SECTION 07 72 00

ROOF ACCESSORIES

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\*\* NOTE TO SPECIFIER \*\* Tractel Ltd.; Roof accessories, roof safety systems.  
This section is based on the products of Tractel Ltd., which is located at:  
1615 Warden Ave.  
Scarborough, ON, Canada M1R 2T3  
Tel: 416-298-8822  
  
Bluewater  
952-448-2935  
  
Fabenco  
713-686-6620  
  
Email: [request info (marketing.swingstage@tractel.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Tractel+Ltd.&coid=36094&rep=&fax=&message=RE:%20Spec%20Question%20(07720blu):%20%20&mf=)  
Web: <http://www.tractel.com> | <https://www.tractel.com/us>   
 [ [Click Here](https://www.arcat.com/arcatcos/cos36/arc36094.html) ] 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 guardrail 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 guardrail 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 guardrail 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 accessories of the following types:
       1. Roof edge protection.
       2. Roof edge protection, custom design.
       3. Collapsible guard rails.
       4. Permanent warning line system.
       5. Leading edge fall protection.
       6. Hatch/skylight railing system.
       7. Grab bars for safety rail.
       8. Self-closing safety gate.
       9. Modular railing system for roof.
       10. Non-penetrating railing system for roof edge fall protection.
       11. Portable warning/barrier system for roof.
       12. Portable guard rail system for roof.
       13. Non-penetrating safety solution for skylight fall protection.
       14. Skylight safety screens and location markers
  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. ASTM International (ASTM):
       1. ASTM A 153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
       2. ASTM A 447 - Standard Specification for Steel Castings, Chromium-Nickel-Iron Alloy (25-12 Class), for High-Temperature Service.
    2. British Standards (BS):
       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.
    3. California Occupational Safety & Health Administration (CAL OSHA):
       1. CAL OSHA 1620 - Design of Temporary Railing.
       2. CAL OSHA 1621 - Railings and Toe Boards.
       3. CAL OSHA 1633 - Elevator Shafts to be Guarded.
       4. CAL OSHA 3209 - Standard Guardrails.
       5. CAL OSHA 3210 - Guardrails at Elevated Locations.
       6. CAL OSHA 3211 - Wall Openings.
       7. CAL OSHA 3212 - Floor Openings, Floor Holes and Roofs.
       8. CAL OSHA 3213 - Service Pits and Yard Surface Openings.
       9. CAL OSHA 3214 - Stair Rails and Handrails.
    4. Occupational Safety & Health Administration (OSHA):
       1. OSHA 29 CFR 1910.23 - Guarding Floor and Wall Openings and Holes.
       2. OSHA 29 CFR 1910.27 - Fixed Ladders.
       3. OSHA 29 CFR 1926.500 - Scope, Application, And Definitions Applicable to this Subpart.
       4. OSHA 29 CFR 1926.501 - Duty to Have Fall Protection.
       5. OSHA 29 CFR 1926.502 - Fall Protection Systems Criteria and Practices.
       6. OSHA 29 CFR 1926.503 - Training Requirements.
       7. OSHA Warning Line Interpretations dated May 12, 2000, November 15, 2002, and January 3, 2005.
  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 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 year warranty.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Tractel Ltd., which is located at: 1615 Warden Ave.; Scarborough, ON, Canada M1R 2T3; Tel: 416-298-8822; ; Bluewater; 952-448-2935; ; Fabenco; 713-686-6620; ; Email: [request info (marketing.swingstage@tractel.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Tractel+Ltd.&coid=36094&rep=&fax=&message=RE:%20Spec%20Question%20(07720blu):%20%20&mf=); 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.
  1. SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Delete if roof edge protection is not required.

* + 1. Roof Edge Protection: Provide freestanding pedestrian egress barrier system on roof, including pipe railings, uprights, bases, and fittings.
       1. Approved Product: SafetyRail 2000 as manufactured by BlueWater Mfg., Inc.
       2. Standards: System shall have top and mid rail in accordance with OSHA Standards - 29 CFR 1910.23 (a)(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:

a.\*\* NOTE TO SPECIFIER \*\* Delete toe board brackets if not required.Toe Board Brackets: Provide brackets and friction knobs as manufactured by BlueWater Mfg. Inc.

* + - * 1. Step-Rail: Variable height railing enables a continuous run of SafetyRail 2000 when the roof steps up or down.
        2. Raised Mid-Rail: Railing to fit over duct work for continuous run of SafetyRail2000.
        3. LP Outrigger: Supports placed under ducting or conduit to continue run of SafetyRail 2000 when rail section cannot be used.
        4. SG2000: Sliding gate.
        5. 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 following paragraph if roof edge protection with custom design is not required.

