SECTION 05 52 00

HANDRAILS AND RAILINGS

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\*\* NOTE TO SPECIFIER \*\* Tractel Ltd.; Work place safety systems.  
.  
This Section is based on the products of Tractel Ltd., which is located at:1615 Warden Ave.Scarborough, ON, Canada M1R 2T3Tel: 416-298-8822Email: [request info (steve.gallagher@alimakgroup.com)](https://arcat.com/rfi?action=email&company=Tractel%252BLtd.&message=RE%253A%2520Spec%2520Question%2520(05520blu)%253A%2520&coid=36094&spec=05520blu&rep=&fax=)  
Web: <http://www.tractel.com> | <https://www.tractel.com/us>   
 [Click Here] for additional information.  
BlueWater Mfg., Inc. is an industry leader for innovate products and solutions for work place safety. We specialize in solving fall protection issues using a passive fall protection guard rail system as opposed to active systems (i.e. lifelines, etc.). The Safety Rail 2000 Guard Rail System accomplishes just that. New roofs are costing building owners 6 to 7 figures and this non-penetrating guard rail system ensures workers are protected without penetrating the roof. There are no potential leak problems down the road when you maintain the roof's integrity. Whether you are looking for a solution for fall protection, barrier protection or handrails, our portable guard rail system can not be matched in versatility and speed of installation.

1. GENERAL
   1. SECTION INCLUDES

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

* + 1. Roof edge protection. (SafetyRail 2000)
    2. Non-penetrating railing system for roof edge fall protection. (SafetyRail 2000 Architectural Series)
    3. Collapsible guard rails. (Stealth Rail)
    4. Permanent warning line system. (Perma-Line)
    5. Leading edge fall protection. (ParaRail)
    6. Roof hatch/skylight systems. (SR2K)
    7. Grab bars. (Grab Bar)
    8. Self-closing safety gate. (Self-Closing Safety Gate)
    9. Modular railing system. (Kwik-Rail)
    10. Portable warning/barrier system. (Kwik-Stand)
    11. Portable guard rail system. (VersaClamp)
    12. Portable guard rail system for parapets. (ParaClamp)
    13. Portable guard rail system for parapets. (MedianClamp)
    14. Pipe fittings. (Kwik-Fit)
    15. Accessories. (Safety Strip, Roof Pads, RTC-2000 Cart, EZ Mover)
  1. RELATED SECTIONS

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

* + 1. Section 05 50 00 - Metal Fabrications.

\*\* NOTE TO SPECIFIER \*\* Roof edge protection and roof hatch protection only. Delete one or both of the following paragraphs if not required.

* + 1. Section 07 41 13 - Metal Roof Panels.
    2. Section 07 50 00 - Membrane Roofing.
  1. REFERENCES

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

* + 1. British Standards:
       1. BS 970 - Specification for wrought steels for mechanical and allied engineering purposes. General inspection and testing procedures and specific requirements for carbon, carbon manganese, alloy and stainless steels.
       2. BS EN 1562 - Founding. Malleable Cast Irons.
       3. BS 3100 - Specification for Steel Castings for General Engineering Purposes.
    2. California Occupational Safety and Health Administration (CAL OSHA):
       1. 1620 - Design of Temporary Railing.
       2. 1621 - Railings and Toe Boards.
       3. 1633 - Elevator Shafts to be Guarded.
       4. 3209 - Standard Guard rails.
       5. 3210 - Guard rails at Elevated Locations.
       6. 3211 - Wall Openings.
       7. 3212 - Floor Openings, Floor Holes and Roofs.
       8. 3213 - Service Pits and Yard Surface Openings.
       9. 3214 - Stair Rails and Handrails.
    3. Occupational Safety and Health Administration (OSHA):
       1. 29 CFR 1910.23 - Fixed Ladders.
       2. 29 CFR 1910.28 - Duty to have fall protection & falling object protection.
       3. 29 CFR 1910.29 - Fall protection systems / criteria & practices.
       4. 29 CFR 1926.500 - Scope, Application, and Definitions Applicable to this Subpart.
       5. 29 CFR 1926.501 - Duty to Have Fall Protection.
       6. 29 CFR 1926.502 - Fall Protection Systems Criteria and Practices.
       7. 29 CFR 1926.503 - Training Requirements.
       8. Warning Line Interpretations dated January 3, 2005, Part 1926 Subpart M
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete paragraph below if shop drawings not required.

