



City Council  
Meeting  
7.13.2020

**PERMANENT  
STANDBY  
GENERATOR**

**DISCUSSION**



## **AGENDA**

- APPLICABLE CODES
- 50 FT. LOT
- 40 FT. LOT
- 65 FT. LOT
- SCREENING



**APPLICABLE  
CODES**

**BUILDING  
DEPARTMENT**

# Introduction to Article 702—Optional Standby Systems

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This article also applies to the installation of optional standby generators in homes, farms, small businesses, and many other applications.

There are **multiple manufacturers** that provide residential standby generators:

- Kohler
- Winco
- Generac
- Briggs & Stratton



APPLICABLE CODES USED FOR THE  
REVIEW, INSTALLATION, &  
PERMITTING DIRECTIVES FOR  
RESIDENTIAL STANDBY GENERATORS  
INSTALLED IN THE STATE OF  
FLORIDA.

## CODES

The following Codes & References apply to Generator Installations for standby power . Most current adopted addition

A: National Electrical Code

B:NFPA 37

C:.NFPA 110

D:.Florida Building Code

E: Code of Ordinances, City of Westlake FL

F: FEMA Publication 348

G:Underwriters Laboratories, Inc. (UL),(ETL) etc.

H:Manufacturers Installation

# MINIMUM CODE REQUIREMENTS FOR PERMANENT RESIDENTIAL TYPE STAND-BY GENERATORS

- 1. Generators (Engines) shall be installed at least 5 feet from openings in walls and at least 5 feet from structures having combustible walls unless there is an adjacent wall that has a fire resistance rating of at least 1 hour between the structure and generator.**
- 2. The generator shall be installed in compliance with floodplain management construction standards (same elevation above grade as the interior 1st floor of the building).**
- 3. Generators that are exposed to wind shall be installed to resist the wind pressures according to ASCE (American Society of Civil Engineers) 7 – 2010.4. Generators installed at grade level shall be supported on a level minimum 4-inch nominal (3.5 inch actual) concrete slab or other approved material extending a minimum of 2 inches above adjoining finished grade. Such slabs shall be placed on clean, thoroughly compacted sand or crushed rock free from organics, debris or other deleterious materials.**
- 4. Generator exhaust shall be located so as not to create a nuisance. Exhaust termination shall be a minimum of 10 feet from any openable openings (doors, windows, vents, etc.) or air intakes.**
- 5. Generators shall be listed and labeled. Generators shall be installed according to the manufacturer's recommendations and by the terms of their approval, in accordance with the conditions of the listing. Where conflicts between 1) the code, 2) the conditions of listing or, 3) the manufacturer's installation recommendations occur, the most restrictive of the three alternatives shall apply.**
- 6. When applicable, the following Standards shall apply: NFPA 54-12 - National Fuel Gas Code NFPA 58-08 - Liquefied Petroleum Gas Code, NFPA 37-06 – Stationary Combustion Engines and Gas Turbines, NFPA 30-08 – Flammable and Combustible Liquids Code, ANSI/ASME B31.3 Process Piping, 2002 and the Florida Fuel Gas Code.**
- 7. Installations shall comply with the Florida Fire Prevention Code<sup>9</sup>. Maximum allowable sound levels and property setbacks shall comply with local jurisdictions requirements.**



## Typical Residential Installation

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# Typical Generator Maintenance



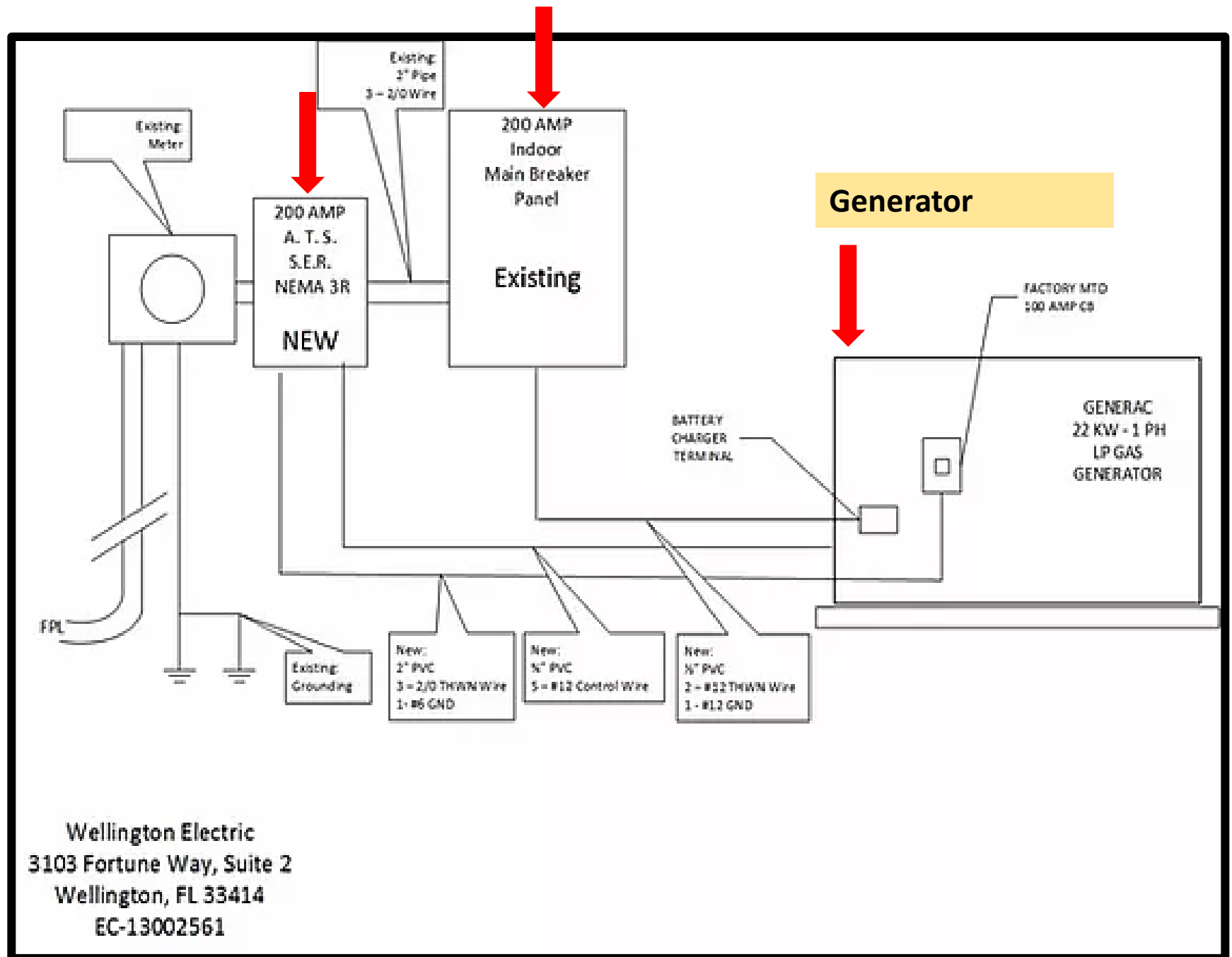


# THE GENERATOR MUST COMPLY WITH NFPA 37.

## PLANS MUST INDICATE:

- a. Three Feet (3 ft) distance from walls as per **NEC Art. 110.26** for electrical clearance.
- b. Thirty inches (30") distance from walls as per **NEC 110.26** for maintenance clearance.
- c. Any part of generator must be a minimum of five feet (5') from any, opening(s), door(s), window(s), or combustible materials **UNLESS**, they have a UL listed **one (1) hour** fire rating.

