Development Services

From Concept to Construction

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APPEAL SUMMARY

Status: Decision Rendered

Appeal ID: 14913	**Project Address:** 6908 N Roberts Ave
Hearing Date: 4/12/17	**Appellant Name:** Carla Key
Case No.: B-001	**Appellant Phone:** 503-902-2126
Appeal Type: Building	**Plans Examiner/Inspector:** Preliminary
Project Type: commercial	**Stories:** ? **Occupancy:** Group S, Division 1 **Construction Type:** already fabricated -- steel
Building/Business Name:	**Fire Sprinklers:** No
Appeal Involves: other: Placement of Cargo Container(s)	**LUR or Permit Application No.:**
Plan Submitted Option: pdf [File 1] [File 2] [File 3]	**Proposed use:** Mini storage

APPEAL INFORMATION SHEET

Appeal item 1

Code Section	1808 Foundations
Requires	We understand that while Cargo Containers are the Code Guide for use as an Accessory Storage Structure - the proposed used as storage containers does not qualify for acceptance under this Code Guide as the units are not considered Accessory storage structures. Therefore the proposed cargo containers must meet all applicable Building Code requirements for a site-built structure. We submit this appeal specifically for the foundation code requirements. Regulation Requirement: 1808 Foundations The appellant submits that the Code Guide for Cargo Containers used as Accessory Storage Structures should be considered in that the same structural features apply to all Cargo Containers and that the Specific Design Requirements in Section III of this Code Guide should be applied to Key Storage Building permit application.
Proposed Design	The proposed design will provide a level structural fill base in lieu of a concrete foundation consisting of a 6-inch ¾ minus gravel rock conforming to ASTM and compacted to 95% relative compaction.
Reason for alternative	Compacted fill will retain an in-place dry density not less than 90% of maximum density at optimum moisture content as determined in accordance with ASTM D 1557. Additionally the cargo container units are constructed with an internal foundation as part of the steel structure. There for each unit has an independent foundation. Please see enclosed memo.

APPEAL DECISION

Placement of cargo containers without permanent foundation: Denied.

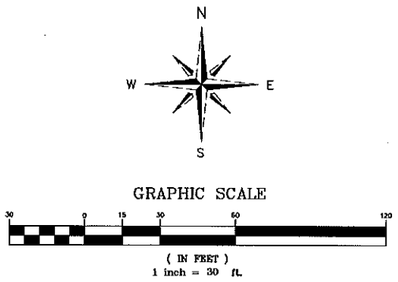
Appellant may contact John Butler (503-823-7339) with questions.

Pursuant to City Code Chapter 24.10, you may appeal this decision to the Building Code Board of Appeal within 180 calendar days of the date this decision is published. For information on the appeals process and costs, including forms, appeal fee, payment methods and fee waivers, go to www.portlandoregon.gov/bds/appealsinfo, call (503) 823-7300 or come in to the Development Services Center.

SITE MAP

OF TAX LOT 1500
LOCATED IN THE NE 1/4 , SECTION 2, T–1N, R–1W
MULTNOMAH COUNTY, OREGON

SCALE 1" = 30'



