxes where necessary in the raceway system to facilitate conductors installation. In general, conduit runs of more than 100' or more than three (3) right angle bends, shall have a pull box installed at a convenient intermediate location. All such boxes shall be indicated on the Contractor's shop drawings.

B. Pull boxes shall be made of galvanized steel, of metal gauge and physical size as required by the NEC for the number and size of conduits and conductors involved. Boxes shall have removable screw covers for flush or surface installation as indicated on the plans.

C. Boxes shall be securely mounted to the building structure with supporting facilities independent of the conduits entering or leaving the boxes.

2.10 EXTERNALLY OPERATED SAFETY SWITCHES

A. Externally operated switches (EXO) or non-fused disconnect switches shall be heavy duty industrial type. Switches shall be fused or unfused as called for. NEMA standard type "HD" in NEMA I enclosures. Units shall be quick-make, quick-break with operating handle which can be padlocked in the "OFF" position. Finish shall be standard light gray enamel. Switches shown exposed to the weather shall have NEMA 3R enclosures. Switches shall have affixed to covers, a nameplate indicating what item is controlled by switch. Switches shall comply with U.L. Standard 98.

B. Fuses shall be of the proper current rating for each installation, and shall be of the following classes:

1. Current limiting fuses shall be as manufactured by Bussman Mfg. Co., "Limitron"; "Trionic" as manufactured by Chase-Shawmut Co.; KNLR/KLSR as manufactured by Littelfuse Tracor, or equivalent.

2. Multi-element time-delay current limiting fuses shall be "Fusetrons" as manufactured by Bussman Mfg. Co; "Trionic" as manufactured by Chase-Shawmut Co.; "Slo-Blo" as manufactured by Littelfuse Tracor, or equivalent.
2.11 STARTERS

A. Manual motor starters shall be two (2) pole disconnect with thermal overload protection, for outlet box mounting. Starters shall be equipped with neon pilot lamp, where pilot is called for by symbol. Where starters are shown mounted exposed to the weather, they shall be furnished in NEMA Type 3R enclosures. Manual starters shall have nameplates, or if outlet box mounted engraved cover plates, indicating the device controlled. Set overload at 125% of full load current.

2.12 STARTERS (MAGNETIC)

A. Starters shall be across the line or as indicated having one (1) set of contacts, motor overload relays of the thermal type, and reset button which shall be accessible without opening the door to the motor starter compartment. Where multi-speed or reversing motor starters are called for, additional sets of magnetic contactors shall be provided, as required with mechanical interlocks in addition to electrical interlocks. Each starter is to be furnished complete with one (1) set of N.O. auxiliary contacts to be used for a start, stop, holding circuit and for the indicating light circuit. Each starter shall also have provisions for adding two (2) additional sets of auxiliary contacts in addition to the motor starter contacts. Each starter unit shall have a hand/off automatic switch or a Start/Stop pushbutton as noted on the drawings and a 7-1/2 watt red jeweled pilot light in the cover. Each unit shall have an engraved nameplate. All control circuits shall be 120 volts. Various auxiliary starter features shall be as called out on the drawings.

2.13 MOLDED CASE CIRCUIT BREAKERS

A. Shall be rated at the voltage indicated, bolt-on type with minimum interrupting rating as required by the one-line drawings. The operating mechanism shall be entirely trip-free, so that contacts cannot be held closed against an abnormal over current or short circuit condition. The operating handle shall open and close all poles of the breaker simultaneously and the breaker mechanism must have a common internal trip bar to trip all poles simultaneously. The breaker shall meet applicable NEMA AB-1 and shall have a U.L. label showing U.L. tested interrupting rating equal to or exceeding the fault current available. Approved manufacturers are General Electric, Square D and Cutler-Hammer.

2.14 PANELBOARDS

A. Panelboards shall conform to the requirements of the U.L. Standard 67 and shall be complete with cabinets. Fronts shall be finished to resist corrosion with no less than one priming coat and one finishing coat. Three (3) keys shall be furnished, each of which shall operate all panelboard cabinet locks included in the project. Adjacent poles of single pole devices shall be of the opposite polarity with split-phase bussing. Circuits shall be numbered serially from top to bottom with odd number on the left. A neatly typed circuit directory with a plastic cover shall be provided in a hold on the inside of the cabinet door. Breakers shall be bolt on type with a minimum of 10,000 amp. interrupting rating.

B. Front shall include flush hinged door with lock, covering all breakers. Doors over 48" high shall have vault handle and a three point catch and lock, arranged to fasten door to top, bottom and center.

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C. All panelboards which control circuits feeding into them from other sources shall have properly buried disconnect switches for the control circuits, as required by code.

D. All breakers feeding fluorescent fixture circuits shall have lock off devices as required by code.

E. Provide handle ties to make two (2) or three (3) pole breakers of all single pole breakers serving multi-wire branch circuits, where required by applicable electrical code.

