CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
01 00 00	**GENERAL REQUIREMENTS**				
01 00 00	**CAMPUS DESIGN STANDARDS**	-	-	-	-
	Notes 1. Discuss with District extent and scope of energy saving requirements and LEED ratings. 2. Design for 15 to 20 percent more efficient energy use than required by Title 24.				
02 00 00	**EXISTING CONDITIONS**				
02 41 00	**DEMOLITION**	-	-	-	-
	Notes 1. Verify with District the extent of salvage to be retained by the District. 2. Contractor is responsible for removal, protection and salvage of items. Items will be salvaged on an individual basis, and turned over to the District.				
02 42 91	**REMOVAL AND SALVAGE OF HISTORIC MATERIALS**	-	-	-	-
	Notes 1. Fullerton: Period architectural elements are to be respected, removed, protected, and replaced in kind as applicable. 2. Generally, historic items which are salvaged and not reinstalled will be retained by the District. 3. Verify with the District in each case.				
02 81 00	**REMOVAL OF HAZARDOUS MATERIALS**	-	-	-	-
	Notes 1. District is responsible for assessing and removal of hazardous materials. 2. District will arrange for a consultant employed by the District to provide surveys and reports as required for each case.				
03 00 00	**CONCRETE**				
03 35 00	**CONCRETE FINISHING**	-	-	-	-
	Notes 1. Hard, acid resisting surfaces in labs, shops, etc. shall be coordinated with owner during design. 2. Acrylic sealer on all exposed, finished concrete shall be coordinated with owner during design. 3. Proper surface preparation for existing slabs and provide acrylic sealer on the exposed existing surfaces shall be coordinated with owner prior to commencement of design.				
04 00 00	**MASONRY (If Used)**				
04 00 00	Notes 1. To be compatible with existing current adjacent installations in type, color and style.				
05 00 00	**METALS**				
05 50 00	**METAL FABRICATIONS**	-	-	-	-
	Notes 1. Galvanize all exterior steel items. 2. Verify with District to determine required finish for exterior items such as handrails: high performance coatings; paint, or unpainted. 3. (Must use acid-etch primer for all field paint applications on all galvanized and aluminum assemblies.)				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
05 55 00	**METAL STAIR TREADS AND NOSINGS**	-	-	-	-
	Notes 1. Don't use cast-in-place nosings or strips on exterior stairs and ramps in new construction. Use grooved concrete treads and ramps. 2. Limit use of surface applied strips to existing non-conforming stairs and ramps. 3. (Provide contrasting nosings at top and bottom of stair runs.)				
06 00 00	**WOOD, PLASTICS, AND COMPOSITES**				
06 10 00	**ROUGH CARPENTRY**	-	-	-	-
	Notes 1. Maximum spacing of stud framing shall be 16-inches O.C. 2. Curbs on roof for all roof mounted hatches, skylights, mechanical equipment and similar items shall be coordinated with owner prior to commencement of design. 3. Curbs shall be 12-inches to 14-inches in height, detailed such that the roof can be resurfaced without removing air handling units or				
06 41 00	**ARCHITECTURAL WOOD CASEWORK**	-	-	-	-
	Notes 1. Use laminated plastic typically, use wood only in executive offices, libraries. 2. Use Woodwork Institute Premium grade in all locations except laboratories. Use laboratory grade in laboratories. 3. Edge banding to match laminating material. 4. (Use matching laminate in lieu of PVC for all edge banding. PVC is going to be eliminated or reduced due to its "less than green" manufacturing processes.) Fullerton: Repair and refinish existing wood cabinets wherever feasible. (Salvage all solid wood casework to be removed and turn over to the owner.)				
07 00 00	**THERMAL AND MOISTURE PROTECTION**				
07 24 00	**EXTERIOR INSULATION AND FINISH SYSTEM**	-	-	-	-
	Notes 1. Don't use, except with special permission of the District.				
07 26 00	**VAPOR RETARDERS**	-	-	-	C 1
	Notes 1. Test floors for moisture where wood, carpet, thin set ceramic tile and resilient flooring will be installed. Provide remedial measures as required to bring floors to acceptable moisture content. 2. Use a heavy duty vapor retarder below on-grade slabs, equal to STEGO Wrap, manufactured by STEGO Industries, LLC., San Clemente, CA (877-464-7834, or Dura-Skrim 12WB, manufactured by Raven Industries, P.O. Box 5107, Sioux Falls, SD 57117 (800) 635-3456 FAX (605) 331-0333. 3. Do not use "Visqueen" or other unreinforced vapor retarders.				
07 50 00	**MEMBRANE ROOFING**	Siplast or Soprema or Sika Sarnafil	-	-	07 50 00
	Notes 1. For new construction, use Siplast, or Soprema modified bitumen. No exceptions. 2. Provide specification for light colored, highly reflective thermoplastic PVC roof membrane, as directed by the Campus, for new roofing. 3. For repairs and minor modifications, match existing built-up roofing. 4. Provide 20 year, no limit, warranty.				
07 60 00	**FLASHING AND SHEET METAL**	-	-	-	-
	Notes 1. Use minimum 24 gauge galvanized sheet metal material. Modifications and repairs should match existing. 2. Alternate #1: Exposed metal flashing shall be prefinished with Fluoropolymer, factory applied coating. 3. All joints in sheet metal shall be continuously soldered. 4. Do not use pitch pans. 5. Fullerton: When repairing sheet metal on period architecture, use materials, designs and types to match existing.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
07 81 16	**CEMENTITIOUS FIREPROOFING**	Monokote	-	-	C 3
	Notes 1. Use only cementitious type, such as Monokote, do not use types which are "hardened" by application of coatings to soft materials.				
08 00 00	**OPENINGS**				
08 10 00	**DOORS AND FRAMES**	-	-	-	-
	Notes 1. Use welded steel frames only, minimum 16 gauge interior, 14 gauge exterior. 2. Use 5 ply, particleboard core wood doors for interior uses. Do not use 7 or 9 ply doors. 3. Use hollow metal doors for exterior and service applications, minimum 16 gauge exterior, minimum 18 gauge interior. 4. Infill interior hollow metal frames with rigid cellular polystyrene or polyurethane-foam-type thermal insulation. 5. At buildings with period architecture, match the existing doors, or where replacement with aluminum doors is necessary, provide 70 percent Fluoropolymer paint finish (Kynar or Hylar) on the aluminum to protect the surfaces. 6. All exterior frames shall be grout filled with no exceptions.				
08 10 00	**DOORS AND FRAMES** **Cypress College**	Special-Lite	SL-175, SL-21	-	08 10 00
	Notes 1. Use Fiberglass Reinforced Plastic (FRP) doors at exterior locations; model SL-175 for standard applications and model SL-21 for fire rated applications. 2. Use Fiberglass Reinforced Plastic (FRP) doors for Gym 2. 3. Use 5 ply, stranded lumber core - not particle board. 4. Use IVES 8190 tubular offset pulls and Von Duprin KRM (key removable mullions).				
08 31 16	**ACCESS PANELS AND FRAMES**	-	-	-	-
	Notes 1. Provide key locks on all access panels. 2. Use stainless steel in tile walls. 3. Provide paint finish on access panels in other walls, and finish to match adjacent surfaces. 4. Be sure that access panels are provided for all junction boxes, valves, telephone and data equipment, fire alarm and other devices above non-accessible ceilings and in walls.				
08 41 00	**ENTRANCES AND STOREFRONTS**	-	-	-	08 41 00
	Notes 1. Use for building entrances where designed. 2. Use only 70 percent Fluoropolymer coating finish. 3. Use only medium stile doors. (Narrow stile too fragile and too heavy). 4. All door actuators shall match door and frame color, Fluoropolymer coating finish.				
08 70 00	**HARDWARE**	SDC	-	-	C 6
	Notes 1. Main entrance doors of buildings shall have automatic wireless entrance operators, whether or not required by ADA. Verify with District in each case. 2. Operator enclosures hardware shall match door and frame color, Fluoropolymer coating finish. 3. Select battery powered push plate switches or bollard post with push plate or touch panel column, coordinate with owner prior to commencement of design.				
08 71 00	**DOOR HARDWARE**	-	-	-	08 71 00
	Notes 1. Please see Sheet 08 71 00 for Door Hardware				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
08 80 00	**GLAZING**	-	-	-	C 14
	Notes 1. Use laminated glass for exterior openings where tempered glass is required by code. Don't use wire glass. Use Low-E glass on exterior. 2. Use tempered glass mirrors, not stainless steel. 3. Fullerton: Color of glass shall be Solarban 60. 4. Cypress: Color of glass shall be Solarban 60. 5. Anaheim: Provide amber smoke glass to match existing.				
09 00 00	**FINISHES**				
09 00 00	**GENERAL**	-	-	-	-
	Notes 1. Require extra material for maintenance for finish materials in this Division: Tile, carpet, paint, wall coverings, resilient floor coverings. 2. Require adhesives and accessories for installation of the maintenance materials. 3. Require labeling and packaging, and delivery to District's on-site storage facility as directed. 4. Use laminated glass for exterior openings where tempered glass is required by code. Don't use wire glass. Use Low-E glass on exterior.				
09 20 00	**PLASTER AND GYPSUM BOARD**	-	-	-	C 15
	Notes 1. Include alkali-resistant fiberglass shorts in Portland cement plaster base coats. 2. Finish coat Portland cement exterior plaster should be tinted to match paint color so that cracks and abrasions are less visible. Do not rely on integral plaster in lieu of paint as final finish. Final finish shall be paint. 3. In lieu of Portland cement plaster finish coat, an acrylic finish coat manufactured by Sto Industries, Inc., Senergy, or Dryvit may be specified. 4. Provide abuse and impact resistant gypsum board in areas where students are unsupervised, such as study halls, libraries, labs, etc. Coordinate extent with owner prior to commencement of design. 5. Provide abuse and impact resistant gypsum board in corridors. 6. Provide fiberglass mat gypsum panels in lieu of paper-faced gypsum board for interior and exterior walls. 7. Do not use water resistant gypsum board. 8. Provide textured finish on gypsum board. 9. Provide acoustic insulation in walls between classrooms. 10. Use open plenum construction with insulation on top of ceiling construction for sound attenuation. Coordinate extent with owner prior to commencement of design. 11. Extend studs to structure above, typical, unless directed otherwise				
09 22 16	**NON-STRUCTURAL METAL FRAMING**	-	-	-	-
	Notes 1. Use 20 gauge min. studs at 16-inch centers maximum, for interior walls and partitions, to facilitate attachment of wall mounted equipment. 2. Use heavier gauges for walls over 10 feet in height.				
09 30 30	**TILING**	Crossville	-	-	-
	Notes 1. Use mortar set tile on walls and floors for new construction. 2. Use thin set tile on walls and floors for retrofits. 3. Use liquid sealant on unglazed, and grout ceramic tile in toilet rooms. Strip off existing finishes, then apply 2 coats of City Seal and 1 coat of Innovation wax. 4. Use Epoxy grout for tile installation for walls and floors. 5. Do not use sealer on decorative paving, or where its use would compromise the non-slip characteristics of the flooring. 6. Include the requirements of inspector's report for all mortar beds prior to installation of tile.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
09 51 00	**ACOUSTICAL CEILINGS**	USG	-	-	09 51 00

Notes

1. Use non directional Fissured pattern.
2. Wet areas and Laboratories: Vinyl faced gypsum panels from USG or Armstrong, or Celotex.
3. Provide specification for vinyl faced mineral fiber panels to satisfy recycling requirements. Coordinate with owner prior to commencement of design.
4. Offices and hallways: USG Aspen 2-foot by 2-foot or 2-foot by 4-foot non-tegular tiles.
5. Classrooms: Fissured panels.
6. Industrial Areas: Perforated metal panel.
7. Use only heavy-duty grids.
8. Provide acoustic ceilings in corridors.
9. Coordinate with owner prior to the commencement of design.
10. No substitutions will be allowed which are for closeout items or any items which have limited stock, access or delivery.

