SECTION 06610

PVC RAILINGS AND BALUSTRADES

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\*\* NOTE TO SPECIFIER \*\* Key-Link Fencing & Railing and Superior Plastic Products; PVC Balustrade and Porch and Deck Rail Systems products.  
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This section is based on the products of Key-Link Fencing & Railing and Superior Plastic Products, which is located at:  
260 Jalyn Dr.  
New Holland, PA 17557  
Toll Free Tel: 800-633-7093  
Fax: 717-355-7129  
Email: [request info (aalvarez@superiorplastic.net)](https://admin.arcat.com/users.pl?action=UserEmail&company=Key-Link+Fencing+%26+Railing+and+Superior+Plastic+Products&coid=48043&rep=&fax=717-355-7129&message=RE:%20Spec%20Question%20(06610spp):%20%20&mf=)  
Web: <https://superiorplasticproducts.com> | <http://KeyLinkOnline.com>   
 [ [Click Here](https://www.arcat.com/arcatcos/cos48/arc48043.html) ] for additional information.  
With 30 years of design and vinyl manufacturing expertise, Superior Plastic Products offers a wide variety of products and styles designed to maximize your enjoyment, security, and privacy. Manufactured and finished in the heart of Lancaster County, Pennsylvania, Superior has tapped into the wealth of knowledge and experience of our local craftsmen to blend ageless classic designs with modern, low-maintenance materials and superior structural integrity.  
Balustrade Railings 5000 and 7000 Series. Do you have any material performance data on the Vinyl? Are the posts all sleeved for use over wood posts or are some internally reinforced with aluminum extrusion? What is the maximum radius available for your Rail sections? Are the vinyl balusters internally reinforced with aluminum? What is the aluminum extrusion alloy? I don't see any information for base mounting systems and trim.  
Series 200: The top and bottom rails appear to be reinforced with aluminum extrusions. Do you have any material performance data on the Vinyl? Are the posts all sleeved for use over wood posts or are some internally reinforced with aluminum extrusion? Are the vinyl balusters internally reinforced with aluminum? What are the "Box Kits"? What is the aluminum extrusion alloy? I don't see any information for base mounting systems and trim.

1. GENERAL
   1. SECTION INCLUDES

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

* + 1. Balustrade Railing Systems.
    2. Porch and Deck Rail Systems.
    3. Porch and Deck Rail Secondary Handrail.
    4. Low Voltage Rail lighting,
    5. Post Caps.
    6. Stair Lighting System
    7. Outdoor LED Lighting.
  1. RELATED SECTIONS

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

* + 1. Section 03300 - Cast-In-Place Concrete: Placement of sleeves cast in concrete.
    2. Section 05500 - Metal Fabrications: Furnishing of sleeves cast in concrete.
    3. Section 05510 - Metal Stairs
    4. Section 05520 - Aluminum Pipe Railings
    5. Section 06100 - Rough Carpentry
    6. Section 06200 - Finish Carpentry
    7. Division 16 - Electrical: Electrical service and disconnects, wire routing and connections.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM B 429 - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube.
    2. ASTM D 1784 - Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
    3. ASTM E 935 - Standard Test Methods for Permanent Metal Railing Systems and Rails for Buildings.
  1. DESIGN / PERFORMANCE REQUIREMENTS
     1. Design Loads: Design to the following requirements. Concentrated and uniform loading need not be applied simultaneously.

\*\* NOTE TO SPECIFIER \*\* Edit the following paragraphs as required. Superior railings are typically designed for ICBO loadings of 200 pound concentrated and 50 pound uniform, however railings can be fabricated to meet other code loading conditions. Codes vary in method of application and magnitude of load. Governing code should be checked for specific requirements. Horizontal and vertical concentrated load test of railing systems should be conducted in accordance with ASTM E 935.

* + - 1. Uniform load: 50 pounds per foot (74.3 kg/m) applied at the top in any direction..
      2. Uniform load: \_\_\_ pounds per foot (\_\_\_\_ kg/m) applied at the top in any direction..
      3. Concentrated load: 200 pounds (90.6 kg) applied at the top in any direction.
      4. Concentrated load: \_\_\_ pounds (\_\_\_ kg) applied at the top in any direction.
  1. SUBMITTALS
     1. Submit under provisions of Section 01300.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Preparation instructions and recommendations.
        2. Details of material and construction.
        3. Storage and handling requirements and recommendations.
        4. Installation methods and requirements.
     3. Shop Drawings: Submit shop drawings for fabrication and installation of railings and balustrades. Include plans, elevations and detail sections. Indicate materials, methods, finishes and types of joinery, fasteners, anchorages and accessory items. Provide setting diagrams and templates for anchorages, sleeves, and bolts installed by others.
     4. Load Tests: Submit test results from ASTM E 935 conducted on the manufacturer's supplied system indicating compliance with required structural loading.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color charts representing manufacturer's full range of available colors and patterns.
    2. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, color, and patterns.
    3. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
    4. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic cleaning and maintenance of all components.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Minimum 3 years documented experience producing systems specified in this section.
     2. Installer Qualifications: Minimum 3 years documented experience installing systems specified in this section.

\*\* 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.
       4. Accepted mock-ups shall be comparison standard for remaining Work
    2. Pre-Installation Conference: Conduct pre-installation conference in accordance with Section 01200 - Project Meetings. Date and time of the pre-installation conference shall be acceptable to the Owner and the Architect.
       1. Prior to commencing the installation, meet at the Project site to review the material selections, installation procedures, and coordination with other trades.
       2. Mock-ups shall be reviewed during the pre-installation conference.
       3. Pre-installation conference shall include the Contractor, the Installer, and any trade that requires coordination with the work.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Deliver materials to the Project site in manufacturer's original wrappings and containers, labeled with supplier's or manufacturer's name, material or product brand name, and lot number, if any.
     2. Store materials in their original, undamaged packages and containers, inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.
  2. SEQUENCING
     1. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
     2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
  3. PROJECT CONDITIONS
     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 absolute limits.
     2. Field Measurements: Take measurements of actual dimensions where necessary for fit without gaps. Indicate measurements on shop drawings.
  4. WARRANTY
     1. Lifetime Limited, Non-Prorated Warranty on Material and 5 Year Prorated Labor Warranty.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Key-Link Fencing & Railing and Superior Plastic Products, which is located at: 260 Jalyn Dr.; New Holland, PA 17557; Toll Free Tel: 800-633-7093; Fax: 717-355-7129; Email: [request info (aalvarez@superiorplastic.net)](https://admin.arcat.com/users.pl?action=UserEmail&company=Key-Link+Fencing+%26+Railing+and+Superior+Plastic+Products&coid=48043&rep=&fax=717-355-7129&message=RE:%20Spec%20Question%20(06610spp):%20%20&mf=); Web: <https://superiorplasticproducts.com> | <http://KeyLinkOnline.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 01600.
  1. MATERIALS
     1. Rail, post and pickets: Aluminum extrusions; alloy and temper 6063-T6 conforming to ASTM B 429.
     2. PVC: Poly Vinyl Chloride (PVC) formulated to resist impact and for Ultra Violet (UV) stabilization. Extruded products meets or exceeds ASTM D I784.
  2. BALUSTRADE RAILING

\*\* NOTE TO SPECIFIER \*\* Select the Contemporary or Classic 5000 Balustrade Series from the following two paragraphs; delete if not applicable. Note that 5000 Series is available in per foot custom lengths and 28 to 45 degree step angle rails.

* + 1. Contemporary Balustrade System: 5000 Balustrade Series:
       1. Rail: Reinforced with extruded aluminum channels. Provide with Top and bottom rail brackets as required with snap-on screw covers and hidden bracket screws.
          1. Top Rail: 4-1/2 inches wide by 3-3/8 inches high.
          2. Bottom Rail: 4-1/2 inches wide by 3-3/8 inches high.
       2. Baluster:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the one not required.

