Revision Date: 11/10/2023

1. **Design Criteria**:
    a. All spaces designated as loading docks shall be equipped with bumpers, and seals, and motor-operated overhead doors.
    b. These doors should be able to close completely and lock after business hours. At least one well-lit personnel door should be provided in addition to the overhead doors unless a building entrance is located close by.
    c. Vehicle approaches and turn-arounds shall be coordinated with the UVM project manager, who will coordinate campus traffic issues with the appropriate UVM departments including UVM Transportation and Parking, UVM Physical Plant and the University's consulting civil engineer.
    d. Selection of loading dock levelers requires an understanding of site-specific and planned loading dock usage issues and dimensions for the most acceptable product to be selected. Basis of design products are listed in this section as a starting point. The design consultant is responsible for verifying the appropriateness and capabilities of their selected products for the size, location, and purpose of the loading dock being designed with UVM project manager and physical plant dept.
    e. Loading dock areas shall be separated from public entrances.
    f. Separate loading docks should be considered for food service deliveries if the project area allows two to be included.
    g. Loading docks must accommodate various sizes and types of vehicles used to deliver or pick up materials from the building. If the bed height of vans and trucks varies more than 18 inches, at least one loading berth should be equipped with a dock leveler. Typical docks are built 55 inches above grade level to accommodate most trucks.
    h. Each truck position should be equipped with adjustable lighting fixtures for the illumination of the interior of trailers.
    i. Noise levels in the dock should be moderated to promote communication among users and resistance to noise transmission from outside of the dock area (to other interior spaces). The STC rating of the walls to the adjacent interior spaces shall be increased to help mitigate the noise levels.
    j. Open loading docks should be covered at least four feet beyond the edge of the platform over the loading berth to protect users and goods being loaded and unloaded.

k. A staging area inside the building should be provided adjacent to the loading dock. The staging area shall be sized based on the materials being moved through the dock and the duration of time it is expected to be stored there. Specialized storage areas items such as chemicals must be considered in specific buildings.
l. Based on risk analysis for the building, the loading dock should be located so that vehicles will not be driven into or parked under the building. If this is not possible, the service area should be hardened for blast. Docks should be separated by at least 50 feet in any direction from utility rooms, utility mains, and service entrances including electrical, telephone/data, fire detection/alarm systems, fire suppression water mains, cooling and heating mains, etc. Locate normal and emergency fuel storage areas away from loading docks.
m. Strongly consider providing separate HVAC systems for loading docks to prevent exhaust fumes or odors from incoming or outgoing material from contaminating air to the rest of the building.
n. Install a carbon monoxide alarm with a local alarm and make UVM aware of its existence so they are sure to test it regularly; use local exhaust ventilation to remove carbon monoxide and provide enough ventilation to remove carbon monoxide even when doors and windows are shut.
o. The entrances and exits at loading docks and service entrances should be provided with a means to reduce the infiltration of outside exhaust, fumes, and debris into the building. Maintaining a negative pressure in docks, relative to the rest of the building, will help reduce infiltration and enhance indoor environmental quality.
p. The placement and location of outside air intakes is critical to the health and well-being of the building occupants and must comply with the security requirements of the building. Ventilation air intakes should be located no less than 25 feet away from loading docks, garage entries, and similar carbon monoxide contamination points.
q. A loading dock located near the building mechanical rooms will be useful throughout the life of the building. Replacement of large mechanical equipment will be simplified if the loading dock can be used to receive and remove system components without having to transport them through the entire building to reach the mechanical rooms. Consider the adjacency benefits during the design phase.
r. Traffic flow and vehicle length, width, and height shall be considered during the design of the loading dock apron.

s. Aprons that slope away from buildings are preferred. When the apron must decline toward the building, proper and potentially redundant drainage systems must be provided.
t. If the area is to be surfaced with asphalt, a concrete "landing strip" must be poured for the trailer's landing gear. In warm temperatures, the landing strip will prevent the trailer's landing gear from sinking into the asphalt when spotted. Gravel-covered aprons are space is not allowed because gravel creates uneven and unsafe conditions.
u. Pavement surfaces should be specified to be evenly laid and structurally sound to support heavy wheel loads. All roadway surfaces should be slightly crowned and properly equipped with drainage outlets.

