

Model: DP003 Double Car Stacker™ System Operational Plan

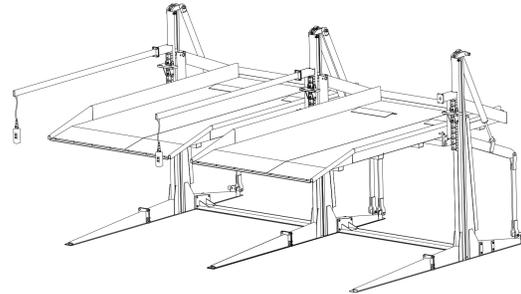
August 07, 2017

Ref: PP17137

Project Address:

9735 Washington Blvd.

Culver City, CA



1.0 Project Summary:

The proposed Mixed-Use Project located at 9735 Washington Blvd., Culver City, CA, consisting of +/-70,585 sf of Office, Retail and Restaurant uses will provide 215 onsite parking stalls. The parking is provided primarily below grade with traditional parking stalls in a 3 level subterranean garage with 7 **ParkPlus Double Car Stackers™ Model DP003** providing 14 parking stalls located at grade level in an enclosed garage. The Mechanical Car Stackers provide less than 7% of the total project parking. Hundreds of Thousands of the **ParkPlus Double Car Stackers™ Model DP003** have been installed in similar applications across the United States since 1969.

The **ParkPlus DP003** can be used in attendant assisted and self operated applications common with commercial office and retail uses. The Stackers will be primarily used for the commercial office tenants for all day parking.

2.0 Site Plan:

The Parking Garage is accessed off of Delmas Terrace. Upon entering the garage from Delmas the tenants and customers can continue immediately down a ramp to the lower levels of the garage containing the traditional parking stalls. A small portion of the office tenants will make a right and transition to the area of the garage with the **ParkPlus Car Stackers™**. See **Diagram 2-A** attached.

3.0 Operational Plan:

The attached operational plan illustrates the location and access to the **ParkPlus Car Stackers™** during both Peak AM and PM periods. During morning Peak AM traffic the parking attendant will have Car Stackers™ positioned in the down position. This will allow for the quickest filling of the parking system. Tenants will be instructed to pull forward in the parking stacker area and either instructed to park on the car stackers or pull forward to an unloading area. This queuing area will hold at least 5 reservoir spaces, more than adequate to handle incoming traffic. The attendant will raise the lifts after filling the platforms. The lifts will raise to their full upright position in approximately 20 seconds. Prior to Peak PM periods the parking attendant will lower any vehicles on the upper platforms. The parking attendant will utilize 5 reservoir spaces to shuffle cars in the Car Stacker™ area as tenants come to retrieve their vehicles. With commercial office tenants it is common not to have a parking attendant. Co-workers will commonly work together to relocate cars and tenants are trained to self operate lifts. In these applications we recommend installing additional occupancy sensors around the lifts providing additional protection to the lift operator. See attached Operational Plan.

DELMAS TERRACE

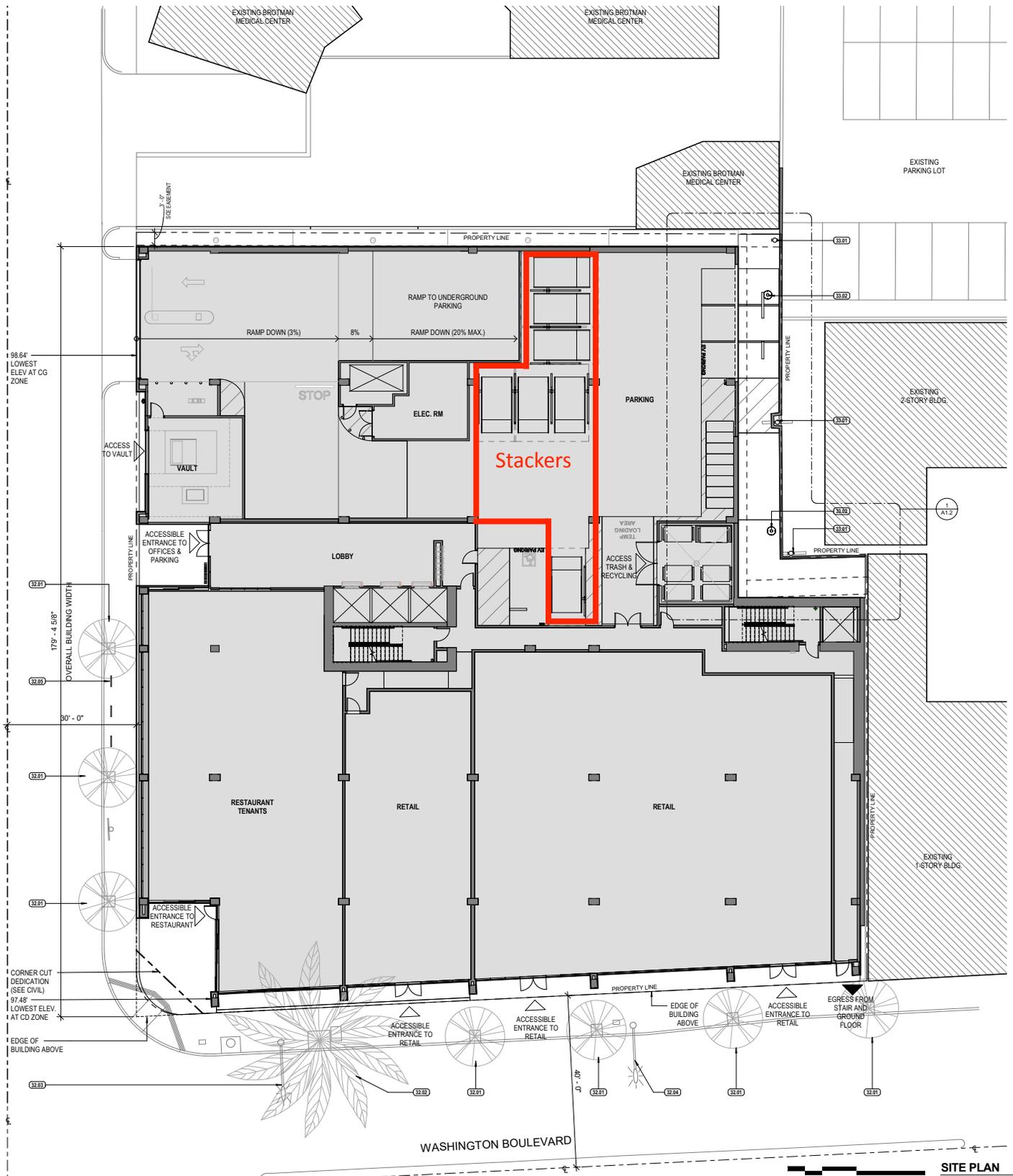
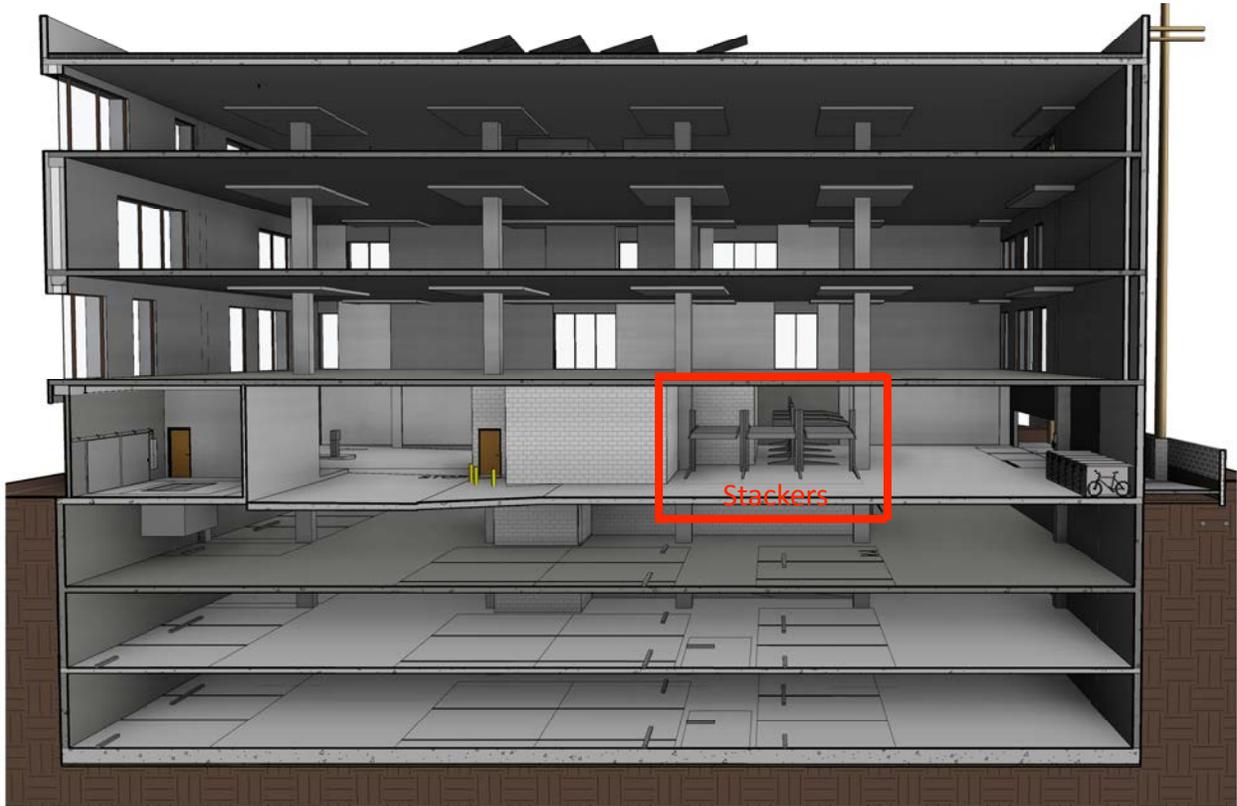


Diagram 2-A

0' 4' 8' 16' 32' SCALE: 1" = 10'-0"

4.0 Permanent Structure and Screening:

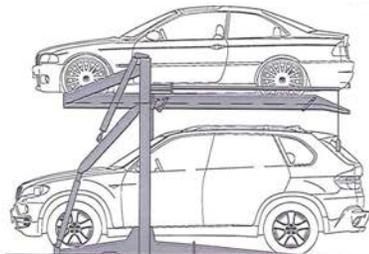
The proposed **ParkPlus Car Stackers™** are located in an enclosed parking structure. The Car Stackers™ will not be visible from the exterior of the building. See **Diagrams 4-A** below. The **ParkPlus Car Stackers™** will be seismically attached to the building structure with epoxy anchor bolts.



Diagrams 4-A

5.0 Technical Studies:

The proposed **ParkPlus Car Stackers™** have been approved by both the City of Los Angeles and the New York City Testing Labs to be used in all commercial and residential applications. The **ParkPlus Car Stackers™** have been in use for almost 50 years. The **ParkPlus Car Stackers™** come fully galvanized to prevent wear and tear. The operating noise level is within the levels of normal speech. See attached Los Angeles Research Report.



LOUDNESS COMPARISON CHART (dBA)

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 1000 ft	110	Rock Band
Gas Lawn Mower at 3 ft	100	
Diesel Truck at 50 ft at 50 mph	90	Food Blender at 3 ft
Noisy Urban Area, Daytime	80	Garbage Disposal at 3 ft
Gas Lawn Mower at 100 ft Commercial Area	70	Vacuum Cleaner at 10 ft
Heavy Traffic at 300 ft	60	Normal Speech at 3 ft
Quiet Urban, Daytime	50	Large Business Office
Quiet Urban, Nighttime	40	Dishwasher Next Room
Quiet Suburban, Nighttime	30	Theater
Quiet Rural, Nighttime	20	Large Conference Room (Background)
	10	Library
	0	Bedroom at Night
		Concert Hall (Background)
		Broadcast Recording Studio
		Lowest Threshold of Human Hearing

6.0 Back Up Power:

The proposed **ParkPlus** Car Stackers™ will be powered by one 10HP Hydraulic Power Unit (HPU). The HPU is equipped with a manual hand pump for lowering vehicles in case of a power outage. See attached Operation Manual for detailed instructions on pages 16-17. See attached Operations Plan for HPU location.

7.0 Inspection Reports:

The proposed **ParkPlus** Car Stackers™ is recommended to be maintained and inspected by a **ParkPlus** certified technician twice a year for commercial applications. The attached Operation Manual has a copy of the Inspection and Maintenance Checklist on Pages 22-25.

8.0 Non-Operation:

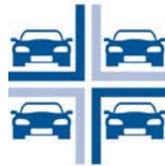
The proposed **ParkPlus** Car Stackers™ has an unprecedented service tract record with lifts operating with little to no maintenance for 25+ years. All parts are readily available and in stock and can be repaired or replaced within 48 hrs. In the unlikely event of a system failure and the lifts being non-operational the lifts can be manually lowered and used in the down portion. The remaining 7 vehicles can be parked by the parking attendant in the drive aisles of the garage on the lower levels.

This report was prepared in accordance with the Zoning Code Amendment P2016-0077-ZCA for Alternative Parking Provisions. If any additional technical data is required please do not hesitate to contact our engineering department for further answers.