* + 1. Shop Drawings: Drawings showing plans, elevations, sections and details of components.

\*\* 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 chips 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) square, representing actual product, color, and patterns.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Deliver materials to the job site in good condition and adequately protected against damage as handrails are a finished product.
     2. Inspect rail sections for damage before signing the receipt from the trucking company. Truck driver must note damaged goods on the bill of lading if damaged product is found.
     3. Store products in manufacturer's unopened packaging until ready for installation.
  2. PROJECT CONDITIONS
     1. Field Measurements: Where handrails and railings are indicated to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication.
  3. WARRANTY
     1. Warranty: Provide manufacture's two (2) year warranty.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Tractel Ltd., which is located at:1615 Warden Ave.Scarborough, ON, Canada M1R 2T3Tel: 416-298-8822Email: [request info (steve.gallagher@alimakgroup.com)](https://arcat.com/rfi?action=email&company=Tractel%252BLtd.&message=RE%253A%2520Spec%2520Question%2520(05520blu)%253A%2520&coid=36094&spec=05520blu&rep=&fax=);Web: <http://www.tractel.com> | <https://www.tractel.com/us>

\*\* 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 - Product Requirements.
  1. SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Delete if no roof edge protection required.

* + 1. SafetyRail 2000 Roof Edge Protection: Provide non-penetrating guard rail system.
       1. Approved Product: SafetyRail 2000.
       2. Standards: System shall have top and mid rail in accordance with OSHA Standards - 29 CFR 1910.29 (b)(1)(2).
       3. Structural Load: 200 lb (90.7 kg), minimum, in any direction to all components in accordance with OSHA Regulation 29 CFR 1926.502.
       4. Height: 42 inches (1067 mm), minimum.
       5. Railings: 1-5/8 inch (41 mm) O.D. hot rolled pickled electric weld tubing, free of sharp edges and snag points.
       6. Mounting Bases: Class 30 gray iron material cast with four receiver posts. Provide rubber pads on bottom of bases.
       7. Receiver Posts: Shall have a positive locking system into slots that allow rails to be mounted in any direction. Friction locking systems are not allowed. Receiver posts shall have drain holes.

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

* + - 1. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete toe board brackets if not required. Provide toe boards when parapet wall is less than 3-1/2 inches (89 mm) in height and there is the possibility of human traffic below roof's edge.

* + - * 1. Toe Board Brackets: Provide brackets and hardware as manufactured by BlueWater Mfg. Inc.
        2. Step-Rail: Variable height railing enables a continuous run of SafetyRail 2000 when the roof steps up or down.
        3. Adjustable Mid-Rail: Railing to fit over duct work for continuous run of SafetyRail 2000.
        4. LP Outrigger: Supports placed under ducting or conduit to continue run of SafetyRail 2000 when rail section cannot be used.
        5. SG2000: Sliding gate.
        6. Finishing Rail: D-shaped railing extension for ladder landings, length of rail section and D-loop as indicated on the Drawings.
      1. Hardware: Securing pins shall be 1010 carbon steel, zinc plated and yellow chromate dipped. Pins shall consist of collared pin and lanyard that connects to lynch pin.

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

* + 1. Architectural Series Roof Edge Protection Non-Penetrating Railing System for Roof Edge Fall Protection: Provide metal handrail system consisting of a top rail, mid rail and base. Stanchions shall be capable of mounting in any direction.
       1. Approved Product: SafetyRail 2000 Architectural Series Guard rail System.
       2. Standards: System shall meet and exceed OSHA Standards - 29 CFR 1926.502 (b) and 1910.29 (b)(3)(4)(5).
       3. Height: 42 inches (1067 mm), minimum.
       4. Railings and Stanchions: 1-1/4 inch pipe (1.66 inch (42 mm) OD).

