



**Special Use Permit # 2022-00103**  
**4513 Duke Street – DHL Express Temporary Trailer**

---

<b>Application</b>	<b>General Data</b>	
Public hearing and consideration of a request for a special use permit to amend Condition #3 for the extension of a temporary trailer use (amending SUP #2020-00105).	<b>Planning Commission Hearing:</b>	February 7, 2023
	<b>City Council Hearing:</b>	February 25, 2023
<b>Address:</b> 4513 Duke Street	<b>Zone:</b>	CG/Commercial General
<b>Applicant:</b> DHL Express	<b>Small Area Plan:</b>	Seminary Hill/Strawberry Hill

**Staff Recommendation:** APPROVAL subject to compliance with all applicable codes and ordinances and the recommended permit conditions found in Section III of this report.

**Staff Reviewer:** Patrick Silva, patrick.silva@alexandriava.gov

**PLANNING COMMISSION ACTION, FEBRUARY 7, 2023:** On a motion by Commissioner Lyle, seconded by Vice Chair McMahon, the Planning Commission voted to recommend approval of Special Use Permit #2022-00103, amending Condition #3. The motion carried on a vote of 7-0.

**Reason:** The Planning Commission agreed with the staff analysis, with the exception of the recommendation to permit the extension of the Special Use Permit for an additional three-years via Administrative Special Use Permit.

**Discussion:**

Commissioner Lyle stated her opposition to the extension provision of Condition #3 which would allow the applicant to extend approval of their Special Use Permit for an additional three years with approval of an Administrative Special Use Permit and favored only a two-year term. Commissioner Lyle stated her belief that the applicant should actively be making efforts to establish the location in a brick-and-mortar storefront and that the three-year extension provision was too long. Commissioner Lyle asked the applicant to clarify if this pop-up is intended to be a temporary solution until a brick-and-mortar lease can be secured or if they wished to operate the use permanent in its current form. The applicant responded that they did not plan on the trailer being approved indefinitely and they continue to look for

alternative business models which comply with the regulations of the municipalities in which they operate.

Vice Chair McMahon inquired of the applicant why, if the pop-up concept has been successful in this location, they would not be able to continue their success in a brick-and-mortar storefront. Kelly Shepard responded on behalf of the applicant stating that brick and mortar DHL storefronts have not proved successful in this region when compared to their pop-up counterparts. Vice Chair McMahon stated that she feels the current request is different from other temporary trailer requests the Planning Commission has considered in the past in that the requests are usually intended to provide temporary relief or support to an existing brick and mortar business. She also stated her belief that staff consider updating the Zoning Ordinance to establish a better framework through which temporary use approvals like these could be considered.

Commissioner Brown stated his support for the comments expressed by Commissioner Lyle.

Commissioner Ramirez also stated her support for the comments expressed by Commissioner Lyle and expressed her concern about the trailer's location and its impact on pedestrian and vehicular traffic at the subject site.

Chair Macek too stated his support for the comments expressed by Commissioner Lyle, but also expressed his desire to see consistency with other recently approved temporary trailer SUP conditions that allowed a two year term with the opportunity for a three year extension through administrative SUP. The Chair recognized that as the trailer had already been approved for two-years, he suggested amending Condition #3 to permit the trailer for only an additional three-years which would result in an overall five-year approval timeframe, consistent with the term allowances for other recent temporary trailer requests.

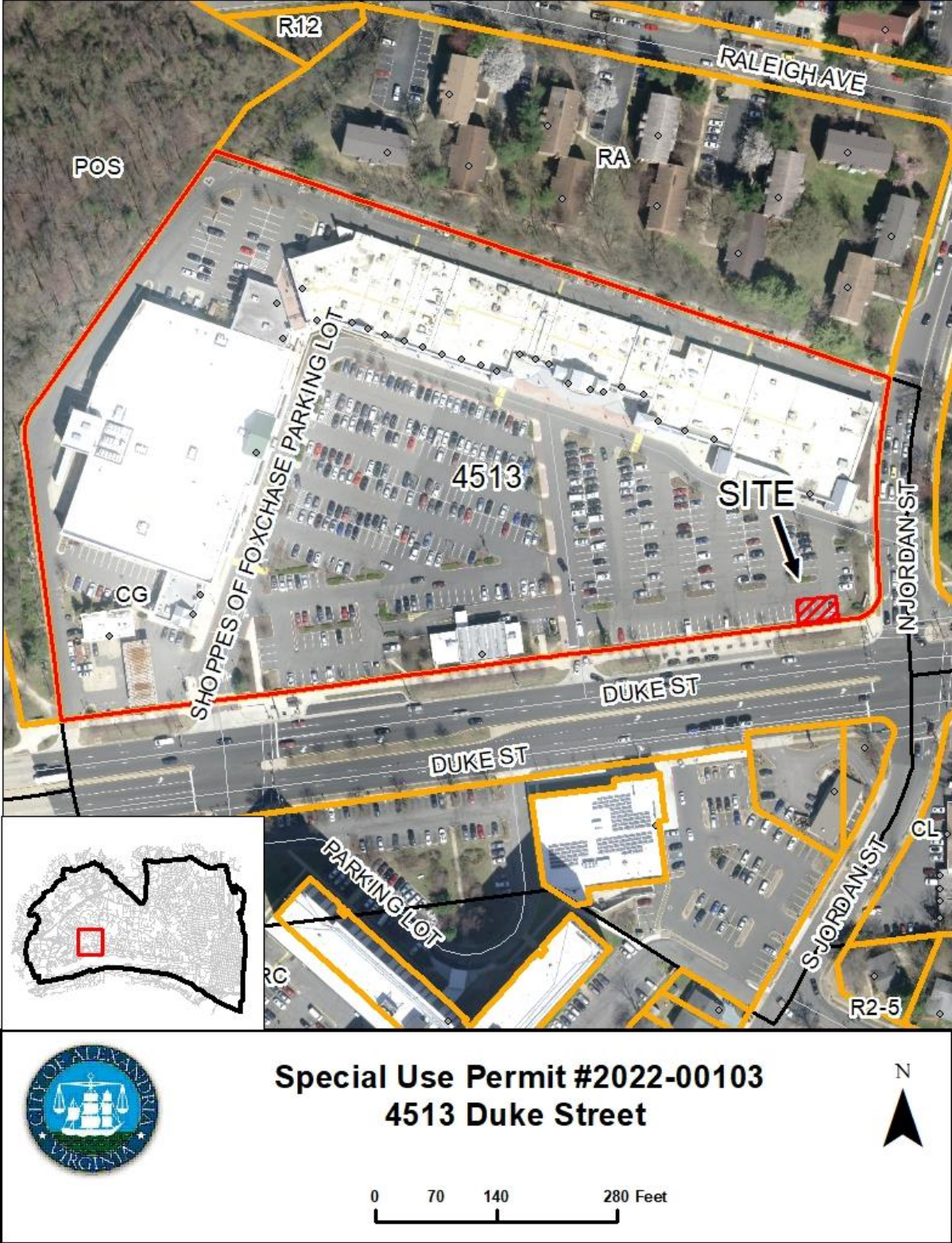
Speakers:

Essete Gabriel, applicant, spoke in favor of the request and provided a testimony on the details and benefits of DHL's pop-up concept. Although the company introduced the pop-up units during COVID, it found the concept successful in terms of locating near its customer base and in operating sustainably through solar panels, and in the future, electronic bike deliveries

Kelly Shepard, applicant, spoke in favor of the request, mentioning that the company is investing in the pop-up units as they have proven to be more scalable and environmentally sustainable than the two bricks and mortar sites they currently use, one which is closing soon.

Bruce Marsh, applicant, spoke in favor of the request, stating that the Alexandria pop-up trailer serves the nearby foreign-born community and provides international shipping access for start-up businesses.

**PROJECT LOCATION MAP**



**I. DISCUSSION**

The applicant DHL Express requests Special Use Permit approval to extend the use term of a temporary trailer beyond March 12, 2023, amending Condition #3. The temporary trailer is located in the parking lot at Foxchase Shopping Center located at 4513 Duke Street.

SITE DESCRIPTION

The Foxchase Shopping Center, known as the Shoppes of Foxchase, are located on a 444,807 square foot lot at the corner of Duke Street and North Jordan Street. The lot is developed with a 583-space surface parking lot. The 151,000 gross square foot shopping center contains several retail, restaurant and personal service uses (Figure 1).

The Foxchase Apartments are located to the east and the north. An Aldi grocery store, Valvoline Oil Change and the 4600 Duke Street Condominiums are sited across Duke Street to the south. The Holmes Run Trail and the Duke Street Dog Park are located immediately to the west.



Figure 1: Trailer Location at the Shoppes of Foxchase

BACKGROUND

City Council approved Development Special Use Permit #2004-00025 for the construction of the shopping center and the parking lot. Pursuant to the City's Continuity of Government Ordinance related to the COVID-19 emergency, on December 8, 2020, City Council ratified the use of temporary trailers for package delivery businesses on private property in commercial zones, temporarily waiving the need for Special Use Permit approval until March 31, 2021. The City Council realized the community benefits of allowing package shipping and delivery services, in time for the winter holiday season, at outdoor locations which easily accommodate social distancing. DHL Express availed itself of the opportunity and installed a temporary trailer on the southwest corner of the shopping center parking lot. As the location proved popular, DHL Express

requested to maintain the temporary trailer past March 31, 2021 and, subsequently, submitted a Special Use Permit application (SUP2020-00105) requesting a two-year use of the temporary trailer which City Council approved on March 12, 2021. With the temporary trailer approval granted by Special Use Permit #2020-00105 nearing its March 12, 2023 expiration date, the applicant found the trailer's presence at the subject site still proved to be quite popular and wished to extend its ability to remain in its current location via approval of a Special Use Permit amendment. Thus, the applicant has submitted the Special Use Permit request which is the subject of this report.

### PROPOSAL

The applicant requests Special Use Permit approval for a temporary trailer at 4513 Duke Street. The 140 square-foot trailer would remain at its existing site on three parking spaces at the southwest corner of the shopping center (Figures 2-3). One passenger van picks-up and delivers packages once a day and parks momentarily in an adjacent parking space. Express employees accommodate approximately 15 customers a day between 9 a.m. and 6 p.m., Monday through Friday, and between 11:00 a.m. and 6:00 p.m., Saturday.

Consistent with staff's standard approach for temporary trailer approval duration, the applicant proposes to operate the trailer for two more years, with an additional three years available with staff approval of an Administrative Special Use Permit. Up to two DHL employees would be present during the hours the trailer is in operation.



*Figure 2: Temporary trailer viewed from shopping center.*



*Figure 3: Temporary trailer viewed from Duke Street*

### PARKING

Section 8-200(A)(16)(a)(i) requires retail uses to provide a minimum of 0.25 spaces for every 1,000 square feet of area in the enhanced transit area. With 187 square feet of space the package shipping retail use would require one parking space. Given that parking requirements of two or less are waived according to Section 8-100(A)(9), the temporary trailer and the use do not have a parking requirement. Although the temporary trailer occupies three spaces in the 583-space shared parking lot, it would not infringe on other uses' parking requirements as the retail, restaurant and personal service uses at the shopping center collectively require no greater than 151 spaces based on the current standards of Section 8-200.

### ZONING/MASTER PLAN DESIGNATION

Section 7-1101(C) of the Zoning Ordinance allows temporary trailers for nonresidential purposes with City Council approval of an Special Use Permit. Package shipping businesses are defined as retail uses. Pursuant to Section 4-402(K), retail uses up to 20,0000 gross square feet are permitted in the CG zone.

The Seminary Hill/Strawberry Hill Small Area Plan designates the lot for commercial use.

## **II. STAFF ANALYSIS**

Staff recommends approval to extend the term of use for DHL Express's temporary trailer at 4513 Duke Street. The location has proven to be a successful package shipping destination as the company reported it represents one of the highest performing DHL Express pop-ups in the United States. The corner parking lot site has operated without parking or traffic flow impacts since it opened in December 2020. Pedestrians are provided with an area safe from parking lot traffic to carry out transactions at the service window. Staff has included Condition #2 to ensure that the temporary trailer remains at this location within the shopping center parking lot during the time that the Special Use Permit is active and the trailer is in operation. The standard time limit for temporary trailers recently approved through Special Use Permit is two years, with an additional three years available with staff approval of an Administrative Special Use Permit. Condition #3 states, therefore, that the Special Use Permit expires on February 25, 2025, with an opportunity to increase the term for an additional three years through an Administrative Special Use Permit.

Subject to the conditions contained in Section III of this report, staff recommends approval of the Special Use Permit request.

### III. RECOMMENDED CONDITIONS

Staff recommends **approval** subject to compliance with all applicable codes and ordinances and the following conditions:

1. The Special Use Permit shall be granted to the applicant only or to any business or entity in which the applicant has a controlling interest. (P&Z) (SUP2020-00105)
2. **CONDITION AMENDED BY STAFF:** The location and specifications of the temporary trailer shall be substantially consistent as proposed in the application dated ~~December 4~~November 22, 2022. (P&Z) (~~SUP2020-00105~~)
3. **CONDITION AMENDED BY PLANNING COMMISSION:** The temporary trailer shall be permitted at the site for a ~~two~~three-year term which expires on ~~March 12~~February 25, 2026, with an opportunity to increase the term for an additional three years through an Administrative Special Use Permit. (P&Z) (~~SUP2020-00105~~) (PC)
4. The applicant shall conduct employee training sessions on an ongoing basis, including as part of any employee orientation, to discuss all SUP provisions and requirements. (P&Z) (SUP2020-00105)
5. Litter on the site and on public rights-of-way and spaces adjacent to or within 75 feet of the premises shall be picked up at least twice a day and at the close of business, and more often if necessary, to prevent an unsightly or unsanitary accumulation, on each day that the business is open to the public. (P&Z) (SUP2020-00105)
6. **CONDITION DELETED BY STAFF:** ~~This use shall comply with the City noise ordinance. (P&Z) (SUP2020-00105)~~
7. **CONDITION AMENDED BY STAFF:** The Director of Planning and Zoning shall review the Special Use Permit one year after it has been operational and shall docket the matter for consideration by the Planning Commission and City Council if (a) there have been documented violations of the permit conditions which were not corrected immediately, constitute repeat violations or which create a direct and immediate adverse zoning impact on the surrounding community; (b) the Director has received a request from any person to docket the permit for review as a result of a complaint that rises to the level of a violation; or (c) the Director has determined that there are problems with the operation of the use and that new or revised conditions are needed. (P&Z) (~~SUP2020-00105~~)
8. **CONDITION ADDED BY STAFF:** The applicant shall require its employees who drive to use off-street parking. (T&ES)
9. **CONDITION ADDED BY STAFF:** The applicant shall encourage its employees to use public transportation to travel to and from work. The business shall contact Go Alex at [goalex@alexandriava.gov](mailto:goalex@alexandriava.gov) for information on establishing an employee transportation



benefits program. (T&ES)

10. **CONDITION ADDED BY STAFF:** The applicant shall provide information about alternative forms of transportation to access the site, including but not limited to printed and electronic business promotional material, posting on the business website, and other similar methods. Contact Go Alex at [goalex@alexandriava.gov](mailto:goalex@alexandriava.gov) for more information about available resources. (T&ES)
  
11. **CONDITION ADDED BY STAFF:** The applicant shall encourage patrons to park off-street through the provision of information about nearby garages or lots in the business' advertising and website. (T&ES)

**STAFF:** Patrick Silva, Urban Planner  
Ann Horowitz, Principal Planner  
Tony LaColla, Division Chief, Land Use Services

---

**Staff Note:** In accordance with Section 11-506(c) of the Zoning Ordinance, construction or operation shall be commenced and diligently and substantially pursued within 18 months of the date of granting of a Special Use Permit by City Council or the Special Use Permit shall become void.

#### IV. CITY DEPARTMENT COMMENTS

Legend: C - code requirement R - recommendation S - suggestion F - finding

##### Transportation & Environmental Services:

- R-1 The applicant shall require its employees who drive to use off-street parking. (T&ES)
- R-2 The applicant shall encourage its employees to use public transportation to travel to and from work. The business shall contact Go Alex at [goalex@alexandriava.gov](mailto:goalex@alexandriava.gov) for information on establishing an employee transportation benefits program. (T&ES)
- R-3 The applicant shall provide information about alternative forms of transportation to access the site, including but not limited to printed and electronic business promotional material, posting on the business website, and other similar methods. Contact Go Alex at [goalex@alexandriava.gov](mailto:goalex@alexandriava.gov) for more information about available resources. (T&ES)
- R-4 The applicant shall encourage patrons to park off-street through the provision of information about nearby garages or lots in the business' advertising and website. (T&ES)

##### Code:

No comments or concerns.

##### Fire:

No comments or concerns.

##### Parks and Recreation:

No comments or concerns.

##### Police Department:

No comments received.

##### Archaeology:

No comments or concerns.



# APPLICATION SPECIAL USE PERMIT

SPECIAL USE PERMIT # \_\_\_\_\_

PROPERTY LOCATION: 4513 Duke St, Alexandria, VA, 22304

TAX MAP REFERENCE: 049.03-06-04 ZONE: CG

APPLICANT:  
Name: DHL Express US

Address: 4513 Duke St. Alexandria, VA

PROPOSED USE: Temporary Trailer - to continue providing domestic and international shipping services

- THE UNDERSIGNED, hereby applies for a Special Use Permit in accordance with the provisions of Article XI, Section 4-11-500 of the 1992 Zoning Ordinance of the City of Alexandria, Virginia.
- THE UNDERSIGNED, having obtained permission from the property owner, hereby grants permission to the City of Alexandria staff and Commission Members to visit, inspect, and photograph the building premises, land etc., connected with the application.
- THE UNDERSIGNED, having obtained permission from the property owner, hereby grants permission to the City of Alexandria to post placard notice on the property for which this application is requested, pursuant to Article IV, Section 4-1404(D)(7) of the 1992 Zoning Ordinance of the City of Alexandria, Virginia.
- THE UNDERSIGNED, hereby attests that all of the information herein provided and specifically including all surveys, drawings, etc., required to be furnished by the applicant are true, correct and accurate to the best of their knowledge and belief. The applicant is hereby notified that any written materials, drawings or illustrations submitted in support of this application and any specific oral representations made to the Director of Planning and Zoning on this application will be binding on the applicant unless those materials or representations are clearly stated to be non-binding or illustrative of general plans and intentions, subject to substantial revision, pursuant to Article XI, Section 11-207(A)(10), of the 1992 Zoning Ordinance of the City of Alexandria, Virginia.

Essete G Abebe  
 Print Name of Applicant or Agent  
1210 S Pine Island Drive,  
 Mailing/Street Address  
Plantation, FL      33324  
 City and State      Zip Code

  
 Signature  
11/22/22  
 Date  
4803810603  
 Telephone #      Fax #  
essete.gabriel@dhl.com  
 Email address

**PROPERTY OWNER'S AUTHORIZATION**

As the property owner of Shoppes at Foxchase, I hereby  
(Property Address)  
grant the applicant authorization to apply for the provide domestic and shipping services to the public use as  
(use)  
described in this application.

Name: GRI Foxchase LLC, by First Washington Realty, Inc, its authroized agent by

Phone 301-907-7800

Please Print

Address: 7200 Wisconsin Ave Ste, C/O First Washington Realty, Inc, Bethesda, MD 20814

Email: bdonovan@firstwash.com

Signature: Kenneth E. Miller

Date: 11/22/2022

1. Floor Plan and Plot Plan. As a part of this application, the applicant is required to submit a floor plan and plot or site plan with the parking layout of the proposed use. The SUP application checklist lists the requirements of the floor and site plans. The Planning Director may waive requirements for plan submission upon receipt of a written request which adequately justifies a waiver.

Required floor plan and plot/site plan attached.

Requesting a waiver. See attached written request.

2. The applicant is the (check one):

Owner

Contract Purchaser

Lessee or

Other: \_\_\_\_\_ of the subject property.

State the name, address and percent of ownership of any person or entity owning an interest in the applicant or owner, unless the entity is a corporation or partnership, in which case identify each owner of more than three percent.  
Deutsche Post AG - 100% of ownership - DHL Express US

---

---

---

---

# OWNERSHIP AND DISCLOSURE STATEMENT

Use additional sheets if necessary

**1. Applicant.** State the name, address and percent of ownership of any person or entity owning an interest in the applicant, unless the entity is a corporation or partnership, in which case identify each owner of more than three percent. The term ownership interest shall include any legal or equitable interest held at the time of the application in the real property which is the subject of the application.

Name	Address	Percent of Ownership
1 Deutsche Post AG	Platz der Deutsche Post,	100%
2.	53113, Bonn Germany	
3.		

**2. Property.** State the name, address and percent of ownership of any person or entity owning an interest in the property located at 4513 Duke St. Alexandria, VA (address), unless the entity is a corporation or partnership, in which case identify each owner of more than three percent. The term ownership interest shall include any legal or equitable interest held at the time of the application in the real property which is the subject of the application.

Name	Address	Percent of Ownership
1 GRI Foxchase LLC	7200 Wosconsin Ave Ste 600	100%
2.	Bethesda, MD 20814-4830	
3.	<small>7200 Wosconsin Ave Ste, C/O First Washington Realty, Inc. Bethesda, MD 20814</small>	


**3. Business or Financial Relationships.** Each person or entity indicated above in sections 1 and 2, with an ownership interest in the applicant or in the subject property are require to disclose any business or financial relationship, as defined by Section 11-350 of the Zoning Ordinance, existing at the time of this application, or within the 12-month period prior to the submission of this application with any member of the Alexandria City Council, Planning Commission, Board of Zoning Appeals or either Boards of Architectural Review. **All fields must be filled out completely. Do not leave blank. (If there are no relationships please indicated each person or entity and "None" in the corresponding fields).**

For a list of current council, commission and board members, as well as the definition of business and financial relationship, [click here](#).

Name of person or entity	Relationship as defined by Section 11-350 of the Zoning Ordinance	Member of the Approving Body (i.e. City Council, Planning Commission, etc.)
1 Deutsche Post AG	none	NA
2 GRI FoxChase LLC	none	NA
3.		

**NOTE:** Business or financial relationships of the type described in Sec. 11-350 that arise after the filing of this application and before each public hearing must be disclosed prior to the public hearings.

As the applicant or the applicant's authorized agent, I hereby attest to the best of my ability that the information provided above is true and correct.

11/22/22  
Date
Essefe G Abebe  
Printed Name
  
Signature

If property owner or applicant is being represented by an authorized agent such as an attorney, realtor, or other person for which there is some form of compensation, does this agent or the business in which the agent is employed have a business license to operate in the City of Alexandria, Virginia?

**Yes.** Provide proof of current City business license

**No.** The agent shall obtain a business license prior to filing application, if required by the City Code.

### **NARRATIVE DESCRIPTION**

**3.** The applicant shall describe below the nature of the request **in detail** so that the Planning Commission and City Council can understand the nature of the operation and the use. The description should fully discuss the nature of the activity. (Attach additional sheets if necessary.)

We want to request to have your approval to extend our permit for two years. We have been a proud member of the Alexandria, VA community for many years, and we introduced the DHL Popup concept in

2020. Because of the presence of the Popup in Alexandria, we were able to support the local

citizens shipping to over 120 countries and is adjacent to Census Tract 2003.03 and within 2 miles of 2

other opportunity zones with the City of Alexandria. Over 4000 customers used this for shipping

services since opening and the feedback has been that the popup model is the preferred

model due to the convenience of the window service and proximity of parking.

The Mobile Popup ServicePoint is a 187 square feet full-service shipping store build on a hydraulic lift

platform and accomodate all essential amenities, such as HVAC, security and computer systems

including a fast, efficient Point-of-Sale system that can process shipment for destinations around the US

& the world. The DHL Popup Servicepoint promotes sustainability, safety, and convenience. We have

found these popup stores to be beneficial for the City of Alexandria community and we ask for your

approval to extend our permit to continue serving the community.

Attached is the site plan for the DHL Popup. The popup or site will be used to process domestic and international

packages. We thank you for your support and look forward to continuing to grow and evolve with the City of

Alexandria.

## USE CHARACTERISTICS

4. The proposed special use permit request is for (*check one*):
- a new use requiring a special use permit,
  - an expansion or change to an existing use without a special use permit,
  - an expansion or change to an existing use with a special use permit,
  - other. Please describe: \_\_\_\_\_

5. Please describe the capacity of the proposed use:
- A. How many patrons, clients, pupils and other such users do you expect?  
Specify time period (i.e., day, hour, or shift).  
10-15 customers / day
- B. How many employees, staff and other personnel do you expect?  
Specify time period (i.e., day, hour, or shift).  
2 employees / day

6. Please describe the proposed hours and days of operation of the proposed use:
- |                        |                            |
|------------------------|----------------------------|
| Day:                   | Hours:                     |
| <u>Monday - Friday</u> | <u>09:00 am - 06:00 pm</u> |
| <u>Saturday</u>        | <u>11:00 am - 06:00 pm</u> |
| _____                  | _____                      |
| _____                  | _____                      |

7. Please describe any potential noise emanating from the proposed use.
- A. Describe the noise levels anticipated from all mechanical equipment and patrons.  
no noise
- B. How will the noise be controlled?  
\_\_\_\_\_  
\_\_\_\_\_

8. Describe any potential odors emanating from the proposed use and plans to control them:  
no odors

---

---

---

9. Please provide information regarding trash and litter generated by the use.

A. What type of trash and garbage will be generated by the use? (i.e. office paper, food wrappers)  
papers, shipping lables and bubble wrap

---

---

B. How much trash and garbage will be generated by the use? (i.e. # of bags or pounds per day or per week)  
one trash bag / day

---

---

C. How often will trash be collected?  
daily

---

---

D. How will you prevent littering on the property, streets and nearby properties?  
We clean up the popup daily and check the surrounding area

---

---

10. Will any hazardous materials, as defined by the state or federal government, be handled, stored, or generated on the property?

Yes.                       No.

If yes, provide the name, monthly quantity, and specific disposal method below:

---

---



11. Will any organic compounds, for example paint, ink, lacquer thinner, or cleaning or degreasing solvent, be handled, stored, or generated on the property?

Yes.       No.

If yes, provide the name, monthly quantity, and specific disposal method below:

We use & maintain one extra ink cartridge for both an inkjet and laser printer.

We typically dispose of 3 inkjet cartridges in a 6 month period. We use one

colorx wipes, window and floor cleaner to maintain the cleanliness of the servicepoint.

---

---

---

12. What methods are proposed to ensure the safety of nearby residents, employees and patrons?

We have 24 hour security system to monitor activities outside and inside of the popup which includes Cameras, remote monitoring, glass break alarm and panic button. Safety equipment is on hand including a first aid kit, fire extinguisher and non-slip floor mats. We have three safety poles 8 feet in front of the servicepoint with reflectors to alert any other cars in the parking lot that the area is secure area.

---

---

## ALCOHOL SALES

13.

A. Will the proposed use include the sale of beer, wine, or mixed drinks?

Yes       No

If yes, describe existing (if applicable) and proposed alcohol sales below, including if the ABC license will include on-premises and/or off-premises sales.

---

---

---

---

## PARKING AND ACCESS REQUIREMENTS

14. A. How many parking spaces of each type are provided for the proposed use:

3  
\_\_\_\_\_ Standard spaces  
\_\_\_\_\_ Compact spaces  
\_\_\_\_\_ Handicapped accessible spaces.  
\_\_\_\_\_ Other.

Planning and Zoning Staff Only
Required number of spaces for use per Zoning Ordinance Section 8-200A _____
Does the application meet the requirement? <input type="checkbox"/> Yes <input type="checkbox"/> No

- B. Where is required parking located? (check one)  
 on-site  
 off-site

If the required parking will be located off-site, where will it be located?

---

**PLEASE NOTE:** Pursuant to Section 8-200 (C) of the Zoning Ordinance, commercial and industrial uses may provide off-site parking within 500 feet of the proposed use, provided that the off-site parking is located on land zoned for commercial or industrial uses. All other uses must provide parking on-site, except that off-street parking may be provided within 300 feet of the use with a special use permit.

- C. If a reduction in the required parking is requested, pursuant to Section 8-100 (A) (4) or (5) of the Zoning Ordinance, complete the PARKING REDUCTION SUPPLEMENTAL APPLICATION.

Parking reduction requested; see attached supplemental form

15. Please provide information regarding loading and unloading facilities for the use:

- A. How many loading spaces are available for the use? na

Planning and Zoning Staff Only
Required number of loading spaces for use per Zoning Ordinance Section 8-200 _____
Does the application meet the requirement? <input type="checkbox"/> Yes <input type="checkbox"/> No

B. Where are off-street loading facilities located? na

\_\_\_\_\_

C. During what hours of the day do you expect loading/unloading operations to occur?  
na

\_\_\_\_\_

D. How frequently are loading/unloading operations expected to occur, per day or per week, as appropriate?  
na

\_\_\_\_\_

16. Is street access to the subject property adequate or are any street improvements, such as a new turning lane, necessary to minimize impacts on traffic flow?

The street access to the subject property is adequate.

\_\_\_\_\_

\_\_\_\_\_

**SITE CHARACTERISTICS**

17. Will the proposed uses be located in an existing building?  Yes  No

Do you propose to construct an addition to the building?  Yes  No

How large will the addition be? NA square feet.

18. What will the total area occupied by the proposed use be?

187 sq. ft. (existing) + \_\_\_\_\_ sq. ft. (addition if any) = \_\_\_\_\_ sq. ft. (total)

19. The proposed use is located in: (check one)

a stand alone building

a house located in a residential zone

a warehouse

a shopping center. Please provide name of the center: Shoppes at Foxchase

an office building. Please provide name of the building: \_\_\_\_\_

other. Please describe: \_\_\_\_\_

**End of Application**



**Department of Planning & Zoning**  
**Special Use Permit Application Checklist**

**Supplemental application for the following uses:**

- Automobile Oriented
- Parking Reduction
- Signs
- Substandard Lot
- Lot modifications requested with SUP use

**Interior Floor Plan**

- Include labels to indicate the use of the space (doors, windows, seats, tables, counters, equipment)

**If Applicable**

- Plan for outdoor uses

**Contextual site image**

- Show subject site, on-site parking area, surrounding buildings, cross streets





# Overview



**Location:**  
Pop ups are positioned in well-lit shopping centers, in non-congested areas



**Structure:**  
Steel-framed structure built on a hydraulic steel commercial trailer with ability to lower almost flush to the ground, 1” duo tempered glass with aluminum framing; stamped drawings provided



**Floor Plan:**  
Floor plan of the trailers is approximately 140 square feet and has an interior usable space of 97 square feet



**Power:**  
Off grid model uses solar/rechargeable batteries to power electronic equipment for business use and energy efficient mini-split HVAC.

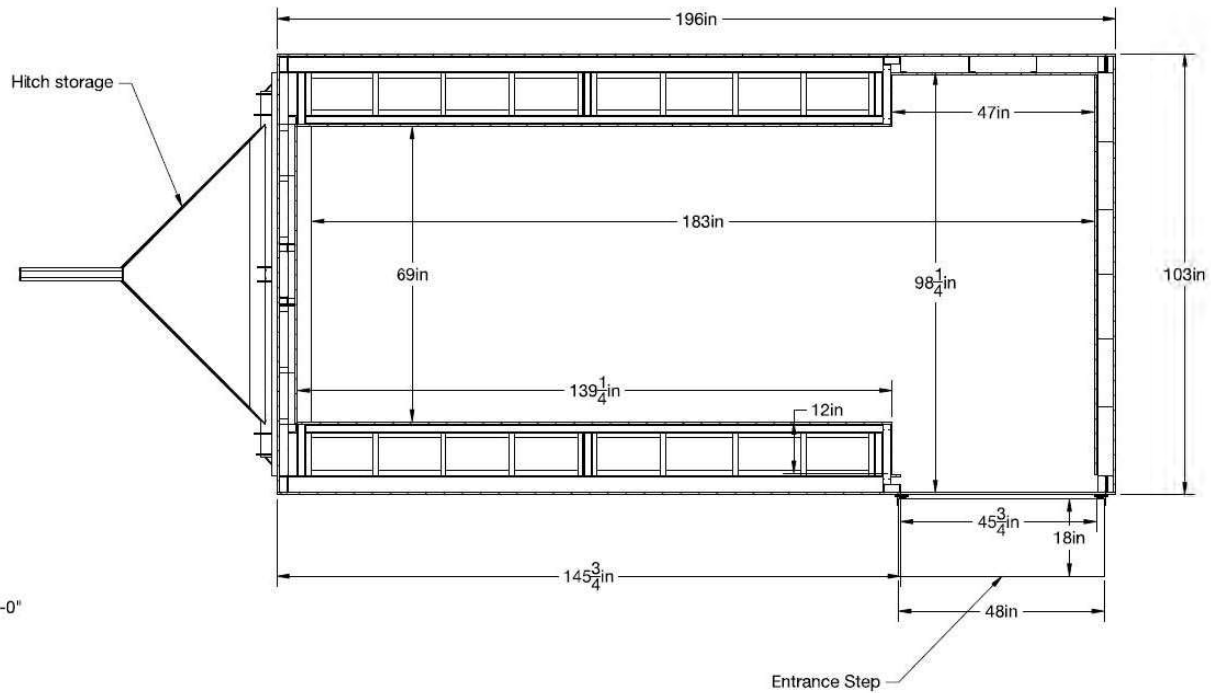
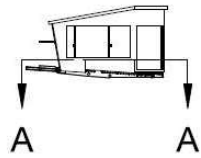


**Accessibility:**  
Wheel chair ramp available and personal concierge service provided as requested. \*For Plantation, lobby service will also be available to accommodate customers as required



**Security:**  
Includes fish eye camera, panic button, No cash. Security cabinet for all packages.





PLAN  
 Scale:  $\frac{1}{2}$ " = 1'-0"



# DHL Mobile

Notes:

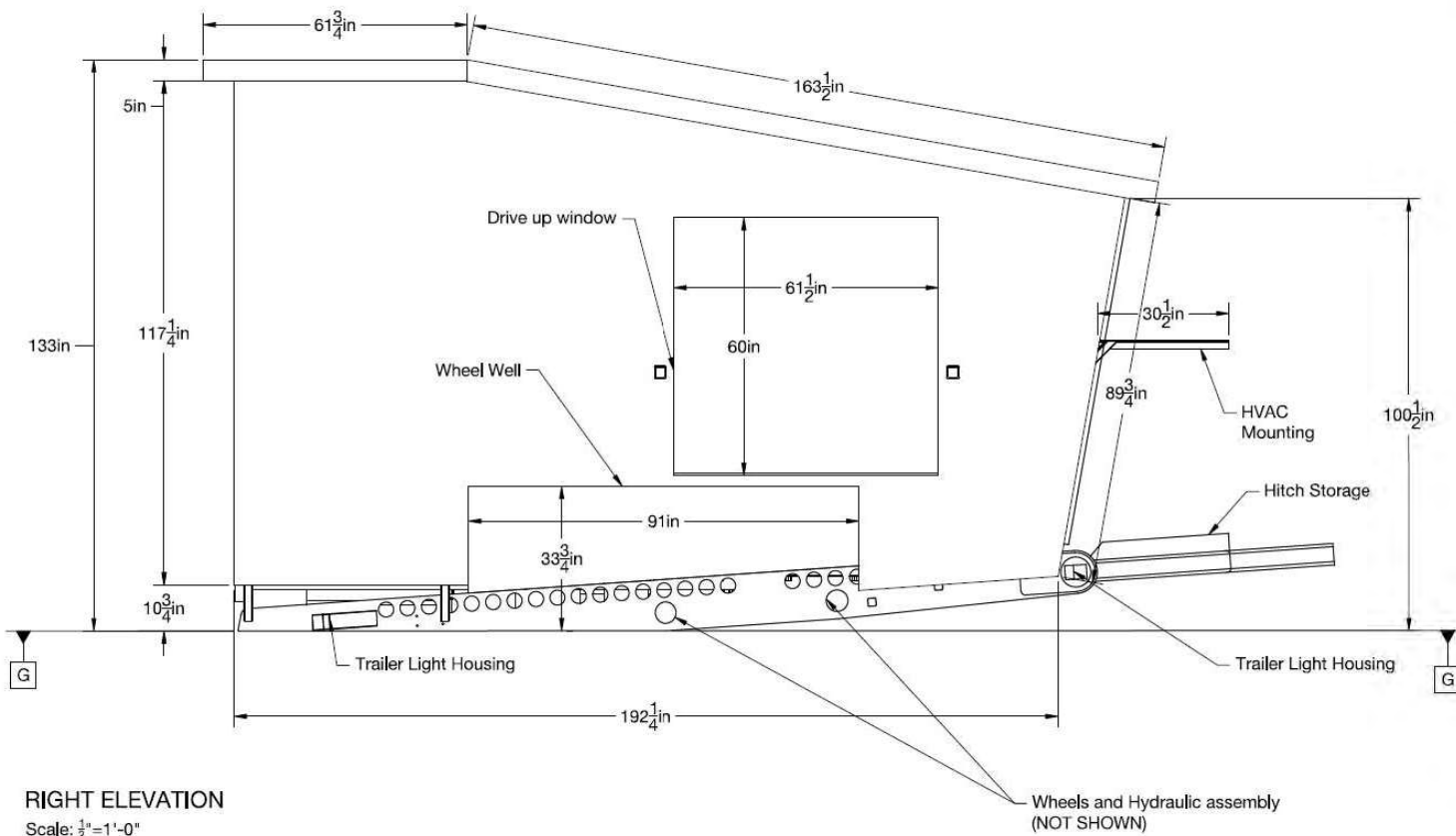
Scale 1/16" = 1'-0"

Structural Design

## S101

Drawn By Aidan Syms  
 © 2020 flexetail LLC





DHL Mobile

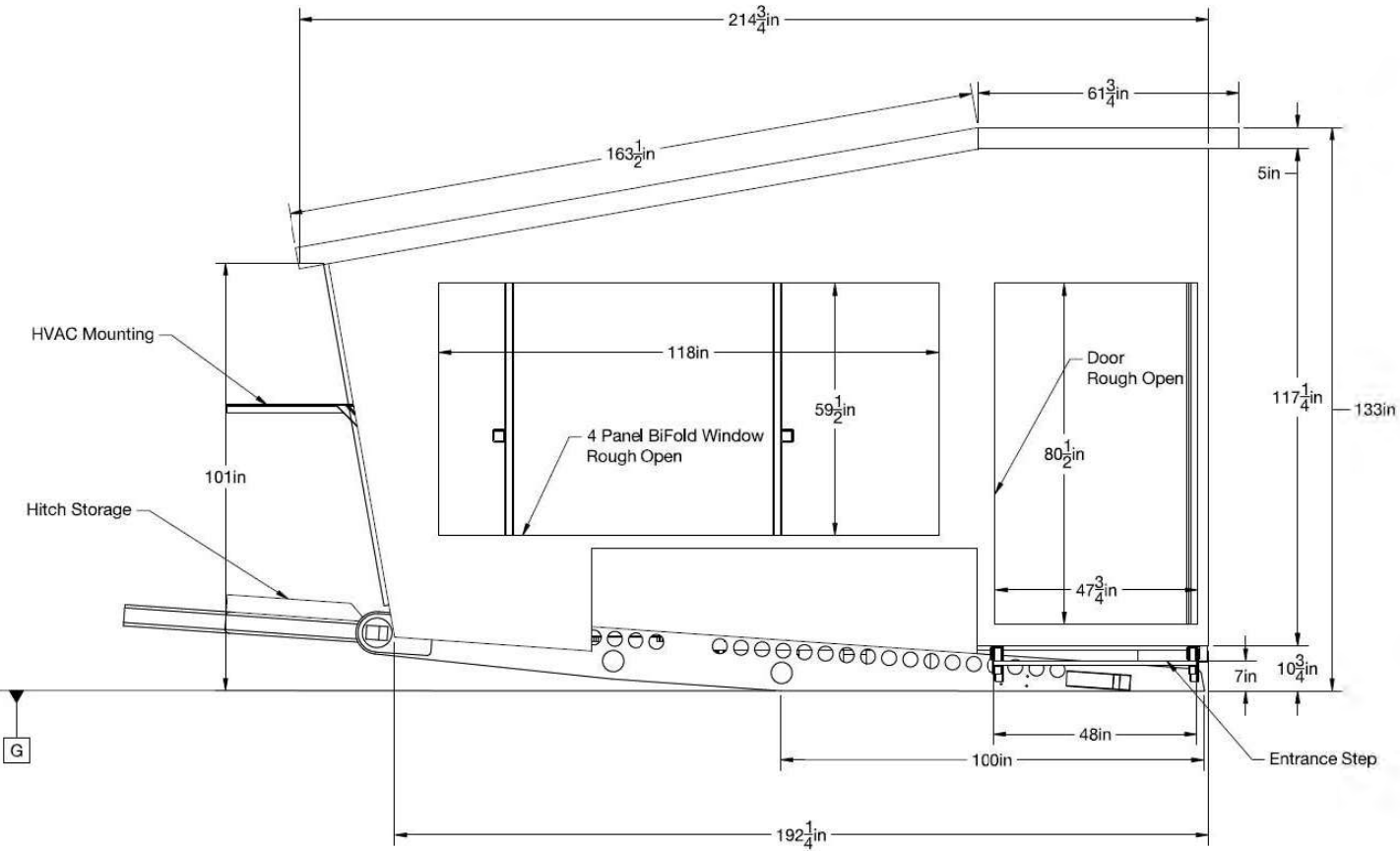
Notes:

Scale 1/2" = 1'-0"

Structural Design

S201

Drawn By Aidan Symms  
© 2020 flexetail LLC



LEFT ELEVATION  
Scale:  $\frac{1}{2}'' = 1'-0''$

**flexetail**

# DHL Mobile

---

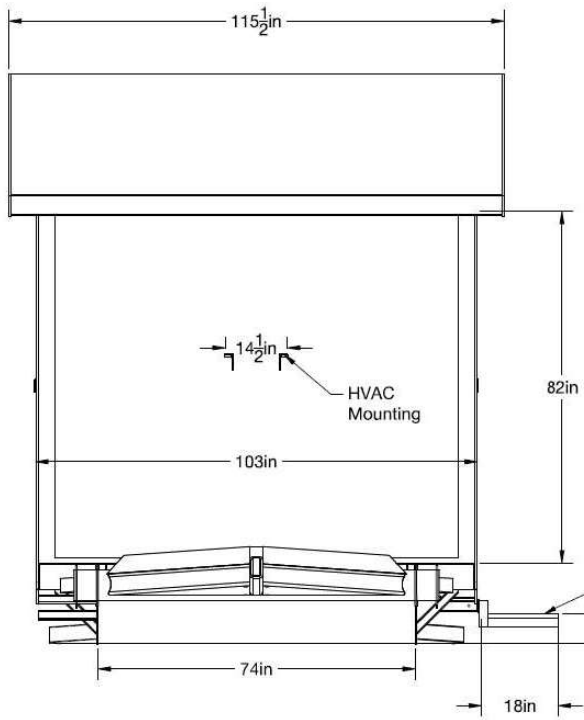
Notes:

---

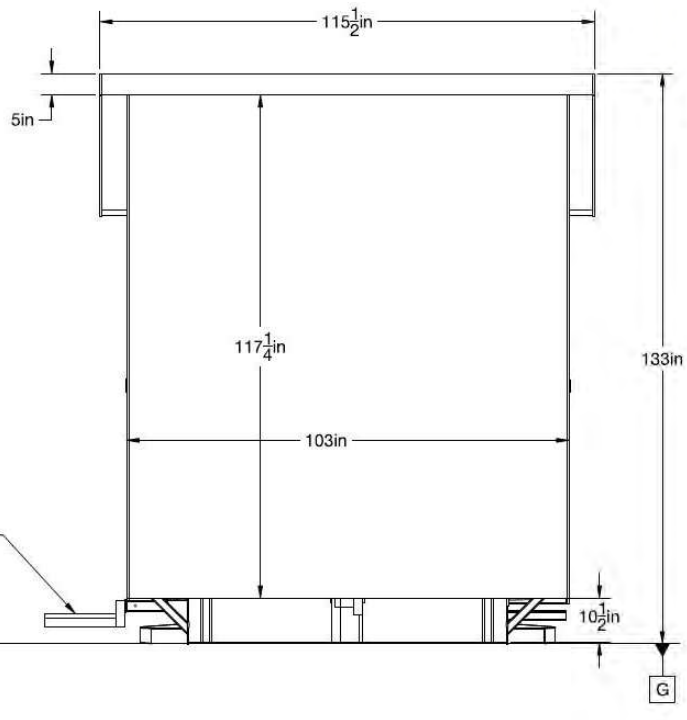
Scale:  $\frac{1}{2}'' = 1'-0''$   
 Structural Design

S202

Drawn By: Aidan Syms  
 © 2020 Flexetail LLC



FRONT ELEVATION  
Scale:  $\frac{1}{2}'' = 1'-0''$



REAR ELEVATION  
Scale:  $\frac{1}{2}'' = 1'-0''$

**flexetail**

**DHL Mobile**

Notes:

Scale:  $\frac{1}{2}'' = 1'-0''$   
Structural Design

**S203**

Drawn By: Aidan Synns  
© 2020 Flexetail LLC



**GENERAL ELECTRICAL AND EQUIPMENT NOTES**

- ALL ELECTRICAL WORK TO BE PERFORMED SHALL CONFORM TO ALL APPLICABLE CODES OF GOVERNMENT AGENCIES HAVING JURISDICTION OVER THE PROJECT WHERE THESE CODES DO NOT APPLY, THE WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE 2014. APPLICABLE CODES SHALL INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING:
    - NATIONAL ELECTRICAL CODE (NFPA 70), 2017.
    - INSTITUTE OF ELECTRICAL AND ELECTRICAL ENGINEERS (IEEE)
    - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA).
    - ELECTRICAL SAFETY IN THE WORKPLACE (NFPA 70E)
    - UNDERWRITERS LABORATORY (UL)
    - INSULATED CABLE ENGINEERS ASSOCIATION (ICEA)
    - AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
    - AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
    - NATIONAL BUREAU OF STANDARDS
    - MA BUILDING 788 CMR
    - SAFETY ORDERS OF INDUSTRIAL ACCIDENT COMMISSION
    - RULES OF THE NATIONAL BOARD OF FIRE UNDERWRITERS
    - LOCAL ORDINANCES OF THE STATE
    - LOCAL ORDINANCES OF THE COUNTY OR CITY
    - REQUIREMENTS OF LOCAL UTILITY COMPANY
  - CONTRACTOR SHALL SUBMIT ELECTRICAL EQUIPMENT PRODUCT DATA SHEETS TO ENGINEER FOR REVIEW AND APPROVAL.
  - PROPOSED DEVIATIONS FROM DESIGN DOCUMENTS SHALL BE REVIEWED AND APPROVED BY ENGINEER
  - CONTRACTOR SHALL INSTALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ELECTRICAL UTILITY LINES WHICH ARE TO REMAIN IN USE DURING CONSTRUCTION.
  - ALL MAJOR EQUIPMENT INTENDED FOR USE IN THE PV SYSTEM SHALL BE IDENTIFIED AND LISTED FOR THE APPLICATION.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND EQUIPMENT THROUGHOUT THE JOBSITE TO ENSURE THEY ARE PROTECTED IN PLACE.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THEIR EMPLOYEES, PERSONNEL, SUBCONTRACTORS, AND EQUIPMENTS CONTINUOUSLY DURING ALL TIMES DURING CONSTRUCTION, INCLUDING AFTER HOURS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT ADEQUATE SAFETY MEASURES AND TO ENFORCE THOSE MEASURES.
- IDENTIFICATION/MARKINGS**
- CONTRACTOR MUST SUPPLY ALL REQUIRED SAFETY SIGNS AND LABELS, WHICH SHALL BE PERMANENTLY ATTACHED BY MECHANICAL MEANS. LABELS SHALL COMPLY WITH NEC ARTICLE 690 AND 705.12, AND OTHER APPLICABLE LOCAL CODES.
  - INVERTER IDENTIFICATION MARKINGS SHALL INDICATE INVERTER NUMBER AND BE PLACED ON THE FRONT OF THE INVERTER ENCLOSURE.
  - CONTRACTOR SHALL ASSIGN TO EACH WIRE AND CABLE A UNIQUE IDENTIFICATION NUMBER, NUMBERS SHALL BE ASSIGNED TO ALL CONDUCTORS HAVING COMMON TERMINALS.
  - AT A MINIMUM, IDENTIFICATION NUMBERING SHALL INCLUDE ORIGIN LOCATION & TERMINAL LOCATION.
  - APPLY ALL CONDUCTOR AND CABLE MARKERS BEFORE TERMINATION.
  - APPLY ALL CONDUCTORS IDENTIFICATION MARKING WITH HEAT SHRINKABLE TUBING. TUBING SHALL BE TIGHT ON THE WIRE AFTER INSTALLATION AND CHARACTERS SHALL FACE THE OPENING PANEL AND READ LEFT TO RIGHT OR TOP TO BOTTOM.

**ELECTRICAL ABBREVIATIONS**

AF	AMPERES FRAME OF BREAKER	PN,BD	PANEL BOARD
AIC	AMPS INTERRUPTING CAPACITY	PDI	POINT OF INTERCONNECTION
AMP, A	AMPERES	PR	PRESSURE SWITCH
AT	AMPERES TRIP RATING OF BREAKER	PT	POTENTIAL TRANSFORMER
AUTO	AUTOMATIC	PV	PHOTOVOLTAIC
ATS	AUTOMATIC TRANSFER SWITCH	PVC	POLYVINYL CHLORIDE
AUX	AUXILIARY	PWR	POWER
AWG	AMERICAN WIRE GAUGE	REC	RECEPTACLE
BKR	BREAKER	RECPTS	RECEPTACLES
C	CELSIUS	REQD	REQUIRED
CAR	CABINER BOX	SCH	SCHEDULE
CB	CENTRE TO CENTRE	SECT	SECTION
CC	CIRCUIT	SHI	SHEET
CND	CONDUIT	SIC	SIGNAL
COM	COMMUNICATION	SM	START CONTACTOR COIL
CPT	CONTROL POWER TRANSFORMER	SP HTR	SPACE HEATER
CR	CONTROL RELAY	STA	STATION
	(MAGNETICALLY HELD UNLESS NOTED OTHERWISE)	STD	STANDARD
CT	CONTROL TRANSFORMER	STL	STEEL
CTRI	CONTROL	STR	STRING
CU	COPPER	SW	SWITCH
DB	DIRECT BURIAL	SWBD	SWITCHBOARD
DISC	DISCONNECT	SWGR	SWITCHGEAR
DISTR	DISTRIBUTION	SYS	SYSTEM
DWG	DRAWING	SYM	SYMMETRICAL
ECC	EQUIPMENT GROUND	TDOD	TIME DELAY ON
ELEV	ELEVATION	TEMP	TEMPERATURE
EMERG	EMERGENCY	TERM	TERMINAL
ENCL	ENCLOSURE	TKR	TRACKER
EQPT	EQUIPMENT	TS	TAMPER SWITCH
EX	EXISTING	TSTAT	THERMOSTAT
FDR	FEEDER	TYP	TYPICAL
FS	FLOW SWITCH	UG	UNDERGROUND
FLEX	FLEXIBLE	UNO	UNLESS NOTED OTHERWISE
FUT	FUTURE	UGPS	UNDERGROUND PULL SECTION
FUSE, CPT	FUSE, CPT PRIMARY	VOC	OPEN CIRCUIT VOLTAGE
FUSE, CPT	FUSE, CPT SECONDARY	W	WATTS
GE	GROUND ELECTRODE CONDUCTOR	WHM	METER (WATT HOUR METER)
GE	GROUND	WF	WEATHERPROOF
GH	HAND HOLE	XFMR	TRANSFORMER
HOA	HAND-OFF-AUTOMATIC		
HTR	HEATER		
HZ	HERTZ		
IG	ISOLATED GROUND		
ID	INDICATION		
INSTR	INSTRUMENT		
INV	INVERTER		
ISC	SHORT CIRCUIT CURRENT		
JB	JUNCTION BOX		
K	THOUSAND (KILO)		
kv	KILOVOLTS		
kw	KILOWATTS		
kVA	KILOVOLT AMPERES		
kVAR	KILOVOLT AMPERES REACTIVE		
KWH	KILOWATT-HOUR		
KWHd	KILOWATT HOUR DEMAND METER		
LC	LOAD CENTER		
LT, LTS	LIGHT, LIGHTS		
LGT	LIGHTING		
MAX	MAXIMUM		
MET	METEOROLOGICAL STATION		
MCB	MAIN CIRCUIT BREAKER		
MCM, Xcmil	THOUSAND CIRCULAR MILS		
M	MANHOLE		
MLO	MAIN LUG ONLY		
MIN	MINIMUM		
MT	MOUNT		
MTD	MOUNTED		
MTG	MOUNTING		
NO, NOS	NUMBER, NUMBERS		
NP	NAME PLATE		
NTS	NOT TO SCALE		
OC	ON CENTER		
PC	POWER CONVERSION STATION		
PCL	PROGRAMMABLE LOGIC CONTROLLER		
PANL	PANEL		

**ELECTRICAL SYMBOLS**

	DISCONNECT
	CIRCUIT BREAKER
	INVERTER
	FUSE W / C JRRRNT RATING
	PV MODULE
	METER
	CONTRACTOR
	MOV LIGHTING ARRESTOR
	EARTH GROUND
	THREE PHASE WYE CONNECTED SOLIDLY GROUNDED NEUTRAL
	THREE PHASE DELTA CONNECTED
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	TRANSFORMER
	COMBINER BOX
	JUNCTION BOX
	BRANCH CIRCUIT PANELBOARD, UNDER 250 VOLTS SURFACE MOUNTED
	BRANCH CIRCUIT PANELBOARD, UNDER 250 VOLTS FLUSH MOUNTED
	BRANCH CIRCUIT PANELBOARD, OVER 250 VOLTS SURFACE MOUNTED
	BRANCH CIRCUIT PANELBOARD, OVER 250 VOLTS FLUSH MOUNTED
	BRANCH CIRCUIT CONDUIT CONCEALED ABOVE CEILING OR IN WALL
	BRANCH CIRCUIT CONDUIT CONCEALED IN SLAB, UNDERGROUND OR UNDER FLOOR.
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	CONDUIT STUB
	CONDUIT CONTINUED
	FLEXIBLE CONDUIT
	EXISTING TO REMAIN

**Castillo Engineering**  
DESIGNED TO MEET

**CASTILLO ENGINEERING SERVICES, I.L.C.**  
104 #1160  
620 N. WYMORE ROAD,  
SUITE 200,  
MAITLAND, FL 32751  
TEL: (407) 284-9375

COPYRIGHTED BY  
**CASTILLO ENGINEERING SERVICES, I.L.C.**

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER

PROJECT NAME

**0.96KW PV SYSTEM**

**12 CABOT RD.,**  
**WOBURN, MA 01801**

SHEET NAME  
**LEGEND SHEET & GENERAL NOTES**

SHEET SIZE  
**ANSI B**  
**11" X 17"**

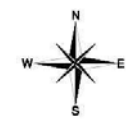
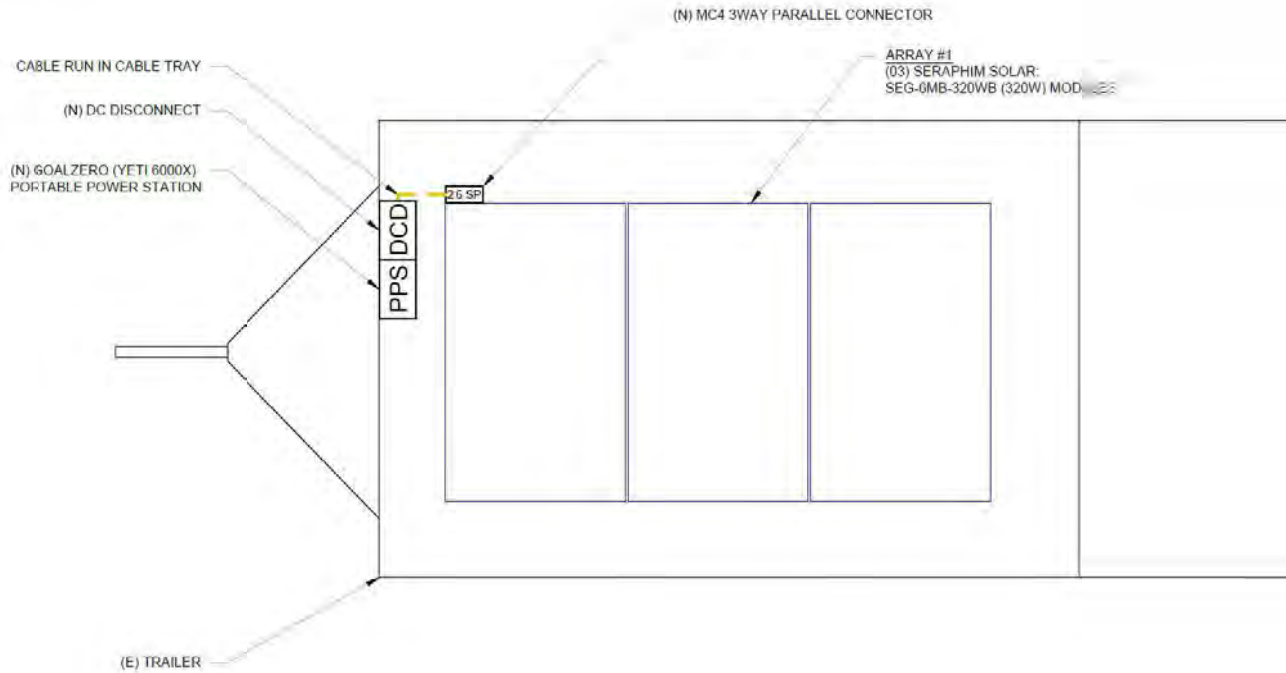
SHEET NUMBER  
**A-001**

**PROJECT DESCRIPTION:**

03x320 SERAPHIM SOLAR: SEG-6MB-320WB (320W) MODULES  
 ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES  
 SYSTEM SIZE: 0.96 KW DC STC  
 ARRAY AREA #1: 52.53 SQ FT.

**EQUIPMENT SUMMARY:**

- 03 SERAPHIM SOLAR: SEG-6MB-320WB (320W) MODULES
- 01 GOALZERO (YETI 8000X) PORTABLE POWER STATION
- 01 MC4 3WAY PARALLEL CONNECTOR



**Castillo Engineering**  
 ESTABLISHED 1994  
 CASTILLO ENGINEERING SERVICES, LLC  
 604#25348  
 820 N. WYKONSHIL ROAD,  
 SUITE 205,  
 MAITLAND, FL 32751  
 TEL: (407) 998-2075

COPYRIGHTED BY  
 CASTILLO ENGINEERING SERVICES, LLC

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER

*Emocrate*  
 s E Castillo  
 2021.03.0  
 9 13:21:21  
 05:00'

PROJECT NAME  
**DHL MOBILE  
 0.96KW PV SYSTEM**  
 12 CABOT RD,  
 WOBURN, MA 01801

SHEET NAME  
 SITE PLAN

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
**S-101**

**1** | **SITE PLAN**  
 S-101 | SCALE: 1/2" = 1'-0"

**MODULE TYPE, DIMENSIONS & WEIGHT**

NUMBER OF MODULES = 03 MODULES  
 MODULE TYPE = SERAPHIM SOLAR, SEG-6MB-320WB (320W) MODULES  
 MODULE WEIGHT = 38.5 LBS / 17.5 KG  
 MODULE DIMENSIONS = 64.57" X 39.06" = 17.51 SF  
 UNIT WEIGHT OF ARRAY = 2.19 PSF

**EQUIPMENT SUMMARY**  
 03 SERAPHIM SOLAR, SEG-6MB-320WB (320W) MODULES  
 01 GOALZERO (YETI 6000X) PORTABLE POWER STATION  
 01 MC4 3WAY PARALLEL CONNECTOR

ARRAY AREA & ROOF AREA CALC'S							
ROOF	ROOF TYPE	ARRAY AREA (sq. Ft.)	ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)	TILT	TRUSS SIZE	TRUSS SPACING
#1	EPDM	52.53	104.13	50.46	14°	2"x6"	16" o.c.

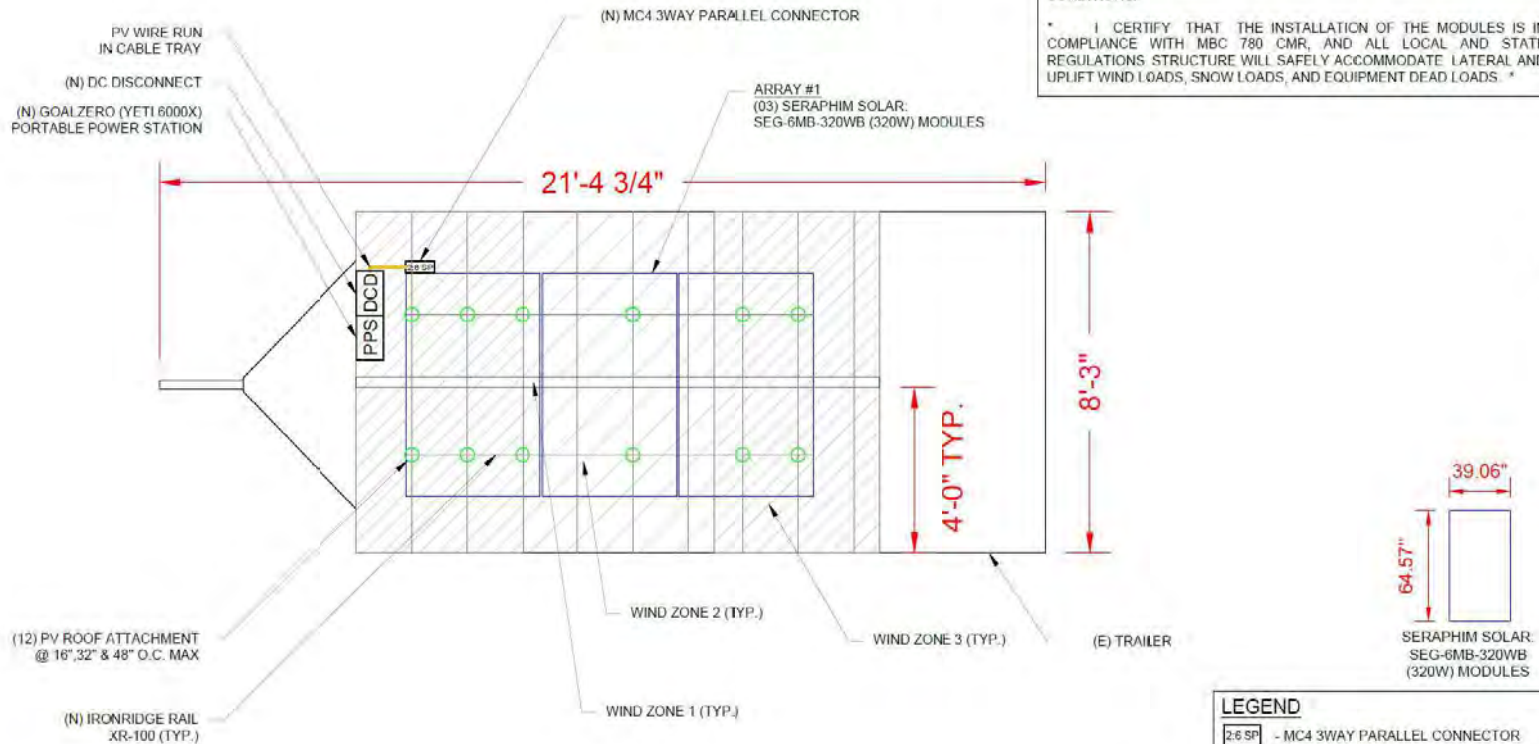
**GENERAL INSTALLATION PLAN NOTES:**

1) ROOF ATTACHMENTS TO TRUSSES SHALL BE INSTALLED AS SHOWN IN SHEET S-02 AND AS FOLLOWS FOR EACH WIND ZONE:

WIND ZONE 1: MAX SPAN 4'-0" O.C. - MAX CANTILEVER 1'-4"  
 WIND ZONE 2: MAX SPAN 2'-8" O.C. - MAX CANTILEVER 0'-10"  
 WIND ZONE 3: MAX SPAN 1'-4" O.C. - MAX CANTILEVER 0'-5"

2) EXISTING COMMERCIAL TRAILER HAS AN EPDM ROOF WITH MEAN ROOF HEIGHT IS 15 FT AND 2X8 ROOF TRUSSES SPACED 16" O.C. EXISTING ROOF SLOPE FOR SOLAR SYSTEM RETROFIT IS 14 DEGREES. CONTRACTOR TO FIELD VERIFY AND SHALL REPORT TO THE ENGINEER IF ANY DISCREPANCIES EXIST BETWEEN PLANS AND IN FIELD CONDITIONS.

\* I CERTIFY THAT THE INSTALLATION OF THE MODULES IS IN COMPLIANCE WITH MBC 780 CMR, AND ALL LOCAL AND STATE REGULATIONS. STRUCTURE WILL SAFELY ACCOMMODATE LATERAL AND UPLIFT WIND LOADS, SNOW LOADS, AND EQUIPMENT DEAD LOADS. \*



**LEGEND**

	- MC4 3WAY PARALLEL CONNECTOR
	- DC DISCONNECT
	- GOALZERO (YETI 6000X) PORTABLE POWER STATION
	- PV ROOF ATTACHMENT
	- TRUSSES
	- CONDUIT

**Castillo Engineering**  
 REGISTERED PROFESSIONAL ENGINEER  
 CASTILLO ENGINEERING SERVICES, LLC  
 604 P 2840  
 1000 N. WYOMING ROAD, SUITE 200  
 MAITLAND, FL 32751  
 TEL: (407) 286-5270

COPYRIGHTED BY CASTILLO ENGINEERING SERVICES, LLC

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER

**Ermocrate**  
 s E Castillo  
 2021.03.0  
 9 13:21:35

PROJECT # 05100

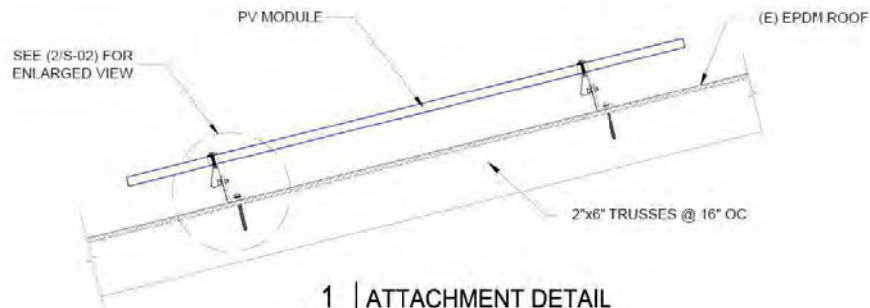
**DHL MOBILE 0.96KW PV SYSTEM**

12 CABOT RD,  
 WOBURN, MA 01801

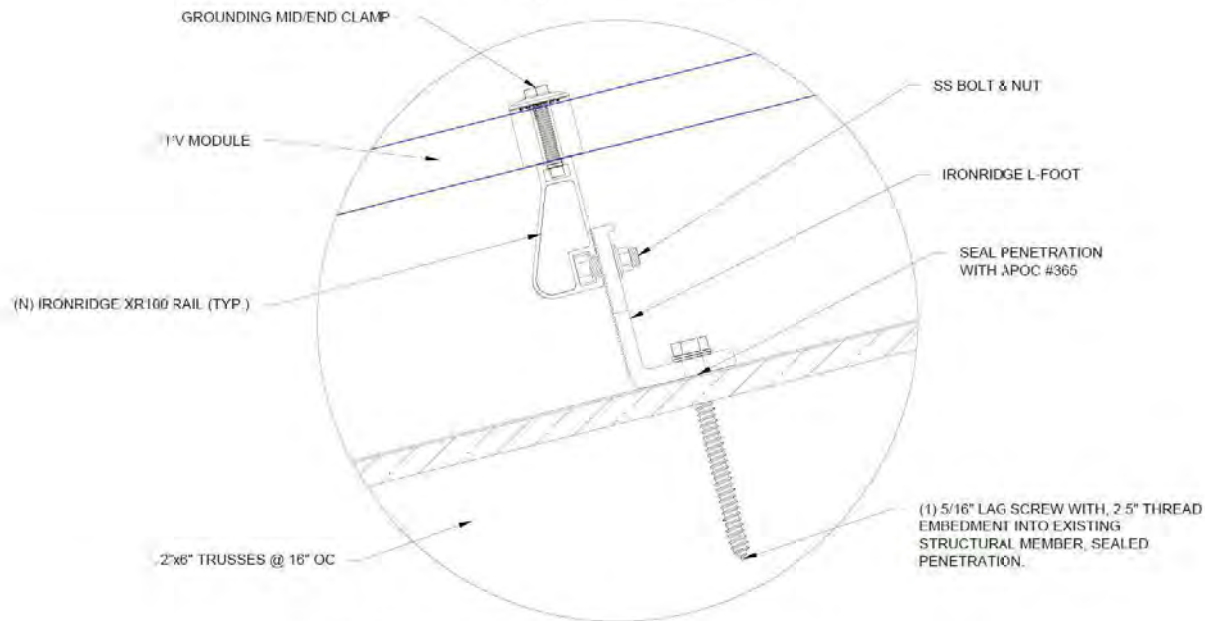
SHEET NAME  
 ROOF PLAN & MODULES

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 S-102



**1 | ATTACHMENT DETAIL**  
S-103 | SCALE: 1" = 1' - 0"



**2 | ATTACHMENT DETAIL (ENLARGED SECTION VIEW)**  
S-103 | SCALE: 1" = 2"

**Castillo Engineering**

ESTABLISHED 1978  
**CASTILLO ENGINEERING SERVICES, LLC**  
OSHA # 23547  
 820 N. WYOMING ROAD,  
 SUITE 350,  
 MAITLAND, FL 32751  
 TEL: (407) 299-2878

COPYRIGHTED BY  
 CASTILLO ENGINEERING SERVICES, LLC

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER

Ermocrate  
 S Castillo  
 2021.03.09 13:21:43  
 05:00

PROJECT NAME

DHL MOBILE  
 0.96KW PV SYSTEM

12 CABOT RD,  
 WOBURN, MA 01801

SHEET NAME

STRUCTURAL  
 ATTACHMENT  
 DETAILS

SHEET SIZE

ANSI B  
 11" X 17"

SHEET NUMBER

S-103



Risk Category	I
Wind Speed ASD (mph)	120
Exposure Category	C
Mean Roof Height (ft)	15
Roof Slope (degrees)	15
Module Area (sq ft)	20
Ground Snow Load (psf)	50
Dead Load (psf)	3
Exposure Factor (C <sub>e</sub> )	1.0
Temperature Factor (C <sub>t</sub> )	1.0
Importance Factor (I <sub>s</sub> )	1.0
Slope Factor (C <sub>s</sub> )	0.91
Sloped Roof Snow Load (psf)	31.85
Kzt	1
Height Adjustment Factor, λ	1.21

Roof Zone	Pnet (30)	
1	13.6	-23
2	13.6	-38
3	13.6	-57.1

$$P_{net} = [AK]_{z:} P_{net}(30)$$

Roof Zone	Pnet (psf)	
1	34.29	-27.83
2	34.29	-45.98
3	34.29	-69.091

Roof Slope Calculator		
Rise	Run	Slope (°)
3	12	14.0

Maximum Uplift per *fastener <b>Wind Zone 1 (lbf)</b>	306.1
Per American Wood Council - NDS Max Withdraw Load for 5/16" LAG with 2.5" Embedment	476

\*Roof attachments w 2 rails at: 48 in O/C

Maximum Uplift per *fastener <b>Wind Zone 2 (lbf)</b>	337.2
Per American Wood Council - NDS Max Withdraw Load for 5/16" LAG with 2.5" Embedment	476

\*Roof attachments w 2 rails at: 32 in O/C

Maximum Uplift per *fastener <b>Wind Zone 3 (lbf)</b>	253.3
Per American Wood Council - NDS Max Withdraw Load for 5/16" LAG with 2.5" Embedment	476

\*Roof attachments w 2 rails at: 16 in O/C

780 CMR: STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

16.00: continued

City/Town	SNOW LOADS		BASIC WIND SPEED, V <sub>nat</sub> (mph)			SEISMIC PARAMETERS (g)	
	Ground Snow Load, P <sub>g</sub> (psf)	Minimum Flat Roof Snow Load, P <sub>f</sub> (psf)	Risk Category I	Risk Category II	Risk Category III or IV	S <sub>1</sub>	S <sub>2</sub>
W. Stockbridge <sup>2</sup>	40	40	105	115	120	0.169	0.066
W. Tinbury	25	25	134	140	154	0.141	0.052
Westborough	50	35	115	125	136	0.186	0.066
Westfield	40	35	107	118	125	0.172	0.065
Westford	50	35	112	123	133	0.223	0.072
Westhampton	50	40	105	116	122	0.170	0.066
Westminster	60	35	109	120	130	0.194	0.069
Weston	40	35	116	126	137	0.207	0.069
Westport	30	30	128	139	149	0.172	0.059
Westwood	40	35	119	129	140	0.196	0.066
Weymouth	35	30	121	131	142	0.206	0.067
Whately	50	35	105	116	122	0.171	0.067
Whitman	35	30	123	133	144	0.194	0.064
Williamsham	35	35	110	121	130	0.173	0.065
Williamsburg	50	40	105	116	121	0.170	0.067
Williamstown <sup>1</sup>	50	40	105	115	120	0.176	0.070
Wilmington	50	30	115	125	136	0.233	0.073
Winchendon	60	35	107	117	125	0.197	0.071
Winchester	40	30	116	126	137	0.224	0.071
Windsor <sup>2</sup>	60	40	105	115	120	0.169	0.067
Winthrop	40	30	118	129	140	0.222	0.070
Woburn	50	30	116	126	137	0.226	0.071
Worcester	50	35	114	124	134	0.180	0.066
Worthington	60	40	105	115	120	0.169	0.067
Wrentham	40	35	120	130	141	0.184	0.064
Yarmouth	30	25	132	140	152	0.149	0.054

NOTES:

- The design flat roof snow load shall be the larger of the calculated flat roof snow load using P<sub>g</sub> and the value of P<sub>f</sub> listed in this table.
- Special Wind Region. Local conditions may cause higher wind speeds than the tabulated values. See ASCE/SEI 7.

**Castillo Engineering**  
 ESTABLISHED 1988  
 CASTILLO ENGINEERING SERVICES, LLC  
 204 BRIDGE  
 820 N. WIMORE ROAD,  
 SUITE 250,  
 MATLAND, FL 32751  
 TEL: (407) 268-2879

COPYRIGHTED BY  
 CASTILLO ENGINEERING SERVICES, LLC

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER

**Emigrate s E Castillo**  
 2021.03.0  
 9 13:22:06

PROJECT NO: 05100

**DHL MOBILE**  
**0.96KW PV SYSTEM**

12 CABOT RD,  
 WOBURN, MA 01801

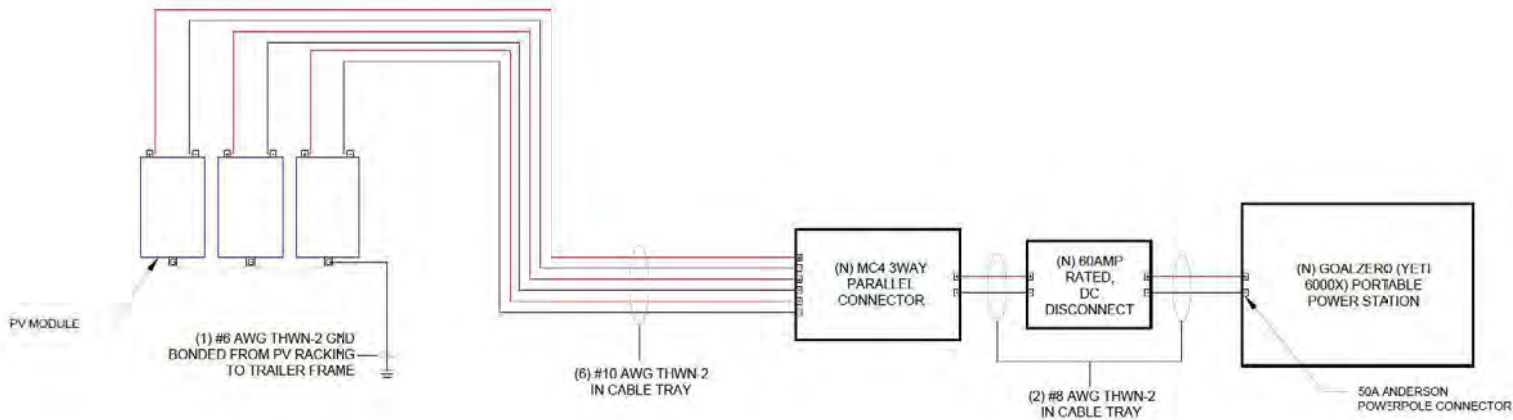
SHEET NAME  
 STRUCTURAL CALCULATIONS

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 S-104

SOLAR ARRAY (0.96 KW-DC-STC)  
 (03) SERAPHIM SOLAR SEG 5MH-320WB (20W) MODULES  
 (01) BRANCH OF 3 MODULES

**NOTE:**  
 1. SUBJECT PV SYSTEMS HAS BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE NEC 2017, AND THOSE SET FORTH BY THE MASSACHUSETTS DEPARTMENT OF ENERGY RESOURCES, INCLUDING MAXIMUM NUMBER OF MODULE STRINGS, MAXIMUM NUMBER OF MODULES PER STRING, MAXIMUM OUTPUT, MODULE MANUFACTURER AND MODEL NUMBER, INVERTER MANUFACTURER AND MODEL NUMBER, AS APPLICABLE.  
 2. SYSTEM DESIGNED PER NEC 710 AND 7-2.



**Castillo Engineering**  
 REGISTERED PROFESSIONAL ENGINEER  
 CASTILLO ENGINEERING SERVICES, LLC  
 00A # 25441  
 600 N. WYOMORE ROAD,  
 SUITE 200,  
 MANTLAND, FL 32751  
 TEL: (407) 296-9101

COPYRIGHTED BY  
 CASTILLO ENGINEERING SERVICES, LLC

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER

Emocrate  
 s E Castillo  
 2021.03.0  
 9 13:22:15

PROJECT # 05100

**DHL MOBILE**  
**0.96KW PV SYSTEM**  
 12 CABOT RD,  
 WOBURN, MA 01801

SHEET NAME  
**ELECTRICAL LINE DIAGRAM**

SHEET SIZE  
**ANSI B  
 11" X 17"**

SHEET NUMBER  
**E-101**

**1** | **ELECTRICAL LINE DIAGRAM**  
 SCALE: NTS

**DC CONDUCTOR AMPACITY CALCULATIONS:  
ARRAY TO MC4 3 WAY CONNECTOR**

EXPECTED WIRE TEMP (In Celsius)	34*
TEMP. CORRECTION PER 310.15(B)(2)(a)	0.96
NO. OF CURRENT CARRYING CONDUCTORS	2
CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a)	1.0
CIRCUIT CONDUCTOR SIZE	10 AWG
CIRCUIT CONDUCTOR AMPACITY	40A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B)	15.66A
1.25 X 1.25 X ISC	
DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC 310.15(B)(2)(a)	38.4A
TEMP. CORRECTION PER 310.15(B)(2)(a) X	
CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X	
CIRCUIT CONDUCTOR AMPACITY	
Result should be greater than (15.66A) otherwise increase the size of the conductor and its ampacity	

**FROM MC4 3WAY CONNECTOR TO POWER STATION**

EXPECTED WIRE TEMP (In Celsius)	34*
TEMP. CORRECTION PER 310.15(B)(2)(a)	0.96
NO. OF CURRENT CARRYING CONDUCTORS	2
CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a)	1.0
CIRCUIT CONDUCTOR SIZE	8 AWG
CIRCUIT CONDUCTOR AMPACITY	55A

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B)	46.97A
3 X 1.25 X 1.25 X ISC	
DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC 310.15(B)(2)(a)	52.80A
TEMP. CORRECTION PER 310.15(B)(2)(a) X	
CONDUIT FILL CORRECTION PER NEC 310.15(B)(3)(a) X	
CIRCUIT CONDUCTOR AMPACITY	
Result should be greater than (46.97A) otherwise increase the size of the conductor and its ampacity	

**ELECTRICAL NOTES**

1. ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
2. ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT. THE TERMINALS ARE RATED FOR 75 DEGREES °C.
3. THE WIRES ARE SIZED ACCORDING TO NEC 110.14.
4. WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
5. WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26
6. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
7. WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
8. ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
9. MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
10. MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
11. THE POLARITY OF THE GROUNDED CONDUCTORS IS NEGATIVE.
12. UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT THE SERVICE ENTRANCE.
13. MODULES CONFORM TO AND ARE LISTED UNDER UL 1703.
14. RACKING CONFORMS TO AND IS LISTED UNDER UL 2703.
15. CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC ARTICLE 300.6 (C) (1) AND ARTICLE 310.10 (D).
16. CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC ARTICLE 310.10 (C).

POWER STATION SPECIFICATIONS	
MANUFACTURER	GOAL ZERO
MODEL #	YETI 6000X
NOMINAL AC POWER	6 KW
NOMINAL OUTPUT VOLTAGE	110V
NOMINAL OUTPUT CURRENT	16.5A

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER	SERAPHIM
MODEL #	SEC-6MB-320WB
PMAX	320W
VMP	33.0V
IMP	7.70A
VOC	40.6V
ISC	10.02A
MODULE DIMENSION	64.57"L x 39.06"W x 1.37"D (In Inch)

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
0.80	4-6
0.70	7-9
0.50	10-20

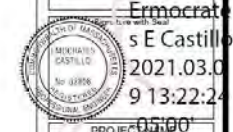


CASTILLO ENGINEERING SERVICES, LLC  
 604 F 2546  
 1020 N. WYOMING, 32043,  
 SUITE 200,  
 MAITLAND, FL 32751  
 TEL: (407) 298-0772

COPYRIGHTED BY  
 CASTILLO ENGINEERING SERVICES, LLC

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER



Ermostrate  
 s E Castillo  
 2021.03.0  
 9 13:22:24  
 05:00'

PROJECT NAME  
**DHL MOBILE  
 0.96KW PV SYSTEM**  
 12 CABOT RD,  
 WOBURN, MA 01801

SHEET NAME  
**WIRING  
 CALCULATIONS**

SHEET SIZE  
**ANSI B  
 11" X 17"**

SHEET NUMBER  
**E-102**

**WARNING: PHOTOVOLTAIC POWER SOURCE**

LABEL LOCATION:  
CONDUIT, CABLE TRAY  
(ADDITIONAL EQUIPMENT THAT  
CONTAINS PV SOURCE WIRES  
(PER CODE: NEC690.31(G)(3))

**RAPID SHUTDOWN SWITCH FOR SOLAR PV SYTEM**

LABEL LOCATION:  
DC DISCONNECT  
(PER CODE: NEC690.56(C)(3))

ADHESIVE FASTENED SIGNS:  
• THE LABEL SHALL BE SUITABLE FOR THE ENVIRONMENT WHERE IT IS INSTALLED.  
• WHERE REQUIRED ELSEWHERE IN THIS CODE, ALL FIELD APPLIED LABELS, WARNINGS, AND MARKINGS SHOULD COMPLY WITH ANSIZ535.4 (NEC 110.21(B) FIELD MARKING).  
• ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT (IFC 605.11.1.3)

**PHOTOVOLTAIC SYSTEM DC DISCONNECT RATED DC OPERATING CURRENT 29.1 AMPS DC NOMINAL OPERATING VOLTAGE 33.0 VOLTS**

LABEL LOCATION:  
DC DISCONNECT  
(PER CODE: NEC690.54)

POWER STATION

MAXIMUM SYSTEM VOLTAGE (VOC)	47.10	V
MAXIMUM CIRCUIT CURRENT (Isc)	46.97	A
MAXIMUM RATED OUTPUT OF DC TO DC CONVERTER (Idc)	N/A	A

LABEL LOCATION:  
POWER STATION  
(PER CODE: NEC690.53)

**SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN**

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN CONDUCTORS OUTSIDE THE ARRAY. CONDUCTORS WITHIN THE ARRAY REMAIN ENERGIZED IN SUNLIGHT



LABEL LOCATION:  
DC DISCONNECT  
(PER CODE: NEC 690.56(C)(1)(a), IFC 605.11.3.1(f))



DESIGNED TO PERMIT:  
CASTILLO ENGINEERING SERVICES, LLC  
CORPORATE  
620 N. WYOMORE ROAD, SUITE 200  
MAYLAND, PA 15751  
TEL: (412) 266-0025

COPYRIGHTED BY CASTILLO ENGINEERING SERVICES, LLC

REVISIONS

DESCRIPTION	DATE	REV

PROJECT INSTALLER

Ermocrate  
s E Castillo  
2021.03.0  
9 13:22:4  
05:00



PROJECT NAME:  
DHL MOBILE  
0.96KW PV SYSTEM  
12 CABOT RD,  
WOBURN, MA 01801

SHEET NAME  
SYSTEM LABELING

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
E-103

SEG-6MB-(300-320)W/B  
SERIES 6 INCH 60 CELLS



Safety



Resistance to salt mist corrosion at your request



Resistance to ammonia consistent with your request



Product is certified by UL 1703

Reliability



Anti-PID products using advanced module technology



World 1st company to pass "Thresher Test" and "On-site Power Measurement" Validator verifications



Serialize products

Performance



High efficiency and enhanced module durability



Outstanding power output capability at low irradiance

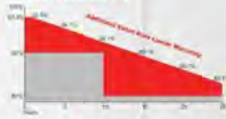


Withstand up to 2400hPa wind and 5400hPa snow loads (EC) long lasting

300-320w



WARRANTY



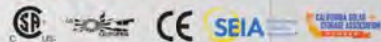
15 YEARS Guarantee on product material and workmanship

25 YEARS Linear power output warranty

MANAGEMENT SYSTEM

ISO 9001: Quality management system  
ISO 14001: Standard for environmental management system  
OHSAS 18001: International standard for occupational health and safety assessment system

PRODUCT CERTIFICATES



INSURANCE



SEG-6MB-(300-320)W/B SERIES 6 INCH 60 CELLS

W WHITE BACKSHEET / SILVER FRAME PRODUCTS  
WB WHITE BACKSHEET / BLACK SILVER FRAME PRODUCTS  
BWB BLACK BACKSHEET / WHITE SILVER FRAME PRODUCTS  
BB BLACK BACKSHEET / SILVER FRAME PRODUCTS

Electrical Characteristics(ETC)

Module Type	SEG-6MB-300W (SEG-6MB-300W)	SEG-6MB-300W (SEG-6MB-300W)	SEG-6MB-300W (SEG-6MB-300W)	SEG-6MB-300W (SEG-6MB-300W)	SEG-6MB-300W (SEG-6MB-300W)
Maximum Power at STC $P_{max}$ (W)	300	306	310	316	320
Open Circuit Voltage $V_{oc}$ (V)	36.7	36.8	37.1	37.3	37.5
Short Circuit Current $I_{sc}$ (A)	9.95	9.75	9.82	9.92	10.02
Maximum Power Voltage $V_{mp}$ (V)	31.1	32.1	32.6	33.6	33.9
Maximum Power Current $I_{mp}$ (A)	9.35	9.45	9.51	9.61	9.70
Module Efficiency ETC- $\eta_{m}$ (%)	18.44	18.75	19.06	19.38	19.67
Power Tolerance (W)	(+4.3%)				
Maximum System Voltage (V)	1500 or 1500(VL)				
Maximum Series Fuse Rating (A)	20				
Fire Performance	Type2 or Type(VL)				

Electrical Characteristics(NCCT)

Module Type	SEG-6MB-300W (SEG-6MB-300W)	SEG-6MB-300W (SEG-6MB-300W)	SEG-6MB-300W (SEG-6MB-300W)	SEG-6MB-300W (SEG-6MB-300W)	SEG-6MB-300W (SEG-6MB-300W)
Maximum Power at NCCT $P_{max}$ (W)	225	228	230	234	238
Open Circuit Voltage $V_{oc}$ (V)	36.7	36.8	37.1	37.3	37.5
Short Circuit Current $I_{sc}$ (A)	7.62	7.91	7.98	8.08	8.14
Maximum Power Voltage $V_{mp}$ (V)	30.3	30.4	30.7	30.9	31.2
Maximum Power Current $I_{mp}$ (A)	7.38	7.44	7.50	7.58	7.64

Temperature Characteristics

Power Temperature Coefficient	-0.36 %/°C
V <sub>oc</sub> Temperature Coefficient	-0.35 %/°C
I <sub>sc</sub> Temperature Coefficient	+0.05 %/°C
Operating Temperature	-40~+85 °C
Nominal Operating Cell Temperature (NOCT)	45±2 °C

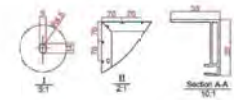
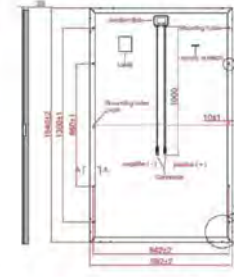
Packing Configuration

	1800x900x35mm(68.5x35.4x1.37 inch)	1800x900x35mm(68.5x35.4x1.37 inch)
Container	20'GP	40'GP
Pieces per Pallet	30	30
Pieces per Container	12	36
Pieces per Container	360	360

Mechanical Specifications

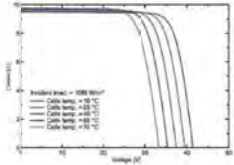
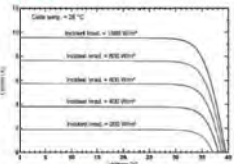
External Dimensions	1840 x 902 x 35 mm(72.44 x 35.51 x 1.37 inch)
Weight	17.5 kg(38.6 lbs)
Solar Cells	PERC Monocrystalline, 186 (Power efficient)
Frame Glass	3.2 mm All-weather tempered glass, low iron
Frame	Anodized aluminum alloy
Junction Box	IP65
Cable Color	12000h ultra-violet resistant
Connector	MC4 Compatible

STC: Irradiance 1000 W/m<sup>2</sup>, module temperature 25°C, AM1.5  
NOCT: Irradiance 800 W/m<sup>2</sup>, ambient temperature 20°C, 1m/s wind speed, 1m/s  
Specifications are subject to change without further notification.



\* All Dimensions in mm  
\* The above drawing is a practical representation of the product.

I/V Curve



CASTILLO ENGINEERING SERVICES, LLC  
620 N. WYMORE ROAD, SUITE 200  
MAITLAND, FL 32751  
TEL: (407) 298-2878

COPYRIGHTED BY CASTILLO ENGINEERING SERVICES, LLC

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER

Signature with Seal

PROJECT NAME  
DHL MOBILE  
0.96KW PV SYSTEM  
12 CABOT RD.,  
WOUBURN, MA 01801

SHEET NAME  
DATA SHEET

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
DS-01

Specifications are subject to change without notification SEG-DS-EN-3022V1.0 © Copyright 2019 Seraphim

SERAPHIM ENERGY GROUP, INC.

Specifications are subject to change without notification SEG-DS-EN-3022V1.0 © Copyright 2019 Seraphim

SERAPHIM ENERGY GROUP, INC.

## GOAL ZERO YETI 6000X TECHNICAL SPECIFICATIONS

### Technical Specifications

Charge times	
Maximum input (standard)	11 hrs
Goal Zero Ranger 300	24-48 hrs
Goal Zero Boulder(3X) 200 Briefcase	12-14 hrs
Goal Zero Boulder (6X) 200 Briefcase	11-12 hrs
Battery:	
Cell Chemistry	Li-ion NMC
Pack Capacity	6010Wh (10.8V, 557Ah)
Single Cell Equivalent: Capacity	1668Ah @ 3.6V
Lifecycles	500 Cycles to 80% capacity (Discharge rate: 1C, Full charge/discharge, Temp: 25C)
Shelf-life	Charge every 3-6 months
Management System	MPPT charge controller
Ports:	
USB-A Port (output)	5V, up to 2.4A (12W max), regulated
USB-C Port (output)	5 - 12V, up to 3.0A (18W max), regulated
USB-PD Port (output)	5 - 20V, up to 3.0A (60W max), regulated
6mm Port (output, 6mm)	12V, up to 10A (120W max), regulated
12V Car Port (output)	12V, up to 13A (160W max), regulated
12V Power Pole port (output)	12V, up to 30A (360W max), regulated
120V AC Inverter (output, pure sine wave)	120VAC 60Hz, 16.5A (2000W, 3500W surge)
230V AC Inverter (output, pure sine wave) UNIVERSAL OR AUSTRALIA (TYPE 1) AC PLUGS	230VAC 50Hz, 8.5A (2000W, 3500W surge)
Charging Port (input, 8mm)	14-50V, up to 10A (120W max)
Power Pole Charging Port (input)	14-50V, up to 50A (600W max)
Expansion Module port	Covered port under the lid. To be used with Goal Zero expansion modules only.

10

### Technical Specifications

WiFi:	
RF Certification	FCC/CE/IC/TELEC/KCC/SRRC/NCC
Protocols	802.11 b/g/n (802.11n up to 150 Mbps)
Frequency Range	2.4-2.5 GHz
Bluetooth:	
Protocols	Bluetooth Low Energy
General:	
Weight (Yeti only)	97.35 lbs (44.16 kg)
Weight (cart only)	106.1 lbs (48.11 kg)
Dimensions (Yeti only)	15.25 x 10.23 x 17 in (38.74 x 25.98 x 43.2 cm)
Dimensions (Yeti & Roll Cart)	20.5 x 14.6 x 19.01 in (51.99 x 36.98 x 48.28 cm)
Operating Usage Temp.	32-104 F (0-40 C)
Certs	RoHS REACH CE FCC
Warranty	24 months

11



DESIGNED TO PERMIT  
**CASTILLO ENGINEERING SERVICES, LLC**  
 05480345  
 820 N. WYMORE ROAD,  
 SUITE 200  
 MAITLAND, FL 32751  
 TEL: (407) 299-5575

COPYRIGHTED BY  
**CASTILLO ENGINEERING SERVICES, LLC**

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER

Signature with Seal

PROJECT NAME

DHL MOBILE  
0.96KW PV SYSTEM

12 CABOT RD,  
WOBBURN, MA 01801

SHEET NAME

DATA SHEET

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

DS-02



Tech Brief

## XR Rail Family

### Solar Is Not Always Sunny

Over their lifetime, solar panels experience countless extreme weather events. Not just the worst storms in years, but the worst storms in 40 years. High winds capable of ripping panels from a roof, and snowfalls weighing enough to buckle a panel frame.

XR Rails are the structural backbone preventing these results. They resist uplift, protect against buckling and safely and efficiently transfer loads into the building structure. Their superior spanning capability requires fewer roof attachments, reducing the number of roof penetrations and the amount of installation time.



#### Force-Stabilizing Curve

Sloped roofs generate both vertical and lateral forces on mounting rails which can cause them to bend and twist. The curved shape of XR Rails is specially designed to increase strength in both directions while resisting the twisting. This unique feature ensures greater security during extreme weather and a longer system lifetime.

#### Compatible with Flat & Pitched Roofs



XR Rails are compatible with FlashFoot and other pitched roof attachments.



IronRidge offers a range of tilt leg options for flat roof mounting applications.

#### Corrosion-Resistant Materials

All XR Rails are made of marine-grade aluminum alloy, then protected with an anodized finish. Anodizing prevents surface and structural corrosion, while also providing a more attractive appearance.



## XR Rail Family

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.



XR10

XR10 is a sleek, low-profile mounting rail, designed for regions with light or no snow. It achieves 6 foot spans, while remaining light and economical.

- 6' spanning capability
- Moderate load capability
- Clear anodized finish
- Internal splices available



XR100

XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans up to 5 feet.

- 8' spanning capability
- Heavy load capability
- Clear & black anodized finish
- Internal splices available



XR1000

XR1000 is a heavyweight among solar mounting rails. It's built to handle extreme climates and spans 12 feet or more for commercial applications.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish
- Internal splices available

## Rail Selection

The following table was prepared in compliance with applicable engineering codes and standards. Values are based on the following criteria: ASCE 7-10, Roof Zone 1, Exposure B, Roof Slope of 7 to 27 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed span tables and certifications.

Snow (PSF)	Wind (MPH)	Rail Span					
		4'	5'-4"	6'	8'	10'	12'
None	100						
	120						
	140	XR10		XR100		XR1000	
	160						
10-20	100						
	120						
	140						
30	100						
	160						
40	100						
	160						
50-70	160						
80-90	160						

Tech Brief



DESIGNED BY PERMIT  
**CASTILLO ENGINEERING SERVICES, LLC**  
 COA # 2344  
 820 N. WINDYBROOK ROAD,  
 SUITE 200  
 MAITLAND, FL 32751  
 TEL: (407) 298-2375

COPYRIGHTED BY  
 CASTILLO ENGINEERING SERVICES, LLC

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER

Signature with Seal

PROJECT NAME  
**DHL MOBILE  
 0.96KW PV SYSTEM**  
 12 CABOT RD,  
 WOBURN, MA 01801

SHEET NAME  
**DATA SHEET**

SHEET SIZE  
**ANSI B  
 11" X 17"**

SHEET NUMBER  
**DS-03**



# AP 365

## ETERNA-FLASH® ULTRA ALL WEATHER RUBBERIZED FLASHING CEMENT DATA SHEET

**COMPLIANCE:** Exceeds performance requirements of ASTM D3409 and ASTM D4586, TYPE I, Miami-Dade County Control Product Approved.

**DESCRIPTION:** APOC® 365® ETERNA-FLASH® All Weather Rubberized Flashing Cement is a high performance flashing cement specially formulated for the professional roofer. APOC 365 is an extremely flowable, rubber reinforced mastic that provides superior elasticity and adhesion to wet surfaces. This product contains special adhesion promoters that allow 365 to bond underwater in the pouring rain. APOC 365 Eterna-Flash is manufactured with select asphalt, rubber, solvent and fibers to provide an "EZ Spread" and highly durable patching compound for use under the harshest weather conditions. APOC 365 is the ultimate repair product and can be used to patch spills, seams, cracks and holes in bonded gravel, mineral surface cap sheet, smooth surface asphalt and shingle roofs. It will seal areas around chimneys, vent pipes, gravel guards, down spouts, cracks in concrete and many other areas.

**PREPARATION:** Download the APOC APP for detailed installation instructions, videos, tips and specifications. **Completely read all application instructions and check weather conditions prior to starting any work.** All surfaces must be completely clean, have proper drainage and be free of surface rust, dirt and any other foreign matter. For longivity and UV protection, it is recommended to prime repairs with the application of a reflective coating after they have cured for 30 - 90 days. **DO NOT HEAT OR THIN** products. Not for use on single ply membranes.

**FOR BEST RESULTS:** Apply when surface temperatures are between 40 °F and 120 °F. On vertical surfaces in hot temperatures, product should be applied in thin layers. In colder weather, product should be stored in heated room (65 °F to 80 °F) at least 24 hours prior to application. Product formulated to be used year-round. For longer lasting repairs, use APOC Rubberized, Polymer, Acrylic or Moisture cured technologies.

**FALL PROTECTION WARNING:** Always use personal fall protection devices and follow procedures in accordance with OSHA and local regulatory requirements when walking or working on roofs. Use safety equipment such as tie-offs, safety lines, lany harnesses, toe boards and ladders. Daily dump in wet conditions, as well as certain knives can result in slippery surfaces and create a fall hazard. Always be cognizant of where you are in relation to your surroundings, including but not limited to the edge of the roof, 3 y projections, skylights and any other subjects which could cause you to slip or fall. Falling from a roof can result in serious harm or death.

**APPLICATION:** For exterior use only. Protective clothing, gloves and eyewear should be used during application of these products. Apply with a trowel or putty knife. Work material to an even consistency over and into the area to be repaired. Using the "Seamless" method, apply cement 1/8" thick, two or three inches beyond the problem area. Next, reinforce the repair by embedding a layer of APOC reinforcing fabric into the repair. Knives later into cement ensuring it is fully saturated from the bottom side up. Finally, cover the joint with an additional layer of cement. Form a finished edge with cement like joint chimneys, vent pipes, and other projections meet the roof line.

**COVERAGE RATE:** Approximately 12.8 sq. ft. per gallon when applied 1/8" thick.  
**CLEAN-UP:** Clean tools with paint thinner or mineral spirits.

©2018 Gardner-Gibson, Inc.  
Manufactured by / Fabricado por:  
Gardner-Gibson, Inc.  
P.O. Box 5449, Tampa, FL 33675

See SDS for more info

**TYPICAL PHYSICAL & PERFORMANCE CHARACTERISTICS:**

Weight Per Gallon	8.5 - 9.0 lbs.
Adhesion Underwater	Excellent
Consistency	Trowel
Application Temperatures	40 F - 120 F
Clean-up Tools	Paint Thinner, Mineral Spirits

**Approx. Shipping Weights:** (nets All items, weights would contained)

10 fl. oz. tube (295 mL)	1 lb.
1 gallon (3.78L)	30 lbs.
(4) 1 gallon containers/case	41 lbs.
3 gallons (11.3 L)	33 lbs.

**VOC: 300 g/L (1 galatory)**

**HANDLING PRECAUTIONS:** Store product in the cargo area of vehicle, and secure on top of 6 mil plastic (lining to prevent damage due to accidental spills or loosening of lids. Product safety information required for safe use is not included. Before handling, read product safety data sheets and container labels for safe use and for physical and health hazard information. Safety Data Sheets are available on the APOC website at [www.apoc.com](http://www.apoc.com), the APOC APP, by contacting APOC at [info@apoc.com](mailto:info@apoc.com) or calling (813) 248-7101.

**LIMITED WARRANTY AND DISCLAIMER:** To the best of our knowledge, the technical data contained herein is true and accurate at the date of issuance and is subject to change without prior notice. User must contact APOC to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied.

APOC Roofing Systems, Inc. (herein "APOC") hereby warrants to the original purchaser, contingent upon original proof of purchase, that this product will be free from any and all manufacturing defects that may materially and adversely affect the product's performance for a period of one (1) year from the date of original purchase ("Warranty Period"). Product must be applied in accordance with the proper application procedures, not for the intended use as stated on the label. Proper preparation and strong conditions must be observed to achieve correct results. Should a manufacturing defect materially and adversely affect the product's performance, APOC shall, within its sole discretion and upon receipt of Purchaser's timely written notice within the Warranty Period, provide replacement product(s) or refund the purchase price of the defective product. THIS LIMITED WARRANTY IS PURCHASER'S SOLE AND EXCLUSIVE WARRANTY AND REPLACES ALL OTHER WARRANTIES, CONDITIONS, REPRESENTATIONS AND GUARANTEES, WHETHER EXPRESS OR IMPLIED, WHETHER BY STATUTE, AT LAW OR IN EQUITY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. This limited warranty does not cover labor or installation costs, water damage, consequential damages or incidental damages. Under no circumstances will APOC be liable for any amount in excess of the product purchase price. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Direct all warranty claims in writing along with original proof of purchase to APOC, c/o Warranty Claims Department, P.O. Box 5449, Tampa, FL 33675. The exclusive venue for any legal action arising out of the purchase of this product or this warranty shall be laid in a court of competent jurisdiction within Hillsborough County, Florida. Florida law shall govern. For additional Limited Warranty information, visit [www.apoc.com/pages/warranty](http://www.apoc.com/pages/warranty).

Gardner-Gibson, Inc. • P.O. Box 5449 • Tampa, Florida 33675-5449  
Phone: (813) 248-2101 • Fax (813) 248-6768 • [www.apoc.com](http://www.apoc.com)



F-18

REGISTERED TO PERFORM  
CASTILLO ENGINEERING SERVICES, LLC  
COA # 2834  
600 N. WYMORE ROAD, SUITE 200  
MAITLAND, FL 32751  
TEL: 407.289.2878

COPYRIGHTED BY CASTILLO ENGINEERING SERVICES, LLC

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT INSTALLER

Signature with Seal

PROJECT NAME  
**DHL MOBILE  
0.96KW PV SYSTEM**  
**12 CABOT RD,  
WOBURN, MA 01801**

SHEET NAME  
**DATA SHEET**

SHEET SIZE  
**ANSI B  
11" X 17"**

SHEET NUMBER  
**DS-04**



November 18, 2020

Aidan Syms - VP of Design & Manufacturing  
Flexetail LLC  
[aidan@flexetail.com](mailto:aidan@flexetail.com)  
17 Philmore rd  
Newton, Massachusetts 02458  
774.270.3240

**Subject: Temporary DHL Mobile Service Point for the City of Alexandria  
TAM Project No. 20679-W**

Attachments: a) Plans  
b) DOT Trailer Certificates  
c) Registrations

Dear Mr. Syms,

In accordance with your request, we have completed a review of the mobile DHL Trailer that will be placed on a temporary basis in Alexandria, Virginia. We were requested to review the trailer, placement, use, and applicable building codes for the mobile trailer.

**BACKGROUND:**

The DHL Mobile Service point is a steel framed structure built on a hydraulic steel commercial trailer. The super structure is composed of hollow structural steel tubes with cold formed steel infill studs and then sheathed with Zip Sheathing.

The commercial trailer is a Lifetime Lo Riser Model IPT4-516 Hydraulic Inclining Platform Trailer which has a load capacity of 10,000 lbs and weighs approximately 3,500 pounds. This trailer is manufactured and sold by a The Advance Metalworking Company in Illinois who states that the specific trailer meets all Federal Department of Transportation requirements for the trailer.

It is also our understanding that this trailer is currently registered and licensed with the Massachusetts Department of Transportation. License Plate number E33682 and VIN 1LPTD1627HKFEB035.

The projected floor plan of the trailers is approximately 140 square feet and has an interior space of 97 square feet when the wall thickness and wheel wells are accounted for.

## **LOADING AND CODE REVIEW:**

This structure will be parked for temporary events and the moved and stored like a normal trailer. While parked, it will be used for less than 180 days and therefore falls into the Temporary Structure's requirement of the Current Virginia Construction Code (2015) and the ICC International Building Code.

The construction of the building falls into category VB due to the combustible materials selected for the exterior sheathing per Chapter 6. For use group of Assembly similar to and exhibit gallery or is used for Mercantile, the more stringent occupant load is 30net area per occupants. This places the trailer at 5 occupants; as per Chapter 3 and Table 1004.1.1

Per chapter 31 section 31.03b structures that cover an area of over 120 square feet and an occupancy over 10 persons a building permit will be required. This useable space of the trailer is just under the 120 occupiable square feet and the maximum occupancy of the trailer is 5 persons. Therefore it appears that a location permit is not required for this structure, unless the authority having judication requires it for other reasons.

Due the temporary use of the structure design loads can be reduced per ASCE 7-10. A 10-year return period wind event results in an ultimate wind speed of 76 miles per hour, a similar sized permanent structure would result in an ultimate design wind speed of 115 mph. The change in forces of these two speeds is the temporary structure is less than half of the permanent loads.

## **CONCLUSIONS:**

1. Based on the stated DOT specification, the trailer registrations, trailer load capacity, type of superstructure construction, the temporary use and temporary design loads it is our opinion that structure as a whole can be considered as part of a manufactured system for road use and not a standard building.
2. Based on the useable space and occupant load it is our opinion that this structure falls outside the requirement of building permits per Temporary Structures Section 3103.1.2 in the 2015 Virginia Construction Code.
3. Based on the weight of the trailer combined with the calculated weight of the framing above and the fact the hydraulic pistons raise the trailer's wheels off the ground it is our opinion that the trailer is stable and will remain stationary under normal anticipated temporary structure wind and lateral load events when placed on level ground.

In the event of a known hurricane or major wind event, the mobile aspect of the trailer will result in the need to be relocated either indoors or anchored in a suitable storage location.

## **DISCLAIMERS:**

Our comments are limited to the conditions noted and those that were declared in this report. We make no claim either stated or implied that all conditions were evaluated, or that a detailed

analysis of the building or structure was performed. Should additional information be uncovered or made available, we retain the right to revise or supplement our report accordingly.

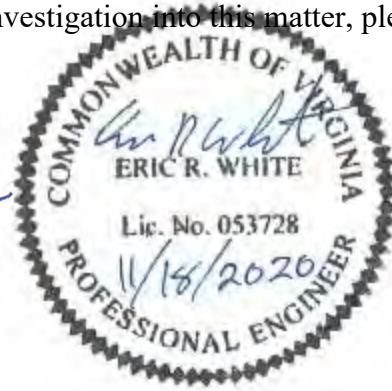
This report is furnished as privileged and confidential to the addressee. Release to any other company, concern, or individual is solely the responsibility of the addressee.

We appreciate the opportunity to provide professional services to you. If you have any questions or need additional information or investigation into this matter, please call us at (757) 564-4434.

Sincerely,



Eric R White PE  
Production Manager



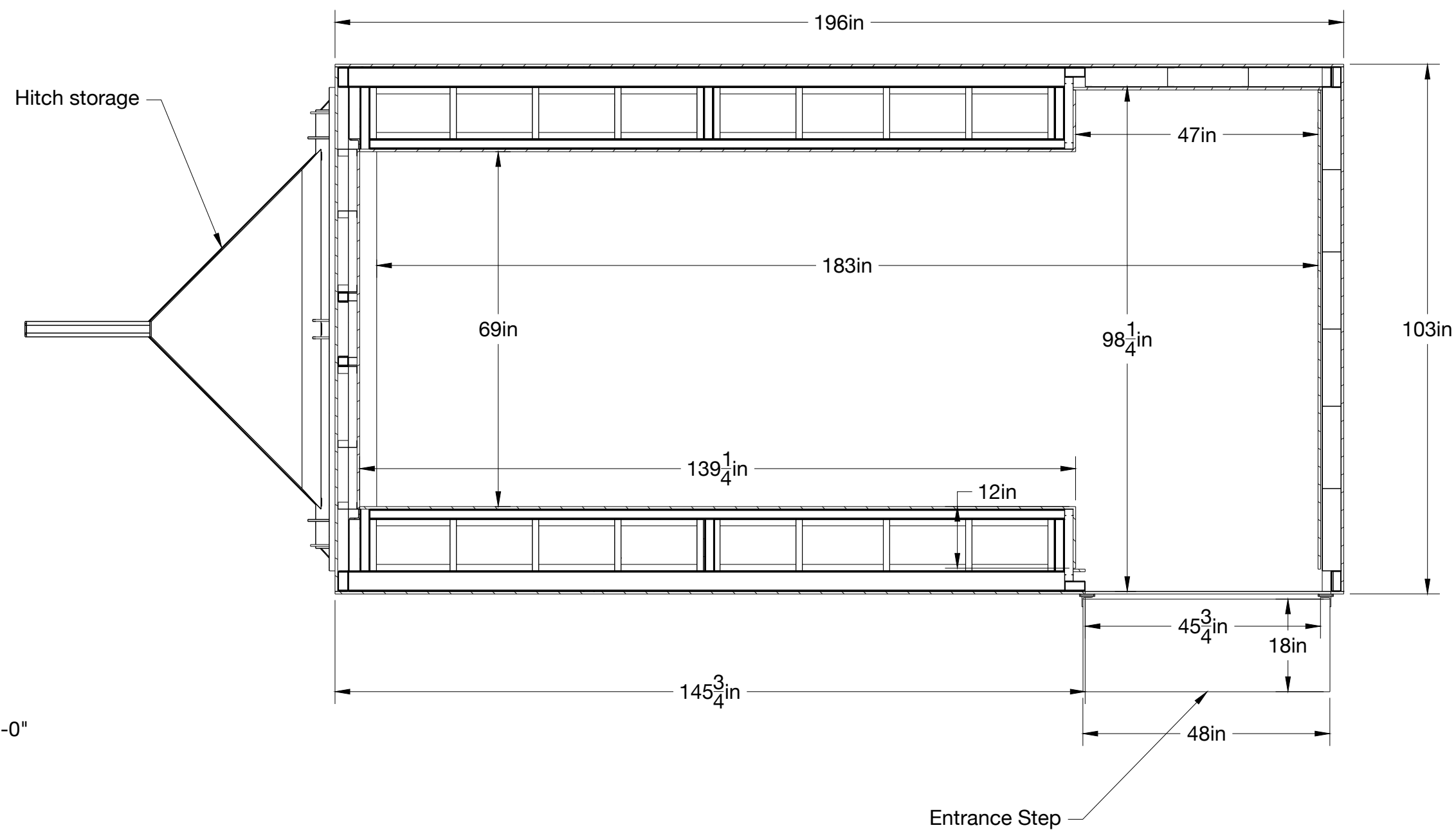
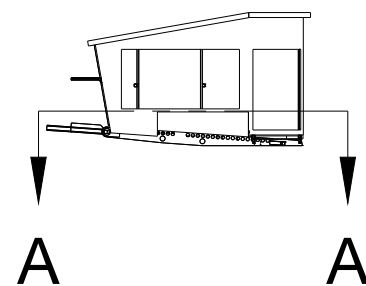
*Encl.*

DHL Mobile

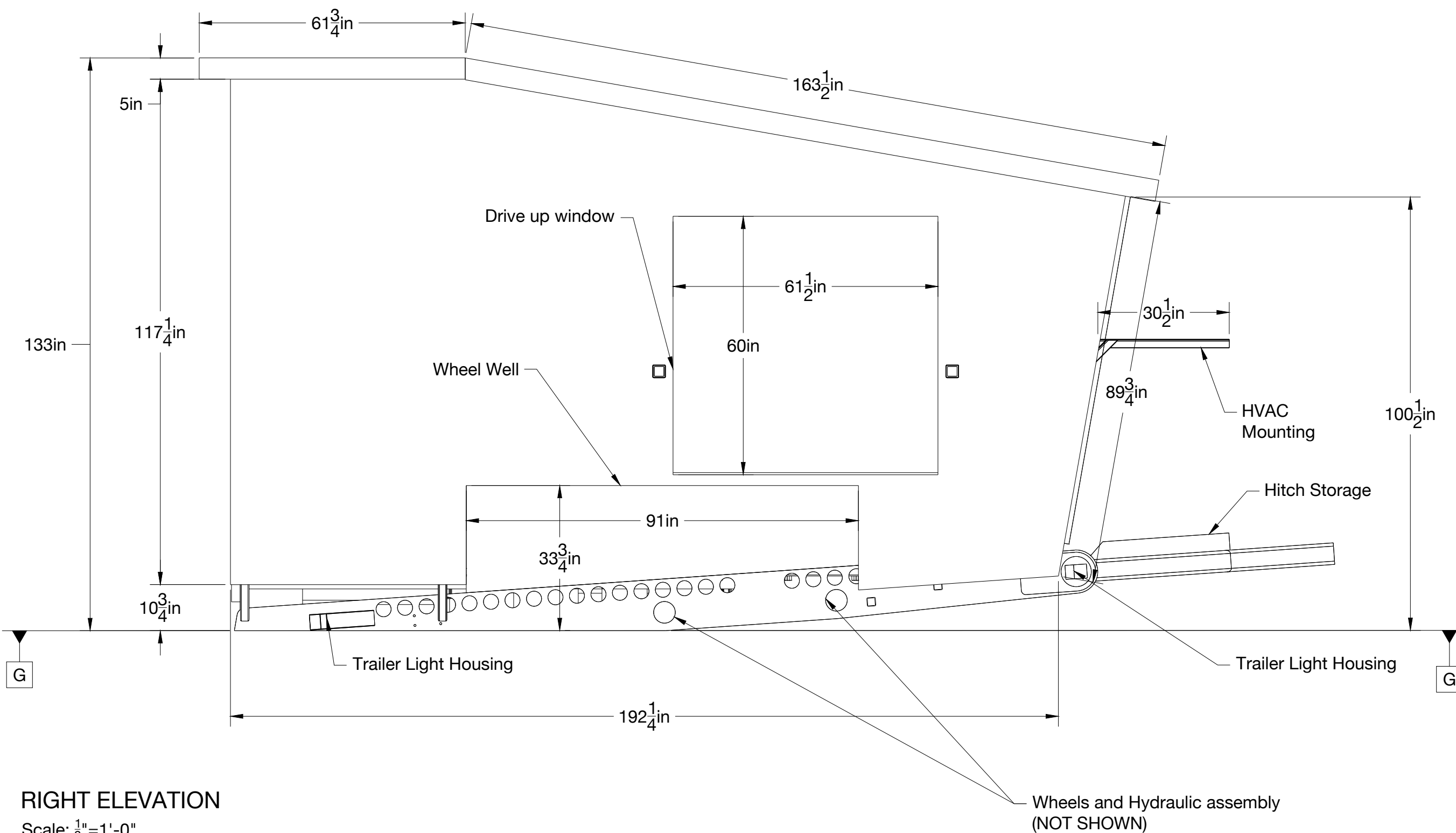
Notes:

Scale 1/16" = 1'-0"  
Structural Design

S101



PLAN  
Scale: 1/2" = 1'-0"



RIGHT ELEVATION

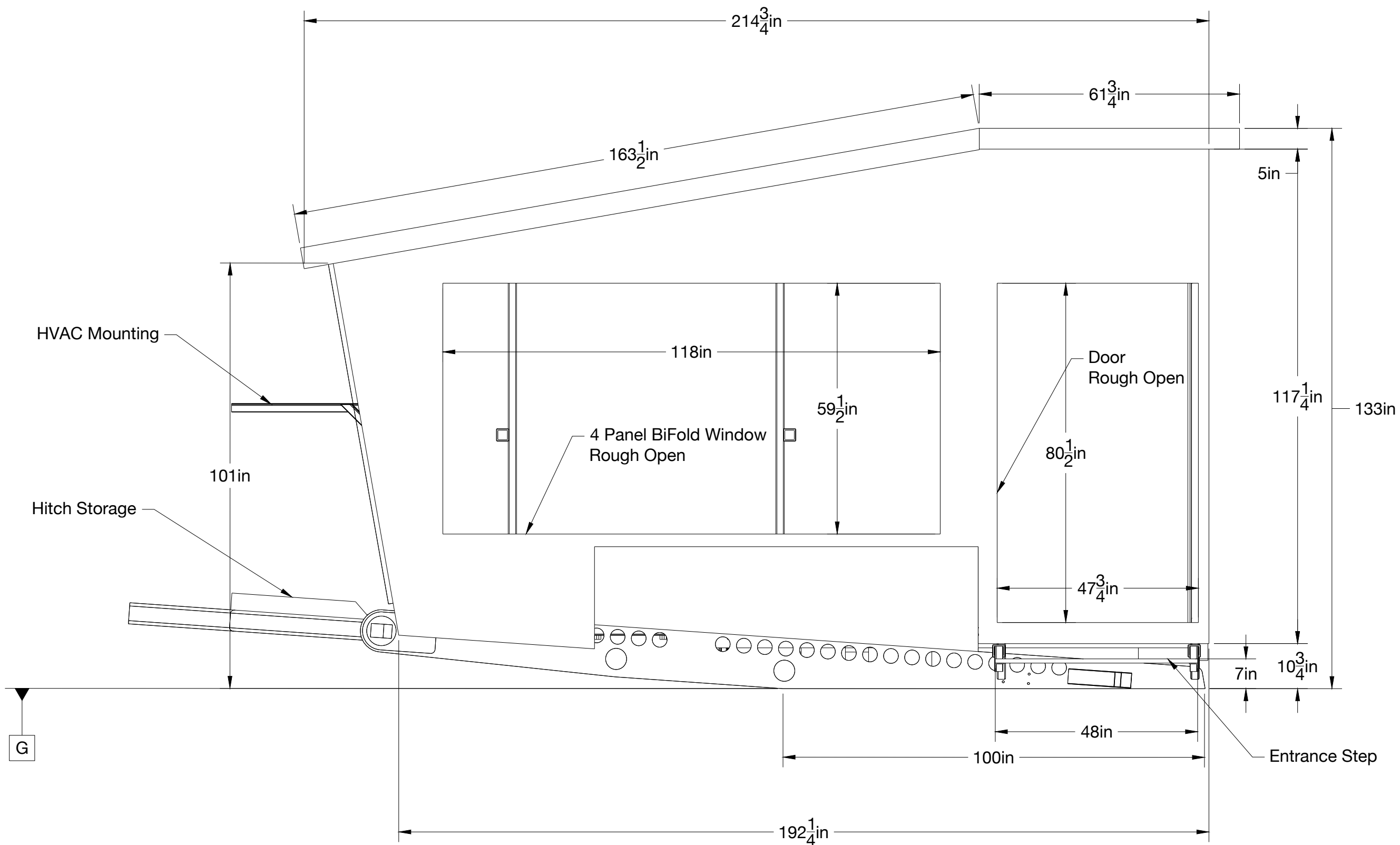
Scale: 1/2" = 1'-0"

Notes:

Scale 1/2" = 1'-0"

Structural Design

S201



HVAC Mounting

Hitch Storage

101in

214<sup>3</sup>/<sub>4</sub>in

163<sup>1</sup>/<sub>2</sub>in

61<sup>3</sup>/<sub>4</sub>in

5in

118in

59<sup>1</sup>/<sub>2</sub>in

4 Panel BiFold Window  
Rough Open

Door  
Rough Open

80<sup>1</sup>/<sub>2</sub>in

117<sup>1</sup>/<sub>4</sub>in

133in

47<sup>3</sup>/<sub>4</sub>in

7in

10<sup>3</sup>/<sub>4</sub>in

48in

100in

Entrance Step

192<sup>1</sup>/<sub>4</sub>in

G

Notes:

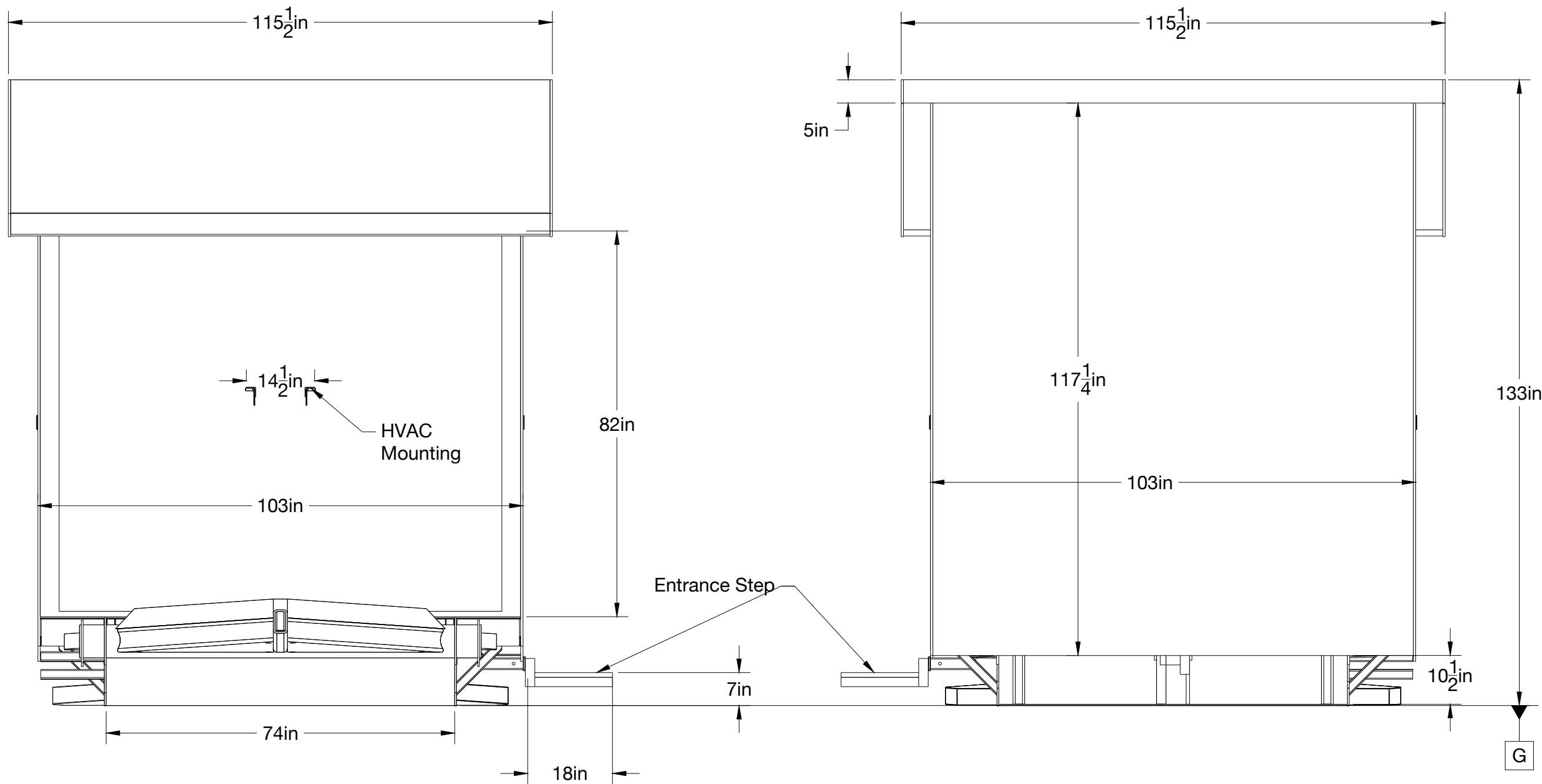
Scale 1/2" = 1'-0"

Structural Design

S202

LEFT ELEVATION

Scale: 1/2" = 1'-0"



FRONT ELEVATION

Scale:  $\frac{1}{2}'' = 1'-0''$

REAR ELEVATION

Scale:  $\frac{1}{2}'' = 1'-0''$

Notes:

Scale  $\frac{1}{2}'' = 1'-0''$

Structural Design

S203

Drawn By

Aidan Syms  
© 2020 Flexetail LLC



*Carroll*

## CERTIFICATE OF REGISTRATION

M.G.L. Chapter 90 Section 24B makes it a crime to alter this Certificate  
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

GENERAL CODE <b>TRN</b>		REGISTRATION TYPE <b>Trailer</b>		PLATE NUMBER <b>E33682</b>	EFFECTIVE DATE <b>26-Dec-2019</b>	TITLE NUMBER	EXPIRES ON	<b>30-Nov-2020</b>
MODEL YEAR <b>2017</b>	MAKE <b>LIFT</b>	MODEL <b>UTILIT</b>	MODEL NUMBER	BODY STYLE <b>TRAIL</b>	COLOR <b>BLACK</b>	VEHICLE IDENTIFICATION NUMBER <b>1LPTD1627HKFEB035</b>		
RESIDENTIAL ADDRESS (IF DIFFERENT THAN MAILING)						TOTAL REGISTERED WEIGHT FOR A COMMERCIAL VEHICLE OR TRAILER <b>14000</b>		
GARAGE ADDRESS <b>74 PARK ST NEWTON MA 02458-2315</b>						US DOT NUMBER FOR COMMERCIAL VEHICLE		
NAME(S) OF OWNER(S) AND MAILING ADDRESS <b>FLEXETAIL LLC 74 PARK ST NEWTON MA 02458-2315</b>						INSURANCE COMPANY <b>Ohio Security Insurance Company</b>		
LESSEE/IN CUSTODY OF						MAXIMUM SEATING CAPACITY FOR VEHICLES FOR HIRE		
SPECIAL MESSAGE  If this vehicle is newly acquired, it must be inspected within 7 days of registration.						CHANGE OF ADDRESS		
						<input type="checkbox"/> RESIDENTIAL <input type="checkbox"/> MAILING <input type="checkbox"/> GARAGE		

*James Jenks* Registrar of Motor Vehicles

### Important information for vehicle owners

- Certificate of Registration: Every person operating a motor vehicle shall have the Certificate of Registration for the motor vehicle and/or trailer, in the vehicle, in some easily accessible place. The records of the RMV constitute the official status of the vehicle registration.

### Trailer Registration



**TRAILER BILL OF SALE**

**SELLER:** The Advance Metalworking Company, Inc.  
3726 U.S. Highway 34  
Kewanee, Illinois 61443

**BUYER:** Name: Kamm Design  
Address: 274 Park Street  
City: Newton State: MA Zip: 02458

**DESCRIPTION OF TRAILER BEING SOLD:**

YEAR: 2017 MAKE: Lifetime Lo Riser  
COLOR: Black MODEL: IPT4-516  
DESCRIPTION: Hydraulic inclining platform trailer.

VIN: 1LPTD1627HKFEB035

**PAYMENT:**

SELLER certifies to BUYER that the SELLER has the authority to sell this trailer and transfer the title to the BUYER. The SELLER further certifies that the title is free of liens. SELLER acknowledges receiving the following payment from the BUYER to transfer ownership of this trailer.

**SELLING PRICE OF TRAILER:** \$                      **USD**

SELLER certifies that to the best of their knowledge, all information on this BILL OF SALE is correct. The SELLER has received payment from the BUYER and hereby transfers ownership of this trailer to the BUYER.

Annette K. Kull  
Signature of SELLER

Secy Treas  
Office or Title

9/14/17  
Date

SEAL

State of Illinois  
County of Henry

This instrument was acknowledged before me on (date) 9/14/17

By ANNETTE K. KULL



Sue M. Gruszeczka  
Notary Public

SEAL

## **DHL Popup Mobile ServicePoint in the City of Alexandria**

We introduced the DHL Popup in Alexandria, Virginia, in 2020 and supported more than 4000 local citizens and small / microenterprise businesses shipping to over 120 countries. Our customers in Alexandria prefer the retail popup approach, with some bypassing traditional retail and driving more than 10 miles to the DHL Popup. The demand for our service increased by 50% after placing the DHL Popup at Shoppes of Foxchase parking spots.

The DHL Popup Mobile Servicepoint concept was introduced during the pandemic to contribute towards social, economic & environmental sustainability efforts. Today, we have 20 Mobile Popup stores across the US in Virginia, Maryland, Ohio, Florida, California, and Texas. Out of the 20 Mobile Popups, 11 are off-grid. The DHL Popup is the business model we will continue expanding across the US, and in Q1, 2023, we are working to place six additional DHL popups in new cities and communities.

There are three critical benefits to having the DHL Popup vs. the traditional retail in Alexandria; it has a social, economic, and environmental positive impact, it is placed at a strategic location adjacent to the opportunity zone to support the community, and it makes shipping easy and affordable with convenience.

- **Sustainability - social, economic, and environmental positive impacts**
  - A Hybrid Mobile Servicepoint with solar installation reflective of our industry leading sustainability program.
  - Working on a plan to bring an e-bike to serve the community with the Popup
  - Connecting with the community through GoGreen events – Earth Day celebration with the City of Alexandria in 2022 and tree give away to the community.
  - Economic opportunity for small business owners and the growing microenterprise sector to access the international market.
  - Connecting the foreign-born community with their families and friends with particularly strong connectivity to the Central American and East African regions.
  
- **Placed adjacent to opportunity zone supporting the community**
  - Close to Census Tract 2003.03 and within 2 miles of 2 other opportunity zones within the City of Alexandria.
  - It makes shipping easy and cost-effective
  - The mobile servicepoint helps us manage our costs better than the brick and mortar model, and in return, we offer cost-effective pricing.



**Choto Bandhor**

3 reviews



★★★★★ a year ago

Friendly helpful staff, good pricing compared do FedEx.

- **Convenience**

- Preferred model by our customers due to the convenience of the window service and proximity of parking
- The window service and the interior of the store meet ADA space requirements



**Jacqueline Moran**

3 reviews



★★★★★ 9 months ago

So easy to mail packages internationally! Everyone that works here is amazing!! They even gave me their chair to sit in while waiting for another customer to finish as I am on crutches.



Like



**Alexander Hau**

5 reviews



★★★★★ 7 months ago

Impressive trailer with helpful staff. Fast and easy!



Like

We thank you for your support and look forward to continuing to grow and evolve with the City of Alexandria.