PARK PLUS CALIFORNIA



MICHAEL O'BRYAN
PRESIDENT



PARK PLUS
HIGH DENSITY VEHICLE STORAGE

Model: DP003 Double Parking Car Stacker
Owners Manual
Los Angeles Electrical Testing Lab LARR# 930501

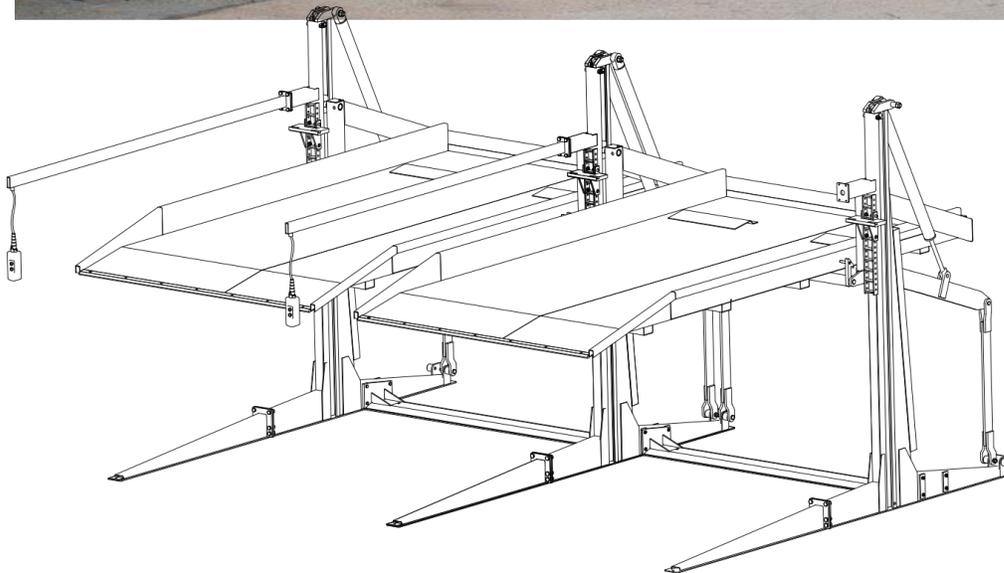


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Section 0: Copyright Disclaimer, Notes to Owner/Employer/Prop. Manager

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Any owner, employer or property manager:

- Shall ensure that equipment operators are qualified and that they are trained in the safe use and operation of the equipment using the manufacturer's operating instructions.
- Shall establish procedures to periodically inspect the equipment in accordance with the equipment manufacturer's instructions and shall ensure that equipment inspectors are qualified and that they are adequately trained in the inspection of the equipment. Inspectors must tag and disconnect any car stacker considered to be unsafe for use or operation. For commercial installations inspections are required at quarterly intervals. For multi-family residential installations inspections are required at monthly intervals.
- Shall establish procedures to periodically maintain the equipment in accordance with the equipment manufacturer's instructions and ensure that equipment maintenance personnel are qualified and that they are adequately trained in the maintenance of the equipment. Maintenance personnel must be pre-approved by manufacturer.
- Shall maintain the periodic inspection and maintenance records recommended by the manufacturer.
- Shall display the equipment manufacturer's operating instructions in a conspicuous location in the area convenient to the operator.
- Shall supply each operator with a copy of this manual.
- Shall provide necessary lockout/ tag out means for energy sources before beginning any equipment repairs.
- Shall not modify the equipment in any manner without the prior written consent of the designer, manufacturer or supplier.
- Shall insure that all safety devices remain in proper working order.

Section 1: Scope, Purpose and Application

1. Scope

This document is to be used as a guide to ensure safety requirements for the operation, inspection and maintenance of installed mechanical parking stackers.

2. Purpose

The purpose of this guide is to provide a basis for common understanding among owners, users, service personnel, the general public and the regulatory community as to the minimum requirements for operating, inspecting and maintaining mechanical parking stackers.

3. Application

The requirements of this guide covering the operation, inspection, and maintenance of mechanical parking stackers shall apply to those specified according to the type and model of installed equipment at a given location from the date of project hand-over.

Section 2: Product Description

The Park Plus SpaceMaker Double Parking Lift model DP003, is a two (2) level car stacker device for parking an automobile one above another on the ground. The device is so designed as to lift an automobile on a platform and lock the platform in place so that a second automobile can be parked in the space below the platform.

2.1 Structure:

The structural steel used in construction of the device is 4130 steel and the platform is composed of solid bent steel sections with integral bent curbs on each side. The entire assembly weighs +/-2600 lbs., comes pre-welded and is assembled in the field with A307 bolts, except for certain critical bolts which are A325 (high tensile – 120,000psi). The stackers may be installed as a single unit or in an array with shared common legs.

Car Stackers are required to be epoxy anchor bolted to an approved foundation system. Structural Engineering and Plan Check are required for all attachment details.

2.2 Hydraulics:

The stacker is operated by hydraulics. The hydraulic cylinder rods are chrome plated to prevent rusting. The hydraulic system, which raises and lowers the platform consists of a pump and motor that are controlled by a 24-volt relay and valve combination. The hydraulic circuit maintains a constant rate of descent regardless of loading conditions. A manually operated emergency pump is provided in case of electrical failure to allow lowering of the platform without electrical power. *A pressure compensated hydraulic overload prevention circuit precludes operation of the unit with a load greater than 6,000 lbs.*

2.3 Safety:

The device is equipped with safety locking system. The “posi-lock” double suspension system holds the full weight of the automobile on the platform in the locked position regardless of hydraulic or electric operation.

Each lift can be equipped with an individual keyed controller for extra safety.

Self Attended applications require additional safety sensors to detect objects located under the platform or entering into the area below the platform.

2.4 Location:

The car stacker has been designed to be mounted on grade to an engineered foundation or attachment system. It may be installed in a building provided the floor is certified to support the weight.

The car stacker can be installed in both attended and self-park application:

- Single Family Residential Buildings – Self Attended
- Multi-Family Residential Buildings – Valet and Self Attended
- Commercial Buildings – Valet and Self Attended
- Indoor Installations – Valet and Self Attended
- Outdoor Installations – Valet and Self Attended
- Surface Lots – Valet and Self Attended
- Low Rise Buildings – Valet and Self Attended
- High Rise Buildings – Valet and Self Attended
- Sprinklered Buildings- Valet and Self Attended

2.5 Fire Protecting:

With installations in over two-dozen metropolitan municipalities the car stackers have been reviewed as being similar to high piled storage and non-building structures. Fire rating of structural components is not required. Sprinklers shall be required per the following section. Each Municipality may have their own fire department guidelines.

2.6 Fire Sprinklers:

Outdoor Use:

1. When a unit or array of units is installed outdoors most municipalities do not require fire sprinklers.
2. Equipment installed outdoors may need to conform to additional zoning regulations and building code requirements.

Indoor Use:

1. For indoor use, installation of a unit or array of units shall be in a sprinklered garage.
2. Sprinkler Plans shall be filed and approved by the local municipality.
3. When the unit or any array of units are installed in a sprinklered building, the sprinkler system shall be designed as required by NFPA 13 and local building codes.
4. Clear building height within the parking area must accommodate the height of the equipment **plus additional requirements for adequate coverage of fire sprinklers.**

2.7 Zoning Requirements:

Each municipality has its own set of zoning regulations and requirements.

Yards and Setbacks:

When equipment is installed outdoors in a required yard or setback the equipment may be required to be installed in an accessory structure or may be required to provide architectural screening.



Above: Typical tandem installation with out set backs, architectural screening or fire sprinklers.

2.8 Stormwater Management:

Low Impact Development consists of site design approaches and Best Management Practices (BMPs) that are designed to address stormwater runoff and pollutions at the source. Most municipalities are adopting BMPs including Infiltration, Capture and Use, and Filtration and Retention. The Car Stackers when installed outdoors are often installed in existing paved parking lots. BMP's must be designed by a Civil Engineer.

2.9 Standard Plans:

The car stackers can be designed in a single or tandem array configuration on either side of a drive aisle, plans attached. Adequate queuing space of at least 2 vehicles must be provided to allow the shuffling of cars. Queuing space may be in the drive aisle. For commercial projects during peak morning traffic all platforms will be lowered for quick filling of the car stackers. Surface's space must be provided for **Accessible Parking.**

KEY NOTES:

- POWER PACK - CLEARANCE AS REQUIRED BY ELECTRICAL CODE
- SWAMP DISCONNECT SWITCH (SEE POWER PACK SPEC.)
- WINDING UNDER ENCLOSURES TO BE ASPHALT CONCRETE, 4" TO 6" THICK (SEE FINISHING PER ARCHITECT'S SPEC.)
- ENCLOSURE FOOTING (SEE STANDARD FOOTING DETAILS)
- PARK PLUS MODEL REPRESENTS L11 OR L11 COMMONS
- MINIMUM CLEARANCE FROM EQUIPMENT TO ADJACENT WALL OR FENCE
- CLEARANCE TO WALL OR FENCE IF IT IS RECOMMENDED BY MUNICIPAL CODE FOR PARK LOT DESIGN
- MINIMUM CLEARANCE FROM EQUIPMENT TO ADJACENT WALL OR FENCE
- ENCLOSURE FOOTING (SEE STANDARD FOOTING DETAILS)

GENERAL NOTES:

- ALL CAR ENCLASURES MUST BE ANCHORED ON A CONCRETE SLAB OR ON FOOTINGS PER STANDARD ANCHOR DETAILS. PROVIDE MINIMUM CLEARANCE AND SPACING LOT DESIGN PER LOCAL MUNICIPAL CODE REQUIREMENTS.
- ALL ENCLOSURES MUST BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. IF ANCHOR BUSHINGS ARE REQUIRED, FIRE STOPPING IS REQUIRED FOR OUTDOOR INSTALLATION.
- A MINIMUM OF ONE POWER PACK IS REQUIRED FOR EVERY PARKING UNIT. IT IS RECOMMENDED FOR COMMON AREAS. ATTACHED WIRING AND MULTIPLE ELECTRICAL PANELS ARE REQUIRED FOR INSTALLATION OF CAR ENCLASURES.
- PERMITS: PERMITS MAY BE REQUIRED FOR ELECTRICAL, PLUMBING, MECHANICAL, AND STRUCTURAL WORK. CHECK WITH LOCAL MUNICIPAL CODE REQUIREMENTS.
- ENCLOSURES MUST BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. IF ANCHOR BUSHINGS ARE REQUIRED, FIRE STOPPING IS REQUIRED FOR OUTDOOR INSTALLATION.
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2 PARK PLUS STANDARD PLAN (PPSP-002) OUTDOOR INSTALLATION
1/16" = 1'-0"

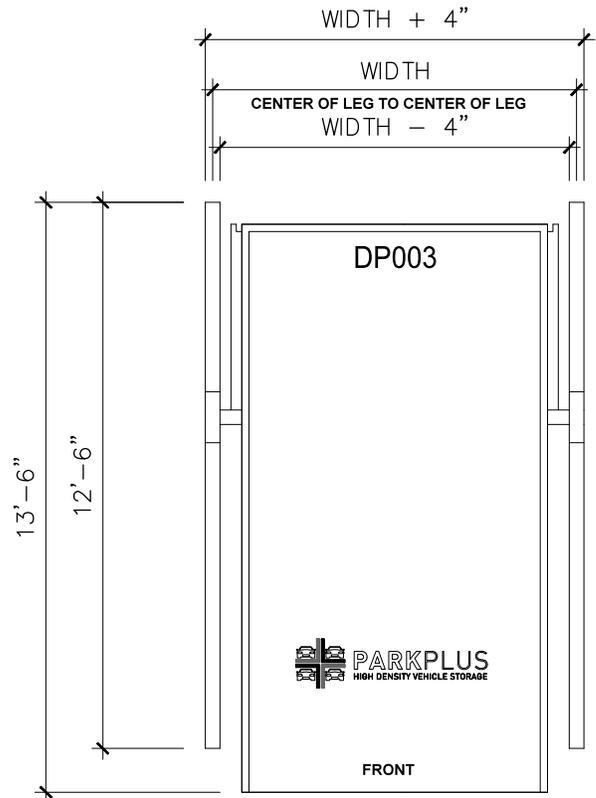
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PARK PLUS
HIGH DENSITY VEHICLE STORAGE

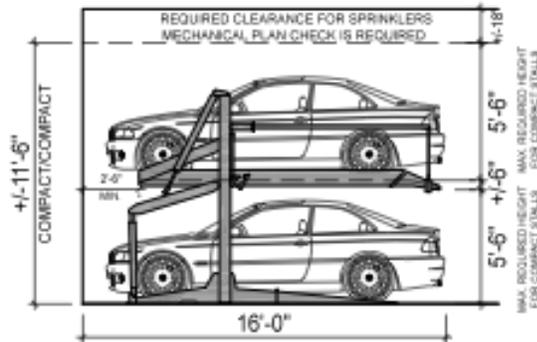
PPSP-002

DP003 – Available Width Chart
*Width = Center of Leg to Center of Leg

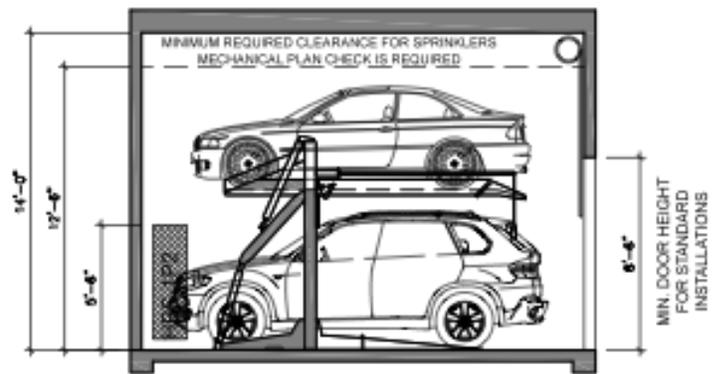
Model	Width
L11	7'-7"
L12	7'- 11"
L13	8'- 3"
L14	10' - 2 1/2"
L15	8'- 10 1/4"
L16	8' - 6"



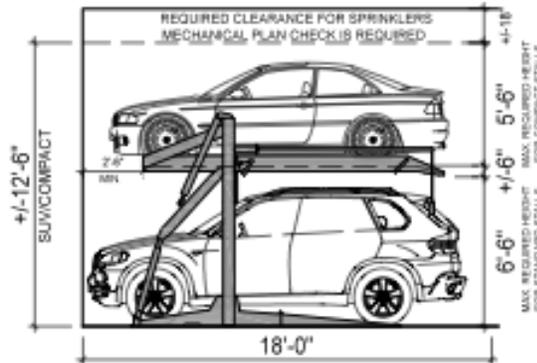
**RECOMMENDED
MAXIMUM REQUIRED HEIGHT**



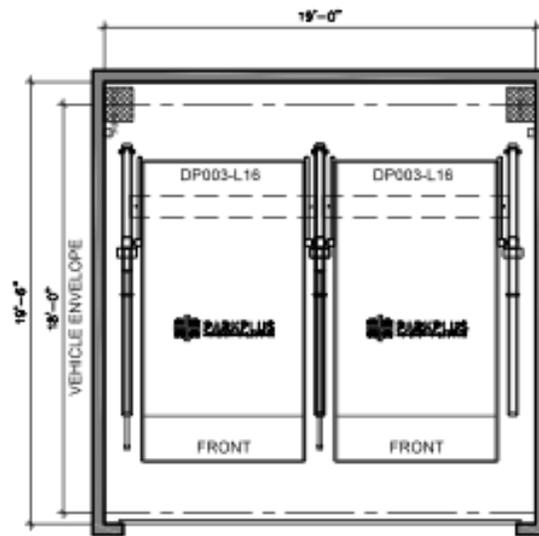
**DOUBLE CAR STACKERS
COMPACT OVER COMPACT
VALET ONLY**



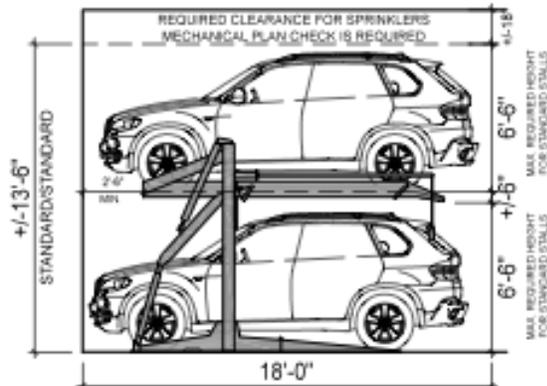
TYPICAL GARAGE SECTION



**DOUBLE CAR STACKERS
COMPACT OVER STANDARD**



TYPICAL GARAGE PLAN



**DOUBLE CAR STACKERS
STANDARD OVER STANDARD**

Section 3: Operator Qualifications and Responsibilities

3.1 Commercial Operator Qualifications:

A commercial mechanical parking operator shall have the following qualifications:

1. Ability in written and oral communications as demonstrated by one of, or a combination of, the following: high school diploma or certificate of equivalency, aptitude test or job experience;
2. ability to understand the mathematical, mechanical and electrical principles of mechanical parking stackers as demonstrated by one of, or a combination of, the following: aptitude test, training program, technical-vocational school, school of higher learning or job-experience;
3. demonstrate physical ability to carry out mechanical parking operator responsibilities in a safe manner; and
4. possess a personal current valid drivers license and obey all rules, regulations and laws that pertain to that license. Operation of any mechanical parking stackers or related equipment will be regarded as part of the responsibilities associated with driving.

