Part 1 General

1.1 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM D624-98, Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.

.2 ASTM D1171-99, Standard Test Method for Rubber Deterioration-Surface Ozone Cracking Outdoors or Chamber.

.3 ASTM D2632-96, Standard Test Method for Rubber Property-Resilience by Vertical Rebound.

1.2 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Indicate:

.1 Dimensions and required clearances.

.2 Fastening methods for dock bumpers.

1.3 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal, and with the Waste Reduction Workplan.

Part 2 Products

2.1 MANUFACTURED UNITS

.1 Laminated Dock Bumper

.1 Rubberized fabric truck tires cut to uniform size pads 254 x 305 mm, with 290 mm overall projection. Pads punched to receive 19 mm steel supporting rods.

.2 Rubber pads laminated between structural steel angles and compressed under approximately 680 kg pressure. Angles welded to 19 mm steel rods at one end and closed with threaded rod and nut at other end.

.3 Anchor leg of angle extends 76 mm beyond rubber surface at each end and contains 21 mm anchor bolt holes as required.

.4 Hot-dipped galvanized finish for exposed metal parts.

Part 3 Execution

3.1 INSTALLATION

.1 No assembly required for pre-manufactured unit. Install dock bumper as indicated.

.1 Laminated Dock Bumper: Provide bolting through steel for structural mounting angles as per manufacturer's instructions.

.2 Install (4) dock bumpers at each dock high loading bay as indicated on drawings.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM A653/A653M- 99, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 ASTM A924/A924M- 99, Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

.3 ASTM D1056- 98, Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.

1.2 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Indicate:

.1 Dimensions and required clearances.

.2 Fastening methods for door seals.

.3 Materials and finishes.

1.3 CLOSEOUT SUBMITTALS

.1 Provide operation and maintenance data for dock shelter seal care, cleaning and maintenance for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal, and with the Waste Reduction Workplan.

Part 2 Products

2.1 EQUIPMENT

.1 Truck dock seals.

.1 Provide 1 set with fixed or hinged header to suit size of loading dock door and foam filled side pad truck dock seal.

.2 Construct dock seals consisting of polyurethane foam factory mounted to 50 mm thick seasoned wood completely encased in steel frames and covered with fabric.

.1 Polyurethane foam: ASTM D1056, unaffected by moisture, heat or cold and retaining resiliency to - 40C.

.2 Covering fabric: vinyl coated nylon, install air escape holes remaining flexible to - 40C.

.3 Size dock seal for 2740 mm wide x 3048 mm high opening.

.4 Header and sides 300 mm wide with 450 mm projection.

.3 In fabric cover provide 125 mm wide integral yellow guide stripes sewn to full length of each jamb and header.

.4 Mounting Hardware: Galvanized.

.5 Optional Pad Wearface: reinforced bottom corners, extra layer of fabric on headpad, pleated layer of fabric sewn to face of boards.

Part 3 Execution

3.1 INSTALLATION

.1 Install loading dock seals, shelters in accordance with manufacturer's instructions and as indicated.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.40-97, Anticorrosive Structural Steel Alkyd Primer.

.2 The Master Painters Institute (MPI)

.1 Architectural Painting Specification Manual.

1.2 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Indicate:

.1 Dimensions of pit and required clearances.

.2 Arrangement of storage tank, pump, jacks mechanical linkages and valves and piping, with sizes and working pressure.

.3 Details of cylinder, plunger, pump, motor, valves and operating station, showing names of manufacturers, type or style designations, part numbers, and hp and rpm of motor.

.4 Factory test data of cylinder containing complete information covering test, cylinder material, inside and outside diameters and maximum test pressure.

.5 Details of electrical equipment.

1.3 CLOSEOUT SUBMITTALS

.1 Provide operation and maintenance data for dock leveller for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

.2 Include:

.1 Complete description and sequence of operation together with wiring diagrams showing electrical connections, manufacturer's instructions covering maintenance requirements, and parts catalogue giving complete list of repair and replacement parts with cuts and identifying numbers.

.2 Dimensioned drawing of dock leveller installation as installed.

1.4 EXTRA MATERIALS

.1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.

.2 Provide complete set of tools necessary to maintain and adjust every part of dock leveller.

.3 Provide high pressure cartridge refill type grease gun and extra cartridge of recommended lubricant.

Part 2 Products

2.1 EQUIPMENT

.1 Hydraulic unit

.1 Provide pit installed, fully automatic, remote controlled, pneumatic hydraulic, biased, hinged lip dock leveller with maximum capacity of moving or roll-over live load of 9000 kg.

.2 Platform to lower itself to bottom position, level with dock and with lip behind bumpers, when truck moves away.

.3 Provide manual override to be used in case of power failure, and allow lip to remain extended if desired.