* + 1. Roof Edge Protection: Provide freestanding Architectural System Roof Edge Protection System, including pipe railings, uprights, bases, counterweights and fittings; with 42 inch (1067 mm) minimum height to provide a pedestrian egress barrier on the roof.
       1. Custom Design: As manufactured by BlueWater Mfg., Inc.; provide pipe, fittings, and accessories as indicated or required by Drawings to match design indicated.
       2. Standards: System shall meet or exceed the requirements in OSHA Standards - 29 CFR 1910.23.
       3. Structural Load: 200 lb (90.7 kg), minimum, in any direction to all components in accordance with OSHA Regulation 29 CFR 1910.23.
       4. Fittings, Including Elbows, Crossovers, Wall flanges, Tees, Couplings: Galvanized Malleable Cast Iron; Kwik Fit structural pipe fittings, ASTM A 447 with ASTM A 153 galvanizing.
       5. Steel Pipe: ASTM A53 Grade B seamed tube; 1-1/4 inches (32 mm) schedule 40, galvanized.
       6. Rails and Posts: 1-1/4 inches (32 mm) diameter.
       7. Mounting Bases: Galvanized steel bases, supplied with a rubber pad on underside of the component.

\*\* NOTE TO SPECIFIER \*\* Delete fastener alloy type not required.

* + - 1. Fasteners: Type 304 stainless steel.
      2. Fasteners: Type 305 stainless steel.

\*\* NOTE TO SPECIFIER \*\* Delete if collapsible guard rails are not required.

* + 1. Collapsible Guard Rails: Provide collapsible portable guard rail section with one-way pivot assembly that allows guardrail to fold down to horizontal surface for clean sightlines; requires no penetrations in substrates for installation. Rails shall be compatible with SafetyRail 2000 Guardrail System.
       1. Approved Product: Stealth Rail as manufactured by BlueWater Mfg., Inc.
       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.
       4. Structural Load: 200 lb (90.7 kg), minimum, in any direction to all components in accordance with OSHA Regulation 29 CFR 1926.502.
       5. Height: 42 inches (1067 mm), minimum.
       6. Railings: 1-5/8 inch (41 mm) O.D. hot rolled pickled electric weld tubing, free of sharp edges and snag points.
       7. Mounting Bases: Class 30 gray iron material cast with four receiver posts. Provide rubber pads on bottom of bases.
       8. 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 if permanent warning line system is not 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 as manufactured by BlueWater Mfg., Inc.
       2. Standards: Warning line system shall meet or exceed the requirements in OSHA Standards - 29 CFR 1926.502(f)(2).
       3. Flag Assembly:
          1. 3/16 inch (4.75 mm) Galvanized Aircraft Cable: Vinyl coated.
          2. Flags: Galvanized sheet steel with a powder coated finish in Safety Yellow.
          3. Flags shall be swaged in place with an aluminum sleeve.

\*\* NOTE TO SPECIFIER \*\* Delete if leading edge fall protection is not 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. 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 as manufactured by BlueWater Mfg., Inc.

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

* + - 1. System Description: Portable.
      2. System Description: Permanent.
      3. Standards: System shall meet or exceed the requirements in OSHA Standards - 29 CFR 1910.23 and 1926.502.
      4. Size: Custom, as indicated on Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete if roof hatch/skylight system is not required. SR2K is for use as roof hatch, skylight, fire vent and floor door protection.

* + 1. Hatch/Skylight Railing 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 as manufactured by BlueWater Mfg., Inc.

\*\* 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 1910.23, including 1910.23 (a)(3)(i); 1910.27.
      2. Structural Load: 200 lb (90.7 kg), minimum, in any direction to all components in accordance with OSHA Regulation 29 CFR 1910.23 (e)(3)(iv).
      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.

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

* + - 1. Gate Opener: Latch pole.
      2. Gate Opener: Latch.
      3. Installation: Locate within 6 inches of open roof hatch or roof opening.

\*\* NOTE TO SPECIFIER \*\* Delete if grab bar system is not 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 for Safety Rails: Mounts to an open receiver on the SafetyRail 2000 base. Width of bars shall adjust to ladder width inside hatch.
       1. Approved Product: Grab Bar as manufactured by BlueWater Mfg., Inc.
       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.

\*\* NOTE TO SPECIFIER \*\* Delete if self-closing safety gate is not required.

* + 1. 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 3 inches (76 mm) to plus 3 inches (76 mm).
       1. Approved Product: Guarddog Self-Closing Safety Gate as manufactured by BlueWater Mfg., Inc.
       2. Standards: System shall have top and mid rail in accordance with OSHA Standards - 29 CFR 1910.23 (a)(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 if modular railing system is not required.

* + 1. Modular Railing System for Roof: Provide metal handrail system utilizing handrail brackets, handrail fittings and hex key for assembly.
       1. Approved Product: Kwik-Rail as manufactured by BlueWater Mfg., Inc.; 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 1910.23 (a)(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 if non-penetrating railing system is not required.