09 65 00	**RESILIENT FLOORING**	Armstrong / Johnsonite	Optima IQ	Persian Deer	09 65 00

Notes

1. Provide vinyl composition tile (VCT) by Armstrong. Coordinate locations with owner prior to commencement of design.
2. Provide Premium VCT Thru-Quartz by Azrock. Coordinate locations with owner prior to commencement of design.
3. Anaheim: Provide rolled homogeneous sheet flooring in Kitchen/Food Prep areas, and other areas as deemed necessary by the District. Johnsonite Optima IQ Persian Deer for use in Student Lounge, Elevator Cabs, Room 134, Room 136.
4. Obtain information from Campus regarding preferred sealers and waxes for flooring.

09 68 00	**CARPET**	Mannington Commercial Carpets	Portella 24"	Fiji	C 18

Notes

1. Provide carpet tile in classrooms, typical.
2. Use only Tandus Flooring, Shaw or Patcraft carpet with Powerbond or similar backing, colors and patterns as approved, recyclable types, minimum quality as follows:

Face

a)	Construction	Textured patterned loop
b)	Gauge	1/13
c)	Pile units per inch	9.5
d)	Tuft density	124.5 tufts per square inch
e)	Pile height, average	0.117 inch
f)	Pile thickness	0.068 inch
g)	Density factor	10,588 ounces per cubic yard
h)	Fiber system	Invista Nylon Resin 6.6 fiber
i)	Dye method	Solution and yarn
j)	Stain protection	Incorporated

Backing

a) Synthetic non woven
b) 80% recycled content and 20% new
c) Density 65 pounds per cubic foot

Characteristics

a)	Flammability	Passes CPSC FF 1-70
b)	Flooring radiant panel	Class 1 (Mean average CRF:0.45 watts/sq. cm or higher)
c)	Electrostatic propensity	3.0 kV or lower, permanent conductive fiber
d)	Colorfastness to light	> 4 after 100 hours

3. Anaheim: Carpet Base Bound. Mannington Commercial Carpets Portella 24” Fiji for use in 6th Floor Corridor. Coordinate

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
09 90 00	**PAINTING AND COATING**	-	-	-	09 90 00

Notes

1. Use 100 percent acrylic exterior paint.
2. Use paint products of Dunn-Edwards, Frazee, or Sherwin Williams. Must be able to convert one brands paint color with another; confirm the materials are compatible with each other, and that technical services are available from each one if needed.
3. The paints are widely stocked at retail and contract level.
4. Provide paint compatibility chart.
5. (Proper preparation, priming and paint types for each individual application shall be clearly indicated and approved per manufacturer's recommendations (i.e., acid-etch primer for all galvanized and aluminum assemblies.)

Anaheim:

a) Provide MDC Wall Coverings Slate FX SX5898MC for use in Hallway Wood Wainscot (lower walls). Spray applied flake finish.
b) Provide MDC Wall Coverings Pearlescent LP1218 for use in Elevator Doors (hallway side).
c) Provide Dunn-Edwards DE6155 Soft Ivory Semi-Gloss for use in Hallway Walls (upper walls).

Cypress:

a) Use 100 percent acrylic interior or exterior paint depending on application, (semi-gloss unless directed otherwise.)
b) Use paint products preferably of Vista Paint, Dunn-Edwards, Frazee, or Sherwin Williams.
c) Must be able to convert one brands paint color with another; confirm the materials are compatible with each other, and that technical services are available from each one, if needed.
d) The paints are widely stocked at retail and contract level.
e) Provide paint compatibility chart.
f) (Proper preparation, sanding, priming and paint types for each individual application shall be clearly indicated and approved per manufacturer's recommendations (i.e., acid-etch primer for all galvanized and aluminum assemblies.)

Fullerton:

a) Use 100 percent acrylic interior or exterior paint depending on application.
b) For interior paint systems, provide eggshell finish for gypsum board drywall; semi-gloss finish for CMU, wood, galvanized aluminum, and steel; and flat finish for concrete and plaster.
c) For exterior paint system, provide flat finish for concrete and plaster, CMU; semi-gloss finish for wood siding and trim, galvanized aluminum and steel.
d) Provide materials for use within each paint system that are compatible with one another and compatible with substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
e) Provide all products within a paint system including thinners and coloring agents, produced by a single manufacturer including prep coats and primers.
f) Provide products that comply with jurisdictional requirements for VOC content, exclusive of colorants added to a tint base.
g) Provide paint that contains 30-45% solids, minimum.
h) In areas prone to mildew growth such as coastal areas or high humid environments, add a mildewcide to paint materials.

09 96 23	**GRAFFITI RESISTANT COATINGS**	-	-	-	-

Notes

1. Not required.
2. The District believes it is less expensive to paint the graffiti out rather than apply graffiti resistant coatings.

10 00 00	**SPECIALTIES**				
10 11 00	**VISUAL DISPLAY UNITS**	PolyVision or Claridge	-	-	10 11 00

Notes

1. Use white marker boards for new construction. Marker boards shall be porcelain over steel over plywood, with metallic backing.
2. Use backing board of minimum 5/8-inch thickness.
3. Verify with District if blackboards are required for math and science classrooms and labs.
4. Use tackboards over Homosote or similar core material over plywood.
5. Where tackable wall surfaces are provided, use self-sealing surfacing over Homosote or similar backing on gypsum board walls.

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
10 14 00	**SIGNAGE**	-	-	-	-
	Notes 1. Contact the individual Campus for information on campus logos, standard graphics, and required signage, as directed by the District.				
10 21 13	**TOILET COMPARTMENTS**	Bradley	-	Stainless Steel	C 21
	Notes 1. Use Series 400 Sentinel Overhead Braced 5WL. 300 Series stainless steel with a 5WL textured finish. (Colored finish.) 2. Floor-mounted overhead-braced with anti-grip headrail.				
10 22 23	**MOVABLE PANEL SYSTEMS**	Hufcor	Series 5000	-	C 22
	Notes 1. Verify with District where operable walls may be required. Provide Hufcor Series 5000 operable walls with an STC of 53 or greater if required. 2. Verify with District whether manual or electrical operation is required for specific uses. Hufcor representative: (562) 634-3116.				
10 26 13	**CORNER GUARDS**	-	-	-	-
	Notes 1. Provide surface-mounted, resilient, plastic corner guard assembly consisting of Snap-On plastic cover installed over continuous retainer, at all outside corners, including mounting hardware; fabricated to match wall condition. 2. For end of wall conditions, provide semi-rigid impact resistant sheet wall covering, including mounting hardware.				
10 44 00	**FIRE PROTECTION SPECIALTIES**	Potter Roemer LLC	1700 Series	Stainless Steel	C 23
	Notes 1. Use extinguishers in recessed cabinets in corridors and classrooms in new facilities. 2. Use bracket mounted extinguishers in classrooms in existing facilities. Use 4A:60BC where bracket mounted. 3. Based on Path of Travel requirements provide either recessed, semi-recessed or surface mounted cabinets.				
10 51 00	**LOCKERS**	Republic Storage Systems Co.	-	-	C 24
	Notes 1. Provide only when and where directed by District. 2. Use metal lockers, on concrete bases for new construction. For existing construction, provide metal feet and bases. All lockers shall comply with FDA requirements for use in food service areas. 3. Use sloping tops, except where lockers are recessed in walls.				