.4 Each unit supplied with power pack consisting of:

.1 Pneumatic cylinder, control valve, pump, fluid receiver, connections suitable for wall pit mounting and 10 m of air line.

.2 Integral motor, controls, pump, fluid receiver, connections suitable for wall pit mounting.

.5 Power characteristics 208 volts, 3 phase.

.6 Make cylinder of seamless steel piping with bore turned and polished and with positive stop ring to prevent plunger from leaving cylinder. Provide top and bottom mountings to ensure positive alignment and to prevent binding in any position of ramp platform.

.7 Equip lifting jack assembly with two bearings for vertical stability, oil inlet connections, stuffing box with suitable packing and plunger wipe, and packing gland.

.8 Have cylinder factory tested at pressure of 2.8 MPa minimum.

.9 Provide electric power unit consisting of motor and direct-connected pump, wiring, conduit, oil piping and accessories.

.10 Provide overload protection for motor, and pressure relief valve in pump bypassing oil back to reservoir. Provide check valve, continuous-duty solenoid valve and flexible hose.

.11 Oil Reservoir

.1 Make oil reservoir integral with torque tube assembly or separate welded steel tank, galvanized inside and out.

.2 Equip reservoir with strainer assembly and overflow and drain connections and protected vent opening.

.3 Provide initial filling of oil for system.

.2 Leveller platform

.1 Platform size: 2134 mm wide by 1500 mm long with 400 mm wide hinged lip.

.2 Construct platform sections of checkered steel floor plate not less than 10 mm thick, flush with front edge of dock ramp frame in retracted position.

.3 Construct platform base of sectional steel box members including an automatic compensation for out-of-level vehicles.

.4 Make leveller flexible with sufficient members to compensate for out-of-level vehicle condition of 100 mm maximum with not more than 15 mm differential between any two flexible members in extreme condition.

.5 Use members of heavy structural shapes, rigidly welded and reinforced for concentrated wheel loads.

.6 No obstruction to protrude above platform floor surface of leading edge of leveller that will prevent closing of overhead doors installed over leveller platform, or hinder operations.

.7 Make side members of leveller platform to function as protective steel plate skirts on each side of leveller platform front to back, when leveller platform is in fully raised position.

.8 Construct underframe of leveller platform of rigid construction and supported by lifting mechanism at two widely separated points to prevent tilting, deflection or distortion of platform when concentrated wheel loads, up to and including maximum moving or roll-over load, are imposed on any position of platform.

.9 Leveller to have retractable safety legs or other safety stop device, that prevent leveller from descending to more than 12mm below cross traffic position in event truck pulls away prematurely.

.10 Provide two laminated fabric reinforced moulded rubber compounded bumpers for each unit.

.3 Operating station

.1 Install wall mounted operating station where indicated.

.2 Provide four operating positions, clearly and permanently marked "UP", "DOWN", "FORWARD" and "REVERSE".

.3 Operate by handle or push-buttons for each position. Return operating handle to "OFF" position when released while moving leveller in any direction, and stop leveller in position at moment of release pushbuttons stop motion when released.

.4 Operate limit switches or similar devices at extreme positions of ramp travel to protect power system and mechanism from damage.

.5 Provide automatic safety lock to limit downward travel of leveller platform to maximum 50 mm in event trailer or truck moves away from leveller while carrying load up to maximum capacity.

.6 Accessories

.7 Fail safe control: equip leveller with velocity valve in hydraulic system to prevent fluid discharge in event truck accidentally pulls away with equipment still on leveller.

.8 Maintenance strut: steel folding strut to prevent accidental collapse of leveller and lip during maintenance.

.9 Automatic overhead door security: automatic locking mechanism to leveller lip to prevent unauthorized lowering of leveller and access to building between lowered leveller and underside of closed door.

.10 Wheel chocks: moulded rubber, wheel chocks designed to provide maximum traction between tires and parking surface.

.11 Provide weatherseals on both sides of platform.

.12 Safety legs: equip leveller with safety legs to prevent leveller dropping more than 25 mm below dock level, in event truck pulls away when leveller is in use.

.13 Provide steel tapered toe guards.

.14 Provide safety stripping four sides of unit.

.15 Vehicle restraint: ICC bar with interlock feature for dock leveller operation to ensure restraint device is active or permit manual override allowance.

.16 Dock light on adjustable bracket arm.

.4 Communication System

.1 Red/Yellow/Green LED interior traffic lights and warning signage to communicate whether it is safe to enter the loading dock.

.2 Red/Yellow/Green LED exterior traffic lights and warning signage to communicate whether it is safe for a driver can leave the loading dock.

.3 Interlock both interior and exterior traffic lights with the control system for the dock leveller and vehicle restraint.

.5 Finish

.1 Paint slip resistant exposed ferrous metal work unless otherwise specified.