2. **References**
    a. No references.

3. **Required Submittals**:
    a. Product Data: Manufacturer's data including instructions, recommendations, and restrictions.
    b. Shop Drawings: For loading dock equipment, include plans, elevations, sections, details, and attachments to other work.
        i. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
        ii. Wiring Diagrams: For power, signal, and control wiring.

4. **Products, Materials & Equipment**:
    a. Manufacturers:
        i. Advance Lifts, Inc., www.advancelifts.com
        ii. Blue Giant Equipment Corporation, www.bluegiant.com
        iii. D L Manufacturing, www.dlmanufacturing.com
        iv. Kelley, 4 Front Engineered Solutions, Inc., www.kelleycompany.com
        v. Pentalift Equipment Corporation, www.pentalift.com!
        vi. Rite Hite Corporation, www.ritehite.com
        vii. Nova Technology.
    b. Loading Dock Leveler:
        i. Basis of Design: "RHH-5000", Rite Hite Corporation, www.ritehite.com

ii. Size: As shown in the Design Consultant contract documents.
iii. Electrical: Coordinate electrical service and conduit size with leveler equipment.
iv. Standard Features: Provide all manufacturer's published standard features.
v. Required Additional Features and Characteristics to be provided:
    1. Automatic return to dock.
    2. Emergency stop button.
    3. Pit frame assembly and pit edge angles for casting into concrete.
    4. Slip resistant abrasive deck surface.
    5. Provide "Pitmaster Under Leveler Seal", Rite Hite.

c. Dock Bumpers:
    i. Basis of Design: "Dok Saver DS620-11", Rite Hite Corporation, www.ritehite.com
    ii. Fasteners Basis of Design: "Red Head, Trubolt Wedge Anchor WS-1254G", Illinois Tool Works, Inc., www.itw-redhead.com
d. Dock Seals:
    i. Basis of Design: "Insulator Dock Seal with High Performance Head Seal, Model ID3P, Rite Hite Corporation, www.ritehite.com.
    ii. Fabric: ≥22 ounce reinforced, friction resistant, "Durathon Fabric".
        1. Colors: Approved by Design Consultant and UVM PM.
    iii. Head Pad: Providing pivoting head pad assembly to accommodate trailer movement.
        1. Provide trailer lights heat dissipation and fire protection.
        2. Provide wear pleats.
        3. Provide replaceable corner wear boots.
        4. Provide 6 inches drop curtain.
    iv. Side Pads:
        1. Provide 3.5 x 24 inches outboard guide strips.
        2. Provide wear pleats.

5. **Installation, Fabrication, and Construction**:
    a. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
    b. Source Limitations: Obtain loading dock equipment from single source from single manufacturer.

c. GC shall comply with the following:
    i. Coordinate rough in and related work.
    ii. Test and adjust for optimum operation.
    iii. Test and confirm all safety features.
    iv. Restore damage to eliminate evidence of repair.
d. Adjusting:
    i. Adjust loading dock equipment to function smoothly and safely, and lubricate as recommended by manufacturer.
    ii. Test dock levelers for vertical travel within operating range indicated.
    iii. After completing installation of exposed, factory-finished loading dock equipment, inspect exposed finishes and repair damaged finishes.

6. **Warranties**:
    a. Special Warranty for Dock Levelers: Manufacturer's standard form in which manufacturer agrees to repair or replace dock-leveler components that fail in materials or workmanship within specified warranty period.
        i. Failures include, but are not limited to, the following:
            1. Structural failures including cracked or broken structural support members, load-bearing welds, and front and rear hinges.
            2. Faulty operation of operators, control system, or hardware.
            3. Deck plate failures including cracked plate or permanent deformation in excess of 1/4 inch between deck supports.
            4. Hydraulic system failures including failure of hydraulic seals and cylinders.
        ii. Warranty Period: Two years from date of Substantial Completion.
        iii. Warranty shall be for unlimited usage of leveler for the specified rated capacity over the term of the warranty.
    b. Installer's standard one-year warranty on installation and craftsmanship.