11 00 00	**EQUIPMENT**				
11 52 13	**AUDIO VISUAL EQUIPMENT**	-	-	-	-
	Notes 1. Verify whether projection screens or whiteboards are to be used for projection purposes: to be issued by the I.T. Department of each Campus. 2. Typically, provide manually operated, projection screens, bracket mounted, attached through the ceiling to the structure, using Unistrut or channel supports. 3. Verify whether electrical operation is required for specific locations. 4. Provide projector mounts. Verify with Campus whether fixed or drop-down types should be used.				
11 53 00	**LABORATORY EQUIPMENT**	-	-	-	-
	Notes 1. Use casework material (wood, metal, or laminated plastic) as directed by Campus. Specify WI laboratory grade or proprietary construction as directed. 2. Use only countertop materials which are "through-color" type, such as Corian or molded epoxy resin. No laminated plastic. Use epoxy tops in all labs. Use Corian or approved equal in all other locations.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
12 00 00	**FURNISHINGS**				
12 24 00	**WINDOW SHADES**	MechoShade	ThermoVeil	Dense Basket Weave	C 25
	Notes 1. Verify with District when window shades are required. If directed, provide mechanically operated or manually operated MechoShades, available from MechoShade Systems, Inc., 625 Moulton Avenue, Los Angeles, CA 90031 (213) 223-3223, Fax: (213) 223-2986. 2. Shadecloth shall be MechoShade ThermoVeil, woven FR-vinyl, Dense Basket Weave. Color as selected by campus. 3. Verify light diffusion percentage requirements.				
12 48 13	**ENTRANCE FLOOR MATS AND FRAMES**	-	-	-	C 26
	Notes 1. For new construction, provide recessed entry mat system with drain pan and drain pipe (by others.) 2. Provide inserts of heavy duty carpet, exterior brush, abrasive tape, or vinyl. Coordinate with owner prior to commencement of design. 3. For renovations, where mats are required, use removable rubber backed fabric mats with tapered edges for serviceability.				
13 00 00	**SPECIAL CONSTRUCTION (NOT USED)**				
14 00 00	**CONVEYING EQUIPMENT**				
14 24 00	**HYDRAULIC ELEVATORS**	-	-	-	-
	Notes 1. Do not use holeless elevators. 2. Elevators shall have push button controls, for unrestricted use. 3. Provide proprietary or non-proprietary control as directed by the College.				
21 00 00	**FIRE SUPPRESSION**				
22 00 00	**PLUMBING**				
22 05 23	**GENERAL-DUTY VALVES FOR PLUMBING PIPING**	Varies	Varies	Factory Finish	-
	Notes 1. Gate Valve in ground. Ball Valve above ground. 2. Water Valves: Ball valves manufactured by Apollo or Watts. Full port bronze with TFE seats, 600 psi SWP, S.S. ball, threaded 600 psi WOG. 3. Provide Bronze valves for potable water application. Products shall meet California AB 1953 Health and Safety Code Requirements. 4. Valves shall be lead free type.				
22 07 19	**PLUMBING PIPING INSULATION**	Truebro / Brocar Products, Inc.	-	-	C 27
	Notes 1. Use prefabricated pipe insulation manufactured by Truebro, or Brocar Products, Inc.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
22 10 00	**DOMESTIC WATER PIPING**	-	-	-	-
	Notes 1. PVC Type 1, Grade 1, Schedule 40 pressure pipe with PVC Type 1, Grade 1 Schedule 80 ASTM D 2464 threaded fittings or D 2467 socked cement welded fittings. 2. Copper Type "K" with Harris Stay Silv 15 silver bracing alloy plus 4 mil wrap. 3. Domestic water piping underground outside of building 3-inch and larger: PVC pressure water pipe, Johns Manville Blue Brut Class 200 (DR 14) AWWA C 900 ring tite, with pressure rated PVC fittings. 4. Domestic water piping under floor slab 3-inch and smaller: Type "K" hard draw copper tubing ASTM B 88 with Harris Stay Silv 15 silver bracing alloy and 4 mil wrap. 5. Domestic hot and cold water above ground: Type "L" hard draw copper tubing ASTM B 88 with wrought copper fittings. Joints made up with lead free Silvabrite 100 solder, Canfield 100% water safe. 6. Domestic water piping in pipe tunnel: Type "K" hard drawn copper tubing ASTM B 88 with wrought copper fittings and Victaulic joints. Condensate waste piping: Type "M" copper hard drawn copper tubing, ASTM B 88 with copper fittings made up with Canfield 100% water safe and flux, provide cleanout plugs.				
22 11 13	**FACILITY DISTRIBUTION PIPING**	-	-	-	-
	Notes 1. Soil, waste and storm drain piping underground up to 5-feet from building: PVC gravity sewer pipe and fittings, SDR 35, bell and spigot compression ring tite joint, ASTM D 3034, Johns Manville Corporation, TRX 11. 2. Soil, waste and vent inside building above ground 2-inch and smaller. Coated service weight cast iron pipe with cast iron soil fittings, FED Spec, WW P 401, or NO HUB joint No. CISPI 31, with stainless steel couplings. 3. Soil, waste and vent inside building above ground 3-inch and larger. Coated service weight cast iron pipe with NO HUB joint No. CISPI 301 with stainless steel couplings with neoprene dual seal gaskets. 4. Storm drainage piping in concealed spaces: NO HUB cast iron with stainless steel couplings. 5. Storm drainage piping in exposed areas: Schedule 40 galvanized steel pipe ASTM A 53 with cast iron long sweep fittings.				
22 11 19	**DOMESTIC WATER SPECIALTIES**	Watts	-	-	-
	Notes 1. Reduced-Pressure-Principle Backflow Preventers: Continuous-pressure operational applications. 12 psig pressure loss maximum, through middle 1/3 of flow range. Bronze body for NPS 2 and smaller. Threaded connections for NPS 2 and smaller.				
22 13 00	**SANITARY SEWERAGE**	-	ABS Schedule 80	-	-
	Notes 1. Within 5-feet of building line. 2. Below grade: Cast Iron Soil Pipe; ASTM A 888 & CISPI 301, Hubless, gray iron castings with smooth interior walls uniformly coated with suitable adherent material. 3. Above grade: Cast Iron Soil Pipe; ASTM A 888 & CISPI 301, Hubless, gray iron castings with smooth interior walls, uniformly coated with suitable adherent material.				
22 13 19.13	**SANITARY DRAINS**	J.R. Smith	Varies	Varies	C 28
	Notes 1. Floor Drains. Floor drain shall comply with ANSI A112.21.1. Provide DUCO cast iron body, round adjustable grate and trap primer connection. 2. Minimum floor drain size shall be 3 inches.				
22 21 12	**FUEL GAS PIPE AND FITTINGS**				
	Notes 1. Natural gas piping underground, up to building shut off valve: Polyethylene pipe, ASTM D 2513 poly pipe 3810 with PE 2406 fittings. 2. Gas risers for meter connection and offsets into building: Transition riser Schedule 40 steel epoxy coated casing with "Double O Seal" transition fitting. 3. Natural gas inside of building 2-inch and smaller: Schedule 40 black steel pipe ASTM A 53 with malleable iron screwed fittings. 4. Natural gas inside of building 3-inch and larger: Schedule 40 black steel pipe, ASTM A 53 with butt welding fittings.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
22 33 00	**ELECTRIC DOMESTIC WATER HEATERS**	Chronomite	Instant-Flow	Varies	-
	Notes 1. Instant Electric. Low flow rate (0.5GPM). Factory Preset Temperature at 110° F. Verify voltage in field. 2. Gas fired domestic hot water heating is preferable to electric heating if the combined heating load of all load points would justify the installation costs associated with a gas-fired domestic hot water heater.				
22 33 00	**DOMESTIC WATER HEATERS**	A.O. Smith	Varies	Varies	-
	Notes 1. The storage section shall be constructed in accordance with ANSI Z21.10.1 and AGA or UL certified for working pressure of 150 psig. 2. The storage section shall be factory insulated with R-16. The insulation shall meet the latest 90A-1980 and CEC requirements. 3. The water heater label shall indicate code compliance.				
22 42 13.13	**COMMERCIAL WATER CLOSETS**	American Standard	Royal Flushometer	Elongated	C 29 and C 29A
	Notes Water Closets: 1. Floor mounted. Accessible. Flush Valve: 1. Sloan Royal, Optima Flushometer, 1.6 gallons per flush, hard wired sensor operated, side mounted with metal cover for new constructions. 2. Sloan Royal, Manual, ADA compliant flush valve. 3. Sloan Royal, side mount operator, 1.6 gallon per flush, battery powered sensor operated for retrofit.				
22 42 13.13	**COMMERCIAL WATER CLOSETS**	J.R. Smith	No hub	0210Y Series	-
	Notes 1. Fixture Support. For wall mounted Water Closets.				
22 42 13.13	**COMMERCIAL WATER CLOSETS**	American Standard	Varies	Elongated	-
	Notes Water Closets: 1. Wall mounted. Accessible. Flush Valve: 1. Sloan Royal, Optima Flushometer, 1.6 gallons per flush, hard wired sensor operated, side mounted with metal cover for new constructions. 2. Sloan Royal, Manual, ADA compliant flush valve. 3. Sloan Royal, side mount operator, 1.6 gallon per flush, battery powered sensor operated for retrofit.				
22 42 13.16	**COMMERCIAL URINALS**	J.R. Smith	No hub	-	-
	Notes 1. Fixture Support. For Urinal				
22 42 13.16	**COMMERCIAL URINALS**	American Standard			
	Notes 1. Wall mounted with flush valve, 24-inch-high to lip for standard use, 1.0 gallon per flush. 2. Wall mounted with flush valve, 17-inch-high to lip for accessible use, 1.0 gallon per flush. 3. Flush Valve: Sloan Royal hard wired sensor operated for new construction. 4. Flush Valve: Sloan Royal side mount operator battery powered sensor operated for retrofit. 5. Cypress: Sloan Optima Royal, exposed, direct wire flushometer.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
22 42 16	**COMMERCIAL SINKS TEACHERS WORK ROOM**	Just	SL-2219-A-GR	SS	C 30
	Notes 1. Deck mounted S.S. sink. Overall size is 22-inch x 19-inch; sink basin itself 16-inch x 16-inch x 6-inch (complies w/stringent ADA). 2. Gooseneck faucet. Cold water only, except at special locations. 3. Requires coordination with sink and deck mounting holes.				
22 42 16	**COMMERCIAL SINKS LOUNGE**	Just	DL-ADA-2228-A-GR	SS	C 31
	Notes 1. Deck mounted S.S. sink. Overall size is 22-inch x 28-inch (complies w/stringent ADA). 2. Chicago Faucet No. 200ACP-317 Swing faucet, single lever. 3. Requires coordination with sink and deck mounting holes.				
22 42 16	**COMMERCIAL SERVICE SINK**	American Standard		Vitreous China	-
	Notes 1. Faucet shall be Chicago No. 897 with heavy duty hose and stainless steel hanger bracket.				
22 42 16.13	**COMMERCIAL LAVATORIES**	J.R. Smith	Wall Mount w/ concealed arms		-
	Notes 1. Fixture support. For lavatory.				
22 42 16.13	**COMMERCIAL LAVATORIES**	American Standard	Wall Hung	Lucerne - 0355.012	C 32
	Notes 1. Accessible and standard. Use concealed arm supports. 2. Chicago Faucet Model 650-4CP with Chicago 128-NF transformer with 6 volt D/C. 3. Cypress: Replace w/Sloan Basys Mid EFX2 with base plate for hands free service. Battery type sensor operated for retrofit.				
22 42 16.13	**COMMERCIAL LAVATORIES**	American Standard	Counter Mounted	Aqualyn - 0476.028	C 33
	Notes 1. Accessible and standard. 2. Chicago Faucet Model 650-4CP with Chicago 128-NF transformer with 6 volt D/C. 3. Cypress: Replace with Sloan Basys Mid EFX 2 with base plate for hands free service. Battery type sensor operated for retrofit.				
22 45 16	**EYEWASH EQUIPMENT**	Guardian	G1849	-	C 34
	Notes 1. Stainless Steel permanently mounted safety shower and eyewash combination unit. Eyewash mounting height to be access compliant. 2. Provide option of permanently deck-mounted 90° swivel eyewash at sink. Coordinate location with owner prior to commencement of design.				
22 47 00	**BOTTLE FILLERS**	Oasis	Aqua Pointe Versafiller	-	C 35
	Notes 1. Aqua Pointe flush mount model at recess conditions. Versafiller retrofit kit at existing drinking fountains. Provide chillers.				
22 47 00	**DRINKING FOUNTAINS AND WATER COOLERS**	Haws	1109 and 1119	-	C 36
	Notes 1. Single bubbler wall mounted drinking fountain. 2. Mounting height for ADA compliance. 3. Model 1109 does not have chiller, coordinate with owner prior to commencement of design. 4. Stainless Steel. 5. Barrier-free dual wall mounted drinking fountain. 6. Model 1119, “Hi-Lo” barrier free. 7. Stainless Steel.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
22 47 00	**DRINKING FOUNTAINS AND WATER COOLERS**	Elkay	VRCGRNTL8C	-	C 37
	Notes 1. Vandal-resistant wall mounted bi-level green ADA water cooler. 2. For standard and accessible use, barrier free, Stainless Steel cabinet.				
22 63 13	**GAS PIPING FOR LABORATORY FACILITIES**	-	Polyethylene Gas Pipe	-	-
	Notes 1. Use for corrosive solid conditions. 2. Use of plastic piping not recommended. Different pipe sizes and pressures would require different pipe material but with the exception of larger pipes requiring welding typically consider using Steel pipe; malleable-iron threaded fittings, and threaded joints.				
