SECTION 12 20 00

WINDOW TREATMENT

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\*\* NOTE TO SPECIFIER \*\* Skyco Shading Systems, Inc.; manual shades, motorized shades, panel glide system, skylight shades.  
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This section is based on the products of Skyco Shading Systems, Inc., which is located at:  
3411 W. Fordham Ave.  
Santa Ana, CA 92704-4422  
Toll Free: 800-777-5926  
Phone: 714-708-3038  
Fax: 714-708-3053  
Email: info@skycoshade.com  
Web: www.skycoshade.com  
Skyco Shading Systems designs and manufactures products to provide superior light and glare control without impeding a view. With a complete line of products, including manual and motorized shades, Roman shades, skylight shades with flat (FTS style or spring tension) or soft fold, Skyco provides solutions to complement a variety of interior design styles.  
Wherever the sun rises or sets, chances are good that Skyco Shading Products are enhancing the experience. Skyco offers one of the largest solar and blackout roller shade fabric selections in the industry.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Manually operated roller shades.
    2. Electrically operated roller shades and controls.
    3. Vertical vane blinds.
    4. Roman shades.
    5. Panel glide system.
    6. Skylight shade system.
    7. Bottom up manual and electrically operated roller shades.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 06 10 00 - Rough Carpentry.
    2. Section 06 20 00 - Finish Carpentry.
    3. Section 07 91 26 - Joint Fillers.
    4. Section 09 21 16.23 - Gypsum Board Shaft Wall Assemblies.
    5. Section 09 50 00 - Ceilings.
    6. Section 08 54 13 - Fiberglass Windows.
    7. Section 08 60 00 - Roof Windows and Skylights.
    8. Section 09 51 23 - Acoustical Tile Ceilings.
    9. Section 09 90 00 - Painting and Coating.
    10. Section 26 05 00 - Common Work Results for Electrical.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be specified, including:
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Style, dimensions, profiles, finishes and material descriptions.
        4. Installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Wiring diagrams.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Fabric Certification: Passes NFPA 701 small and large scale. Materials tested shall be identical to products proposed for use.
    2. Fabric Bacteria and Fungal Resistance: Meets or exceeds ASTM G22 & G21.
    3. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, product details, installation details, operational clearances, wiring diagrams, assembly and mounting details, typical installation details and recommendations and fit-up to adjacent work, finishes, options and accessories.
    4. LEED Submittals: Provide documentation for Credit requirements to be met.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Window Treatment Schedule: With same room designations indicated on the Drawings; including but not limited to opening sizes and key to typical mounting details.
    2. Maintenance Data: Instructions and precautions for cleaning shade cloth material, operating hardware and controls.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if selections have already been made.

* + 1. Selection Samples:

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Fabric: Submit 2 sets of samples, minimum 4 inches by 6 inches (102 mm x 152 mm), representing manufacturer's standard range of options for shade cloth.
      2. Finishes: Submit two sets of samples, minimum 4 inches by 6 inches (102 mm x 152 mm) representing manufacturer's standard range of finishes specified for steel and aluminum.
    1. Verification Samples:

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Fabric: Submit 2 samples, minimum 4 inches by 6 inches (102 mm x 152 mm), representing actual products specified for shade cloth.
      2. Finishes: Submit 2 samples, minimum 4 inches by 6 inches (102 mm x 152 mm) representing actual finishes specified for steel and aluminum.
      3. One complete shade assembly as specified herein.
  1. QUALITY ASSURANCE
     1. Manufacturer's Qualifications: Engaged in manufacturing of products of similar type to that specified, with a minimum of 20 years successful experience.
     2. Installer Qualifications: The installer shall be a firm qualified to install the product specified, as demonstrated by prior experience. Minimum 10 years successful experience installing like products.
     3. Single Source Requirements: To the greatest extent possible provide products specified in this section from a single manufacturer.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
       1. Finish areas designated by Architect.
       2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
       3. Refinish mock-up area as required to produce acceptable work.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Delivery: Deliver materials to site protected from damage.
     2. Storage:
        1. Store materials in manufacturer's unopened packaging until ready for installation and in accordance with manufacturer's instructions.
        2. Materials shall be stored in a clean area free of corrosive fumes and dust, and away from construction activities.
        3. Materials shall be stacked horizontally using plastic or wood shims such that drainage and ventilation are provided for, and such that water cannot accumulate in, about, or upon the containers.
  2. PROJECT CONDITIONS, COORDINATION AND SEQUENCING
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
     2. Conference: Convene a pre-installation conference to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.
        1. Building shall be enclosed; windows, frames and sills shall be installed and glazed.
        2. Wet work shall be complete and dry; including but not limited to concrete, masonry, plaster, stucco, terrazzo, sheet rock, spackling, and taping (including sanding)
        3. Ceilings, window pockets, electrical and mechanical work above window treatments shall be complete.
  3. WARRANTY
     1. Manufacturer's Standard Limited Warranty: Against manufacturing defects in materials and workmanship.
        1. Shade: Warranted for 10 years after completion of installation.
        2. Fabric: Warranted for intended use - interior for 10 years, exterior for 5 years from date of shipment.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Motors: Warranted 5 years - electronics and accessories 5 year.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Skyco Shading Systems, Inc., which is located at: 3411 W. Fordham Ave.; Santa Ana, CA 92704-4422; Toll Free Tel: 800-777-5926; Tel: 714-708-3038; Fax: 714-708-3053; Email: [request info (info@skycoshade.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Skyco+Shading+Systems,+Inc.&coid=38588&rep=&fax=714-708-3053&message=RE:%20Spec%20Question%20(12490sky):%20%20&mf=); Web: <http://www.skycoshade.com> | <http://www.skycoselect.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Tech Shades are stylish manual shades that provide excellent light and glare control without obstructing the view to the exterior. Skyco offers a selection of Tech Shade manual shade systems:

* 1. ROLLER SHADES - MANUALLY OPERATED
     1. Roller Shades: Provide shades by Skyco Shading Systems, Inc. Shades shall be custom fabricated to size, color and material as indicated and required to provide light and privacy control.

\*\* NOTE TO SPECIFIER \*\* Individual shades, one fabric band on one tube. Delete if not required.

* + - 1. Configuration: Individual shades.

\*\* NOTE TO SPECIFIER \*\* Banded shades are 2 or more fabric bands on one tube. Shades must all be the same length and close in width. Shades can be manual or motorized. Manual: Up to 150 square feet (14 sq m) and 18 pounds (8.2 kg) maximum. Spring Lift Assist is recommended on oversize shades. Motorized: Up to 3 panels on 12 feet (3658 mm) wide 2-1/2 inches (64 mm) tube.

* + - 1. Configuration: Banded shades.

\*\* NOTE TO SPECIFIER \*\* Coupled shades are 2 or more separate tube and shade bands joined together by the use of mechanical couplers and operated by one drive mechanism. All shades operate in tandem. The maximum number of bands which can be coupled together is calculated on the total weight and size of the shades and the number of coupling devices required. These shades are manual or motorized. Manual Straight Panels: 2-3 panels for a total of 15 feet (4.6 m) (clutch or crank). Crank operators are available in several gear ratios for ease of operation for large sizes. Motorized Straight Panel: 2-4 straight panels for a total width of 40 feet (12 m) or 6-8 straight panels for a total width of 40 feet (12 m). Motorized Angled Panels: Number and size of panels vary depending on the coupler angle and the sizes of the shade panels.

* + - 1. Configuration: Coupled shades.

\*\* NOTE TO SPECIFIER \*\* Standard roll of the material places the material closest to the window. Regular roll shades can be overlapped front to back or stacked for double shade treatments.

* + - 1. Roll Type: Regular single roll.

\*\* NOTE TO SPECIFIER \*\* Material can be rolled on the tube so that the fabric is into the room and farther from the glass line. Reverse roll applications are used when there is door or window hardware in the way of the shade path. Reverse rolling one shade of a butt & pass condition will reduce the light gap at the corner.

* + - 1. Roll Type: Reverse single roll.

\*\* NOTE TO SPECIFIER \*\* Two pieces of fabric attached together to form a 2-faced shade. The front face to the room is the selected fabric and the liner material to the glass can be a black-out material, translucent or mylar.

* + - 1. Roll Type: Dual band.
    1. Roller Shade System: Top Down Vertical Shades. Bead chain and clutch operated.

\*\* NOTE TO SPECIFIER \*\* The R24 System is designed for large shades in restaurants, institutions and office interiors with shades to 20 lb (9 kg) or 120 sf (11 sq m).