.2 Free surfaces of rust and coat with rust resistant paint.

.3 Clean but do not paint surfaces to be field welded.

.4 Apply two coats of anticorrosive structural steel alkyd primer to CAN/CGSB-1.40 MPI EXT 5.1 to surfaces of structural members and frame of ramp excepting finished or working surfaces.

.5 Apply heavy coat of bituminous paint to concealed surfaces before building-in.

.6 Power supply

.1 Power supply: 208 V, 3 phase, 60 Hz.

.2 Electrical service specified in Section 26 05 00 - Common Work Results for Electrical includes: fused disconnect switch with conductors from switch to controller or starter.

Part 3 Execution

3.1 INSTALLATION

.1 Install dock ramps in accordance with manufacturer's instructions.

.2 Install electrical motors, controller units, pushbutton stations, relays and other electrical equipment required for proper operation.

.3 Touch up shop primer to bolts, welds, and burned or scratched surfaces at completion of installation.

.4 Adjust dock ramp operating components to ensure smooth continuous raising and lowering of platforms.

.5 Deck surface in normal down position is to be level and flush with surface of surrounding dock surface.

.6 Install wiring in conduit in accordance with Canadian Electrical Code 2006.

3.2 SITE TESTS

.1 Conduct operating tests for approval of Departmental Representative including:

.1 Operation to maximum limits of travel in "UP", "DOWN", "FORWARD", and "REVERSE" directions.

.2 Extending ramp to rest on bed of variety of trucks or trailers.

.3 Demonstration of drop limitation.

.4 Demonstration of proper functioning of out-of-level compensation.

.5 Demonstration of proper functioning of compensation for variation in compression of truck or trailer springs.

.6 Any other test required by DCC Representative to ensure full compliance with specification requirements.

.7 Demonstration of loading capacity.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.40-97, Anticorrosive Structural Steel Alkyd Primer.

.2 The Master Painters Institute (MPI)

.1 Architectural Painting Specification Manual.

1.2 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Indicate:

.1 Dimensions of pit and required clearances.

.2 Arrangement of storage tank, pump, jacks mechanical linkages and valves and piping, with sizes and working pressure.

.3 Details of cylinder, plunger, pump, motor, valves and operating station, showing names of manufacturers, type or style designations, part numbers, and hp and rpm of motor.

.4 Factory test data of cylinder containing complete information covering test, cylinder material, inside and outside diameters and maximum test pressure.

.5 Details of electrical equipment.

1.3 CLOSEOUT SUBMITTALS

.1 Provide operation and maintenance data for dock leveller for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

.2 Include:

.1 Complete description and sequence of operation together with wiring diagrams showing electrical connections, manufacturer's instructions covering maintenance requirements, and parts catalogue giving complete list of repair and replacement parts with cuts and identifying numbers.

.2 Dimensioned drawing of dock leveller installation as installed.

1.4 EXTRA MATERIALS

.1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.

.2 Provide complete set of tools necessary to maintain and adjust every part of dock lift.

.3 Provide high pressure cartridge refill type grease gun and extra cartridge of recommended lubricant.

Part 2 Products

2.1 EQUIPMENT

.1 Hydraulic Dock Lifts: Provide manufacturer's hydraulic dock lifts of capacity, size, configuration and construction indicated, consisting of a safety tread steel platform, lifetime lubricated bearings and a hydraulic operating system with controls, safety devices and accessories. Fabricate lift from structural steel shapes rigidly welded and reinforced for maximum strength, safety and stability. Design assembly to withstand deformation during both operating and stored phases of service. Provide mounting brackets.

.2 Toe Guards: Bevel toe guards on all four sides

.3 Platform: Fabricate platform from heavy steel plate to comply with MH29.1

.4 Platform Surface: Nonskid, safety tread deck plate

.5 Cylinders: Machine grade cylinders with mechanical internal stops and return lines from breather vents to the reservoir. Cylinder rods are chrome plated and polished. Cylinders equipped with flow controls to prevent free fall in compliance with MH29.1.

.6 Bearings: Rollers and pivot points equipped with lifetime teflon self-lubricating bearings.

.7 Hydraulic Power Unit: Manufacturer's standard self contained remotely located assembly consisting of a steel reservoir, UL listed motor, high pressure gear pump and valve manifold with pressure compensated flow control, down solenoid, check valve and relief valve.

.8 Electrical Controls: NEMA 12 UL listed control box with magnetic motor starter with 3 pole adjustable overloads, 24 Volt 4 amp fused secondary control transformer and the entire control box assembly, not just components, shall be labeled as UL listed.

