

Commercial Building Alteration Requirements

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Alterations



- Permits for Alterations Can Be the Norm and Not the Exception for Jurisdictions
 - Examples
 - Office remodels
 - Building shell modifications (e.g. adding glass or additional door to the building)
 - Adding additional heating and/or cooling system to the building
- Often the waters are very muddy when it comes to what must comply and what is exempted in the IECC

What the IECC Says About Alterations

- 101.4.3 Additions, *alterations*, renovations or repairs. Additions, alterations, renovations or repairs to an existing building, building system or portion thereof *shall conform to the provisions of this code as they relate to new construction* without requiring the unaltered portion(s) of the existing building or building system to comply with this code. Additions, alterations, renovations, or repairs shall not create an unsafe or hazardous condition or overload existing building systems.

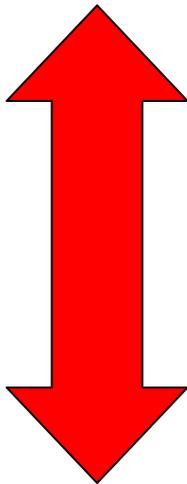
Alteration Definition

ALTERATION. *Any construction or renovation to an existing structure other than repair or addition that requires a permit. Also, a change in a mechanical system that involves an extension, addition or change to the arrangement, type or purpose of the original installation that requires a permit.*



Alterations

**Must Comply
Make Less
Efficient**



**Make More
Efficient
Must Comply**

- So What Does This All Mean?
 - If I increase the load on the energy using feature of the building it must comply with the IECC
 - If I decrease the load on the energy using feature of the building it must comply with the IECC
 - Does this make sense at all???

Alterations

- What Are the Implications to this Interpretation?
 - Decrease the lighting load by exchanging more efficient, lower wattage fixtures for higher wattage less efficient fixtures.
 - Decrease the load on the building envelope by replacing old glazing with more efficient glazing.
 - Replace old HVAC units with new systems with a greater output capacity.

Alterations

Exemptions

- Installing storm windows over existing fenestration
- Replacing only the glass in an existing sash and frame
- Exposing existing ceiling, wall or floor cavities that are already filled with insulation
- Construction that does not expose existing roof, wall or floor cavities