* + - 1. Product: SL30/R24 System - Fabricated of high carbon steel wrap springs and molded fiberglass reinforced polyester or injection molded nylon.

\*\* NOTE TO SPECIFIER \*\* The R16 System is designed for large shades in restaurants, institutions and office interiors with shades under 14 lb (6.4 kg) and to 130 sf (12 sq m).

* + - 1. Product: SL20/R16 System - Fabricated of high carbon steel wrap springs and molded fiberglass reinforced polyester or injection molded nylon.
      2. Fascia - 3 inch (76mm) or 4 inch (102mm) determined by size of mechanism.

\*\* NOTE TO SPECIFIER \*\* The R8 System is a light commercial and institutional applications, such as congregate care and nursing home room facilities, lifting less than 5 pounds (2.3 kg) and under 60 inches (1524 mm) in width. For R24 System only. Delete if not required.

* + - 1. Single Shade Headbox: 4-3/4 x 5 inch (111mm x 127 mm) with 3 inch (76 mm) closure plate.
      2. Large Single Shade Headbox: 7 x 7 inch (177.8 mm) with 5 inch (127 mm) closure plate.
      3. Dual Shade Headbox: 7 x 9 inch (177.8 mm x 228 mm) with 3 inch (76 mm) closure plate.
      4. Mount and Closure - 3 inch (76 mm) or 5 inch (127 mm) for site constructed ceiling recesses. Standard Skyco finishes or custom finish as specified by architect.

\*\* NOTE TO SPECIFIER \*\* Delete finish not required.

* + - 1. Fascia and Head Box Finish: White powder coat.
      2. Fascia and Head Box Finish: Cream powder coat.
      3. Fascia and Head Box Finish: Black powder coat.
      4. Fascia and Head Box Finish: Clear Anodized
      5. Fascia and Head Box Finish: Bronze powder coat.
      6. Fascia and Head Box Finish: Custom finish available.
      7. Fascia Brackets: Size and Finish to match Fascia. Matching end caps available.
      8. Mounting: Wall, ceiling and side mount brackets as indicated or required. Bracket thickness is 0.125 inch (3 mm).

\*\* NOTE TO SPECIFIER \*\* For R-24 System. Delete if not required.

* + - * 1. Brackets shall be nickel-plated steel with a 1-1/2 inch (38mm) or 2 inch (51 mm) projection.

\*\* NOTE TO SPECIFIER \*\* For R-16 and R8 Systems. Delete if not required.

* + - 1. Fabric Type: Material shall be FR-rated and acceptable for commercial application.

\*\* NOTE TO SPECIFIER \*\* Delete fabric source not required.

* + - * 1. Fabric as selected from Skyco Shading Systems selections.
        2. Fabric as provided by customer (COM) acceptable to shade manufacturer.

\*\* NOTE TO SPECIFIER \*\* Delete finish not required.

* + - 1. Clutch Finish: Natural.

\*\* NOTE TO SPECIFIER \*\* For R24 System and R16 System only. Delete finish not required.

* + - 1. Clutch Finish: Black.

\*\* NOTE TO SPECIFIER \*\* For R8 System only. Delete finish not required.

* + - 1. Clutch Finish: White.

\*\* NOTE TO SPECIFIER \*\* Delete finish not required.

* + - 1. Control Loop - Continuous: Finish: #10 qualified stainless steel ball chain.
      2. Control Loop - Continuous: Finish: #10 qualified stainless steel in white, beige, antique bronze or black (Special Order).
      3. Provide single and double side-channel, sill-channel, closure plates and attachment strips as indicated or required to furnish application and product complying with design intent. Finishes - per Skyco Standard selections or custom finish available.
    1. Roller Shade Fabrication:
       1. Clutch: Clutch shall operate bi-directionally using an endless control loop. Sized to provide force to resist weight of shade and maintain shade position.
       2. Control Loop: Control shall be on right side as facing the shade unless indicated otherwise.
       3. Mounting: Brackets are configured to be ceiling, wall or jamb mounted as indicated or required.
       4. Spring Lift Assist: Provide spring assist on oversized shades. The wound spring assists shall come in 36 inches (914 mm) and 45 inches (1143 mm) lengths, reducing lift force to 5 lbs (2.26 kg).