# Typical Residential Application.

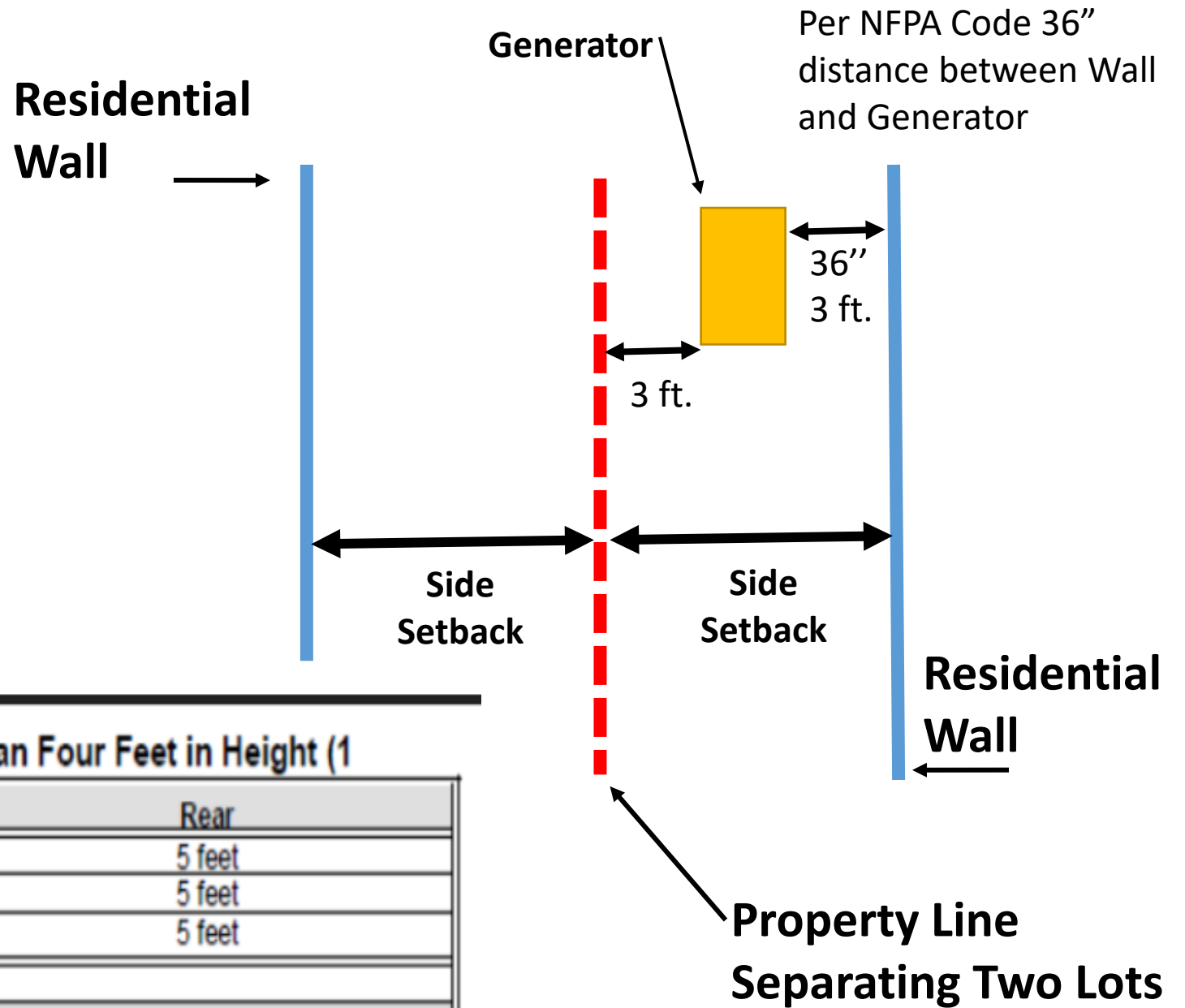


A background image showing a group of people in a meeting. One person is pointing at architectural plans on a table, while another is holding a pen. A white hard hat is visible on the left side. The scene is brightly lit, suggesting an office or meeting room environment.

**APPLICABLE CODES**

**PLANNING & ZONING  
DEPARTMENT**

Interim City code requires for SFD (Single Family Dwellings) following setbacks:  
**Side 3 ft. and Rear 5 ft.**



**Table 5.B.1.A - Setbacks for Generators less than Four Feet in Height (1)**

	Side	Rear
SFD	3 feet	5 feet
ZLL	5 feet	5 feet
TH	NA	5 feet

Ord. 2006-004  
 Note:  
 1. Refer to FBC for additional location criteria.

# Maximum Sound Levels per Interim City Code

No person shall operate or cause to be operated any source of sound from any location in such a manner as to create a sound level which exceeds the limits set forth below in Table 5.E.4.B Maximum Sound Levels for more than ten percent of any measurement period, which period shall not be less than ten minutes. Sound level measurement compliance shall be determined with a Type 2 or equivalent sound level meter using the A-weighting scale in accordance with the standards of the American National Standards Institute (ANSI). All measurements shall be made with a sound meter at or within the boundary of the complaining landowner within the property lines of the receiving land.

# Generator Sound Level

<https://youtu.be/bQAPJS7bG4A>

(youtube video)



**Table 5.E.4.B – Maximum Sound Levels**

Receiving Land Use Type	Sound Source	Time of Day	Maximum Sound Level	
			USA	RSA
Residential	Fixed mechanical equipment	Any time	60 dB	60 dB
Residential	Permanent Generator	See <u>Art. 5.B.1.A.19. Permanent Generators</u>	75 dB	75 dB
Residential	All other sources	7:00 am to 8:00 pm	60 dB	55 dB
		8:00 pm to 10:00 pm	55 dB	50 dB
		10:00 pm to 7:00 am	50 dB	50 dB
Commercial Non-Residential	All sources	Any time	70 dB	70 dB
Non-Residential	Permanent Generator	See Art. 5.B.1.A.19. Permanent Generators	75 dB	75 dB

[RSA Laboratories](#) (which is an [acronym](#) of the creators of the technique; Rivest, Shamir and Adleman)

**EXAMPLE: Generac 22kW Generator\*** *The City is not recommending this manufacturer. Residents can opt from a number of generator brands.*

Generac Protector Gas Series are noise friendly with ratings from 59dB(A) – quieter than most central air conditioning units

## 2. Generac 7043 – Best Standby Generator

### FEATURES

- **Generator type:** standby
- **Rated watts:** 22,000 (LP), 19,500 (NG)
- **Engine:** 999cc Generac G-Force 1000 Series
- **Fuel consumption:** 228 ft<sup>3</sup>/h (NG, 50% load), 92 ft<sup>3</sup>/h (LP, 50% load)
- **Start type:** automatic
- **Noise level:** 57-67 dB(A) ←
- **Warranty:** 5-year limited







# **GENERATOR LOCATION ON LOTS**

**50 FT. LOT**

**40 FT. LOT**

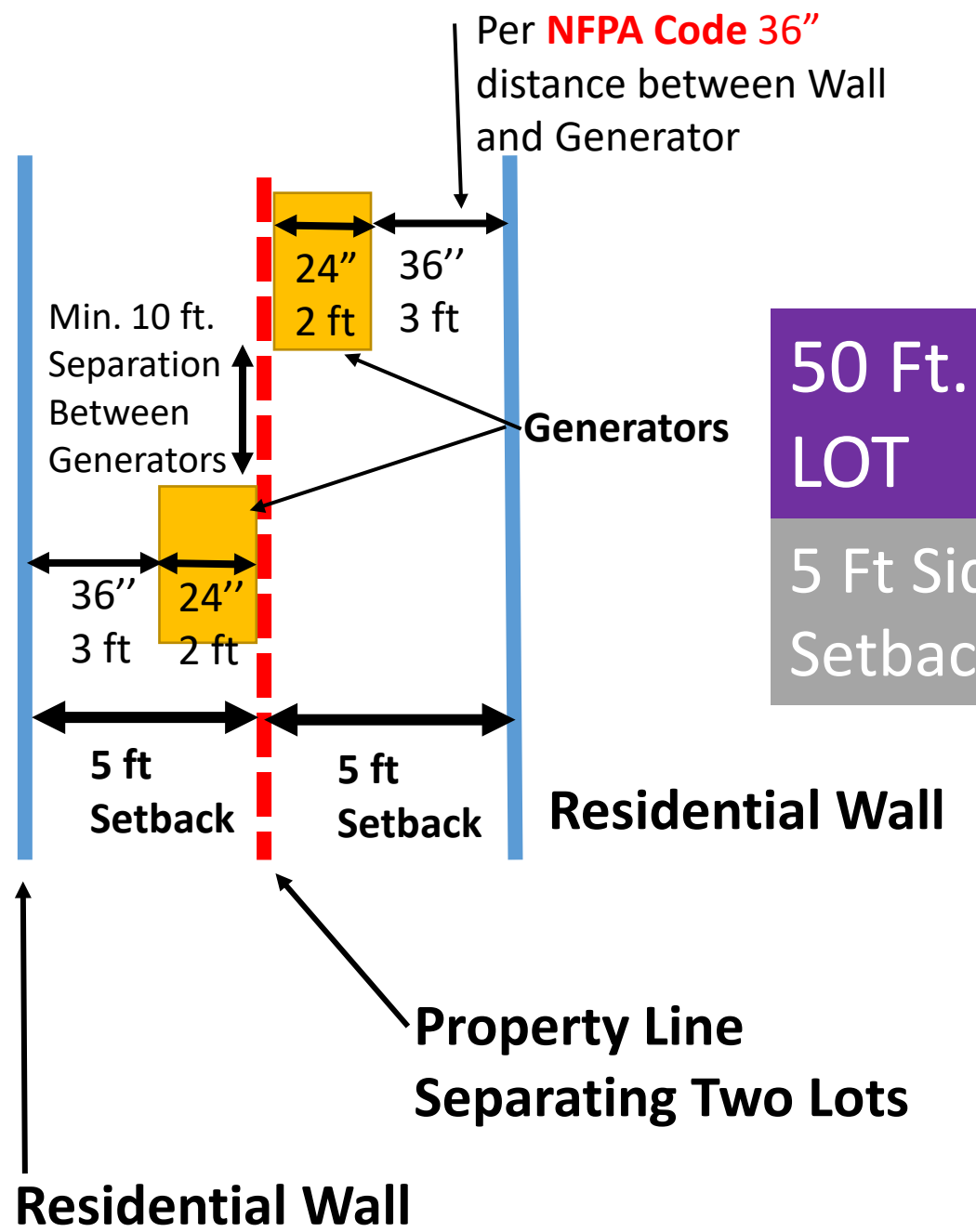
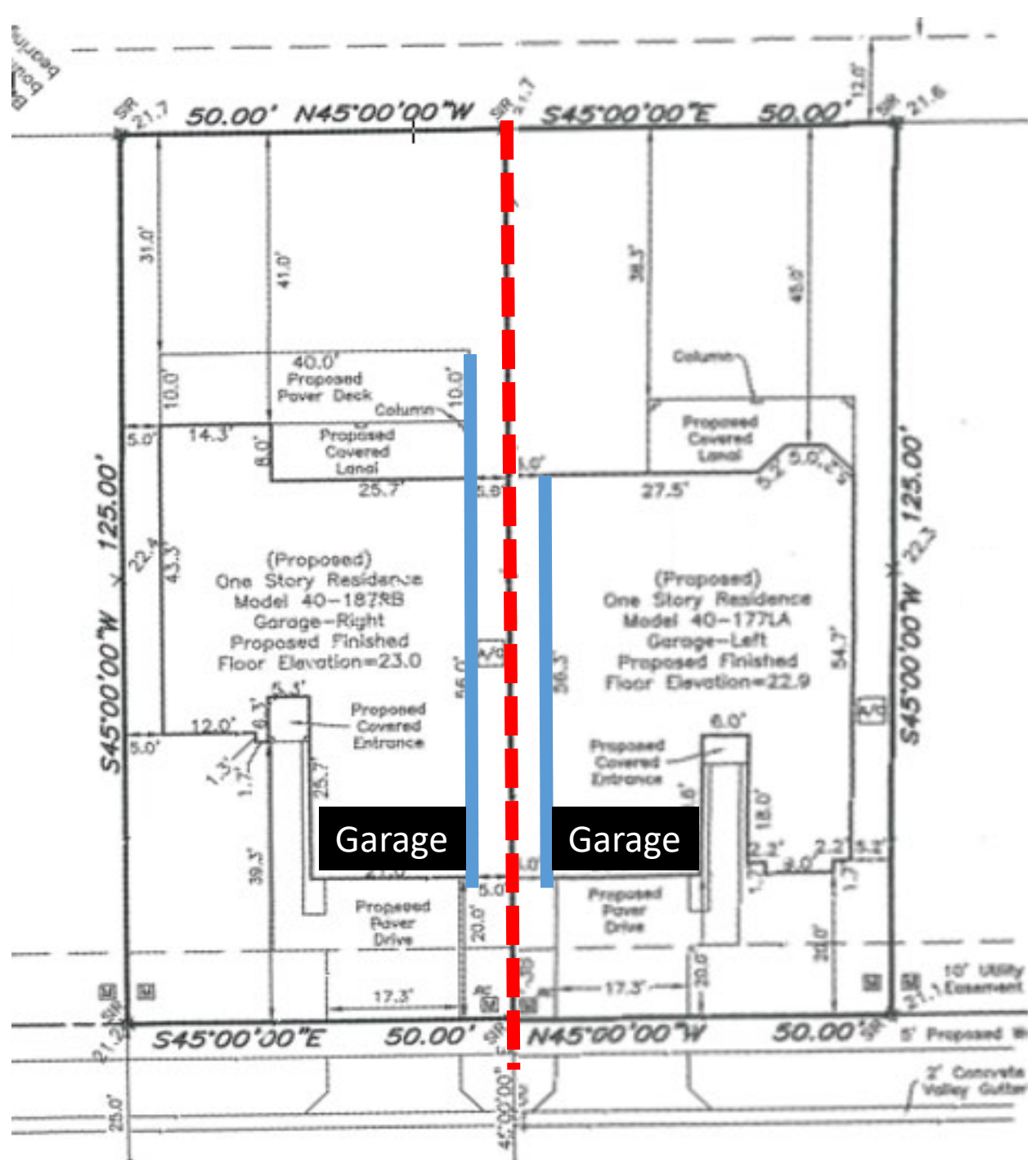
**65 FT. LOT**

**A/C Unit**



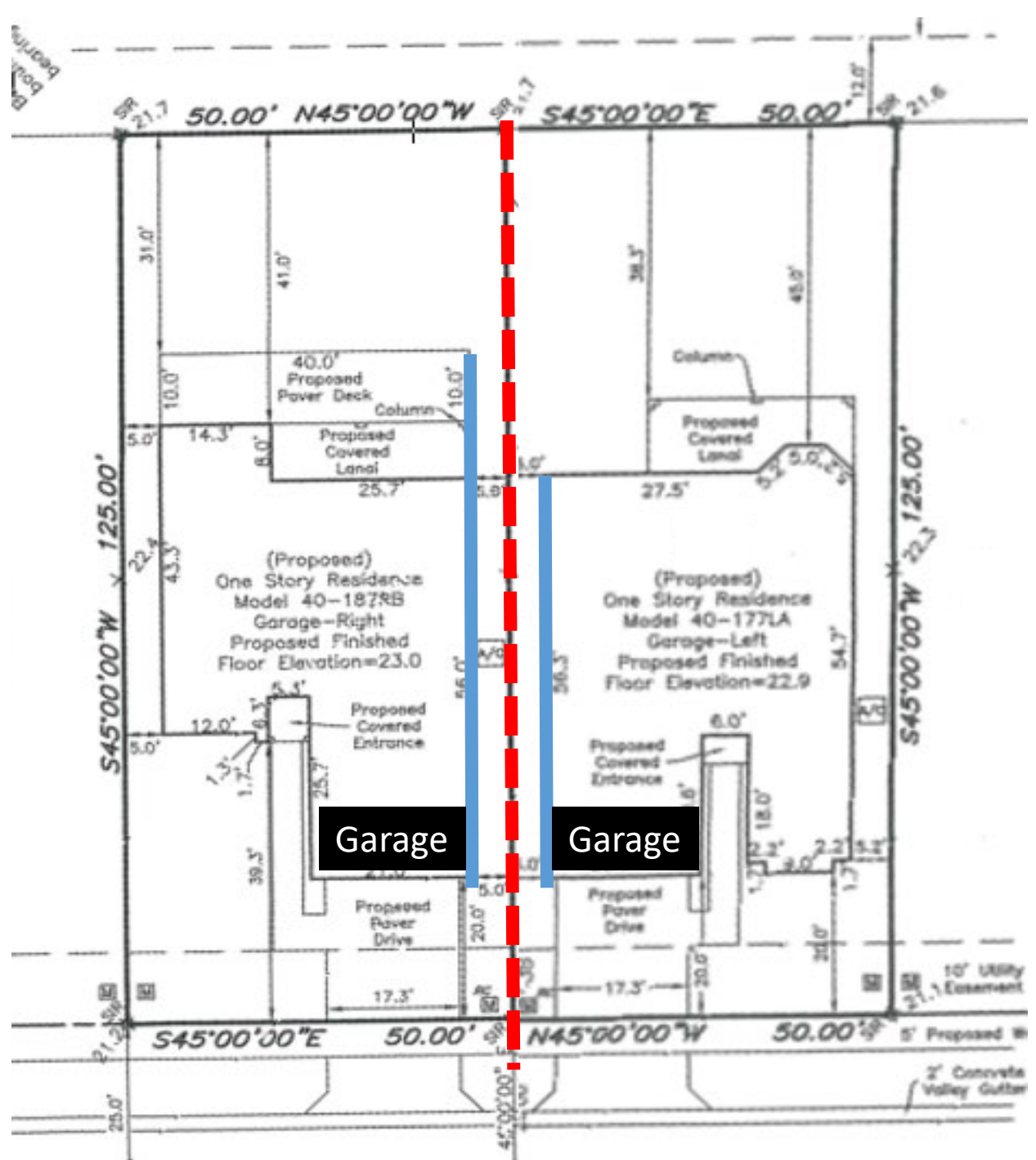
50 Ft.  
LOT

5 Ft Side  
Setbacks



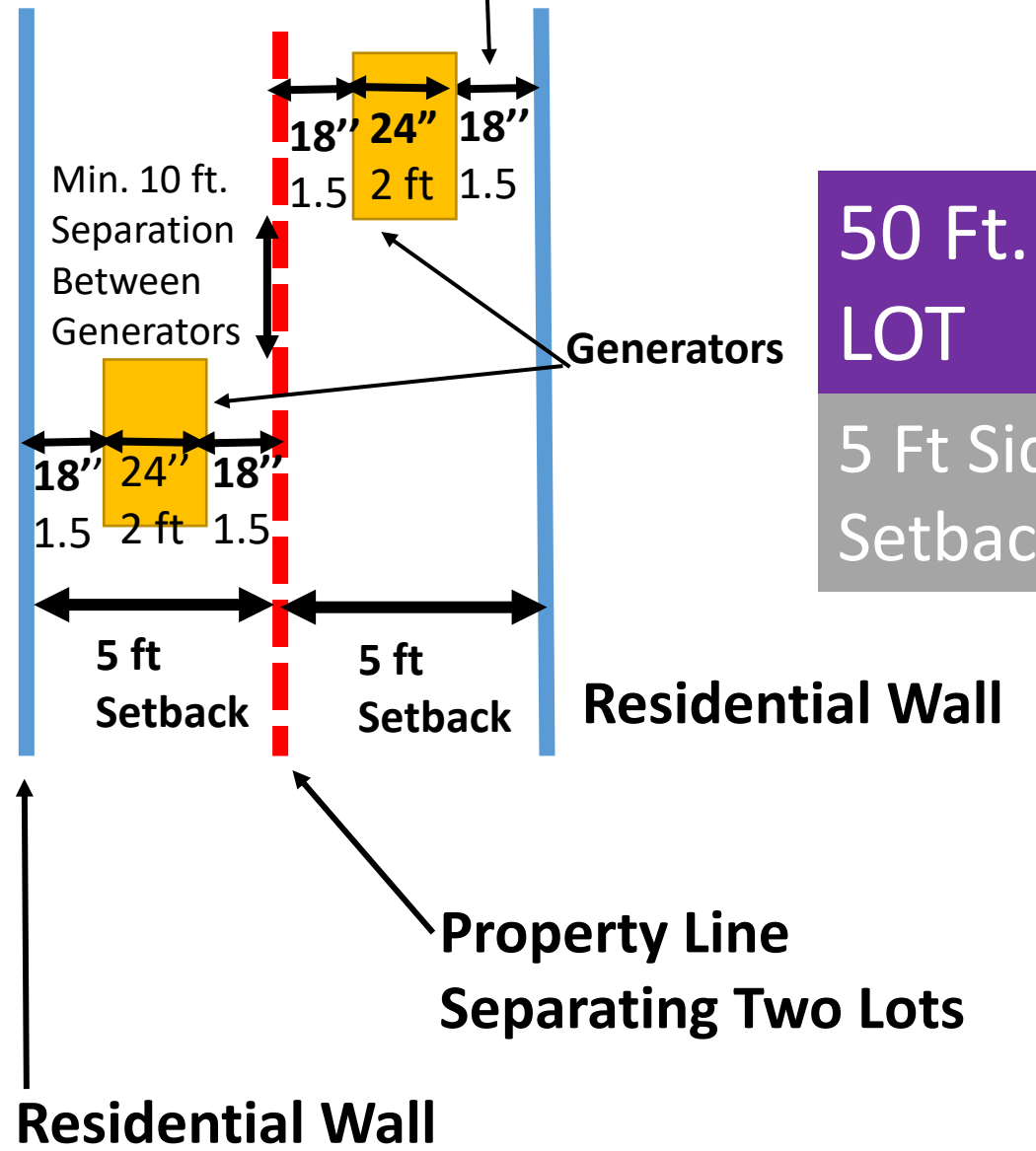
## SPACING

The generator's spacing shall be per **manufacturer's requirements** and NFPA-110 between the principal structure. If there is an existing nearby generator, the separation distance between both generators must be **10 feet or greater**.



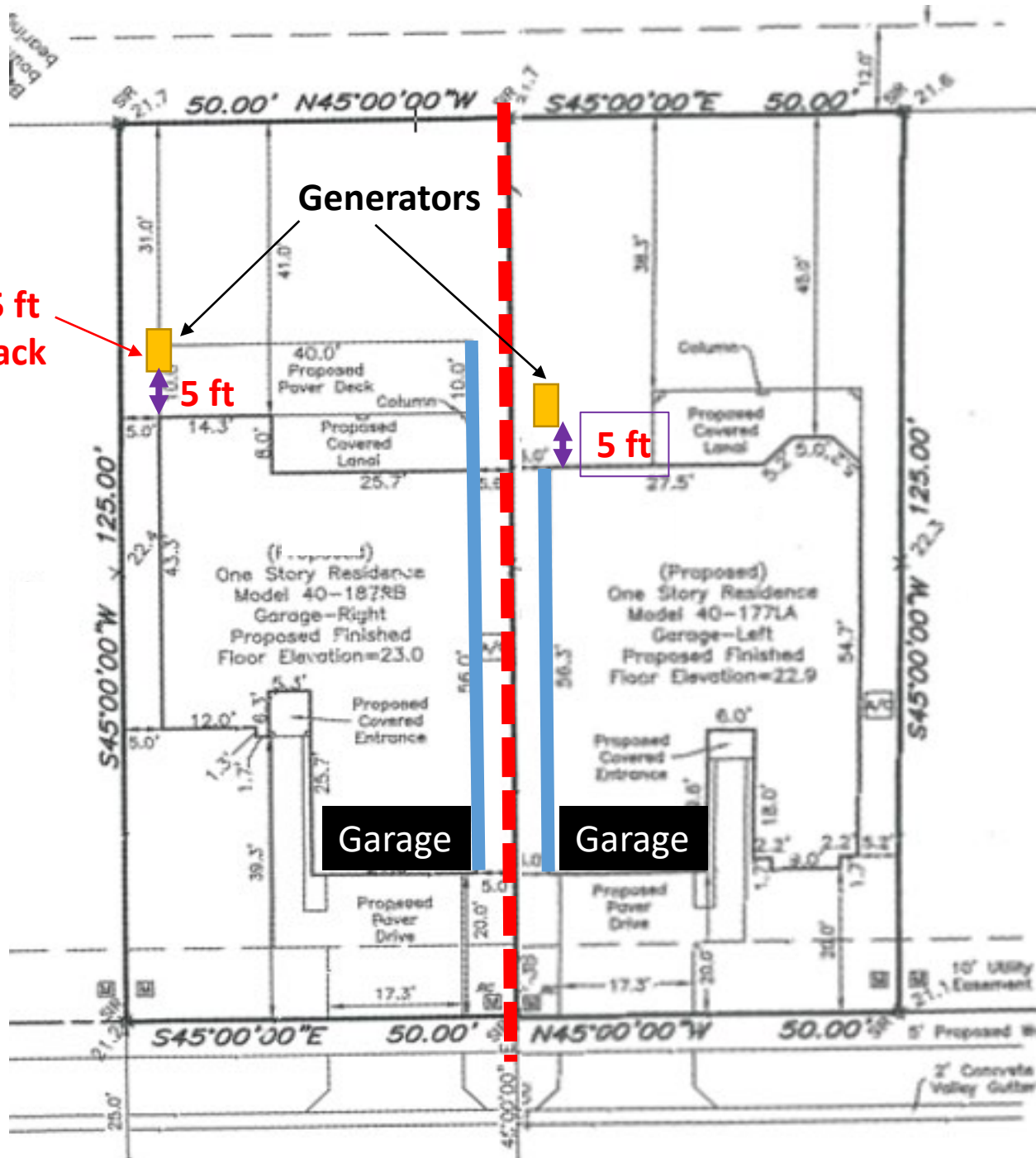
Is 18" enough for maintenance?

Per **Manufacturer** specification 18" distance between Wall and Generator



# Proposed Generator Location

2.5 ft Setback



50 Ft. LOT  
5 Ft Side Setbacks

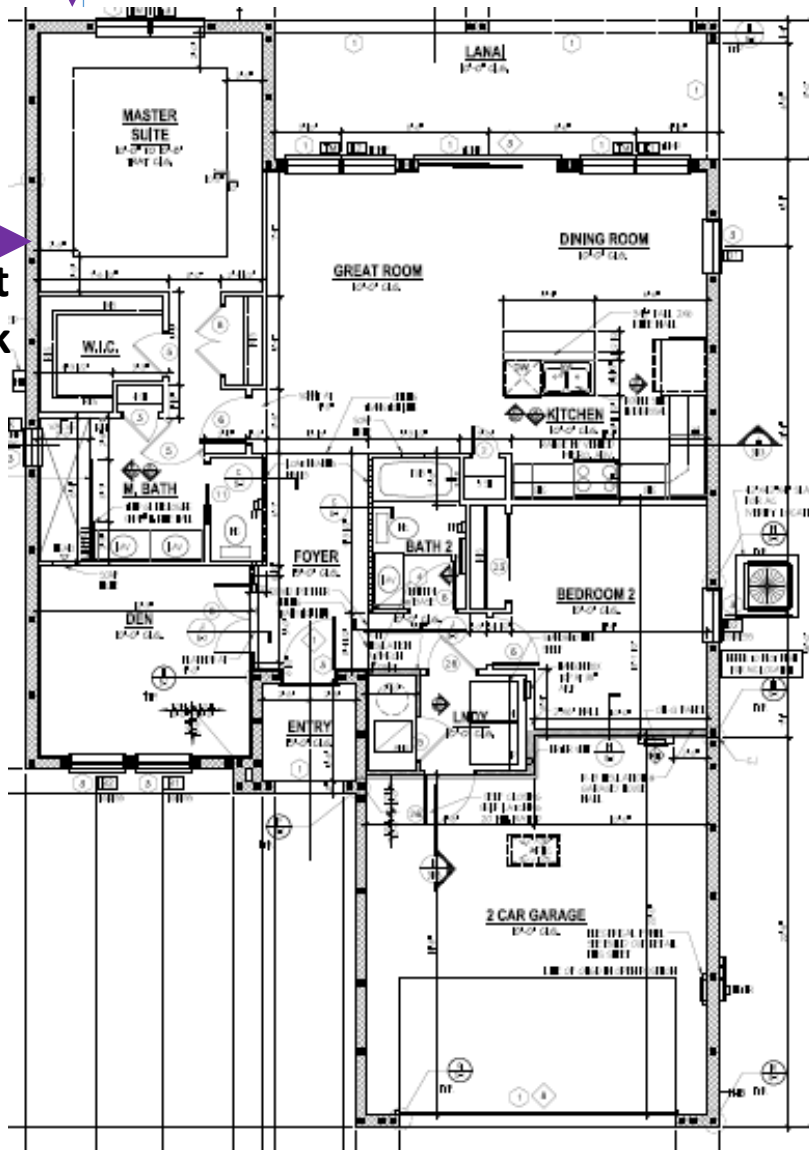
# Proposed Generator Location

2.5 ft  
Setback

Min. 5 ft from Window

5 ft  
Setback

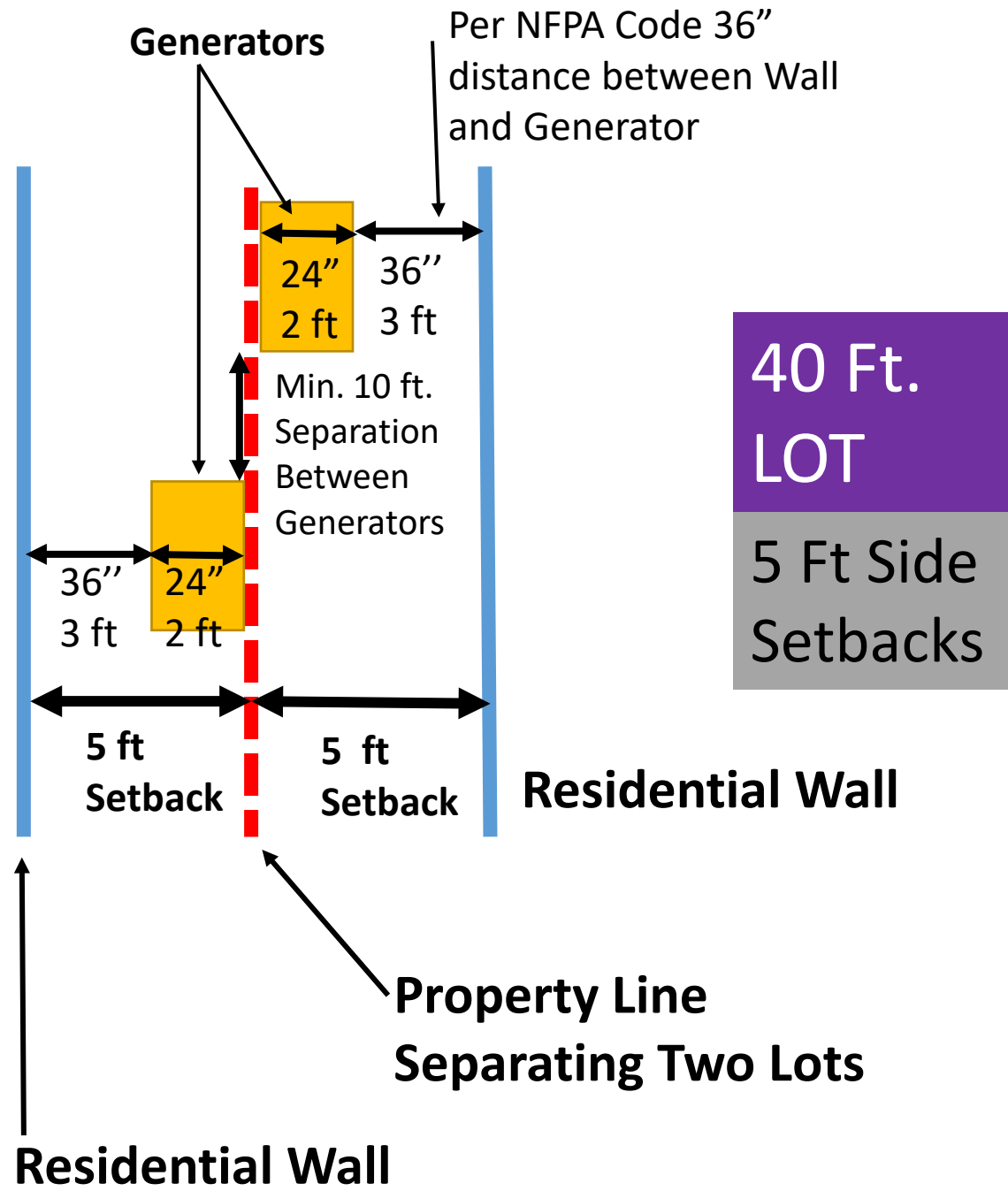
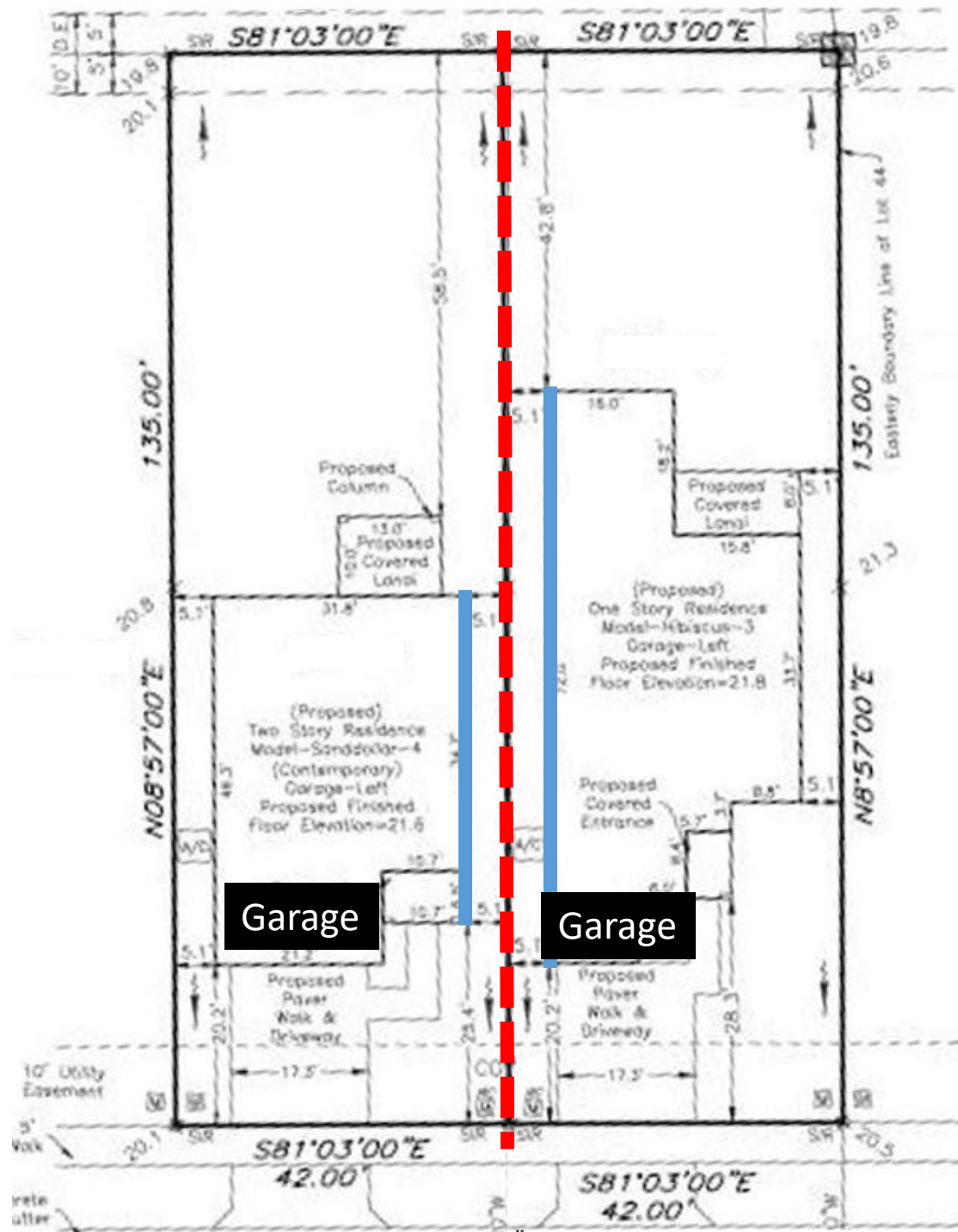
Property Line