.9 Safety Devices: Provide Manufacturer's standard safety support in compliance with MH29.1 and devices as follows:

- .1 Removable handrails constructed 42 inch (1067 mm) high with midrail and 4 inch (102 mm) kick plate.
- .2 Pit mounted units shall be equipped with 8 inch (203 mm) bevel toe guards and have a minimum 2 inch (51 mm) black and yellow marking along the lower edge of the toe guards.

.10 Paint Finish: Manufacturer shall fully prime the entire unit, apply enamel paint and bake cure the final finish, blue color.

.11 Axles and Shafts: Chrome plated.

.12 Pit Mounted Disappearing Dock Lifts: Series 4000 as manufactured by Advance Lifts, Inc.

- .1 Equipped with a hinged bridge with lifting chains.
- .2 Controllers assembled in manufacturer's UL approved panel shop.

.3 Units washed with phosphoric acid, fully primed and then finished with baked enamel.

.4 Cylinders are machine grade with clear plastic return lines and internal mechanical stops.

.5 Pressure hoses are double wire braid with JIC fittings.

.6 Reservoirs are mild steel.

.7 Vertical Travel Distance: 58 inches (1473 mm).

.8 Model: 4460

.1 Capacity: 20,000 lbs (6804 kg).
.2 Axle Capacity Ends: 12,000 lbs (5443 kg).
.3 Axle Capacity Sides: 10,500 lbs (4763 kg).
.4 Platform Size: 8 ft (2438 mm) x 10 ft (3048 mm).
.5 Lowered Height: 20 inches (419 mm).
.6 Motor: 7.5 HP.
.7 Vertical Lift Speed: Approximately 8 FPM (0.04 m/s).

2.2 ACCESSORIES

.2 Hinged Steel Bridges:

.1 Bridge Material: Nonskid, safety tread plate.
.2 Bridge for Series 4000: Steel, 2170mm x 300mm..

.3 Handrails and Safety Chains:

.1 Removable Stanchion: 42 inch (1067 mm) high removable steel pipe stanchion.

.4 Automatic Bridge Activator

.5 Automatic Mechanical Wheel Chock

.6 Electric Accessories:

.1 NEMA 4X weatherproof pendent push button.
.2 NEMA 1 wall mounted push button.
.3 UP-DOWN selector switch/key operated.
.4 UP-DOWN push button with key lockout.
.5 Electric limit switch mounted or loose.
.6 Warning Light: Guarded warning light for 1045 and 1055.
.7 Two second warning bell.
.8 Quick disconnect push button (plug and receptacle mounted in box).
.9 5 HP-230v/60hz/single phase power unit add-on (Series T, 2000, 3000, 6000).
.10 Power Unit Covers: For Series T and 2000, floor mounted without immersion heater.
.11 Oil Immersion Heater.

.7 Hydraulic Accessories:

.1 Hydraulic velocity fuses.
.2 Manual down valve for remote power unit.
.3 Oil:
.4 15 gallons for series 4000

.5 1/2 inch (13 mm) Hydraulic Hose: _____ linear foot
.6 3/4 inch (19 mm) Hydraulic Hose: _____ linear foot.

.8 Additional Accessories:

.1 One pint spray can of touch up paint per unit specified.
.2 One extra equipment manual per unit specified.

Part 3 Execution

3.1 EXAMINATION

.1 Examination: Verify field measurements and that surfaces, substrates and conditions are suitable and ready to receive Work. Pit dimension tolerances are plus 0.25 inch (6 mm), minus 0 inches (0 mm).

.2 Preparation:

.1 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
.2 If preparation is the responsibility of another installer, notify Architect of deviations from manufacturer's recommended installation tolerances and conditions.
.3 Do not proceed with installation until substrates have been prepared and deviations from manufacturer's recommended tolerances are corrected.
.4 Commencement of installation constitutes acceptance of conditions.

3.2 INSTALLATION

.1 Coordinate with concrete formwork for recessed pit for dock lift to ensure that all dimensions conform to the requirements for the specified size and model dock lift.

.2 Attach the dock lift securely according to manufacturer's written instructions.

3.3 ADJUSTING AND CLEANING

.1 Adjust installed products for safe, smooth, balanced, efficient operation of the loading dock equipment and accessories.

.9 After installation, touch up and restore all marred or abraded surfaces to original condition.

3.4 SITE TESTS

.1 Conduct operating tests for approval of DCC Representative including:

.1 Operation to maximum limits of travel in "UP", "DOWN", "FORWARD", and "REVERSE" directions.
.2 Extending ramp to rest on bed of variety of trucks or trailers.
.3 Demonstration of drop limitation.
.4 Demonstration of proper functioning of out-of-level compensation.

.5 Demonstration of proper functioning of compensation for variation in compression of truck or trailer springs.

.6 Any other test required by DCC Representative to ensure full compliance with specification requirements.

.7 Demonstration of loading capacity.

END OF SECTION