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

* + - * 1. Curved upright.
        2. Inclined upright.
        3. Straight upright.
      1. Free Standing Base: Class 30 gray cast iron.
      2. Hardware: 1010 carbon steel securing pins, zinc plated and yellow chromate dipped.

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

* + - 1. Finish for Rails: Hot dipped galvanized.
      2. Finish for Rails: Powder coat paint over hot dipped galvanized steel.
      3. Finish for Bases: Hot dipped galvanized.
      4. Finish for Bases: Powder coat paint.

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

* + 1. Collapsible Guard Rails: Provide collapsible portable guard rail section with one-way pivot assembly that allows guard rail to fold down to horizontal surface for clean sightlines; requires no penetrations in substrates for installation. Rails shall be compatible with SafetyRail 2000 Guard rail System.
       1. Approved Product: Stealth Rail.
       2. Standards: Guard rail system shall meet or exceed OSHA (Standards - 29 CFR) 1926.501 and 1926.502.
       3. Hardware: Detent pin on each pivot assembly shall lock rail in upright position.

\*\* NOTE TO SPECIFIER \*\* Delete following paragraph if no permanent warning line system required. Contact manufacturer for OSHA information on Warning Line Interpretations.

* + 1. Permanent Warning Line System: Provide non-penetrating, permanent, highly visible warning line system for roof edge fall protection. System shall not be used as a motion stopping device.
       1. Approved Product: Perma-Line.
       2. Standards: Warning line system shall meet or exceed the requirements in OSHA Standards - 29 CFR 1926.502(f)(2).

\*\* NOTE TO SPECIFIER \*\* Delete following paragraph if no leading edge fall protection required. ParaRail provides fall protection for a variety of tasks including maintenance for security cameras, antennas, lights, drain cleaning and hoisting of tools and materials.

* + 1. ParaRail Leading Edge Fall Protection: Provide non-penetrating, self-supporting leading edge roof top safety and fall protection system that allows full access to leading edge of flat roof or parapet.
       1. Approved Product: ParaRail.
       2. Standards: System shall meet or exceed the requirements in OSHA Standards - 29 CFR 1910.29 and 1926.502.
       3. Size: Custom, as indicated on Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete following paragraph if no roof hatch/skylight system required. SR2K is for use as roof hatch, skylight, fire vent and floor door protection.

* + 1. SafetyRail Roof Hatch/Skylight Systems: Provide non-penetrating railing system with top rail, mid rail, and OSHA approved swinging gate, with the hatch curb acting as toe plate. System shall be capable of being dismantled for roof repair.
       1. Approved Product: SR2K.

\*\* NOTE TO SPECIFIER \*\* SR2K meets OSHA Standards - 29 CFR 1910.23 (a)(2) for providing a mid-rail. Utilizing a chain as protection at a roof hatch does not provide a mid-rail as required by OSHA. Contact manufacturer for most recent OSHA interpretations.

* + - 1. Standards: System shall meet or exceed the requirements in OSHA Standards - 29 CFR 1910.29, including 1910.29 (b)(13)(i).
      2. Structural Load: 200 lb (90.7 kg), minimum, in any direction to all components in accordance with OSHA Regulation 29 CFR 1910.29 (b)(3)(4)(5).
      3. Height: 42 inches (1067 mm), minimum.
      4. Width: As indicated on Drawings.

\*\* NOTE TO SPECIFIER \*\* Revise paragraph below to indicated side rail length or indicate length on Drawings. Roof Hatch Kits will need longer side rails when using BlueWater Inc. Grab Bar. Contact the factory to size the Hatch Kit.

* + - 1. Side Rail Length: As indicated on Drawings.
      2. Railings: 1-5/8 inch (41 mm) O.D. hot rolled pickled electric weld tubing, free of sharp edges and snag points.
      3. Mounting Bases: Class 30 gray iron material cast with four receiver posts. Provide rubber pads on bottom of bases.
      4. Receiver Posts: Shall have a positive locking system into slots that allow rails to be mounted in any direction. Friction locking systems are not allowed. Receiver posts shall have drain holes.
      5. Railing Hardware: Securing pins shall be 1010 carbon steel, zinc plated and yellow chromate dipped. Pins shall consist of collared pin and lanyard that connects to a lynch pin.
      6. Gate Hardware: Bolts and washers shall be 3/8 inch by 3-1/2 inch (9.5 mm by 89 mm) and 3/8 inch by 3 inch (9.5 mm by 76 mm) grade 5, zinc plated.
      7. Installation: Locate within 6 inches of open roof hatch or roof opening.

\*\* NOTE TO SPECIFIER \*\* Delete following paragraph if no grab bar system required. Grab bar allows for easy egress and ingress of roof hatches and floor hatches. Install the Grab Bars as an option to the Fall Protection Hatch Kits.

* + 1. Grab Bar Aids in Easy Egress/Ingress of a Roof Hatch: Width of bars shall adjust to ladder width inside hatch.
       1. Approved Product: Grab Bar.
       2. Mount Pad: Adjustable; shall enable bars to be used with curbs or on uneven surfaces.
       3. Hardware: Bars lock into place with securing pin and friction collar.
    2. Self-Closing Safety Gate: Fully assembled gate shall be capable of swinging in either direction by inverting installation position. Gate size shall be laterally adjusted from minus 1-1/4 inch (32 mm) to plus 2-1/2 inch (64 mm).
       1. Approved Product: Self-Closing Safety Gate.
       2. Standards: System shall have top and mid rail in accordance with OSHA Standards - 29 CFR 1910.29 (b)(1)(2).

\*\* NOTE TO SPECIFIER \*\* Revise paragraph below by inserting gate width, or retain paragraph and show width on Drawings. Gates are available in the following widths: 18, 21, 24, 27, 30, 33, 36, and 40 inches (457, 533, 610, 686, 762, 838, 914, and 1016 mm).

* + - 1. Width: As indicated on Drawings.
      2. Height:
         1. Top Rail: 42 inches (1067 mm), minimum.
         2. Bottom Rail: 21 inches (533 mm).
      3. Hardware: Provide the following:
         1. Gate Hardware: U-Bolts.
         2. Universal Hinge Assembly: Fits railing types up to 2 inches (51 mm) O.D. or flat surface mounting.

\*\* NOTE TO SPECIFIER \*\* Delete paragraph below if not required. Adapter kits are available for railings larger than 2 inches O.D. (51 mm) or uniquely shaped railings.

* + - * 1. Railing adapter kit.
        2. Self-Closing Springs: Two stainless steel torsion springs.

\*\* NOTE TO SPECIFIER \*\* Retain one of the following four paragraphs.

* + - 1. Material: Mild steel, powder coated.
      2. Material: Mild steel, hot-dip galvanized.
      3. Material: Mild steel, hot-dip galvanized with powder-coated finish.
      4. Material: Stainless steel.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if no modular railing system.

* + 1. Modular Railing System: Provide metal handrail system utilizing handrail brackets, handrail fittings and hex key for assembly.
       1. Approved Product: Kwik-Rail; provide the following kit:

\*\* NOTE TO SPECIFIER \*\* Retain one of the following five paragraphs for KwikRail Kit. For 1-1/2 inch pipe, replace .XX with .40. For 1-1/4 inch pipe, replace .XX with .32.

* + - * 1. Kit: 6 Foot Rail Only; Part No. 500136.XX.
        2. Kit: 12 Foot Straight Run; Part No. 500137.XX.
        3. Kit: 6 ft. by 6 ft. Corner Section; Part No. 500138.XX.
        4. Kit: 6 Foot Extension; Part No. 500139.XX.
        5. Kit: 6 Foot 90 Degree Extension; Part No. 500140.XX.
      1. Standards: System shall have top and mid rail in accordance with OSHA Standards - 29 CFR 1910.29 (b)(1)(2).
      2. Height: 42 inches (1067 mm), minimum.

\*\* NOTE TO SPECIFIER \*\* Retain one of the following two paragraphs.

* + - 1. Railings: 1-1/2 inch pipe (1.90 inch (48 mm) OD).
      2. Railings: 1-1/4 inch pipe (1.66 inch (42 mm) OD).