3.2 Residential or Private Operator Requirements:

A residential or private mechanical parking operator shall be required to:

1. Ability in written and oral communications as demonstrated by one of, or a combination of, the following: high school diploma or certificate of equivalency, or aptitude test;
2. ability to understand the mathematical, mechanical and electrical principles of mechanical parking stackers as demonstrated by one of, or a combination of, the following: aptitude test or training program;
3. demonstrate physical ability to carry out mechanical parking operator responsibilities in a safe manner;
4. possess a personal current valid driver's license and obey all rules, regulations and laws that pertain to that license. Operation of any mechanical parking stackers or related equipment will be regarded as part of the responsibilities associated with driving.
5. Operate the stacker from an individually keyed control to ensure secure operation of a particular unit at any time.
6. Must be at least 18 years of age.

3.3 Operator Responsibilities:

- 3.3.1 The operator shall operate the mechanical parking stacker only after being properly instructed or trained in accordance with this guide and manufacturer supplied instructions.
2. The operator shall use all applicable safety features provided on the mechanical parking stacker, and operate the stacker in accordance with the instructions furnished by the manufacturer.
3. Equipment shall always be raised to the full up position and lowered on safety hooks.
4. The operator of the stacker shall be responsible for the maintaining the cleanliness and orderliness of the stacker and its surroundings in order that the stacker may be safely operated in accordance with the instructional and safety materials furnished by the manufacturer. Platforms are not to be used for storage.

3.4 Owner, Owner's Representative, and Operator Responsibilities:

The mechanical parking stacker owner, owner's representative, or operator shall take all appropriate steps to follow the recommended inspection procedures of the stacker manufacturer, but in no event shall the operator fail to inspect or take notice of the following features on a daily basis:

1. accessibility and readability of the operating procedures, safety tips and generic safety materials;
2. accessibility and readability of safety warning labels;

3. readability of the rated load capacity of the stacker;
4. proper operation of the lifting controls, restraints and locking devices;
5. deformation or excessive wear on any of the structural components;
6. deformation or excessive wear of other components such as hose, electrical wires, drive chains, cables or screws;
7. damage or excessive wear on any part of the stacker during lifting;
8. evidence of hydraulic leaks;
9. unusual noise, sudden movements, erratic operation or evidence of chips or filings during use; and
10. cracks or loose concrete around floor anchor bolts.

3.5 Operator Reporting:

If any of the conditions described above are observed before, during or after operation of the stacker, the operator shall stop using the stacker and report the condition to the owner or owner's representative. If any of the conditions listed above are observed, then the stacker shall not be used until the cause of the problem has been determined, and the appropriate repairs have been made by a qualified service provider.

3.6 Use of Accessories:

Accessories used on mechanical parking stackers shall be in accordance with the mechanical parking manufacturer's specifications applicable for use on the specific stacker. Such accessories may include an annunciator and alert beacon as may be required in some residential applications for self-operation:

- **Annunciator:** An annunciator is an audible alarm signaling device that is installed on the stacker or group of stackers that is activated when the stacker is in operation. The intention of this device is to create an audible awareness that the stacker is in operation and that people in the area are cautious during the procedure.
- **Alert Beacon:** An alert beacon is a flashing illuminating device that is installed on the stacker or group of stackers that is activated when the stacker is in operation. The intention of this device is to create a visual awareness that the stacker is in operation and that people in the area are cautious during the procedure.
- **Safety Sensors:** Safety sensor are sensing devices that will prevent the platform from lowering if a person or object is present or enters into the boundaries of the lift system.

Section 4: Operating Instructions

WARNING:

To avoid death, personal injury and/ or property damage, permit only trained personnel to operate equipment and accessories outlined above.

After reviewing these instructions, become familiar with all equipment controls by running the equipment through several cycles before loading a vehicle on the equipment.

SAFETY:

- Observe and heed all CAUTION, SAFETY and WARNING labels on the lift. Keep clear of equipment while it is being raised or lowered.
- The platform is designed to rest on the floor when fully lowered. Keep feet clear.
- Driver and passengers must exit before raising equipment.
- All vehicles must be properly centered on the platform before operator attempts to operate equipment, with transmission in "park" and parking brake engaged.

4.1 Loading:

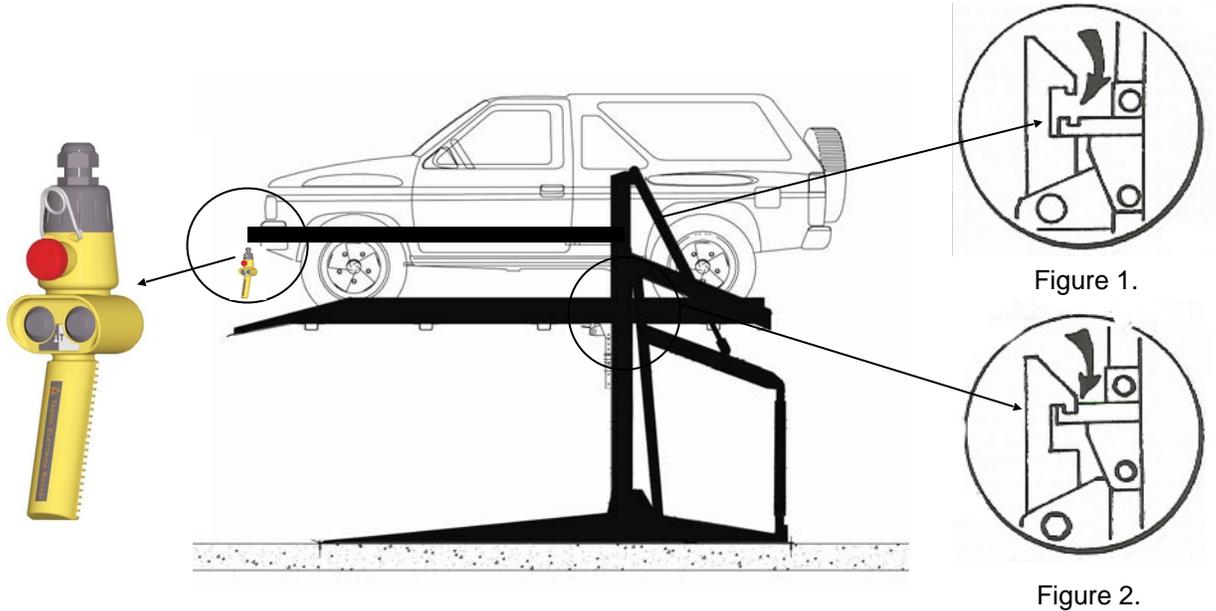
Equipment platform must be fully lowered and area must be cleared of all people and/or obstruction while the vehicle is driven onto the equipment.

4.2 Center Vehicle:

Center vehicle onto platform and make sure wheels are against wheel stops (be cautious of low profile vehicles where body may not adequately clear wheel stops. In this event park vehicle on equipment as far as possible before wheel stops). Shut off engine and engage vehicle parking gear and brake. **SUV's must head in only.**

4.3 To Raise Platform:

- Press the UP button until the platform reaches the top pre-set position. (Figure 1.) Observe that Safety Hooks are rotated into position above Bookshelf (Figure 2.)
- Then, push on the DOWN button until the platform comes to rest as the safety bar engages the correct position with the safety hooks. (Figure 2.)



IMPORTANT:

Observe equipment, vehicle and overhead clearance as platform is rising.

WARNING:

Clear area if vehicle or platform is in danger of falling.

SAFETY:

Before working around elevated equipment, always make sure that it has been lowered onto the Safety Locks and that the locks are fully engaged.

NOTE:

Locking the Safety Hook:

When the platform is raised to its highest pre-set point, the safety hooks will be positioned approximately 3" above the safety hook shelf ("Bookshelf"- refer to attached technical specification drawings). It is then necessary to lower the platform to engage the safety hooks in place.

Unlocking the Safety Hook:

In order to lower the platform, the safety hooks need to be disengaged from the Bookshelf. This procedure requires the raising of the platform by approximately 3" as described below.

4.4 To Lower Platform:

- Perform complete safety check before operating the system.
- Push the **UP** button until the safety hooks disengage from the safety shelf. (Figure 3.)

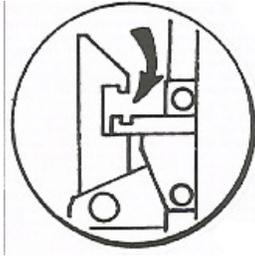


Figure 3.

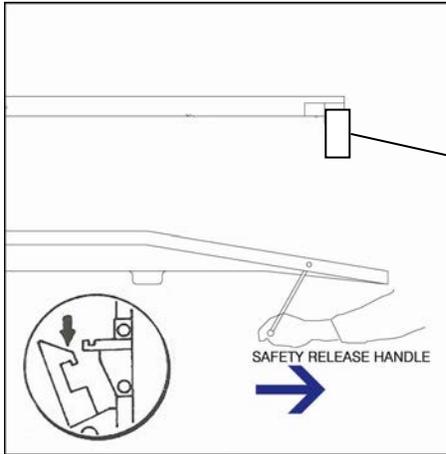


Figure 4.



- Pull the Safety Hook Release Handle and continue to hold in this position AND push the **DOWN** button until the safety hooks have passed the safety shelf. (Figure 4.)
- Continue to push the down button and stand clear of the moving platform until it has come to a complete stop.
- **The cycle is now complete.**

IMPORTANT:

Observe equipment and vehicle to be sure that they are coming down level. If not, stop and raise the equipment until it becomes level again. Check all Safety Locks and whether these are releasing properly. – See Trouble Shooting

If the equipment is not operating properly, **DO NOT USE** until adjustments or repairs have been made by an authorized equipment-service professional

Section 5: Equipment Inspection

5.1 Periodic Qualified Inspection:

Qualified Inspection Procedure:

The owner or owner's representative shall establish a periodic inspection procedure in accordance with the recommendations of the manufacturer in order to ensure reliability and allow the continued safe operation of the stacker. Note that certain sections of U.S. Code of Federal Regulations, Title 29, Section 1929 and applicable subparts – Occupational Safety and Health Administration, General Industry Standards may pertain to the procedures anticipated by this section. Compliance with applicable regulations is the responsibility of the person(s) involved.

5.2 Qualified Inspector:

A mechanical parking stacker inspector shall have the following qualifications:

1. knowledge of personal safety practices necessary to perform routine and periodic inspections of existing equipment;
2. ability to read and understand equipment manuals, drawings and parts lists;

3. knowledge of the purpose and function of all components, devices and accessories commonly employed on mechanical parking stackers;
4. working knowledge of electrical and electronic circuit principles as applied to the operation of pumps, motors, valves and switches;
5. working knowledge of mechanical principles as applied to structures, machines, mechanisms and the effects of traction on ropes, chains and sheaves;
6. working knowledge of hydraulic principles as applied to the operation of valves, pumps, cylinders (plungers) and piping; and
7. knowledge of the many and varied types and styles of automotive lifts and mechanical parking stackers, their uses and any limitations or restricted applications pertaining thereto.

5.3 Qualified Inspector Training:

Training for personnel who are qualified to perform periodic inspections of mechanical parking stackers shall be achieved through experience in installation or field service work for users, manufacturers, distributors or service organizations for mechanical parking stackers or automotive lift products.

5.4 Qualified Inspection Documentation:

A record of each periodic inspection per machine shall be prepared and maintained on site noting the observations and findings of all points of inspection recommended by the manufacturer as well as subsequent repairs or replacements accomplished.

5.5 Qualified Inspection Frequency:

Inspections by the owner or employer must occur in periods specified by the manufacturer. The owner must ensure the inspection frequency requirements are met.

Commercial Installations: Inspections are required at quarterly intervals by a qualified inspector.

Residential Installations: Inspections are required at monthly intervals by a qualified inspector.

5.6 Inspection Checklist:

The qualified inspector should follow the recommended checklist as per the manufacturer's specifications, and obtain owner or owner's representative signature on completion of each inspection. See attached **Inspection / Maintenance Checklist**

Section 6: Equipment Maintenance

6.1 Preventative Maintenance:

The owner or employer shall establish a periodic preventative maintenance procedure in accordance with the recommendations of the manufacturer in order to ensure reliability and allow the continued safe operation of the stacker. Note that certain sections of U.S. Code of Federal Regulations, Title 29, Section 1910 and applicable subparts – Occupational Safety and Health Administration, General Industry Standards may pertain to the procedures anticipated by this section. Compliance with applicable regulations is the responsibility of the person(s) involved.

6.2 Preventative Maintenance Documentation:

The owner or employer shall be responsible for maintaining a record of each preventative maintenance procedure, noting the specific checks made, parts replaced, adjustments made, results of measurements taken and any recommendations made. The frequency of this documentation shall follow the recommendations of the manufacturer. Maintenance records must be maintained on site. See attached checklist.