GRAPHIC SCALE

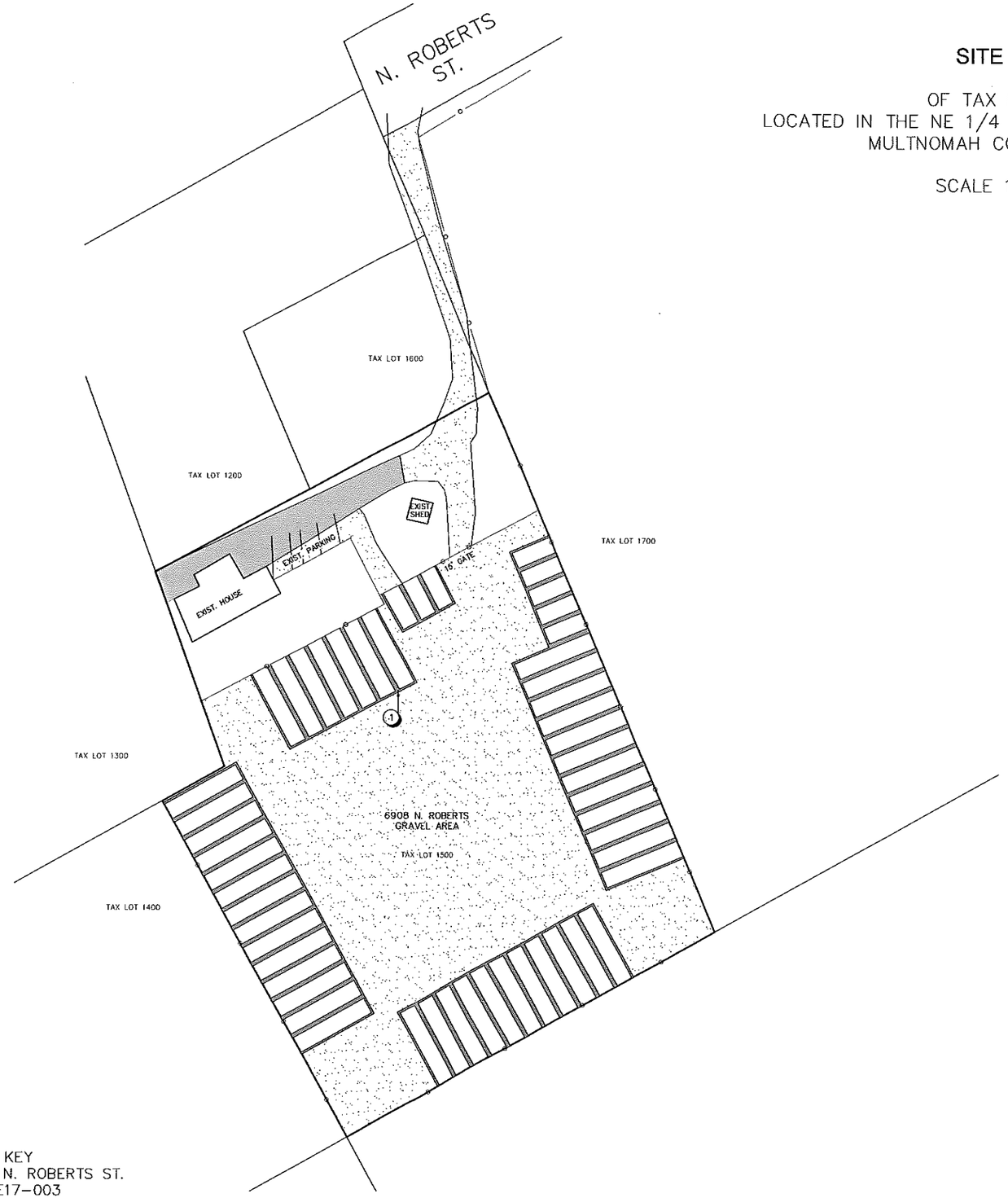
30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

NOTES

1. LEVEL GRAVEL BASE SHALL BE MINIMUM OF 6" DEPTH COMPACTED TO 95% RELATIVE COMPACTION AND UNIFORM TO ASTM D 1241.

ALL LINE WORK FROM TAX MAPS AND AERIAL PHOTO.



LEGEND

- PROPERTY LINE
- EXISTING FENCE
- PURPOSED TYPICAL 8'X8'X40' CARGO CONTAINER
- PURPOSED TYPICAL. 8'X8'X20' CARGO CONTAINER
- EXISTING GRAVEL
- EXISTING PAVEMENT
- LEVEL GRAVEL BASE

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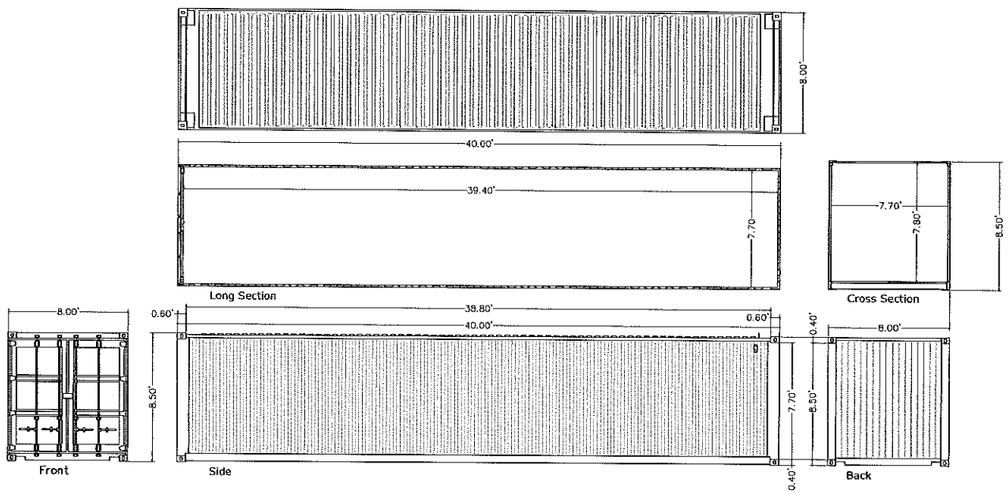
CLIENT – CARLA KEY
ADDRESS –6908 N. ROBERTS ST.
JOB NUMBER – E17–003

SITE MAP

OF TAX LOT 1500
LOCATED IN THE NE 1/4 , SECTION 2, T-1N, R-1W
MULTNOMAH COUNTY, OREGON

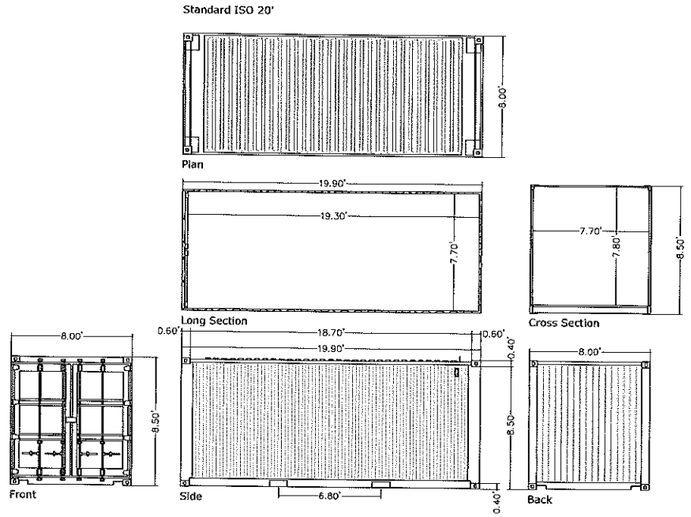
SCALE 1" = 30'

Standard ISO 40'



TYPICAL DETAIL 40 FOOT CONTAINER - N.T.S.

Standard ISO 20'



TYPICAL DETAIL 20 FOOT CONTAINER - N.T.S.

E17-003 SITEMAP.dwg 15:59 03/03/2017

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Background:

The proposed storage containers will be used solely for storage akin to temporary self-storage facility. The units are designed to be intermodal and can be relocated on and off the site or to different locations around the site. The proposed units will not be occupied and will be used only for storage facilities.

The objective of an appeal is to provide evidence that the proposed activity provides an equivalent or better protection than the intent of a foundation that is required under the Building Code.

The following provides an outline of how the combination of 1) the proposed site preparation of installing 6-inches of compacted gravel as a level base, and 2) the inherent structural construction of the containers, achieves an equivalent function as that of a concrete foundation.

Purpose of Foundation:

All engineering structures are provided with foundations at the base to fulfill the following objectives and purposes;

i. To distribute the load of the structure over a large bearing area so as to bring intensity of loading within the safe bearing capacity of the soil lying underneath.
ii. To load the bearing surface at a uniform rate so as to prevent unequal settlement.
iii. To prevent the lateral movement of the supporting material.
iv. To secure a level and firm bed for building operations.
v. To increase the stability of the structure as a whole.

Each element of the purpose of a foundation as defined above is addressed below in relative order to illustrate how an equivalent function is achieved:

1. The load of each unit will be distributed by the internal footing onto the compacted gravel which provides a stabilized even survey and transfers the load evenly and within a safe bearing capacity of the the underlying soil type which is Urban Latourelle with a published bearing capacity of 2000 psi.
2. The portable units are constructed such that all the steel work is shot (sand) blasted & primed with a Zinc undercoat, then the entire sub floor area is sprayed with a very thick coating of bitumen. This coating seals the timber flooring, and protects the steel from corrosion. The steel used in containers is a special steel called 'Corten'. This is a high tensile steel (hard to bend/dent) that also has some rust resistant properties. The combination of these measures usually prevents the sub floor area from deterioration for the life of the container.

   The sub floor of a container comprises the two long side rails, the front & back rails (the perimeter of the container floor) & cross members that are welded between the two long rails, every 30cm's. This lattice of steel rails are all level on the bottom surface, so when the container sits flat on the ground all of these rails contact the ground at the same time providing a 20ft or 40ft x 8ft foot print, meaning it's very unlikely that it's going to sink or unequal settlement on a compacted gravel surface.
3. The prevention of lateral movement is achieved by the internal construction of the steel cross members every 30 cm's the full length of the container unit.
4. The unit will be placed on level and firm compacted ¾ minus gravel 6-inches deep that will provide a secure and stable bed to support the container structures as storage facilities. The floor is design to pass a concentrated load test of 16,000 lbs over a foot print of 44 sq. inches. The floor has also been

designed to pass a test at twice its rated payload capacity of 47,895 for a 20 container and 58,823 lbs for a 40' container when evenly distributed.

5. The construction of the containers provides an inherent structural stability as they are fabricated to with steel rails and cross members that are level.