\*\* NOTE TO SPECIFIER \*\* Delete paragraph below if no gate, or retain paragraph and indicate size on Drawings.

* + - 1. Gate: Custom, as indicated on Drawings.
      2. Hardware: Anchor bolts.

\*\* NOTE TO SPECIFIER \*\* Retain one of the following four paragraphs.

* + - 1. Material: Mild steel, powder coated.
      2. Material: Mild steel, hot-dip galvanized.
      3. Material: Mild steel, hot-dip galvanized with powder-coated finish.
      4. Material: Aluminum.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if no portable warning/barrier system.

* + 1. Portable Warning/Barrier System: Provide self-contained, hand carried visual warning system with spindle mount and handle for transporting and hoisting.
       1. Approved Product: Kwik-Stand.
       2. Standards: System shall meet or exceed the requirements in OSHA Standards - 29 CFR 1926.502 (f).
       3. Height: 39 inches (991 mm) tall.
       4. Area, Foot Print: 39 inches by 32 inches (991 mm by 813 mm) in use.
       5. Weight: 34 lbs. (15.4 kg), each stand.
       6. Support Bars: Hole at each end for accessories.
       7. Accessories:

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

* + - * 1. Extender Feet: For metal roofs.
        2. Stakes: For gravel or asphalt roofs.
        3. Rubber Pads: For feet of stands.
      1. Flags: Bright yellow; OSHA rated.
      2. Hardware: Securing pin attached to stanchion with lanyard.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if no portable guard rail system.

* + 1. Portable Guard Rail System: Provide C-clamp locking guard rail system with off-set compression plates and compression rods.
       1. Approved Product: VersaClamp.
       2. Height: Adjustable, to comply with OSHA guard rail heights.
       3. Clamps: Expand from 1 inch (25 mm) to 12 inches (305 mm).
       4. Accessories:
          1. Toe Board Brackets: Provide brackets and hardware as manufactured by BlueWater Mfg. Inc. for deck applications.
          2. Adaptors: As manufactured by BlueWater Mfg. Inc., for permanent placement of VersaClamp.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if no portable guard rail system for parapets.

* + 1. Portable Guard Rail System for Parapets: Provide C-clamp locking guard rail system with off-set compression plates and compression rods designed for use on parapets.
       1. Approved Product: ParaClamp.
       2. Height: Adjustable, to comply with OSHA guard rail heights.
       3. Clamps: Expand from 1 inch (25 mm) to 12 inches (305 mm); or 1 inch (25 mm) to 25 inches (635 mm).
       4. Accessories:
          1. Toe Board Brackets: Provide brackets and hardware as manufactured by BlueWater Mfg. Inc. for deck applications.
          2. Adaptors: As manufactured by BlueWater Mfg. Inc., for Safety Rail 2000 rail sections as required.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if no portable guard rail system for medians.

* + 1. Portable Guard Rail System for Medians: Provide C-clamp locking guard rail system with off-set compression plates and compression rods designed for use on medians.
       1. Approved Product: MedianClamp.
       2. Height: Adjustable, to comply with OSHA guard rail heights.
       3. Clamps: Expand from 1 inch (25 mm) to 12 inches (305 mm); or 1 inch (25 mm) to 25 inches (635 mm).
       4. Accessories:
          1. Adaptors: As manufactured by BlueWater Mfg. Inc., for Safety Rail 2000 rail sections as required.
  1. FITTINGS
     1. Pipe Fittings:
        1. Approved Product: Kwik-Fit.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs. If retaining the second paragraph, consult with manufacturer as to which fittings to specify.