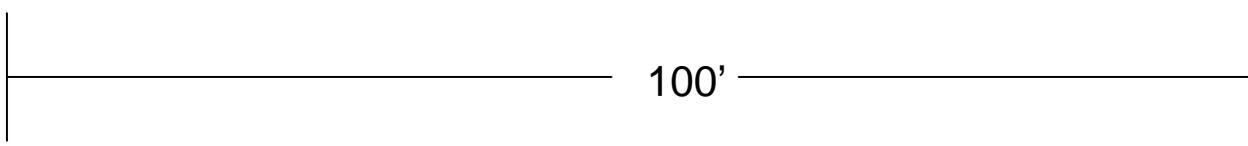
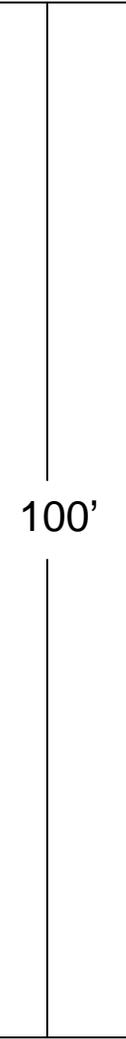
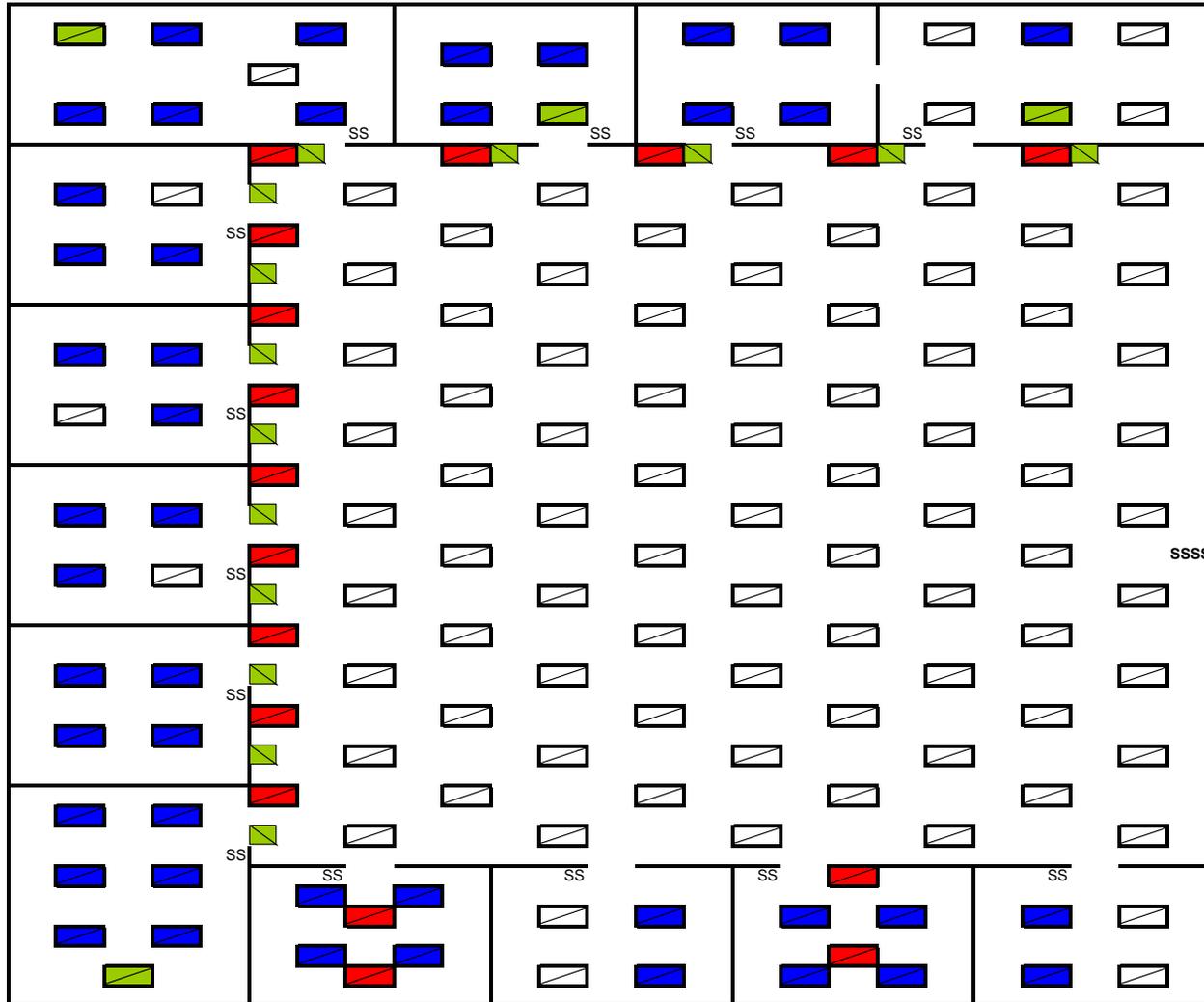
Fixture Type

 48" T12 40W 3 Bulb 106 Watts/Fixture

 24" T8U 32W

 Moved Fixture

 Removed Fixture



Existing Building Specifications

EXISTING BUILDING DESCRIPTION		
Assembly Description	Area	R-value / U-factor
Raised Floor Over Crawlspace	1176	R-19
Exterior Wall	1120	R-11
Glazing	80	U-0.80
Door	42	U-0.80
Roof	1176	R-19

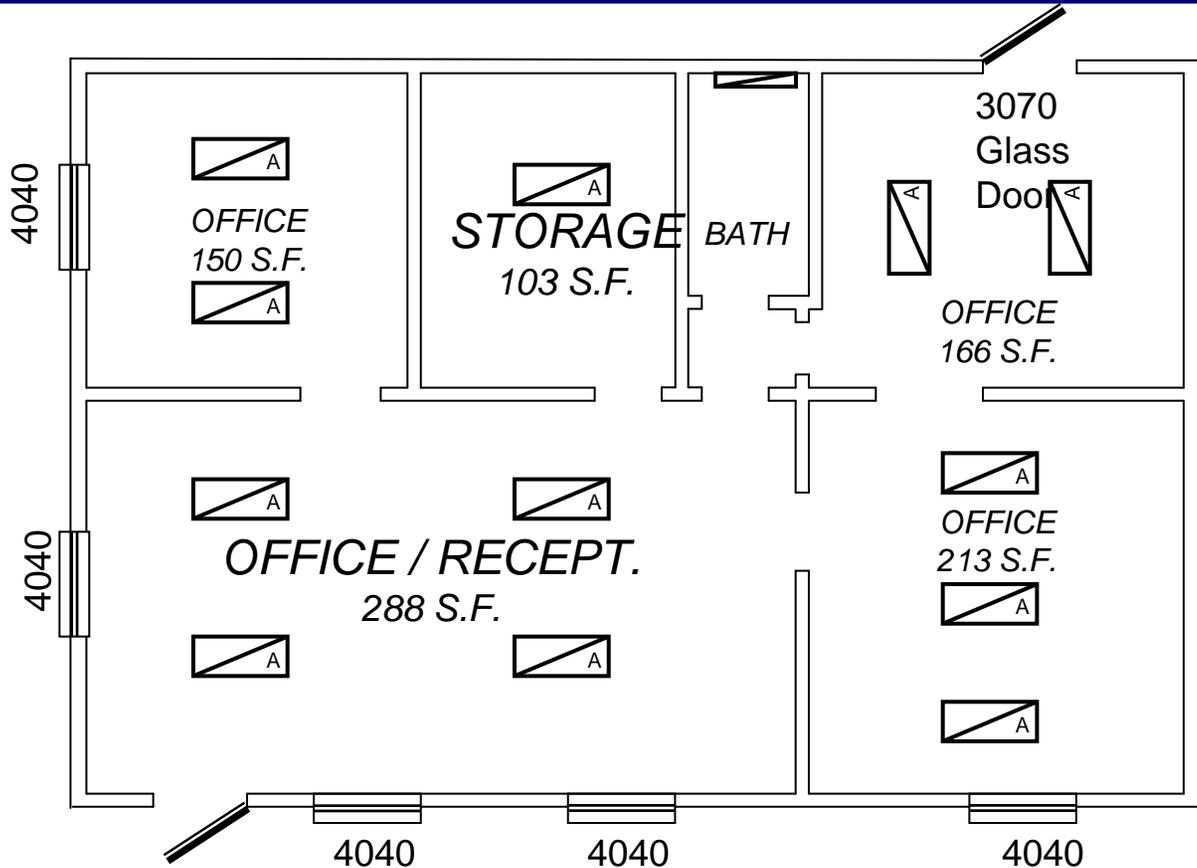


Proposed Building Specifications

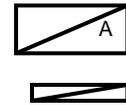
PROPOSED BUILDING DESCRIPTION		
Assembly Description	Area	R-value / U-factor
Raised Floor Over Crawlspace (Existing)	1,176	R-19
Raised Floor Over Crawlspace (New)	84	R-21
Total Floor Area	2,436	
Exterior Wall (Existing)	992	R-11 + R-4 Cont.
Exterior Wall (New)	1,538	R-13+ R-4 Cont.
Glazing (Existing)	48	U-0.80
Glazing (New)	299	U-0.35
Door	42	U-0.80
Roof	1,298	R-38