\*\* NOTE TO SPECIFIER \*\* R24 System: Uses 2-1/2 inches (64 mm) tubes; 1-1/2 inches (38 mm) tubes may be used for shades under 100 inches (2540 mm) in width. R16 System: Uses 1-1/2 inches (38 mm) tubes. R8 System: Uses 1-1/2 inches (38 mm) tubes; 1 inch (25 mm) and 1-1/4 inches (32 mm) tubes used for narrow roll-up applications.

* + - 1. Tube: The tube shall be extruded aluminum sized per system model and selected for application.
      2. Fabric Attachment: The fabric shall be heat-welded to a soft vinyl interconnect and press-fit into a keyway, allowing for simple field adjustability, or change of shade band materials.
      3. Standard Hem Bar: The aluminum bar is inserted into the hem pocket and the fabric heat-welded at the top and sides of the bar to provide a refined unobtrusive appearance.

\*\* NOTE TO SPECIFIER \*\* R-16 provision. Delete if not required.

* + - 1. Optional Hem Bar: Round and oval exposed hem bars as indicated.

\*\* NOTE TO SPECIFIER \*\* Delete batten provision not required.

* + - 1. Battens: Where required to maintain shade fabric flatness battens shall be placed at manufacturer's option.
      2. Optional Batten placement: Align battens to horizontal window frame mullions or related architectural elements as indicated. All shades in a single elevation or room shall have battens if one or more require a batten.

\*\* NOTE TO SPECIFIER \*\* Delete seam provision not required.

* + - 1. Seams: Seam where needed for splicing shall be placed at manufacturer's option to minimize waste.
      2. Optional Seam placement: Seam where needed for splicing shall align the seams with horizontal window frame mullions or related architectural elements as indicated. All shades in a single elevation or room shall be seamed if one or more require a splice.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. ELECTRICALLY OPERATED SHADE SYSTEMS - MOTORS AND CONTROLS
     1. Standard Motor: Tubular, fractional horsepower, asynchronous configuration with reversible capacitor designed for intermittent operation. Motor shall be totally enclosed, thermally protected, temperature Class A with a solenoid-activated disk brake for increased speed and lift capacity. 4 Wire configuration - 2 directional, one common, one ground. Motor rating shall be 120 Volt 60Hz AC motors as recommended by manufacturer for size and weight of shade system including coupled systems

\*\* NOTE TO SPECIFIER \*\* Refer to manufacturer's literature for control options with each motor rating. Delete motor not required.

* + - 1. Motor Type: Quiet (44 dBA) measured 3 feet from motor.
      2. Motor Type: Ultra Quiet (38 dBA) measured 3 feet from motor.
    1. Standard Motor Controls:
       1. Product: Switch. Rocker switch (standard), toggle and paddle styles as indicated or required. Individual motor control by SPST switch or two motor control by DPDT (double pole / double throw) switch.
       2. Key operated three position wall switch.
       3. Group Control - 4 Motors (GCS II)
       4. Individual and Group Control - (IGC & IGC 3N1) - intermediate stops available.
       5. RF or IR Remote control option.
       6. Product: Auto-Controllers. Motor controls shall include light, sun, temperature, and timer controls for interior applications, and wind sensors for exterior systems as indicated or required.
       7. Product: Building Automation Controllers. RS232 / RS485: Smart Line Intelligent Systems shall interface with building systems and designed to operate multiple groups, sub-groups and individual shades.
    2. Radio Technology Motor: Built in radio receiver. 120V 60 Hz AC in several sizes selected for size and weight of shade system including coupled systems. Tubular motor totally enclosed within the shade tube. 3-Wire configuration - power, common, ground.

\*\* NOTE TO SPECIFIER \*\* Refer to manufacturer's literature for control options with each motor rating. Delete motor not required.

* + - 1. Motor Type: Quiet (44 dBA) measured 3 feet from motor.
      2. Motor Type: Ultra Quiet (38 dBA) measured 3 feet from motor.
    1. Radio Motor Controls:

\*\* NOTE TO SPECIFIER \*\* Delete transmitters, colors and options not required.