23 00 00	**HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)**				
23 00 00	**HVAC**	Carrier/ Trane	Varies	Varies	-
	Notes 1. No composite bases to be used. Avoid heat pumps if possible. 2. Specify chilled water air handlers, whenever possible, to be tied to the campus plant. Size coils to 20 degree delta T CHW, 40 degree delta T HHW.				
23 05 19	**METERS & GAGES FOR HVAC PIPING**	-	-	-	-
	Notes 1. Pressure Gauges and Thermometers Manufacturers: Marsh, Palmer, Weiss. 2. Pressure gauges shall be 3-1/2-inch dial size, bottom connected, with chrome ring, shut off cock and recalibration. 3. Thermometers shall be immersion type, with aluminum body, 7-1/2-inch face height, separable socket, vari angle and extension neck. 4. Provide turbine type gas flow meters, water flow meters (ultrasonic not recommended), dial thermometers, thermowells, press gage attachment, test plugs, test plug kit and steam flow meter 5. Cypress: Provide butterfly valves with non-spring actuator by Belimo, Model F6150HSU, color orange.				
23 05 23	**GENERAL DUTY VALVES FOR HVAC PIPING**	-	-	-	-
	Notes 1. Steam Ball Valves: Stainless Steel, 100 psi steam pressure by Apollo, Nibco. Ball Valves are not recommended for steam unless trim and seals are properly specified. 2. Water Ball Valves: Apollo, Nibco, Hammond, Milwaukee. 3. Butterfly Valves: Keystone, ITT, Mueller Steam Specialty, Milwaukee. 4. Plug Cocks: Walworth. 5. Strainers: Keckley, Armstrong, Watts, Mueller Steam Specialty. 6. Check Valves: Installed in vertical piping where flow is upward and in discharge piping from pumps shall be water type non slam check valves. 7. Strainers: Locate upstream from each control valve, pump, coil, water make up and steam trap. 8. Water Shut Off Valves: All shut off valves shall be full ported ball valves with stainless steel ball and threaded or solder ends. Butterfly valves, where indicated on the drawings, shall be lug type with extended neck, lever handle for size 3-inch, and handwheel gear drive for 6-inch and larger size valves. 9. Plug Cocks: Up to 2-inch size with bronze body bronze tapered plug, Teflon packing, threaded ends. For 2-1/2-inch and larger with cast iron body and plug, pressure lubricated, Teflon packing, flanged ends. 10. Steam Shut Off Valves: Gate valves, carbon steel or ductile iron body, flexible wedge, S.S. trim. For 2-inch and smaller: Bronze G.V. for LP steam and forged steel G.V. for HP steam.				
23 05 53	**IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT**	-	-	-	C 38
	Notes 1. Color and size of letters and arrows for sizes and types of piping to follow ANSI pipe marking guidelines. Also, include equipment labels, pipe labels, stencils, valve tags. 2. Cypress: Provide strap-on pipe markers by R&R Identification Co., Size G, color green and yellow.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
23 05 93	**TESTING, ADJUSTING, BALANCING AND COMMISSIONING**	-	-	-	-
	Notes 1. Each air handling system, air distribution outlet, exhaust system, boiler, chiller, cooling tower, coils, pumps, Heat exchanger, condensing unit, roof top package unit, hydronic system and steam system shall be tested, adjusted, and balanced in conformity with the AABC Standards. 2. A minimum of 6 copies of the test and balance reports shall be submitted.				
23 07 13	**DUCT INSULATION**	-	-	-	-
	Notes 1. Provide double wall perforated metal with (R-8) insulation on all exterior ducts. Paint finish to be owner verified. 2. Include Indoor concealed and exposed ducts and outdoor exposed ducts insulation. 3. Cypress: Not Applicable.				
23 07 16	**EQUIPMENT INSULATION**	-	-	-	-
	Notes				
23 07 19	**PIPING INSULATION**	-	-	-	-
	Notes 1. Provide jacketing for exterior and interior piping; including thickness for each temperature range, insulation type, and rigid inserts for areas where insulation will be impacted by pipe hangers/supports. Coordinate specification for District review and approval. 2. Concealed pipes insulation shall be formed tubular fiberglass with vapor barrier and factory applied jacketing and plastic cover for all fittings. 3. Exterior exposed pipe insulation shall also be formed tubular fiberglass, but will have aluminum jacketing with a vapor barrier. 4. High traffic areas will get calcium silicate insulation or equal. 5. Cypress: Provide Owens-Corning SSL II ABB piping insulation.				
23 09 00	**INSTRUMENTATION AND CONTROL FOR HVAC**	-	-	-	-
	Notes 1. Provide list of Direct Digital Controls (DDC), Resistance Temperature Detectors (RTC), Differential Pressure (DP), Refrigerant Detection System Senders, etc. Coordinate specification for District review and approval. 2. Cypress: Provide building automation by Automated Logic.				
23 11 23	**NATURAL GAS PIPING**	-	-	-	-
	Notes 1. See Plumbing Section 22 21 12. 2. Cypress: Not Applicable.				
23 21 13	**HYDRONIC PIPING**	-	-	-	-
	Notes 1. Manufacturers of Pipe and Fittings: Steel Pipe - Bethlehem Steel Co., Kaiser Steel, National Tube Co. Copper Tubing - Anaconda, Bridgeport, Mueller. 2. Hot and Chilled Water Piping Above Ground: Steel Pipe 2-1/2-inch and larger, ASTM A 53 Schedule 40 black steel, seamless ERW Grade B pipe with 150 psi butt welding fittings and welding neck flanges. Copper Tubing 2-inch and smaller, Type "L" hard drawn copper tubing ASTM B 88 with wrought copper fittings made up with 95 5 solder and flux, or silver braze. 3. Hot and Chilled Water Piping Below Grade: Use Schedule 40 black steel piping with welded or Victaulic (vic below grade not recommended) joints for NPS 2 and larger. Pipe may be bedded in Dry-Therm or equal without jacketing. If a jacketed product is used it shall be similar to Quick-Therm by Perma Pipe. 4. Condenser Water Piping, Above Ground: Steel Pipe 2-1/2-inch and larger, ASTM A 53 Schedule 40, galvanized carbon steel, seamless ERW Grade B pipe with 150 psi galvanized fittings and welded joints coated with galvaloy. Copper Tubing 2-inch and smaller, Type "L" hand drawn copper tubing ASTM B 88 with wrought copper fittings made up with 95 5 solder and flux, or silver braze. 5. Equipment Drains and Overflows: Copper Tubing 2-inch and smaller, Type "L" hard drawn copper tubing ASTM B 88 with wrought copper fittings made up with 95 5 solder and flux. 6. ASTM Designation for Fitting Materials: Malleable Iron: A 197, Steel Welding Type: A 234, Bronze, Solder Joint: B 88.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
23 21 13	**HYDRONIC SPECIALTIES**	-	-	-	-
	Notes 1. Steam Traps Manufacturers: Armstrong, Hoffman, Sarco, Mueller Steam Specialty. 2. Use float and thermostatic traps for pressures up to 30 psig. Use inverted bucket traps for steam pressures over 30 psig. Bodies and covers shall be of close grained cast iron. The floats, buckets, valves and valve seats shall be Stainless Steel. All traps shall be provided with thermostatic vents. 3. Expansion Tanks Manufacturers: Ace, Bell & Gossett, Wessels, Mepco. 4. Construction: Closed, welded steel, stamped in accordance with ASME Code for 125 psi rating, galvanized inside and outside, supplied with support saddles and with tappings for installation of accessories. Gauge glass set shall be refrigerant type with compression stops. 5. Air Separators Manufacturers: Bell & Gossett, TACO, Spirotherm. 6. Combination air separators/strainers, welded steel air eliminator and dirt separator, stamped in accordance with ASME Code for 125 psi rating, with galvanized steel integral strainer with 3/16-inch perforations, tangential inlet and outlet connections, internal stainless steel air collector tube, and airtrol tank fitting for installation on expansion tank. 7. Pipe Hangers and Supports Manufacturers: Elcen, Grinnell, Tolco. 8. Supports for horizontal piping shall be clevis hanger with threaded hanger rod. Supports for vertical piping shall be riser clamp type. 9. Provide lateral bracing at every hanger exceeding 12-inch in length. 10. Pressure Gauges and Thermometers Manufacturers: Marsh, Palmer, Weiss. 11. Pressure gauges shall be 3-1/2-inch dial size, bottom connected, with chrome ring, shut off cock and recalibration. 12. Thermometers shall be immersion type, with aluminum body, 7-1/2-inch face height, separable socket, vari angle and extension neck. 13. Cypress: Not Applicable.				
23 21 23	**HYDRONIC PUMPS**	-	-	-	-
	Notes 1. Centrifugal Pump Manufacturers: Bell & Gossett, PACO, Peerless, Mepco, Armstrong. Design team to coordinate with owner prior to commencement of design to specify pump types and their applications. 2. Centrifugal pumps shall be flex coupled, with bronze impeller, Stainless Steel shaft, solid volute with direct support to base, mechanical seal, and premium efficiency motor to operate a maximum speed of 1750 rpm. Furnish safety guards over flexible couplings. 3. Provide close-coupled end suction pumps, in line pumps, vertical mounted pumps, double suction pumps.				
23 22 13	**STEAM & CONDENSATE PIPING**	-	-	-	-
	Notes 1. Manufacturers of Pipe and Fittings: Steel Pipe - Bethlehem Steel Co., Kaiser Steel, National Tube Co. Copper Tubing - Anaconda, Bridgeport, Mueller. 2. Steam Piping, Above Ground: Steel Pipe 2-1/2-inch and larger, ASTM A 53 Schedule 40 black steel, ERW or seamless pipe with 150 psi butt welding fittings and welding neck flanges. Steel Pipe 2-inch and smaller, ASTM A 53 Schedule 80 black steel with screwed malleable iron fittings. 3. Steam condensate Pipes: Schedule 80, ERW or seamless steel pipes. 4. ASTM Designation for Fitting Materials: Malleable Iron: A 197, Steel Welding Type: A 234, Bronze, Solder Joint: B 88.				
23 22 23	**CONDENSATE PUMPS**	-	-	-	-
	Notes 1. Steam Condensate Pump Manufacturers: Bell & Gossett, PACO, Armstrong.				
23 23 00	**REFRIGERANT PIPING**	-	-	-	-
	Notes 1. Tubing types and fittings and brazing or soldering requirements to follow ANSI guidelines. 2. Refrigerant valves and refrigerant piping to follow ANSI guidelines. 3. Cypress: Provide copper piping.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
23 25 00	**HVAC WATER TREATMENT**	-	-	-	-
	Notes 1. System Cleaner: Condenser water, chilled water and hot water piping systems. Clean systems with highly alkaline chelating agents to remove all oil and mill scale. Drain and flush systems and feed with clear water. 2. Hot and Chilled Water Systems: Pot type feeder for 125 psi working pressure, complete with flow indicator, drain, service shut off valves and needle valve. Minimum capacity of 3 gallons. 3. Condenser water treatment system shall be by WETCO/Brine Solutions, Inc. and shall employ a high cycle rate with no blow down. System make-up water to the cooling towers shall be run through a high capacity water softener as manufactured by WETCO/Brine Solutions, Inc. or equal. Side stream sand filters shall be provided for cooling towers as manufactured by Lakos or equal. 4. Alternate Condenser Water System Treatment Equipment: Shall include; solution metering pump, 50 gallon solution tanks, liquid level switch, packaged conductivity monitor and controller, water meter, solenoid valves, timers, service valves. 5. Water Treatment: Chemicals for hot and chilled water closed systems and for condenser water system will be furnished by the College Facility Department and shall be added into each system by the contractor under District personnel supervision.				
23 31 13	**METAL DUCTS**	-	-	-	-
	Notes 1. Ductwork and plenums shall be fabricated and supported in accordance with SMACNA Duct Construction Standards, California Mechanical Code. 2. Galvanized Sheet Steel Ducts: ASTM 525 galvanized steel sheet, lock forming quality, having zinc coating in conformance with ASTM A 90. 3. Insulated Flexible Ducts: Wrapped with flexible glass fiber insulation, enclosed by seamless aluminum pigmented plastic vapor barrier jacket. 4. Low pressure ducts rated for 2-inch W.G. positive and 1-1/2-inch W.G. negative pressure. 5. Medium pressure duct rated for 15-inch W.G. positive or negative pressure. 6. Fibrous glass ducts: Not acceptable. 7. Exposed exterior duct with insulation shall be double wall construction finished with aluminum jacketing with R-8 insulation.				
23 33 00	**AIR DUCT ACCESSORIES**	Ruskin	-	-	-
	Notes 1. Specifications and manufacturers for volume dampers, control dampers, duct silencers, combination fire smoke dampers, flexible connections and duct accessories hardware shall be coordinated with owner prior to commencement of design.				
23 34 13 23 34 16 23 34 23 23 34 33	**HVAC FANS**	-	-	-	-
	Notes 1. Specifications and manufacturers for axial fans, centrifugal fans, power ventilators, centrifugal fans with high plume and air curtains shall be coordinated with owner prior to commencement of design. 2. Power Ventilator Manufacturers: Cook, Greenheck, Penn. 3. Roof Exhausters: Centrifugal fan unit direct driven, with spun aluminum housing, resilient mounted motor, disconnect switch, and aluminum bird screen. 4. Centrifugal Fan Manufacturers: Barry Blower, Cook, New York Blower, Dunham Bush. 5. Type: All welded, centrifugal, air foil fans. Class I for 0-inch to 2-inch static pressure. Class II for 2-1/2-inch to 4-inch static pressure.				
23 36 00	**AIR TERMINAL UNITS**	-	-	-	-
	Notes 1. Air terminal Unit Manufacturers: Anemostat, Krueger, Titus, Price. 2. Type: Duct mounted variable air volume supply air control terminals for connection to single medium pressure duct, with variable air volume controls connected to building automation control system. Hot water heating coils shall be provided for zones that are located at the exterior perimeter and in the top floor of the building.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
23 37 13	**DIFFUSERS, REGISTERS, AND GRILLES**	-	-	-	-
	Notes 1. Diffusers and Register Manufacturers: Anemostat, Krueger, Titus, Price. 2. Ceiling Diffusers: Rectangular or square modular core, adjustable direction pattern type diffuser with opposed blade volume damper. Surface mount for gypsum board ceiling and filler panel mount for T Bar lay in application. Fabricate of steel with baked enamel finish. 3. Exhaust and Return Registers: Surface mount - louver face with 1/2-inch bar spacing and opposed blade volume damper, fabricate of aluminum or steel baked enamel finish. T Bar lay in application - perforated face with opposed blade volume damper, fabricate of steel with baked enamel finish. 4. Ceiling Grilles: Same as registers except without opposed blade volume dampers.				
23 37 23	**HVAC GRAVITY VENTILATORS**	-	-	-	-
	Notes 1. Manufacturer and appropriate application shall be coordinated with owner during design. 2. Cypress: Provide HVAC gravity ventilators by McDonnell & Miller Hoffman, Model No. 79.				
23 41 00	**PARTICULATE AIR FILTRATION**	FARR	-	-	-
	Notes 1. Preference for filter types, acceptable sizes, and manufacturers for various levels of filtration shall be coordinated with owner during design. 2. Provide specifications for filter types, filter frames, housings and filter gages for review with owner during design. 3. Cypress: Provide pleated paper frame by Glasflos. Provide specifications for review and approval by the Campus.				
23 51 00	**BREECHINGS, CHIMNEYS, AND STACKS**	-	-	-	-
	Notes 1. Shall be double wall with a water tight stainless inner pipe for condensing water heaters and boilers as manufactured by Metalbestos, Selkirk or equal. 2. Provide single and double wall round or rectangular ducts, metal and flexible based on indicated static pressure class. Provide duct liner, type to be confirmed with owner prior to commencement of design. 3. Type B Vents: a) The gas vent system shall provide a positive flow adequate to exhaust all flue gases to outside atmosphere, without condensation within the vent or spillage at any appliance draft hood. b) All flue-gas carrying parts of the vent system shall be Selkirk (or equal) Type B double-wall gas vent piping and such piping shall be continuous from the appliances' outlet into the vent top of housing. c) Double wall flexible B vent may be used as a segment of an unenclosed Type B gas vent system. d) Provide single and double wall round or rectangular ducts, metal and flexible based on indicated static pressure class. Provide duct liner, type to be confirmed with owner prior to commencement of design. 4. Grease Ducts: a) Fabricate exhaust hoods indicated from minimum #18 gauge thick stainless steel. b) For grease removal at food service exhaust hoods, provide removable, stainless-steel, baffle-type grease filters with spring loaded fastening. c) Provide minimum #14 gauge thick, stainless steel filter frame and removable collection basins or troughs. d) Install commercial kitchen hood exhaust ducts without dips and traps that may hold grease, and sloped a minimum of 2 percent to drain grease back to the hood. e) Install fire-rated access panel assemblies at each change in direction and at maximum intervals.				
23 52 16	**CONDENSING BOILERS**	-	-	-	-
	Notes 1. Provide specifications, manufacturer and appropriate application for boiler trim and controls. Coordinate with owner for review and approval prior to commencement of design 2. Cypress: Not Applicable.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
23 52 33	**WATER TUBE BOILERS**	-	-	-	-
	Notes 1. Hydronic Heat Boiler Manufacturers (for space heating): Bryan Boiler high efficiency force draft (or equal). 2. Finned Water Tube Manufacturers: Raypak, Laars. 3. Commercial: Raypak Model Hi Delta Copper Fin Tube Hot Water Supply Boiler. 4. The boiler shall be design certified and tested by the American Gas Association Laboratories with a listed minimum thermal efficiency of 84% and shall bear the ASME stamp and be inspected and approved by the National Board for 160 psig working pressure complete with Manufacturer's Data Report. 5. The boiler shall be equipped with a 75 psig ASME pressure relief valve, piped by the installer to an approved drain, and a temperature and pressure gage. 6. The water tube heat exchanger of the boiler shall be of the single bank, horizontal grid design with eight integral copper fin tubes, each end of which is rolled into an ASME boiler quality steel tube sheet and sealed to 160 psig rated bronze headers with Silicone "O" rings. 7. The burners will be supplied with a fan assisted, clean burning, highly efficient fuel air mixture. The boiler shall comply with all local and national air quality regulations for low NOx boilers. 8. Firing Mode: The boiler shall be equipped to provide staged firing control of the gas input to boiler. 9. Boiler Control: The boiler shall be equipped with: an operating temperature control, high limit temperature control, outdoor reset, flow switch (mounted and wired), an energy saving pump control relay (Economaster II), diagnostic center, low water cutoff with remote probe and high limit control with auto reset. 10. Provide water tube steam boiler specifications for review and approval by Campus prior to commencement of design. 11. Cypress: Provide water tube boilers by Lochinvar Aquas, Model No. SBN 1500.				
23 52 39	**FIRE TUBE BOILERS**	-	-	-	-
	Notes 1. Provide fire tube boiler specifications for review and approval by Campus prior to commencement of design. 2. Cypress: Provide fire tube boilers by Lochinvar, Model No. CBN 1435.				
23 53 13	**BOILER FEEDWATER PUMPS**	-	-	-	-
	Notes 1. Provide boiler feedwater pumps specifications for review and approval by Campus prior to commencement of design. 2. Cypress: Provide boiler feedwater pumps by Weinman.				
23 53 16	**DEAERATORS**	-	-	-	-
	Notes 1. Provide deaerators specifications for review and approval by Campus prior to commencement of design. 2. Cypress: Not Applicable.				
23 55 13	**FUEL FIRED DUCT HEATERS**	-	-	-	-
	Notes 1. Provide fuel fired duct heaters specifications for review and approval by Campus prior to commencement of design. 2. Cypress: Not Applicable.				
23 55 23	**FUEL FIRED RADIANT HEATERS**	-	-	-	-
	Notes 1. Provide fuel fired radiant heaters specifications for review and approval by Campus prior to commencement of design. 2. Cypress: Provide fuel fired radiant heaters by Schwank, Model No. SJC50.				
23 55 33	**FUEL FIRED UNIT HEATERS**	-	-	-	-
	Notes 1. Provide fuel fired unit heaters specifications for review and approval by Campus prior to commencement of design. 2. Cypress: Provide fuel fired unit heaters by Schwank, Model No. SJC50.				
23 57 00	**HEAT EXCHANGERS FOR HVAC**	-	-	-	-
	Notes 1. Provide heat exchangers specifications for review and approval by Campus prior to commencement of design. Include preference for plate and frame over shell and tube for water to water applications. 2. Cypress: Provide heat exchangers by Mueller.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
23 62 00	**PACKAGE COMPRESSOR AND CONDENSER UNITS**	-	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design. 2. Provide air and water cooled units by Carrier, or Trane, or York. 3. Cypress: Provide package compressor and condenser units by Copeland.				
23 62 13	**AIR COOLED REFRIGERANT CONDENSERS**	-	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design. 2. Provide condensers by Carrier, or Trane, or York. 3. Cypress: Provide condensers by Mitsubishi and Liebert.				
23 64 13	**ABSORPTION CHILLERS**	Thermax	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design. 2. Cypress: Provide absorption chillers by Prochill, Model No. LT 165/16 USGTS.				
23 64 13	**CENTRIFUGAL CHILLERS**	McQuay	WDC	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design. 2. Chillers shall be dual compressor, water cooled, with variable speed drives. 3. Cypress: Provide centrifugal chillers by Carrier, Color beige/light brown.				
23 65 00	**COOLING TOWERS**	-	-	-	-
	Notes 1. Manufacturers: Baltimore Air Coil, Marley, Evapco, American. 2. Type: All stainless steel construction with vertical discharge, induced draft type, with sump, fan, surface sections, draft eliminations and premium efficiency TEFC motor. 3. Provide specifications for review and approval by Campus prior to commencement of design.				
23 73 13	**MODULAR INDOOR CENTRAL STATION AIR-HANDLING UNITS**	-	-	-	-
	Notes 1. Manufacturers: Governair, Temtrol, Huntair, Energy Labs, Dynamic Air, HAAKON. 2. Provide specifications for review and approval by Campus prior to commencement of design.				
23 74 13	**PACKAGED OUTDOOR HVAC EQUIPMENT**	-	-	-	-
	Notes 1. Full BACnet capability, per ASHRAE standards. No plastic curbs. Use all down-draft units unless noted otherwise. 2. Specify chilled water air handlers, in lieu of DX units, to be tied to the campus plant. Size coils to 20 degree delta T CHW, 40 degree delta T HHW. Provide control interface with the existing campus EMS. 3. Air Handling Unit Manufacturers: Energy Labs Inc., Governair, Huntair, Temtrol, Dynamic Air. 4. Constant Volume, 0-inch to 2-1/2-inch static pressure Class 1 supply fans and return fans. 5. Variable air volume, 0-inch to 4-inch static pressure Class II supply fans and return fans. 6. Units shall include the following: Double skin, 16 gauge galvanized steel, insulated casing with welded frame construction with 14 gauge galvanized steel walk on floors; insulated stainless steel condensate drain pan; copper tube and aluminum fin cooling coils and heating coils; double skin construction; hinged and latched access door to each unit section; air filter section for 40% efficient air filters; mixed air plenum with extra low leakage dampers; premium efficiency fan motors; variable frequency drive for fans shall be: ABB, Reliance "VTAC 9", Cutler Hammer, Yaskawa. 7. Roof Top Unit (RTU) Manufacturers: Trane, Carrier, York. a) RTU's shall have an economizer and shall have the highest SEER rating for the manufacturer's standard configuration. Standard unit shall be gas heat and electric cool. 8. Provide specifications for review and approval by Campus prior to commencement of design. 9. Chillers shall be dual compressor, water cooled, with variable speed drives. 10. Cypress: Provide copper on copper cooling coils and heating coils.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
23 81 23	**COMPUTER ROOM AIR CONDITIONERS**	-	-	-	-
	Notes 1. Manufacturers: Data Air, Liebert. 2. Provide specifications for review and approval by Campus prior to commencement of design. 3. Cypress: Provide air conditioners by Liebert.				
23 81 26	**SPLIT SYSTEM AIR CONDITIONERS**	-	-	-	-
	Notes 1. Manufacturers: LG, Mitsubishi, Trane, Carrier. 2. Provide specifications for review and approval by Campus prior to commencement of design. 3. Cypress: Provide split system air conditioners by Liebert.				
23 82 16	**AIR COILS**	-	-	-	-
	Notes 1. Manufacturers: Colmac, Temtrol, Heatcraft, USA Coil. 2. Provide specifications for review and approval by Campus prior to commencement of design.				
23 82 19	**FAN COIL UNITS**	-	-	-	-
	Notes 1. Manufacturers: Trane, Envirotech, Thermal, Magicaire. 2. Provide specifications for review and approval by Campus prior to commencement of design.				

25 00 00	**INTEGRATED AUTOMATION**				
25 00 00	**ENERGY MANAGEMENT SYSTEM (EMS)**	-	-	-	-
	Notes 1. The Central Plant building automation control equipment shall be consistent with the campus control system, shall be BACnet compatible and shall be compatible with the following building automation control systems that are existing, or will be added to. 2. Cypress: Automated Logic Corporation (existing) 3. Fullerton: Johnson Controls - Metasis (existing). 4. Anaheim: Johnson Controls - Hybrid. a) Provide specifications for review and approval by Campus prior to commencement of design. 5. The specifications shall include the extension of the existing and intraconnection with the new central building automation control system, and shall include all labor, material, equipment, software, and programming necessary to meet the functional performance of the new and existing building automation system.				

26 00 00	**ELECTRICAL**				
26 05 12	**MEDIUM VOLTAGE TRANSFORMERS**	-	-	-	-
	Notes 1. Provide indoor dry type transformer contained within a sub-station line up for larger buildings and exterior pad mounted transformers by MGM or Square D for small buildings. 2. Cypress: Provide indoor dry type transformer contained within a sub-station line up. 3. Fullerton: All outdoor transformers to be oil filled.				
26 05 13	**MEDIUM VOLTAGE CABLES**	-	-	-	-
	Notes 1. Use 5kV shielded cable for 4,160 volt distribution. 2. Cypress: Provide 15kV cables.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
26 05 18	**CABLES**	-	-	-	-
	Notes 1. Fullerton: All connections to reap + switches to be done with solid wire unless approved otherwise.				
26 05 19	**LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**	-	-	-	-
	Notes 1. Copper Only, Type THWN/THHN. 2. 208V System Colors: a) A = Black b) B = Red c) C = Blue 3. 480V System Colors: a) A = Brown b) B = Orange c) C = Yellow 4. Provide code sized ground wire in every power or lighting conduit. 5. Provide megger test on every feeder after installation.				
26 05 29	**HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**	Unistrut	P-1000 or P-3300	Galvanized	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
26 05 33	**RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS**	-	-	-	-
	Notes 1. Provide 3/4-inch trade size for power and lighting, 1-inch trade size for communication. 2. Provide EMT with steel compression fittings for concealed work in walls and ceilings and more than 10'-0" above finished floor. 3. Provide PVC, Schedule 40 for underground work. Provide PVC coated steel risers. 4. Provide rigid steel conduit for exposed, exterior and work below 10'-0" above finished floor. 5. Provide flexible steel conduits for drops to lighting fixtures, connection of equipment subject to vibration. Maximum length = 6'-0". 6. Fullerton: Provide minimum size 3/4-inch seal tight condition for all machines. Hook ups size or space cont. subject to approval.				
26 05 36	**CABLE TRAYS FOR ELECTRICAL SYSTEMS**	P-W Industries	Varies	-	-
	Notes 1. Provide aluminum cope trays.				
26 05 39	**UNDER FLOOR RACEWAYS FOR ELECTRICAL SYSTEMS**	Walker or Hubbell	Varies	-	-
	Notes 1. Provide Walker for underfloor duct system. 2. Provide Walker or Hubbell flush floor boxes only. Do not use monuments.				
26 09 23	**LIGHTING CONTROL DEVICES**	WattStopper	DW-200-I	White	C 39
	Notes 1. Occupancy Sensor, Dual Technology, Automatic Self-Adjusting Wall Switch, Dual Switched Outputs, 120/277 VAC for use in rooms requiring Bi-Level switching. 2. Typical companies include Leviton, Sensor Switch, Hubbell. 3. Cypress: Provide Lutron DVTV-WH.				
26 09 23	**LIGHTING CONTROL DEVICES**	WattStopper	DT-200	White	C 40
	Notes 1. Occupancy Sensor, One-way room, to be used with compatible switch pack. 2. Typical companies include Leviton, Sensor Switch, Hubbell. 3. Provide dual technology occupancy sensor.				
	LIGHTING CONTROL DEVICES	WattStopper	DT-300	White	C 41

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
26 09 23	Notes 1. Occupancy Sensor, Two-way room, to be used with compatible switch pack. 2. Typical companies include Leviton, Sensor Switch, Hubbell. 3. Provide dual technology occupancy sensor.				
26 09 23	**LIGHTING CONTROL DEVICES**	WattStopper	BZ-50	White	C 42
	Notes 1. Occupancy Sensor Heavy Duty Switch Pack, universal voltage. 2. Typical companies included Leviton, Sensor Switch, Hubbell. 3. Provide one switch pack per required switch leg. 4. Fullerton: Provide lighting control devices by Paragon, Model No. EC7000PC/20V-RT.				
26 09 23	**LIGHTING CONTROL DEVICES**			-	C 43
	Notes 1. Fullerton: Use Intermatic time clocks only.				
26 10 00	**MEDIUM VOLTAGE ELECTRICAL DISTRIBUTION**	Varies	-	-	-
	Notes 1. Fullerton: Provide Square D. 2. Cypress: Provide Eaton.				
26 24 13	**SWITCHBOARDS**	Varies	-	-	-
	Notes 1. Provide copper bus. 2. Fullerton: Provide Square D. 3. Cypress: Provide Eaton.				
26 24 16	**PANELBOARDS**	Varies	-	-	-
	Notes 1. Provide copper bus with bolt on circuit breakers. 2. Provide 200% rated neutral bus on 208/120V panelboards. 3. Anaheim: Provide Square D. 4. Fullerton: Provide Square D. 5. Cypress: Provide Eaton.				
26 27 26	**ENCLOSED SWITCHES AND CIRCUIT BREAKERS**	-	-	-	
	Notes 1. Anaheim: Provide heavy duty disconnect switches by Square D. 2. Fullerton: Provide heavy duty disconnect switches by Square D. 3. Cypress: Provide heavy duty disconnect switches by Eaton.				
26 51 00	**INTERIOR LIGHTING**	-	-	-	-
	Notes 1. General Purpose T5 Troffer 2-foot x 4-foot and electronic ballast. Verify foot candles per IES Standards. 2. No Chinese manufactured ballast. 3. All T-5 lamps are to be 4100 Kelvin temperature for uniform CR levels. If any CFL's are available in 4100k, they should be specified as such when used. 4. Fullerton: Advance ballasts preferred. 5. Cypress: Provide LED for new construction and retrofits. Fixtures shall be approved through Facilities during the design phase of the project.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
26 56 00	**EXTERIOR LIGHTING**	-	Verify w/ District	Verify w/ District	-
	Notes 1. Use Sylvania fluorescent lamps. 2. Use Phillip and Sylvania HID lamps. 3. Use clear metal halide lamp, universal mounting position. 4. Fullerton: a) Use LED fixtures, vandal resistant. b) Use Phillips Lamps fluorescent. 5. Cypress: a) Use LED fixtures for general application b) Compact fluorescent may be used in special applications. c) Fixtures shall be approved through Facilities during the design phase of the project.				
27 00 00	**COMMUNICATIONS**				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Conduit	Varies	-	-	-
	Notes 1. Above Grade: EMT. 2. Below Grade: PVC Schedule 40, concrete-encased. 3. Fullerton: Above grade below 10 feet, use ridged condition.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Surface Raceway	Panduit Non-Metallic Raceway, Wiremold Non-Metallic Raceway	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Hangers and Cable Ties	Erico, Cooper B-Line, 3M	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Ladder Racking	Chatsworth Products (CPI), Cooper B-Line	-	-	-
	Notes 1. Both open ladder and closed types are acceptable. 2. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Cable Tray	PW Industries	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Splice Cases – Indoor Copper	Systimax, Preformed, 3M	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Cable Tags and Labels	Panduit, 3M, Erico	-	-	-
	Notes 1. Color to match current cable tags and labels as best as possible.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Junction Boxes	Steel City, T & B, Appleton, Carlon	-	-	-
	Notes 1. Cypress: Provide Raco junction boxes. 2. Anaheim: Provide Raco junction boxes.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Cable Distribution Rings	Northern Telecom	-	-	-
	Notes 1. Fullerton: Plug all open spaces with expandable plugs.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Communications Manholes	Jensen Precast, Oldcastle Precast	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Communications Handholes	Jensen Precast, Oldcastle Precast	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Communications Manhole/Handhole Hardware	Jensen Precast, Oldcastle Precast	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Ductbank Locating Cable (Detectable Warning Tape)	Brady, Pro-Line	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Pull Rope	Neptco/Muletape	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Bonding/Grounding	Erico, Cooper B-Line Harger	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 05 01	**COMMON WORK RESULTS FOR COMMUNICATIONS** Raceway Tags	Panduit	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Copper Cable Termination Blocks	Systimax	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
27 10 01	**STRUCTURED CABLING** BDF/IDF Wall Mounted Equipment Enclosure	Chatsworth Products (CPI)	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** BDF/IDF Equipment Racks	Chatsworth Products (CPI)	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Cable Management	Chatsworth Products (CPI)	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Interbuilding Copper Cable	Systimax, General Cable	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Connector/Protectors	Systimax	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Protector Panels	Systimax	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Cable Pair Protectors	Systimax, Siecor	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Fiber Optic Terminal Panels	Systimax	-	-	-
	Notes 1. Provide 72 Port or 24 Port.				
27 10 01	**STRUCTURED CABLING** Tube Cable Distribution Units	Sumitomo Electric	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Interbuilding Air Blown Fiber Optic Cable	Sumitomo Electric	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Intrabuilding Air Blown Fiber Optic Cable	Sumitomo Electric	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Fiber Optic Station Cable	Sumitomo Electric	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
27 10 01	**STRUCTURED CABLING** Copper Riser Cable	Systimax	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Coaxial Riser Cable	CommScope	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Coaxial Backbone Cable	CommScope	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Coaxial Station Cable	CommScope	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Copper Station Cable	Systimax	-	-	-
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
27 10 01	**STRUCTURED CABLING** Station Outlets [Campus Standard]	Varies			
	Notes 1. Cat 5e, Cat 6 - Systimax. 2. Coax - Gilbert. 3. Fiber - Systimax. 4. Provide specifications for review and approval by Campus prior to commencement of design.				
28 00 00	**ELECTRONIC SAFETY AND SECURITY**				
28 13 01	**SECURITY ACCESS CONTROL** Software Operating System	Hirsch Velocity for Windows	-	-	-
	Notes 1. Cypress: Provide Schlage SMS Enterprise (new name is Vanderbilt). a) DO NOT provide Hirsch.				
28 13 01	**SECURITY ACCESS CONTROL** Control Panels	Varies	-	-	-
	Notes 1. 8 Door Control Panel - Hirsch VM8N with SNIB Communications Board. 2. 2 Door Control Panel - Hirsch VM2N with SNIB Communications Board. 3. Cypress: DO NOT provide Hirsch.				
28 13 01	**SECURITY ACCESS CONTROL** Power Supplies	Varies	-	-	C 44
	Notes 1. 6 Amp - Securitron BPS-24-6. 2. 4 Amp - Securitron BPS-24-4. 3. 2 Amp - Securitron BPS-24-2.				
28 13 01	**SECURITY ACCESS CONTROL** Keypads	Varies	-	-	C 45
	Notes 1. Hirsch DS47L (ScramblePad). 2. Hirsch 47L-HI (High-Intensity ScramblePad). 3. Hirsch 47L-SPX (ScramblePad w/Proximity Card Reader). 4. Hirsch 47L-HI-SPX (ScramblePad w/Proximity Card Reader). 5. Cypress: DO NOT provide Hirsch. Provide 26 bit MiniProx, ThinLine or equal.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
28 13 01	**SECURITY ACCESS CONTROL** Card Readers-Mounted	Varies	-	-	28 13 01c
	Notes 1. Mullion Mount - HID 5365 MiniProx (Hirsch CR21L-BL) or HID 6005 ProxPoint (Hirsch CR20L-BL). 2. Wall Mount - HID 5395 ThinLine II (Hirsch CR23L-BL). 3. Cypress: DO NOT provide Hirsch.				
28 13 01	**SECURITY ACCESS CONTROL** Reader Interface	Varies	-	-	C 47
	Notes 1. Hirsch MR1A (Match Reader Interface for Installation with Hirsch mounting boxes). 2. Hirsch MR1B (Match Reader Interface for Installation with Generic J-Boxes). 3. Cypress: DO NOT provide Hirsch.				
28 13 01	**SECURITY ACCESS CONTROL** Proximity Access Cards-Non-Printable	HID 1326LSSSV, ProxCard II, Hirsch IDC20-125	-	-	28 13 01
	Notes 1. Cypress: Provide HID H-10301 Format Cards. 2. DO NOT provide Hirsch.				
28 13 01	**SECURITY ACCESS CONTROL** Proximity Card-Printable	HID 1326LGSSV, ProxCard II, Hirsch PVC-CP-H	-	-	C 48b
	Notes 1. Cypress: DO NOT provide Hirsch.				
28 13 01	**SECURITY ACCESS CONTROL** Expansion Alarm Input Boards	Hirsch AEB8	-	-	C 49
	Notes 1. Cypress: DO NOT provide Hirsch.				
28 13 01	**SECURITY ACCESS CONTROL** Expansion Relay Output Board	Hirsch REB8	-	-	C 49a
	Notes 1. Cypress: DO NOT provide Hirsch.				
28 13 01	**SECURITY ACCESS CONTROL** Security Line Module	Hirsch	-	-	C 50
	Notes 1. Hirsch MELM1 (Monitors Door Status). 2. Hirsch MELM2 (Monitors Door Status and Request to Exit). 3. Hirsch MELM3 (Monitors Door Status and Request to Exit; Provides Tamper Protection). 4. Cypress: DO NOT provide Hirsch.				
28 13 01	**SECURITY ACCESS CONTROL** Door Status Contact Switches	Varies	-	-	28 13 01a
	Notes 1. Sentrol 1078C (1” steel doors and wood doors). 2. USP US-240 (Twist-Loc). 3. Amseco AMS-37L (Surface Mounted for Rated Doors, Concrete-Filled Jambs). 4. Sentrol 2505A (Roll Up Doors).				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
28 13 01	**SECURITY ACCESS CONTROL** LAN/WAN Interface	Hirsch LIF-U	-	-	C 52
	Notes 1. Provide specifications for review and approval by Campus prior to commencement of design.				
28 13 01	**SECURITY ACCESS CONTROL** Memory Code Expansion Boards	Varies	-	-	28 13 01b
	Notes 1. Hirsch MEB-CB128 (Code/Card Memory). 2. Hirsch MEB-BE (Buffer). 3. Cypress: Provide Schlage SMS (Newest Name: Vanderbilt) or Geoffrey. a) DO NOT provide Hirsch.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Digital Video Recorder (16-Channel)	Cascadia X-CAS-DVRT-120-16T	-	-	-
	Notes 1. Cypress: Provide Pelco Digital Sentry - Central Server.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Remote Viewing Software	Cascadia “F” Series	-	-	-
	Notes 1. Cypress: Provide Pelco Digital Sentry Control Panel.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Camera Power Supply (16 Cameras, 24Vac)	Altronix ALTV24-16	-	-	C 54
	Notes 1. Cypress: Not Applicable.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Fixed Camera	Samsung SDC-311	-	-	C 55
	Notes 1. Cypress: Provide Pelco camera line - IP based cameras.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Fixed Camera Lens (Varifocal 3.5-8mm, f1.4)	Tamron 13VG35814	-	-	C 56
	Notes 1. Indoor/Outdoor cameras are now purchased as a complete system for use. Provide Pelco. 2. Cypress: Not Applicable.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Fixed Camera Mount (20 lb.)	Pelco EM1400	-	-	C 57
	Notes 1. Indoor/Outdoor cameras are now purchased as a complete system for use. Provide Pelco. 2. Cypress: Not Applicable.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Fixed Camera Enclosure (Outdoor Applications)	Pelco EH3512MT	-	-	C 58
	Notes 1. Indoor/Outdoor cameras are now purchased as a complete system for use. Provide Pelco. 2. Cypress: Not Applicable.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
28 23 01	**SECURITY VIDEO SURVEILLANCE** Pan-Tilt-Zoom Camera	Varies	-	-	C 59
	Notes 1. Indoor (Pelco Spectra III) - Pelco SD53C22-PG-0. 2. Outdoor (Spectra III) - Pelco SD53C22-PG-E0. 3. Cypress: Provide Pelco IP based cameras. a) Pan/Tilt/Zoom mounts are not exclusive to Pelco.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Pan-Tilt-Zoom Camera Mount	Varies	-	-	C 60
	Notes 1. Parapet Mounted: Pelco PP351. 2. Wall Mounted (Gray, w/24Vac Power Supply): Pelco IWM240GY. 3. Ceiling/Soffit Mounted: Pelco MRCA. 4. Cypress: Provide Pelco PP351 for parapet. a) Pan/Tilt/Zoom mounts are not exclusive to Pelco.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Pole Mount Adapter (Use with IWM Series)	Pelco PA402	-	-	C 61
	Notes 1. Pan/Tilt/Zoom mounts are not exclusive to Pelco. 2. Cypress: Provide Pelco.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Viewing Monitor (17" LCD Flat Screen)	Princeton 2K701	-	-	-
	Notes 1. Provide Windows based PC, display agnostic. 2. Cypress: Not Applicable.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Grounding and Bonding	Varies	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Hangers and Supports	Varies	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Conduits and Backboxes	EMT 4"	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Cable Trays	PW Industries	-	-	-
	Notes 1. 12-inches wide.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Ladder Racking	Chatsworth, B-Line, Cooper	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Surface Raceway	Underground Ducts and Raceways	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Cable Tags and Labels	Panduit	-	-	-
	Notes 1. Cypress: Provide same as District Telecom Standards.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
28 23 01	**SECURITY VIDEO SURVEILLANCE** Identification	Varies	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Hangers and Cable Ties	Erico, Panduit	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Voice/Data Outlets	Systimax	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Data-Only Outlets	Systimax	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Coax-Only Outlets	Gilbert	-	-	-
	Notes 1. Cypress: Provide Cisco 48 Port POE Data Switches.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Patch Panels	Systimax	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** BDF/IDF Wall-Mounted Equipment Enclosures	Chatsworth Products	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Cable Management	Chatsworth Products	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Coax Station Cable	Varies	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Communications Manholes and Vaults	Jensen Precast, Oldcastle Precast	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Pull Rope	Carlon	-	-	-
	Notes 1. Fullerton: Pull rope + plugs all spare condition.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Bonding/Grounding	Ground Rods Erico, Harger	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Fiber Optic Cable (Interbuilding)	Sumitomo	-	-	-
	Notes				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
28 23 01	**SECURITY VIDEO SURVEILLANCE** Cameras	Varies	-	-	28 23 01a
	Notes 1. Samsung SDC-311 Color. 2. Pelco ICS090 Color Dome. 3. Pelco ISCS300 Color Camera.				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Security Camera Digital Video Recorder	Cascadia X-CAS-DVRT-120-16T	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Access Control Software Operating System	Cascadia X-CAS-DVRT-120-16T	-	-	-
	Notes				
28 23 01	**SECURITY VIDEO SURVEILLANCE** Alarm Devices	Varies	-	-	-
	Notes 1. Sentrol 1078C, 1” steel and wood door contact (non-rated doors). 2. USP US-240 Twist-Loc door contact (rated doors, in place of hinge screw). 3. Amseco AMS-37L. 4. Sentrol 2505A, Roll-Up Door Status Contact.				
28 31 00	**FIRE DETECTION AND ALARM**	Simplex	4020	Varies	-
	Notes 1. No substitutions. 2. Fullerton: Simplex 4100 U Panel. 3. Cypress: Simplex 4100 ES Panel.				
31 00 00	**EARTHWORK**				
31 00 00	**EARTHWORK**				
	Notes 1. Soils Investigation reports shall not be included in the contract documents. 2. Incorporate the recommendation of the soils report into the design of the facility.				
32 00 00	**EXTERIOR IMPROVEMENTS**				
32 12 16	**ASPHALT CONCRETE PAVING**	Guardtop	-	-	C 64
	Notes 1. Aggregates: Use 1/2-inch maximum size for walks. Use 3/4-inch maximum size for parking lots. 2. Use Asphalt emulsions seal, such as "Guardtop" manufactured by Industrial Asphalt. 3. Use minimum thickness of 2-inch overlay. Do not put Petromat fabric between the existing and new paving, unless specifically authorized by the District. 4. Properly prepare existing paving to be resurfaced. Use tack coat to assure bond between new and existing. 5. For large areas to be resurfaced, prepare by grinding to assure bond. 6. For fire access roads, provide 4-inch AC paving over 9-inch crushed aggregate base. Review structural section with structural engineer and conform to recommendations of soils report for each case. 7. Bituminous paving overlayment: At areas of existing bituminous concrete pavement, provide new overlayment compacted to 95% density. Thickness to be coordinated with owner prior to commencement of design. Provide slightly crowned surface where new				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
32 13 00	**RIGID PAVING**	-	-	-	-
	Notes 1. Use Portland Cement Concrete, Type II (Type V where concrete is in contact with earth) having a minimum 3,250 (560-C-3250) psi compressive strength. 2. Review structural section with structural engineer and conform to recommendations of soils report for each case. 3. Fire Lanes shall be a minimum of 6-inches thick reinforced with No. 3 rebar at 12-inches O.C. both ways over 4-inches minimum of aggregate base compacted to 95%. Review structural section with structural engineer and conform to recommendations of soils report for each case. 4. Fullerton: Fire Lanes + driveways should be minimum of 6-inches thick + 5000 psi concrete. Review structural section with structural engineer and conform to recommendations of soils report for each case.				
32 13 13	**CONCRETE PAVING**	-	-	-	
	Notes 1. Use concrete having minimum 3,000 psi compressive strength for all sitework. 2. Use waterproof cement for water feature ponds, pools, etc. 3. Walkways at non-vehicle areas shall be a minimum of 4-inches thick over 3-inches of aggregate base with No. 3 bars at 18-inches O.C. both ways. Review structural section with structural engineer and conform to recommendations of soils report for each case. 4. Walkways crossing vehicle areas shall be a minimum of 6-inches thick over 3-inches of aggregate base with No. 4 bars at 12-inches O.C. both ways. Review structural section with structural engineer and conform to recommendations of soils report for each case. 5. All walkways shall have a thickened edge. Review structural section with structural engineer and conform to recommendations of soils report for each case. 6. Trash Enclosures shall be a minimum of 6-inches thick with thickened edge reinforced with No. 4 bars at 12-inches O.C. both ways over 3-inches of aggregate base and outside lift area (apron). Review structural section with structural engineer and conform to recommendations of soils report for each case. 7. Exterior Flatwork shall be a minimum of 4-inches thick over 3-inches of aggregate base with No. 3 bars at 18-inches O.C. both ways. Review structural section with structural engineer and conform to recommendations of soils report for each case. 8. Concrete mix and curing shall provide for low vapor emission prior to flooring placement. 9. Coordinate with Section 07 26 00 for all moisture sensitive flooring areas. 10. Fullerton: All concrete should be a minimum of 3000 psi unless first approved by Campus.				
32 16 00	**CURBS, GUTTERS, SIDEWALKS AND DRIVEWAYS**		-	-	-
	Notes 1. Verify with District whether mow strips are to be provided. 2. Where mow strips are provided, provide not less than 12-inch deep foundation for mow strips. Minimum 5-inches wide when separating grass from other landscaping. Minimum 18-inches wide when against buildings, walls or other vertical surfaces. 3. Provide reinforcing steel in all linear concrete items such as curbs, mow strips, etc. to minimize cracking. Minimum 2 No. 4 bars. 4. Provide reinforcing steel in all sidewalks and plazas which are of sufficient width for vehicles to drive on them. Minimum No. 4 bars at 18-inches O.C., or No. 3 bars at 1-inch O.C.				
32 17 23	**PAVEMENT MARKING**		-	-	-
	Notes 1. White for parking stalls. 2. Blue for disabled access. For loading and unloading access aisle, provide blue border, #15090/Federal Standard 595B and within the blue border, hatched lines a maximum of 36-inches on center shall be painted a color contrasting with the parking surface. For dark asphalt, provide white cross hatch. 3. White for directional indicators. 4. Use only water based traffic type paint.				
32 31 13	**CHAIN LINK FENCES AND GATES**		-	-	-
	Notes 1. Use galvanized, minimum 9 gauge wire, top rails. 2. Use swinging gates for pedestrian access, not rolling types. 3. For vehicle access, rolling gates shall be ground supported type, not top rail supported. 4. Use manual gates. 5. Steel chain-link fabric: 2-inch mesh, 0.120 diameter, Zn-5-Al-MM Alloy coated fabric: ASTM F 1345 with Class 1, 0.60-oz/sq. ft. minimum coating weight.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
32 80 00	**IRRIGATION SYSTEM**		-	-	
	Notes 1. Typically, use Schedule 40 PVC with Schedule 80 fittings. 2. Use Rainmaster controllers exclusively, with provisions for future central system. 3. Use Toro or Hunter sprinkler heads only, gear driven types where applicable. 4. Valves should be Griswold, Toro, or Weathermatics. Use brass, not plastic, for 2-inch size and larger. 5. Valve boxes and covers shall be strong enough not to break or deform when motorized vehicles run over them. Such boxes shall be set in a gravel base with sufficient compaction to preclude settling when run over by motorized vehicles. 6. Provide sleeves where pipes run under concrete walks. 7. Provide swivel type risers "Marlex" or double 90° nipple and double 90°. Use threaded risers only for connections to the pipe, so they can be replaced. 8. Provide water hammer arresters on all systems. 9. Provide irrigation to all planting, even drought resistant types. 10. Wiring from controller to valves shall be direct burial. Place directly under main line to valves or provide Schedule 40 PVC buried conduit for wiring. 11. Cypress: Provide drip irrigation consisting of 1/2-inch solid drip irrigation tubing (main line) and 1/4-inch PVC distribution tubing with pressure-compensating drip emitters attached to the ends of 1/4-inch drip distribution tubing and staked next to individual plants.				
32 84 13	**DRIP IRRIGATION SYSTEM** Drip Line	Rainbird	Black Stripe (XBS)		C 65
	Notes 1. With (1) 2 GPH Xeri-Bug Emitter (XB) per plant.				
32 84 13	**DRIP IRRIGATION SYSTEM** Drip Hose	Rainbird	Sub-Surface (XFS)		C 65a
	Notes				
32 84 23	**IRRIGATION SYSTEM** Reduce Pressure Backflow Preventer	Febco	825YA	Powder Coated	C 66
	Notes 1. Provide StrongBox - Backflow Enclosure - cold rolled steel, with standard powder coat finish. 2. Cypress: DO NOT provide backflow if using existing irrigation water line.				
32 84 23	**IRRIGATION SYSTEM** Flow Sensor Valve	Hunter			-
	Notes				
32 84 23	**IRRIGATION SYSTEM** Master Valve	Superior	3300 Series	Brass	C 67
	Notes				
32 84 23	**IRRIGATION SYSTEM** Irrigation "Smart" Controller	Rainmaster	Eagle-i-Plus		C 68
	Notes 1. Provide all irrigation controllers with stainless steel Rainmaster Enclosure Box.				
32 84 23	**IRRIGATION SYSTEM** Rain Gauge	Irritrol	Rainsensor Series		C 69
	Notes				
32 84 23	**IRRIGATION SYSTEM** Gate Valves	Nibco		Brass	C 70
	Notes				
32 84 23	**IRRIGATION SYSTEM** Remote Control Valve	Superior	950 Series		C 71
	Notes 1. Cypress: Provide Weathermatics Brass.				
32 84 23	**IRRIGATION SYSTEM** Quick Coupling Valves	Rainbird	3-LRC Series		-
	Notes				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
32 84 23	**IRRIGATION SYSTEM** Rotor Heads (pop-up heads)	Hunter	Rainsensor Series		-
	Notes				
32 84 23	**IRRIGATION SYSTEM** Spray Heads (pop-up heads)	Rainbird	1800 Series (SAM)		C 72
	Notes				
32 84 23	**IRRIGATION SYSTEM** Bubbler Heads (in canister)	Rainbird	RWS Series		C 73
	Notes				
32 84 23	**IRRIGATION SYSTEM** Mainline (PVC) - 1-1/2-inches & Smaller	Pacific Plastics	Schedule 40 - 18-inches min deep		-
	Notes				
32 84 23	**IRRIGATION SYSTEM** Mainline (PVC) - 2-inches & Larger	Pacific Plastics	CL 315 - 18-inches min deep		-
	Notes				
32 84 23	**IRRIGATION SYSTEM** Lateral Line (PVC)	Pacific Plastics	CL 200 - 12-inches min deep		-
	Notes				
32 84 23	**IRRIGATION SYSTEM** Sleeve (PVC)	Pacific Plastics	Schedule 40 - 24-inches min deep		-
	Notes				
32 84 23	**IRRIGATION SYSTEM** Fittings (PVC)	Lasco	Schedule 80		-
	Notes				
32 90 00	**PLANTING**				-
	Notes 1. Consult with Campus Ground, and College Administration, prior to any design work. 2. Perform soil testing for each planting area, as soil types vary over the campuses. Use appropriate soil amendments for each soil type, as evidenced by the results of soil tests. 3. Use drought tolerant plants only. 4. Provide ornamental grasses for planter beds. 5. For relocating existing plants (10 gallon or larger) or trees, employ the services of a licensed arborist. 6. All plant material shall be subject to review and written approval by the owner prior to planting. 7. Cypress: All plant material shall be subject to review and written approval by the Director Physical Plant/Facilities or designee prior to planting.				
32 91 13	**MULCHING** Mulch	-	-	-	-
	Notes 1. Mulch shall be applied at a minimum depth of 2-inches and shall be “redwood” mulch.				
32 92 00	**TURF AND GRASSES** Turf - Sod	Marathon	Iie		-
	Notes 1. Turf application shall be “sod” as deemed applicable by the District on specific projects.				
32 92 00	**TURF AND GRASSES** Turf - Hydroseed	Marathon	Iie		-
	Notes 1. Turf application shall be “hydroseed” as deemed applicable by the District on specific projects.				
32 93 13	**GROUND COVERS** Ground Covers	-	-	-	-
	Notes 1. Ground cover material may be installed from flats or container stock 2. All Ground Covers shall be drought tolerant.				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
32 93 33	**SHRUBS** Shrubs and Vines	-	-	-	-
	Notes 1. Minimum Size shrub and vines shall be one gallon. 2. All shrubs shall be drought tolerant (M-L) species.				
32 93 43	**TREES** Trees	-	-		-
	Notes 1. Minimum tree size shall be 15 gallon with non-evasive roots and drought tolerant species.				
32 93 43	**TREES** Root Barriers	Deep Root Corp.	UB-24-2	Black	C 74
	Notes 1. All trees located 5-feet or less from structures and/or hardscape edge shall receive root barriers.				
33 00 00	**UTILITIES**				
33 46 00	**SUBDRAINAGE SYSTEMS**	-	-	-	-
	Notes 1. Provide subdrainage systems at perimeter of water features. 2. Provide subdrainage systems at all retaining wall situations. 3. Provide subdrainage systems at floor levels below grade.				
34 00 00	**TRANSPORTATION**				
	Notes				
40 00 00	**PROCESS INTEGRATION**				
	Notes				
41 00 00	**MATERIAL PROCESSING AND HANDLING EQUIPMENT**				
	Notes				
42 00 00	**PROCESS HEATING, COOLING, AND DRYING EQUIPMENT**				
	Notes				
43 00 00	**PROCESS GAS AND LIQUID HANDLING, PURIFICATION, AND STORAGE EQUIPMENT**				
	Notes				
44 00 00	**POLLUTION AND WASTE CONTROL EQUIPMENT**				
	Notes 1. Provide options for sorting of trash, food waste and recyclables. Coordinate with owner prior to the commencement of design. 2. Cypress: Paper recycling and some localized recycling as needed for all other recyclables. Contractor to recycle all materials that are considered recyclable and provide documentation of type and quantity to the District as required per contract documents.				
45 00 00	**INDUSTRY-SPECIFIC MANUFACTURING EQUIPMENT**				
	Notes				

CSI Section	Product Description	Manufacturer	Model If Appl.	Color/Finish	Exhibit
46 00 00	**WATER AND WASTEWATER EQUIPMENT**				
	Notes				
48 00 00	**ELECTRICAL POWER GENERATION**				
	Notes				