Edgemere Road Firehouse Feasibility Study for the Incorporated Village of Garden City

August 9, 2022

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Design Criteria

Fire-fighting Operations

- Provide wider and taller bays for the ladder and engine.
- Eliminate backing-in for the ladder and engine.

Historic Preservation

- To the extent possible, keep the appearance of the building.

Second-Floor Public Use

- Determine the capacity of the floor for public assembly.

Code Requirements

- Place of refuge, seismic upgrade, egress

Cost

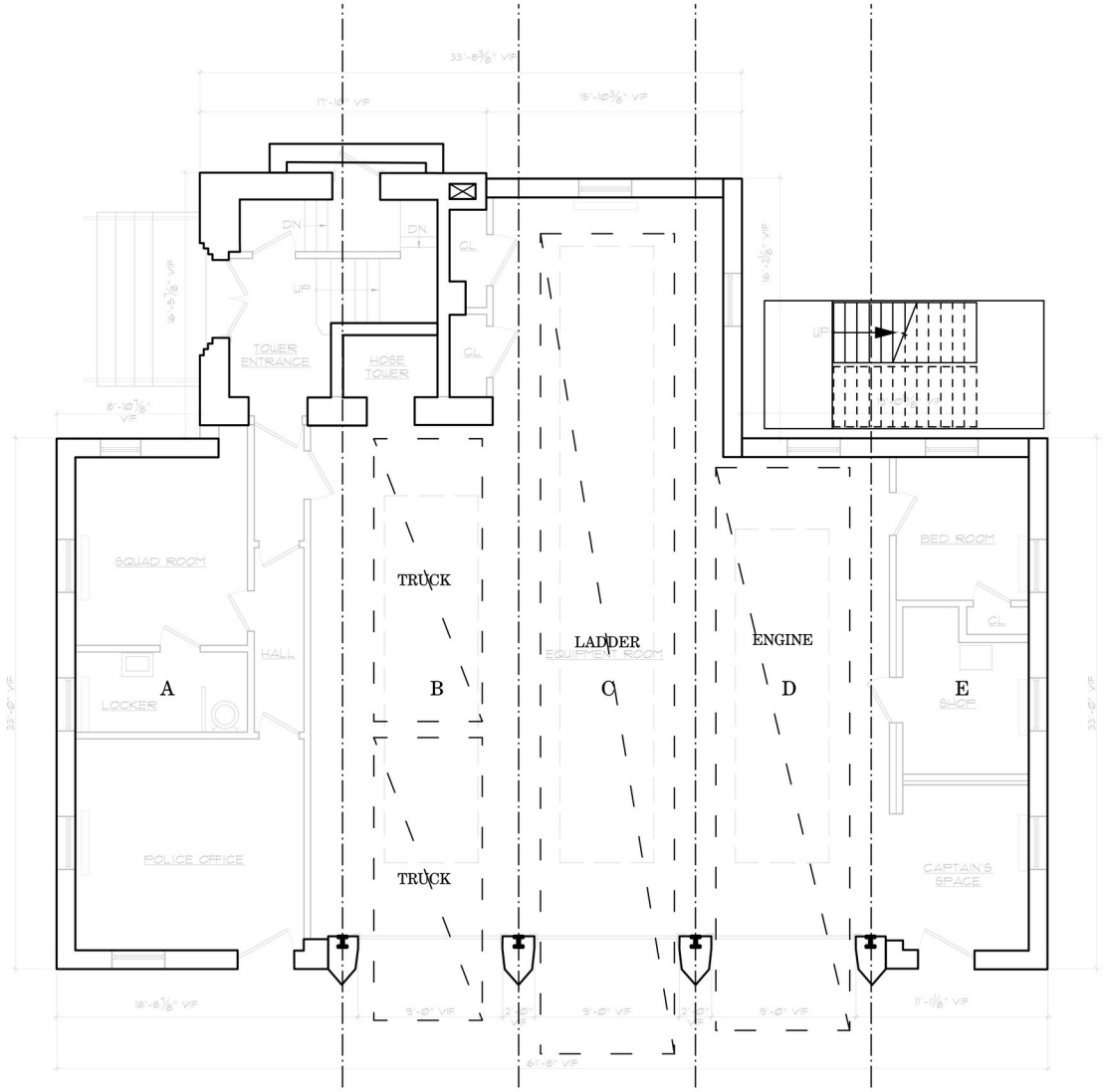
Vehicle Criteria

Vehicle	Max Height	Max Width	Max Length
NY State maximum	13.5 feet	102 inches	
Engine / Pumper	12 feet	100 inches	40 feet
Ladder	13 feet	100 inches	51 feet (or more)
SUV / Pick-up	6.5 feet	82 inches	21 feet

Options Considered

- Option 0: Review of existing building as is.
- Option 1: Allow ladder truck entry from the south.
- Option 2: Allow ladder and engine entry from the south.
- Option 3: One new wing, on the west side.
- Option 4: Two new wings, east and west.
- Option 5: New two-bay wing on the south.