6.3 Repair Maintenance Procedure:

The owner or employer shall be responsible for the repair maintenance procedures as recommended by the operator, inspector or maintenance technician. Repair maintenance shall be performed according to recommendations of the manufacturer and carried out by qualified repair maintenance personnel. Note that certain sections of U.S. Code of Federal Regulations, Title 29, Section 1910 and applicable sub-parts - Occupational Safety and Health Administration, General Industry Standards may pertain to the procedures anticipated by this section. Compliance with applicable regulations is the responsibility of the person(s) involved.

Any electrical service maintenance shall be performed by or under the direct supervision of an electrician licensed in the applicable jurisdiction.

6.4 Repair Maintenance Personnel:

Personnel appointed to perform periodic repair maintenance must be qualified through experience in installation and field service work for manufacturers or distributors of mechanical parking stackers or automotive lift products. It is recommended that the services of a qualified service company be employed to carry out the necessary repairs by the manufacturer. Service providers must be approved by the manufacture.

6.5 Repair Maintenance Documentation:

A thorough record of each repair maintenance procedure performed shall be prepared and maintained by the owner or employer and kept on site. See attached checklist.

6.6 Repair Maintenance Frequency:

Repair maintenance shall follow the recommendations of the mechanical parking stacker manufacturer and shall be accomplished in timely response to observations or recommendations made by the operator, inspector or technician.

IMPORTANT:
If you are not completely familiar with automotive stacking equipment maintenance procedures, STOP. Contact the manufacturer or an authorized service professional.

Section 7: Equipment Modifications

There shall be no modifications or reconstructions made to any part of the mechanical parking stacker without the express written permission of the manufacturer.

Any disabling of safety features is against the law. Violators will be prosecuted under the full extent of the law.

Section 8. Trouble Shooting

8.1 Trouble Shooting Matrix:

MALFUNCTION	CAUSE	REMEDY
Motor does not run	1. Check fuse or circuit breaker	1. Replace blown fuse or reset circuit breaker*
	2. Check for correct voltage to motor	2. Supply correct voltage to motor.*
	3. Inspect all wiring connections	3. Repair and insulate all wiring connections*
	4. Switch burnt out	4. Replace switch*
	5. Motor windings burned out	5. Replace Motor*
Motor runs but will not raise lift.	1. Open lowering valve.	1. Repair or replace lowering valve.*
	2. Pump sucking air	2. Tighten all suction line fittings.*
	3. Suction stub off pump	3. Replace suction stub.*
	4. Low fluid level.	4. Fill tank with approved oil
	5. Lift Valve not opening	5. Repair or replace lift valve*

Park Plus Inc. – Model: DP003

Motor runs – raises unloaded lift but will not raise vehicle.	1. Motor running on low voltage	1. Supply correct voltage to motor*
	2. Dirt in lowering valve.	2. Clean lowering valve
	3. Improper relief valve adjustment.	3. Replace relief valve cartridge.*
	4. Overloading lift.	4. Check vehicle weight and/ or balance vehicle weight on lifts.*
Control handle or button does not activate the machine	No electric power	Check main circuit for power
	Defective hydraulic valve switch	Check valve switch for proper contact
	Defective electrical component in power supply	Check fuse and fuse box components
Power supply motor operating but platform does not move	Low hydraulic oil	Check power supply oil level indicator
	Defective hydraulic pump	Check pressure gauge
Platform moves very slowly with heavy car	Low hydraulic pressure	Check pressure gauge and adjust pressure until platform performs at proper speed. Do not exceed 2,500 PSI*
Oil leaks	Check for loose hydraulic fittings, cracked hydraulic hoses or leaky cylinders	Tighten fitting. Replace defective hose. Replace cylinder "O" ring.*
Machine squeaks when in operation	Little or no grease in wheel channel.	Grease wheel channel.*
	Binding or rubbing parts due to vehicle accidentally hitting leg stanchion.	Check to see if leg stanchion is properly lined up and plumb.*

***Remedy listed above may require qualified technician. Contact manufacturer.**

8.2 Manual Pump:

Two people are required for this procedure.

In the event of an electrical failure, a manual hand pump is incorporated in the power pack and the platform may be lowered in the following manner: One person must be positioned at the machine to operate the controls (control operation is identical with or without power). The other person must be positioned at the power supply to operate the hand pump. Several movements of the manual pump will produce sufficient pressure to operate the machine. (Figure 5.)

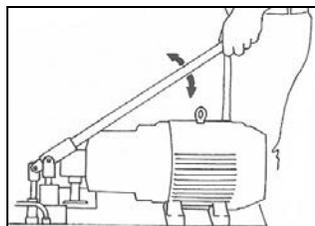


Figure 5.

STOP if unsure or inexperienced with any procedures.

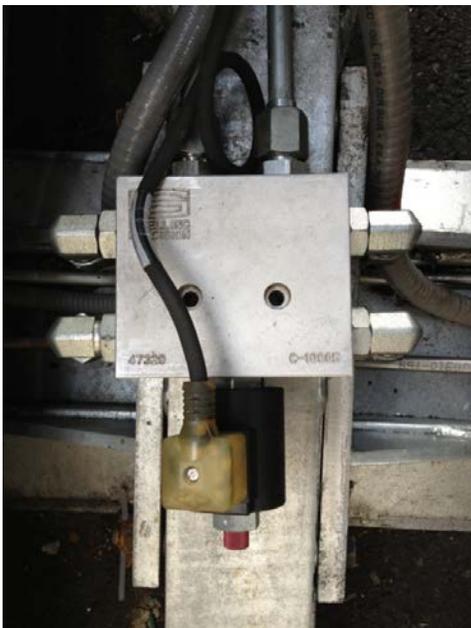
For immediate 24/7 assistance call 1-800-459 2604

PROCEDURE TO LOWER A PLATFORM IN THE EVENT OF A POWER FAILURE

NB: TWO PEOPLE ARE REQUIRED TO PERFORM THIS PROCEDURE. EXERCISE EXTREME CAUTION AT ALL TIMES, AS INJURY OR EVEN DEATH MAY OCCUR.

Step 1

Proceed to the rear of the left hand leg of the platform to be lowered. A manifold block assembly is located on the base of the leg complete with a solenoid valve. Push and twist manual override button (red knob) on the solenoid spool to open the valve.



DP003 Manifold block assembly

Step 2

One person should proceed to the Power Pack unit and open the cover. The second person should proceed to and stand in front of the platform to be lowered, ensuring that he/she is positioned away from the path of the platform to be lowered.



Power Pack manifold block assembly with hand pump

Step 3

A manual hand pump is incorporated in the Power Pack (see picture above). The person at the Power Pack must pump the hand pump several times which will produce sufficient pressure to raise the platform. Ensure that the safety hooks are raised approximately 1" above the safety shelf (bookshelf bracket).

Step 4

The person standing in front of the platform should now pull the release handle and continue to hold it in this position. **At the same time ensuring that he/she is positioned away from the path of the platform to be lowered.**

Step 5

The person standing at the Power Pack should push and slowly twist the manual override button of the solenoid spool valve of the Power Pack manifold assembly. Exercise **CAUTION** whilst twisting the manual override button to control the lowering speed of the platform. Once the safety hooks have cleared the safety shelf the release handle can now be released.

Step 6

Once the platform has reached the ground, release the manual override button of the solenoid spool valve in the Power Pack and close the cover.

Step 7

Return to the manifold block assembly located on the base of the leg of the affected platform. Push and twist the manual override button (red knob) on the solenoid spool back to its original position to close the valve.

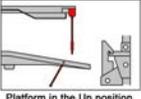
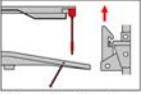
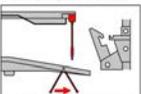
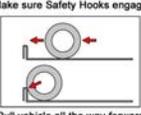
Section 9: Safety Devices, Notes, and Warning Labels

9.1 Safety Notes:

- Policy should prohibit customers or non-authorized persons or bystanders from being in area while equipment is in use.
- Thoroughly train all operators of this equipment in the use and care of equipment and accessories.
- Be sure no one is standing in front or behind equipment while vehicle is being driven onto or backed off the equipment.
- DO NOT permit anyone on equipment when it is either being raised or lowered.
- Always stand clear of equipment when raising or lowering and observe “Pinch Points” Warnings.
- Never overload equipment. Capacity of equipment is 6000 lbs. CAPACITY SHOULD NEVER BE EXCEEDED!
- Always shut off engine and engage parking gear and brake before exiting vehicle.
- Always drive on/ off equipment with care
- Keep area around equipment clean of tools, debris, grease, oil, flammables, etc.
- Always keep equipment platform clean.
- Replace all caution, warning, or safety related decals on the equipment when unable to read or missing.
- Always engage safety hooks when vehicles are in raised position or are being stowed.

9.2 Equipment Safety Warning Labels:

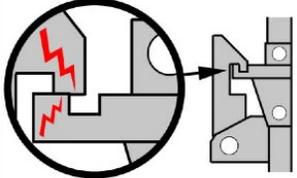
Platform Warning Label: To be installed on platform near control arm.

 <p>Platform in the Up position</p>  <p>Raise platform 1" to lower</p>  <p>Release Safety Hooks then lower</p>  <p>Make sure Safety Hooks engage</p>  <p>Pull vehicle all the way forward</p>	 <p>PARKPLUS HIGH DENSITY VEHICLE STORAGE</p>	Park Plus Inc. Model: DP003 Maximum Load: 6000 lbs. Maximum PSI: 2,500. Maximum Vehicle Height: _____	Hydraulic Power Pack: 208V, 1 Phase, 60 Hertz, 22Amps Controls: 24 Volts DC Horse Power: 10		
		⚠ Danger - Risk of Injury or Death			
		<ul style="list-style-type: none"> ▪ Lift to be used by <u>trained operator only</u>. ▪ Make sure transmission is in <u>PARK</u> and <u>PARKING BRAKE</u> is set. ▪ Driver and Passengers must exit vehicle before operating the lift. ▪ Crush Hazard, remain clear of lift when raising or lowering platform. ▪ Make sure vehicle is completely on platform before operating lift. ▪ Pull vehicle forward to wheel stops. ▪ Do Not Attempt to modify or re-adjust lift. In case of malfunction or damage to lift, DO NOT operate lift, Contact Manufacture. 		<ul style="list-style-type: none"> ▪ SUV's head in only. ▪ Children should not play on or near lift. ▪ Vandalizing or tampering with the lift is against the law, violators will be prosecuted under the full extent of the law. ▪ Keep clear of all moving components when lift is being operated. ▪ The Installation of the Vehicle Lifts System shall be subject to the conditions of approval listed in Research Report number 930501. Not Valid if RR is not current. For a copy of the RR visit www.LADBS.org or call 323-224-2168 	

Warning Label: To be installed on lift legs.

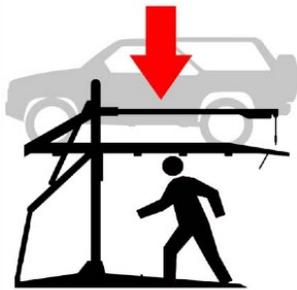


⚠ DANGER

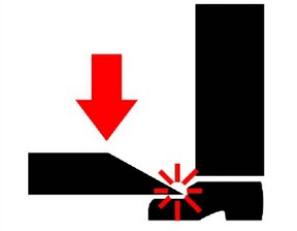


Safety Locks.
Make sure safety locks engage properly.

⚠ PELIGRO



Crush Hazard.
Remain clear of lift when raising or lowering vehicle.



Crush Hazard.
Keep clear of moving platform.

⚠ DANGER



Children should not play on or around lift.

⚠ WARNING



Keep clear of pinch points when lift is moving.

⚠ WARNING



Clear area if vehicle is in danger of falling.

⚠ CAUTION



Lift to be used by trained operator ONLY.

⚠ WARNING

Driver and passengers must exit before raising equipment.

Set transmission in "park".

SET PARKING BRAKE.

Do not operate damaged lift.



MODEL: DP-003
MAXIMUM LOAD:
6000 LBS

AFTER HOUR AND EMERGENCY SERVICE NUMBER
1-800-966-5509

Warning Label: For installation at front of platform.

 PARKPLUS HIGH DENSITY VEHICLE STORAGE	MAXIMUM LOAD: 6000 LBS SUV's HEAD IN ONLY SET PARKING BRAKE
---	--

Warning Label: For installation on hydraulic power pack.

 PARKPLUS HIGH DENSITY VEHICLE STORAGE	24hr Assistance: 1-800-966-5509
 CAUTION	
<ul style="list-style-type: none">■ Electrical Shock Hazard: Do not remove cover.■ No User serviceable parts inside.■ For Installation in Non-Hazardous Locations Only■ Read all instructions before operating the equipment.	
<hr/> <p>Park Plus Inc. Model: DP003 Hydraulic Power Pack: HPS30-3PH Maximum Load: 6000 lbs. Maximum. PSI: 2,500. 208V, 1 Phase, 60 Hertz, 22Amps Controls: 24 Volts DC Hourse Power: 10 Maximum Number of Lifts Connected: 30 The Installation of the Vehicle Lifts System shall be subject to the conditions of approval listed in Research Report number 930501. Not Valid if RR is not current. For a copy of the RR visit www.LADBS.org or call 323-224-2168</p>	

9.3 Safety Sensors:

For all self operated installations like Multi-Family Residential safety sensors must be installed to detect the presence of an object or person in the boundaries of the lift platform and prevent the platform from lower.

Park Plus uses a planer laser (Keyence SZ-04M) mounted at the front of the parking stall and field adjusted to define the boundary of the lift platform. If an object or person is present within the boundary of the lift platform the lift will not lower and if an object or person enters the boundary of the lift platform while lowering the lift will stop.

The safety sensor is to be mounted at about 10"-12" above the finish floor and a limit switch shall be installed to de-activate the safety sensor once the platform is lowered to about 10"-12" off the finish floor.

Boundaries of lift platform shall be clearly marked on the ground with contrasting color.

See attached Appendix A for more details

Section 10: Operator Training Log – DP003

Owner or Employer: _____

Operator Name: _____

Installation Address: _____

Qualifications:

1. _____

2. _____

3. _____

Stacker Model: DP003 – Double Car Stacker Serial No.: _____

USE REVERSE SIDE OF THIS FORM TO LIST THE COMPLETE SERIAL NUMBERS OF STACKERS

Lifting Capacity (lbs): _____ Maximum Vehicle Height: _____

Training Date: _____ Number of Training Cycles: _____

I have read and understand the Manufacturers Instructions: (initial) _____

I have received a copy of the Manufactures Instructions: (initial) _____

Training Conducted and Supervised By: _____

Authorized By: _____

I certify that I possess the qualifications necessary and have received the training required to operate the mechanical parking stackers described herein. I understand the risks involved in using the mechanical car stackers and I agree to adhere to the requirements and instructions in this manual.

Operator Signature: _____ Date: _____

I certify that I have verified that the operator whose name is shown above possesses the qualifications necessary and has received training to operate the mechanical parking stacker described herein.

Owner: _____ Date: _____

Vehicle License Plate Number assigned to this stacker: _____

A copy of this Operator Training Log must be kept on site.

Section 11: Inspection / Maintenance Checklist – Park Plus DP003

The following is to be used as a quick reference checklist for the purpose of mechanical parking stacker inspection by the owner or employer, the operator or any other person responsible for the routine inspection of the equipment.

Instructions

1. Check the appropriate box as each item is completed. If there is more than one inspector, each person will initial the item they inspected.
2. Record comments, observations and date items were repaired or replaced.
3. If any item was not inspected, write "NI" in the comments box. If any item is not applicable to this lift, write "NA"
4. Sign and Date the bottom when all items are completed.
5. Complete one check lift for each lift being inspected.

Car Stacker Serial Number: _____

Inspection / Service Item:	Comments:
General Overview:	
Record Location of Manufacturing Instructions on Premises	
Check With Operator and Observe For Any Unusual Characteristics	
Check Safety Warning Labels Condition	
Record Rated Load Capacity	
Record Max Vehicle Height	
Confirm Adequacy of Clearances Around Stackers	
Report Standing Water Around Equipment	
Examine Electrical Wiring and Components	

Inspection / Service Item:	OK	REPAIR	COMMENTS:
Structural / Mechanical:			
Examine All Welds:			
Rust / Damage / Wear:			
Alignment:			
Guide Rollers:			
Decking & Covers Secured:			
Anchor Bolts & Other Fasteners:			
Check level of frame:			
Arm Assembly:			

Park Plus Inc. – Model: DP003

Platform:			
Drive-up Ramps:			
Fig. 11.1 Check all points of lubrication:			Leg Channel must be lubricated every 6 months
Inspection / Service Item:	OK	REPAIR	COMMENTS:
Safety:			
Fig. 11.4 Safety Lock Alignment:			
Safety Sensors:			
Limit Switches:			
Locking Springs			
Locking Control Arm:			
Locking Operation:			
Hydraulic System:	OK	REPAIR	COMMENTS:
Capacity (lbs):			
Test Function			
Fig. 11.3 Oil Level & Inspection for Leaks			
Valves			
Fig. 11.2 Hoses			
Cylinder			
Oil pressure (not to exceed 2500psi):			
Oil Filter:			
15 Minute Leak Test (Vehicle Elevated):			
Check cylinders are operating properly:			
Check oil level at fully raised position:			
Electrical:	OK	REPAIR	COMMENTS:
Function of Switches:			
Limit Switches:			
Condition of Terminals:			
Operation:	OK	REPAIR	COMMENTS:
Operation of all features:			

Inspect / Test all Safety Features:			
Record the lifting speed of platforms:			
Record the lowering speed of platforms:			
Check for imbalances:			

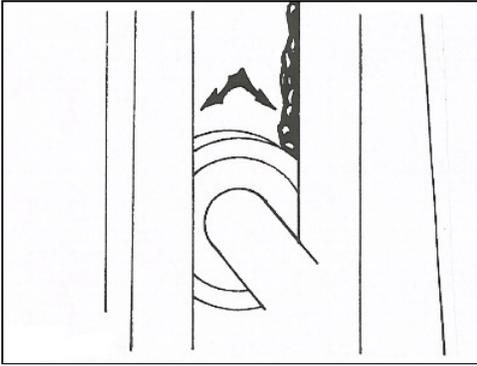


Figure 11.1

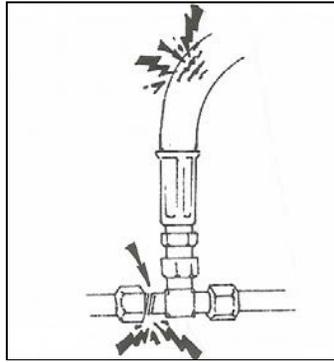


Figure 11.2

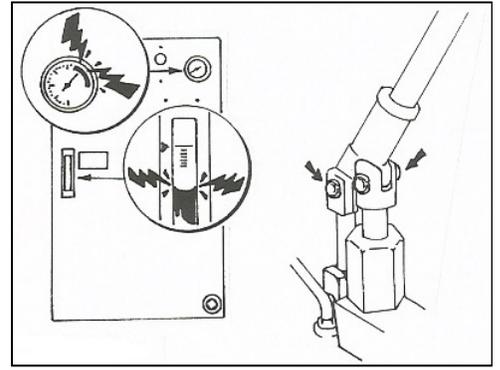


Figure 11.3

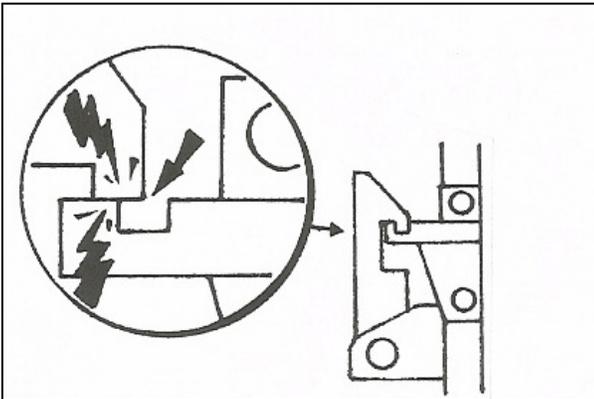
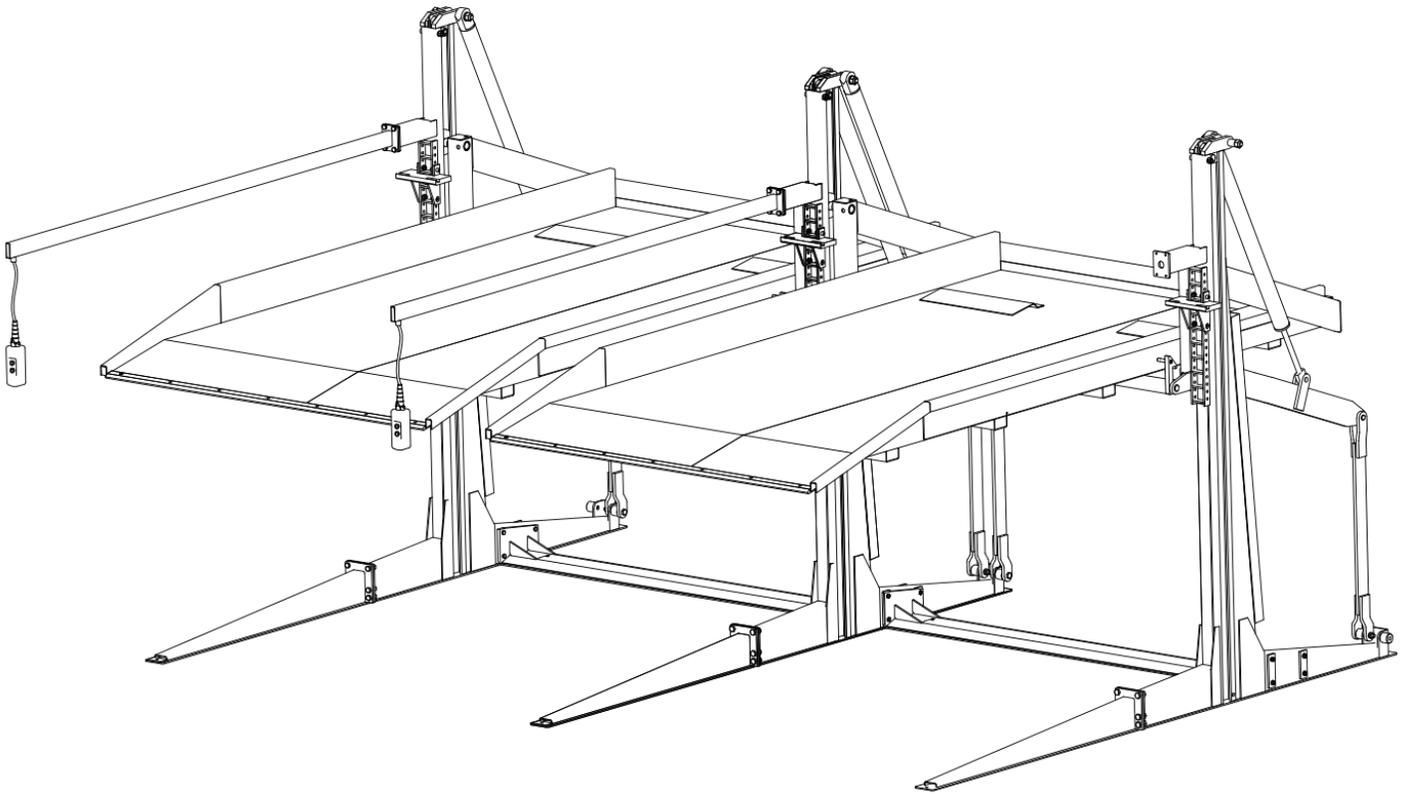


Figure 11.4



Circle location of repairs to be corrected, or that has been corrected on diagram above.

Notes: _____

Owner or Owner's Representative: _____

Operator Name: (Print) _____

License Plate Numbers of Assigned Parking: _____

Inspection Company: _____

Inspector: (Print) _____

Inspectors Signature: _____ Date: _____

Operator Signature: _____ Date: _____

Owners Signature: _____ Date: _____

A copy of this inspection report must be kept on site.

Section 12: Periodic Preventative Maintenance Record Log

A Preventative Maintenance Program shall be established by the Owner and is recommended at quarterly intervals, and at a minimum interval of every 6 months. A copy of the Inspection / Maintenance Checklist shall be completed for each machine and attached to this document.

Owner or Employer: _____

Operator Name: _____ Employee # _____

Qualified Technician Conducting Preventative Maintenance: _____

Service Interval: _____ Date: _____

Location of Equipment: _____

Stacker Model: DP003 Double Car Stacker

Serial No.'s: Attach a list of the serial numbers for all lifts

Lifting Capacity of Stacker (lbs): _____

Conducted and Supervised By _____ Date _____

Authorized By _____ Date _____

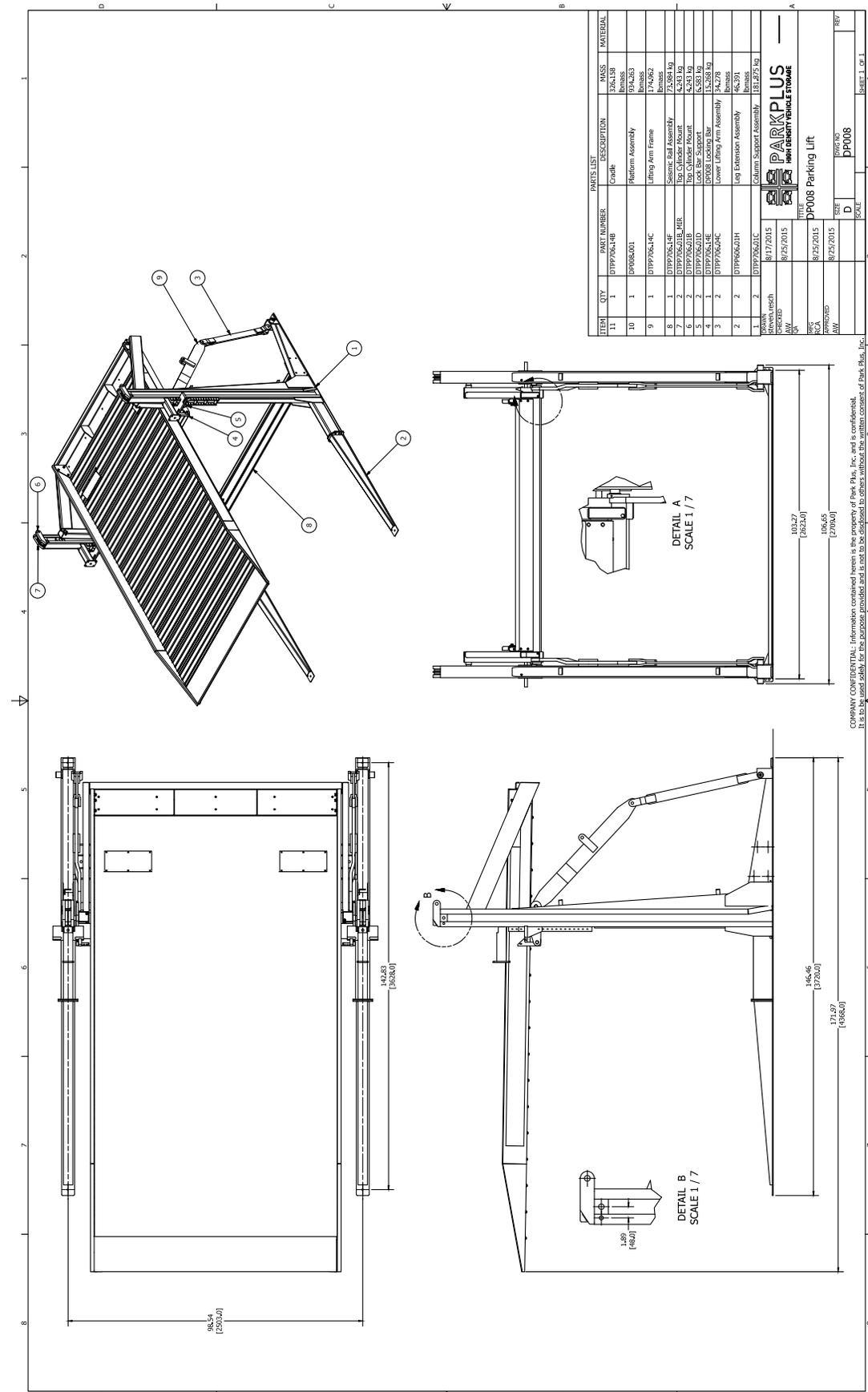
Technician Signature _____ Date _____

Supervisor Signature _____ Date _____

Additional Notes:

Section 13: Technical Specifications

13.1 Assembly Drawings:



13.2 Hydraulic Power Pack:

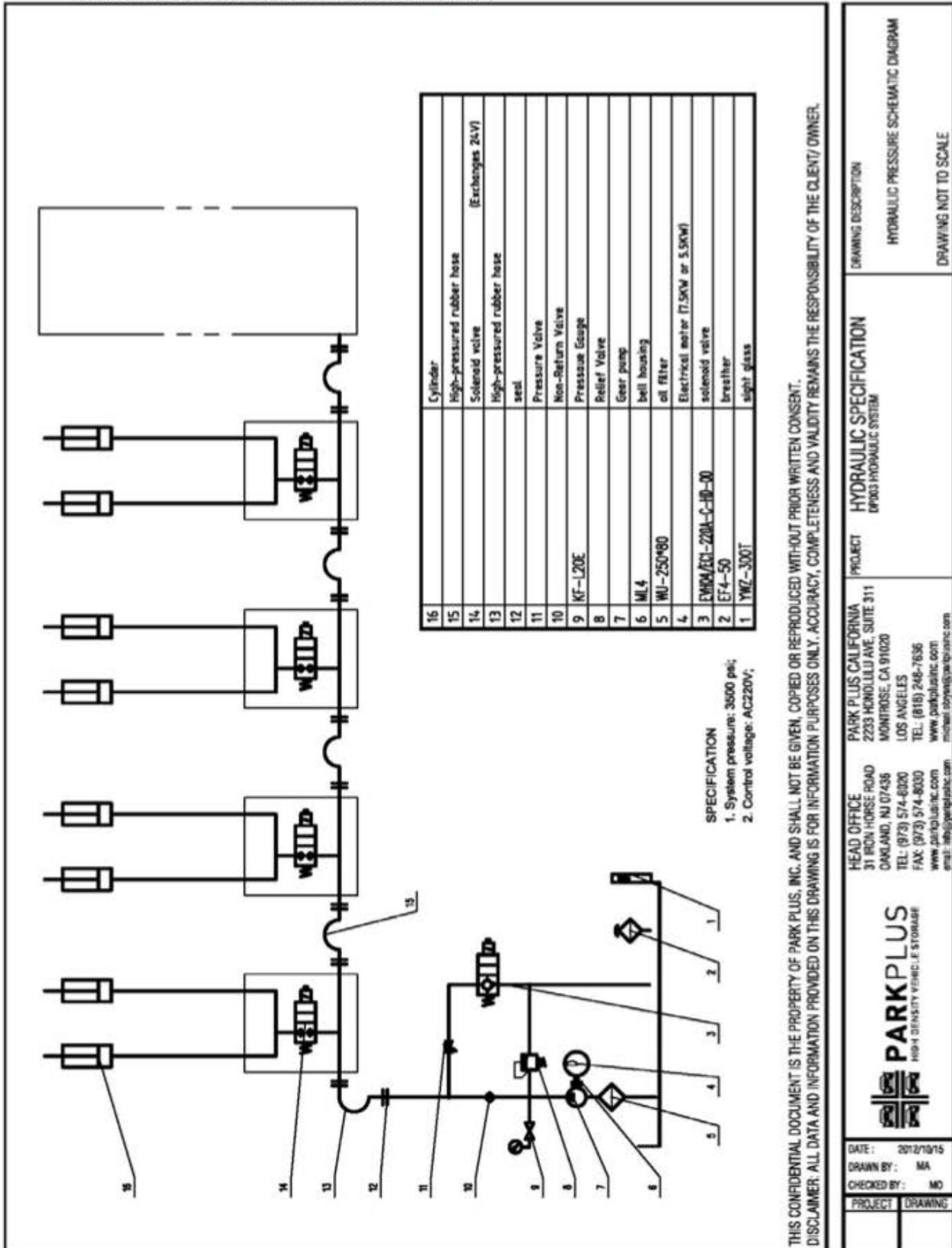
- 13.2.1. Hydraulic Pressure Schematic
- 13.2.2. HPS1 Cut Sheet
- 13.2.3. HPS15 and HPS30 3PH Diagram
- 13.2.4. HPS15 and HPS30 1PH Diagram



<u>ELECTRIC MOTOR</u>	<u>U.S. STANDARD</u>
Horsepower	10
Kilowatt	7.5
Phase	3
Voltage	208-230
Cycles – Hertz	60
Current – Amperage	22
Revolutions Per Minute (RPM)	1,760
Amps Required	40
<u>HYDRAULICS</u>	
Pump Flow – Gallons Per Minute (GPM)	6.6
Max. Pound Per Sq. In. (PSI)	2,500
Max. Kilograms Per Sq. In. (KPI)	362.50
Tank Capacity – Gallons	60/90
Back-Up Power	Manual Hand Pump
Directional Valve	4-way
<u>CONTROLS</u>	
Raise	Control Handle
Lower	Control Handle
Safety Lock Release	Manual
Motor Protection	Overload Switch
Control Voltage	24 Volts DC
Platform Speed	Approx. 25/40 seconds
Capacity	20-30 car lifts per power unit
<u>POWER PACK DIMENSIONS</u>	
Height	46"
Width	20"
Length	42"

See attached Appendix B for additional information:

13.2.1. Hydraulic Pressure Schematic



CITY OF LOS ANGELES
CALIFORNIA

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

**BOARD OF
BUILDING AND SAFETY
COMMISSIONERS**



ERIC GARCETTI
MAYOR

FRANK M. BUSH
GENERAL MANAGER

OSAMA YOUNAN, P.E.
EXECUTIVE OFFICER

VAN AMBATIELOS
PRESIDENT

E. FELICIA BRANNON
VICE PRESIDENT

JOSELYN GEAGA-ROSENTHAL
GEORGE HOVAGUIMIAN
JAVIER NUNEZ

Park Plus, Inc.
8640 Tamarack Ave.
Sun Valley, CA 91352
Attn: Michael O'Bryan

RESEARCH REPORT NO.: 930501
Re-Approval Date: October 9, 2016
Expires: October 9, 2017

GENERAL APPROVAL - Renewal - Passenger Vehicle Lift System (Double Stacker) - Manufactured by Park Plus, Inc. The system consist of a "Hydraulic Power Pack", and the "Vehicle Lifts". This electrical approval is not a product endorsement nor a certification of accuracy or function of the approved item.

CONDITIONS OF APPROVAL

The following conditions apply to all models. The installation of this Vehicle Lift System is approved when the following conditions are met:

1. The following five "Hydraulic Power Pack" models may be used with the Vehicle Lift Systems:

Model Number	Electrical Ratings	# of Lifts	Fused Disconnect
HPS1	208/220V, 1Ph, 3HP, 17 Amps	1	30 Amp
HPS15-1P	208/220V, 1Ph, 10HP, 50 Amps	1-15	60 Amp
HPS15-3P	208/220V, 3Ph, 10HP, 28.4 Amps	1-15	40 Amp
HPS30-1P	208/220V, 1Ph, 10HP, 50 Amps	16-30	60 Amp
HPS30-3P	208/220V, 3Ph, 10HP, 28.4 Amps	16-30	40 Amp

2. The following six "Vehicle Lifts" models may be used with the Lift Systems:

Lift Model Number	Overall Outside Dimensions of Lifts*		Inside Dimensions of Platforms*	
	Width	Length	Width	Length
DP003-L11	7'-7"	13'-6"	6'-3"	13'-3"
DP003-L12	7'-11"	13'-6"	6'-7"	13'-3"
DP003-L13	8'-3"	13'-6"	6'-11"	13'-3"
DP003-L14	10'-2½"	13'-6"	8'-11"	13'-3"
DP003-L15	8'-10"	13'-6"	7'-6"	13'-3"
DP003-L16	8'-4" to 8'-6"	13'-6"	7'-0"	13'-3"

* See manufacturer's specification sheets.

3. The installation of the Vehicle Lift Systems shall comply with the requirements of LADBS Information Bulletin document #P/ZC 2002-001 Section Q.
<http://www.ladbs.org/docs/default-source/publications/information-bulletins/zoning-codc/parking-lot-design-ib-p-zc2002-001.pdf>
4. The "Hydraulic Power Pack" shall be plainly and permanently marked on a contrasting background with 1/4" minimum height letters where readily visible with the following:
 - a. Manufacturer's name,
 - b. Model designation,
 - c. Serial number,
 - d. Electrical Ratings in Volts, Amp, HP, Phase & Hz,
 - e. "Caution - For Installation in Non-Hazardous locations only",
 - f. "WARNING - Electrical Shock Hazard. Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.",
 - g. "WARNING - This Vehicle Lift System shall ONLY be operated by authorized, trained and qualified personnel. Read all the instructions before operating the equipment",
 - h. "This Vehicle Lift System shall comply to the conditions of approval listed in Research Report, RR 930501. Not valid if RR is not current. For a copy of the RR visit www.LADBS.org or call 323-224-2168."
5. Each lift of the "Vehicle Lift" shall be plainly and permanently marked on a contrasting background with 1/2" minimum height letters where readily visible with the following:
 - a. Manufacturer's name,
 - b. Model designation,
 - c. "WARNING - RISK OF INJURY OR DEATH. This Vehicle Lift System shall ONLY be operated by authorized, trained and qualified personnel. Do not operate the lift if people are present on or near the lift. Read all the instructions before operating this Vehicle Lift System",
 - d. "CAUTION - To access the vehicle on the platform, lower the vehicle to the ground level first, DO NOT climb the lift.",
 - e. "CAUTION - The driver and the passengers must exit the vehicle prior to operation of the lift.",
 - f. "CAUTION - The vehicle must be completely on the platform prior to operating the lift.",
 - g. "CAUTION - Maximum dimensions of the vehicle on this lift shall not exceed:
Height: 78 Inches, Length: 216 Inches, Width 80 Inches",
 - h. "DANGER - Risk of injury and damage to the Lift System. Maximum Load Capacity: 6,000 Lb. Do not lift a vehicle exceeding its capacity.",
 - i. "DANGER - Risk of injury. Do not attempt to modify or adjust the lift. In case of any malfunction or damage, do not operate the lift. Contact the manufacturer's authorized representative at 800-966-5509 for repair or replacement.",
 - j. "This Vehicle Lift System shall comply to the conditions of approval listed in Research Report, RR 930501. Not valid if RR is not current. For a copy of the RR visit www.LADBS.org or call 323-224-2168."

6. The Vehicle Lift System shall only be used by a trained and "Qualified Person" as defined in the Los Angeles Electrical Code.
7. The Vehicle Lift System shall be installed and maintained in strict compliance with the manufacturer's instructions by trained, authorized and qualified personnel only.
8. Maintenance of safety mechanisms indicated in the manufacturer's manual shall be recorded and to be included in the maintenance record.
9. The *Hydraulic Pump & Lift System* shall be equipped with a "Parker - RAH101S50" adjustable release valve, set at 2,500 Lb. to prevent injuries to the operator and damages to the lift system and personal properties, if the vehicle's weight exceed 6,000 Lb.
10. An accessible power disconnect switch shall be installed within sight of the Vehicle Lift System. The disconnect switch shall be clearly labeled "Power Disconnect for Vehicle Lift System."
11. All components of Vehicle Lift System shall be listed by a City of Los Angeles recognized electrical testing laboratory or approved by the Department.
12. The "transportation system" shall be cleared from foreign objects at all times, and the safety sensing devices shall prevent operation of the equipment when object is blocking its path.
13. The installation of this *Passenger Vehicle Lift System* shall comply with applicable provisions of the Los Angeles City Codes including but not limited to Building, Electrical, Mechanical, Plumbing, Fire, Zoning Codes and Planing regulations.
14. The Vehicle Lift System shall be installed on a leveled surface, and its supporting structure shall be approved and anchored seismically per Chapter 16 of the City of Los Angeles Building Code.
15. A building permit shall be obtained prior to installation or relocation of the Vehicle Lift System in the City of Los Angeles.
16. An electrical permit shall be obtained prior to installation of the Vehicle Lift System in the City of Los Angeles.
17. The Vehicle Lift System shall employ an approved motion / occupancy sensors (Planer Laser, Keyence Model SZ-04M or Omron Model OS32C) to disable the lift system if an object or a person is present or enters into the boundaries of the lift system.
18. In commercial installations the vehicle lift system shall only be accessible to and operated by trained, authorized and qualified parking attendants.
19. All sensing devices shall be set and sealed at the factory. Field adjustable settings shall be accessible only to the manufacturer's authorized personnel.

20. A component, when replaced, shall be of the identical original manufacturer's part that was approved by the Los Angeles City Electrical Testing Laboratory.
21. Homeowner of a single family, duplex or multi dwelling shall file with the City of Los Angeles, Department of Building and Safety (LADBS) "*Covenant and Agreement Regarding Maintenance of Vehicle Lift System - 2 levels*".
22. For each installation of Vehicle Lift System that deviates from the conditions of approval of this research report, a separate One-time field application shall be submitted to Electrical Testing Lab to evaluate site specific issues and requirements.
23. If the equipment is no longer in service, it shall be repaired or replaced by the manufacturer's authorized representative. The total number of parking spaces shall comply with the requirements of the building department.
24. This approval shall be void if the product is modified or moved without prior authorization from the Los Angeles City Electrical Testing Laboratory.
25. This approval does not include the calibration of the Vehicle Lift System or any test equipment that is used to service the unit.
26. A copy of this research report shall be placed inside the control panel of the Vehicle Lift System.

DISCUSSION

The product covered under this Research Report is the electrical system of *Passenger Vehicle Lift System* that is installed in nonhazardous locations. The Vehicle Lift System is designed for the parking and storage of passenger vehicles. Two vehicles may be placed in a sized single parking space. One vehicle is stored on an elevated horizontal platform or pan that is raised by two hydraulic arm cylinders. When the upper vehicle is raised and secured on to its steel-on-steel lock system, a second vehicle may be parked underneath the raised platform.

The Vehicle Lift System employs a steel-on-steel locking system that automatically engages when the platform is raised to its designated height. When properly locked, the lift cannot be lowered accidentally due to electrical or hydraulic failure. Only an authorized, trained and qualified person with a key can operate the lift system. The lock system must be manually released before the lift can be lowered. The lift system cannot be operated by remote control or from a control switch located anywhere except directly adjacent to the individual lift.

This lift system employs listed and approved motion sensors. The motion sensors stops the operation of the lift system if an object or person either present or enters under a lifted parked vehicle or during descendent or rise of a vehicle transportation system. If the motion sensors fail to function as intended, the lift system will not operate until its repaired or replaced.

Multiple lifts can be connected to a single "*Hydraulic Power Pack*", however, only one lift may be operated at a time.

When the Vehicle Lift System is installed in commercial applications, it is only be accessible to and operated by trained, authorized and qualified parking attendant. When the vehicle system is installed in a single or duplex family dwelling it is operated by authorized, trained and qualified individual homeowner or a parking attendant from a key operated control box mounted on each machine.

When this system is installed in accordance with the provisions of this General Approval, it should meet the minimum safety standards of the Los Angeles City Electrical Code.

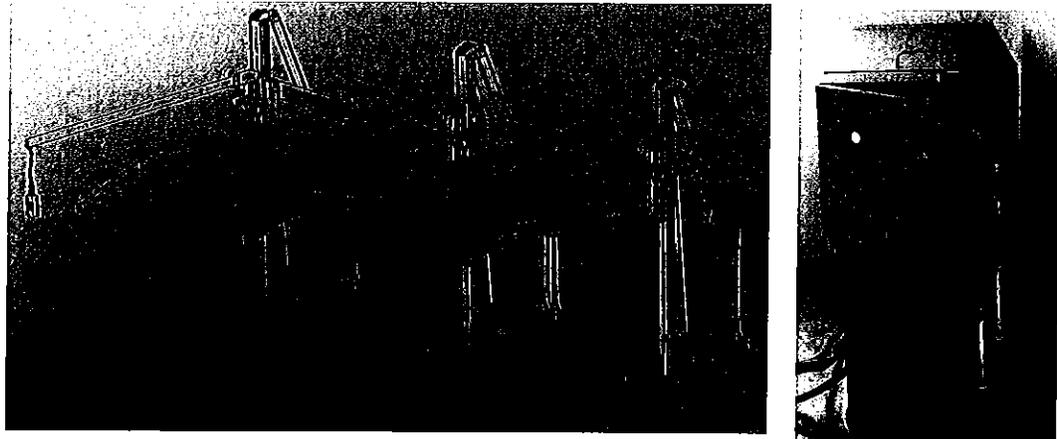
The fabrication details and strength of the structure of the vehicle lift system was not evaluated as a part of this approval.

For this General Approval to be valid on any installation in the City of Los Angeles, an engineer or inspector of the Department of Building and Safety must make a determination that all conditions of the General Approval required to provide equivalency have been met.

This General Approval is in accordance with Section 93.0303 of the Electrical Code pertaining to "New Materials and Methods of Construction" and does not waive the requirements of the City of Los Angeles Building Code.

This General Approval is neither a product endorsement nor a certification of accuracy or function of the approved item.

PICTURES



APPROVED BY:

A handwritten signature in black ink, appearing to read 'Behrooz Hooriani', is written over a horizontal line.

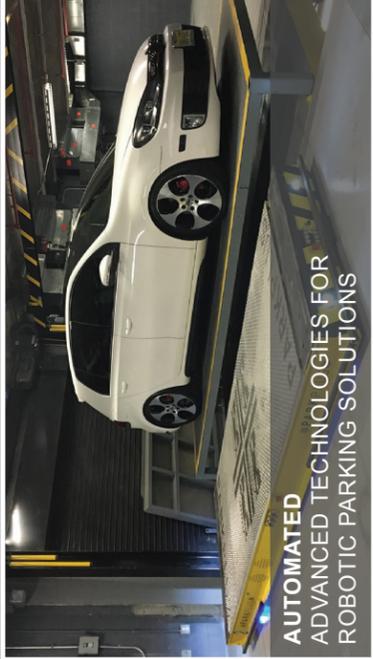
Behrooz Hooriani, P.E.
Electrical Engineer
Electrical Testing Laboratory
2319 Dorris Place
Los Angeles, CA 90031
(323) 224-2168 Tel
(323) 224-2161 Fax
www.LADBS.org



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AUTOMATED TECHNOLOGIES FOR ADVANCED ROBOTIC PARKING SOLUTIONS



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DP003

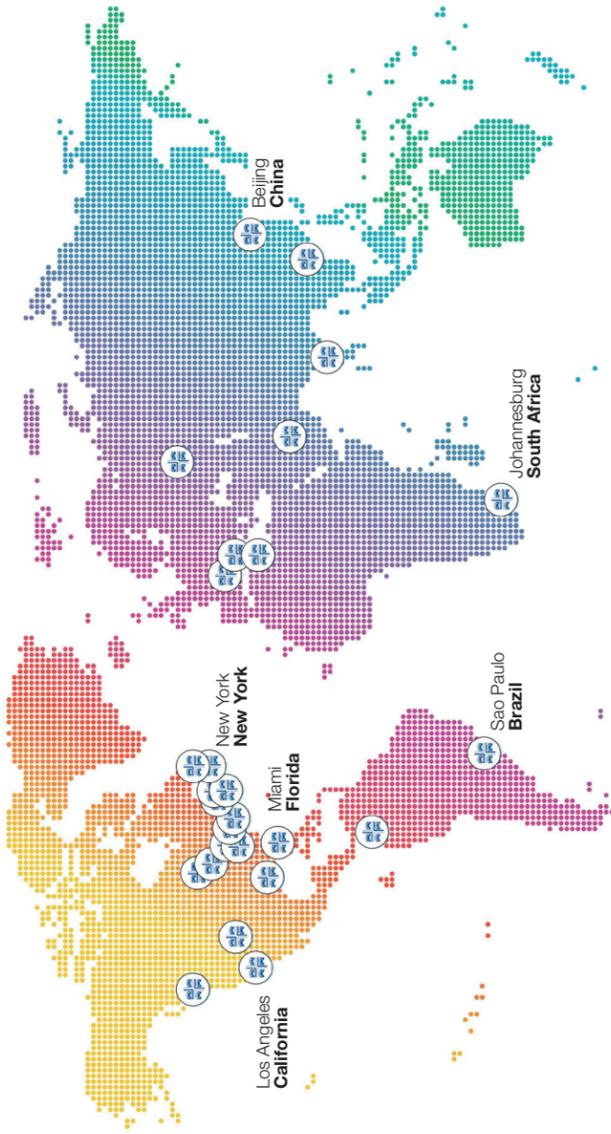
DOUBLE STACKER

2 Level Parking System

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SPEC SHEET

PARKPLUS DP003 DOUBLE STACKER

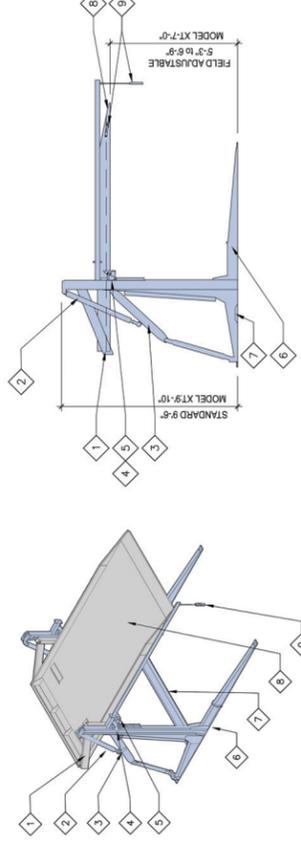
- Galvanized, Commercial-Grade Machines
- In-house Design, Manufacture, Install & Service
- Best Hydraulic Cylinders in the World
- Minimum Moving Parts – No Chains, No Cables



The **PARKPLUS DP003** Double Stacker is a hydraulic 2-post, 2-level cantilevered vehicle lift for parking cars one above another on the ground. Device lifts a car on platform and locks platform in place so that a second car can be parked in space below.

Entire assembly comes pre-welded and is assembled in the field. Stackers may be installed as single units or in arrays with shared common legs. Stacker is designed to be mounted on grade or asphalt. Approved foundation system may be required for installation of stackers.

The **PARKPLUS DP003** Double Stacker may be installed indoors and outdoors. Platform height is field adjustable in 1 1/2" increments. Each municipality may have minimum height requirements and different clear requirements for code required parking. Architect's should review with local planning and building departments. **MEP coordination with project team must meet code requirements and satisfy equipment clearances.**



Components

- 1 CRADLE FRAME ASSEMBLY
- 2 HYDRAULIC CYLINDER
- 3 PARALLEL ARM ASSEMBLY
- 4 ADJUSTABLE HEIGHT ASSEMBLY
- 5 SAFETY LOCKS ASSEMBLY
- 6 END LEG ASSEMBLY
- 7 SEISMIC BEAM ASSEMBLY
- 8 PLATFORM ASSEMBLY
- 9 PUSH BUTTON CONTROLS

Suitable for

- Standard passenger vehicles
- Station wagon / Van / SUV

Specifications

Load per Platform: 6,000 lbs.
Weight of Unit: +/- 3,050 lbs.
Length of Platform: 13'-6"
Length incl. Overhang: 16'-6"
Width of Unit: 7'-11" to 9'-0"
Height: 9'-6" to 9'-10"
Operation: Hydraulic

+ Power Pack

Hydraulic Power System (HPS)

HPS1: 1-2 units
 (208-230V / 1 PH / 60 HZ / 2-3 HP / 18Amp)
HPS-1P10: 1-30 units
 (208-230V / 1 PH / 60 HZ / 10 HP / 40Amp)
HPS-3P10: 1-30 units
 (208-230V / 3 PH / 60 HZ / 10 HP / 28.4Amp)

+ Electrical

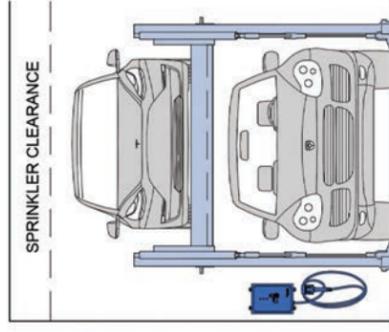
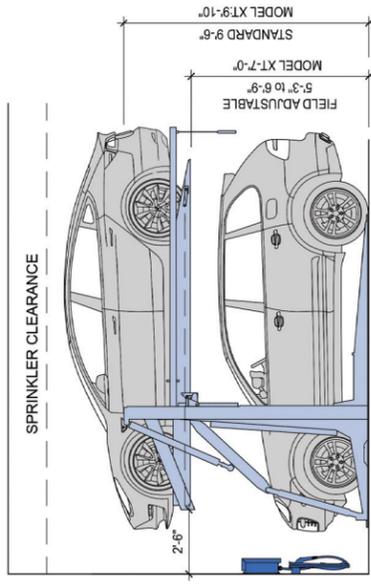
1 Disconnect required per HPS
 3 PH 208-230V / 40Amp
 1 PH 208-230V / 60Amp
All control wiring is a Class 2 Circuit 24V

Applications

DP003 Double Stacker can be installed in attended/valet and self-park applications:

- Single & Multi-Family Residential Buildings
- Indoor & Outdoor Installations
- Low & High Rise Buildings
- Commercial Buildings
- Surface Lots

Self-park applications may require additional occupancy sensors.



Clearance

S = Standard/SUV
 C = Compact

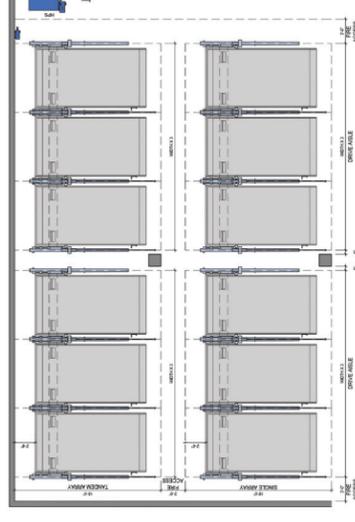
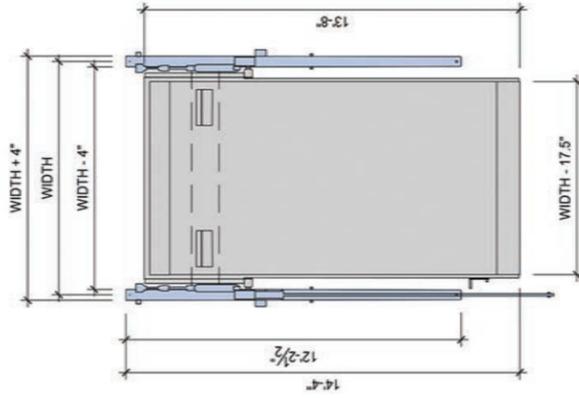
MODEL	HEIGHT
C/C	11'-6"
C/S	12'-6"
S/S	13'-6"
S/S*	14'-6"

* LA City requirement

Width

MODEL	WIDTH
W01	7'-11"
W02	8'-3"
W03	8'-6"
W04	9'-0"
W05	Custom

WIDTH = Center of Leg to Center of Leg



Layout

PARKPLUS DP003 Double Stacker can be arranged in single or tandem arrays on either side of a drive aisle. Queuing space of at least 2 vehicles must be provided to allow for shuffling of cars. Queuing space may be in drive aisle. For commercial projects, during peak morning traffic, all platforms will be lowered for quick filling of stackers. Surface space to be provided for Accessible Parking.

ADDITIONAL INFORMATION

Safety

Device is equipped with safety locking system. 'Posi-lock' double suspension system holds full weight of vehicle on platform in locked position. Device can be equipped with individual keyed controller for extra safety. Self-attended applications may require occupancy sensors to detect objects located under platform or entering the area below platform.

Fire Protecting

In over two-dozen metropolitan municipalities, car stackers are reviewed as similar to high piled storage and non-building structures. Fire rating of structural components is not required. Sprinklers may be required per following section. Each municipality may have fire department guidelines.

Fire Sprinklers

Outdoor: 1. Most municipalities do not require fire sprinklers. 2. May need to conform to additional zoning regulations and building code requirements.

Indoor: 1. Installation shall be in a sprinklered garage. In tandem array, additional sprinkler requirements may apply. 2. Sprinkler Plans filed and approved by local municipality. 3. Sprinkler system designed as required by NFPA 13 and local building codes. 4. Clear building height within parking area must accommodate height of equipment plus additional requirements for adequate coverage of fire sprinklers.

Temperature

Device is designed to operate between 20° and 120° F. For below freezing environments we recommend heaters for Power Packs.

Loading

Structural design and loading is provided on a project by project basis and is dependant on seismic zones, soil conditions and other environmental conditions.

Warranty

12-month Standard Manufacturer's Warranty on new equipment.

Service

At end of 12-month warranty period a service contract is available upon request.

Rental option may include Service & Maintenance for full term.

Approvals

- MEA Certified, City of New York
- LAETL Approved, LARR#930501
- California Seismic Code compliant
- Miami Dade County compliant



PARKPLUS
HIGH DENSITY VEHICLE STORAGE

PARKPLUS, INC. HEAD OFFICE
83 BROAD AVENUE, SUITE 2
FAIRVIEW, NJ 07022

PARKPLUS CALIFORNIA
8640 TAMARACK AVENUE
LOS ANGELES, CA 91352

PARKPLUS FLORIDA, INC.
111 OLD GRIFFIN ROAD
DANIA BEACH, FL 33004

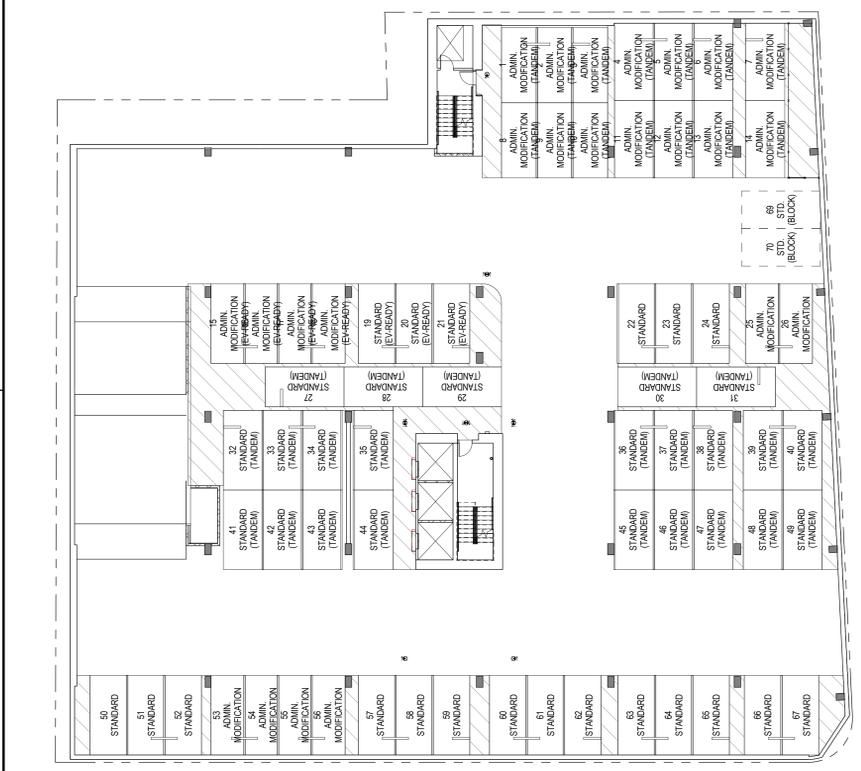
PARKPLUSINC.COM

LEVEL	GROSS LEASABLE AREA			PARKING		REQ. BIKES
	NAME	AREA	FACTOR	REQUIRED	BIKES	
1ST FLOOR / GROUND	OUTDOOR DINING	798 SF	100 SF	8.0	0.40	
1ST FLOOR / GROUND	RESTAURANT	4,234 SF	100 SF	42.3	2.12	
1ST FLOOR / GROUND	RETAIL	6,158 SF	400 SF	15.4	0.77	
1ST FLOOR / GROUND	RETAIL	2,000 SF	400 SF	5.0	0.25	
1ST FLOOR / GROUND	RETAIL	13,190 SF		70.7	3.54	
2ND FLOOR	OFFICE	23,135 SF	370 SF	62.5	3.13	
2ND FLOOR	OFFICE	23,135 SF		62.5	3.13	
3RD FLOOR	OFFICE	23,226 SF	370 SF	62.8	3.14	
3RD FLOOR	OFFICE	23,226 SF		62.8	3.14	
4TH FLOOR ROOF	OFFICE	9,250 SF	370 SF	25.0	1.24	
4TH FLOOR ROOF	OUTDOOR DINING	1766.88 SF	100 SF	17.66	0.89	
4TH FLOOR ROOF	OUTDOOR DINING	11,036.86 SF		45.0	2.13	
TOTAL GROSS BUILDING AREA		70,587.86 SF		238.88	11.94	

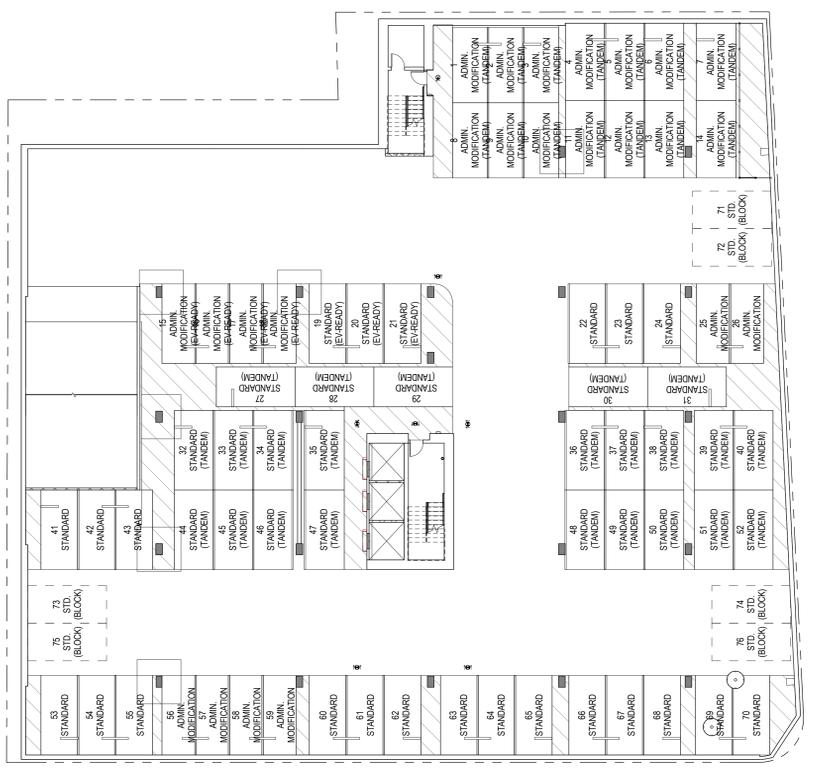
GROSS LEASABLE AREA - SUMMARY			
TYPE	AREA	FACTOR	REQUIRED
OFFICE	55,611 SF	370 SF	150.3
RESTAURANT	6,818.88 SF	100 SF	68.18
RETAIL	8,158 SF	400 SF	20.4
TOTAL GROSS BUILDING AREA	70,587.86 SF		238.88

PARKING SCHEDULE PER LEVEL			TOTAL PARKING
LEVEL	PARKING TYPE	STALLS	
1ST FLOOR / GROUND	AUTOMOBILE STACKER	14	
1ST FLOOR / GROUND	STANDARD	2	
1ST FLOOR / GROUND	STANDARD - ACCESSIBLE PARKING	1	
1ST FLOOR / GROUND	STANDARD - DESIGNATED PARKING	1	
1ST FLOOR / GROUND	ADMIN. MODIFICATION (7'-8" X 18'-0")	18	
P1 LEVEL	ADMIN. MODIFICATION - DESIGNATED PARKING	6	
P1 LEVEL	ADMIN. MODIFICATION - TANDEM (8'-1" X 17'-6")	1	
P1 LEVEL	STANDARD	13	
P1 LEVEL	STANDARD - ACCESSIBLE PARKING	6	
P1 LEVEL	STANDARD - DESIGNATED PARKING	20	
P1 LEVEL	STANDARD - TANDEM PARKING	60	
P2 LEVEL	ADMIN. MODIFICATION (7'-8" X 18'-0")	9	
P2 LEVEL	ADMIN. MODIFICATION - DESIGNATED PARKING	6	
P2 LEVEL	ADMIN. MODIFICATION - TANDEM (8'-1" X 17'-6")	6	
P2 LEVEL	ADMIN. MODIFICATION - TANDEM (9'-0" X 17'-6")	6	
P2 LEVEL	STANDARD	17	
P2 LEVEL	STANDARD - DESIGNATED PARKING	3	
P2 LEVEL	STANDARD - TANDEM PARKING	23	
P2 LEVEL	STANDARD	67	
P3 LEVEL	ADMIN. MODIFICATION (7'-8" X 18'-0")	6	
P3 LEVEL	ADMIN. MODIFICATION - DESIGNATED PARKING	4	
P3 LEVEL	ADMIN. MODIFICATION - TANDEM (8'-1" X 17'-6")	6	
P3 LEVEL	ADMIN. MODIFICATION - TANDEM (9'-0" X 17'-6")	8	
P3 LEVEL	STANDARD	20	
P3 LEVEL	STANDARD - DESIGNATED PARKING	3	
P3 LEVEL	STANDARD - TANDEM PARKING	23	
P3 LEVEL	STANDARD	70	
TOTAL PARKING STALLS PROVIDED		215	

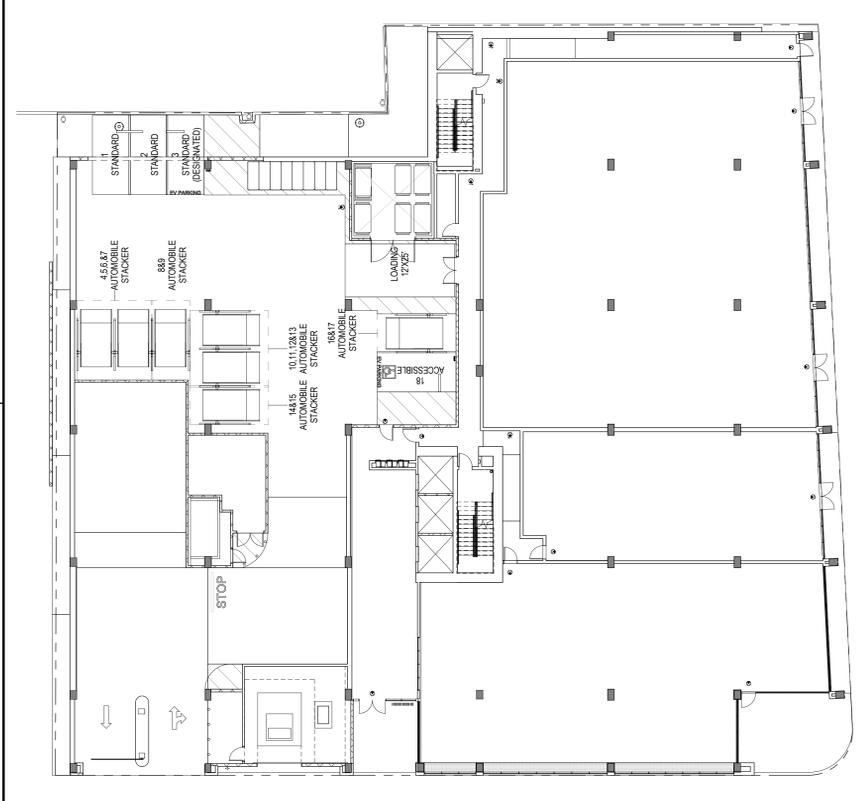
PARKING SIZE	TYPE	SIZE	STALLS
7'-8" X 18'-0"	ADMIN. MODIFICATION (7'-8" X 18'-0")	7'-8" X 18'-0"	16
7'-8" X 18'-0"	ADMIN. MODIFICATION - DESIGNATED PARKING	7'-8" X 18'-0"	5
8'-1" X 17'-6"	ADMIN. MODIFICATION - TANDEM (8'-1" X 17'-6")	8'-1" X 17'-6"	18
9'-0" X 17'-6"	ADMIN. MODIFICATION - TANDEM (9'-0" X 17'-6")	9'-0" X 17'-6"	24
8'-6" X 18'-0"	AUTOMOBILE STACKER	8'-6" X 18'-0"	8
8'-6" X 18'-0"	AUTOMOBILE STACKER	8'-6" X 18'-0"	6
8'-6" X 18'-0"	STANDARD - ACCESSIBLE PARKING	8'-6" X 18'-0"	52
8'-6" X 18'-0"	STANDARD - DESIGNATED PARKING	8'-6" X 18'-0"	7
8'-6" X 18'-0"	STANDARD - TANDEM PARKING	8'-6" X 18'-0"	66
TOTAL PARKING STALLS PROVIDED			215



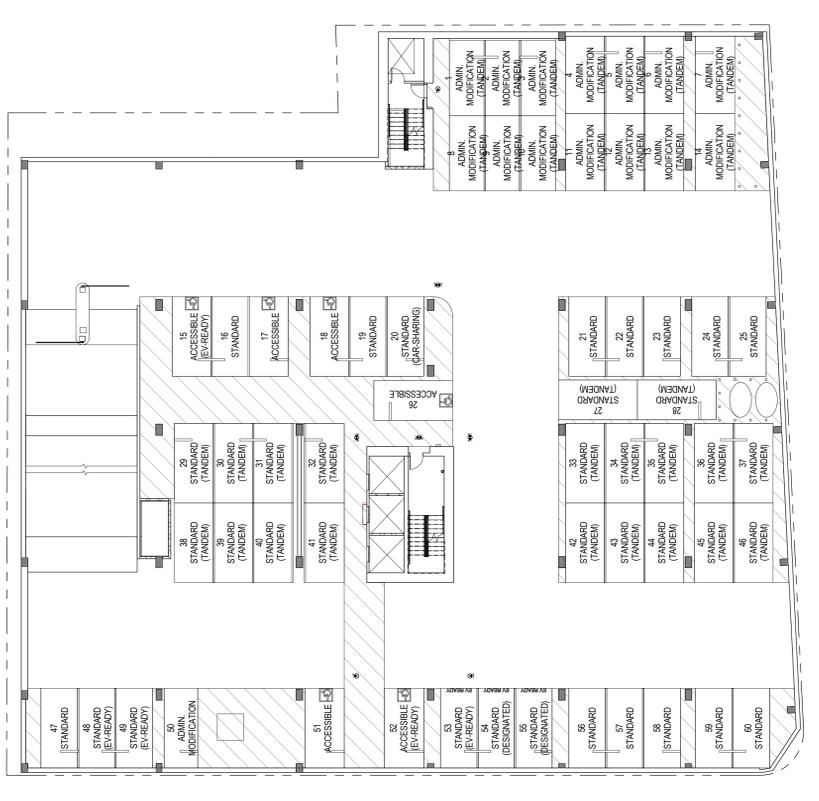
P2 LEVEL PLAN
SCALE: 1/16" = 1'-0"



P3 LEVEL PLAN
SCALE: 1/16" = 1'-0"



P1 LEVEL PLAN
SCALE: 1/16" = 1'-0"



P1 LEVEL PLAN
SCALE: 1/16" = 1'-0"



REVISIONS		
REV. NO.	DATE	DESCRIPTION
01	03/02/2017	PRE SUBMITTAL
02	03/02/2017	SITE PLAN REVIEW SET
03	03/01/2017	100% DD SET
04	07/27/2017	PLAN CHECK SUBMITTAL

PROJECT NO. BM16