Property Line

50 Ft.  
LOT

5 Ft Side  
Setbacks

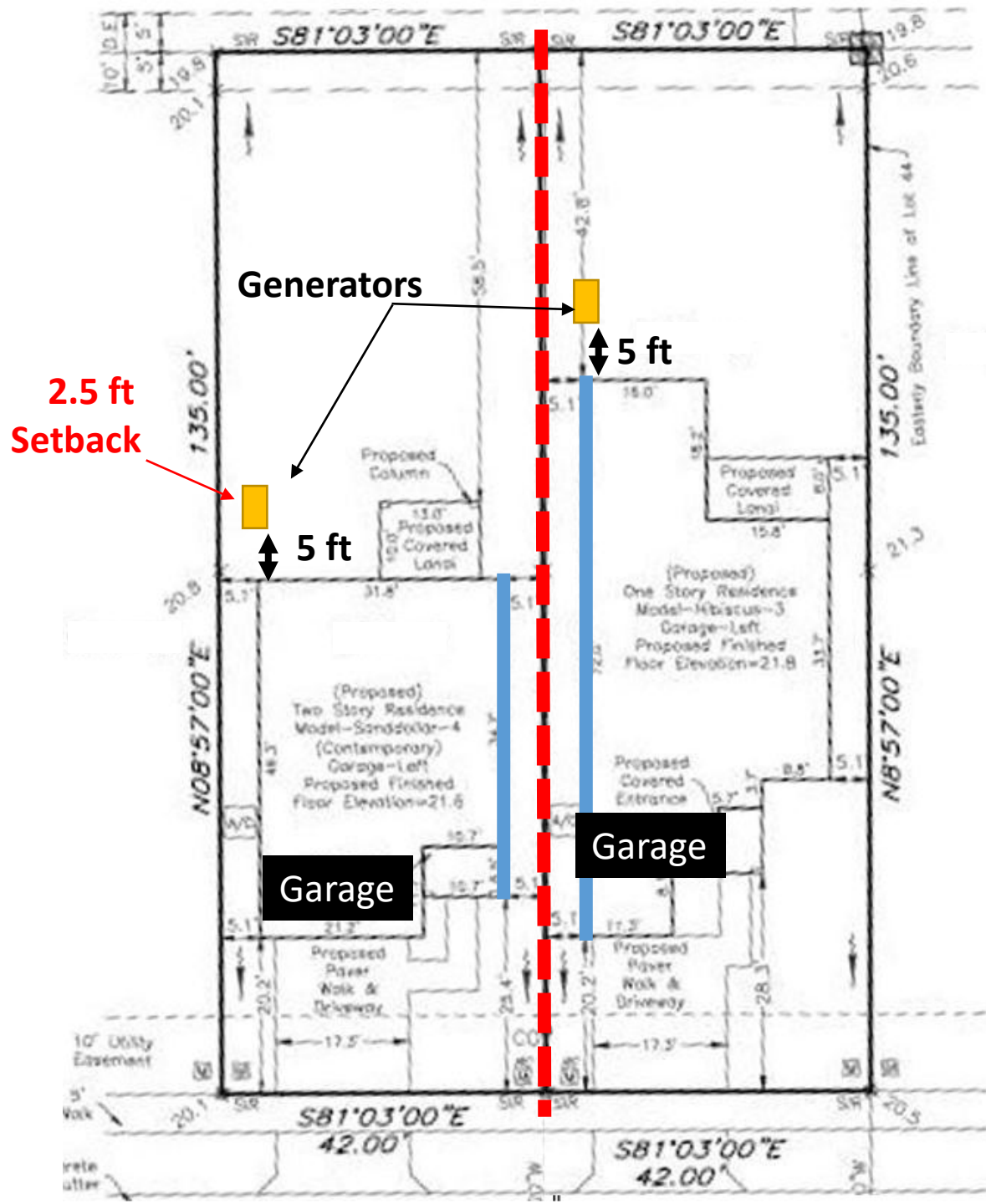


**40 Ft. LOT**

**5 Ft Side Setbacks**



# Proposed Generator Location



40 Ft.  
LOT

5 Ft. Side  
Setbacks

**A/C Unit**

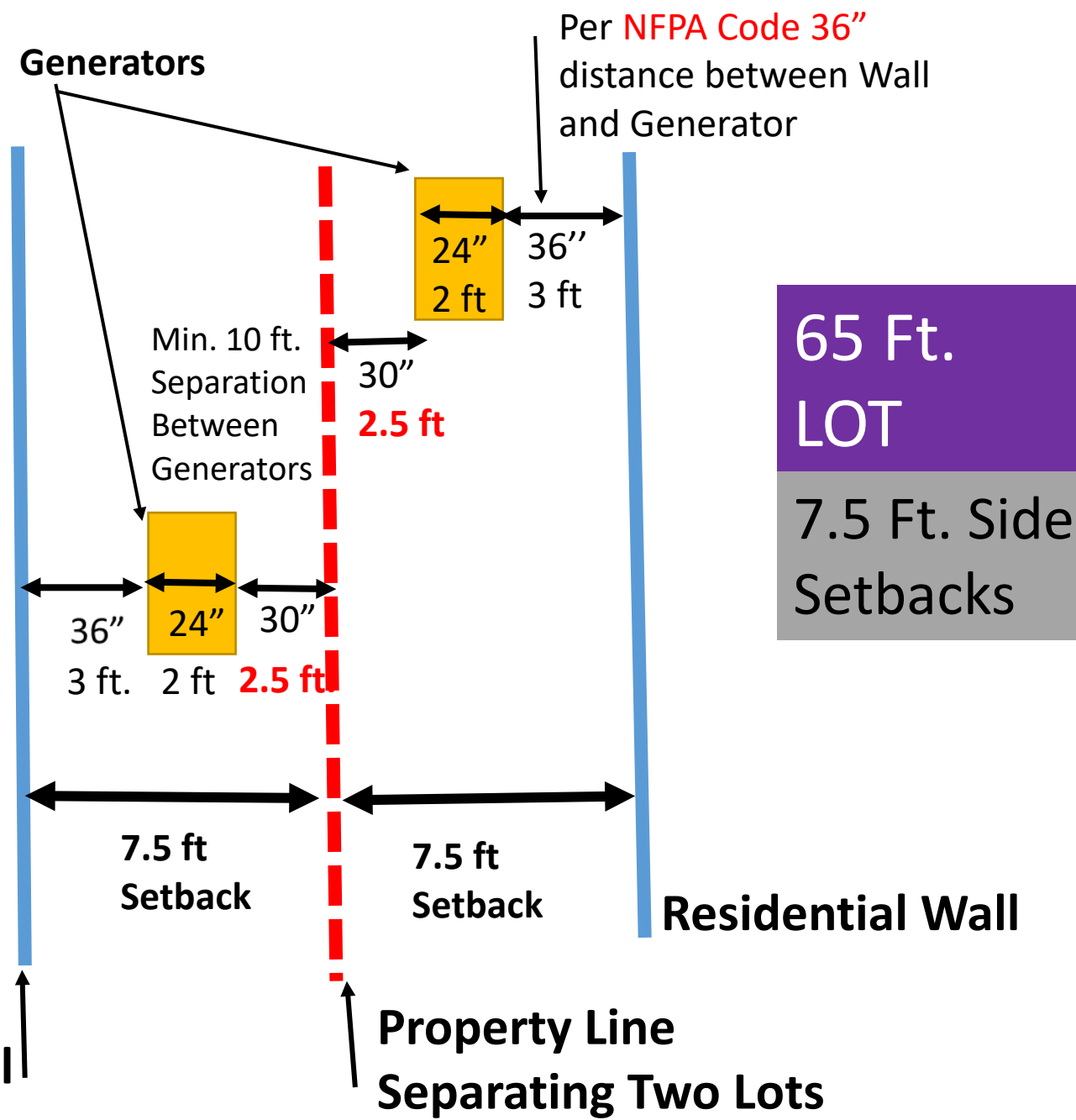
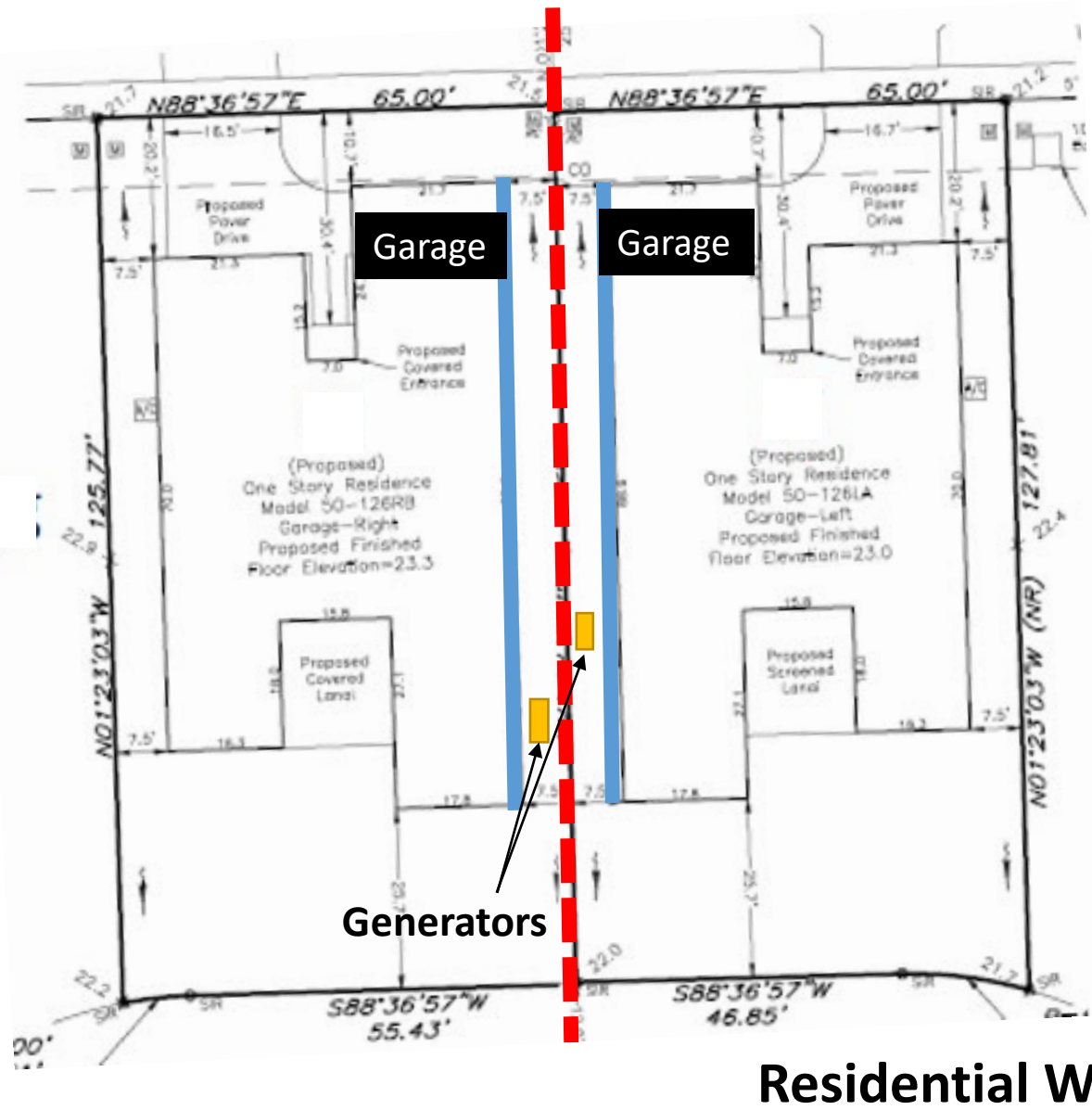


**5 ft  
Setback**

**40 Ft.  
LOT**

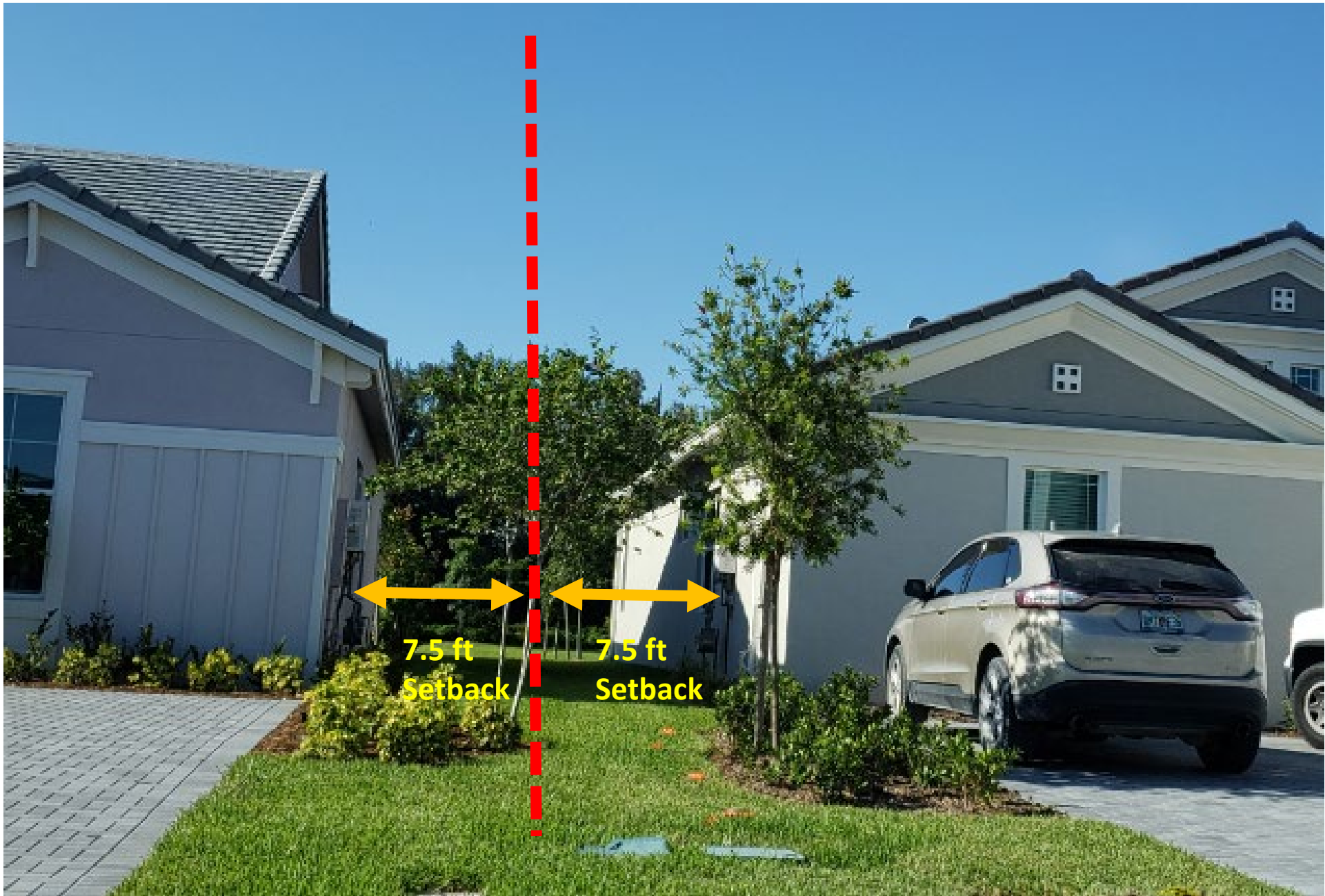
**5 Ft. Side  
Setbacks**

# Proposed Generator Location



65 Ft. LOT

7.5 Ft. Side Setbacks



65 Ft.  
LOT

7.5 Ft. Side  
Setbacks



# **SCREENING OF GENERATORS**

## Interim City Code

Generators that are not located within, or completely screened by a building, **shall be screened from view** when adjacent to or visible from a public R-O-W (right-of-way) or parcels with a conservation or residential FLU or use. Screening may include the use of fences, walls or hedges, or a combination thereof.



Homeowner documents are more restrictive.



**THANK YOU**

**ANY  
QUESTIONS?**