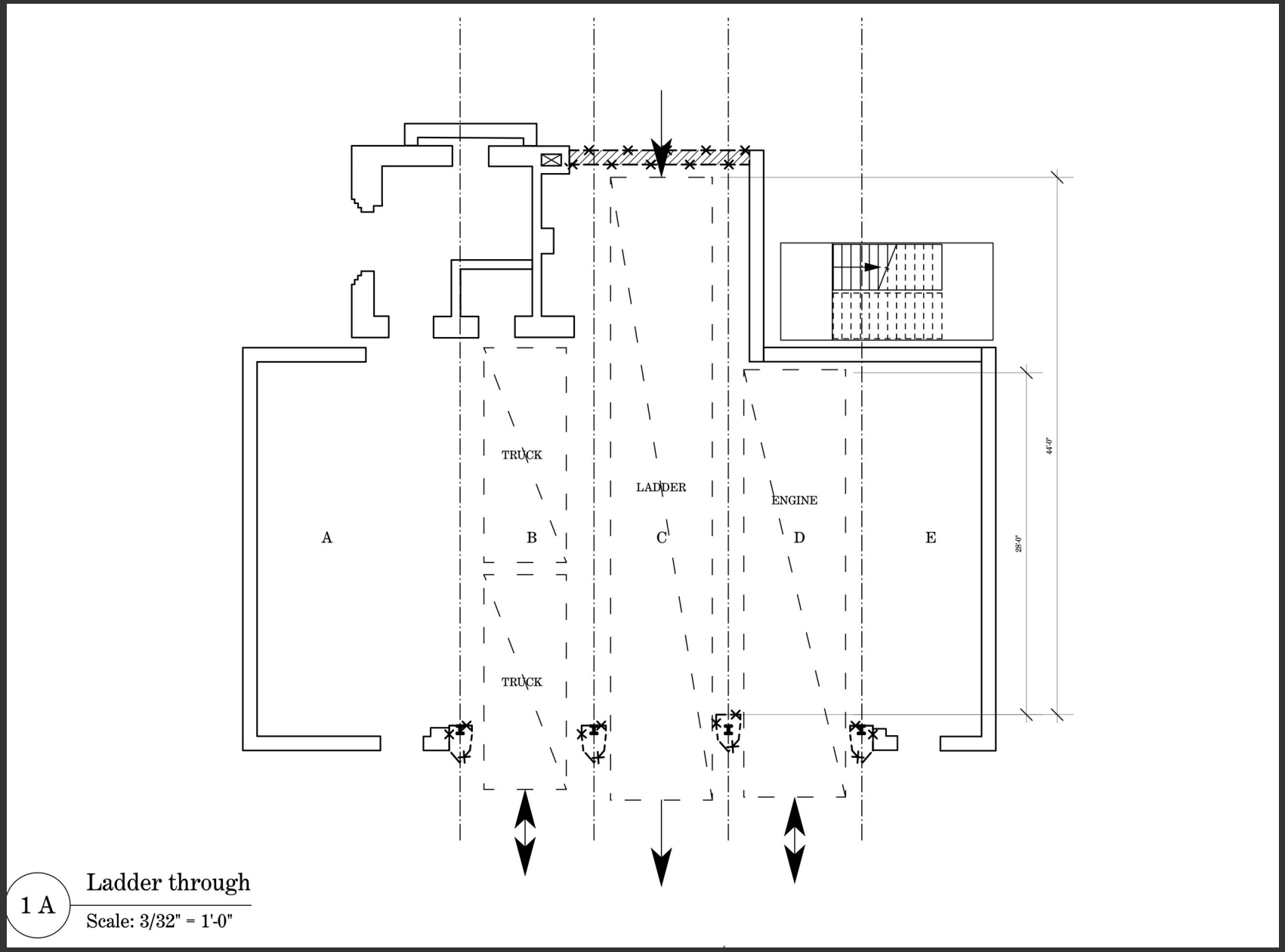
Option 0: New Use, Existing Building



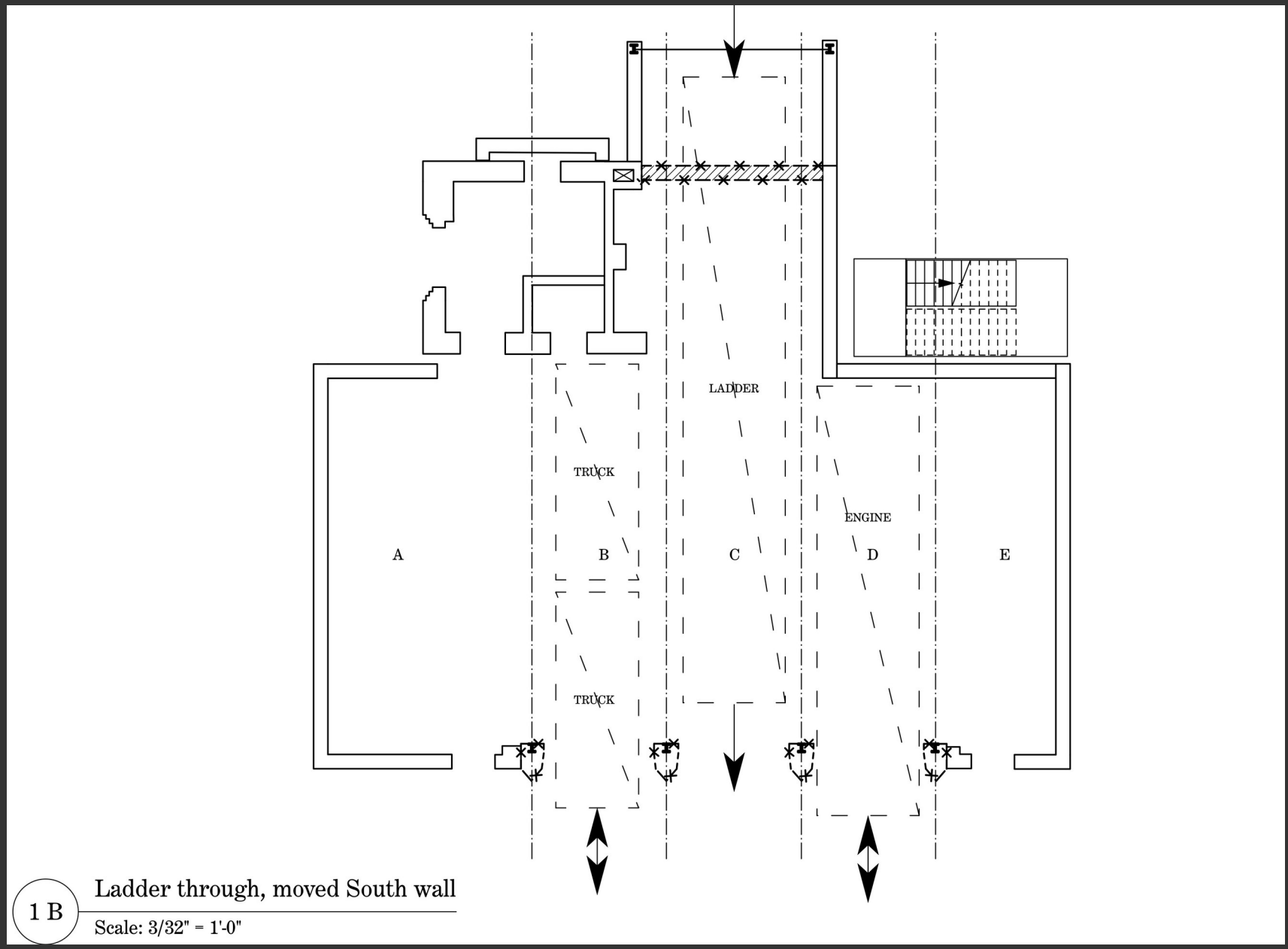
0 Existing Condition

Scale: 3/32" = 1'-0"