* + 1. 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 Guardrail System as manufactured by BlueWater Mfg., Inc.
       2. Standards: System shall meet and exceed OSHA Standards - 29 CFR 1926.502 (b) and 1910.23 (e).
       3. Height: 42 inches (1067 mm), minimum.
       4. Railings and Stanchions: 1-1/4 inch galvanized 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 \*\* Protect your Skylights and employees with the non-penetrating BlueWater Manufacturing Skylight Defender. Delete the following paragraph if no skylight fall protection system.

* + 1. Non-Penetrating, OSHA-Compliant Safety Solution for Skylight Fall Protection:
       1. Approved Product: Skylight Defender as manufactured by BlueWater Mfg., Inc.
       2. Design: Compression attachment system that does not require drilling into the roof membrane.
       3. Size: Customizable sizes.
       4. Performance: Meets and exceeds the 200lb OSHA Regulation 1910.23(a)-1910.23(e)(8) and the 400lb OSHA-Cal Regulation = OSHA Regulations 29CFR 1910.23 and 1925.502.

\*\* NOTE TO SPECIFIER \*\* Delete if portable warning/barrier system is not required.

* + 1. Portable Warning/Barrier System for Roof: Provide self-contained, hand carried visual warning system with spindle mount and handle for transporting and hoisting.
       1. Approved Product: Kwik-Stand as manufactured by BlueWater Mfg., Inc.
       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 for Roof: Provide C-clamp locking guard rail system with off-set compression plates and compression rods.
       1. Approved Product: Versa-Clamp as manufactured by BlueWater Mfg., Inc.
       2. Height: Adjustable, to comply with OSHA guardrail heights.
       3. Clamps: Expand from 1 inch (25 mm) to 12 inches (305 mm).
       4. Accessories:
          1. Toe Board Brackets: Provide brackets and friction knobs as manufactured by BlueWater Mfg. Inc. for deck applications.
          2. Adaptors: As manufactured by BlueWater Mfg. Inc., for permanent placement of Versa-Clamp.
    2. Skylight Safety Screens:

\*\* NOTE TO SPECIFIER \*\* Flat Skylight Defender Screen Model FSD is a metal screen system that is attached to the standing seam roof over a skylight panel to protect against injuries or death from accidental falls through the panel of the skylight. Model FSD is attached to the roof using the appropriate S-5 clamps for a strong/rigid installation. Delete if not required.

* + - 1. Product: Flat Skylight Defender Screen Model FSD for Standing Seam Roofs as manufactured by BlueWater Mfg., Inc.
         1. Construction: 0.25 inch (6 mm) diameter galvanized steel wire in a welded 4 inches X 4 inches (102 mm x 102 mm) grid, flat with an overall size of 40 inches x 128 inches (1016 mm x 3251 mm).
         2. Product is attached to the roof using the appropriate S-5 clamps.

\*\* NOTE TO SPECIFIER \*\* Flat Skylight Defender Screen Model FSD is a metal screen system that is attached to the metal rib/corrugated roof over a skylight panel to protect against injuries or death from accidental falls through the panel of the skylight. Model FSD is attached to the roof using four mounting strips for a strong/rigid installation. Delete if not required.

* + - 1. Product: Flat Skylight Defender Screen Model FSD for Metal/Corrugated Roofs as manufactured by BlueWater Mfg., Inc.
         1. Construction: 0.25 inch (6 mm) diameter galvanized steel wire in a welded 4 inches X 4 inches (102 mm x 102 mm) grid, flat with an overall size of 40 inches x 128 inches (1016 mm x 3251 mm).
         2. Product is attached to the roof using four mounting strips.

\*\* NOTE TO SPECIFIER \*\* The Skylight Demarcation Kit provides visual location of skylights on snow covered rooftops. Four orange colored fiberglass markers are used to indicate each corner of the skylight. On larger skylights, additional markers can be installed around the periphery. The markers easily attach to all of Bluewater's Skylight Defenders and are also designed to fit other manufacturer's skylight screens.  
NOTE! These units are not intended to replace OSHA required skylight protection.  
Delete if not required.

* + 1. Skylight Location Markers:
       1. Product: Skylight Demarcation as manufactured by BlueWater Mfg., Inc.
       2. Construction: Four 5/16 inch (8 mm) diameter 48 inches (1219 mm) tall orange fiberglass markers with a band of reflective tape located near the top.
          1. Hardware: Stainless steel mounting brackets are provided along with all the mounting hardware to connect to the BlueWater Skylight Defender.
          2. Mounting holes are provided to connect to other manufacturer's products using customer supplied screws.
  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. FABRICATION
     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