* + - 1. Type: Provide fittings required for a complete operational system that meets OSHA requirements.
      2. Type: Provide the following:
         1. Series 1047 - 90 Degree Elbow.
         2. Series 1048 - Short Tee.
         3. Series 1049 - Long Tee.
         4. Series 1050 - Railing Base Flange.
         5. Series 1051 - 3-Way Blind Corner.
         6. Series 1052 - 3 Way Open Corner
         7. Series 1053 - Short Cross.
         8. Series 1054 - Straight Sleeve.
         9. Series 1055 - Expanding Connector.
         10. Series 1056 - Internal Swivel Tee.
         11. Series 1057 - Swivel Base.
         12. Series 1058 - Base Flange.
         13. Series 1060 - Wall Flange.
         14. Series 1061 - Rail Bracket.
         15. Series 1062 - Side Outlet Tee.
         16. Series 1063 - 4 Way with Center Pipe.
         17. Series 1064 - Short Tee Swivel.
         18. Series 1065 - Adjustable 2 Socket Cross.
         19. Series 1067 - Variable Angle Tee.
         20. Series 1068 - Collar.
         21. Series 1069 - Gate Eye.
         22. Series 1070 - Gate Hinge.
         23. Series 1071 - Hook.
         24. Series 1072 - Fixing Pad.
         25. Series 1073 - Single Male Swivel.
         26. Series 1074 - Single Female Swivel.
         27. Series 1075 - Alternate Male Swivel.
         28. Series 1076 - Double Male Swivel.
         29. Series 1077 - 90 Degree Corner Male Swivel.
         30. Series 1078 - Cross Over.
         31. Series 1079 - Clamp On Tee.
         32. Series 1080 - Single Swivel Kit.
         33. Series 1081 - Base Swivel Kit.
         34. Series 1082 - Double Swivel Kit.
         35. Series 1083 - 90 Degree Corner.
         36. Series 1084 - Spare Screws.
         37. Series 1085 - End Cap.
         38. Series 1086 - Extended Straight Sleeve.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs.

* + - 1. Material, Structural Pipe Fittings: Malleable iron, in accordance with BS EN 1562.
      2. Material, Fitting Types 26, 27 and 90: Weldable cast steel, in accordance with BS 3100.
      3. Finish: Pipe fittings shall be galvanized in accordance with BS EN ISO 1461.
      4. Fitting, Inside Diameter:

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs.

* + - * 1. 1.73 inch (44 mm).
        2. 1.97 inch (50mm).
      1. Hardware: Stainless steel set screws, in accordance with BS 970 Grade 420. Each set screw shall support axial load of 900 kg when tightened to torque of 40Nm.
  1. ACCESSORIES

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

* + 1. Safety/Caution Signage: Cushioned foam strip with self adhesive backing; UL- rated for indoor/outdoor use.
       1. Approved Product: Safety Strip.
       2. Thickness: 3/8 inch (9.5 mm).
       3. Length: 36 inches (914 mm).

\*\* NOTE TO SPECIFIER \*\* Retain one of the following two paragraphs.

* + - 1. Width: 2 inches (51 mm).
      2. Width: 4 inches (102 mm).

\*\* NOTE TO SPECIFIER \*\* Retain one of the following two paragraphs.

* + - 1. Color: Safety yellow.
      2. Color: Safety yellow with black stripes.
    1. Roof Pads: Provide the following pad under each base to protect roof membrane.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs below.

* + - 1. Approved Product: BUR Pad.
      2. Approved Product: EPDM Roof Pad.
    1. Rolling Storage Cart: Provide four-wheeled cart for storage and movement of SafetyRail 2000 components.
       1. Approved Product: RTC-2000.
       2. Capacity: 120 lineal feet (36.6 m) of various size railings (70 feet (21 m) usable); 12 individual rail sections.
       3. Lockable Storage Box: For storage of toe board brackets and securing pins.
       4. Lifting Rings: For hoisting to elevated areas.
    2. Base Mover: Provide two-wheeled steel cart to transport one base unit.
       1. Approved Product: EZ Mover.
  1. FlNlSHES

\*\* NOTE TO SPECIFIER \*\* Retain one of the following two paragraphs.

* + 1. Finish: Factory finished powder coat paint.
    2. Finish: Hot dipped galvanized.

\*\* NOTE TO SPECIFIER \*\* Retain one of the following two paragraphs if retaining powder coat paint.

* + 1. Color: Safety yellow.
    2. Color: Match Architect's sample.
  1. FABRICATI0N
     1. Assemble components with joints tightly fitted and secured. Accurately form components to suit installation.

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. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   3. INSTALLATION
      1. Install in accordance with manufacturer's instructions.
   4. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION