UNIVERSITY OF CALIFORNIA, SANTA BARBARA

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SANTA BARBARA • SANTA CRUZ

OFFICE OF DESIGN & CONSTRUCTION SERVICES and PHYSICAL FACILITIES

CONTRACTING SERVICES
Building 439
Santa Barbara, California 93106-1030
Telephone (805) 893-3356
Fax (805) 893-8592

SENT VIA:
- ☐ FAX ON THIS DATE
- ☐ HAND DELIVERY ON THIS DATE
- ☒ FEDERAL EXPRESS ON THIS DATE
- ☐ UNITED PARCEL SERVICE ON THIS DATE

HOLDERS OF PLANS AND SPECIFICATIONS:

Palmstrom Lab Renovation,
Engineering 2, Building 503
Project No. FM070466S/981550
Addendum No. 1

October 31, 2007

Enclosed is **ADDENDUM NO. 1** to the Construction Documents on the above-captioned project.

Bid date has been changed from Tuesday November 6, 2007, 2:30 PM to Thursday, November 8, 2007, 2:30 PM to be held at:

CONTRACTING SERVICES
Facilities Management, Bldg. 439,
Door #E, Reception Counter
University of California, Santa Barbara
Santa Barbara, CA 93106-1030.

Late arrivals shall be disqualified. Please allow time for unforeseen traffic delays, securing a parking permit and potential parking problems.

Anna Galanis
Director, Contracting Services

ADDENDUM NUMBER 1

to the

CONSTRUCTION DOCUMENTS

Palmstrom Lab Renovation, Engineering 2, Building 503

GENERAL

The following changes, additions or deletions shall be made to the following document(s) as Indicated. All other conditions shall remain the same.

I ADVERTISEMENT FOR BIDS

Item No. 1 First Page, sentence beginning with "Bid Deadline",,, **Change** to read: Bid Deadline: Sealed bids must be received on or before 2:30 PM on Thursday November 8, 2007. Sealed bids will be received at Contracting Services; Facilities Management, Bldg. 439; University of California, Santa Barbara; Santa Barbara, California, 93106-1030

II SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

Item No. 2 Note No. 4, Change to read: Bids will be received on or before the Bid Deadline, 2:30 PM, Thursday, November 8, 2007.

III SPECIFICATION

Item No. 3 Table of Contents, Add "Sketches" to the "Table of Contents"

Item No. 4 Section 07840: Fire Stopping, Part 1. General. 1.01 Description. **Add** Para. No. 5.

Add Para. 5 - All penetrations within this project shall be filled with approved UL fire stop for both new and existing ceiling and wall annular openings. Contractor shall identify all areas.

Item No. 5 Section 09250: Gypsum, Part 3, Execution, 3.02 Wall Board Installation.

Add - Provide 16 guage backing for all cabinets, door hardware, and shelves.

Item No. 6 Section 09250: Gypsum, Part 3, Execution, 3.02 Wall Board Installation, **Add** Para 3.02 "C" , Wall board installation

Add - The contractor shall prepare all walls for semi-gloss paint.

Item No. 7 Section 09250: Gypsum, Part 3, Execution, 3.02 Wall Board Installatio

Add Para.3.02"D" - Glaze smooth gypsum compound on all new and existing walls in Room 1315 and opposing side of 2-hour walls.

Item No. 8 Section 09900: Painting, Part 1, General, 1.01 Scope

Scope 1.01, "A" is **replaced** in its entirety with the following language:

Furnish materials and perform labor as required for preparation, etching, priming, and painting of all interior and exterior surfaces including all pipes and mechanical ducting within the area of project renovation. Cut in all multiple colors which will be selected at the time of work.

Item No. 9 Section 09900: Painting, Part 1, General, 1.01 Scope

Quality Assurance, 1.02 "A". **Add** the following requirement to this section:

Inspection of all phases of the "Scope of Work" shall be approved by the University Representative prior to commencement of work.

Item No. 10 Section 09900: Painting, Part 1, General, 1.01 Scope

Preparation , 3.02 **Add** the following requirements to this section:

3.02 "B" - Manually etch all galvanized metal, copper and metal hardware with an approved solution by wiping and scrubbing all surfaces.

Item No. 11 Section 09900: Painting, Part 1, General, 1.01 Scope

Sreparation , 3.02 **Add** the following

Item No. 11 Continued

3.02"C" - All gypsum walls shall be washed with approved cleaning agent.

Item No. 12 Section 09900: Painting, Part 1, General, 1.01 Scope

Preparation, 3.02 "D" - **add** the following:

3.02 "D" - Copper shall be treated with approved oil based primer

Item No. 13 Section 09900: Painting, Part 1, General, 1.01 Scope

Preparation, 3.02 "E" - **add** the following:

3.02 "E" - All valves and non-paint items shall be masked.

Item No. 14 Section 09980, Polymer Flooring

Replace original Section 09980, Rev. 0 in its entirety with new Section 09980, 09980, Rev. 1, attached.

Item No. 15 Section 12300, Manufactured Casework

Remove - Specification 12300, Rev. 0 and **replace** with Specification 12300, Rev. 1 in its entirety, attached.

Item No. 16 Section 15067, Acid Waste Pipe and Fittings

Add - Specification Section 15067, Acid Waste Pipe & Fittings, attached.

Item No. 17 Section 15855, Air Handling Unit

Part 2.02, Unit Configuration, Note "D", Interior Liners

Add - "Provide 316 Stainless Steel interior cabinet liners in the fan compartment only. All other areas shall be either hot dip galvanized or powder coated".

Item No. 18 Section 15855, Air Handling Unit

Part 2.02, Unit Configuration, Note "G", Access Doors

Add -"Provide full aluminum doors with powder coated/salt spray resistance treatment".

Item No. 19 — Section 15855, Air Handling Unit

Part 2.02, Unit Configuration, Note "H" Bases

Add - Provide powder coated /salt spray resistance treatment for entire unit including base frame and underside of unit per ASTM 5000 HRS.

IV DRAWINGS

Item No. 20 — Dwg. A5.0, Schedules, Detail 6

Add Sketch SK – PD1 in its entirety, attached.

Item No. 21 — Dwg. P1, Plumbing, General Notes, Legend, Schedules and Drawing Index

Add Sketch No. 930-317 dated 11-25-98 and Sketch No. 869B dated 06-18-01 are added to the Plumbing Fixture Schedule, attached.

Ftg. No. Mk No.	Mfr'er. Model No.	Manuf. Name	Fixture Type	Hot Water In	Cold Water In	Soil Waste In
-	930-317	Chicago Faucet	Hot/Cold Faucets	-	-	-
-	869B	Chicago Faucet	Hot/Cold Faucets	-	-	-

Item No. 22 — Dwg. MD1, 1st Floor Demolition Plan, Dated 7-10-07 Attached.

Reference: Sketch SK-MD1, Sketch attached

Item No. 23 — Dwg. PD-1, Plumbing, First Floor Demolition Plan

Delete second sentence of Note No. 4 that reads "prepare piping for revised sprinkler layout". Drawing attached.

Item No. 24 — Dwg. PD-1, Plumbing First Floor Demolition Plan

Reference: Sketch SK-PD1, attached

Item No. 25 — Dwg. P2, Plumbing, First Floor Renovation Plan – Process Piping, Water/Waste/Vent, dated 7-10-07

Reference: Sketch SK-P2, Process Piping-Detail 6/Water/Waste/Vent-Detail 8, attached.

Item No. 26 Dwg.- P2. Plumbing First Floor Renovation Plan

Replace Note 3 to read - "Provide emergency shower/eyewash with 1-1/4" domestic water connections".