* + - * 1. 1-3/4 inch Denver.
        2. 2-5/8 inch Vintage.
      1. Newel Post: Provide with post mounts, caps and trim required for the installation.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete those not required.

* + - * 1. Size: 6 inch square plain.
        2. Size: 6 inch recessed panel.
        3. Size: 6 inch vintage plain.
      1. Height:

\*\* NOTE TO SPECIFIER \*\* Available in 4 foot, 6 foot, 8 foot and 10 foot lengths.

* + - * 1. Length: As indicated on the Drawings.
      1. Step/Stair Rail: Provide with universal stair mounting bracket and trim as required for the installation. Suitable for 28 to 45 degree step angles.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete those not required.

* + - * 1. 6 foot length.
        2. 8 foot length.
      1. Color:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete those not required.

* + - * 1. White.
        2. Clay.

\*\* NOTE TO SPECIFIER \*\* Select the Stately 7000 Balustrade Series from the following two paragraphs; delete if not applicable. Note that 7000 Series is available in per foot custom lengths and 28 to 45 degree step angle rails. Also available with radiused top and bottom rail sections. Contact the manufacturer for additional information.

* + 1. Stately Balustrade System: 7000 Series Balustrade Series: Provided with snap-on screw covers with hidden bracket screws. Provide with Top and bottom rail brackets as required.
       1. Rail: Reinforced with extruded aluminum channels.
          1. Top Rail: 6-1/2 inches wide by 4-1/2 inches high.
          2. Bottom Rail: 6-1/2 inches wide by 4-1/2 inches high.
       2. Baluster:
          1. 3-3/4 inch Belmont.
       3. Newel Post: Provide with post mounts, caps and trim required for the installation.

\*\* NOTE TO SPECIFIER \*\* Newel post recommended is 8 inch insert optional size if required. Select one of the following paragraphs and delete those not required.

* + - * 1. Size: 8 inch plain.
        2. Size: 8 inch recessed panel.
      1. Height:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete those not required.

* + - * 1. 36 inches
        2. 42 inches
      1. Length:

\*\* NOTE TO SPECIFIER \*\* Available in 4 foot, 6 foot, 8 foot and 10 foot lengths.

* + - * 1. Length: As indicated on the Drawings.
      1. Step/Stair Rail: Provide with universal stair mounting bracket and trim as required for the installation. Suitable for 28 to 45 degree step angles.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. 6 foot length.
        2. 8 foot length.
      1. Length: As indicated on the Drawings.
      2. Color:
         1. White.
  1. PORCH AND DECK RAILING SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Select the Porch and Deck Railing System from the following paragraphs; delete if not applicable. Note that 200 Series is available 32 to 36 degree step angle rails.

* + 1. Porch and Deck Railing System: 200 Series Railing: Provide with Top and bottom rail brackets as required. No visible hardware or screws are permitted. Provided with snap-on screw covers with hidden bracket screws.
       1. Rail: Reinforced with extruded aluminum channels.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs for top rail and delete the one not required.

* + - * 1. Vinyl Top Rail: 2-1/2 inches flat top, 3-1/4 inch overall width by 2 inches high.
        2. Vinyl Deckboard Mount Top Rail:
        3. Vinyl Bottom Rail: 1-3/4 inches wide by 2-3/4 inches high.
      1. Level Rail Length:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. 5 foot.
        2. 6 foot.
        3. 7 foot.
        4. 8 foot.
        5. 10 foot..
        6. As indicated on the Drawings.
      1. Height:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete those not required.

* + - * 1. 36 inch residential
        2. 42 inch commercial
      1. Baluster:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. Vinyl 1.3 inch turned Madison.
        2. Aluminum 3/4 inch round York.
        3. Vinyl 1.3 inch square Model.
      1. Newel Post: Provide with post mounts, caps and trim required for the installation.
         1. Size: 4 inches
         2. Length:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

38 inch.

48 inch.

54 inch.

\*\* NOTE TO SPECIFIER \*\* Select Porch and Deck Post Wrap covers if required for the project. Delete if not required. If required select one or more of the following style paragraphs and delete tthose not required. Note, Fluted C-Style and Beechdale Smooth is available only in White color.

* + - 1. Porch and Deck Post Wrap Covers: Four piece snap-on vinyl covers.
         1. Fluted C-Style 4 inches by 4 inches by 102 inches.
         2. Fluted C-Style 6 inches by 6 inches by 102 inches.
         3. Fluted Beechdale 4 inches by 4 inches by 102 inches.
         4. Fluted Beechdale 6 inches by 6 inches by 102 inches.
         5. Fluted Beechdale 8 inches by 8 inches by 102 inches.
         6. Smooth Beechdale 4 inches by 4 inches by 102 inches.
         7. Smooth Beechdale 6 inches by 6 inches by 102 inches.
      2. Step/Stair Rail: Provide with universal stair mounting bracket and trim as required for the installation. Suitable for 32 to 36 degree angles.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. 6 foot length.
        2. 8 foot length.
      1. Box Kits:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. 5 foot boxed section.
        2. 6 foot boxed section.
        3. 7 foot boxed section.
        4. 8 foot boxed section.
        5. 10 foot boxed section.
      1. Color:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. White.
        2. Clay.
        3. Black.
    1. Porch and Deck Railing System: 1000 Series Railing: Provide with Top and bottom rail brackets as required. No visible hardware or screws are permitted. Provided with snap-on screw covers with hidden bracket screws.
       1. Rail: Reinforced with extruded aluminum channels.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs for top rail and delete the one not required.

* + - * 1. Vinyl Top Rail: 3 inches flat top by 3-1/2 inches high.
        2. Vinyl Deckboard Mount Top Rail:
        3. Vinyl Bottom Rail: 1-3/4 inches wide by 3-1/2 inches high.
      1. Level Rail Length:

\*\* NOTE TO SPECIFIER \*\* Available in 5 foot, 6 foot, 7 foot, 8 foot and 10 foot lengths.

* + - * 1. As indicated on the Drawings.
      1. Height:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete those not required.

* + - * 1. 36 inch residential
        2. 42 inch commercial
      1. Baluster:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. Model
        2. Heritage
        3. Madison
        4. Kinzer
        5. Traditional
        6. Lexus
        7. York
        8. Witmer,
        9. Glass Panel
        10. 4 inch Wide Glass
        11. Aluminum 3/4 inch round York.
      1. Newel Post: Provide with post mounts, caps and trim required for the installation.
         1. Style/Size: 4 inch Plain.
         2. Style/Size: 4 inch Madison.
         3. Style/Size: 4 inch Heritage.
         4. Length:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

38 inch.

48 inch.

54 inch.

\*\* NOTE TO SPECIFIER \*\* Select Porch and Deck Post Wrap covers if required for the project. Delete if not required. If required select one or more of the following style paragraphs and delete tthose not required. Note, Fluted C-Style and Beechdale Smooth is available only in White color.

* + - 1. Porch and Deck Post Wrap Covers: Four piece snap-on vinyl covers.
         1. Fluted C-Style 4 inches by 4 inches by 102 inches.
         2. Fluted C-Style 6 inches by 6 inches by 102 inches.
         3. Fluted Beechdale 4 inches by 4 inches by 102 inches.
         4. Fluted Beechdale 6 inches by 6 inches by 102 inches.
         5. Fluted Beechdale 8 inches by 8 inches by 102 inches.
         6. Smooth Beechdale 4 inches by 4 inches by 102 inches.
         7. Smooth Beechdale 6 inches by 6 inches by 102 inches.
      2. Step/Stair Rail: Provide with universal stair mounting bracket and trim as required for the installation. Suitable for 28 to 45 degree angles.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. 6 foot length.
        2. 8 foot length.
      1. Box Kits:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. 5 foot boxed section.
        2. 6 foot boxed section.
        3. 7 foot boxed section.
        4. 8 foot boxed section.
        5. 10 foot boxed section.
      1. Color:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. White.
        2. Clay.
        3. Almond.
        4. Black.
    1. Porch and Deck Railing System: 3000 Series Railing: Provide with Top and bottom rail brackets as required. No visible hardware or screws are permitted. Provided with snap-on screw covers with hidden bracket screws.
       1. Rail: Reinforced with extruded aluminum channels.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs for top rail and delete the one not required.

* + - * 1. Vinyl Top Rail: 3 inches flat top by 3-1/4 inches high.
        2. Vinyl Deckboard Mount Top Rail:
        3. Vinyl Bottom Rail: 1-3/4 inches wide by 3-1/2 inches high.
      1. Level Rail Length:

\*\* NOTE TO SPECIFIER \*\* Available in 5 foot, 6 foot, 7 foot, 8 foot and 10 foot lengths.

* + - * 1. As indicated on the Drawings.
      1. Height:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete those not required.

* + - * 1. 36 inch residential
        2. 42 inch commercial
      1. Baluster:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. Model
        2. Heritage
        3. Madison
        4. Kinzer
        5. Traditional
        6. Lexus
        7. York
        8. Witmer,
        9. Glass Panel
        10. 4 inch Wide Glass
        11. Aluminum 3/4 inch round York.
      1. Newel Post: Provide with post mounts, caps and trim required for the installation.
         1. Style/Size: 4 inch Plain.
         2. Style/Size: 4 inch Madison.
         3. Style/Size: 4 inch Heritage.
         4. Length:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

38 inch.

48 inch.

54 inch.

\*\* NOTE TO SPECIFIER \*\* Select Porch and Deck Post Wrap covers if required for the project. Delete if not required. If required select one or more of the following style paragraphs and delete those not required. Note, Fluted C-Style and Beechdale Smooth is available only in White color.

* + - 1. Porch and Deck Post Wrap Covers: Four piece snap-on vinyl covers.
         1. Fluted C-Style 4 inches by 4 inches by 102 inches.
         2. Fluted C-Style 6 inches by 6 inches by 102 inches.
         3. Fluted Beechdale 4 inches by 4 inches by 102 inches.
         4. Fluted Beechdale 6 inches by 6 inches by 102 inches.
         5. Fluted Beechdale 8 inches by 8 inches by 102 inches.
         6. Smooth Beechdale 4 inches by 4 inches by 102 inches.
         7. Smooth Beechdale 6 inches by 6 inches by 102 inches.
      2. Step/Stair Rail: Provide with universal stair mounting bracket and trim as required for the installation. Suitable for 28 to 45 degree angles.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. 6 foot length.
        2. 8 foot length.
      1. Box Kits:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. 5 foot boxed section.
        2. 6 foot boxed section.
        3. 7 foot boxed section.
        4. 8 foot boxed section.
        5. 10 foot boxed section.
      1. Color:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. White.
        2. Clay.
        3. Almond.
        4. Black.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs if required. Delete the if not required.

* + 1. Secondary Handrail: Provide for use at stairs and elsewhere as indicated for use in conjunction with porch and deck railing using the following components as required.
       1. Available Components: Pipe rail size 1-1/2 inch diameter.
          1. End Cap
          2. P-Loop Return
          3. 3 inch Mounting Bracket
          4. Aluminum Connector with Ring
          5. 5 degree Radius Elbow
          6. 78 inch Straight Handrail with Aluminum
          7. 32 degree Radius Elbow
          8. 34 degree Radius Elbow
          9. 90 degree Radius Elbow
          10. 6 inch Corner Mounting Bracket
          11. Aluminum 0 to 90 degree Universal Elbow
          12. Mounting Bracket Insert (Poly)
          13. Outside Elbow
          14. Aluminum 90 degree Elbow Bracket
          15. 38 degree Radius Elbow
          16. Aluminum Mounting Bracket Insert
          17. Aluminum Straight Wall Bracket with Ring
          18. Aluminum Gate Return Kit with Outside Elbow
          19. Candy Cane Return
          20. Aluminum External Swivel with ring
       2. Color:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the those not required.

* + - * 1. White Vinyl.
        2. Almond Vinyl.
        3. Clay Vinyl.
        4. Black Aluminum.

\*\* NOTE TO SPECIFIER \*\* Select the post cap(s) required from the following paragraphs and delete those not required.

* 1. POST CAPS
     1. Vinyl Post Cap
        1. Size:

\*\* NOTE TO SPECIFIER \*\* Select the size required from the following paragraphs and delete those not required.

* + - * 1. 4 inch
        2. 5 inch
      1. Style:

\*\* NOTE TO SPECIFIER \*\* Select the style required from the following paragraphs and delete those not required.

* + - * 1. New England Ball Cap
        2. New York Cap
        3. Spade Cap
        4. New England Cap
        5. Ball Cap
        6. Flat Cap
        7. Federation Cap
      1. Colors:

\*\* NOTE TO SPECIFIER \*\* Select the color required from the following paragraphs and delete those not required. Federation is available in White only. New England available in White, Almond and Clay only.

* + - * 1. White
        2. Almond
        3. Clay
        4. Black
    1. Woodtone Post Caps
       1. Size:

\*\* NOTE TO SPECIFIER \*\* Select the cap size required from the following paragraphs and delete those not required.

* + - * 1. 4 inch
        2. 5 inch
      1. Material/Color:

\*\* NOTE TO SPECIFIER \*\* Select the material/color required from the following paragraphs and delete those not required.

* + - * 1. Vinyl White Pine
        2. Vinyl Seasoned Pine
        3. Copper.

\*\* NOTE TO SPECIFIER \*\* Select the Outdoor LED Lighting required from following paragraphs and delete those not required.

* 1. OUTDOOR LED LIGHTING
     1. Construction:
        1. Die-Cast and Powder-Coated Aluminum Housing
        2. Acrylic Lens.
        3. High output 3000K LED bulbs. Rated at over 50,000 hours.
        4. LED light board coated with an Optical Conformal Coating to protect circuitry from normal environmental conditions.
        5. Mizu-P25 2.50mm Pitch Waterproof connections.
        6. UL / CSA approved.

\*\* NOTE TO SPECIFIER \*\* Select the fixture Style(s) required from following paragraphs and delete those not required.

* + 1. Fixture Style:
       1. Pyramid Style Post Cap Light: Light shines outward on all sides.
          1. Size: Fits post size:

4 inch

* + - * 1. Low Power Draw: 0.4 Watts per Cap.

\*\* NOTE TO SPECIFIER \*\* Select the following optional paragraph if required and delete if not required.

* + - * 1. Matching Post Caps: Provide non-lighted caps where indicated.
      1. Decorative Style Post Cap Light: Light shines outward on all sides.
         1. Size: Fits post size:

4 inch

* + - * 1. Low Power Draw: 0.4 Watts per Cap.

\*\* NOTE TO SPECIFIER \*\* Select the following optional paragraph if required and delete if not required.

* + - * 1. Matching Post Caps: Provide non-lighted caps where indicated.
      1. Pyramid Style Post Cap Downlight: Light shines downward on all sides.
         1. Size: Fits post size:

4 inch

* + - * 1. Low Power Draw: 1.6 Watts per Cap.

\*\* NOTE TO SPECIFIER \*\* Select the following optional paragraph if required and delete if not required.

* + - * 1. Matching Post Caps: Provide non-lighted caps where indicated.
      1. Decorative Style Post Cap Downlight: Light shines downward on all sides.
         1. Size: Fits post size:

4 inch

* + - * 1. Low Power Draw: 1.6 Watts per Cap.
      1. Post and Stair Accent Light: Mounts to posts, stair risers or deck fascia. Low profile light shines downward.
         1. Size: 2 inches W by 1 inch H.

\*\* NOTE TO SPECIFIER \*\* Select the fixture Color(s) required from following paragraphs and delete those not required.

* + 1. Fixture Color:

\*\* NOTE TO SPECIFIER \*\* The following colors are color matched for vinyl railing.

* + - 1. White
      2. Almond
      3. Clay
      4. Black
    1. Accessories: Provide with the following accessories as required for the installation indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Available in: 2 foot, 5 foot, or 9 foot Lengths

* + - * 1. Wire Extension

\*\* NOTE TO SPECIFIER \*\* Includes: 2-Way Splitter, 5 foot and 9 foot Wire Extensions

* + - * 1. Post Light Wire Kit
        2. 2-Way Wire Splitter

\*\* NOTE TO SPECIFIER \*\* Comes with 1 Plug Cover

* + - * 1. 4-Way Wire Splitter

\*\* NOTE TO SPECIFIER \*\* Available in 3 Per Pack

* + - * 1. Plug Cover

\*\* NOTE TO SPECIFIER \*\* The following accessories are optional select those required from the following paragraphs and delete those not required.

* + - * 1. Remote Dimmer: Control the brightness of lights remotely.
        2. Photoelectric Timer: Set a timer for lights.

\*\* NOTE TO SPECIFIER \*\* Power supply is suitable for up to 40 fixtures. Verify quantity required for installation as required

* + - * 1. Power Supply: Mean Well NPF-40-12 UL8750 constant voltage and constant current LED power supply.

Input Voltage: 90~305Vac

C.V. Output Voltage: 12.0 Volts

C.V. Max Current: 3.340 Amps

Max Output Power: 40 Watts

Constant Current: 3.340 Amps

C.C. Voltage Min: 7.20 VDC

C.C. Voltage Max: 12.00 VDC

* 1. FABRICATI0N
     1. Fit, shape and assemble components in largest practical sizes, for delivery to the site. Fabricate components with joints tightly fitted and secured.
     2. Top rails shall be continuous without splices except for lengths longer than \_\_\_ feet.
     3. If railing is angled horizontally, machined proper angle into the post.
     4. Fabricate railing system to meet step railing requirements; riser and tread dimensions of the steps.
     5. Provide components required for anchorage. Fabricate anchors and related components of material and finish as required, or as specifically noted.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. PREPARATION
      1. Clean surfaces thoroughly prior to installation.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph and coordinate installation as applicable. Delete if not required.

* + 1. Coordinate railing installation with installation of waterproof membrane or coating Specified in Section 07xxx.
    2. Ensure that adjacent surfaces, structures, and finishes are protected from damage by construction activities of this section.
    3. Use wood blocks and padding to prevent damage to railing members and fittings during erection.
    4. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
  1. INSTALLATION
     1. Install in accordance with manufacturer's instructions.
     2. Keep perimeter lines straight, plumb, and level.
     3. Provide grounds, clips, backing materials, adhesives, brackets, anchors, and accessories necessary for a complete installation.
        1. Expansion Bolt Mounting: Anchor through base plates to concrete substrate.
        2. Sleeve Mounting:
           1. Arrange for casting of sleeves or core drill insitu concrete to provide holes for railing uprights.
           2. After setting, fill holes with hydraulic grout; brace members until grout is cured.
        3. Connect railing components in accordance with manufacturer's instructions applicable to the specified system. Tighten all fasteners so that completed railing is rigid and free of play at joints and component attachments.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraphs for LED lighting if required. Delete if not required.

* + 1. Install LED lighting in accordance with the manufacturer's recommendations. Coordinate with Division 16 - Electrical: Electrical service and disconnects, wire routing and connections.
  1. ERECTION TOLERANCES
     1. Install railings plumb and level, securely fastened, with vertical members plumb.
        1. Maximum variation from plumb: 1/4 inch (6.0 mm).
        2. Maximum misalignment from true position: 1/4 inch (6.0 mm).
        3. Maximum misalignment between adjacent separated members: 1/8 inch (3.0 mm).
  2. CLEANING
     1. Remove dust or other foreign matter from component surfaces; clean finishes in accordance with manufacturer's instructions.
  3. PROTECTION
     1. Protect installed products until completion of project.
     2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION