

SECTION 111319 STATIONARY LOADING DOCK EQUIPMENT

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PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Recessed loading dock levelers.
- B. Edge of dock (EOD) levelers.
- C. Fixed dock seals.
- D. Adjustable curtain dock seals.
- E. Fixed dock shelters.
- F. Foam dock shelters.

1.02 RELATED REQUIREMENTS

- A. Section 031000 - Concrete Forming and Accessories: Placement of leveler frame[**and safety lock frame**] into concrete [**loading dock**] [_____].
- B. Section 031000 - Concrete Forming and Accessories: Placement of seal and shelter frame into concrete.
- C. Section 033000 - Cast-in-Place Concrete.
- D. Section 111313 - Loading Dock Bumpers.
- E. Section 111316 - Loading Dock Seals and Shelters.

1.03 REFERENCE STANDARDS

- A. ANSI MH30.1 - Design, Testing, and Utilization of Dock Leveling Devices 2022.
- B. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2022).

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide materials and finish, installation details, roughing-in measurements, and operation of unit.
- C. Shop Drawings: Indicate required opening dimensions and tolerances, perimeter conditions of construction.
- D. Shop Drawings: Indicated framed wall opening, dimensions and tolerances, adjacent construction and fittings required for anchorages, and anchor points.
- E. Samples: Submit [**two**] [_____] cuts of [**seal**] [**shelter**] [_____] covering material, ____ by ____ inch (____ by ____ mm) in size, illustrating color and finish.
- F. Manufacturer's Instructions: Indicate special requirements.
- G. Manufacturer's Qualification Statement.
- H. Welders' Qualification Statement.
- I. Installer's Qualification Statement.
- J. Operation Data: Provide operating instructions, and identify unit limitations.

- K. Maintenance Data: Provide unit maintenance information, lubrication cycles, and spare parts manual.
- L. Executed warranty.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least **[one]** [] years of **[documented]** experience.
- B. Welder Qualifications: Welding processes and welding operators qualified within previous **[12 months]** [] in accordance with AWS D1.1/D1.1M.
- C. Installer Qualifications: Company specializing in performing work of type specified and with at least **[one]** [] years of **[documented]** experience **[and approved by manufacturer]**.

1.06 FIELD CONDITIONS

- A. Existing Conditions: Field verify dimensions of construction related to stationary loading dock equipment prior to fabrication, including **[recessed pit dimensions]** **[slope of inclined dock approach]** **[dock height]** **[and]** [].

1.07 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide 1-year manufacturer warranty for defective work from Date of Substantial Completion. Complete forms in Owner's name and register with manufacturer.
- C. Special Limited Warranty: Provide 4-year warranty for main spring on mechanical levelers following manufacturer warranty. Complete forms in Owner's name and register with warrantor.
- D. Extended Correction Period: Correct defective work within 2-year period commencing on Date of Substantial Completion if dock and door are purchased and installed by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer:
 - 1. Wayne Dalton; www.wayne-dalton.com; 1 (800) 827-3667.

2.02 RECESSED LOADING DOCK LEVELERS (PIT LEVELER)

- A. Wayne Dalton, Model **[M68WD]** **[M78WD]**.
 - 1. Provide manufacturer's standard loading dock levelers, complying with ANSI MH30.1 2022, and of capacity, size, and construction as indicated. Provide nonslip steel platform with complete controls, safety devices, and required accessories. Levelers complying with ANSI MH14.1 lack load testing compliance and are not permitted.
 - a. Recessed Concrete Pit: Provide **[preformed]** [] concrete pit sized to fit dimensions of specified loading dock levelers.
 - 1) Reinforce concrete slab as required to support dock leveler.
 - 2) See Section 033000 for additional cast concrete requirements.
 - 2. Automatic Vertical Compensation: Floating travel of dock leveler ramp edge extended to automatically compensate for upward and downward movement of truck bed during loading and unloading operations.
 - 3. Automatic Lateral Compensation: Tilting of dock leveler ramp edge extended and resting on truck bed to automatically compensate for canted truck bed up to 4 inches (102 mm) over width of ramp.
 - 4. Lip Operation: Manufacturer's standard mechanism that automatically extends and supports hinged ramp edge and rests on truck bed over dock leveler's working range, allows ramp edge to yield under incoming truck impact and automatically retracts ramp edge when truck departs.
 - a. Adjustable Lip Extension: [16 inches (406 mm)] [18 inches (457 mm)] [20 inches (508 mm)] long.
 - b. Lip Taper: 7 by 8 feet (2.13 by 2.44 m) only.

- c. Hinged Ramp Lip: Nonskid steel plate.
- d. Hinge: Provide self-cleaning lug hinges to avoid debris trapped in hinge and replaceable hinge pin for maintenance without breaking welds or grinding of metal.
- 5. Mechanical Operating System: Manually controlled, with counterbalance and spring operation; spring-operated raising and walk-down lowering of unloaded ramp.
 - a. Provide dock leveler with upward-biased-spring counterbalancing mechanism controlled by hold-down device; ramp raised to top operating range limit by operating recessed control handle to disengage hold-down device; ramp is lowered below building floor level by operating auxiliary recessed control handle releasing supporting legs.
 - 1) Mechanical Failsafe: Safety legs automatically engage in event of sudden truck departure.
- 6. Construction: Fabricate loading dock leveler frame, edge, and platform supports from structural and formed C-channel shapes, with platform and continuously supported hinged edge welded to supports, chamfer edge to minimize obstructing material-handling vehicles, and ensure entire assembly fabricated to withstand deformation during operation and storage phases of service.
 - a. Forklift Protection: Three wheel.
 - b. Toe Guards: **[Working range] [Full range in safety yellow]**.
- 7. Ramp Traffic Support: Provide support for ramp at platform level in stored position to support cross-dock traffic with ramp edge retracted. Provide ability to pull safety legs back and means to release supports allowing ramp to descend below platform level.
- 8. Ramp Maintenance Support: Provide safety brace mechanism in framework of lift, not within lip, to support ramp in up position during dock leveler maintenance.
 - a. Rated Capacity: Capable of supporting **[30,000 lb (13,608 kg)] [35,000 lb (13,063 kg)] [40,000 lb (18,144 kg)] [45,000 lb (20,412 kg)]** without permanent deflection or distortion.
- 9. Platform Size: [6 by 8 feet (1.83 by 2.44 m)] [7 by 8 feet (2.13 by 2.44m)] nominal.
- 10. Range of Operating: Dock levelers to compensate for height differences between truck bed and loading platform, as follows: 12 inches (305 mm) above dock level, and 12 inches (305 mm) below dock level.
- 11. Smooth Path: Beveled edge of lip ramp transition, edge to deck transition, and floor-to-deck transition to minimize jolts to equipment and workers.
- 12. Platform Deck: Steel checker plate deck for traction, reinforced on underside, welded to fabricated steel frame.
- 13. Frame: Clean-pit type, with no dirt traps from cross-pit beams in rear of pit; dock leveler supports at sides of pit, including full front-to-rear openness for ease of cleaning.
- 14. Hinged Ramp Lip: Nonskid steel plate.
 - a. Lip Hinge: Provide self-cleaning lug hinges to avoid debris trapped in hinge and replaceable hinge pin for maintenance without breaking welds or grinding of metal.
- 15. Finish: Textured powder coat to increase durability of finish and slip resistance, as well as reduce corrosion and VOCs.
- 16. Leveler Adjustment: Height adjusters operate above leveler deck to adjust plus or minus 1.25 inches (32 mm) without shims or welding equipment.
- 17. Transport Loops: Four lifting loops for top transport of leveler by forklift.
- 18. Hold Down: Reduces time that leveler is under tension, which increases equipment lifespan.
 - a. Include: **[Standard duty] [Heavy duty]**.
- 19. Safety Brace: Locate under leveler and tether to prevent loss or misplacement.
- 20. Bumpers: **[Standard 410-14] [_____]**
- 21. Weather Seals: **[Brush] [Neoprene]**.

2.03 EDGE OF DOCKS (EOD) LEVELERS

- A. Wayne Dalton; Model **[E66WD] [E72WD]**.

1. Hinged-edge type, in complying with ANSI MH30.1 2022, and located at exterior edge and securely mounted to face of loading dock. Levelers complying with ANSI MH14.1 lack load testing compliance and are not permitted.
2. Automatic Vertical Compensation: Floating travel of dock leveler ramp edge extended to automatically compensate for upward and downward movement of truck bed during loading and unloading operations.
3. Lip Operation: Manufacturer's standard mechanism that automatically extends and supports hinged ramp edge and rests on truck bed over dock leveler's working range, allows ramp edge to yield under incoming truck impact and automatically retracts ramp edge when truck departs unexpectedly. EOD also automatically stores to safe position when truck departs unexpectedly.
4. Mechanical Operating System: Manually controlled, with counterbalance and spring operation; spring-operated raising and lowering of ramp.
5. Construction: Fabricate loading dock leveler frame, edge, and platform supports from structural and formed steel shapes, with platform and hinged edge welded to supports; chamfer edge to minimize obstructing material-handling vehicles, and ensure entire assembly is fabricated to withstand deformation during operation and storage phases of service.
6. Ramp Maintenance Support: Provide safety brace mechanism in framework to support ramp in up position during dock leveler maintenance.
7. Rated Capacity: Capable of supporting **[20,000 pounds (9072 kg)] [30,000 pounds (13,608 kg)]** without permanent deflection or distortion.
8. Width: **[66 inches (1676 mm)] [72 inches (1829 mm)]**.
9. Smooth Path: Beveled lip edge-of-ramp transition, edge-to-deck transition, and floor-to-deck transition to avoid jolts to equipment and workers.
10. Platform Deck: Steel checker plate deck, reinforced on underside, welded to fabricated steel frame. Also, have on bumper box.
11. Hinged Ramp Edge: **[15-inch edge with standard crown (381 mm edge with standard crown)] [15-inch edge with high crown (381 mm edge with high crown)] [17-inch edge with standard crown (432 mm edge with standard crown)] [17-inch edge with high crown (432 mm edge with high crown)]**.
 - a. Lip Hinge: Provide self-cleaning lug hinges to avoid debris trapped in hinge cavity and replaceable hinge pin for maintenance without welding equipment.
12. Finish: Textured powder coat to increase durability of finish and slip resistance, as well as reduce corrosion and VOCs.
13. Handle Storage: Self-storing within the deck where convenient to reach. Tethered to prevent loss or misplacement. Powder-coated in safety yellow.
14. Safety Brace: Conveniently located under the leveler and tethered to prevent loss or misplacement. Powder-coated in safety yellow.
15. Molded Bumper and Bumper Box: Manufacturer's standard.

2.04 FIXED DOCK SEALS

- A. Wayne Dalton; Model LX10WD.
 1. Height: 7 feet 6 inches (2286 mm) minimum to 9 feet (2743 mm) maximum.
 2. Width: 6 feet 4 inches (1930 mm) minimum to 11 feet (3353 mm) maximum.
 3. Projection: 8 inches (203 mm) minimum to 20 inches (508 mm) maximum.
 - a. Taper up 8 to 20 inches (203 to 508 mm) or down 8 to 20 inches (203 to 508 mm).
 - b. Project Box Option: **[4 inches (102 mm)] [6 inches (152 mm)] [8 inches (203 mm)] [10 inches (254 mm)] [12 inches (305 mm)]**.
 4. Cushion: Fire retardant foam for full depth of seal; tapered at jambs. Full compression and recovery required to temperatures below minus 40 degrees F (minus 40 degrees C).
 - a. Continuously bonded to backing with flexible, non-flammable adhesive.
 5. Covering Material: Standard weight fabric that remains flexible to minus 40 degrees F (minus 40 degrees C).

- a. Covering Weight: **[22 oz/sq ft (6.7 kg/sq m)] [28 oz/sq ft (8.5 kg/sq m)] [40 oz/sq ft (12.2 kg/sq m)] [____ oz/sq ft (____ kg/sq m)]**.
 - b. Covering Color: **[Black] [Blue] [Brown] [Gray] [Green] [____]**.
6. Covering Material: Heavy-weight fabric which remains flexible to minus 40 degrees F (minus 40 degrees C).
- a. Covering Weight: **[22 oz/sq ft (6.7 kg/sq m)] [28 oz/sq ft (8.5 kg/sq m)] [40 oz/sq ft (12.2 kg/sq m)] [____ oz/sq ft (____ kg/sq m)]**.
 - b. Covering Color: **[Black] [Blue] [Brown] [Gray] [Green] [Red] [____]**.
7. Premium Abrasion-Resistant Covering Material: Fabric that remains flexible to minus 40 degrees F (minus 40 degrees C).
- a. Covering Weight: **[22 oz/sq ft (6.7 kg/sq m)] [28 oz/sq ft (8.5 kg/sq m)] [40 oz/sq ft (12.2 kg/sq m)] [____ oz/sq ft (____ kg/sq m)]**.
 - b. Abrasion Resistance: Six times more resistant than standard covering material.
 - c. Covering Color: Black.
8. Header: Fixed air vented construction.
- a. Header Height: **[12 inches (305 mm)] [15 inches (381 mm)] [18 inches (457 mm)]**.
9. Vertical Columns: **[8/11: 8 inch (203 mm) back column, 11 inch (279 mm) front column] [8/14: 8 inch (203 mm) back column, 14 inch (356 mm) front column] [10/10: 10 inch (254 mm) back column, 10 inch (254 mm) front column] [12/12: 12 inch (305 mm) back column, 12 inch (305 mm) front column] [12/15: 12 inch (305 mm) back column, 15 inch (381 mm) front column] [12/18: 12 inch (305 mm) back column, 18 inch (457 mm) front column]**.
10. Seams: Mechanically double stitched; double-ply at exposed face.
11. UV Protection: Treat all fabrics and thread with UV protection for fade resistance.
12. Bottom Dock Seal: **[Same construction as header and vertical columns] [____]**.
- a. Length: **[4 feet (1219 mm)] [8 feet (2438 mm)]**.
13. Curtain: To accommodate additional variation in trailer heights.
- a. Installation: Velcro holding capability.
 - b. Fabric: **[Match seal fabric] [Low-temperature PVC material for cold applications]**.
 - c. Drop Length: **[12 inches (305 mm)] [18 inches (457 mm)] [24 inches (610 mm)]**.
14. Column Double Fabric Layer: **[None required] [Matching fabric dual layer required]**.
15. Draft Control: Two bottom draft flaps.
16. Frame Construction (Top and Sides): **[Treated wood] [Galvanized steel]**.
17. Guide Stripe: **[24 inches (610 mm) high] [Full height]**.
18. Column Fabric Scuff Guard: **[None required] [40 oz. premium fabric scuff guards required]**.
19. Security Seal: **[Required] [Not required]**.
20. Wear Pleats: **[Not required] [Matching fabric pleats]**.
21. Corner Wear Pleats: **[Not required] [66 oz premium fabric pleats]**.

2.05 ADJUSTABLE CURTAIN DOCK SEALS

- A. Wayne Dalton; Model LC20WD.
 1. Height: 9 feet 6 inches (2895 mm) minimum to 12 feet (3657 mm) maximum.
 2. Width: 6 feet 4 inches (1930 mm) minimum to 12 feet (3657 mm) maximum.
 3. Projection: 8 inches (203 mm) minimum to 20 inches (508 mm) maximum.
 - a. Taper up 8 to 20 inches (203 to 508 mm) or down 8 to 20 inches (203 to 508 mm).
 - b. Project Box Option: **[4 inches (102 mm)] [6 inches (152 mm)] [8 inches (203 mm)] [10 inches (254 mm)] [12 inches (305 mm)]**.
 4. Cushion: Fire retardant foam for full depth of seal; tapered at jambs. Full compression and recovery required to temperatures below minus 40 degrees F (minus 40 degrees C).
 - a. Continuously bonded to backing with flexible, nonflammable adhesive.
 5. Covering Material: Standard weight fabric that remains flexible to minus 40 degrees F (minus 40 degrees C).

- a. Covering Weight: 22 oz/sq ft (6.7 kg/sq m).
- b. Covering Color: **[Black] [Blue] [Brown] [Gray] [Green]**.
6. Covering Material: Heavy-weight fabric that remains flexible to minus 40 degrees F (minus 40 degrees C).
 - a. Covering Weight: 40 oz/sq ft (12.2 kg/sq m).
 - b. Covering Color: **[Black] [Blue] [Brown] [Gray] [Green] [Red]**.
7. Premium Abrasion-Resistant Covering Material: Fabric that remains flexible to minus 40 degrees F (minus 40 degrees C).
 - a. Covering Weight: 40 oz/sq ft (12.2 kg/sq m).
 - b. Abrasion Resistance: Six times more resistant than standard covering material.
 - c. Covering Color: Black.
8. Vertical Columns: **[8/11: 8 inch (203 mm) back column, 11 inch (279 mm) front column] [8/14: 8 inch (203 mm) back column, 14 inch (356 mm) front column] [8/20: 8 inch (203 mm) back column, 20 inch (508 mm) front column] [10/10: 10 inch (254 mm) back column, 10 inch (254 mm) front column] [12/12: 12 inch (305 mm) back column, 12 inch (305 mm) front column] [12/15: 12 inch (305 mm) back column, 15 inch (381 mm) front column] [12/18: 12 inch (305 mm) back column, 18 inch (457 mm) front column]**.
9. Seams: Mechanically double stitched; double-ply at exposed face.
10. UV Protection: Treat fabrics and thread with UV protection for fade resistance.
11. Bottom Dock Seal: **[Same construction as header and vertical columns] [_____]**.
 - a. Length: **[4 feet (1219 mm)] [8 feet (2438 mm)]**.
12. Optional **[Adjustable] [Fixed]** Curtain: **[Required] [Not required]**.
 - a. Height: **[Adjustable 24 to 60 inches (Adjustable 610 to 1524 mm)] [Fixed 12 to 60 inches (Fixed 305 to 1524 mm)]**.
 - b. Curtain Split: **[With Velcro] [Without Velcro]; [Adjustable, 24 to 48 inches (610 to 1219 mm)] [Fixed, 12 to 48 inches (305 to 1219 mm)]**.
 - c. Curtain Fabric: **[To match balance of fabric] [Low-temperature PVC]**.
13. Draft Control: Two bottom draft flaps.
14. Frame Construction (Top and Sides): **[Treated wood] [Galvanized steel]**.
15. Guide Stripes: **[Partial height] [Full height]**.
16. Wear Pleats: **[None required] [Matching fabric pleats] [66 oz. premium fabric pleats]**.
17. Corner Wear Pleats: **[None required] [Matching fabric pleats] [66 oz. premium fabric pleats]**.
18. Column Double Fabric Layer: **[None required] [Matching fabric dual layer]**.
19. Column Fabric Scuff Guard: **[None required] [40 oz. premium fabric scuff guards]**.
20. Security Seal: **[Required] [Not required]**.

2.06 FIXED DOCK SHELTERS

- A. Wayne Dalton; Model TX40WD by.
 1. Width: 11 feet (3353 mm) minimum to 12 feet 8 inches (3861 mm) maximum.
 2. Height: 11 feet (3353 mm) minimum to 12 feet 6 inches (3810 mm) maximum.
 3. Projection: **[24 inches (610 mm)] [36 inches (914 mm)] [48 inches (1219 mm)] [60 inches (1524 mm)]**.
 4. Frame Construction for Top and Sides: **[Treated wood] [Galvanized steel]**.
 5. Side and Top Covering Material: Standard weight fabric that remains flexible to minus 40 degrees F (minus 40 degrees C).
 - a. Covering Weight: 22 oz/sq ft (6.7 kg/sq m).
 - b. Covering Color: **[Black] [Blue] [Brown] [Gray] [Green]**.
 6. Side and Top Covering Material: Heavy-weight fabric that remains flexible to -40 degrees F (-40 degrees C).
 - a. Covering Weight: 40 oz/sq ft (12.2 kg/sq m).
 - b. Covering Color: **[Black] [Blue] [Brown] [Gray] [Green] [Red]**.

7. Premium Abrasion-Resistant Side and Top Covering Material: Fabric that remains flexible to minus 40 degrees F (minus 40 degrees C).
 - a. Covering Weight: 40 oz/sq ft (12.2 kg/sq m).
 - b. Abrasion Resistance: Six times more resistant than standard covering material.
 - c. Covering Color: Black.
8. Vertical Panel Upgraded Seal Accessories: **[Required] [Not required]**.
9. Seams: Mechanically double stitched; double-ply at exposed face.
10. UV Protection: Treat fabrics and thread with UV protection for fade resistance.
11. Curtain Drop: 36 inches (914 mm) minimum to 60 inches (1524 mm) maximum.
12. Draft Control:
 - a. Two draft control pads.
 - b. Projection: **[24 inches (610 mm)] [36 inches (914 mm)] [48 inches (1219 mm)] [60 inches (1524 mm)]**.
13. Mounting: Galvanized mounting hardware and stabilizing bracket.
14. Steel Guards (Shelter Bumpers): Manufacturer's standard double guards.
15. Guide Stripes: **[Partial height] [Full height]**.

2.07 FOAM DOCK SHELTERS

- A. Wayne Dalton; Model TM70WD.
 1. Width: 11 feet 4 inches (3454 mm) maximum.
 2. Height: **[10 feet, 9 inches (3.28 m)] [12 feet (3.66 m)]**.
 3. Projection: **[16 inches (406 mm)] [18 inches (457 mm)] [20 inches (508 mm)] [24 inches (610 mm)]**.
 - a. Taper up 8 to 20 inches (203 to 508 mm) or down 8 to 20 inches (203 to 508 mm).
 - b. Project Box Option: **[4 inches (102 mm)] [6 inches (152 mm)] [8 inches (203 mm)] [10 inches (254 mm)] [12 inches (305 mm)]**.
 4. Frame Construction (Top and Sides): **[Treated wood] [Galvanized steel]**.
 5. Side and Top Covering Material: Standard weight fabric that remains flexible to minus 40 degrees F (minus 40 degrees C).
 - a. Covering Weight: 22 oz/sq ft (6.7 kg/sq m).
 - b. Covering Color: **[Black] [Blue] [Brown] [Gray] [Green]**.
 6. Side and Top Covering Material: Heavy-weight fabric that remains flexible to minus 40 degrees F (minus 40 degrees C).
 - a. Covering Weight: 40 oz/sq ft (12.2 kg/sq m).
 - b. Covering Color: **[Black] [Blue] [Brown] [Gray] [Green] [Red]**.
 7. Premium Abrasion-Resistant Side and Top Covering Material: Fabric that remains flexible to minus 40 degrees F (minus 40 degrees C).
 - a. Covering Weight: 40 oz/sq ft (12.2 kg/sq m).
 - b. Abrasion Resistance: Six times more resistant than standard covering material.
 - c. Covering Color: Black.
 8. Seams: Mechanically double stitched; double-ply at exposed face.
 9. UV Protection: Treat fabrics and thread with UV protection for fade resistance.
 10. Optional **[Adjustable] [Fixed]** Curtain: **[Required] [Not required]**.
 - a. Height: **[Adjustable 30 to 52 inches (Adjustable 762 to 1321 mm)] [Fixed 18 to 52 inches (Fixed 457 to 1321 mm)]**.
 - b. Curtain Split: **[With Velcro] [Without Velcro]; [Adjustable, 30 to 48 inches (762 to 1219 mm)] [Fixed, 18 to 48 inches (457 to 1219 mm)]**.
 - c. Curtain Fabric: **[To match balance of fabric] [Low-temperature PVC]**.
 11. Draft Control: Two bottom draft flaps.
 12. Guide Stripes: **[Partial height] [Full height]**.
 13. Wear Pleats: **[None required] [Matching fabric pleats] [66 oz. premium fabric pleats]**.
 14. Corner Wear Pleats: **[None required] [Matching fabric pleats] [66 oz. premium fabric pleats]**.
 15. Column Double Fabric Layer: **[None required] [Matching fabric dual layer]**.

16. Column Fabric Scuff Guard: **[None required] [40 oz. premium fabric scuff guards]**.

2.08 ACCESSORIES

- A. Loading Dock Bumpers: See Section 111313.
- B. Loading Dock Seals and Shelters: See Section 111316.
- C. Curb Angles: See Section 055000.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify **[existing conditions] [and] [_____]** meet the manufacturer's requirements before starting work.
- B. Examine loading dock equipment area for compliance with requirements for installation tolerances and other conditions related to this work.
- C. Examine walls and floors of loading dock equipment concrete pits for suitable conditions, and verify pits are plumb and square and properly sloped back to front of loading dock for drainage.
- D. Verify rough-in wall opening and anchors are acceptable, correctly sized, and aligned to proper tolerances.
- E. Verify that frames installed in concrete and masonry are correctly located.
- F. Proceed with installation after unsatisfactory conditions corrected.

3.02 PREPARATION

- A. Prepare loading dock equipment for size and locations as indicated and provide anchoring devices with templates, diagrams, and installation instructions.
- B. Prepare metal curb angles along concrete edges of recessed pits with top flush with loading platform and fit exposed ends together to form smooth hairline joints.

3.03 INSTALLATION

- A. Install loading dock leveler unit in prepared opening in accordance with manufacturer's written instructions.
 - 1. Set square and level.
 - 2. Anchor unit securely, flush with building floor, and fillet-weld back of leveling dock to pit frame; touch-up welds with paint.
 - 3. Position mechanical pit levelers above or below dock height, inclusive of end loading with lip pendant.
- B. Install edge-of-dock levelers to ensure arrangement is adequate to accommodate lift in proper relation to the loading platform.
 - 1. Anchor or weld edge-of-dock leveler securely in place in accordance with manufacturer's written instructions.
 - 2. Weld anchor holes in contact with continuously embedded loading dock edge channel.
 - 3. Weld or bolt bumper blocks to face of loading dock.
- C. Install **[seal] [and] [shelter]** components in accordance with manufacturer's instructions.
 - 1. Set plumb and level.
 - 2. Attach anchors and fittings to prepared wall construction and opening frame.
- D. Grease fittings to lubricate deck hinge for smooth operation.

3.04 ADJUSTING

- A. Adjust installed loading dock equipment **[and safety devices]** for smooth and balanced operation **[and lubricate as recommended by manufacturer]**.
- B. Test dock levelers for vertical travel within operating range as indicated and adjust as necessary for proper operation.

- C. After installation, inspect exposed factory-finished loading dock equipment and repair damaged finishes.

3.05 CLEANING

- A. See Section 017000 - Execution and Closeout Requirements for additional requirements.
- B. Clean recessed pits of debris.

3.06 CLOSEOUT ACTIVITIES

- A. See Section 017800 - Closeout Submittals for additional submittals.
- B. See Section 017900 - Demonstration and Training for additional requirements.
- C. Demonstrate proper operation of **[loading dock equipment]** [] to Owner's designated representative.
- D. Demonstration: Demonstrate operation of system to Owner's personnel.
 - 1. Use operation and maintenance data as reference during demonstration.
 - 2. Conduct walking tour of project.
 - 3. Briefly describe function, operation, and maintenance of each component.
- E. Training: Train Owner's personnel on operation and maintenance of system.
 - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
 - 2. Provide minimum of **[two hours]** **[one day]** [] of training.
 - 3. Instructor: Manufacturer's training personnel.
 - 4. Location: At project site.
 - 5. Location: Owner's offsite classroom facilities may be used.
 - 6. Location: Provide local classroom facilities.
 - 7. Location: At manufacturer's training facility; include travel expenses for **[one member]** **[two members]** [] **members** of Owner's staff.

3.07 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch up damaged finishes after Substantial Completion.

3.08 MAINTENANCE

- A. See Section 017000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.
- B. Provide a separate maintenance contract for specified maintenance service.
- C. Provide service and maintenance of operating equipment for a period of **[one year]** **[two years]** [] from Date of Substantial Completion.
 - 1. Provide maintenance service by skilled employees of loading dock equipment installer.
 - 2. Include **[monthly]** **[quarterly]** [] preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper operation of loading dock equipment at rated speed and capacity.
 - 3. Provide manufacturer's authorized replacement parts and supplies.

END OF SECTION