Item No. 27 Dwg. - P2. Plumbing. First Floor Renovation Plan

Remove DHWS and DHWR connections from emergency shower/eyewash. This model does not support tempering of water.

Item No. 28 Dwg. P2. Plumbing. First Floor Renovation Plan

Change General Note 1 to read: "Hot and cold equipment, chilled water, hydronic and supply returns and supply water shall be insulated and covered with PVC jacket. Provide with clearly legible and fixed piping labels indicating process and direction of flow".

Item No. 29 Dwg. P2. Plumbing. First Floor Renovation Plan

Add to Note 6 – "Connect DI Water in Room 1245B".

Item No. 30 Dwg. P2. Plumbing. First Floor Renovation Plan

Add Note 11- "Retain acid plumbing vents rerouting and reconnecting to all service areas adjacent and to the second floor during demolition".

Item No. 31 Dwg. P2. Plumbing. First Floor Renovation Plan

Change Note 7 to read : "Provide 1/2" Nitrogen, 1/2" Vacuum, and 1/2" b Compressed air piping drops at 20' – 0" intervals for connection. Provide with quick connect fittings.

END OF ADDENDUM NO. 1

SECTION 09980, REV. 1

POLYMER FLOORING

FULL SPECIFICATION:

PART 1 - GENERAL

1.1 INTRODUCTION: Decorative polymer composite overlays are comprised of a two component modified epoxy polymer and vinyl flake blend (color of blend to be selected by Owner) to create a dense overlay with six inch (6') preformed polymer coving to be overlayed with the same floor system. The existing concrete substrate consisting of VCT and its adhesive will be removed by Owner. The exposed concrete substrate may need prefilled with an EPC prior to placement of polymer overlay where the adhesive removal damaged the concrete surface. The concrete shall be sounded, cleaned by shot blasting and joints sealed. When required cracks, regrading of areas, and patching will be repaired and the substrate leveled with a pre-fill epoxy procedure. The polymer overlay is created by the broadcast method of placement which consists of placing the polymer on the concrete at the desired thickness and broadcasting the selected flakes into the wet epoxy until an even dry layer of flake is present on the surface; the same process is than again repeated after the first lift has become tack-free. The entire system is then top coated to seal the upper surface. Surface profiling of the exposed wear surface of the overlay can be accomplished during the topcoat process to improve the coefficient of friction. The Owner shall select the desired surface profile from samples submitted by the Contractor. The overlay thickness shall be an approximately 3/16 inch.

1.2 GENERAL WORK: This work shall consist of furnishing all labor, materials, equipment for the surface preparation, pre-conditioning of products, mixing, product placement, transporting, curing and project quality control of the polymer and aggregate materials. The epoxy polymer concrete and coves shall be placed at the specified thickness and height as shown herein, on the plans, or in the contract. All joint spalling, surface spalling, and crack repair shall be repaired prior to the placement and at the locations shown on the plans or as directed. Except as modified herein, the epoxy materials shall conform to the applicable specifications required under this project for concrete construction. The contractor shall be a factory trained applicator of the polymer manufacturer.

1.3 SUBMITTALS: General - The following are in accordance with Conditions of Contract and Specifications:

1.3.1 Bid Submittal

The Contractor's quotation shall include all labor, other costs, and materials as stated herein, including pre-fill, leveling, regrading, joints, patching, crack repair, and vapor barrier work.

a. **Pre-fill** - Areas requiring prefill up to 1/32 inch thick . The pre-fill polymer if required shall be CrownPrime, Product No. 302 used as neat or silica sand filled.
b. **Low Surface Areas known as Bird Baths and Regrading** - Areas such as bird baths or regrading up to ¼ inch thick average shall be filled with high strength cementitious material.
c. **Joints** - Expansion joints shall be filled with as required.

d. **Patching** – Patching of holes and trenches shall be performed as specified by the Polymer Manufacturer.
e. **Crack Repair** – All structural crack repairs shall be performed as for full depth crack injection based on 6 inch thick concrete as approved by the Polymer Manufacturer. All non-structural cracks for interior floors shall be routed and sealed using CrownFlex Joint Sealer or an approved EPC by the Polymer Manufacturer.
f. **Vapor Barrier Sealing** – When vapor transmission is believed to be an issue, University Representative shall give the contractor sufficient time to test the floor. Testing for project shall require three (3) test sites as agreed by the Contractor and University Representative. Follow the Polymer Manufacturer's standard procedures for testing and treatment using CrownCote Vapor Barrier, Product No. 303.

1.3.2 Submittal Documents

Included with all standard legal documents required by University Representative, the contractor shall include product data sheets for products to be used, and a sample joint Polymer Manufacturer and Contractor's Warranty form that will be signed and given to University upon completion of the project.

1.3.3 Sample A cured sample, (4 in x 6 in), of the epoxy polymer concrete overlay, acceptable color, with a light surface profile, shall be submitted. The actual texture on the surface of the sample maybe changed at University's Representative request for safety requirements at no additional cost. The sample shall be labeled as a representative of the floor overlay to be placed, Polymer Manufacturer name and identification of system, Contractor name, dated, and signed by the Contractor. The sample will be used for as part of the acceptance process of the floor overlay, except in areas where texture was changed by University.

1.4 QUALITY ASSURANCE

1.4.1 Application Contractor Qualifications Placement shall be made by an experienced factory trained Contractor (Company) who has specialized in installing polymer type flooring systems similar to that required for this project and who is acceptable to Polymer Manufacturer with factory certification. The working supervising employee for the crew shall also be factory trained. The Company Certification and individual working Employee Certification are different, and this contract requires both Company and Employee Certifications are current for compliance. All certifications must be from the Polymer Manufacturer that is supplying the materials.

1.4.2 Single-Source Responsibility Obtain flooring materials, including repair materials, vapor barriers, joint sealing systems, primers, membranes, pre-fills, precast cove system, and polymers for the base and topcoats, colored quartz aggregates and surface profile aggregate from a single manufacturer,

1.4.3 Measuring Moisture Emissions When required the concrete shall be tested for moisture emission using ASTM F1869 as the test method. One test shall be placed for every 1,000 ft^2 of concrete surface area to be overlayed. A moisture vapor transmission of no more than 3 lbs per 1,000 ft^2 per 24 hours is considered acceptable. Reading over 3 lbs per 1,000 ft^2 per 24 hours will require treatment to reduce the reading to an acceptable range. The treatment will be recommended by the Polymer Manufacturer. The treatment, if required, will automatically become part of the overlay warranty. Test data shall be supplied in a clear and understandable format to Manufacturer and University Representative prior to starting the floor overlay placement.

1.4.4 Testing for Surface Soundness and Cleanliness During the surface preparation process the concrete shall be tested by the Shear Cup Test Method as

defined by the Polymer Manufacturer. One (1) test within each 1,000 ft^2 of floor surface to be overlayed shall be tested. Successful passing of the test requires 100% concrete failure. Failure requires re-cleaning and re-testing that sector until the test is passed. The Owner's Representative shall be present during the breaking portion of the test to verify results. No additional payment shall be made to the Contractor for the testing, patching of the test surface area, or additional surface preparation work required. Digital photos shall be taken of each test showing test number and test specimen failing or passing, photos of overall floor project site before surface preparation and after surface preparation, and delivered to Manufacturer for issuance of warranty. Tests that fail shall be retested after cleaning and new photos showing data of test(s) that pass.

1.4.5 Warranty The project shall be a joint warranty between the Polymer Manufacturer and Contractor for a period of one (1) year from completion date of project and University's acceptance. A sample copy of the Manufacturer's Joint Warranty shall accompany the Contractors bid documents. Digital pictures of the completed project shall be taken as long shots and close-up of special details such as coves and images and supplied to the Manufacturer for issuance of Warranty.

1.5 DELIVERY, STORAGE AND HANDLING

1.5.1 Deliver materials in original packages and containers with seals unbroken and bearing manufacturer's labels containing brand name and directions for storage and mixing.

1.5.2 Follow manufacturers' written instructions for handling and pre-conditioning all materials.

PART 2 - MATERIALS

2.1. PRODUCT DESCRIPTION

2.1.1 Polymers The base polymer for each lift shall be CrownFlake, Product No. 307, or CrownShield 40-2, Product No. 323. Products shall be 100% solids epoxy containing no VOC's, low to nearly no odor, non-shrinking and designed as a moisture insensitive formula to be applied on moist or dry concrete surfaces and on dry polymer surfaces. Some colored flake selections are nearly transparent; therefore the first base coat is pigmented. The topcoat polymer shall be Crown Clear, Product No. 326 an epoxy when UV resistant is not required. Polymer products are available from Crown Polymers, LLC, 11111 Kiley Drive, Huntley, IL 60142 USA, Telephone No. 888.732.1270 or 847.659.0300, Fax No. 847.659.0300, e-mail: info@crownpolymers.com. No polymer substitutions are acceptable.

2.1.2 Colored Flake The vinyl flake blend shall be CrownFlake, Product No.SP633, or SP638 when solid colors are required. The flake blend color shall be selected by Owner (before bid acceptance). CrownFlakes are available from Crown Polymers, LLC, 11111 Kiley Drive, Huntley, IL 60142 USA, Telephone No. 888.732.1270 or 847.659.0300, Fax No. 847.659.0300, e-mail: info@crownpolymers.com. No flake substitutions are acceptable.

2.1.3 Polymer Flake Composition CrownFlake is a Micro-thin Overlay consisting of two base lifts of epoxy and colored vinyl flakes that are installed by the broadcast method of application. The tack-free overlay lifts are then top coated to seal the floor system. The floor system is continued up the wall using the SpeedCove System to the selected height. The overlay thickness is controlled by the amount of epoxy and aggregate used in each base lift. The overlay is typically placed as a seamless (joint less) floor. The completed floor thickness above all patching, leveling and pre-fill materials shall be approximately1/16 in (1.6 mm).

2.1.4 Cove System The cove system shall be a precast cove, SpeedCove, that transition from the floor without a ridge at the floor connection area to the wall surface in a finished monolithic design that compliments the floor system. The height shall be six (6 in) in height as selected by the Owner's Representative prior to bidding. The SpeedCove System is distributed Crown Polymers, LLC, 11111 Kiley Drive, Huntley, IL 60142 USA, Telephone No. 888.732.1270 or 847.659.0300, Fax No. 847.659.0300, e-mail: info@crownpolymers.com and it's Stocking Distributors. Hand troweled or broadcast systems are not acceptable for this project and no other substitutions are acceptable.

2.1.5 Joints and Cracks The control joints (not included in the overlay quotation) and cracks (quoted as a unit cost) shall be filled with CrownFlex Joint Sealer, Product No. 505 or CrownFlex Joint Sealer, Gel Grade, Product No. 501. The expansion joints (quoted as a unit cost) shall be filled using CrownFlex EVA Expansion Joint System, Product No. 525 as shown on the attached drawing. All materials are available from Crown Polymers, LLC, 44 W 104 Route 20, Hampshire, IL 60140 USA, Telephone No. 888 / 732-1270 or 847 / 683-0800, Fax No. 847 / 683-0890, e-mail: info@crownpolymers.com. No polymer substitutions are acceptable.

2.1.6 Option – CrownCide, Product No. SP668, an antimicrobial additive can be added during the product manufacturing stage at the factory for all epoxy and polyurea floor and wall systems. The additive protects the floor and wall system by inhibiting the growth of odor-causing bacteria, fungi, molds, mildew and algae. To add the antimicrobial additive specific Crown Polymers Product Name and Number + CrownCide, Product No. SP668. Note: This specification will not include CrownCide unless it is specified.

2.2 PHYSICAL PROPERTIES AND TECHNICAL DATA

2.2.1 Compressive Strengths
7 day cure, ASTM C695, 11,700 psi

2.2.2 Hardness (Indentation)
Neat Epoxy, 7 day cure, ASTM D2240, Durometer, Shore D 80

2.2.3 Indentation (Impact)
7 day cure, MIL-D-3134, Para. 4.7.3
Withstands 20 ft-lbs

2.2.4 Adhesion To Concrete (Tensile Pull)
EPC, 7 day cure, ACI 503 R, - 400 psi, 100% concrete failure

2.2.5 Abrasion Resistance (Tabor)
7 day cure, ASTM D 4060, 1,000 cycles, 1,000 g. load, Wheel No. 10, Loss 0.049 g

2.2.6 Water Absorption
7 day cure, ASTM D 570, max. 0.13%

2.2.7 Tensile Strength
7 day cure, ASTM D 638, 6,100 psi

2.2.8 Tensile Elongation
7 day cure, ASTM D 638, >7%

2.2.9 Flammability
7 day cure, ASTM D635, Self-extinguishing

2.2.10 Slip Resistance
Compiles with Americans with Disabilities Act (ADA), Title 111, July1992 and OHSA Standards 29 CFR-1910. Accepted Industry Standard, ASTM C 1028
Coefficient of Friction Levels range from 0.5 to 1.0. Rating is depended on surface profile selected.

2.2.11 Compliance

Complies with USDA and FDA standards.

PART 3 - EXECUTION

3.1 Equipment

3.1.1 Surface Preparation - Use surface preparation equipment or methods as approved by the Polymer Manufacturer capable of removing, adhesives, paints, overlayment, deleterious materials, shot blast marks from the concrete substrate that would show through the overlayment, and other contaminants which would inhibit bond of the overlay system. The final cleaning shall include abrasive blasting with dust free shot blast equipment. The Contractor using the Shear Cup Method shall test the cleaned surface. Passing shall be 100% concrete failure. If failure occurs, re-clean until the floor passes the test. There shall be no additional payment for this work of testing and re-cleaning if required.

3.1.2 Joints - Use equipment that will remove dirt and other debris including existing control and expansion joint materials without smearing the materials on the inner wall surfaces of the joint. Fill the control joint with CrownFlex Joint Sealer so the filled joint creates a smooth transition across the joint surface to the adjacent concrete surfaces without high or low spots.

3.1.3 Repairs and Vapor Barrier Sealing – Use tools and equipment as required for all repairs and vapor transmission sealing before placement of the polymer overlay. Follow the Polymer Manufacturer's instructions

3.1.4 Mixing - Use mixing equipment capable of blending the polymers into a homogenous mass without creating air entrapment or shortening the potlife as approved by the polymer manufacturer.

3.1.5 Storage or Containment Unit – When temperature or weather conditions require the protection of materials, follow the Polymer Manufacturer's instructions.

3.2 Placement – JOINTS, PRE-FILL AND DOUBLE BROADCAST METHOD

3.2.1 Pre-fill - Apply CrownPrime, Product No. 302 as a neat, slurry sand filled, or trowelable material over the substrate to fill, regrade or level the floor. Allow epoxy to become tack-free before applying the base coat lift. The pre-fill application shall be smooth without ridges or indentions. The pre-fill material maybe pulled tight to all concrete surfaces that do not require filling or grade adjustment. All surfaces must be 100% wetted and fully covered with the pre-fill material.

3.2.2 Joints and Cracks – Place mixed CrownFlex Joint Sealer into control joint slots, and routed cracks slots (min.3/8 in x 3/8 in), smooth material to adjacent upper concrete floor surfaces. When seamless floors are required, the control joints and repaired cracks shall not be seen through the floor overlayment.

3.2.3 Coves – The precast cove system shall be bonded to the wall surface to create adhesion of the system and a waterproof connection. All connection butt joints shall be sealed and smooth. The same materials used for the floor surface shall be broadcast vertically from floor surface upward onto the wall surface. The cove shall have a radius connecting to the floor that blends into the floor overlay with a smooth transition. The wall shall be taped above the precast cove to create a straight transition line from wall to cove. When protective corner guards are used they shall stop at the top of the cove system. The cove and floor systems shall create a seamless smooth monolithic overlay without high and low areas. Install coves before placement of floor overlay. Follow the manufacture's installation guide.

3.2.4 First Base Coat and Flake Broadcast - Apply selected polymer evenly over the substrate surface and broadcast CrownFlake vinyl flakes evenly into the wet epoxy until a

dry layer of flake is present on the surface. If wet spots occur, immediately rebroadcast flake while the epoxy is wet until a dry layer is present. Allow epoxy to become tack-free before removing the excess flake. Do not leave dry flake on the surface. Base coat flake that has been used and removed on lower lifts shall not be used in the top broadcast.

3.2.5 Second Base Coat and Flake Broadcast - Apply selected polymer evenly over the substrate surface and broadcast CrownFlake vinyl flakes evenly into the wet epoxy until a dry layer of flake is present on the surface. If wet spots occur immediately rebroadcast flake while the epoxy is wet until a dry layer is present. Allow epoxy to become tack-free before removing the excess flake. Do not leave dry flake or dust on the surface. Lightly sand or scrape the exposed flake to smooth the final surface. Sanding or scraping must be carefully accomplished so not to damage the broadcasted surface. On floors that required aggressive anti-slip properties do not sand the floor surface. Remove all dust and flake from area just prior to top coat placement.

3.2.6 Top Coat - The Surface Profile (Texture) is partially determined by the quantity of clear topcoat placed over the flake composite with Crown Polymers Surface Profiler Aggregate. Apply the selected Crown Polymers Clear Top Coat and selected Surface Profiler to accomplish the Owner's requirements pursuant to the manufacturer supplied sample. The top coat maybe applied in one or two lifts depending on the applicators expertise in applying top coats. The final application must match the provided approved sample within 5% plus or minus. Uneven top coat application will not be acceptable.

3.2.7 Application, Protection and Cure - Follow the Polymer Manufacturer's recommendation for temperature limitations, protection of surfaces before and during the curing process, maximum time required between polymer applications, and curing the system.

*****END OF SECTION****

SECTION 12300, REV. 1

MANUFACTURED CASEWORK

PART 1 GENERAL

1.1 SCOPE

A. Provide and install laboratory casework, resin tops, and related sinks and accessories as indicated on the Drawings, as stated herein, and as required for a complete project.

1.2 QUALITY ASSURANCE

A. Laboratory casework shall be of modular steel construction, manufactured in accordance with standards listed below.
B. Cabinetry shall be fabricated by a manufacturer with a minimum of 10 years documented experience in laboratory casework. Preference will be given to manufacturers with shops within 500 miles of the project location.

1.3 SUBMITTALS

A. Submit the following:
   1. Product data sheets indicating technical data for casework to be provided, and listing materials, country of origin, and VOC contribution.
   2. Shop drawing for casework to be provided.
   3. Samples of finishes, min. 5" x 8"

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Fisher-Hamilton , PolyVision, or equal meeting item 1.2B.

2.2 MATERIALS: Cabinets

A. Cabinets shall be of modular steel type, with materials conforming to:
   1. ASTM A653/A653M, Standard Specification for sheet steel, galvanized or galvanealed by hot-dip process.
   2. ASTM A666, Standard Specification for Cold-worked Austenitic Stainless Steel.

B. All members sahll be die-formed, notched and assembled in fixtures, exposed welds polished smooth.

C. Gauges shall be minimum as follows:
   1. Drawer bodies and heads, shelves, interior door panels, security panels: 20ga.
   2. End, backs, case tops and bottoms, bases, ext. door panels, posts: 18ga.
   3. Top front and intermediate rails, gussets, legs, frames, stretchers: 16ga
   4. Drawer suspensions, hinge reinforcements, front-corner gussets: 14ga
   5. Table leg corner brackets and leveler gussets: 11ga.

D. Cabinets shall be, as a minimum, equal to "Modular Steel" as manufactured by Fisher Hamilton.

E. Standard pulls, latches, and drawer slides from the manufacturer's standard line shall be included, finish shall be satin chrome.

2.3 MATERIALS: Tops

A. Tops shall be solid phenolic material 'TopLab', as manufactured by Trespa, in a color selected by Owner from the manufacturer's standard line. Chamfer edges shall be included, exposed edges shall be polished.

B. Sinks shall be undermount-type, constructed of material equal to the countertops, with bottom surface sloped to drain outlet.

2.4 FABRICATION

A. Shall be accomplished per the manufacturer's printed specification for cabinetry and countertops.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:
   1. Verify that surfaces to receive units are true and plumb. Correct

unsuitable surfaces before beginning installation.

2. Verify that blocking and backings have been installed as required for anchorage.

3.2 INSTALLATION

A. General:
   1. In accordance with the manufacturer's recommendations.
   2. Provide all necessary installation accessories.
   3. Install doors and drawers to operate smoothly with edges aligned.
   4. Anchor tops securely.

B. Tolerances: Install tops level to within 1/8-inch in 8 feet.

3.3 ADJUSTING

A. At Substantial Completion, adjust and lubricate cabinet hardware for smooth operation if required.

3.4 CLEANING

A. At Substantial Completion, clean exposed and semi-exposed parts using manufacturer's recommended procedures.

3.5 PROTECTION

A. Protect casework from damage and maintain design environmental conditions until Substantial Completion.

3.6 SCHEDULES

A. Hardware Schedule:
   1. Hinges: 2 per door, 3 on doors greater than 48-inches high.
   2. Wire Pulls: One per door or drawer.
   3. Drawer Slides: One set per drawer.
   4. Catches: one per door, 2 on tall doors.
   5. Adjustable Shelf Supports: 4 per shelf.

END OF SECTION

SECTION 15067

ACID WASTE PIPE AND FITTINGS

PART 1 - GENERAL

1.1 SCOPE

A. This Section includes piping and specialties for the following systems:

1. Acid-waste and vent, gravity-flow, non-pressure piping system designated "Acid waste."

1.2 DEFINITIONS:

A. The following are industry abbreviations for plastic and rubber materials:

1. Polypropylene plastic – PPC.

1.3 SUBMITTALS:

A. Product Data: For Acid-waste piping materials, components, and specialties.

B. Coordination Drawings: For piping and specialties, including relation to other services that serve same work areas.

C. Maintenance Data: For Acid-waste systems and tanks to include in the maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE:

A. Source Limitations: Obtain pipe, fittings, and joining materials for each piping system through one source from a single manufacturer.

1. Exception: Piping from different manufacturers may be used in the same system if indicated and suitable transition fittings matching both piping materials are used.

B. Product Options: Drawings indicate size, profiles, and dimensional requirements of Acid-waste piping specialties and are based on specific types and models indicated. Other manufacturers' products with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."

C. Provide listing/approval stamp, label, or other marking on piping and specialties made to specified standards.

D. Listing and Labeling: Provide electrically operated specialties specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in NFPA 70, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" as defined in OSHA Regulation 1910.7.

E. Comply with ASME B31.3, "Process Piping."

F. Comply with NFPA 70, "National Electrical Code."

1.5 DELIVERY AND STORAGE:

A. Deliver and store piping and specialties with sealing plugs in ends or with end protection.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer for above and below grade acid-waste piping shall be Fuseal Type-2 or Spears Acid Waste System.

2.2 JOINING MATERIALS:

A. General: Applications of the following piping joining materials are indicated in piping applications articles in Part 3 of this Section.

B. Flanges: Assemblies of companion flanges; gasket complying with ASME B16.21; and compatible with liquid, and bolts and nuts.

PART 3 - EXECUTION

3.1 ABOVEGROUND, ACID-WASTE PIPING APPLICATIONS:

A. General: Use pipe, fittings, and joining methods for above ground, Acid-waste piping according to the following applications:

B. 1-1/2- to 4-Inch NPS: PP drainage piping and socket-fusion joints.

3.2 UNDERGROUND, ACID-WASTE PIPING APPLICATIONS:

A. General: Use pipe, fittings, and joining methods for underground, Acid-waste piping according to the following applications:

B. 1 1/2- to 4 Inch NPS: PP/PP Double-contained piping assembly and socket-fused joints.

3.3 SPECIALTIES INSTALLATION:

A. Install specialties according to manufacturer's written instructions.

3.4 PIPING INSTALLATION, GENERAL:

A. Refer to Division 15 Section "Pipe and Pipe Fittings - General" for basic piping installation.

B. Install piping next to equipment, accessories, and specialties to allow service and maintenance.

C. Flanges may be used on aboveground piping, unless otherwise indicated.

3.5 JOINT CONSTRUCTION:

A. Refer to Division 15 Section " Pipe and Pipe Fittings - General " for basic piping joint construction. Where specific joint construction is not indicated, follow piping manufacturer's written instructions.

B. Plastic-Piping, Heat-Fusion Joints: Make polyolefin pressure-piping joints according to ASTM D 2657.

C. Plastic-Piping, Electrofusion Joints: Make polyolefin drainage-piping joints according to ASTM F 1290.

D. Dissimilar-Materials, Piping Joints: Make joints using adapters compatible with both systems materials.

3.6 HANGER AND SUPPORT INSTALLATION:

A. Refer to Division 15 Section "Supports and Anchors" for pipe hanger and support devices.

B. Install riser clamps, MSS Type 8 or MSS Type 42, for vertical runs.

C. Install adjustable steel clevis hangers, MSS Type 1, for individual, straight, horizontal runs 100 feet and less.

D. Install spring hangers, MSS Type 52, for supporting base of vertical runs.

E. Support horizontal piping and tubing within 12 inches of each fitting and coupling.

F. Support vertical piping and tubing at base and at each floor.

G. Rod diameter may be reduced one size for double-rod hangers, with 3/8-inch minimum rods.

H. Install padded hangers for PP piping with the following maximum spacing and minimum rod diameters:

1. 2-Inch NPS: Maximum horizontal spacing, 33 inches with 3/8-inch minimum rod diameter; maximum vertical spacing, 72 inches.
2. 2-1/2- and 3-Inch NPS Maximum horizontal spacing, 42 inches with 1/2-inch minimum rod diameter; maximum vertical spacing, 72 inches.
3. 4- and 5-Inch NPS : Maximum horizontal spacing, 48 inches with 5/8-inch minimum rod diameter; maximum vertical spacing, 72 inches.

I. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

3.7 CONNECTIONS:

A. Install piping next to equipment and accessories to allow service and maintenance.

B. Connect Acid-waste piping to specialties, accessories, and equipment. Use chemical-resistant coupling, adapter, or fitting as required for materials being joined.

3.8 LABELING AND IDENTIFICATION:

A. Install labeling and pipe markers on equipment and piping according to requirements of Division 15 Section "Mechanical Identification."

3.9 FIELD QUALITY CONTROL

A. Piping Tests

1. Test for leaks and defects in new piping and parts of existing piping. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
2. Leave uncovered and unconcealed new piping until it has been tested and approved. Expose piping that has been covered or concealed before testing.
3. Repair leaks and defects with new materials and retest piping or portion thereof until there are no leaks.
4. Prepare reports for tests and required corrective action.

B. Inspect Acid-Waste Piping.

1. Do not enclose, cover, or put into operation drainage and vent piping until it has been inspected and approved by authorities having jurisdiction.
2. During installation, notify authorities having jurisdiction at least 24 hours before inspection. Perform tests specified below in presence of plumbing official.
3. Rough Installation Inspection: Arrange for inspection of piping system after system roughing-in, before concealing, and before setting fixtures and equipment.
4. Final Inspection: Arrange for final inspection by plumbing official to observe tests specified below and to ensure compliance with requirements of plumbing code.
5. Reinspections: Make required corrections and arrange for reinspection by plumbing official if piping system fails to pass test or inspection.
6. Reports: Prepare inspection reports signed by plumbing official.

C. Acid-Waste Piping Tests: Test systems according to procedures of authorities having jurisdiction or, in absence of published procedure, according to the following:

1. Test for leaks and defects of piping systems. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of system tested.
2. Leave uncovered and unconcealed piping until it has been tested and approved. Expose for testing all such work that has been covered or concealed before testing and approval.
3. Rough Plumbing Test Procedure: Test piping at completion of piping roughing-in. Tightly close all openings in piping system, and fill with water to point of overflow, but not less than 10-feet head of water. Water level cannot drop from 15 minutes before test starts through completion of test. Inspect joints for leaks.
4. Repair leaks and defects using new materials and retest system or portion thereof until there are no leaks.
5. Prepare reports for tests and required corrective action.

3.10 CLEANING

A. Use procedures prescribed by authorities having jurisdiction or, if not prescribed by those authorities, use procedures described below:

1. Purge new piping and parts of existing piping that have been altered, extended, or repaired.
2. Clean piping by flushing with potable water.

3.11 COMMISSIONING

A. Perform the following final checks before startup:

1. Verify that specified tests of piping systems are complete.
2. Check for proper seismic restraints.

END OF SECTION

CHICAGO FAUCETS

2100 SOUTH CLEARWATER DRIVE
DES PLAINES, ILLINOIS 60018-5999

FITTING NO.

930-317

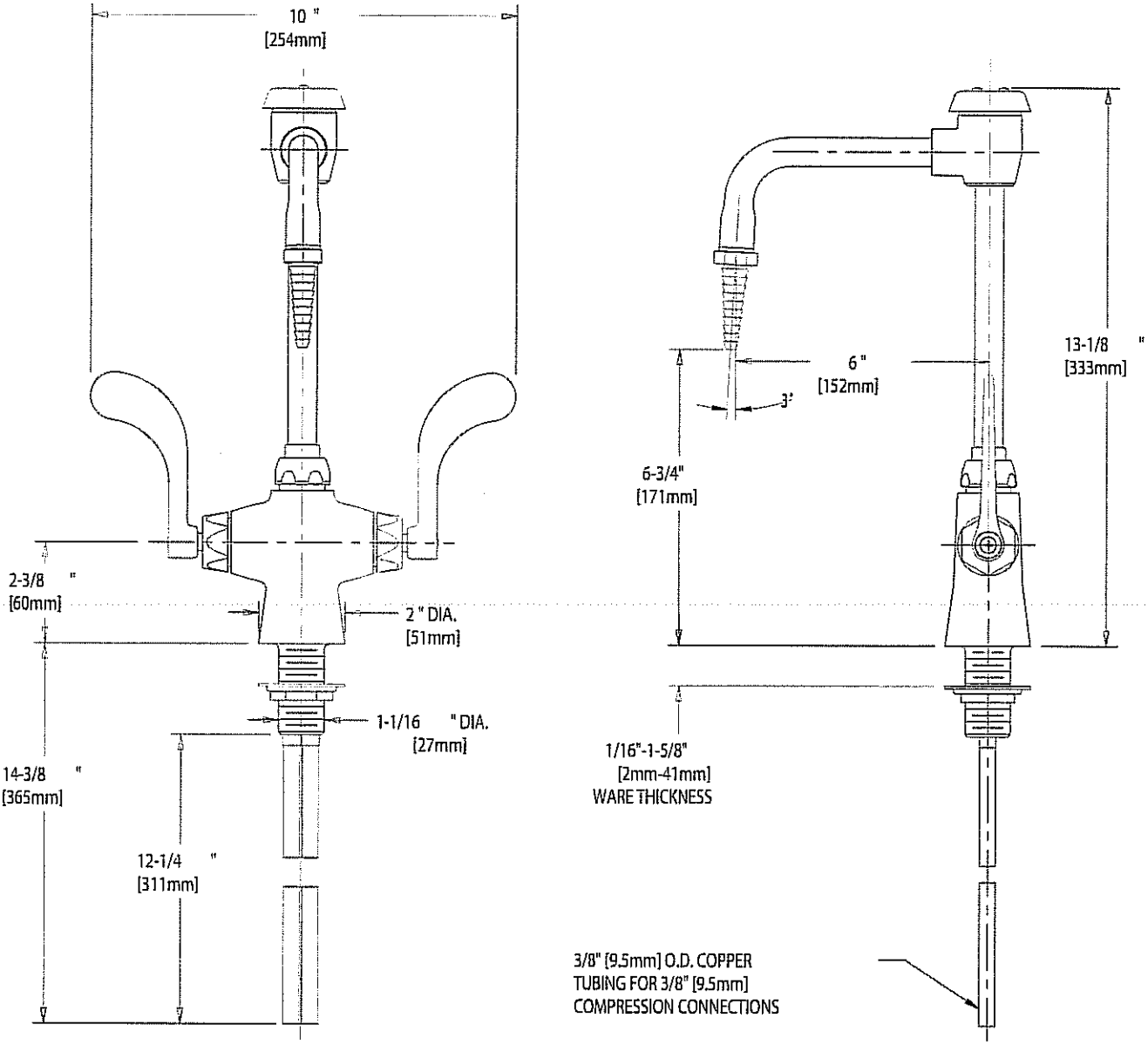
SUBMITTED MODEL NO.

JOB NAME

ITEM NO.

SUBMITTED AS SHOWN	
SUBMITTED AS NOTED	
SEE ATTACHED FOR SUBMITTED MODIFICATION	

ADA COMPLIANT



DIMENSIONS IN INCHES AND [MILLIMETERS].

TECHNICAL DATA

- DECK MOUNTED COMBINATION LABORATORY FITTING
- GN2BVB RIGID/SWING VACVUUM BREAKER SPOUT
- 317 INDEXED WRISTBLADE HANDLES
- QUATURN UNITS
- FINISH OR AS SPECIFIED
- 3/8" [9.5mm] COPPER SUPPLY TUBES
- E7 LAB NOZZLE OUTLET
- ANSI A112.18 COMPLIANT
- CSA B125 COMPLIANT

DATE: 11-25-98
BY: MGM
CHK'D:
APP'D:
REV:

930-317

CHICAGO FAUCETS

2100 SOUTH CLEARWATER DRIVE
DES PLAINES, ILLINOIS 60018-5999

FITTING NO.

869B

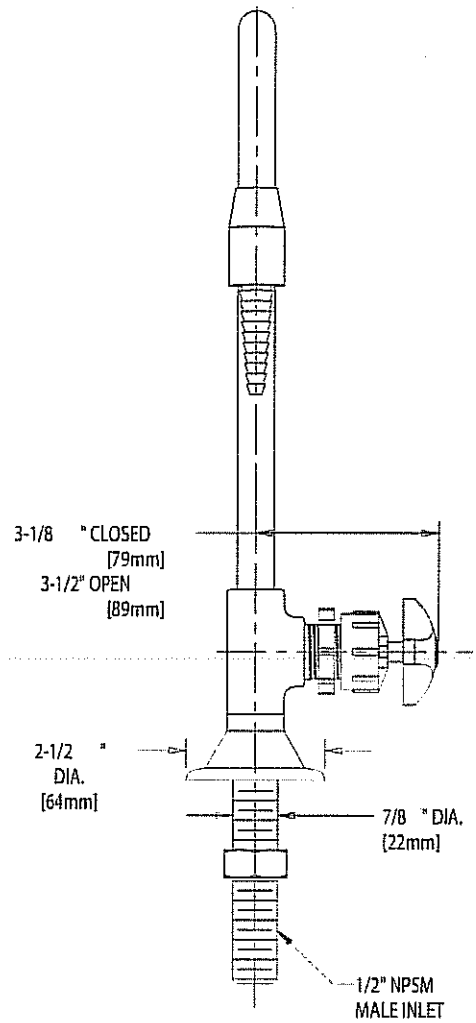
SUBMITTED MODEL NO.

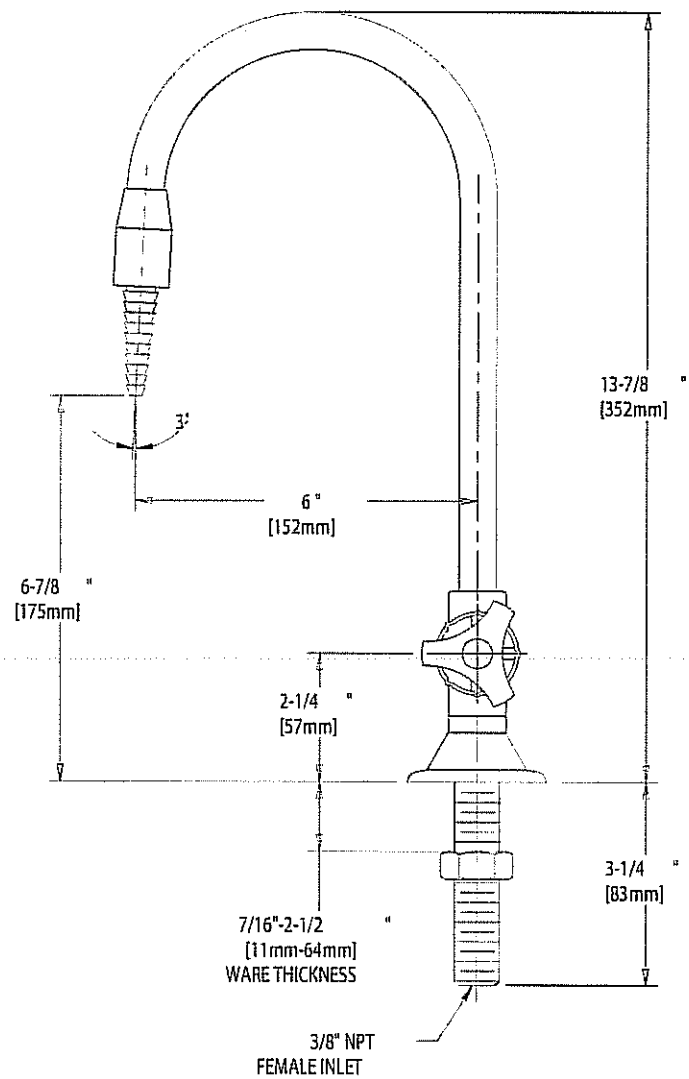
JOB NAME

ITEM NO.

SUBMITTED AS SHOWN	
SUBMITTED AS NOTED	
SEE ATTACHED FOR SUBMITTED MODIFICATION	

NOTES:
1. JAM NUT TO BE LOCKED AGAINST CAP AFTER POSITIONING AND LOCKING OF NEEDLE UNIT.
2. THIS PVC FITTING IS NOT TO BE USED AT PRESSURE EXCEEDING 60 PSI.





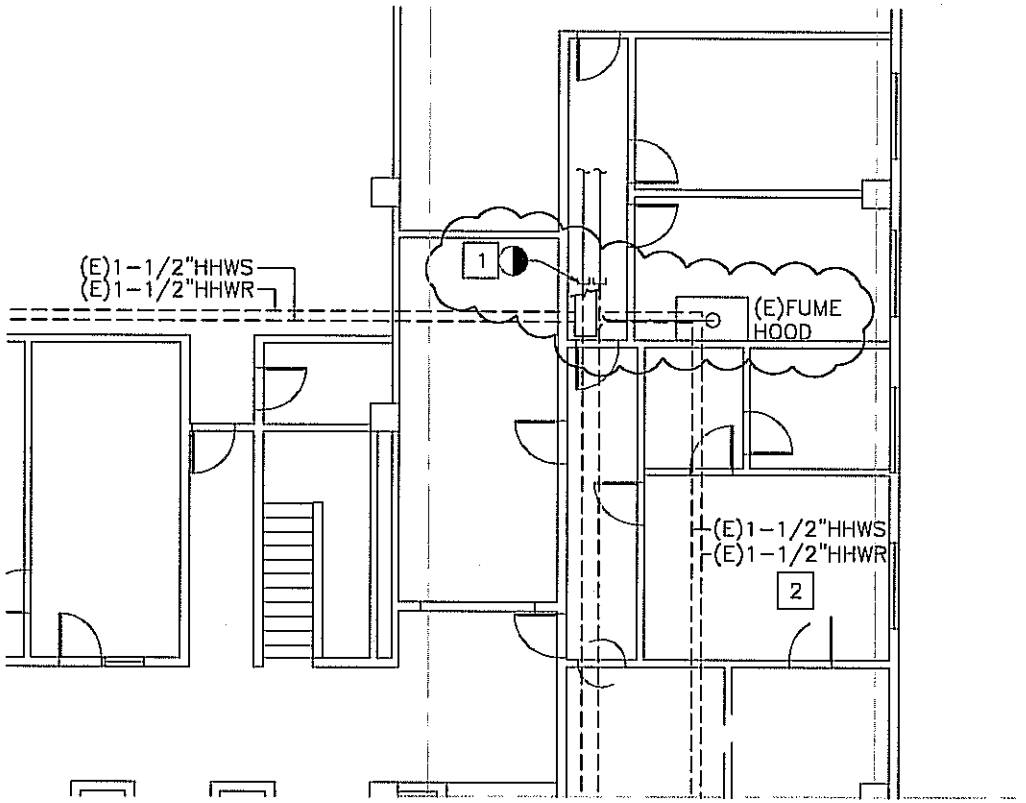
DIMENSIONS IN INCHES AND [MILLIMETERS].

TECHNICAL DATA

-DECK MOUNTED DISTILLED WATER FITTING
-RIGID GOOSENECK SPOUT WITH LAB NOZZLE OUTLET
- NEEDLE-POINT VALVE WITH THREE ARM HANDLE
-MALE INLET SHANK
-PVC (POLYVINYL CHLORIDE)

DATE: 06-18-01
BY: SID
CHK'D:
APP'D:
REV:

869B



NOTES

1. DISCONNECT AND REMOVE EXISTING SUPPLY AND RETURN AIR DUCTWORK FROM LABORATORY SPACE. SEAL AND CAP SUPPLY AIR AND RETURN AIR DUCTWORK AIR TIGHT. EXISTING EXHAUST AIR DUCTWORK CONNECTED TO EXISTING LABORATORY HOOD TO REMAIN. REBALANCE AIRSIDE SYSTEM AS REQUIRED AFTER REMOVAL OF SUPPLY AND RETURN DUCTWORK.

NORTH

MECHANICAL FIRST FLOOR DEMOLITION PLAN

PROJECT TITLE
Building 503 (ENG2)
Palmatrom Lab Renovation

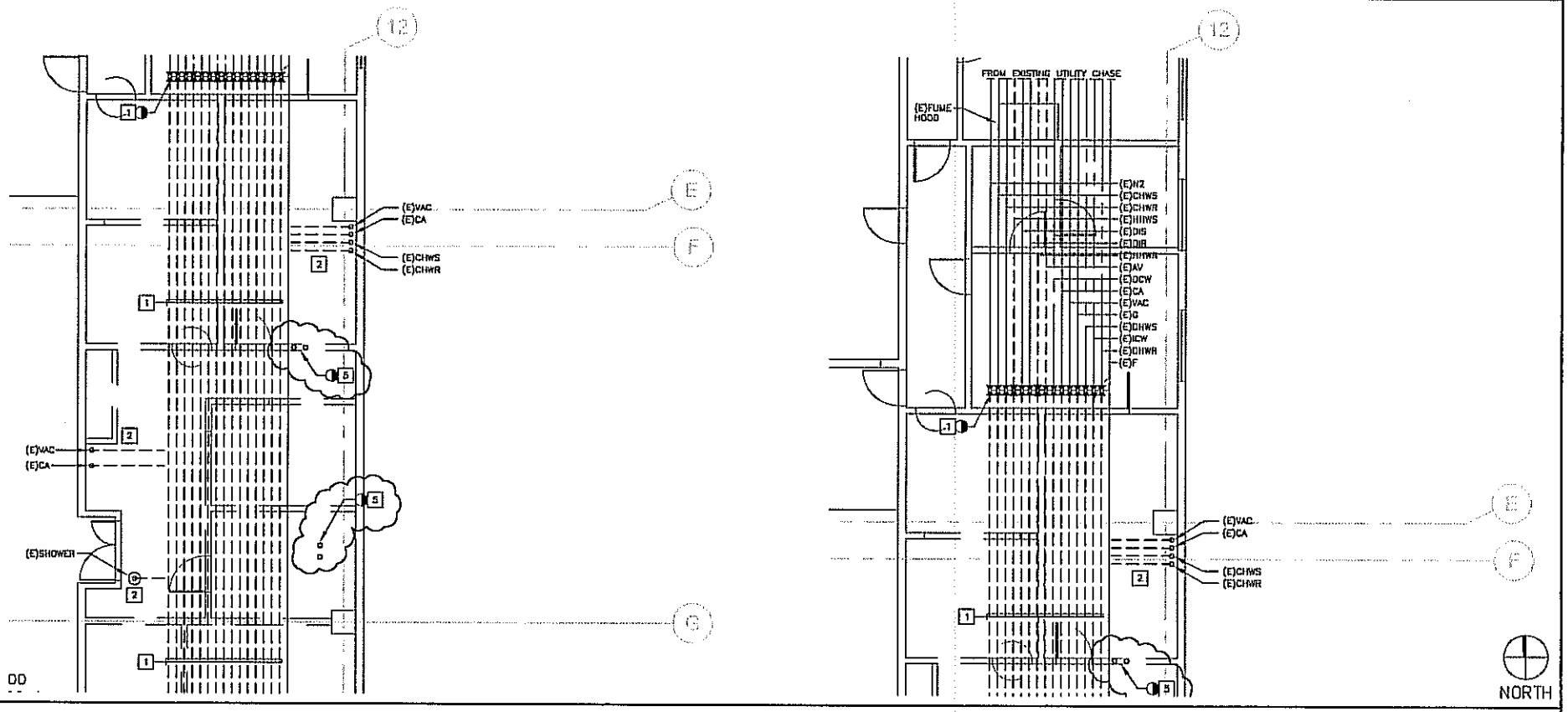
CLIENT
UNIVERSITY OF CALIFORNIA
SANTA BARBARA SANTA
BARBARA, CALIFORNIA 93106

1ST FLOOR DEMOLITION PLAN

FIRST FLOOR
SCALE: 1/8"=1'-0"

P2S ENGINEERING
Long Beach, California www.p2seng.com

DRAWING	SK-MD1
ADDENDUM	1
REVISION TO SHEET	MD1
SCALE	1/8"=1'-0"
DATE	10/18/2007
DESIGNED BY	JDH



PLUMBING FIRST FLOOR DEMOLITION PLAN

NOTES

5 DISCONNECT AND REMOVE EXISTING ROOF AND OVERFLOW DRAIN PIPING FROM SPACE. SEAL EXISTING ROOF PENETRATIONS. EXCAVATE CONCRETE FLOOR AND SEAL/CAP PIPING.

PROJECT TITLE
Building 503 (ENG2)
Palmstrom Lab Renovation

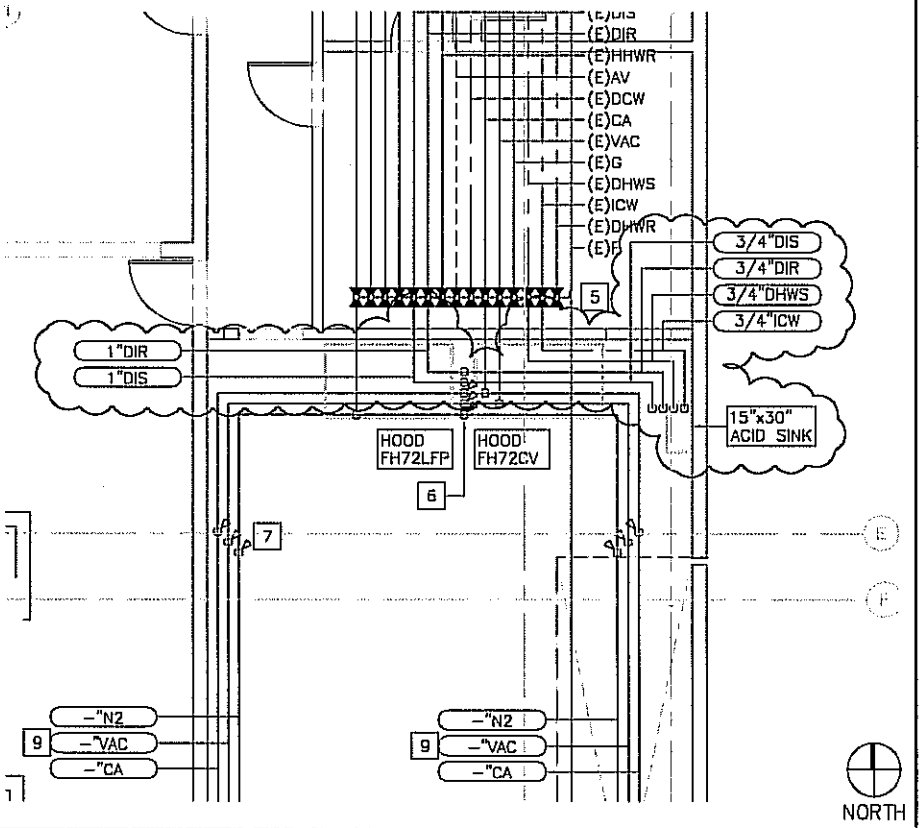
CLIENT
UNIVERSITY OF CALIFORNIA
SANTA BARBARA SANTA
BARBARA, CALIFORNIA 93106

1ST FLOOR DEMOLITION PLAN

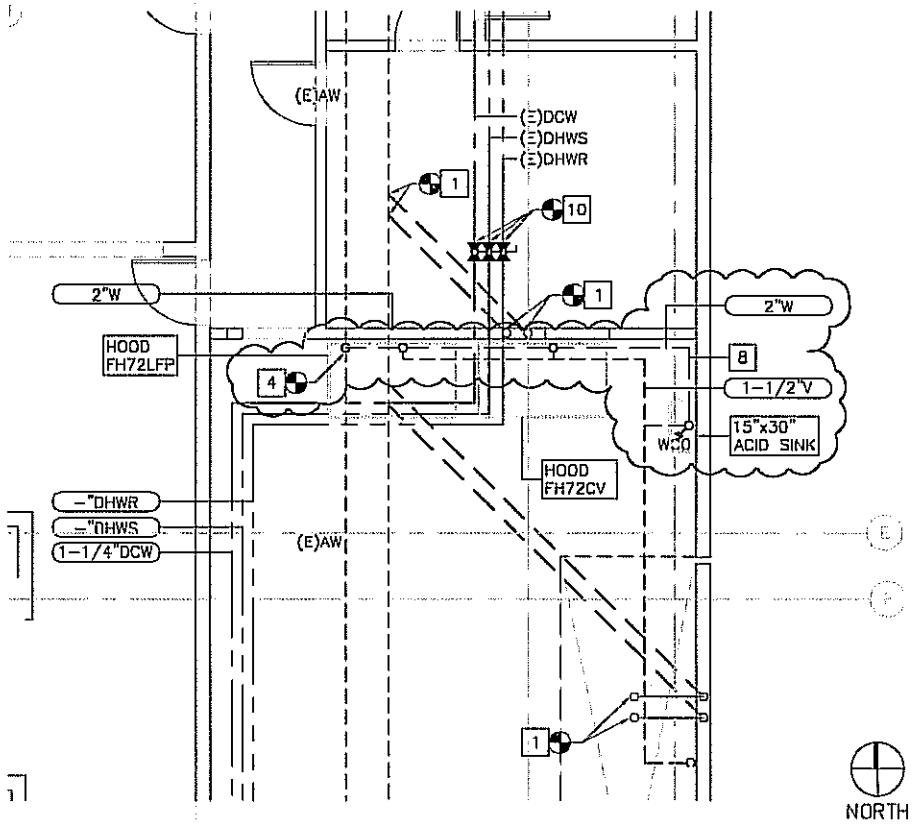
FIRST FLOOR
SCALE: 1/8"=1'-0"

P2S ENGINEERING
Long Beach, California www.p2seng.com

DRAWING: SK-PD1
ADDENDUM: 1
REVISION TO SHEET: PD1
SCALE: 1/8"=1'-0"
DATE: 10/29/2007
DESIGNED BY: JDH



PLUMBING FIRST FLOOR RENOVATION PLAN - PROCESS PIPING



PLUMBING FIRST FLOOR RENOVATION PLAN - WATER/WASTE/VENT

NOTES

8 PROVIDE 2"W ALONG WALL FROM ACID WASTE SINK AND FUME HOODS. DROP THROUGH SLAB AND CONNECT TO EXISTING ACID WASTE PIPING BELOW GRADE.

PROJECT TITLE
Building 503 (ENG2)
Palmstrom Lab Renovation

CLIENT
UNIVERSITY OF CALIFORNIA
SANTA BARBARA SANTA
BARBARA, CALIFORNIA 93106

1ST FLOOR RENOVATION PLAN

FIRST FLOOR
SCALE: 3/16"=1'-0"

P2S ENGINEERING
Long Beach, California www.p2seng.com

DRAWING	SK-P2
ADDENDUM	1
REVISION TO SHEET	P2
SCALE	3/16"=1'-0"
DATE	10/18/2007
DESIGNED BY	JDH