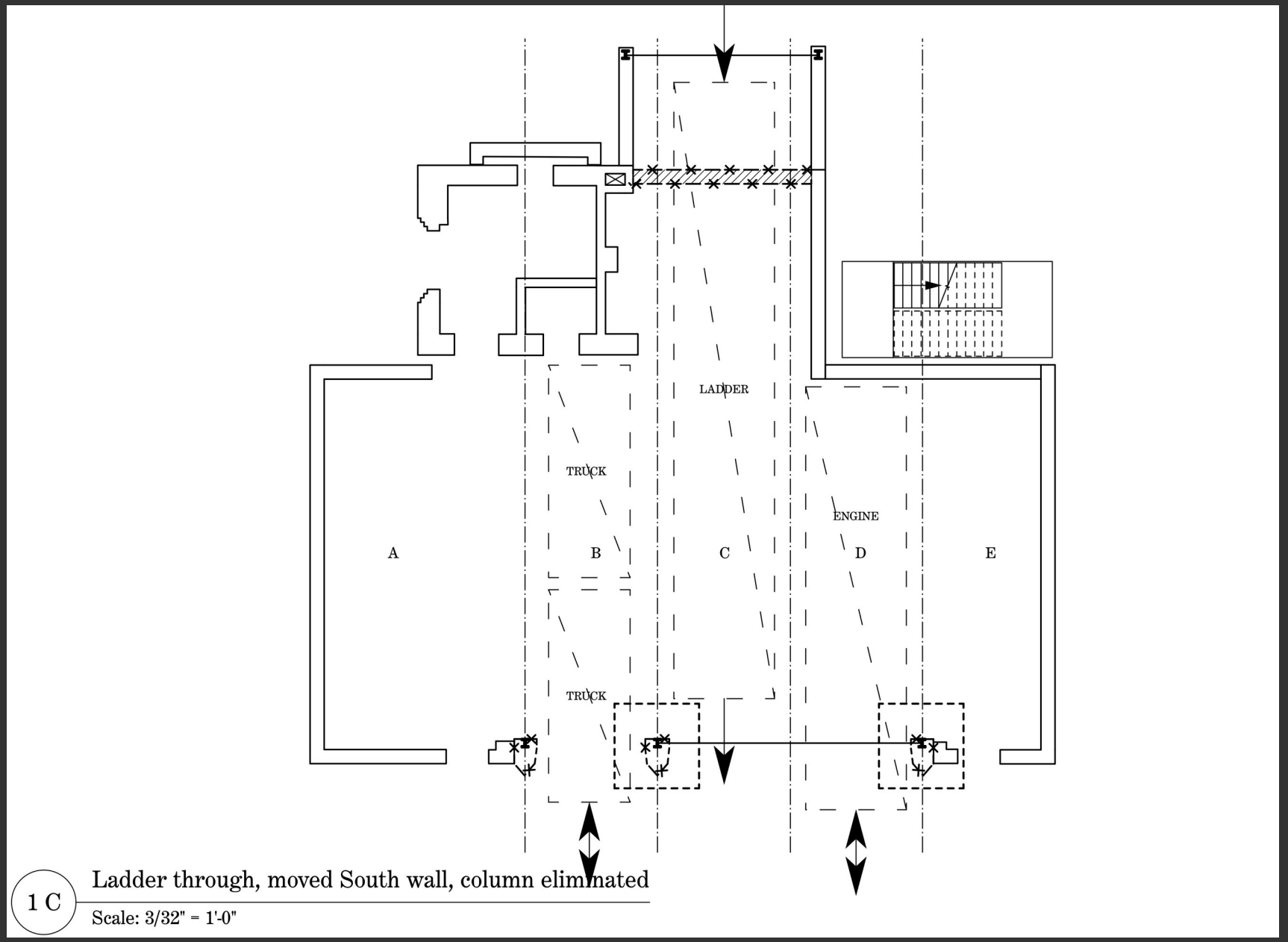
Option 1A: Ladder Enters From South



Option 1B: Ladder Enters From South



Option 1C: Ladder Enters From South

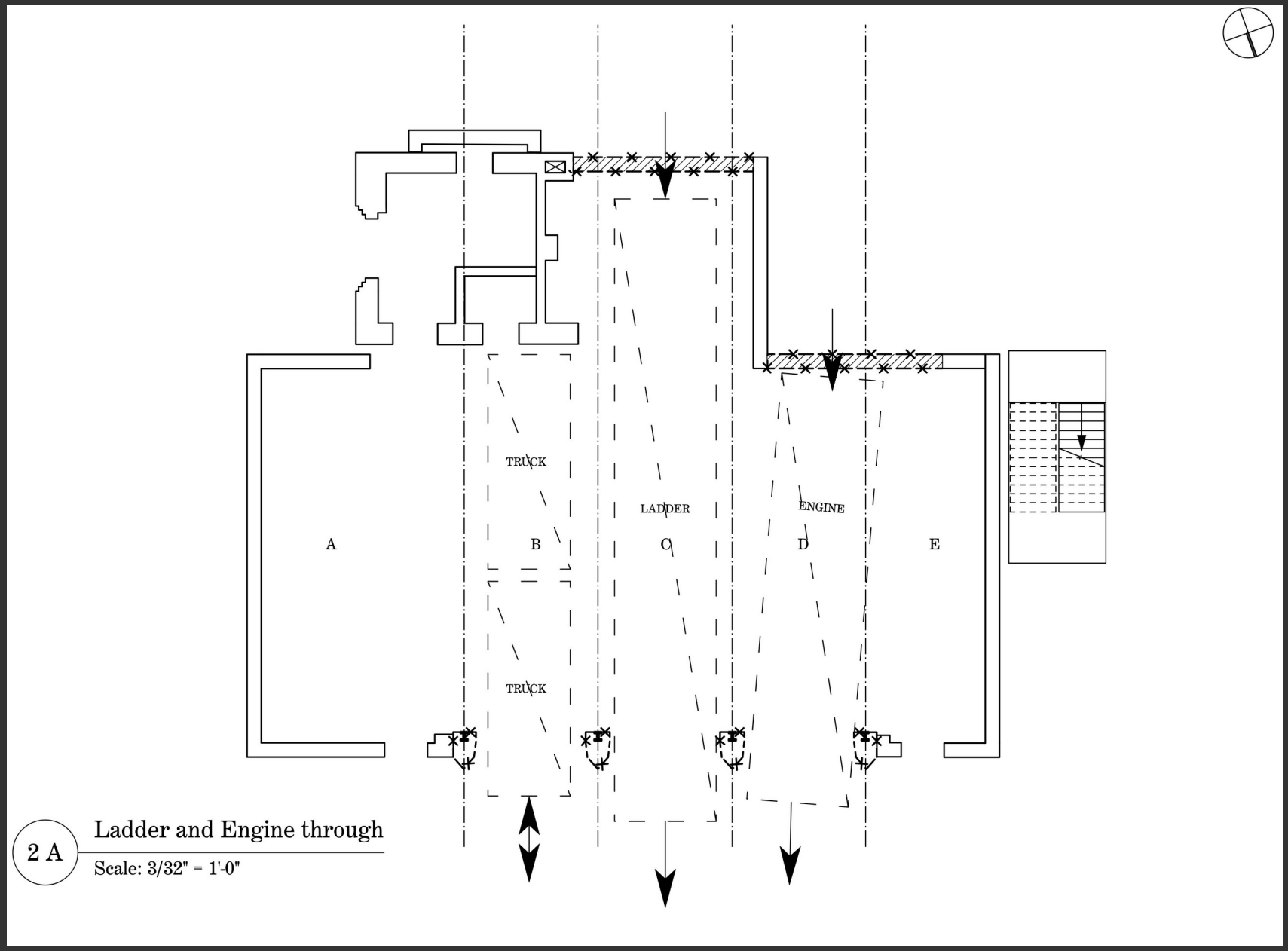


1 C

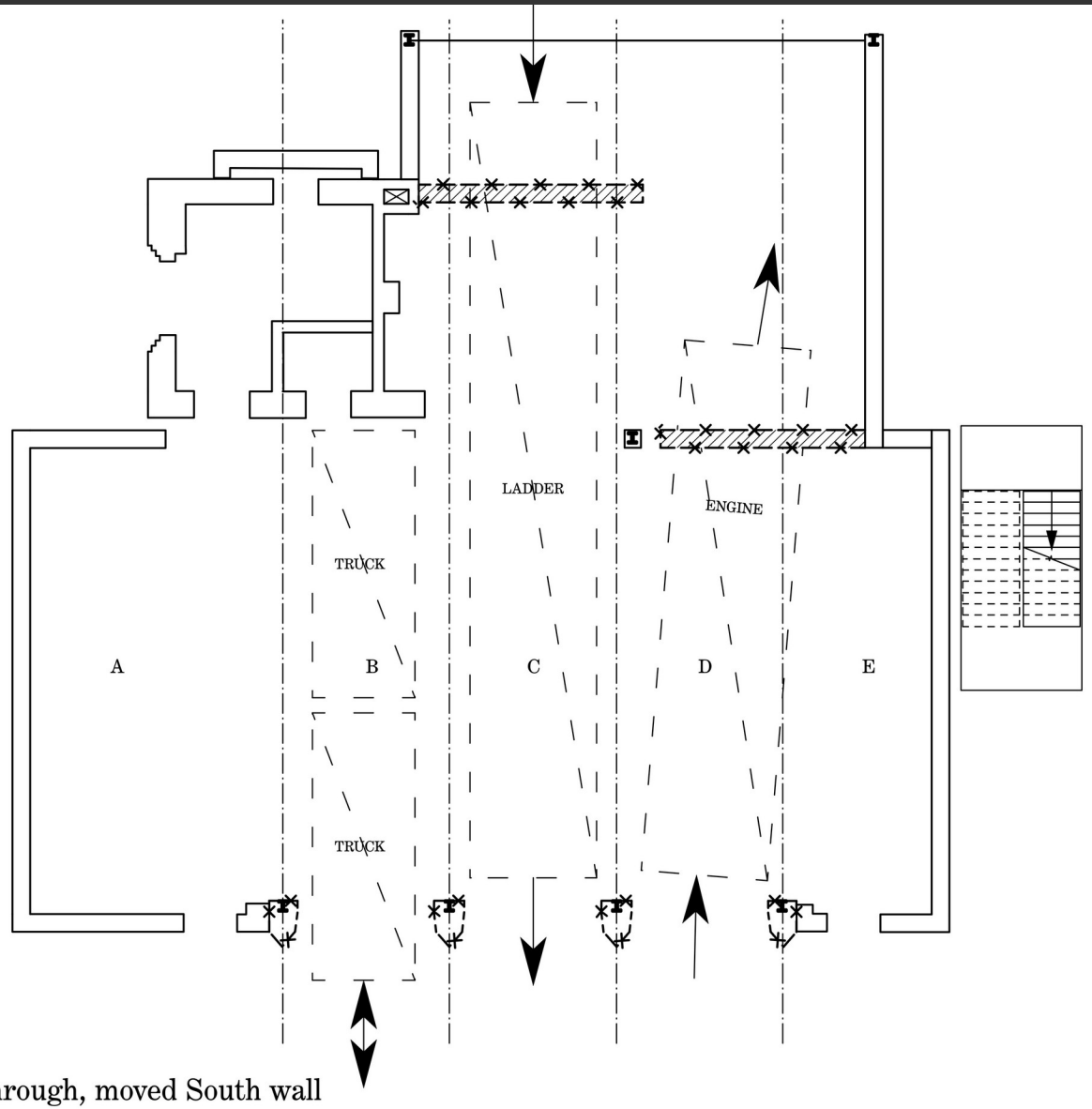
