ADDENDUM B

Date: March 21, 2011

Irvine Valley College
Life Sciences Building
BID # 303
South Orange County Community College District

General-All project documents including contract documents, drawings, and specifications, shall remain unchanged with the exception of those elements added, revised, deleted, or clarified by this addendum. Acknowledge receipt of Addendum B in the space provided in the bid form. Failure to do so may cause the bid to be deemed nonresponsive.

CONTENTS
ADDENDUM ITEMS

Revisions to Contracting and Bidding Manual

B-1 Titles missing in Contracting and Bidding Manual
The reprographics firm had a printing error that caused the titles to be missing in the Contracting and Bidding Manual. The reprographic firm has corrected the mistake as of Friday, February 25, 2011. All bidders should verify that the first page of the Contracting and Bidding Manual (Bid Forms page 1) has a black bar with “CONTRACTING AND BIDDING MANUAL – TITLE PAGE” at the top of the page. If this title is missing, contact Repro-Xpress for a new manual.

B-2 Disabled Veterans Business Enterprises Participation Goal
Pursuant to Education Code §71028 and PCC §10115, the District has established a disabled veteran’s business enterprise (DVBE) goal of 3% for this project. The Contractor must make a good faith effort to contact and utilize DVBE contractors and suppliers in securing bids for performance of the project. Information regarding DVBE firms can be obtained from the Office of Small Business Certification and Resources (OSBCR) at 916-375-4940 or www.pd.dgs.ca.gov/smbus. The successful bidder shall submit the attached (Document 073) to demonstrate bidder’s good faith efforts and DVBE utilization, prior to the award of contract. The bidder is required to retain all documentation of DVBE certification and/or good faith effort in the event such documentation is requested by the District.
Revisions to Project Specifications

B-3  075419 - 2 - Adhered PVC Thermoplastic Membrane Roofing
Section 1.6 A – Remove: "At the time of bidding"

B-4  116010 – Laboratory Casework
Braun/Mott is an approved equal
Contact name: Ron Routh
Phone: (916) 667-3535
Email: ron@braunconstservices.com

B-5  133413 – Prefabricated Green House
Replace old section with the attached new 133413 section.

Revisions to Contract Drawings

B-6  L004 – Planting Plan
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-7  L005 – Planting Legend
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-8  A103 – Roof Plan
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-9  A202 – Exterior Elevations
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-10 A401 – First Floor Reflected Ceiling Plan
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-11 A402 – Second Floor Reflected Ceiling Plan
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-12 A614 – Enlarged Boiler Room Plan
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-13 A615 – Greenhouse Plan and Elevations
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-14 M002 – Mechanical Equipment Schedule
Replace existing sheet with new Delta 2 dated 03/11/2011.
B-15  P001 – Legend, Notes, Schedules, Index, Calculations
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-16  E003 – Single Line Diagrams
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-17  E004 – Panel Schedules
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-18  E203 – First Floor Signal Plan
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-19  E303 – Second Floor Signal Plan
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-20  E604 - Details
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-21  FP001 – Fire Protection – Legend, Notes
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-22  S203 – Roof Framing Plan
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-23  S301 – Footing Schedule & Foundation Details
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-24  S303 – Non-Frame Column Schedule
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-25  S502 – Typical EBF Details
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-26  S701 – Sections & Details
Replace existing sheet with new delta Add# 2 dated 03/11/2011.

B-27  S705 – Sections & Details
Replace existing sheet with new delta Add# 2 dated 03/11/2011.
1.01 DVBE REQUIREMENTS

A. Pursuant to Education Code §71028 and PCC §10115, the District has established a disabled veteran's business enterprise (DVBE) goal of 3% for this project. The Contractor must make a good faith effort to contact and utilize DVBE contractors and suppliers in securing bids for performance of the project. Information regarding DVBE firms can be obtained from the Office of Small Business Certification and Resources (OSBCR) at 916-375-4940 or www.pd.dgs.ca.gov/smbus.

B. This form (Document 073) shall be submitted prior to the award of contract. The bidder is required to retain all documentation of DVBE certification and/or good faith effort in the event such documentation is requested by the District.

LIST ANY DVBE SUBCONTRACTOR/SUPPLIERS YOUR FIRM HAS CONTACTED
NAME OF FIRM / LOCATION (CITY/STATE) / TELEPHONE

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LIST ANY DVBE SUBCONTRACTORS/SUPPLIERS YOUR FIRM WILL USE ON THIS PROJECT
NAME OF FIRM / LOCATION (CITY/STATE) / AMOUNT OF SUBCONTRACT

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END OF DOCUMENT
PART 1 - GENERAL

1.1 SECTION INCLUDES:

A. It is the intent of this portion of the specifications to include the furnishing and erecting of the greenhouse superstructure including all glazing, doors, door hardware, and ventilation as shown on plans and/or hereinafter described.

B. It is not the intent of this portion of the specifications to cover concrete, grouting, masonry work, plumbing, electrical work (power and control wiring), utility connections, final cleaning of glazing, nor counter-flashing. This portion shall be the responsibility of the General Contractor or his selected Subcontractors other than the Greenhouse Contractor.

C. No masonry or foundation installation shall be made prior to approval of greenhouse drawings. Approved greenhouse drawings shall be used to make all masonry and foundation installations. Dimensions may vary slightly from contract drawings to accommodate manufacturer's standard, but total area shall not be less than 98% of that shown.

D. The Contractor shall pay for design and construction costs that the manufacturer requires which are not shown in the approved plans. The Contractor is also responsible for any costs associated with DSA approval of the green house, including modifications to the approved plans.

1.2 SPECIFICATIONS AND PLANS

A. These specifications are intended to supplement the drawings and, therefore, it shall not be their purpose to mention any portion of the construction which the drawings are competent to explain and such omissions shall not relieve the Greenhouse Contractor from carrying out such portions indicated only on the drawings and should items be required by specifications which are not indicated on the drawings, they shall be supplied and installed by this Contractor.

B. Related Work Specified Elsewhere:

1. Concrete floors, grouting of sills and base plates, and Aggregated base: Division 03 and 04.
2. Plumbing rough-in work and hook-up of greenhouse plumbing systems, and downspouts described in this section: Division 22.
3. Electrical power wiring, control wiring, environmental control system wiring, lighting, conduit and hook-ups of greenhouse electrical equipment provided under this section: Division 26.

1.3 QUALITY ASSURANCE

A. The greenhouses shall be erected by the manufacturer or their qualified greenhouse specialty contractor with at least five (5) years experience in building greenhouses of the type specified, similar in size and complexity.
1.4 SUBMITTALS

A. Greenhouse Manufacturer shall submit (architects advised quantity) sets of approval drawings.

B. Approval submittals shall include engineered wet stamped drawings for Division of State Architect (DSA), a full set wet stamped engineering calculations, and equipment submittal. The manufacturer shall comply with any DSA comments on the design or calculations, and shall re-submit until approved by DSA.

C. Approval drawings shall include the following individual detailed sheets:

1. Cover Sheet
2. Floor/ Post Plan
3. Post Feet Details
4. Roof Framing Plan
5. Roof Glazing Plan
6. Sidewall Elevations
7. Gable Elevations
8. (size) Aluminum Truss
9. Foundation Plan
10. Equipment Plan
11. Double Vent Ridge Section
12. Bench Layout
13. Typical Sidewall Section
14. Wall Section @ AeroCool (or gable section)
15. Roof to Gable Section
16. Misc. Closure Details (greenhouse to head house/building)
17. Door & Door Hardware Schedule

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Drawings and specifications are based on THE GLASS HOUSE as manufactured by Rough Brothers, 5513 Vine Street, Cincinnati, Ohio 45217, (1-800-543-7351). Manufacturers seeking approval to bid and who have products similar in design and meeting all the requirements of the specifications must submit complete product data and specifications along with a list of seven (7) projects of equal size and magnitude that have been successfully completed and operational for a minimum of four (4) years and evidencing not less than ten (10) years experience in similar work. Name and location of project, name and address of general contractor, name and address of architect shall be provided for each of the references.

2.2 MATERIALS

A. Structure shall be designed and detailed according to good engineering practice. All primary framing shall be 6005 or 6061-T6 and 6063-T6 alloys. All aluminum flashing shall be 5005-H14 alloy. Framing shall consist of aluminum trusses on 10'-3-3/4” centers spanning the full width of the structure with a 6/12 roof pitch. Aluminum shall be mill finish with appropriate heat treatment. No castings, either of aluminum or aluminum alloy, shall be permitted for joining structural members at joints subject to stress in which tensile strength is a factor.
B. Sidewall columns shall be attached to top of foundation curb on slab with epoxy set plated anchor bolts, Grade A36 or A307. Drilling for anchors and setting of plated anchor bolts to be by the greenhouse manufacturer.

C. Structural connections shall be made with galvanized steel bolts. All bolts 1/4" diameter up to ½" diameter shall be A307. All bolts ½" diameter or larger shall be Grade 5. Welded connections will not be accepted.

2.3 STANDARD DESIGN CRITERIA

A. Standard loads specified below
   1. Dead Load - structure and equipment.
   2. Live Load - 16 lbs. per sq. ft. on horizontal area.

B. In designing for the above loads, the loads may be considered to act in any of the following combinations:
   1. Dead Load plus Wind Load.
   2. Dead Load plus Live Load.
   3. Dead Load plus Live Load plus Wind Load

C. In addition to the above, roof bars shall be required to carry a 100 lb. concentrated load at the center of any span.

D. Structure shall be designed in accordance with current Aluminum Association "Specifications for Aluminum Structures". The maximum allowable deflection shall be L/120 of the span. Structure shall include adequate bracing for the lateral support of structural members and framing, and for stability of the structure for the resistance to wind forces. Bottom chord members as well as other truss members shall be adequate to resist compressive loads produced by horizontal wind loads and roof uplift produced by wind.

2.4 EXPANSION CONTROL

A. Suitable expansion joints shall be provided in all longitudinal members to take care of the longitudinal expansion in the aluminum. No longitudinal members shall exceed 21-0". All members shall be so joined as to require each joint to handle the expansion in the individual member and to prevent an accumulation of expansion in several members in one direction.

2.5 ALUMINUM FRAME

A. Truss members and connection plates shall be aluminum. Welded connections will not be accepted. Special care shall be taken in the fabrication of this aluminum work, and all tolerances shall be held to an absolute minimum in order to secure proper fit of the aluminum members specified.
B. Aluminum columns shall be furnished and placed through the length of the greenhouse and across all partitions and gables as required. Columns shall be punched, or drilled to attach required aluminum members.

C. Trusses shall be connected to the sidewall columns by an aluminum plate so designed as to be bolted to the web of the column with all bolts in shear. No joint shall be allowed, either of combined extrusions or a casting that shall be fastened to the flange of the column thereby placing fasteners in tension or twist.

D. Aluminum rafters shall be furnished and placed in the roof of the greenhouse, extending from the eave or gutter to the ridge. Each pair of rafters shall be connected together at the ridge by means of galvanized plates.

E. Aluminum purlins in the roof, of the size required shall be furnished and connected to supporting members with a minimum of two galvanized steel bolts into each member. Purlins shall be prefabricated before shipment for the attachment of glazing bars and purlin clips.

F. Provide all other structural members, bracing, clips, and fasteners not mentioned above but required to complete the framework of the greenhouse.

2.6 GUTTER

A. An extruded aluminum gutter, 7 ½" wide x 2 3/4" deep, with extruded drip gutter and internal downspout connections shall be provided where indicated on the drawings. This member shall have a flange to receive glazing bars and shall be provided with weep holes to carry condensation collected from the underside of the roof to the drip gutter. Gutter to include safety foot treads as a safety factor. Gutters without integral extruded safety tread shall not be accepted.

B. Connections for gutter downspouts shall be provided where indicated on drawings. All gutter and downspouts shall be extruded aluminum. Greenhouse contractor shall make final connection.

2.7 EAVE Not Used

2.8 RIDGE

A. An extruded aluminum ridge shall be furnished and placed at the peak of the structure. Ridge shall be provided with continuous socket hinge to receive ridge vents or fixed roof glazing.

2.9 GABLE ENDRAFTER

A. Specially extruded gable and corner trim shall be provided to receive roof glazing bar, vertical side and gable glazing and glazing bars. The gable and corner trim shall be neatly mitered and spliced at the ridge and at the eave or gutter to provide a smooth detail at this point. These shall be securely fastened to the structural members, forming the gable end.

2.10 WALL AND VENT SILLS
A. Extruded aluminum sills shall be provided where required. Sills shall be capable of receiving side vents or fixed glazing. Sill corners shall be shop welded.

2.11 GLAZING BARS

A. Extruded aluminum glazing bars shall be placed and spaced on 24-3/4" centers to properly receive glass 24" wide. A chamber shall be provided on both the top and bottom of this bar for fastening purposes. End panels to be custom dimension for overall building dimension as shown in drawing.

B. Condensation gutters to conduct primary condensation to a suitable disposal point shall be provided. Glazing bars shall extend in one piece from the ridge to the eave or gutter. In order to prevent secondary condensation on the underside of the roof bars from collecting at purlin points, roof bars shall cross purlins with the entire underside of the bar raised to a minimum of 3/8" above the top flange of the purlin. This will allow the condensation to pass to a suitable collection point at the side of the enclosure. Rafter straps for fastening roof bars to purlins in the above manner shall be of extruded aluminum. Washers of plastic or other material placed between the roof bars and purlins to raise the bars off the purlins are shall not acceptable as a substitute method of secondary condensation control.

2.12 CURB SILL FLASHING

A. Aluminum sill flashing shall be placed on the outside of the perimeter curb. Sill flashing shall be placed under the glazing sill member and to the outside of the greenhouse columns, covering the top of the exposed curb. Aluminum sill flashing shall extend no less than 2" down the vertical face of the curb. Sill flashing at curb shall be a minimum 1/16" thick. All sill corner flashing shall be shop welded. All sill flashing and end flashing conditions at door openings shall be shop welded closures matching the profile of the sill flashing. All sill flashing to be laid end to end with a .032 x4" long splice cap matching the profile of the sill flashing. Splice cap to be set in sealant and held in place with pop-rivets. Lapped sill flashing at joints is not acceptable.

2.13 ROOF VENTS

A. Automatic 26" ridge vents with a continuous socket hinge shall be furnished and arranged to open out. Vents for any given compartment, when assembled and installed, shall be continuous from one end to the other. Ridge vents shall be made up of a top rail, bottom rail, and mullions of extruded aluminum. They will then be bolted together in accordance with the manufacturer's instruction.

B. All vents shall have provision made at the hinge point to prevent creeping of the vents.

2.14 SIDE VENTS

A. Automatic 26" sidewall vents with a continuous socket hinge shall be furnished and arranged to open out. Vents for any given compartment, when assembled and installed, shall be continuous from one end to the other. Side vent shall be made up of a top rail, bottom rail and
mullions of extruded aluminum. They will then be bolted together in accordance with manufacturer's instructions.

B. All vents shall have provision made at the hinge point to prevent creeping of the vents.

2.15 VENT OPERATORS

A. All vents shall be operated with aluminum rack arms with zinc pinions.

B. Exterior side vents or gable vents which cover cooling pads shall be operated with exterior rack and pinion arms. Vent equipment shall be mounted on separate posts on exterior of greenhouse.

C. Provide 1.315” diameter galvanized drive shaft with aluminum couplings.

D. Aluminum shaft hangers with DELRIN bushings shall be provided to support roof and side vent drive shaft.

E. Rack & pinion arms with aluminum rack, zinc pinion gear and extruded aluminum housing assembly to keep rack and pinions in proper mesh and alignment shall be provided. Racks attach to bottom rail of vents with aluminum clips and stainless steel cotter pins. No less than two sets of rack and pinion arms shall be provided for each bay per run of vents.

2.16 VENT MACHINES

A. Wadsworth, Lock or Ridder vent machines shall be used to operate motorized roof vents.

B. Wadsworth, Lock or Ridder vent machines shall be used to operate motorized side vents.

2.17 ROOF & SIDE VENT SCREENS

A. Screens shall be provided at all vent openings and at evaporative pads. Screen rails shall be 5/16” x 7/8” mill finish extruded aluminum with a groove to receive a vinyl insert to hold 16 x 18 aluminum mesh in place.

B. Screen frames shall be assembled with die cast aluminum corners and designed to allow for re-screening of units in the field.

C. Brush seals shall be provided at ends of screen frames where vent operator arms penetrate.

2.18 DOORS AND FRAMES

A. Single doors shall be 1 3/4” x 3’0” x 6’8” half panel clear anodized with 5” extruded tube rails and 4” extruded aluminum tube frame with wool pile seals. Hardware shall include stainless steel hinges with non removable pins lever handle lockset with key unlocking outside and push button locking inside, aluminum threshold and door sweep Hardware set 04 Specification
Section 087100. Upper panel shall be glazed with 1/4" clear safety glazing and lower panel shall be an aluminum faced panel.

B. Horizontal rail shall be located at midpoint of door height. All rails and frame shall have a .125" minimum wall thickness.

2.19 GABLES

A. Glass gables with fixed gables from sill to gable rafter shall be constructed in a similar manner to the roof and sides using extruded aluminum shapes. All gable glass shall be lapped 3/8" similar to roof glazing.

2.20 GLAZING

A. All glass shall be B or Greenhouse quality, 1/8" double strength, clear annealed glass. Conform to Division of State Architect (DSA) wind load and safety requirements. If more expansive glass is required by DSA, it shall be included in the base price.

1. All Standard rectangle sized glass to be 1/8" clear tempered glass. All odd sized or sloped cut glass to be 1/8" double strength, clear annealed glass or 1/8" clear acrylic.

2. All roof glazing to be laminated glass consisting of (2) 1/8" clear annealed glass pieces with .030" PVB inner layer. Nominal thickness to be ¼".

B. All glass shall be laid with 3/8" lapped joints and held in place with aluminum bar caps to cover the glazing, and prevent the glass from slipping.

C. Aluminum extruded bar caps shall be applied to the bar covering the entire length of each lite of glass and made to conform to the laps in the glass and provide a uniform 3/8" lap. These caps shall be fabricated from extruded aluminum, so fabricated to exert a uniform, but not excessive pressure, along the entire length of the glass lite. Each cap shall be held with a minimum of two ½" x #10 stainless steel hex head self-tapping screws. Screws which hold bar caps shall be spaced not over 15 inches apart, nor shall any screw be placed closer than 1-1/2" from the end of the caps.

D. At each truss top chord and end rafters, scaffold screws, 1" x #12 round head stainless steel screws shall be used to hold the caps in place, yet provide sufficient shank protruding above the caps for support of scaffolding.

2.21 GLAZING COMPOUNDS

A. Glass shall be bedded in extruded rope putty. The roof glass shall be caulked on top with a special elastic glazing compound before the bar caps are applied.

2.22 BENCHES

A. Benches shall be Ro-Flo as manufactured by Rough Brothers. Freestanding, floating aisle (5) five 5'-0" wide x 10'-0" long benches of the size and quantity shown on the drawings shall be provided. Support system shall be 14 ga.; 1.25" square galvanized steel tubing spaced at 6'-
0" intervals. Bench tops shall include 18 ga., 1” square galvanized steel tubing crosspieces spaced at 18" intervals, extruded aluminum side and end rails with (specify: 1", 2" or 4") perimeter edge and 3/4" hex #13 galvanized expanded metal. Safety plastic corner connectors shall be used at end rails on all bench top corners. Exposed metal corners are not acceptable. Two runs of 14 ga., 1.315 o.d. galvanized steel tubing shall be provided to support bench tops above the support system. Two runs of 14 ga., 1.315" o.d. galvanized steel tubing shall be installed 1'-2" above the floor to stabilize the support system. Extruded aluminum fittings with galvanized bolts and stainless steel screws shall be used to assemble the benches. Bench height shall be 2'-6" from floor to expanded metal. Bench support system for floating aisle benches shall be attached to concrete floor with wedge anchor. Note: All galvanizing shall be hot dipped.

2.23 RETRACTABLE SHADE/HEAT RETENTION CURTAIN SYSTEM

A. GENERAL

1. Independently motorized Shading, Cooling and Heat Retention Curtain System(s) designed for size as shown on the drawings as manufactured by Rough Brothers Inc.
2. Curtains are to travel simultaneously from truss to truss and have a peaked or "roofline" profile with a flat top.
3. Curtains are to be suspended from U.V. stabilized reinforcing tape and suspension hooks which slide on stainless steel wires.
4. All curtains are to come sewn to size complete with reinforcing tape and suspension hooks factory installed.
5. Provide Curtain fabric samples to be selected by the school.

B. MOTORS AND CONTROLS

1. System to be independently operated by one motor.
2. Motor is to be U.L. or CSA approved.
3. Primary and backup limit switches for each travel direction can be integrally mounted into the motor.
4. Control panel is to be prewired for computer hookup, equipped with a manual override switch.

C. DRIVE SYSTEM

1. Drive cables to be stainless steel.
2. Drive cables are to be of a continuous length without any splices.
3. Driveline is to contain one driveline drum per drive cable which provides simple adjustment if required.

D. SYSTEM HARDWARE

1. All rotating components, i.e. bearing brackets and pulleys are to utilize pregreased double sealed ball bearings.
2. All hardware is to be corrosion protected by either galvanizing or plating.
E. SYSTEM SEALING

1. Proper sealing of the curtain system at the trusses is to be accomplished using truss mounted aluminum extrusions.

2.24 LIGHTING

A. METAL HALIDE FIXTURES (MH) (Greenhouse Contractor to provide 4 fixtures)

2.30 LOW PRESSURE BENCH MOUNT IRRIGATION SYSTEM

A. OVERHEAD MISTING UNITS

PART 3 - EXECUTION

3.1 INSTALLATION

A. Drilling and setting of anchor bolts is to be by greenhouse manufacturer.

B. Install entire system and all components in strict accord with manufactures recommendations.

3.2 DISSIMILAR MATERIALS

A. Separate dissimilar metals with polyurethene or asphaltic coating. Separate aluminum from cementitious material with polyurethene or asphaltic coating.

3.3 GROUTING

A. After the Greenhouse Contractor has placed the wall sills, the Contractor shall provide the necessary materials and labor to grout between the wall and the sill to eliminate any discrepancies between the two and produce a finished joint.

3.4 FLASHING

A. All counter-flashing shall be furnished and placed by the sheet metal contractor. Drawings establishing flashing line shall be furnished by the Greenhouse Contractor. All flashing and counter-flashing shall be aluminum.

3.5 INSTRUCTION

A. Greenhouse Manufacturer’s project manager shall be certified for having completed an OSHA Construction Safety Training Course, ten (10) hour minimum. Greenhouse Manufacturer shall provide to the jobsite one (1) complete "job-specific" Jobsite Safety Manual.
B. In addition to a minimum of (2) site visit by greenhouse manufacturer project management, greenhouse manufacturer shall instruct owner on use of greenhouse and systems. Provide operation and maintenance manuals to owner.

C. Greenhouse Manufacturer shall supply the project with complete sets of Operation & Maintenance manuals both in three ring binders (4) and in CD format. Maintenance manuals shall include all equipment data and product literature including all periodic maintenance requirements.

3.6 WARRANTY

A. Greenhouse Manufacturer shall provide a one (1) year material & labor warranty from date of substantial completion on all materials or labor provided by the greenhouse manufacturer or his subcontractors including vendor supplied systems and components.

END OF SECTION 133413
## Package Rooftop Water Cooled Condenser Air Conditioning Unit Schedule

### Heat Exchanger Schedule

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### Cooling Tower Filter Schedule

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### Cooling Tower Schedule

#### Cooling Tower Chemical Treatment Package

<table>
<thead>
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<th>U.S.</th>
<th>Location</th>
<th>Service</th>
<th>Commercial Name</th>
<th>Model</th>
<th>Inlet, °F</th>
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### Space Heating Boilers Schedule

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<th>Model</th>
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### Pump Schedule

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### Expansion Tank Schedule

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### Exhaust Fan Schedule

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</tbody>
</table>
1. 30" LAB. EXHAUST DUCT DOWN TO THE SECOND FLOOR
2. 22" TOILET EXHAUST DUCT DOWN TO THE SECOND FLOOR
3. 22" X 18" LAB EXHAUST DUCT DOWN TO THE FIRST FLOOR
4. 12" ELECTRICAL ROOM EXHAUST DUCT DOWN TO THE ROOF
5. 1" CONDENSATE DRAIN PIPE WITH TRAP DRAIN TO THE ROOF
6. 1 1/2" CONDENSATE DRAIN WITH TRAP DRAIN TO THE ROOF
8. 10" BOILER FLUE U.T.R. WITH RAIN CAP
9. PROVIDE DRAIN LINE FROM THE BOILER THROUGH A NEUTRALIZER KIT THEN DRAIN TO THE FLOOR SINK
10. 3" HWS AND HWR DOWN TO THE CEILING OF SECOND FLOOR
11. 1" CONDENSER WATER LINE FROM THE EXPANSION TANK DOWN AND CONNECT TO 6" CONDENSER RETURN LINE IN THE SECOND FLOOR CEILING
12. 1 1/4" SPACE HEATING HOT WATER PIPES CONNECT TO A C-1 PRE HEAT COIL AND DOWN TO CONNECT TO THE 3" hhw LINES IN THE SECOND FLOOR CEILING
14. 3" DIA CONDENSER WATER PIPE FROM BELOW TO AC-2
<table>
<thead>
<tr>
<th>Panel</th>
<th>Description</th>
<th>Location</th>
<th>Room Code</th>
<th>Subtotal VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>1000 AMP MAIN CB</td>
<td>Classroom 105</td>
<td></td>
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<tr>
<td>P2</td>
<td>1190 AMP MAIN CB</td>
<td>Classroom 111</td>
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<tr>
<td>P3</td>
<td>1200 AMP MAIN CB</td>
<td>Classroom 113</td>
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<td>P4</td>
<td>1300 AMP MAIN CB</td>
<td>Classroom 115</td>
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<td>P5</td>
<td>1400 AMP MAIN CB</td>
<td>Classroom 117</td>
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</table>

**Total Load:** 10,000 VA

**Subtotal:** 10,000 VA

**Remainder:** 0 VA

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<table>
<thead>
<tr>
<th>Panel</th>
<th>Description</th>
<th>Location</th>
<th>Room Code</th>
<th>Subtotal VA</th>
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</thead>
<tbody>
<tr>
<td>P6</td>
<td>1500 AMP MAIN CB</td>
<td>Classroom 202</td>
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<td>P7</td>
<td>1600 AMP MAIN CB</td>
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<td>P8</td>
<td>1700 AMP MAIN CB</td>
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<td>P9</td>
<td>1800 AMP MAIN CB</td>
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<td>1900 AMP MAIN CB</td>
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**Total Load:** 9,000 VA

**Subtotal:** 9,000 VA

**Remainder:** 0 VA

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<table>
<thead>
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<th>Room Code</th>
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<tbody>
<tr>
<td>P11</td>
<td>2000 AMP MAIN CB</td>
<td>Classroom 212</td>
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<tr>
<td>P12</td>
<td>2100 AMP MAIN CB</td>
<td>Classroom 214</td>
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<td>P13</td>
<td>2200 AMP MAIN CB</td>
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<td>P14</td>
<td>2300 AMP MAIN CB</td>
<td>Classroom 218</td>
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<td>P15</td>
<td>2400 AMP MAIN CB</td>
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**Total Load:** 17,773 VA

**Subtotal:** 17,773 VA

**Remainder:** 0 VA

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<table>
<thead>
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<th>Panel</th>
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<tbody>
<tr>
<td>P16</td>
<td>2500 AMP MAIN CB</td>
<td>Classroom 222</td>
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<td>P17</td>
<td>2600 AMP MAIN CB</td>
<td>Classroom 224</td>
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<td>P18</td>
<td>2700 AMP MAIN CB</td>
<td>Classroom 226</td>
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<td>P19</td>
<td>2800 AMP MAIN CB</td>
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<td>P20</td>
<td>2900 AMP MAIN CB</td>
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**Total Load:** 27,820 VA

**Subtotal:** 27,820 VA

**Remainder:** 0 VA
KEY NOTES

1. Provide connection to MDF.

2. 4" SQ BOX (2) EACH FOR HDMI, RGB & VGA.

3. (2) 4" SQ BOX FOR HDMI, RGB AND VGA DEVICES.

4. 3/4" CONDUIT AND CABLE RUN UNDERGROUND, TYP.

5. PROVIDE WIREMOLD 880S2 FLOOR BOX OR EQUAL.

6. FLOOR BOX SHALL HAVE (1) HDMI, (1) RGB & (1) VGA.

7. 7'-6" AFF, TYP.

8. FOR FUTURE SMARTBOARD. INSTALL +/- 8' ABOVE FINISH FLOOR. FIELD COORDINATE EXACT LOCATION.

9. DATA/TELEPHONE ABOVE COUNTER LOCATION SHALL BE COORDINATED WITH CASEWORK INSTALLER. LOCATION SHALL BE ADJACENT TO POWER RECEPTACLE. SEE POWER LAYOUT. TYPICAL TO ENTIRE COMMUNICATION/SIGNAL OF THIS PROJECT.

10. PROVIDE CONNECTION TO MDF.


12. FOR TV, HEIGHT IS +/- 8'-0" ABOVE FINISH FLOOR.


14. DEVICES THAT ARE IN THE MIDDLE OF THE ROOM SHALL HAVE CONDUIT HOMERUN RUN UNDERSLAB. TYPICAL.

15. PROVIDE CEILING-MOUNTED HDMI RGB & VGA.

16. VACUUM PUMP

17. SIGNAL CABLE TRAY IN CEILING SAPCE MOUNTED, TYPICAL.

18. DEVICES IN THE MIDDLE OF THE ROOM SHALL HAVE CONDUIT HOMERUN RUN UNDERSLAB. TYPICAL.

19. 2 ADD#2 03/11/2011

20. SEE DETAIL 5/E604

21. 21/2" C, STUB-OUT IN CEILING, TYP.

22. 48" AFF, TYPICAL.

23. GENERAL LAB

24. 24" AFF, TYPICAL.

25. MEETING

26. 5500 IRVINE CENTER DRIVE

27. IRVINE, CA  92618

28. LIFE SCIENCES BUILDING FIRST FLOOR SIGNAL PLAN

29. LIFE SCIENCES BUILDING

30. IRVINE VALLEY COLLEGE

31. 92651

32. JOB

33. SCALE

34. 1/8" = 1'-0"

35. JOB

36. PM

37. JF / SP

38. NORTH

39. OUTLET AND CABLE RUN UNDERGROUND, TYP.

40. GREEN HOUSE

41. GATE

42. CLASSROOM

43. STORcAGE

44. BIOLOGY

45. COMPUTER LAB

46. ELEV MACHINE

47. FACP

48. TELECOMM

49. FACP

50. TELECOMM ROOM

51. PROVIDE ADEQUATE J-BOX ON HOMERUN BETWEEN GREENHOUSE TO TELECOMM ROOM. J-BOX SHALL BE ACCESSIBLE. IF INSTALLED IN FINISH SURFACE, PROVIDE BLANK COVER WITH TAG, TELEPHONE/DATA AND OR DATA J-BOX.

52. 20863.00

53. 5/28/2010

54. 11/10/2010

55. DSA SUBMITTAL

56. FILE NO:

57. A#:

58. 04-111122

59. IDENTIFICATION STAMP

60. DIV. OF THE STATE ARCHITECT

61. 30-C5

62. 3194 - D

63. AIRPORT LOOP DRIVE

64. COSTA MESA, CA. 92626

65. 714 . 427 . 0288 714 . 427 . 0277
1 PROVIDE (6) 2"C TO FIRST FLOOR FOR PENETRATION WITH 20 PAIR MM F.O. AND 100 PAIR TELEPHONE CABLE. PROVIDE 2"C STUB OUT TO ROOF WITH 180 DEGREE ELBOW ABOVE 12" ROOF.

2 FOR FUTURE SMARTBOARD. INSTALL +/- 8' ABOVE FINISH FLOOR. FIELD COORDINATE EXACT LOCATION.

3 DATA/TELEPHONE ABOVE COUNTER LOCATION SHALL BE COORDINATED WITH CASEWORK INSTALLER. LOCATION SHALL BE ADJACENT TO POWER RECEPTACLE. SEE POWER LAYOUT. TYPICAL.

4 (2) 1" CONDUIT TO CEILING SPACE.

5 (2) 4" SQ BOX FOR HDMI, RGB AND VGA DEVICES. COORDINATE LOCATION OF J-BOX WITH CASEWORK INSTALLER.

6 THIS ROOM SHALL BE PROVIDED WITH CRESTRON MODEL QP-400-WSP-P. SEE DETAIL 3/E604.

7 PROVIDE CEILING-MOUNTED HDMI RGB & VGA DEVICES THAT ARE IN THE MIDDLE OF THE ROOM SHALL HAVE CONDUIT HOMERUN RUN UNDERSLAB. TYPICAL.
OVERHEAD FIRE SPRINKLER SYSTEM GEN. NOTES.

1. FIRE PROTECTION NOTES

- FIRE SPRINKLER SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 13, 2002 EDITION.
- CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND DETAILS TO ARCHITECT FOR APPROVAL PRIOR TO START OF WORK.
- CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND DETAILS TO DIVISION OF THE STATE ARCHITECT FOR APPROVAL PRIOR TO START OF WORK.

2. FIRE PROTECTION DRAWING LIST

- FIRE FLOW DATA

- SYSTEMS

- BUILDING CODE SUMMARY

- BUILDING SUMMARY

- SEISMIC ANCHORAGE AND BRACING NOTES

- NOTES

- FIRE PROTECTION LEGEND

- GENERAL

- FIRE SPRINKLER SYSTEM SUBMITTAL REQUIREMENT

- FIRE PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTES

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