Existing Building Lighting Plan

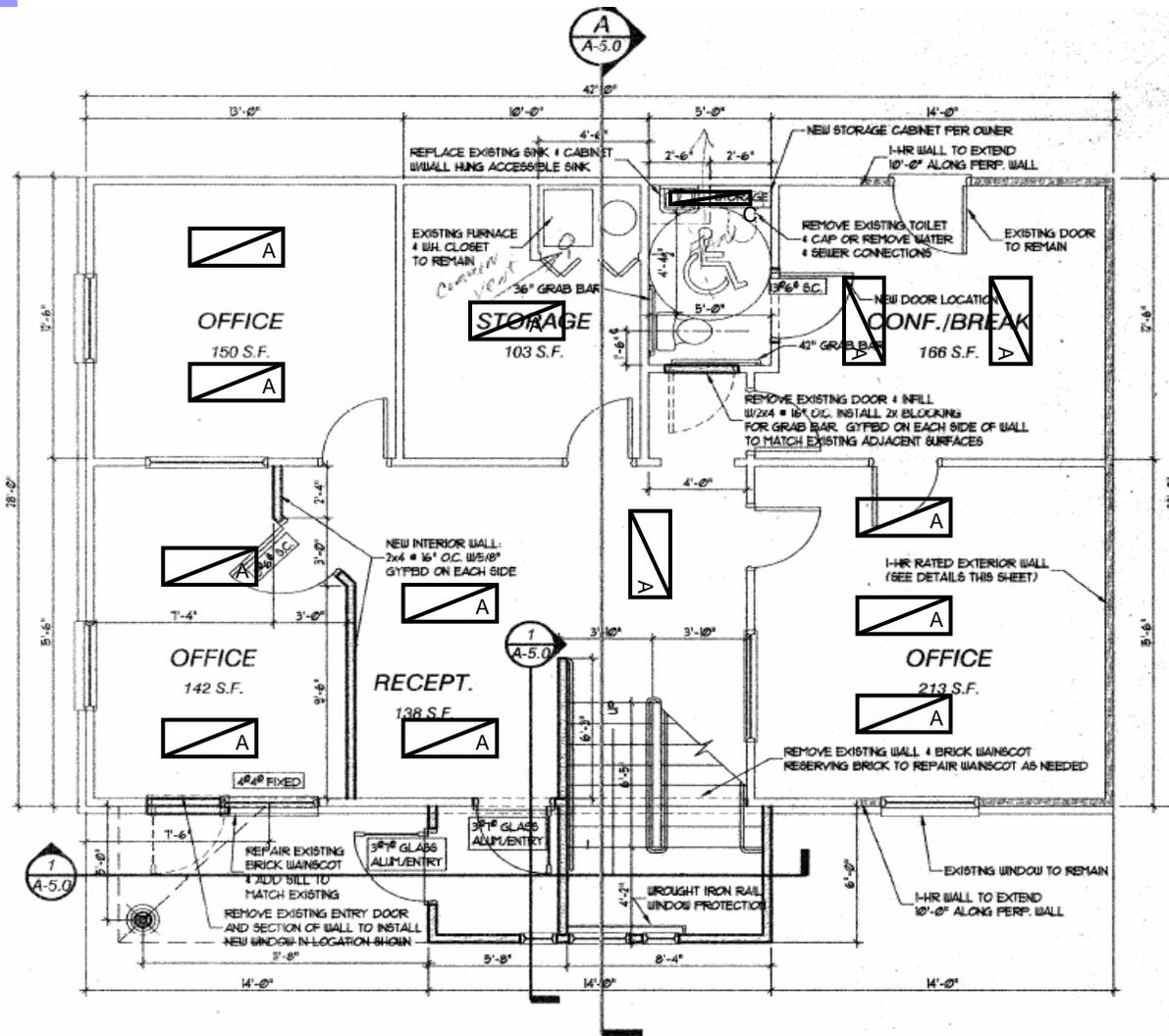


3070
Glass
Door

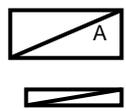


Lighting Schedule

A – 2X 4 48" T12 40W 4-Bulb
Incandescent 3 Bulb 60W/bulb



Proposed Lighting Plan 1st Floor



Lighting Schedule

A – 2 X 4 48" T12 40W 4-Bulb 13 Fixtures

Incandescent 3 Bulb 60 W/bulb 1 Fixture

Alteration Recommendations

1. Place burden of proof on the designer to show what is being changed
2. Consider allowing alterations that can be shown to save energy to be somewhat exempt from the IECC requirements
 1. Use COMcheck Guidelines
3. Take advantage of efficiency upgrades for the features that are being upgraded