Ladder through, moved South wall, column eliminated

Scale: 3/32" = 1'-0"

Option 2A: Both Trucks Enter From South



Option 2B: Both Trucks Enter From South

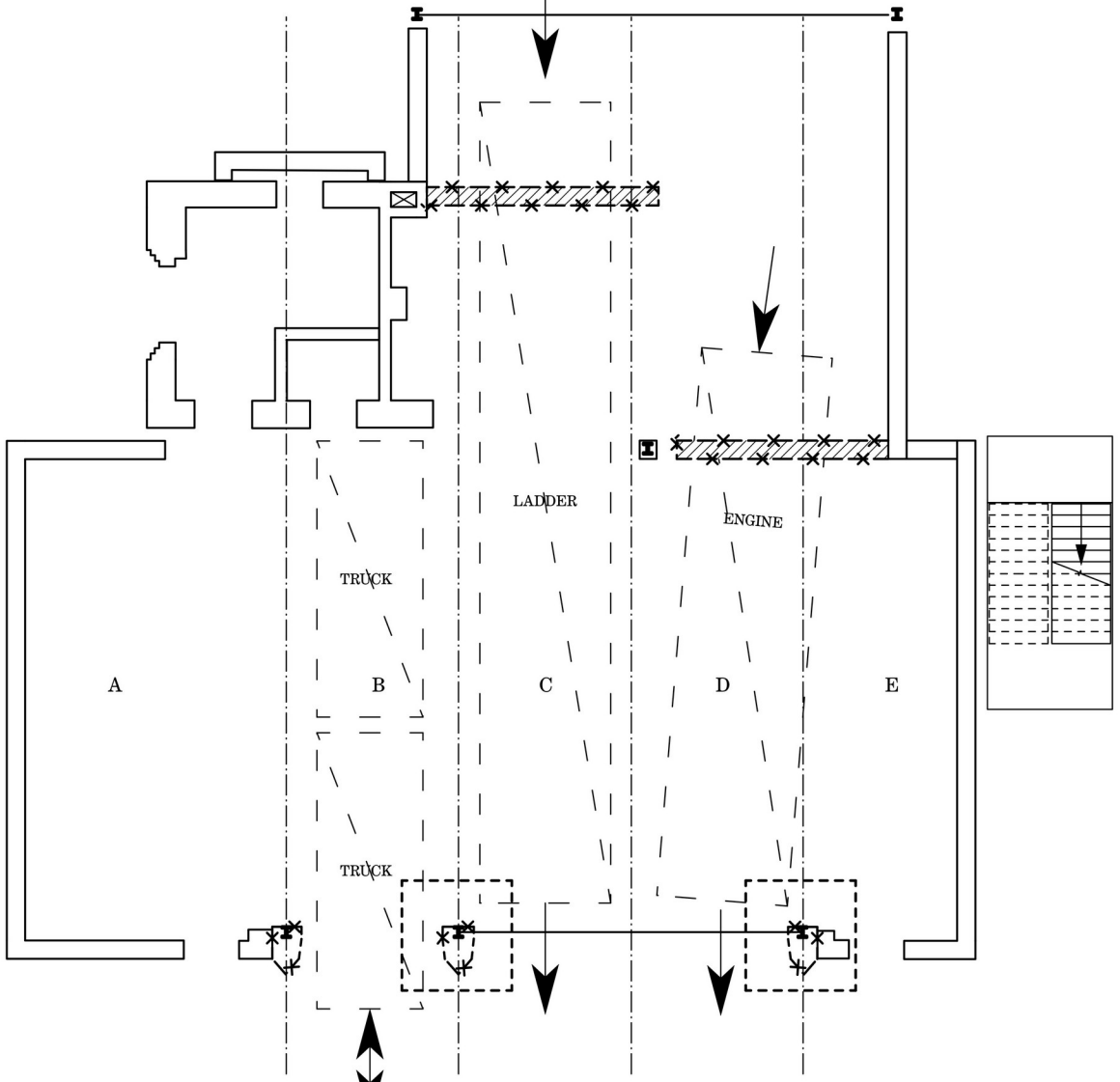


2 B

Ladder and Engine through, moved South wall

Scale: 3/32" = 1'-0"

Option 2C: Both Trucks Enter From South

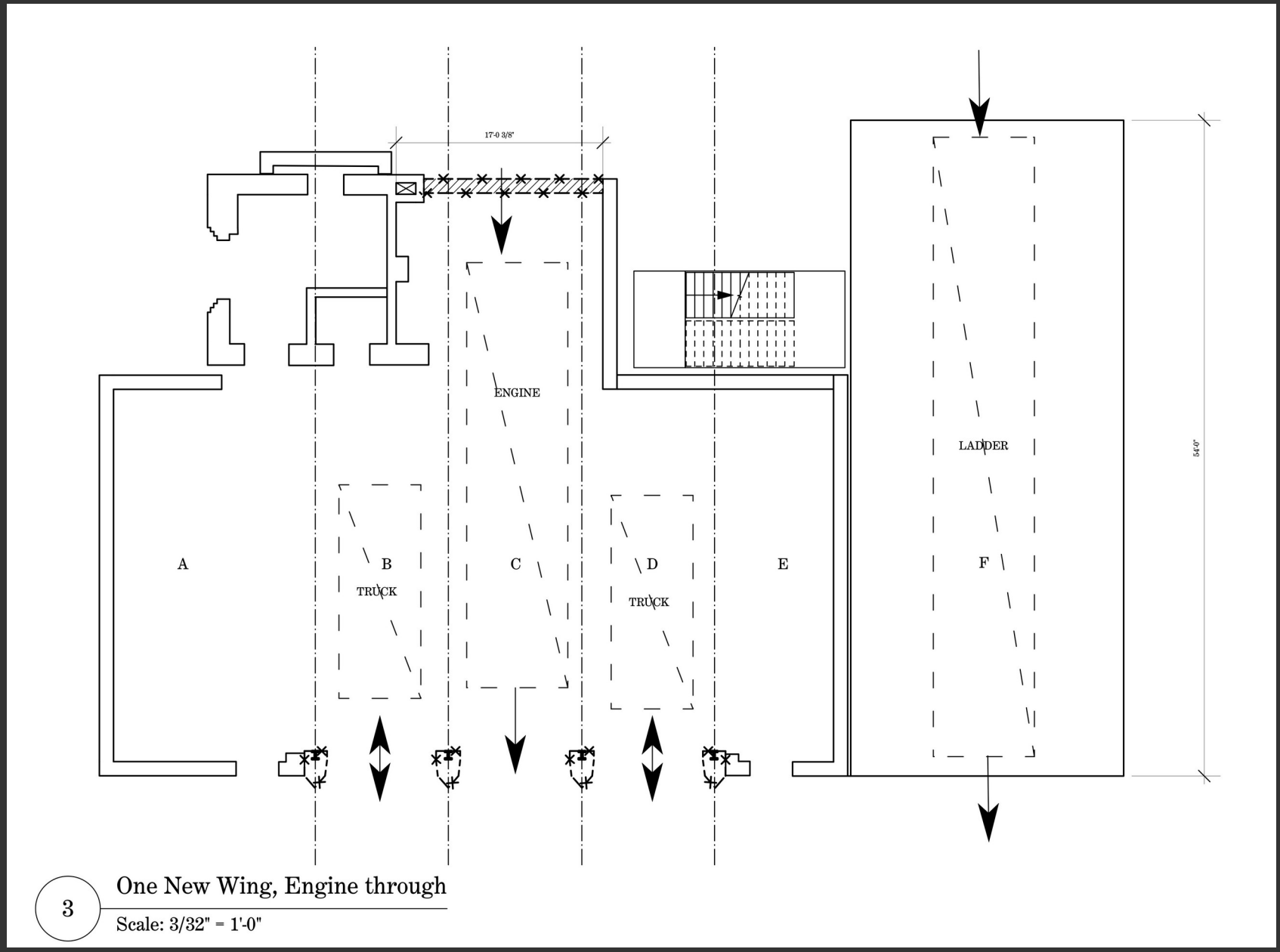


2 C

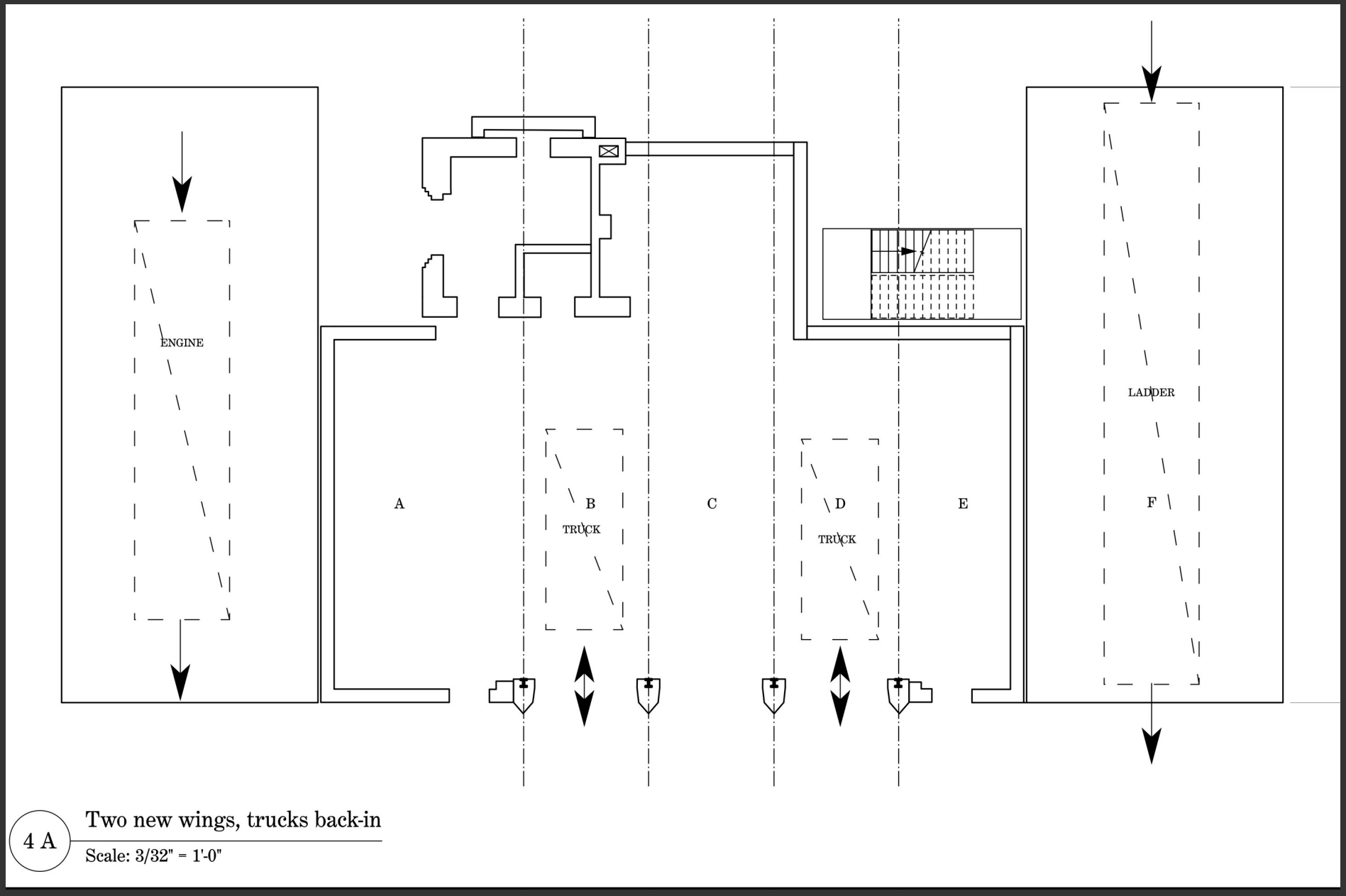
Ladder and Engine through, moved South wall, column eliminated

Scale: 3/32" = 1'-0"

Option 3: New West Wing



Option 4A: New East and West Wings

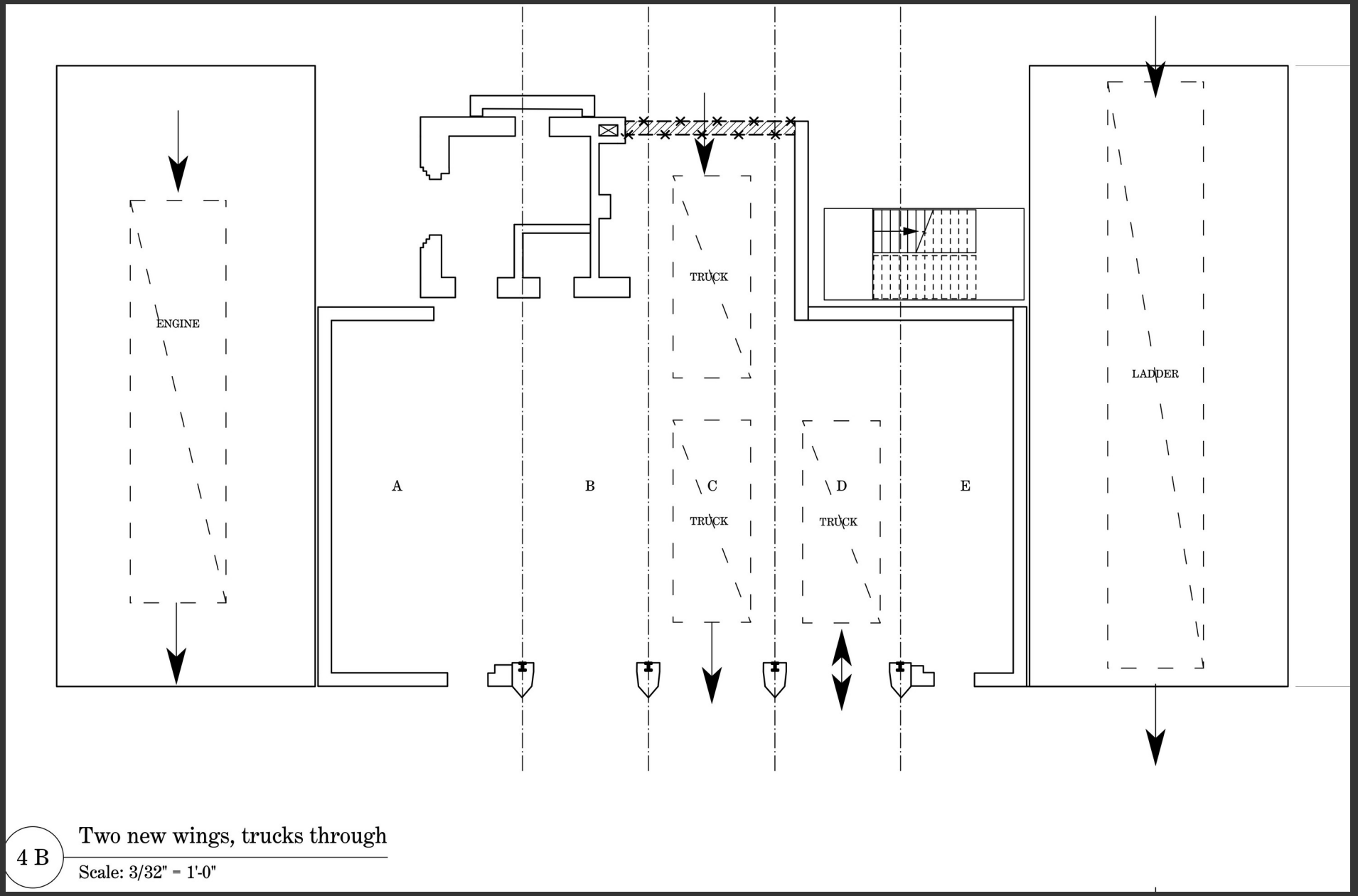


4 A

Two new wings, trucks back-in

Scale: 3/32" = 1'-0"

Option 4B: New East and West Wings

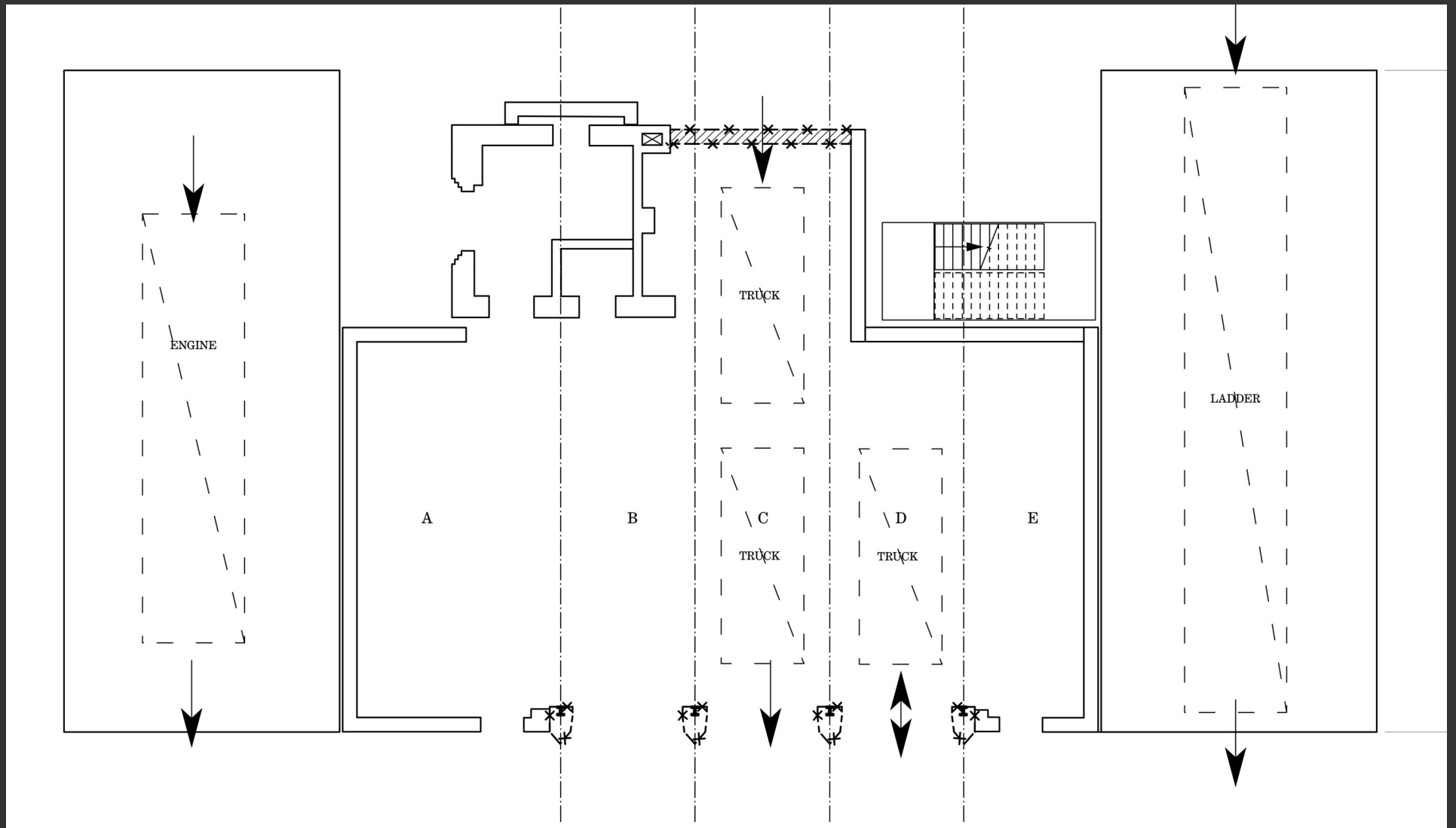


4 B

Two new wings, trucks through

Scale: 3/32" = 1'-0"

Option 4C: New East and West Wings

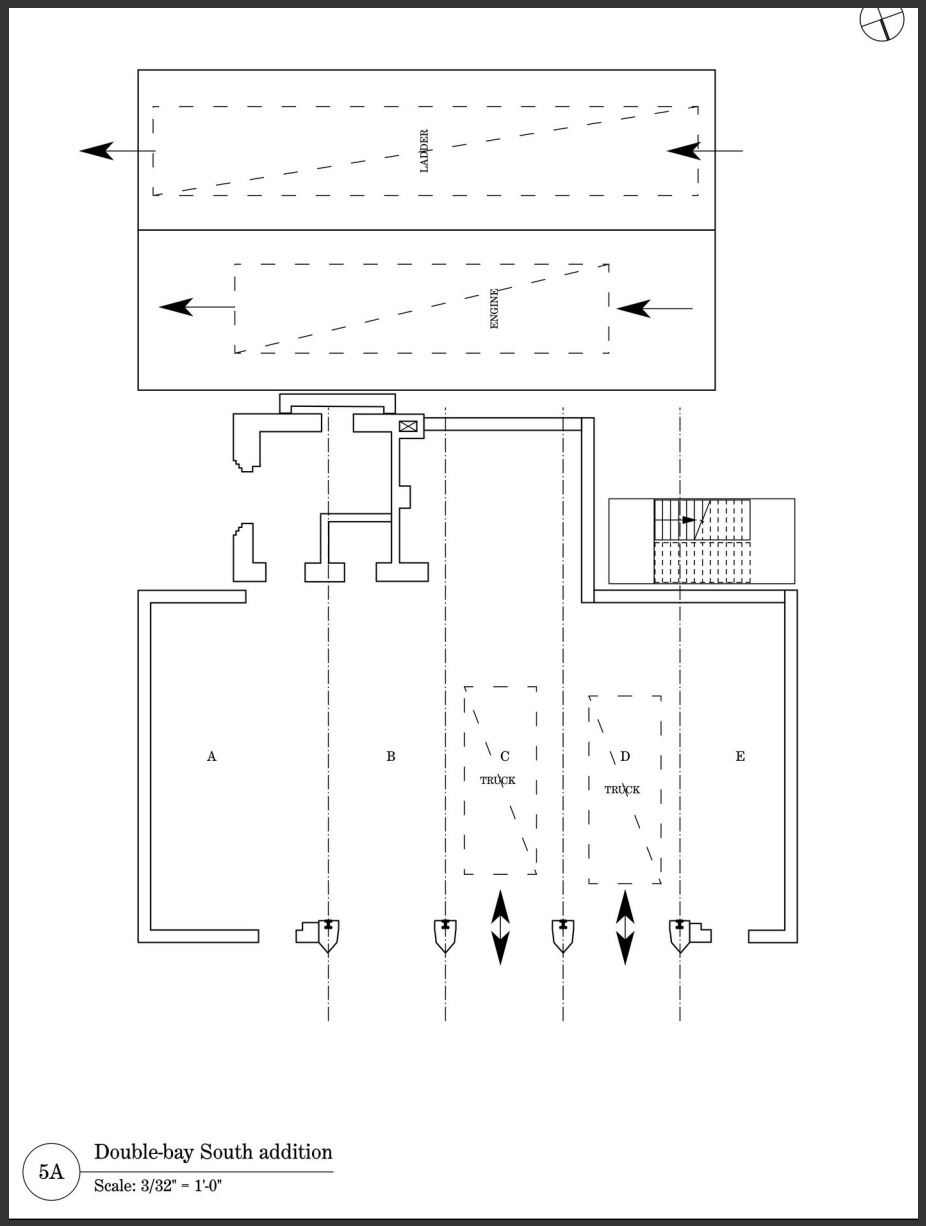


4 C

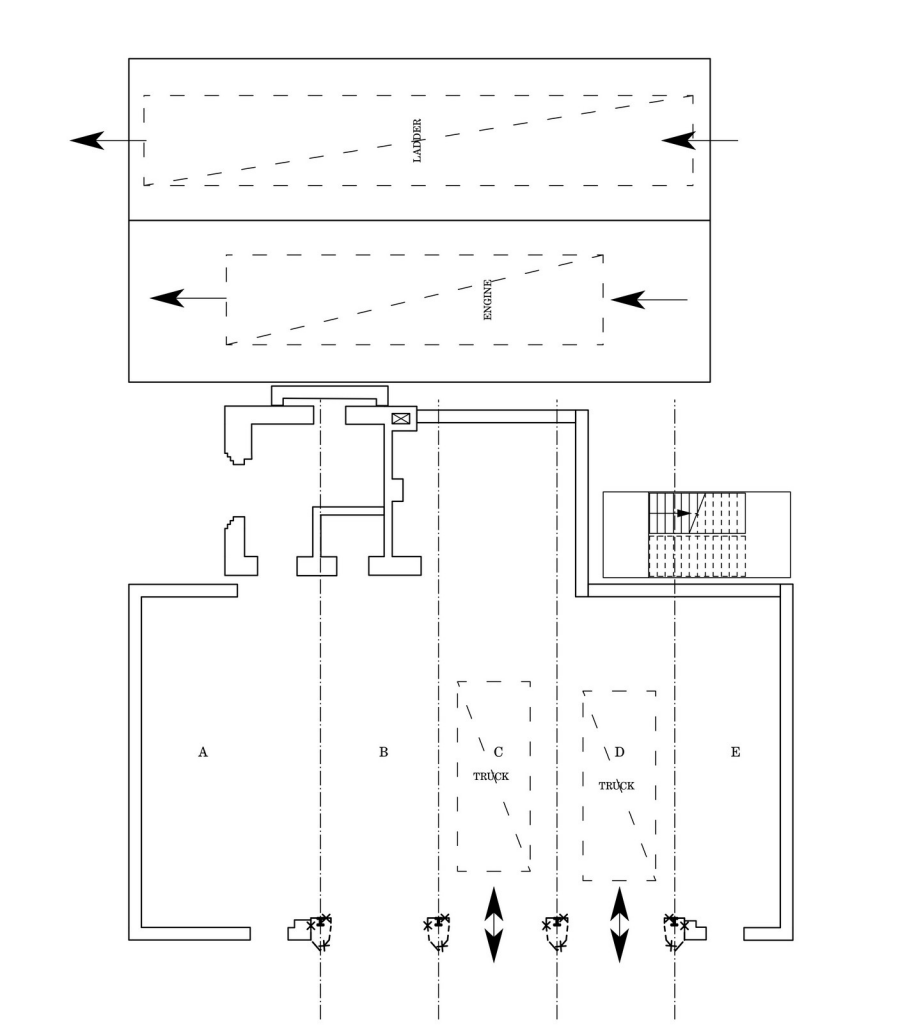
Two new wings, trucks through enlarged opening

Scale: 3/32" = 1'-0"

Option 5A: New South Wing



Option 5B: New South Wing



5B Double-bay South addition, truck opening enlarged

Scale: 3/32" = 1'-0"

Preferred Options

Edgemere Road Firehouse Feasibility Study **Comparison Table**

Date: 07/11/22 Refer to FS-100 and FS-101 for corresponding diagrams
Prepared by: tm

Color Legend:
Red = limitation
Green = benefit
Yellow = change within option

		Option 1 A Ladder through	Option 2 A Ladder + Engine Through	Option 3 – PREFERRED 1 New Wing, Engine Through	Option 4 A 2 New Wings, Truck back in	Option 5 A – PREFERRED 2-bay South Addition
Ladder	Max Length	44’	44’	As needed	As needed	As needed
	Max Height	12’-6”	12’-6”	As needed	As needed	As needed
	Clear width	10’-2”	10’-2”	As needed	As needed	As needed
	Drive Through	Y	Y	Y	Y	Y
Engine	Max Length	28’	28’	44’	As needed	As needed
	Max Height	12’-6”	12’-6”	12-6’	As needed	As needed
	Clear width	10’-2”	10’-2”	10’-2”	As needed	As needed
	Drive Through	N	Y at angle	Y	Y	Y
Trucks	Max Length	14’ each	14’ each	As needed	As needed	As needed
	Max Height	12’-6”	12’-6”	12’-6”	12’-6”	12’-6”
	Clear width	10’-2”	10’-2”	10’-2”	9’	9’
	Drive Through	N	N	N	N	N
Relative cost		$	$	$$$	$$$$$	$$$$
Structural work for existing building		Remove rear wall of bay C Install new steel frame at bay C Install new footings for frame at bay C Remove steel covers at gate	Remove rear wall of bay C Install new steel frame at bay C Install new footings for frame at bay C Remove steel covers at gate Remove rear wall of Bay D Install new steel frame at rear Bay D Install new footings at rear Bay D Move fire stairs to side of building	Remove rear wall of bay C Install new steel frame at bay C Remove steel covers at gate	Not applicable	Not applicable
Structural work for New Wing(s)		Not applicable	Not applicable	(8) New footings New steel frame (1 bay x 4 bays) Seismic separation between old/new New slab on grade New roof	*Double work of 3* (16) new footings (2) New steel frames (1 bay x 4 bays) (2) Seismic separations (2) New slab on grade (2) New roof	*50% more work than 3 A* (12) New footings New steel frame (2 bay x 4 bays) Seismic separation between old/new New slab on grade New roof

Other Options

		Option 1 B Ladder through, moved South wall	Option 2 B Ladder + Engine Through, moved South Wall		Option 4 B – To be Considered 2 New Wings, Trucks Through	Option 5 B 2-bay South Addition
Ladder	Max Length	As needed	As needed		As needed	As needed
	Max Height	12'-6"	12'-6"		As needed	As needed
	Clear width	10'-2"	10'-2"		As needed	As needed
	Drive Through	Y	Y		Y	Y
Engine	Max Length	28'	As needed		As needed	As needed
	Max Height	12'-6"	12'-6"		As needed	As needed
	Clear width	10'-2"	10'-2"		As needed	As needed
	Drive Through	N	Y at angle		Y	Y
Trucks	Max Length	14' each	14' each		As needed	As needed
	Max Height	12'-6"	12'-6"		12'-6"	12'-6"
	Clear width	10'-2"	10'-2"		9'	10'-2"
	Drive Through	N	N		Y	N
Relative cost		$	$$		$$$$$	$$$$
Structural work for existing building		Remove rear wall of bay C Install new steel frames at bay C Install new footings for frame at bay C Remove steel covers at gate Steel frame for moved rear wall New footings for moved rear wall Extend side wall bay C	Remove rear wall of bay C Install new steel frame at bay C Install new footings for frame at bay C Remove steel covers at gate Remove rear wall of Bay D Install new steel frame at rear Bay D Install new footings at rear Bay D Move fire stairs to side of building Remove masonry between C and D Install new column on new footing Moved rear wall steel frame Moved rear wall new footings Extend side walls bay E and D	*No 3B*	Remove rear wall of bay C Install new steel frame at bay C Install new footings for frame at bay C	Remove steel covers at gate
Structural work for New Wing(s)		Not applicable	Not applicable		(16) new footings (2) New steel frames (1 bay x 4 bays) (2) Seismic separations (2) New slab on grade (2) New roof	(12) New footings New steel frame (2 bay x 4 bays) Seismic separation between old/new New slab on grade New roof

Other Options

		Option 1 C Ladder through, moved South wall, Column eliminated	Option 2 C Ladder + Engine Through, moved South Wall, Column Eliminated		Option 4 C 2 New Wings, Trucks Through wider front	
Ladder	Max Length	As needed	As needed		As needed	
	Max Height	12'-6"	12'-6"		As needed	
	Clear width	21' for ladder + engine at front	21' for ladder + engine at front		As needed	
	Drive Through	Y	Y		Y	
Engine	Max Length	28'	As needed		As needed	
	Max Height	12'-6"	12'-6"		As needed	
	Clear width	21' for ladder + engine at front	21' for ladder + engine at front		As needed	
	Drive Through	N	Y at angle		Y	
Trucks	Max Length	14' each	14' each		As needed	
	Max Height	12'-6"	12'-6"		12'-6"	
	Clear width	10'-2"	10'-2"		10-2'	
	Drive Through	N	N		Y	
Relative cost		$$$	$$$$$		$$$$	
Structural work for existing building		Remove rear wall of bay C Install new steel frames at bay C Install new footings for frame at bay C Remove steel covers at gate Steel frame for moved rear wall New footings for moved rear wall Extend side wall bay C Remove central column at gate Install new footings at gate Install or reinforce spandrel beam	Remove rear wall of bay C Install new steel frame at bay C Install new footings for frame at bay C Remove steel covers at gate Remove rear wall of Bay D Install new steel frame at Bay D Install new footings at Bay D Move fire stairs to side of building Remove masonry between C and D Install new column on new footing Moved rear wall steel frame Moved rear wall new footings Extend side walls bay E and D Remove central column at gate Install new footings at gate Install or reinforce spandrel beam	*No 3C*	Remove rear wall of bay C Install new steel frame at bay C Install new footings for frame at bay C Remove steel covers at gate	*No 5C*
Structural work for New Wing(s)		Not applicable	Not applicable		(16) new footings (2) New steel frames (1 bay x 4 bays) (2) Seismic separations (2) New slab on grade (2) New roof	

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