2.15 TRANSFORMERS, DRY TYPE

A. Dry transformers shall conform to the applicable requirements of NEMA Standard TRI, ST 20. Transformers shall be of the rating indicated and shall be equipped with four (4) 2-1/2” primary taps below the rated voltage. Transformers shall be of the following type, and shall be UL labeled:

B. Open self-cooled transformers shall be designed for natural circulation of air through the windings and shall carry full load continuously at rated voltage and frequency without exceeding the following temperature rating. 150°C rise above an ambient of 40°C and a "hot spot" rise of 30°C to a final coil temperature of 220°C. The windings, core and coil assembly shall be treated to resist the effects of moisture. The transformers shall be provided with ventilating enclosure having a corrosion-resisting finish.

C. Transformers shall be a standard product of the manufacturer and as such, tests made by the manufacturer previously on an electrically identical unit shall be submitted. Tests shall be certified by competent personnel of the manufacturer's testing division. Tests shall include ratio, full load loss, no load loss, exciting current resistance, impedance and sound levels. KVA capacity as shown on the drawings.

D. Transformers impedance shall be the manufacturers standard for the voltage and size called for unless a specific impedance is called for.

E. Control transformers shall be dry-type in accordance with NEMA Standards for machine tool control transformers. The V.A. rating, primary and secondary voltage shall be so noted on the drawings. Each transformer shall be equipped with a fuse block and fuse on the secondary.

2.16 SUPPORT BUSHINGS

A. Shall have bodies of malleable iron casting, hot dip galvanized, with insulated inner surface and wedging plug of an insulating material.

2.17 SEALING MATERIAL

A. Shall be a two-part urethane foam which when mixed will expand approximately 15 times in volume to form a dense, strong tough foam unit with a density of 3 to 4 pounds per cubic foot. It shall reach 60% full strength in 8 to 10 minutes after
2.18 PENETRATION SEALING SYSTEMS (FIRE STOPS)

A. Provide cable and raceway penetration sealant meeting UL and ASTM standards and NEC Article 300-21. Sealant shall not rely on heat to expand and seal the penetration. Sealant shall remain pliable and vibration-proof to prevent cracks or sprawl and shall not break seal due to vibration of cable and raceways. The fire rating of the sealant shall equal or exceed the fire rating of the penetrated materials (1 hour minimum at corridor walls; 2 hours minimum at shafts and chases). Sealant shall be Chase Tech. Corp CTC PR-855, 3M Type CP-25 or equivalent.

2.19 CONCRETE

A. Concrete for duct encasement, pad and such shall be 3000 pound tested at 28 days.

B. Concrete for duct encasement, pad and such shall be specified under the Concrete Section of this Specification.

2.20 GROUND RODS

A. Ground rods shall be copper clad steel. Install ground rods as called for on the drawings, but in no case smaller than 3/4" diameter by 10 feet long.

2.21 PULL LINE

A. Pull line shall be nylon or other man made fiber with a tensile strength of not less than 200 pounds.

PART 3 - EXECUTION

3.1 LAYOUT AND INSTALLATION

A. Layout and installation of electrical work shall be coordinated with the overall construction schedule and work schedules of various trades, to prevent delay in completion of the project. Complete drawings and specifications for the entire project will be available at the job site. It shall be obligatory to thoroughly check these documents before organizing the electrical work schedule or installing material and equipment.

B. Electrical equipment, outlets, junction and pull boxes shall be installed in accessible locations, avoiding obstructions, preserving headroom and keeping openings and passageways clear. Minor adjustments in the locations of equipment shall be made where necessary, providing such adjustments do not adversely affect functioning of the equipment.

C. Sleeves for electrical conduit passing through walls or slabs shall be placed under the work of this Section before concrete is poured. Where conduits pass through suspended floor slabs, sleeves shall be standard weight, galvanized...
3.2 CONDUIT

A. Conduit for wiring 120 volts and over shall be either rigid metal or electrical metallic tubing. Conduit shall be concealed within finished walls, ceiling and floors where possible. Exposed conduit and conduit above suspended ceiling with removable panels, shall be installed parallel with or at right angles to the building walls. All conduit shall be supported adequately by one (1) hole malleable iron straps or pipe hangers. When the area ceiling is suspended type, conduit shall be above the ceiling. Conduit larger than 1", in reinforced concrete slabs, shall be parallel with or at right angles to main reinforcement. When at right angles to the reinforcement, the conduit shall be close to one of the support saddles. Conduit in concrete shall be located so as not to affect the structural strength of the slab, but so that the conduit shall be surrounded by a minimum of 1" of concrete. Where embedded conduit crosses expansion joints, suitable weather tight expansion fittings and bonding jumpers shall be provided. Conduit installed beneath floor slabs shall be encased in concrete. The concrete encasement surrounding the conduit shall be rectangular in cross-section and have a minimum concrete thickness of 3". Where two or more conduits are encased together, they shall separated by a minimum concrete thickness of 1-1/2", except that light and power conduits shall be separated from control signal and telephone conduits.
by a minimum concrete thickness of 4". The top of the concrete envelope shall be directly under the floor slab.

B. Conduit encased in concrete shall be rigid galvanized steel with threaded fittings, or PVC.

C. Aluminum conduit shall not be installed underground or encased in concrete, and shall not be used with brass or bronze boxes or fittings.

D. Electrical metallic tubing (EMT) shall not be installed underground, encased in concrete, installed in hazardous areas, or used in outdoor work. Maximum size of EMT shall be 2" in diameter.

E. Exposed conduit subject to physical damage shall be rigid standard weight galvanized steel conduit. The definition of "exposed to physical damage" used herein is any conduit run vertically or horizontally below 8' above the finished floor.

F. Conduit for underground service into building shall be rigid galvanized steel from the service equipment to a point 5 feet beyond the building. The underground portion of the conduit shall be encased in a concrete envelope having a wall thickness of not less than 3". Where a conduit rises through a concrete floor, the curved portion shall not be visible above the finished floor and the entire conduit below the floor slab shall be encased in a concrete envelope having a wall thickness of not less than 3".

G. Conduit extending 5' beyond the building line to remote locations may be rigid steel or PVC, fiberglass or utility duct, either PVC or ABS and shall be encased in 3" of concrete.

H. Flexible metal conduit shall be used for final connection to rotating or vibrating equipment. A green insulated equipment grounding conductor shall be installed in such conduits. Liquid-tight flex shall be used in damp or wet locations requiring flexible connections.

I. Conduit runs of flexible metal conduit or all runs, any portion of which is flexible metal conduit shall have a green ground conductor, pulled in with the circuit wires.

J. All runs where non metallic conduit is used shall have a proper ground conductor installed.

K. In all cases, where a ground conductor is installed, it shall be the Contractor's responsibility to install conduit of sufficient size to accommodate the ground conductor and specified phase wires. The ground conductor shall be sized to meet code requirements.

L. Telephone conduit system shall include outlets and backboards interconnected with conduit as indicated. Install a pull cord in all empty conduits. Telephone conduits shall be EMT or PVC where not installed in plenums.
M. Sound reinforcement system shall include outlet terminal cabinets as indicated on the drawing. Sound system wiring components and connections shall be installed in accordance with the specification for such systems. Install a pull cord in all empty conduits. Conduit shall be EMT.

N. Install expansion provisions in all conduits crossing expansion joints and at all locations noted. Use U.L. approved fittings for all conduits larger than 1-1/2" in furred spaces and for all size conduits in concrete slabs. In conduit runs 2" through 1-1/2" length of flex installed in the run at the expansion joint may be used. For conduits which do not contain a grounding conductor, a green colored insulated wire shall with slack equivalent to the expansion of the joint shall be mounted across the expansion joint.

O. Exposed conduits in rooms containing corrosive chemical shall be PVC coated Rigid Galvanized Steel. This includes chemical storage rooms and swimming pool equipment rooms.

3.3 WIRE AND CABLE

A. Wire and cable shall be continuous from outlet to outlet, with the splices only in junction boxes, gutters and equipment.

B. Support Cable No. 1 and larger in vertical run of over 20' in total rise. Where any cable rise vertically, include cable supports where, and as required by code.

C. Signal and miscellaneous control wire, use 600V. U.L. designation type THW unless otherwise specified.

D. Splices. All splices shall be in accessible locations. Tapes shall be as specified hereinbefore. The conductor shall be joined securely both mechanically and electrically by twisting the conductors together and soldering, or by the use of solderless connectors. For splices in Wire No. 10, AWG and smaller, the conductors shall be twisted together and soldered and then covered neatly with an insulation equivalent in value to the conductor insulation or for branch circuits under 600 volts, the splice may be made with approved solderless connectors and then shall be covered neatly with insulating tapes, hot molded composition covers, or other approved equivalent, conductor insulations.

3.4 GROUNDING

A. Grounding shall be in accordance with the National Electrical Code, except that water piping shall be grounded, but shall not be used as the grounding electrode. Grounds and grounding systems shall have a resistance of solid earth ground not exceeding the following values:

<table>
<thead>
<tr>
<th>Resistance Value</th>
<th>OHMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>For grounding secondary neutral noncurrent metal parts associated with electrical equipment and for grounds not covered above.</td>
<td>25</td>
</tr>
</tbody>
</table>

B. Minimum size of grounding conductor from ground rods to service equipment shall be No. 4 AWG and connected to the ground rod using a copper jumper, full size of the grounding conductor.
C. Grounding connections shall be made by exothermic welds or by brazing a compatible mechanical connector and brazing over completely. Exothermic welds shall be made strictly in accordance with the manufacturer's written recommendations. Exothermic welds which have "puffed up" or which show convex surfaces, indicating improper cleaning or the attachment surface are not acceptable. No mechanical connectors are required at exothermic weldments.

D. Grounding contacts of receptacles shall be connected to a solidly grounded equipment grounding conductor. The resistance between the equipment grounding contacts and solid earth ground shall not exceed 25 ohms.

3.5 INSTALLATION AND SUPPORT OF BOXES

A. Concealed outlet boxes shall be accurately placed so as to finish flush with the finish surface or wall or ceiling unless otherwise indicated. They shall be plumb and rigidly fastened to the structure, independent of the conduit, by a bar hanger or strap approved for each particular use.

B. Outlet, pull or junction boxes where mounted on concrete, brick, etc., shall be rigidly fastened by proper sized machine bolts and approved type expansive shield.

C. Outlet boxes in furred ceilings shall be rigidly fastened to the supporting structure by an approved type bar hanger or other device.