* + - 1. Transmitter: Single channel wireless hand held transmitter:
         1. Color: White (standard).
         2. Color: Black.
         3. Color: Silver.
      2. Transmitter: Four channel wireless hand held transmitter:
         1. Color: White (standard).
         2. Color: Black.
         3. Color: Silver.
      3. Transmitter:Sixteen channel wireless hand held transmitter:
         1. Color: White (standard).
         2. Color: Silver.
      4. Wall Switch for Transmitters:
         1. Color: White (standard).
         2. Color: Ivory.
      5. URTSI: Universal interface allows radio motor shade to be controlled via RS232/485 signal,
      6. Wireless Sun Sensor and Timer,
    1. RS485: Tubular 120V AC motor concealed within the shade tube with 3 wire pigtail and data cable. Quiet 44 (dBA) and Ultra Quiet (dBA) available - measured 3 feet from motor.
    2. RS485 Motor Controls: Individual and Group Control. 3 Button RS 485 switch and 6 Button RS 485 switch for group and preset stops. BACnet interface controlling up to 32 groups with two-way communication via IP. IP interface for virtual switches, timed and priority events.
       1. Product: Animeo IP+ Building Automation System. Automatic control of interior and exterior window treatments.
          1. Automatic control system: The system controls 8 zones determined by the level of light and room temperature. Refer to the Drawings for schedule for zone control and location.
          2. Sensors: The sensors transmit information concerning light level and temperature via sensor boxes. Refer to the Drawings for schedule for sensor type and location.
          3. Decentralized Zone Control: The motor controllers manage the priorities from information delivered from local wired and wireless control points.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - * 1. The shade management software shall be linked to the HVAC systems by a personal computer.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - * 1. e.Product: Pilot PC Solar Tracking. Computer based software, which shall be linked with an automatic control system programmed to anticipate sun angles and changes in weather.
    1. 24 V DC RS 485 Motor - 24V DC Ultra Quiet (38 dBA) motor w/ built in intelligence. Tubular motor concealed inside each shade tube. Compatible with "home automation" systems, animeo, and radio.
       1. Product: Animeo IP+ Building Automation System. Automatic control of interior and exterior window treatments.
          1. Automatic control system: The system controls 8 zones determined by the level of light and room temperature. Refer to the Drawings for schedule for zone control and location.
          2. Sensors: The sensors transmit information concerning light level and temperature via sensor boxes. Refer to the Drawings for schedule for sensor type and location.
          3. Decentralized Zone Control: The motor controllers manage the priorities from information delivered from local wired and wireless control points.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - * 1. The shade management software shall be linked to the HVAC systems by a personal computer.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - * 1. Product: Pilot PC Solar Tracking. Computer based software, which shall be linked with an automatic control system programmed to anticipate sun angles and changes in weather.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Roller Shade System: Exterior Shades. Operation by motorization or crank.
       1. Fabric Type: Material shall be FR-rated and acceptable for commercial application and approved for exterior use.

\*\* NOTE TO SPECIFIER \*\* Select only one from two options listed below. Delete side shade securement method not required.

* + - 1. Side Channels: The shades can be secured to side tracks with a zipper locking system. Weighted exposed hem bar has guide tracking into side channel.
      2. Guide Cables: The shades can be secured to stainless steel guide cables with a cast aluminum eye attached to the ends of the concealed stainless steel hem bar tube in a welded seam pocket.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Provide closure plates and attachment as indicated or required to furnish application and product complying with design intent.

\*\* NOTE TO SPECIFIER \*\* The crank mechanism is for large oversized shades and special conditions where standard manual shades will not work and motorization is not a viable alternative. Crank operators are an excellent alternative for exterior applications where chains are not recommended. Delete if not required.

* + 1. Operation: Crank.
       1. Gear Ratios: 3/1 to 14/1 shall be as required for size lift requirements.
       2. Handles and Poles: Standard shall be natural gray finish with plastic sleeve. Universals shall be chromed brass and stainless steel.
       3. Mounting with the shaft coming through the wall or directly from the bottom of the crank as indicated or required.
       4. Handles permanently affixed or secured with hook and eye or bell coupler for removable handles as indicated or required.
    2. Roller Shade System: Bottom-up Shade System.
       1. Fabric Type: Material shall be FR-rated and acceptable for commercial application.

\*\* NOTE TO SPECIFIER \*\* Designed for a maximum area of 40 sf (3.7 sq m). Delete if not required.

* + - 1. Product: Bottom-up Spring/Pulley Manual Shade System as manufactured by Skyco Shading Systems, Inc.
         1. Operation: A single tube application that uses a heavy duty spring tube with pulley and wall-mounted cord cleat.

\*\* NOTE TO SPECIFIER \*\* Designed for maximum area of 60 sf (1.5 sq m). Delete if not required.

* + - 1. Product: Bottom-up Bead and Reel Manual Shade System as manufactured by Skyco Shading Systems, Inc.
         1. Operation: A single tube application that uses a clutch with bead and reel on a top take-up tube.

\*\* NOTE TO SPECIFIER \*\* Designed for a maximum area of 100 sf (9.3 sq m). Delete if not required.

* + - 1. Product: Bottom-up Heavy Duty Manual Shade System as manufactured by Skyco Shading Systems, Inc.
         1. Operation: A single tube application that uses a heavy duty crank geared mechanism on a top take-up tube.
      2. Product: Bottom-up Heavy Duty Motorized Shade System as manufactured by Skyco Shading Systems, Inc.
         1. Operation: Dual tube application using heavy duty spring tube and motorized tube. Pulleys shall keep take-up cable, cord and tape in line and under correct tension. A Dual Motor FTS (Fabric Tension System) shall be used for scheduled shades over 80 square feet.
      3. Provide single and double side-channel, sill-channel, closure plates and attachment strips as indicated or required to furnish application and product complying with design intent.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. VERTICAL VANE SYSTEM
     1. Vertical Vane System: Provide Vertical Vane System by Skyco Shading Systems, Inc. Fabric vanes shall be custom fabricated to size, color and material as indicated and required to provide light and privacy control.
        1. Fabric Type: Material shall be FR-rated and acceptable for commercial application.
        2. Materials: Vane top clips shall be nylon sonically welded into folded fabric.
        3. Bottom hems shall have plated steel weights sonically welded and sealed into folded fabric on 3 sides.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Configuration: Straight.
      2. Configuration: Curved - 90 degree.
      3. Configuration: Continuous curve.
      4. Draw: Center.
      5. Draw: One way.
      6. Draw: Off set.

\*\* NOTE TO SPECIFIER \*\* Delete operation not required.

* + - 1. Operation: Hand.
      2. Operation: Wand.
      3. Operation: Cord.

\*\* NOTE TO SPECIFIER \*\* Motor and Controls: Switches, radio & IR remote, sun sensor, home automation and audio visual interface. Shades can operate individually and / or in groups.

* + - 1. Operation: Motor. 120V AC motors from 36 inches to 360 inches (914 mm to 9144 mm) wide.
      2. Operation: Motor. 24V Motor for sheer and residential applications from 36 inches to 180 inches (914 mm to 4572 mm).

\*\* NOTE TO SPECIFIER \*\* Shades available up to 150 inches by 150 inches (3810 mm by 3810 mm). Delete if not required.

* 1. ROMAN SHADE SYSTEM
     1. Roman Shade System: Provide Roman Shade System by Skyco Shading Systems, Inc. Shades shall be custom fabricated to size, color and material as indicated and required to provide light and privacy control. Shades shall stack neatly in even folds of approximately 5 to 6 inches (127 mm to 152 mm) height.

\*\* NOTE TO SPECIFIER \*\* Delete style not required.

* + - 1. Style: Flat with rear batons.
      2. Style: Flat with front batons.
      3. Style: Soft fold.
      4. Style: Flat without batons.
      5. Style: Matching baton alignment.
      6. Style: Custom baton spacing as indicated or required.
      7. Style: Slope shades as indicated or required.

\*\* NOTE TO SPECIFIER \*\* Delete lining not required.

* + - 1. Lining: Unlined.
      2. Lining: Standard fused back.
      3. Lining: Standard.
      4. Lining: Blackout.
      5. Fabric Type: Material shall be FR-rated and acceptable for commercial application.

\*\* NOTE TO SPECIFIER \*\* Delete operation not required.

* + - 1. Operation: Cord and Pulley. The shades shall have cord and pulley mechanism. The cord lock holds the shade at height level desired. The cords shall be polyester available in white or buff. Each cord is individually operated then strung through a cord equalizer to maintain even height along the width of the shade. The cord tassels are wood available in painted white or natural stain. Clear plastic cord cleats shall be provided.
      2. Operation: Bead Reel Clutch. The SL/20R16 clutch mechanism shall allow positioning of the shade with precision accuracy. The take up reels secured to the 1-1/2 inches (38 mm) aluminum tube allow for operation of the shade using a bead and reel system. The clutch shall be bi-directional, never needing adjustment and stops automatically. Cords and route holes shall be concealed on the back of the shade or under the self fabric valance.
      3. Operation: Motor controlled.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Fabric Valance: A fabric valance shall wrap completely around the header board. Returns shall be provided for outside mounted shades. The valance is 5 to 6 inches (127 mm to 152 mm) in height depending on the size of the shade.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. PANEL GLIDE SYSTEM
     1. Panel Glide System: Provide Panel Glide System by Skyco Shading Systems, Inc. Shades shall be custom fabricated to size, color and material as indicated and required to provide light and privacy control. Provide top hung fabric panels in multi-track configurations.
        1. Tracks: 2, 3, 4, and 5 channel tracks 1-9/16 inches to 3-7/16 inches deep by 3/4 inches high (40 mm to 87 mm by 19 mm). Refer to drawings for track type or provide track type required for configuration indicated.

\*\* NOTE TO SPECIFIER \*\* Delete track finish not required.

* + - 1. Track Material and Finish: Extruded aluminum with clear anodized finish.
      2. Track Material and Finish: Extruded aluminum with white finish.
      3. Brackets: Ceiling mounted and wall brackets as indicated or required.

\*\* NOTE TO SPECIFIER \*\* Delete draw not required.

* + - 1. Draw: One Way Draw.
      2. Draw: Center Draw.
      3. Draw: Center Opening Draw.
      4. Draw: Staggered Draw.
      5. Draw: As indicated on drawings.
      6. Fabric Type: Material shall be FR-rated and acceptable for commercial application.
      7. Overlap: 2-1/2 inches (64 mm) approximate panel overlap.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Edge Banding: As indicated or required.
      2. Fabric Attachment: Velcro hook and loop on panel runner and sewed to fabric.

\*\* NOTE TO SPECIFIER \*\* Delete operation not required.

* + - 1. Operation: Hand.
      2. Operation: Wand.
      3. Operation: Cord.

\*\* NOTE TO SPECIFIER \*\* Motor Controls: Switches, radio & IR remote, sun sensor, home automation and audio visual interface. Shades can operate individually and / or in groups.

* + - 1. Operation: Motor.

\*\* NOTE TO SPECIFIER \*\* Skyco Motorized Skylight Shades allow complete control of overhead windows, controlling light, glare, ultraviolet rays and direct sunlight. Skyco offers a selection of motorized skylight shading systems. Delete if not required.

* 1. SKYLIGHT SHADE SYSTEM
     1. Skylight Shade System: Provide skylight shades by Skyco Shading Systems, Inc. Shades shall be custom fabricated to size, color and material as indicated and required to provide light and privacy control.

\*\* NOTE TO SPECIFIER \*\* Motors turn at 20 RPM and operate skylight tension systems of up to 300 square feet (28 sq m) of material area. Delete product not required.

* + 1. Product: Fabric Tension System (FTS) as manufactured by Skyco Shading Systems, Inc.
       1. Fabric tension system hardware consists of dual motorized tubes, fabric secured between 2 tubes with cable or industrial webbing. Where blackout and solar material screening are scheduled on the Drawings, the 2 materials shall be welded together and wrapped on each tube, allowing for both solar screening and blackout capabilities. The system tightens the fabric when it has been fully opened.
       2. The controller operates each motor independently to maintain the dynamic (moving) tension. The final (static) tension sets the fabric to eliminate sagging when the fabric is fully open.
       3. Load Bar: 1 inch by1-1/2 inches (25 mm by 38 mm) aluminum or steel, depending on the width of the shade fabric.
       4. Fabric Type: Material shall be FR-rated and acceptable for commercial application. Fiberglass core or pre-stretched polyester core yarns only.
       5. The shade shall be tracked in side channels where blackout shades are required.
       6. Wide shades shall have wheeled side carriers with 4 inches (102 mm) angle trim.
       7. Shades over 8 feet wide require oversized tubes.
       8. A 4 inch (102 mm) panel or "U" shape box covers the shade tubes at each end.
       9. The fabric in sloping skylights draws from the bottom.
    2. Product: Spring Tension System as manufactured by Skyco Shading Systems, Inc.
       1. Dual tube application using heavy duty spring mounted in take-up tube and motorized fabric tube. Fabric draws from the bottom of sloped glazing.
       2. Single tube application with Conston boxes at opposite end to keep spring tension on shade fabric.
       3. Load Bar: 1 inch by 1-1/2 inches (25 mm by 38 mm) aluminum or steel, depending on the width of the shade fabric.
       4. Fabric Type: Material shall be FR-rated and acceptable for commercial application. Fiberglass core or per-stretched polyester core yarns only.
       5. The shade shall be tracked in side channels where blackout shades are required.
       6. Wide shades shall have wheeled side carriers with 4 inches (102 mm) angle trim. Shades over 8 feet wide require oversized tubes.
    3. Product: Bottom-up Motorized Shade System as manufactured by Skyco Shading Systems, Inc.
       1. A dual tube application combines a heavy-duty spring tube and motorized tube, along with pulleys to keep the take-up cable, cord and tape in line and under correct tension.
       2. Single tube application with Conston boxes at opposite end to keep spring tension on shade fabric.
       3. Fabric Type: Material shall be FR-rated and acceptable for commercial application.
    4. Provide closure plates, single and double side channels. head boxes where larger size coverings are required and fascia as indicated or required to furnish application and product complying with design intent.

\*\* NOTE TO SPECIFIER \*\* Skyco motorized shades are a state-of-the-art way to control interior environments. Designed to maximize energy efficiency and reduce building operational costs, Skyco motorized shades control glare, ultraviolet rays and direct sunlight. They also provide both privacy and a sense of security. Delete if not required.

* 1. FABRICS
     1. Interior Fabric Type: Selected from Skyco Shading Systems selections.

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + - 1. Fabric Material: PVC coated fiberglass.
      2. Fabric Material: PVC coated polyester
      3. Fabric Material: 100% Polyester
      4. Fabric Material: Combination polyester/fiberglass.
      5. Fabric Material: As selected from manufacturer's full range of standard fabrics.

\*\* NOTE TO SPECIFIER \*\* Several SKYCO Shading Systems fabrics are designed for exterior use conditions and recommended by Skyco. Delete if not required.

* + 1. Exterior Fabric Type: Selected from Skyco Shading Systems selections.
       1. Materials: 98" & 126 inch wide PVC-coated fiberglass & polyester
       2. Material: PVC Coated polyester fabric - pre stretched designed for exterior.
    2. Fabrication:
       1. Fabric shall be cut square with sonic blade cutting machines. Fabric shall be adequately heat-set cross links of fabric to prevent unraveling. Fabric shall hang straight and flat without buckling or distortion. When trimmed, the edge of the fabric shall remain straight and free of raveling.

\*\* NOTE TO SPECIFIER \*\* Materials come in widths from 72 inches to 98 inches (1829 mm to 2489 mm). Refer to Skyco literature for maximum width of shade possible without railroading.

* + - 1. Standard Material Direction: The shade cloth shall be cut so the material width comes from the width of the fabric roll.

\*\* NOTE TO SPECIFIER \*\* Railroading is the directional change of fabric. This is necessary when the shade width exceeds the fabric width. The width of material becomes the height of the shade.

* + - 1. Any shade whose width is wider than the width of the roll of material shall require the material to be railroaded.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. For materials that have pattern or color direction which will be visible if shades are made in both standard and railroaded directions, the shade cloth shall be fabricated in the same direction for each continuous elevation of shade rolls.

\*\* NOTE TO SPECIFIER \*\* Seams required for splicing shade cloth when required shade dimensions are larger than fabric dimensions can be located to minimize waste or located to align with architectural elements of the window or room. Delete provision not required.

* + - 1. Coordination of Seams and Batten Locations:
         1. Seaming and battens when required shall be located by the manufacturer to minimize waste.
         2. The 1/4 inch (6 mm) horizontal seam and the 2 inches (51 mm) batten pocket locations shall be located for architectural alignment as indicated or shown on the drawings.

1. EXECUTION
   1. EXAMINATION AND PREPARATION
      1. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
      2. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
   2. INSTALLATION
      1. Install in accordance with manufacturer's instructions. Install support brackets and with clearance sufficient to permit unencumbered operation of shade and hardware as recommended by manufacturer.
      2. Fabric: Install straight and flat without buckling or distortion. Shade fabric shall not telescope on the roll.
      3. Demonstration: Installer shall demonstrate shade to be in uniform and smooth working order.
   3. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION