

June 27, 2023

1931 Second Avenue, Seattle WA

Re: Automated Parking System Approval

Amy Barnett, Building Plans Examiner Supervisor
Department of Planning and Development
City of Seattle Department of Construction & Inspections
700 Fifth Avenue, Suite 2200
P.O. Box 34019, Seattle, WA 98124-5070

SDCI Construction Permit #6775483-PH
SDCI MUP Permit #3031140-LU

Dear Amy:

The letter is to formally propose the automatic Sodefin automated car storage system at the 1931 2nd Avenue project. We briefly introduced this proposal to SDCI at the project's 403 Meeting of April 8, 2020, with meeting minutes approved and distributed on April 29, 2020. The first meeting including James Clancy, Amy Barnett, and Marsha Poon from City Staff.

A comparable system was proposed and accepted by SDCI in 2018 for a nearby site, 600 Wall Street (Spire Seattle). This project intends to follow the 600 Wall Street document format to complete approval for the new system configuration at 1931 2nd Avenue.

To that extent we have updated the precedent project approval documentation to reflect the current configuration and applicable codes.

The attached documents include the following:

Table of Contents and Summary of System

- A. Exhibit 1 – A17.1 -2010 – Part 7.9 Compliance Check List
- B. Exhibit 2 – Safety Parameters
- C. Exhibit 3 - Risk Assessment
- D. Exhibit 4 – Seismic Compliance
- E. Exhibit 5 – Shop drawings

The project team is anxious to receive approval from you on this submittal. Given the previous approval by SDCI in 2018 of a similar system, built by the same manufacturer and installed by the same vendor, we believe we have addressed all requested information about the system and its conformance with applicable codes. That installed system has performed exceptionally well, and safely, for 3 years now. As we expect

the use of Automated Parking Systems to be increasingly common, gaining experience in their review, approval, and operation is a benefit to both City Staff and the design and development community. We look forward to addressing any other concerns with you. Please do not hesitate to call if you have any questions.

Sincerely,



Jason Lamb

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**1931 SECOND AVENUE
SEATTLE, WASHINGTON**

Automated Car Storage System Report



June 27, 2023



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Exhibit 1 – A17.1 -2010 – Part 7.9 Compliance Checklist

Exhibit 2 – Safety Parameters

Exhibit 3 - Risk Assessment

Exhibit 4 – Seismic Compliance

Exhibit 5 – Shop drawings

- A. Shop Drawings 1: Level P1
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1. Introduction

1.1 1931 Second Ave

This report addresses the proposed high rise and parking facility at 1931 Second Avenue, Seattle, Washington. The 42-story building will be provided with 214 parking spaces with a below-grade automated parking system. The operation of the parking systems, life safety, and fire protection of the parking facility are the focus of this report.

1.2 Purpose of this Report

The Schwartz Company, serving as the owner's representative, oversaw and managed the installation of Seattle's first large capacity fully automated parking system at the Spire Condominium Tower at 600 Wall Street which was completed in 2021. This report has been modified, updated, and adapted from the permit submittals to the various AHJ's in December of 2017 for the Spire project. The vendor and installer for this system is the same as was used on the Spire Project.

This report outlines the way the automated parking systems operate and addresses the life and fire safety concerns associated with the 1931 Second Avenue parking facility and proposes safety solutions and protections. The subterranean automated parking facility is not adequately described by Seattle Building and Fire Codes, and therefore this report gathers various codes, research, examples of similar constructed installations and engineering expertise to propose a thorough safety scheme for the 1931 Second Avenue project in Seattle.

1.3 Code Limitations

This report was written based on our analysis of the design drawings of the proposed facility. As is mentioned above, the Seattle building and fire codes do not adequately prescribe the new technology utilized in the proposed facility, and therefore this report addresses the hazards and provides solutions for protection based on extensive research, influence drawn from European building and fire codes, and engineering expertise on fire protection and life safety practices.

2. System Description and Operation

2.1 General Description of Proposed Below Grade Automated Vehicle Storage and Retrieval System (AVSRS)

Address: 1931 Second Avenue, Seattle, WA 98104

Vehicle drop-off and pick-up floor, (P1)

Parking levels (P2-P5)

Type of Construction: Type 1A Fully Sprinklered

System Capacity: 210 vehicles (an additional (4) parking stalls are provided for shuffling)

The APS consists of the following:

1. Two entry portals with turntables on level P1, one turntable will meet ADA requirements. The central inscribed rectangle of each turntable acts as a vertical transporter and will move vehicles to the P2 Level. At the P2, vehicles are transferred between the External Vertical Transporters and one of the two Traveling Towers.

1. An entry portal with turntable on level P1



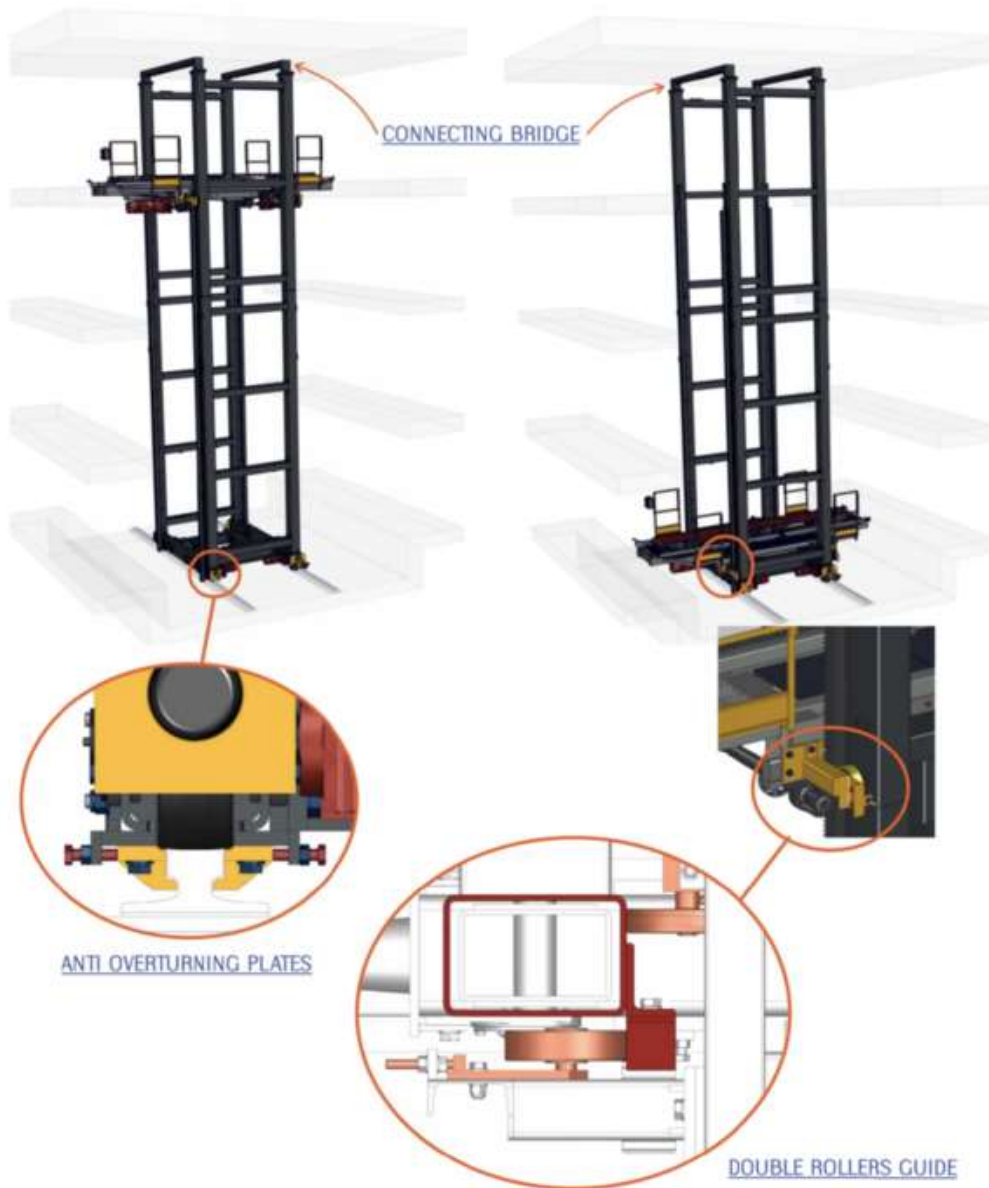
2. One of two proposed external vehicle transporters, taking cars from P1 to P2.

ENTRANCE/EXIT ROTATING SIDE LIFT

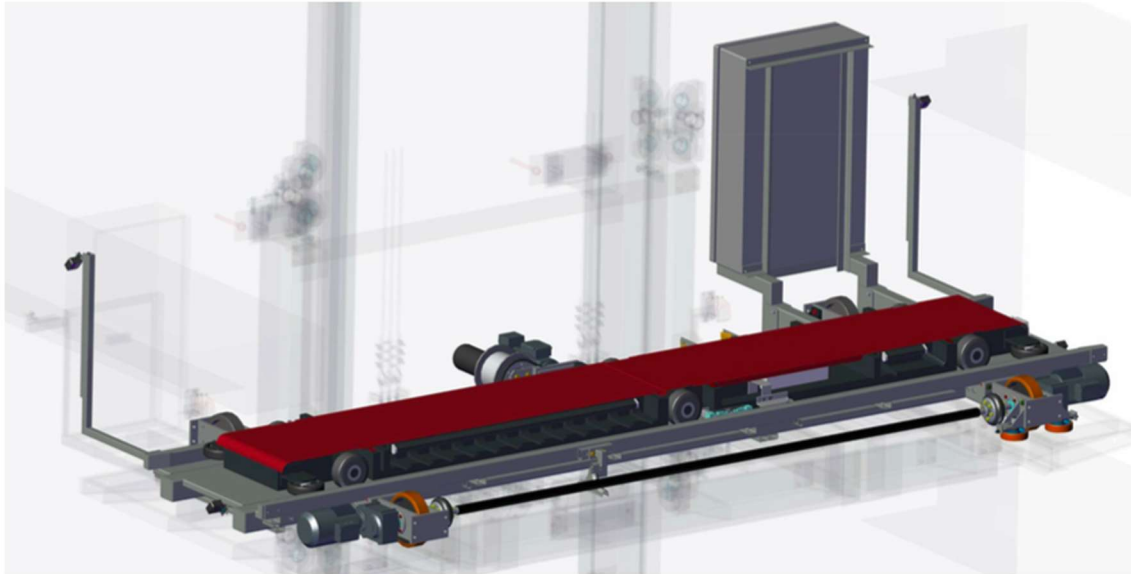


3. One example of 2 proposed Traveling Towers serving levels P2 to P5.

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4. One of two dolly resident on the Traveling Towers.



5. A traffic light (red/green) indicating the availability of the entry portal on the P1 Level.
6. A display screen indicating the correct/wrong vehicle positioning into the entry port.
7. One set of sensors for checking vehicle's height and the length and width
8. Additional sensor for checking vehicle presence
9. One card reader and PIN pad (outside of Portal)
10. One warning flashing light indicating vehicle exit
11. Operational speeds vertical movement 3.6 feet/sec
12. Operational speeds horizontal movement up to 3.3 feet/sec

Vehicle Criteria

The automated parking system will require less space in length, width and height in comparison to conventional parking. Vehicles will be parked inches apart from one another and the computer will automatically calculate the most appropriate available space for every vehicle. The system will be designed with an average mix of current and foreseeable future common motor vehicle sizes, ranging from 8' to 14'. The automated vehicle storage system will provide both Portals for ADA car parking (an ADA Van conventional parking space will be provided on the P1 Level), and three levels of parking for SUVs, and one level of parking for standard and compact automobiles.

The Sotefin system will provide drop-off/pick-up bays on Level P1 and then automatically park cars on Levels P2 to P5. Vertical movement of vehicles will be handled by Vertical Transporters from the P1 to and from the P2 Level. The Traveling Towers will move cars between the P2, P3, P4, and P5 Levels and move horizontally to align with specific parking stalls on those levels. The Dolly is a "sled" that picks up the car by its tires and transports it to or from its parking spot.

The AVSRS consists of (2) Portals each containing a Turntable and External Vertical Transporter (EVT) to rotate vehicles and move them to and from the P1 and P2 Levels. At the P2 Level, one of two Traveling Towers moves and parks cars on the P2, P3, P4, and P5 Levels. The EVTs operate independently and can service either Traveling Tower.

2.2 System Layout and Operation

i. Vehicle Storage

Passenger vehicles drive down a ramp from the street level (L1) to reach level P1, the Portal Level (the same ramp is driven up from P1 to L1 when exiting the building). P1 provides (2) Portals (Vehicle Transfer Rooms) that measure approximately 21'. Each portal has automatic door/doors to control vehicle and pedestrian access. Each portal is equipped with sensors that only allow system operation when the portals are without people. The portal doors only open when the External VT is at the P1 level and all system operation has ended. The system will only operate when the Portal is void of humans and pets, the doors are closed.

Each portal has visual aids to help the users properly position their vehicle on the center of a turntable and measure the vehicle to ensure that it meets the size criteria. Once the user has walked out of the portal and identified themselves with a swipe card and entered their code, the turntable enclosure doors close, thus preventing further entry until the parking cycle is complete. A patented Silomat Dolly is resident on each Traveling Tower and automatically centers and raises the vehicle approximately 2 inches when picking up and car. The turntable has a center rectangle that is part of a vertical transport device (External Vertical Transporter) that lowers the car to the P2 level. A Traveling Tower's resident Dolly moves to the EVT platform at the P2 Level, picks up the car, returns to the Traveling Tower and parks it on P2, P3, P4, P5 Level. Whilst the Dolly and Traveling Tower are parking the car, the EVT returns to the P1 Level and is then available to accept the next car to be parked.

ii. Vehicle Retrieval

Internal system:

One of the two Traveling Towers moves horizontally to align with the car being retrieved as the Traveling Tower platform moves vertically. The Dolly moves out, picks up the parked car and returns with it to the Traveling Tower platform. The Traveling tower then moves to align with one of the two EVTs and the Dolly moves out and deposits the car on the EVT. The EVT then moves to the P1 Level. An audible signal announces the imminent arrival of the car to the Portal and the waiting lobby display screen provides a video image of the car arriving and identifies the Portal.

3. User Experience

Training: The parking system is only available to dedicated users (tenants) who have received training and passed a test. An online refresher training and test is required annually as well. The system is not to be used by the general public or untrained users. Frequent visitors can have their car vetted, be trained, pass a test, and be provided access to the APS. One-time guests can have their car vetted and building staff can assist them in using the APS.

i. Vehicle Storage:

The user enters the building and descends a two-way ramp and approaches their assigned portal, indicated by a display screen as they descend the entrance ramp. Should the portal not be immediately available because it is in use, the user parks in a designated Queueing Area until their Portal is free.

The user enters the Portal and is instructed how to position the car and given a signal when the car is correctly positioned. The user then exits the Portal and uses their swipe card/fob and PIN to instruct the system to store the vehicle. The door to the portal closes and the user proceeds to the passenger elevator while their car is being parked.

ii. Vehicle Retrieval:

The user summons their vehicle with a swipe card and a PIN. A screen in the waiting area alerts the user that their car will be delivered to an assigned Portal and the portal exit door opens when the vehicle has been delivered allowing the user to enter and drive to the ramp leading to street-level. The exit door automatically closes and the system is available to Store or Retrieve the next vehicle.

At no point may the Portal system be active when someone is present in the Portal. The portal doors only open after the system has ceased operation. The user experience is like that of parking in a single-car garage with the added task of parking the car roughly centered in the parking area with the assistance of a dedicated display screen on the back wall of the Portal.

4. Building and Fire Codes

4.1 Appropriate Codes and Standards

Below are listed codes and standards that are applicable to the 1931 Second Avenue parking facility:

1. 2015 Seattle Building Code (SBC) [an amended version of the 2015 International Building Code]
2. 2015 Seattle Mechanical Code (SMC) [an amended version of the 2015 International Mechanical Code]

3. 2015 Uniform Plumbing Code (UPC) with Washington State Amendments, Chapters 51-56, and 51-57 WAC.
4. 2017 Seattle Electrical Code
5. 2015 Seattle Energy Code
6. ASME A17.1 – 2010 Edition
7. ASME A17.7 – 2016 Performance Based Code
8. 2015 Seattle Fire Code (IFC) [an amended version of the 2015 International Fire Code]

5. Risk Assessment

5.1 Applicable GESRs (Global Essential Safety Requirements)

A17.7 Performance based safety code for elevators and escalators

- a. Section 3.1 Common GESRs Related to Persons at Various Locations
 - i. 3.1.5 Hazards Due to Relative Movement
Users and non-users shall be protected from the effects of shearing, crushing or abrasion, or other injuries due to:
 1. relative movement of the LCU (car) and external objects; and
 2. relative movement of the elevator equipment

Note: This GESR addresses the safety of persons located inside and outside the LCU (car).

- b. Section 3.2 – GESRs Related To Persons Adjacent To The Elevator – Falling Into Hoistway

Means shall be provided to prevent the risk of users, non-users, elevator personnel, and emergency personnel falling into the hoistway.

Note:

- i. This GESR addresses the risk of falling into the hoistway from
 1. surrounding floors; and
 2. landing doors when car is absent
- ii. This GESR also applies to emergency personnel

5.2 Deviations from A17.1-2010 – Section 7.9

See attached Exhibit 1

5.3 Safety Parameters

See attached Exhibit 2

5.4 Risk Assessment per Non- Mandatory Appendix C

See attached Exhibit 3

5.5 Compliance with Seismic – A17.1-2010 -Part 8.4

See Exhibit 4

6. Safety

A. Section 403 High-Rise Buildings

403.1.2 Testing

All mechanical and electrical equipment installed per approved plans and specifications pursuant to this section shall be tested and proven to be in proper working condition to the satisfaction of the fire code official before issuance of the Certification of Occupancy. Such system shall be maintained in accordance with the Fire Code.

COMPLIANCE: The project will comply as follows:

All mechanical and electrical equipment will be tested as required.

403.3 Automated Sprinkler System

Buildings and structures shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and a secondary water supply where required by Section 903.3.5.2

403.3.1 Sprinkler System Design

Each sprinkler system zone in buildings that are more than 420 feet (128 000 mm) in building height shall be supplied by no fewer than two risers. Each riser shall supply sprinklers on alternate floors. If more than two risers are provided for a zone, sprinklers on adjacent floors shall not be supplied from the same riser.

COMPLIANCE: The project will comply in accordance with these requirements; one sprinkler head will be provided for every two vehicles on each level of the Sotefin storage system. The sprinkler heads will be located in the ceiling space between the vehicle rows below.

System compliance:

1. A tank with 33,000 gallons of usable volume is included on level P5, with a vertical turbine fire pump oriented directly above the tank. Fire pump room will be 2-hour rated.
2. Each floor sprinkler system shall be connected between standpipe risers.
3. Shut-off valves, water-flow devices and check valves (or pressure reducing valves) shall be provided on each floor at the sprinkler system connection to each standpipe.
4. Two four-way fire department connections serving the combination system shall be located on 2nd Avenue and Virginia Street sides well separated (minimum 100'). Locate 10' from main entry doors, generator tailpipe, garage entrances.
5. At least one of the fire department connections shall be connected to the riser above a riser isolation valve.
6. The dry-pipe sprinkler system serving the garage and unheated spaces will be supplied by the on-site water tank.
7. The standpipe risers in each required stair shall be a minimum pipe size of 6 inches.
8. Two 2½-inch hose connections shall be provided on every floor level landing in every required stairway. If pressure reducing valves (PRV) are required, each hose connection shall be provided with its own PRV.
9. The system shall be designed to provide a minimum flow of 300 gpm at a minimum pressure of 150 psi [maximum 205 psi at each standpipe connection] in addition to the flow and pressure requirements contained in NFPA 14.

403.4 Automatic Fire Detection

Smoke detection shall be provided in accordance with section 907.2.13.1

COMPLIANCE: The project will comply as follows:

Smoke detection will be provided per Section 907.2.13.1 (2015 IFC amended by SFD) and shall be a part of the Building Integrated Addressable Fire Alarm System. Three fire detection zones are proposed on each level of Sotefin USA storage system. An addressable Life Safety System will be provided which will include:

Automatic smoke detection system in accordance with Section 907.2.13.1.

1. Area smoke detectors shall be located in each mechanical equipment, electrical, transformer, telephone equipment or similar room which is not provided with sprinkler protection. In each elevator machine room and in elevator lobbies. Duct smoke detection shall be installed in strict compliance with Section 907.3.1.
2. Manual fire alarm boxes in accordance with Section 907.4.2. Only 1 manual station will be provided as building is fully sprinklered. It will be located in the FCC.
3. Automatic Sprinkler system in accordance with Section 903.3.1 Water flow, pressure, hi-pressure, low pressure and supervisory switches as required for the automatic sprinkler system shall be connected to the Life Safety System.
4. Fire department communication system in accordance with Section 907.2.13.2. City of Seattle requires DAS in all high-rise buildings.

5. Emergency voice/alarm communication system in accordance with Section 907.5.2.2. Must meet 520Hz Low Frequency Requirements. Emergency voice/alarm communication system shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler water flow device or manual fire alarm box shall automatically sound and alert tone and activate visible alarms and followed by voice instructions giving directions for general evacuation. The system shall operate on a minimum of the alarming floor, the floor above and the two floors below. Speakers and Visible devices shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided for each elevator group, exit stairway and floor.
6. Visible alarm notification appliances in accordance with Section 907.5.2.3. Visible alarm notification appliances shall be provided in accordance with Section 907.5.2.3.1 through 907.5.2.3.4, and Administrative Rule 9.09.07, Visible Alarm Notification Devices, and any future revisions of this rule adopted.
7. Monitoring in accordance with Section 907.6.5. The Life Safety system will be monitored by an approved supervising station in accordance with NFPA 72.
8. The proposal to meet NFPA 72, Section 21.5 requirement is that all FSE lobbies will be monitored by addressable combo heat/smoke sensors. A high temperature indicator lights for every floor will be displayed in the smoke control panel located in the FCC.

403.4.4 Emergency Voice / Alarm Communications System

An Emergency Voice / Alarm Detection System shall be provided in accordance with section 907.5.2.2

All conveyance systems and equipment will be inspected and tested by the City of Seattle elevator inspector.

COMPLIANCE: The project will comply as follows:

Emergency voice/alarm communication is incorporated as an integral part of the Fire Alarm system described above, in accordance with Section 907.5.2.2, to comply with 520Hz Low Frequency Requirements. Emergency voice/alarm communication system will be designed and installed in accordance with NFPA 72.

The operation of any automatic fire detector, sprinkler water flow device or manual fire alarm box will automatically sound and alert tone and activate visible alarms and followed by voice instructions giving directions for general evacuation.

The system will operate on a minimum of the alarming floor, the floor above and two floors below. Speakers and Visible devices will be provided throughout the building by paging zones. At a minimum, paging zones will be provided for each elevator group, exit stairway and floor.

403.5.4 Smoke Control in Exit Stairways

A smoke control system meeting the requirements of Section 909 shall be provided.

COMPLIANCE: Stair 1 and stair 2 enclosures will be provided with pressurization systems in compliance with sections 909.20.5 and 1023.11. Interior exit stairways will be pressurized to a minimum of 0.10" and maximum of 0.35".

The residential and hotel elevator hoistways will be provided with pressurization systems in compliance with sections 909.21 and 713.14. Elevator hoistways will be pressurized to a minimum of 0.10" and maximum of 0.25".

909.20.5.1 Supply air. Air for stairway pressurization shall be supplied at intervals sufficient to maintain the required pressure throughout the interior exit stairway. Project intent is to supply air at approximately every third and not more than 8 floors from the bottom of each stairway. A corridor exhaust fan will be utilized in compliance with 909.21.1.2 and the exception under 909.20.5.5.

Exit passageways will be pressurized via air from the vertical exit enclosure. There is no wall between stair and exit passageway as rated separation is not required per SBC 1023.3.1 exception 3.

Shaft pressurization fan status and controls using switches in accordance with Section 909.16.2 (or equivalent) will be installed on the main fire alarm control panel (FACP) in lieu of installing a dedicated fire-fighter's smoke control panel. The building graphics normally provided on the smoke control panel shall be laminated and mounted in the vicinity of the FACP for quick reference by emergency responders.

403.17 Emergency Operational Plan

Prior to the issuance of a Certificate of Occupancy, the owner-occupant of the building shall assign a responsible person as the building's Fire Safety Director to work with the fire code official in establishing an operational plan for the building. The operational plan shall contain the guidelines and procedures to be followed and responsibilities of the fire department, building employees, and tenants under emergency conditions, including special provisions for persons with disabilities. The plan shall also include procedures for operation, maintenance and testing of the life safety systems and the allowable use and occupancy of each portion of the building. One copy of the operational plan shall be filed with the fire code official, and when done shall be posted in the central control station prior to issuance of the Certificate of Occupancy.

COMPLIANCE: The project will comply as follows:

An Emergency Operational Plan will incorporate procedures related to the automated vehicle storage system Sotefin USA and will be presented to the fire chief for approval.

B. Section 406 Motor-Vehicle-Related Occupancies

406.4.1. Clear height.

The clear height of each floor level in vehicle and pedestrian traffic areas shall be not less than 6 feet 6 inches. Van-accessible parking is provide outside the APS system on P1. ADA cars can be accommodated at each Portal and can be parked on all APS parking levels.

COMPLIANCE: The project will comply as follows:

Level P1 will have public access, conventional/van ADA parking loading and clear headroom of 8'-2".

Level P2 automatically transfers vehicles (maintenance access only) between level P1 and P2 and transfers vehicles to a Traveling Tower that parks cars on levels P2-B-5. All APS areas will provide 6'-6" minimum ceiling height.

Levels P2 through P5 will be dedicated to the automated vehicle storage system and will used exclusively for transporting and storing vehicles. Access to these levels is restricted to maintenance personnel and Fire Department only. There will be no pedestrian or vehicular traffic on these levels.

406.4.2. Ventilation.

A mechanical ventilation system shall be provided in accordance with the International Mechanical Code.

COMPLIANCE: The project will comply as follows:

Parking level P1 (where vehicles will be operable) will be capable of being ventilated at a rate of 0.75 cfm/sf and will ventilate continuously at a rate greater than 0.05 cfm/sf as required by Seattle Mechanical Code 404.2.1.

Carbon dioxide/ Nitrogen dioxide sensors will modulate the fans to keep the concentration below levels required per SMC 404.1.

The automated vehicle storage P-2 through P-5 will be continuously ventilated at a rate of 50 cfm per parking stall per SMC 404.2.1, exception to automated parking systems.

C. Section 712 Vertical Openings

712.1.10.1 Automobile Ramps

Vertical openings for automobile ramps in parking garages shall be permitted where constructed in accordance with Sections 406.5 and 406.6.

COMPLIANCE: The project will have no shaft enclosures for vehicle lifts (material lifts) between levels P2 and P5. IBC code commentary specifically addresses vertical openings in parking garages with *“The special code requirements of Sections 406.5 and 406.6 recognize the unique features of parking garages. Adherence to those sections will mitigate the concerns of vertical openings.”*

D. Section 907 Fire Alarm and Detection Systems

907.1 General

This section covers the application, installation, performance and maintenance of fire alarm systems and their components. Buildings required by this section to be provided with a fire alarm system shall be provided with a single fire alarm system. For the purposes of this section, fire walls not located on a property line shall not constitute a separate building.

COMPLIANCE: The project will comply in accordance with these requirements. Construction documents for fire alarm systems shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code, the International Building Code and relevant laws, ordinances, rules and regulations, as determined by the fire code official.

907.2.13.1 Automatic Smoke Detection

Automatic smoke detection in high-rise buildings shall be in accordance with Sections 907.2.13.1.1 and 907.2.13.1.2.

COMPLIANCE: The project will comply as follows:
Smoke detection will be provided per Section 907.2.13.1 (2015 IFC amended by SFD) and shall be a part of the Building Integrated Addressable Fire Alarm System.

907.2.19 Deep Underground Buildings

Where the lowest level of a structure is more than 60 feet (18 288mm) below the finished floor of the lowest level of exit discharge, the structure shall be equipped throughout with a manual fire alarm system, including an emergency voice/alarm communication system installed in accordance with Section 907.5.2.2.

COMPLIANCE: The project will comply with these requirements.

907.6.4 Zones

907.6.4.2 High-rise buildings. In high-rise buildings, a separate zone by floor shall be provided for each of the following types of alarm-initiating devices where provided:

- 1. Smoke detectors.*
- 2. Sprinkler water flow devices.*
- 3. Manual fire alarm boxes.*
- 4. Other approved types of automatic fire detection devices or suppression systems.*

COMPLIANCE: The project will comply as follows:

The Building Integrated Addressable Fire Alarm System will comply with this requirement.

F. Section 1011 Stairways

1011.2 Width and Capacity

The required capacity of stairways shall be determined as specified in Section 1005.1, but the minimum width shall be not less than 44 inches (1118mm). See Section 1009.3 for accessible means of egress stairways.

Exceptions:1. Stairways serving an occupant load of less than 50 shall have a width of not less than 36 inches (914mm).

COMPLIANCE: At transfer level P1 there are (2) 36" wide exit stairs that discharge to grade. For the lower levels P2-P5 where cars are automatically stored a single exit access stair provides exit to grade. Since the occupant loading of each level P2-P5 is less than 50, exit stair width is 36" min.

G. Section 1015 Guards

1015.2 Where required.

1015.2 Where required. Guards shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, aisles, stairs, ramps and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches

(914mm) horizontally to the edge of the open side. Guards shall be adequate in strength and attachment in accordance with Section 1607.8.

Exception: Guards are not required for the following locations: Along floor openings not accessible to the public.

COMPLIANCE: The project will comply as follows:

The automated vehicle storage system will have two un-protected hoistway openings at the EVTs at Levels P1 and P2 (at and below the location of the Portal Turntables). The openings will be 19'-0" long by 10'-4" wide.

A Travelling Tower operates between P2 and P5, in the opening 168'-5" long and 19'-0" wide. The Traveling Tower and its platform will be traveling vertically and horizontally transporting the dolly with the vehicle on top. Once the Traveling Tower platform is aligned with the parking stall, the Dolly and the car move onto the floor slab and the car is parked on slab-mounted stall-hardware. The vehicle retrieval will be in the reversed order.

The applicant proposes no guardrails at the EVT and Travelling Tower openings for the following reason.

EVT Openings: Access to the P1 Level Portals will only be possible with the EVT platform in the raised position, this will seal the opening. At the P2 Level EVT opening and the Traveling Tower openings the guardrails will present an obstruction to the dolly movement and prevent the normal operation of the vehicle storage system. The public will have no access to the vehicle storage levels; the access will be strictly limited to the authorized maintenance personnel and Fire Department.

Therefore, the applicant believes that this application complies with the intent of Section 1015.1 Exception 6.

In addition, the applicant proposes the following measures.

1. A fall-arrest system. A horizontal metal wire will be installed along walk-able paths at 3-foot above the floor level. The maintenance personnel and Fire Department will hook up their fall-arrest lines to the metal wire; the fall-arrest lines will be of such length that will not allow approaching the edge of the hoistway openings. In addition, 5,000 Lb. capacity fall arrest anchor rings will be installed a ceilings and columns as needed to provide tie-off points for workers adjacent to any openings.
2. The areas around the openings in floors will have illuminated emergency-powered signage indicating the fall hazard.

H. Section 1006 Number of exits and exit access doorways

1006.3 Egress from stories

The means of egress system serving any story or occupied roof shall be provided with the number of exits or access to exits based on the aggregate occupant load served in accordance

with this section. Horizontal exits shall not count toward the required number of exits from the story or roof. The path of egress travel to an exit shall not pass through more than one adjacent story.

COMPLIANCE: Table 1006.3.1 requires two exits for occupant load of 1; therefore two exit stairs from level P1 are provided.

1006.3.2 Single exits.

A single exit or access to a single exit shall be permitted from any story or occupied roof where one of the following conditions exists: 3. Parking garages where vehicles are mechanically parked shall be permitted to have one exit or access to a single exit.

COMPLIANCE: The automated vehicle storage levels P2-P5 will have a single exit from each level to a 2-hour enclosed exit stair. The maximum exit access travel distance is 167' and less than the 400' maximum per T1017.2. The exit stair will discharge at grade to the adjacent sidewalk right of way.

I. Section 1106 Parking and passenger loading facilities

1106.2 Groups R-1 and R-2.

Groups I-1, R-1, R-2, and R-3. Accessible parking spaces shall be provided in Group I-1, R1, R-2, and R-3 occupancies in accordance with Items 1 through 4 as applicable: 1. In Group R-2, and R-3 ((and R-4)) occupancies that are required to have Accessible, Type A or Type B dwelling units or sleeping units, at least 2 percent, but not less than one, of each type of parking space provided shall be accessible.

COMPLIANCE: The project will comply as follows:

The automated vehicle storage system will have 218 vehicle storage spaces on levels P2 through P5. The number of required accessible parking spaces is calculated as follows (ICC ANSI 2010):

201 to 300 require 7 accessible parking spaces. Therefore, six accessible parking spaces are required and will be provided on the lower levels P2-P5 with access through Car Lift 1 with one Van Space on P1.

1106.5 Van spaces.

For every six or fraction of six accessible parking spaces, at least one shall be a van-accessible parking space.

COMPLIANCE: The project will comply as follows:

One van-accessible parking space is required and will be provided on level P1.

Other Safety Features:

- High Water Alarms
 - If a high-water alarm is triggered in the traveling tower pit, the parking system will go into a safety configuration. This means that all traveling towers and EVT's will move to the highest possible position.
- System Recall w/ Fire alarm
 - If a fire alarm is triggered, the parking system will go into a safety configuration. This means that all EVT's will rise to the highest position (into the portals). The traveling towers will each go to a different floor level (P2 and P3) to provide bridges across the pit where possible.
- Access Controls – open door response & Maintenance indicator on FA panel
 - All the man doors into the parking system below the P1 level are to remain locked at all times. Only Parkworks and emergency personnel will have a key to access these levels.
- EV Charging Description
 - Each charging stall charge-location will be provided with an off-the-shelf level 2 EV charger at an 11kW charge rate. This charger would be the same as those supplied for conventional parking/charging uses. The charge-plug (equipped with a robotic-friendly grip-adapter) will be placed in a holster to provide a consistent “pick and store” location.
 - A six-axis robotic arm traveling on a linear rail will move to the car in need of charging, grip the charge-plug, remove it from its holster, plug in the car, release the charge-plug and retract. While the car is being charged, the robotic arm will be available to plug and unplug other cars. Once the car is sufficiently charged, a reverse operation will occur.

J. Checklist

1. Confirm sprinkler head quantities and locations (SBC Section 403.3.1)
2. Confirm fire detection zones (SBC Section 907.2.13.1)
3. Confirm un-protected hoistways for vehicle lifts (SBC Section 712.1.10.1)
4. Confirm fall-arrest system and illuminated hazard-warning signage measures in lieu of guardrails (SBC Section 1015.2)

END

Exhibit 1
Compliance Check List
A17.1 -2010 Part 7.9
Electric Material Lifts with Automatic Transfer Device

A17.1 Reference	Item	Comments
7.9.1	Hoistway Construction	Requires that material lift comply with 2.1 to 2.13 and 2.29 unless modified. By 7.9.1.1-10.
2.1	Hoistways	Hoistway will be open.
2.2	Pits	Full compliance
2.3	Location and Guarding of Counterweights	N/A
2.4	Vert. Clearance and runby	Full compliance
2.5	Horizontal Car and CWT Clearance	Full Compliance
2.6	Protection of Space Below	N/A – There will not be occupied space below.
2.7	Machine Rooms	Lighting, locked and enclosed, etc.
2.8	Equip. in Hoistways and Machine rooms	No non-elevator equipment. Compliance with electrical codes, etc.
2.9	Machine Beams	Full compliance
2.10	Guarding of equipment	Full compliance
2.11	Protection of Hoistway openings	N/A
2.12	Hoistway door locks, contacts	N/A
2.13	Power operation of Hoistway doors	N/A
2.29	Identification	The material lifts will be numbered in sequence with the main passenger lifts.
7.9.1.1	Cutouts in Doors	N/A – Doors are not provided
7.9.1.2	Counterbalanced Car Door	N/A – Car doors are not being provided.
7.9.1.3	Hoistway Doors	N/A – Hoistway doors are not required.
7.9.1.4	Types of Entrances	Power operated horizontal type doors shall be provided.
7.9.1.5	Projections into Hoistway	The Automatic Transfer Mechanism (ATM), does not extent into the hoistway unless the platform is parked at the floor and a car or empty shuttle is being transferred.
7.9.1.6	Vision Panels	N/A
7.9.1.7	Lock Doors	The hoistway doors will be locked before the platform is allowed to move.
7.9.1.8	Hoistway Door Unlocking	N/A
7.9.1.9	Door Closing	Doors shall close automatically prior to platform leaving floor.
7.9.2	Machinery & Equipment	Shall conform with 2.14 through 2.28, 8.8, and 8.9 except as modified by 7.9.2.1 through 7.9.2.20
7.9.2.1		
2.14	Car Enclosure	N/A – Car is open platform
2.15	Car Frames/Platforms	Full compliance
2.16	Capacity and Loading	Full compliance
2.17	Car and Cwt Safeties	Full compliance
2.18	Speed Governors	Full compliance

A17.1 Reference	Item	Comments
2.19	Ascending Car/ Overspeed	N/A
2.20	Suspension Ropes	Full compliance
2.21	Counterweights	Full compliance
2.22	Buffers and Bumpers	Full compliance
2.23	Car and Cwt Guide Rails	Full compliance
2.24	Driving Machines and Sheaves	Full compliance
2.25	Terminal Stopping Devices	Full compliance
2.26	Operating Devices and Control Equipment	N/A – operated remotely.
2.27	Emergency Signaling Devices	N/A
2.28	Layout Drawings	Full compliance
7.9.2.1	Top Emergency Exist	N/A – there will not be a cab.
7.9.2.2	Enclosure	N/A- there will not be a cab.
7.9.2.3	Car doors	N/A- there will not be a cab.
7.9.2.4	Transfer device type	N/A – transfer device will not serve as the platform.
7.9.2.5	Rated Load	Can not exceed 50 lbs per square foot.
7.9.2.6	Warning Signs	N/A
7.9.2.7	Counterweight Safeties	N/A – none are need as there is no occupied space below.
7.9.2.8	Rated Speed	Full compliance
7.9.2.9	Type A Safeties	Full compliance
7.9.2.10	200 FPM	Full compliance
7.9.2.11	Not Applicable	
7.9.2.12	Spring Buffers	Modified to allow spring buffers up to 300 FPM
7.9.2.13		Requires the use of Table 7.9.2.13 regarding buffer stroke
7.9.2.14	Oil Buffers	N/A – speed will be below 300 FPM and oil buffers will not be used.
7.9.2.15	Car switches	N/A – none will be provided.
7.9.2.16	Inspection Operation	Inspection operation will be provided on the platform so that inspectors can ride the platform lift up and down. Inspection speed shall be 50 FPM maximum.
7.8.2.17	Inspection w/ doors open	N/A
7.9.2.18	Emergency Stop Switch	Provided on the inspection switch.

Exhibit 2

Exhibit 2 Reference to A17.1 - 2013 and Other Standards			
SP#	GESR and Related Notes		SPs
3.1.5	Section 3.1		
	Common GESRs Related to Persons at Different Locations		1. Automatic Transfer Device at Entry/Exit Level
	<p>3.1.5 Hazards Due to Relative Movement Users and non-users shall be protected from the effects of shearing, crushing or abrasion, or other injuries due to: (a) relative movement of the LCU (car) and external objects; and (b) relative movement of the elevator equipment.</p> <p>Note: This GESR address the safety of persons located inside and outside the LCU (car)</p>		<p>At the entry/exit level, the automatic transfer device will be delivering vehicles from the entry port into the fully-enclosed hoistway, or from the fully-enclosed hoistway to the exit port.</p> <p>The following measures will be used to prevent people from entering the fully-enclosed hoistway while the system is in motion:</p> <ol style="list-style-type: none"> 1. Before the system starts its movement, a overhead door will close down and prevent people from entering the entry port adjacent to the hoistway. 2. If a person tries to get into the entry port by going either under the overhead door, an electric eyebeam will shut down the system.
			2. Automatic Transfer Device at Vehicle Storage Levels
	Note: This GESR addresses the safety of		At the vehicle storage levels safety is established by restricting access to people at all times.

	persons located inside and outside the LCU (car)		<p>There will be maintenance personnel access doors, and to prevent people from entering the vehicle storage areas by using these doors, the following measures will be provided. The access doors will remain locked at all times, limit switches and key-pads will be installed. If the access door is opened by a unauthorized person without entering the key-pad code and/or disengaging the limit switch, an alarm will sound to alert security and lights on the entire floor be turned on. The system will shut down.</p> <p>Adequate signage will be installed at the access doors warning of the danger of entering the vehicle storage areas and clearly stating that only authorized personnel may enter.</p>
3.2	Section 3.2		
	GESRs Related to Persons Adjacent to the Elevator – Falling into Hoistway Means shall be provided to prevent the risk of users, non-users, and elevator personnel falling into the hoistway. Note: This GESR addresses the risk of falling into the hoistway from (a) surrounding floors; and (b) landing doors when car is absent. This GESR also applies to emergency personnel		1. At Entry/Exit Level a) Surrounding Floors At the entry/exit level the hoistway is fully enclosed by walls from floor to ceiling. Hoistway opening will be protected by center closing horizontal doors as per A17.1 / 2.11. b) Doors when car is absent Car will leave the top landing (entry/exit level) only if hoistway door is completely closed. Hoistway door will remain closed and protected from forced opening from outside.
			2. At Vehicle Storage Levels
			<p>In the storage areas, the falling hazard occurs when person is near the edge of the unenclosed hoistway. Maintenance personnel or emergency personnel upon entering the vehicle storage areas through the access doors will be approximately 26 feet away from the unprotected edge of the hoistway and will not be in immediate danger of falling down.</p>

		<p>a) Users and Non-Users</p> <p>Users and non-users (general public and residents) do not have access to the vehicle storage areas where the hoistway is not enclosed. In order to prevent people from entering the vehicle storage areas by using maintenance personnel access doors, the doors will remain locked at all times and key-pads will be provided.</p> <p>If the access door is opened by un-authorized person without entering the key-pad code and/or disengaging the limit switch, an alarm will sound to alert security and lights on the entire floor be turned on. The system will shut down.</p>
		<p>b) Maintenance Personnel</p> <p>Walking paths will be clearly marked on the vehicle storage level floors; maintenance personnel will be able to perform their work without falling hazard as long as they remain within the walking paths. Sufficient lighting will be provided to ensure visibility of the walking paths. In addition, a rail-and-latch system will be installed. Maintenance personnel will be trained to use the rail-and-latch system that will allow them to walk within the storage area and not get near the falling hazard at the edge of the unenclosed hoistway. The rails will be located along the walking paths, and the length of the latch will be of such length to prevent a person from getting too close the edge of the unenclosed hoistway.</p>
		<p>c) Emergency Personnel</p> <p>Emergency personnel will be also trained to use a rail-and-latch system that will allow them to walk within the storage area and not get near the falling hazard at the edge of the unenclosed hoistway. The rails will be located along the walking paths and the length of the latch will be enough to ensure that a fire fighter can get close enough to any vehicle on fire throughout the storage level. Sufficient lighting will be provided to ensure visibility of the walking paths.</p> <p>The system will be on an emergency generator.</p>
		<p>End</p>

June 19, 2023

Exhibit 3

Risk Assessment per Non-mandatory Appendix C

Hazardous Situation	Harmful Event		Risk Elements		Protective Measures (risk reduction measures)	After Protective Measures		Residual Risk
	Cause	Effect	S	P		S	P	
A. Unenclosed Hoistway	Fire Fighter in emergency response on floor	Fire Fighter falls down hoistway	1	D	<p>1. Emergency response personnel will be trained to use rail-and-latch systems that will allow them to walk within the vehicle storage area and not get near the falling hazard at the edge of the unenclosed hoistway. The rails will be located along the walking-paths and the length of the latch will be enough to ensure that a fire fighter can get close enough to put out any vehicle on fire throughout the vehicle storage level.</p> <p>2. The access doors leading into the vehicle storage areas will remain locked, limit switches will be installed at the doors to stop all moving parts of the system. If an access door is opened by un-authorized person, an alarm will sound to alert security and lights at the entire floor be turned on.</p> <p>3. Upon entering the vehicle storage area, emergency response personnel will be able to immediately hook on to the rail and latch system. All lights will be turned on as well as will be illuminated signs warning of the falling hazard. The lights and the signs will be on emergency power.</p>	4	F	None
B. Unenclosed Hoistway,	Person stays in car and	Person falls	1	D	1. Prior to use of the system, the following safety measures will be in place:	3	E	None

Movements of the System	exits car after it is stored	down hoistway			<p>a. At the entry/exit level, upon driving onto turntable, driver will be prompted to make sure that nobody is left in the vehicle.</p> <p>b. Upon confirmation that all occupants have vacated vehicle, the system will move vehicle into fully-enclosed hoistway. From this point forward, there will be no human interaction with the system.</p> <p>d. If a passenger is still in the turntable area, motion sensors will detect human movement, and the system will stop.</p> <p>2. If, despite the warnings, a person stays in vehicle and escapes detection by not moving, the system will take that person down into the vehicle storage area. This will be deemed a violation of HOA by-laws and regulations. HOA by-laws will have a clause about home owners' responsibility to make sure that nobody is left behind in vehicle prior to setting the system in motion.</p> <p>3. In unlikely occasion a person is taken down into the vehicle storage and leaves vehicle, most likely, the array of laser sensors installed on each floor will detect movement and will:</p> <p>a. Stop the system</p> <p>b. Turn on all lights</p> <p>c. Notify security</p> <p>d. Pre-recorded announcement will notify the unauthorized person of the falling danger and advise to stay in place until escorted out by security</p>			
C. Unenclosed Hoistway	Maintenance persons in storage area	Person falls down hoistway	1	D	Safe walking paths will be clearly marked in the vehicle storage levels to ensure that maintenance personnel can walk around the vehicle storage areas with no falling hazard as long as they remain in the "safe zones". Sufficient lighting will be provided to ensure visibility of safe paths. The rail-and-latch systems will allow maintenance personnel to walk within the vehicle storage	4	F	None

					area and not get near the falling hazard at the edge of the unenclosed hoistway.			
D. Unenclosed Hoistway, Movements of the System	Person illegally forces lock on storage access doors	Person falls down hoistway	1	D	To prevent the entrance of users or non-users to the storage areas, all doors leading into the storage areas will remain locked, key-pads and limit switches will be installed at the doors to stop all moving parts of the system. If a door is opened by un-authorized person, an alarm will sound to alert security, and lights on the entire floor will be turned on. Adequate signage will be installed at the access doors warning of the danger of entering the vehicle storage areas and clearly stating that only authorized personnel may enter.	3	E	None

Table C-2.1 – Levels of Severity			Table C-2.2 – Levels of Probability		
ID	Level of Severity	Description	ID	Level of Severity	Description
1	High	Death, system loss, or severe environmental damage.	A	Highly Probable	Likely to occur frequently
2	Medium	Severe injury, severe occupational illness, major system or environmental damage.	B	Probable	Likely to occur several times in the life cycle
3	Low	Minor injury, minor occupational illness, minor system or environmental damage.	C	Occasional	Likely to occur at least once in the life cycle
4	Negligible	Will not result in injury, occupational illness, system or environmental damage.	D	Remote	Unlikely but may possibly occur in the life cycle
			E	Improbable	Very Unlikely to occur in the life cycle

			F	Highly Improbable	Probability cannot be distinguished from zero
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Exhibit 4
Seismic Compliance Check List
A17.1 -2010 Part 8.4
Seismic Zone: 3

A17.1 Reference	Item	Device	Complies (Yes/No)	Comments
8.4.1	Horizontal car and cwt clearance	N/A – no Counterweight is provided.		
8.4.2	Machinery and supports			
8.4.2.1	Beams and Supports	Machine Anchors and Supporting beams – refer to Swiss Park drawing # for anchorage. Controllers – refer to Swiss Park Drawing #		
8.4.2.2	Overhead Beams and Floors	N/A – There are no overhead beams or floors.		
8.4.2.3.1	Fastenings and Stresses	Fastening devices, including bolts, which are of the rigid type or are not subject to impact forces shall be designed to withstand forces acting simultaneously of not less than those required to produce an acceleration of gravity horizontally and ½ gravity vertically (gh.5gv)		
8.4.2.3.2	Fastenings Subject to Impact	Fastenings subject to impact loads shall be double those required for rigid fastenings.		
8.4.2.3.3	Strength of Fastenings	Maximum combined stresses in fastenings, and their parts due to the specified seismic forces shall not exceed 88% of the yield. Strength of the material.		
8.4.3	Guarding of Equipment			
8.4.3.1	Chain Retainer Guards	Machine drive sheave (drum) Defector sheave Secondary sheave		
8.4.3.2	Guarding of snag points	Rail brackets – See Swiss Park Drawing # - Rail clips Fishplates Vanes		
8.4.4	Car Enclosure	N/A – System does not have an enclosure.		
8.4.5	Car Frames and Platforms			
8.4.5.1	Guiding Members and Position Restraints	The platform shall be designed to be held in the running rail with upper and lower or restraints.		
8.4.5.2.1	Design of Car Frames, Guiding Members and Position Restraints	Must be designed to withstand a seismic force acting horizontally on the weight of the car plus 40% of its rated capacity of not less than that required to produce and acceleration of .5gravity.		
8.4.5.2.2	Running clearance	Clearance between car restraints and rails shall not exceed .187 inches. – Refer to Swiss park drawing #		
8.4.6	Compensating ropes	N/A – Compensating ropes are not used.		
8.4.7	Counterweights			
8.4.7.1.1	Frame design	Designed so that not more than 2/3 of the weight is on the bottom.		
8.4.7.1.2		If more than 2/3 of weight is at bottom, 8.4.8.9 applies and Figs 8.4.8.2-1 to 2-7		
8.4.7.1.3		If more than 2/3 of weight is at bottom special design on rails		
8.4.7.1.4	Clearance	Clearance between the cwt frame and face of rail shall not exceed .5 inches, at mid point.		

A17.1 Reference	Item	Device	Complies (Yes/No)	Comments
8.4.7.2.1	Position Restraints	Upper and lower position restraints shall be installed at the top and bottom of the cwt frame.		
8.4.7.2.2	Design of Restraints	Not less than that required to produce an acceleration of $\frac{1}{2}$ gravity		
8.4.7.2.3	Clearance of Restraints	When cwt frame is centrally located, not more than .187"		
8.4.8	Guide Rail Systems			
8.4.8.1	Rails Brackets and Spacing	Guiding members shall meet the requirements of 8.4.8 or 2.23 whichever is more stringent.		
8.4.8.3	Guide Rail Stress	Stresses shall not exceed 88% of the minimum yield.		
8.4.8.4	Brackets & Supports	Brackets, their fastenings and supports shall be capable of withstanding the horizontal forces imposed by the seismic loads.		
8.4.8.5	Rail Joints	See Swiss Park Drawings for joint detail.		
8.4.8.6	Construction of Rail Joints	See Swiss Park Drawings for joint detail		
8.4.8.7	Strength of brackets	All brackets shall be designed to handle the car wgt plus 40% of the capacity when subjected to a seismic force.		
8.4.8.8	Type of fastenings	May be fastened by clips, welds or bolts, but must meet g forces. See Swiss park Drawing #		
8.4.8.9	Information on Layouts	Refer to Swiss Park Drawings for seismic force data		
8.4.9	Driving Machines			
8.4.9.1	Driving Machines	All integral parts together with their supports shall be capable of withstanding the inertia effect of their masses without permanent deformation.		
	Emergency Operation	Operation of Lift Under Earthquake Emergency Conditions.		
8.4.10.1.1	Earthquake Equipment	Seismic Switch: If > 150 FPM and in zone 3 or 4, then need a switch. Switch will be provided.		
8.4.10.1.2	Equipment Specifications	Seismic Switch shall be fail safe type and activate upon excitation in the vertical and horizontal direction of not more than .15 times gravity acceleration (32.2 ft/s ²)		
8.4.10.1.3	Elevator Operation	When seismic switch is activated shall stop vertical movement. Swiss park is providing switch by Seismic Switch, Inc.		
8.4.10.1.4	Maintenance	Earthquake protective devices shall be arranged to be checked for satisfactory operation annually and shall be calibrated at intervals specified by the manufacturer.		

Exhibit 5
Compliance Check List
A17.1 -2000 Part 7.9
Electric Material Lifts with Automatic Transfer Device

A17.1 Reference	Item	Comments	Complies (Yes/No)	Comments
7.9.1	Hoistway Construction	Requires that material lift comply with 2.1 to 2.13 and 2.29 unless modified. By 7.9.1.1-10.		
2.1	Hoistways			
2.2	Pits			
2.3	Location and Guarding of Counterweights			
2.4	Vert. Clearance and runby			
2.5	Horizontal Car and CWT Clearance			
2.6	Protection of Space Below	N/A – There will not be occupied space below.		
2.7	Machine Rooms	Lighting, locked and enclosed, etc.		
2.8	Equip. in Hoistways and Machine rooms	No non-elevator equipment. Compliance with electrical codes, etc.		
2.9	Machine Beams			
2.10	Guarding of equipment	Standard railing 42” high, etc.		
2.11	Protection of Hoistway openings			
2.12	Hoistway door locks, contacts			
2.13	Power operation of Hoistway doors			
2.29	Identification	The material lifts will be numbered Elevators 4 and 6 and labeled per this section.		
7.9.1.1	Cutouts in Doors	Doors are only being provided to prevent accidental entry into open shaft, thus doors will not go full height of entrance.		
7.9.1.2	Counterbalanced Car Door	N/A – Car doors are not being provided.		
7.9.1.3	Hoistway Doors	Hoistway doors are located inside the material lift in a restricted area for the sole purpose of reducing likely hood of maintenance or emergency personnel from falling down shaft.		
7.9.1.4	Types of Entrances	Power operated horizontal type doors shall be provided.		
7.9.1.5	Projections into Hoistway	The Automatic Transfer Mechanism (ATM), does not extent into the hoistway unless the platform is parked at the floor and a car or empty shuttle is being transferred.		
7.9.1.6	Vision Panels	The hoistway doors will not have vision panels as the lift can be seen over the top of the door panel.		
7.9.1.7	Lock Doors	The hoistway doors will be locked before the platform is allowed to move.		
7.9.1.8	Hoistway Door Unlocking	These will be provided at each floor.		
7.9.1.9	Door Closing	Doors shall close automatically prior to platform leaving floor.		

A17.1 Reference	Item	Comments	Complies (Yes/No)	Comments
7.9.2	Machinery & Equipment	Shall conform with 2.14 through 2.28, 8.8, and 8.9 except as modified by 7.9.2.1 through 7.9.2.20		
7.9.2.1				
2.14	Car Enclosure	N/A – Car is open platform		
2.15	Car Frames/Platforms			
2.16	Capacity and Loading			
2.17	Car and Cwt Safeties			
2.18	Speed Governors			
2.19	Ascending Car/ Overspeed			
2.20	Suspension Ropes			
2.21	Counterweights			
2.22	Buffers and Bumpers			
2.23	Car and Cwt Guide Rails			
2.24	Driving Machines and Sheaves			
2.25	Terminal Stopping Devices			
2.26	Operating Devices and Control Equipment			
2.27	Emergency Signaling Devices			
2.28	Layout Drawings			
8.8				
8.9				
7.9.2.1	Top Emergency Exist	N/A – there will not be a cab.		
7.9.2.2	Enclosure	N/A- there will not be a cab.		
7.9.2.3	Car doors	N/A- there will not be a cab.		
7.9.2.4	Transfer device type	N/A – transfer device will not serve as the platform.		
7.9.2.5	Rated Load	Can not exceed 50 lbs per square foot.		
7.9.2.6	Warning Signs	Warning signs shall be provided at the top landing only.		
7.9.2.7	Counterweight Safeties	N/A – none are need as there is no occupied space below.		
7.9.2.8	Rated Speed	N/A- a cwt safety is not required.		
7.9.2.9	Type A Safeties			
7.9.2.10	200 FPM			
7.9.2.11	Not Applicable			
7.9.2.12	Spring Buffers	Modified to allow spring buffers up to 300 FPM		
7.9.2.13		Requires the use of Table 7.9.2.13 regarding buffer stroke		
7.9.2.14	Oil Buffers	N/A – speed will be below 300 FPM and oil buffers will not be used.		
7.9.2.15	Car switches	N/A – none will be provided.		
7.9.2.16	Inspection Operation	Inspection operation does not apply, and car top inspection is not applicable as there is not enclosed platform		
7.8.2.17	Inspection w/ doors open	N/A		
7.9.2.18	Emergency Stop Switch	Not provided in car, but provided at each landing. Will stop ATD and lift.		