D. Heights or outlets and equipment indicated on the drawings shall govern, but in the absence of such indication, the following heights above finished floor shall be maintained. Outlet heights are centerline:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch</td>
<td>48&quot;</td>
</tr>
<tr>
<td>Receptacles</td>
<td>12&quot; or as indicated on plans.</td>
</tr>
</tbody>
</table>

3.6 PULL BOXES

A. Boxes shall be securely mounted to the building structure with supporting facilities independent of the conduits entering or leaving the box.

3.7 CONNECTION TO EQUIPMENT

A. Contractor shall connect all equipment throughout building requiring electrical connections.

3.8 CIRCUITS IN PANELBOARDS

A. Circuits in panelboards which are noted at panel schedule or otherwise indicated on plan to be controlled by relay time clock or contactor, shall be provided with a control device having the necessary number of poles to control the circuits indicated. Contacts shall be rated to carry the branch circuit load, and coil shall match the control circuit. Relays or time clocks shall be installed at top of panel under separate lockable door. Each relay or time clock shall be in a separate compartment with required disconnect. Where contactors are required for control
of split bus, install contactor between upper and lower sections of split bus.

3.9 ENCLOSURE

A. Relays or contactors indicated on plan to be installed exterior to panelboard or motor control center shall be mounted in NEMA-1 enclosures indoors and in NEMA 3R enclosures where exposed to weather.

3.10 FINISH

A. All panelboards, relay and terminal cabinets shall be finished light gray baked enamel ANSI-49 over all steel surfaces. Panelboards installed flush in corridor walls or other public spaces shall be finished prime coat on exposed trim and door. Final finish will be determined by Architect.

3.11 ENGRAVING AND MARKING

A. In addition to nameplates required for governing codes for switchboards, panelboards, transformers, etc., control devices switches, circuit breakers, starters, relays, etc. shall be labeled to indicate function or use.

B. Control devices on switchboards, distribution panels or motor control centers shall have engraved nameplates, attached with rivets or drive screws.

C. Circuits on panelboards shall be labeled with a typed directory mounted in a holder provided on inside, or embossed plastic strip type adhesive labels mounted adjacent to control devices.

D. Individual disconnect switches, circuit breakers and motor starters in finished areas on interior or exterior of building shall have engraved nameplates. Control devices in mechanical rooms may be labeled by means of paint stenciling with a contrasting paint color. Stencil figures shall be 3/8” high unless otherwise required.

E. Flush mounted control devices with stainless steel or plastic plates shall have plate engraved with 3/16” high block type characters filled with black enamel.

F. Attached engraved nameplates shall be of laminated black and white nameplate stock with 3/16” high characters cut through the black exposing the white. Plates shall have beveled edges.

3.12 CONTRACTOR DAMAGE

A. The Contractor shall promptly cause repairs to be made on any utility lines. Lines which are shown as existing on the drawings shall be repaired at the Contractor's expense. F. Attached engraved nameplates shall be of laminated black and white nameplate stock with 3/16” high characters cut through the black exposing the white. Plates shall have beveled edges.

3.13 RECONDITIONING OF SURFACES

A. All surfaces disturbed shall be replaced in kind. Reseeding or replanting will not
be required. Paving repair shall be as specified in another Section of these Specifications. F. Attached engraved nameplates shall be of laminated black and white nameplate stock with 3/16" high characters cut through the black exposing the white. Plates shall have beveled edges.

3.14 BARRICADES

A. Barricades shall be placed at all open ditches and other obstructions. Barricades shall be lighted at night. F. Attached engraved nameplates shall be of laminated black and white nameplate stock with 3/16" high characters cut through the black exposing the white. Plates shall have beveled edges.

3.15 TESTS

A. After installation has been completed and the Inspector of Construction has been given 5 days notice of the proposed test, the Contractor shall conduct an operating test. All equipment and devices shall be demonstrated to operate in accordance with the specifications’ requirements. Test equipment shall be furnished by the Contractor and records shall be made of the test results. Test results shall be submitted for purposes. Attached engraved nameplates shall be of laminated black and white nameplate stock with 3/16" high characters cut through the black exposing the white. Plates shall have beveled edges.

B. All electrical tests shall be witnessed by an inspector. The inspector shall have experience in electrical work equal to that of an electrician having at least five year experience as a Journeyman. F. Attached engraved nameplates shall be of laminated black and white nameplate stock with 3/16" high characters cut through the black exposing the white. Plates shall have beveled edges.

C. Before any wire is connected to the ground rods, each rod shall be tested for ground resistance value with a portable ground testing meter developing an a.c. voltage and shall be used to test each ground or group of grounds. The auxiliary or reference ground rods shall be 3/4 inch copper clad steel, not less than 4 feet in length and driven 3-1/2 feet deep and shall be installed in a straight line from the ground being tested and the two reference grounds and to the proper binding post of the instrument. Where there is more than one ground within a circle of 10 feet at a particular location, the reference rods as driven for the "first" test shall be used for tests on the other rods without changing their location. The instrument shall be equipped with a meter reading directly in ohms and fractions thereof indicating the ground value in ohms of the ground under test. F. Attached engraved nameplates shall be of laminated black and white nameplate stock with 3/16" high characters cut through the black exposing the white. Plates shall have beveled edges.

D. Installation 600 volts and less shall be tested to determine that the wiring system and the equipment is free from short circuits and from ground other than required grounds. Tests shall be made with an instrument capable of accurate resistance measurement and having a voltage rating of not less than 500 volts. F. Attached engraved nameplates shall be of laminated black and white nameplate stock with 3/16" high characters cut through the black exposing the white. Plates shall have beveled edges.
3.16 ANCHORS
   A. Dry transformers shall be anchored to the floor with 2" bolts and tied to wall studs, concrete or masonry walls with 2" channel or flat iron stock, both sides.

3.17 PROTECTION OF WORK
   A. The Contractor shall protect all work, materials and equipment from damage from any cause whatsoever, provide adequate and proper storage facilities during progress of work, and be fully responsible for all injury or damage due to any part of his work function.

3.18 ADJUSTMENTS
   A. Adjust all relays, contactors and controls to properly operate, interlock, and sequence. Adjust contact clearances with alignment. Tighten loose bolts or screws. Properly select and set all protective elements and devices.

3.19 ACCEPTANCE
   A. Before this work will be accepted, the Contractor shall demonstrate to the Owner that the entire installation is complete and in proper operation and adjustment with all new materials, and that the Contract has been fully executed.

3.20 GALVANIZED SURFACES
   A. Brush thoroughly and wipe with clean rags and solvent to remove all dirt, oil and grease.

3.21 PANELBOARDS
   A. Panelboards and similar items with factory finish. Clean and touch up damaged surfaces.

3.22 CLEAN UP
   A. Upon completion of work, and periodically as required for safety and sanitation, remove from the site all surplus material, equipment and debris resulting from work under this Section.
NOTE:
TYPICAL TREAD IS 12"
TYPICAL RISER IS 6"

TILE AND PLASTER ON STAIRS TO REMAIN UNDISTURBED

REMOVE HANDRAILS AND
REPLACE PER SHEET SP-2.5
(TYPICAL 2 PLACES)

SAW CUT FOR REMOVAL OF PLASTER
(1/2" THICK), ROUGHEN CONCRETE AND
PREPARE FOR 1/4" MORTAR AND 1/4" TILE
PER SHEET SP-2.5

RAMP FLOOR ONLY:
CHIP AND REMOVE PLASTER OR
CONCRETE FINISH, 1/2" DEEP,
ROUGHEN CONCRETE AND PREPARE
FOR 1/4" MORTAR AND 1/4" TILE
PER SHEET SP-2.5

SAW CUT CONCRETE 2" WIDE x 2" DEEP
AROUND PERIMETER OR
EXISTING GRATES AND FRAMES, REMOVE
GRATES AND FRAMES COMPLETE.
(TYPICAL 2 PLACES)

TILE AND PLASTER TO REMAIN UNDISTURBED UNLESS NOTED OTHERWISE
(TYPICAL)
OR ALTERNATE
REMOVE PLASTER COMPLETE TO BARE CONCRETE

REMOVE ALL POOL ANCHORS, SIGNAGE
AND STANCHIONS ON DECK COMPLETE
WITH DECK DEMO
(TYPICAL)
HOSE CONNECTION IN
IN #2-1375 GROUND
BRANT (NICKEL BRONZE
AND SCORIATED COVER
H POLISHED FACE)
ProvidE oPTIONAL
PDED DRAIN PORT

3/4" CW POINT OF CONNECTION,
SEE SHEET SP-6.1 FOR CONTINUATION.

PAIRED DISABLED ACCESS
LIFT ANCHORS WITH
STAINLESS STEEL COVER
PLATES (SEE BELOW)

AND DECK HYDRANT MUST BE BONDED. SEE DETAIL

DOWN ASS'Y
ACME - 5 UNC.

BASE OF LIFT

SADDLEBACK COLLEGE POOL
DECK REPLACEMENT
SOUTH ORANGE COUNTY COMMUNITY
COLLEGE DISTRICT
EQUIPMENT ROOM NOTES

1. EQUIPMENT ROOM FLOOR MUST SLOPE MIN. 1/4" TO 1/2" TO FLOOR DRAINS.
2. ALL POOL EQUIPMENT MUST BE INSTALLED ON 6" HIGH HOUSEKEEPING PADS PROVIDED BY BUILDING CONTRACTOR UNLESS NOTE OTHERWISE.
3. PROVIDE ROSE BUSH(S) FOR HOUSE CLEANING PURPOSES (SEE BUILDING MECHANICAL DRAWINGS).
4. PUMP PIT FLOOR MUST SLOPE MIN. 1/4" TO 1/2" TO PUMP PIT.
5. MIN. 7'-0" CLEAR ON ALL OVERHEAD PIPING.
6. PROVIDE PRESSURE GAUGES ON INFLUENT AND EFFLUENT SIDE OF EACH FILTER SYSTEM.
7. INTERLOCK ALL CHEMICAL BOOST PUMPS WITH MAIN CIRCULATION PUMP FOR EACH POOL.
8. PROVIDE A MINIMUM OF TWO (2) PERMANENT AIR SUPPLY OPENINGS COMMUNICATING DIRECTLY THROUGH THE WALL TO OUTSIDE AIR: ONE WITHIN 12 INCHES OF THE CEILING, AND THE OTHER WITHIN 12 INCHES OF THE FLOOR. EACH OPENING MUST HAVE A MINIMUM FREE AREA OF ONE SQUARE INCH FOR 4,000 CFM INPUT OF THE TOTAL INPUT RATING OF ALL APPLIANCES IN THE EQUIPMENT ROOM.
9. PROVIDE PVC TRUE UNION BALL SHUT-OFF VALVES ON HEATER INFLUENT AND EFFLUENT LINES FOR ISOLATION.
10. PROVIDE 2 1/2" STAINLESS STEEL GLYCERINE FILLED VACUUM GAUGES AT EACH PUMP STRAINER PIT (TYPICAL).
11. PROVIDE THERMO METER ON ALL THREE HEATER INFLUENT LINES, EFFLUENT LINES AND IN MAIN RETURN LINES AFTER HEATER BYPASSES (TYPICAL).
12. PROVIDE SIGNS ON CHEMICAL ROOM DOORS IN COMPLIANCE WITH CBC ARTICLE 80.
13. ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION IN ACCORDANCE WITH 1990 CBC SECTION 1632A.
15. ANCHORAGE DETAILS FOR EQUIPMENT WHICH ARE NOT APPROVED DURING PLAN REVIEW ARE SUBJECT TO APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE FIELD REPRESENTATIVE OF THE ARCHITECT PRIOR TO INSTALLATION AND INSPECTION BY THE PROJECT INSPECTOR.
16. ALL CHEMICAL INJECTION PIPING TO BE SCHEDULE 80 1/2" PIPE, USE CHEMICAL RESISTANT PVC SOLVENT.
17. SCHEDULE 80 PVC PIPE TO BE SUPPORTED BY WALL OR CEILING AS SPECIFIED BY BUILDING STRUCTURAL - NO FLOOR MOUNTED PIPE SUPPORTS IN THE CHEMICAL ROOMS, PIPE TO BE SUPPORTED AS FOLLOW OR AS INDICATED ON SP-40.
   a. 8" SCHEDULE 80 PVC PIPE SUPPORTED AT LEAST EVERY 11 FEET.
   b. 4" SCHEDULE 80 PVC PIPE SUPPORTED AT LEAST EVERY 11 FEET.
   c. 2" SCHEDULE 80 PVC PIPE SUPPORTED AT LEAST EVERY 6 FEET.

DETAILED REFERENCES:

EQUIPMENT ROOM NOTES

SADDLEBACK COLLEGE POOL DECK REPLACEMENT
SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT

pjhm architects
647 Camino de Los Mares #201
San Clemente, CA 92673
p 949.496.0269

San Diego:
804 Per View Way #103
Oceanside, CA 92054
p 760.730.5527 / fax 760.730.5627

DESCRIPTION
ADDITION A
SHEET
SP-4
1. CIRCULATION PUMPS - TWO (2) PACO 10W-25957, 200 GPM AT 68' OF HEAD, 1750 RPM, 208-230-460, 38, 7.5 HP, PACO LC PUMP MUST BE INSTALLED WITH PACO CAST IRON BASE PLATE. PUMP MUST BE MOUNTED TO CAST IRON BASE PLATE WITH STAINLESS STEEL CAP SCREWS FOR PROPER PUMP PULL OUT FEATURE TO FUNCTION CORRECTLY.

2. FILTER SYSTEM - (2) PAC FAB TR140C, HIGH RATE SAND FILTERS WITH MANUAL BACK WASH VALUES, 14,12 SQ. FT. SAND, 14.16 GPM PER SQ. FT. OF SAND, 2" FACE PIPING, INCLUDES A PENTAIR MULTI-PORT MODEL #261049

3. HEAT EXCHANGER - EXISTING

4. CHEMICAL - EXISTING

5. CHEMICAL CONTROL MONITOR - EXISTING SEIMENS IMPACT CONTROLLER ADD TWO (2) SENSOR CABINETS AND SENSORS FOR CONTROL OF TWO POOLS

6. FLOW METER - SIGNET FLOW METER IR85040

7. CHLORINATOR - PULSAR P4 CALCIUM HYPOCHLORITE SYSTEM 1 HP BOOST PUMP AND MAZZI 155SX VENTURI

8. PH-MTS CO2 FEED SYSTEM EKO² MTS CO² FEED SYSTEM WITH ALKALINITY CONTROL

PUMP NOTES:

A. THERAPY POOL PUMP ON 2'-6"x1'-6" CONCRETE PAD (FIELD VERIFY HEIGHT OF PAD WITH EQUIPMENT CLEARANCE REQUIREMENTS). PROVIDE 4" BUTTERFLY VALVE ON MAINDRain SUCTION LINE AND SKIMMER SUCTION LINE, PLUS ADDITIONAL 4" BUTTERFLY VALVE ON COMBINED SUCTION LINE BEFORE 4"x3" EPOXY COATED REDUCER. 2 1/2" PUMP DISCHARGE LINE INCLUDES 2 1/2"x4" EPOXY COATED INCREASER, 4" CHECK VALVE, AND 4" BUTTERFLY VALVE TO 4" PVC LINE TO FILTER SYSTEM.

B. THERAPY POOL PULSAR P4 BOOSTER PUMP ON 12"x18"x6" HIGH CONCRETE PAD

EQUIPMENT SCHEDULE
EW THERAPY POOL
IPING (SIZE TO MATCH EXISTING)
CONNECT ALL NEW CHEMICAL
IPING TO PULSAR V AND
HMTS BETWEEN P.O.C’S

NOTE:
SEE DETAIL
FOR CHEMICAL
PIPING SCHEMATIC

6
SP-4.1
9
SP-4.1

SADDLEBACK COLLEGE POOL
DECK REPLACEMENT
SOUTH ORANGE COUNTY COMMUNITY
COLLEGE DISTRICT
THERAPY POOL SURGE CHAMBER

GE CHAMBER CALCULATION

MINING POOL SURFACE AREA = 2,424 SQ. FT. GUTTER AREA = .734 SQ. FT. x 324 FT. PERIMETER = 2,378 CU. FT. x 7,481 = 1,779 GALLON GUTTER CAPACITY SURGE CHAMBER = 10'x10'x10' = 1,000 CU. FT. x 7,481 = 7,481 GALLON SURGE CHAMBER

TOTAL SURGE CAPACITY = 9,260 GALLON TOTAL SURGE CHAMBER

DIAGRAM NOTES:

- 2" SCHED 80 PVC CONDUIT FOR FLOAT CONTROL WIRING, SEE DETAIL 1/SP-4.1 FOR MORE INFORMATION
- 6" FILL LINE FROM MAKE-UP MANIFOLD AT POOL EQUIPMENT ROOM (TYP.)
- 6" SURGE CHAMBER SUCTION LINE
- 6" MAIN DRAIN LINE
- 6" SURGE CHAMBER FLOAT VALVE
- 3" SP-4.1 PIPE ANCHOR (TYP.)
- 2" SP-4.1 PIPE WATERSTOP (TYP.)
- 6" FILL LINE FROM MAKE-UP MANIFOLD AT POOL EQUIPMENT ROOM (TYP.)
- 6" SURGE CHAMBER SUCTION LINE
- 6" MAIN DRAIN LINE
- 6" SURGE CHAMBER FLOAT VALVE
- 3" SP-4.1 PIPE ANCHOR (TYP.)
- 2" SP-4.1 PIPE WATERSTOP (TYP.)

SADDLEBACK COLLEGE POOL DECK REPLACEMENT
SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT

ADDENDUM A
SP-9
**LINK SEAL™ WATERSTOP**

**SCALE:** NONE

- **GPM (MIN) ON**
- **SURGE CHAMBER WALL OR LID**
- **LINK-SEAL TYPE WALL PENETRATION SEAL**
  - 6" PIPE = MODEL LS-475-C
  - 8" PIPE = MODEL LS-475-C
  - 10" PIPE = MODEL LS-400-C
  - 12" PIPE = MODEL LS-400-C
  - 14" PIPE = MODEL LS-400-C
- **FOR FLOAT CONTROL STILLING PIPE (8") AND FILL LINE (6") THROUGH SURGE CHAMBER LID, ORDER TO ACTUAL SLAB THICKNESS**

**ACCESS HATCH TO SURGE CHAMBER**
16"x32" CONCRETE FILLED
ACCESS COVER W/ 28"x28" CLEAR OPENING ABOVE.

**2" SCHED. 80 PVC CONDUIT FOR FLOAT CONTROL WIRING, SEE DETAIL 1/SP-4,1 FOR MORE INFORMATION**

**ACCESS LADDER**
8/SP-4,1

**STILLING PIPE FLOAT CONTROL**
3/SP-4,1

**PIPE ANCHOR (TYP.)**
5/SP-4,1

(A) VERIFY HEIGHT WITH PUMP REQUIREMENTS
GUTTER OUTLET- THERAPY POOL

EXISTING GUTTER DRAIN LINE

NEW 6" SCHEDULE 80 PVC GUTTER DRAIN LINE TO THERAPY POOL SURGE CHAMBER

STAINLESS STEEL 6-BAND NO HUB FITTING (TYP.)

FLOW PREVENTION STANDARD
TEER INTO EXISTING HOSE BIBB WATER SUPPLY. SEE DETAIL 2/SP-2.2 FOR MORE INFORMATION

DECK VALVE BOX (TYP. 2 PLACES)

CONNECT EXISTING MAINDRAIN LINE TO NEW MAINDRAIN LINE. CONTRACTOR TO VERIFY EXACT LOCATION (TYPICAL)

SADDLEBACK COLLEGE POOL DECK REPLACEMENT
SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT
## Electric Panel Schedule

<table>
<thead>
<tr>
<th>Description</th>
<th>VOLT</th>
<th>AMPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Chlorinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex Air Pump</td>
<td></td>
<td></td>
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<tr>
<td>Existing</td>
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</tr>
<tr>
<td>Relay</td>
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<tr>
<td>Existing</td>
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</tr>
<tr>
<td>New Chem Control</td>
<td></td>
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<tr>
<td>Existing</td>
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<td></td>
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<tr>
<td>1 HP Boost Pump</td>
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**Sub Total**

<table>
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<tr>
<th>LOAD</th>
<th>6036</th>
<th>6431</th>
<th>7261</th>
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</table>

**Panel Total**

<table>
<thead>
<tr>
<th>VOLT</th>
<th>AMPS</th>
</tr>
</thead>
</table>

**Saddleback College Pool Deck Replacement**

South Orange County Community College District
CONDUITS IN THIS ROOM SHALL BE PVC EXTERNALLY COATED, RIGID STEEL CONDUITS: USE ONLY FITTINGS LISTED FOR USE WITH THIS TYPE OF CONDUIT. PATCH AND SEAL ALL JOINTS, NICKS AND SCRAPES IN PVC COATING AFTER INSTALLING CONDUITS AND FITTINGS. USE SEALANT RECOMMENDED BY FITTING MANUFACTURER AND APPLY IN THICKNESS AND NUMBER OF COATS RECOMMENDED BY MANUFACTURER.
SLOT DRAIN REINFORCING

SCALE: 1" = 1'-0"

6" CONCRETE SLAB ON GRADE W/ #4 @ 12" EA. WAY.

REMOVE 6" OF EXISTING SUB GRADE, RECOMPACT AND PROVIDE 6" OF CRUSHED ROCK. THE ROCK PLUS THE NEW 6" CONCRETE GIVE A 12" SECTION.

TYPICAL SLAB EDGE

SCALE: 1" = 1'-0"

CANTILEVER EDGE

3 #4 CONT.

WATER LEVEL

TYP. SLAB REINF.

#4 DOWELS @ 12" O.C. EPOXYED INTO 2" DIAMETER

SADDLEBACK COLLEGE POOL DECK REPLACEMENT
SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT
NOTE:
CONTRACTOR TO HAVE TESTING LAB
VERIFY REINFORCING BAR LOCATIONS IN
STRUCTURAL WALLS. CORES TO BE POSITIONED
TO MISS REINFORCING BARS.

4" RETURN LINE TO
THERAPY POOL

12"Ø CORE THRU WALL
(TYP. 4 PLACES) FOR
NEW THERAPY POOL PIPING,
SEE SHEET SP-4.0
CONDUITS IN THIS ROOM SHALL BE PVC EXTERNALLY COATED, RIGID STEEL CONDUITS. USE ONLY FITTINGS LISTED FOR USE WITH THIS TYPE OF CONDUIT. PATCH AND SEAL ALL JOINTS, NICKS AND SCRAPES IN PVC COATING AFTER INSTALLING CONDUITS AND FITTINGS. USE SEALANT RECOMMENDED BY FITTING MANUFACTURER AND APPLY IN THICKNESS AND NUMBER OF COATS RECOMMENDED BY MANUFACTURER.

CONNECT TO CHEMICAL CONTROLLER

20A-1P N.O/NC RELAY IN NEMA 1 ENCL.

NOTE: WC1
Conduits in this room shall be PVC externally coated. Rigid steel conduits: use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
STING COMPETITION POOL
LSAR SYSTEMS TO REMAIN
DISTURBED

REMOVE OZONE SYSTEM
COMPLETE, TERMINATE AND
CAP PIPING AND CONDUIT FOR
OZONE SYSTEM. CONTRACTOR
TO HAUL AWAY OZONE
SYSTEM.

EXISTING FLOOR SINK
COMP. POOL HEAT EXCH.

EQUIPMENT

SADDLEBACK COLLEGE POOL
DECK REPLACEMENT
SOUTH ORANGE COUNTY COMMUNITY
COLLEGE DISTRICT
COMP. POOL SURGE CHAMBER NOTES:
1. REPAIR ALL CRACKS AND SPALLED CONCRETE ON ALL SURGE PIT FACES (FLOOR, WALLS AND CEILING) WITH EPOXY INJECTION
2. PREPARE ALL SURFACES FOR WATERPROOFING WITH CEMENTITIOUS WATERPROOFING
MAINRAIN TILE NOTES:
CONTRACTOR IS RESPONSIBLE FOR REPLACING
ALL RACING COURSE TILE DAMAGED OR REMOVED DURING THE
MAINRAIN DEMOLITION PHASE.
RACING COURSE TILE AND MORTAR TO
MATCH EXISTING.

NOTES:
A. ITEMS NOT DIMENSIONED ARE IN THE SAME LOCATION
   AS THOSE ON THE OPPOSITE POOL WALL
B. SEE SHEET SP-2.05 FOR ALL FINISH DIMENSIONS

DETAIL REFERENCE NOTES:
1. SEE DETAIL 1/SP-2.1 FOR TYPICAL GUTTER SECTION.
2. SEE DETAIL 5/SP-2.1 FOR DEPTH MARKER LOCATIONS DETAIL.
3. SEE DETAIL 7/SP-2.2 FOR STAINLESS STEEL CAP TILE AT
   CENTERLINE OF EXISTING CUP ANCHOR LOCATIONS.