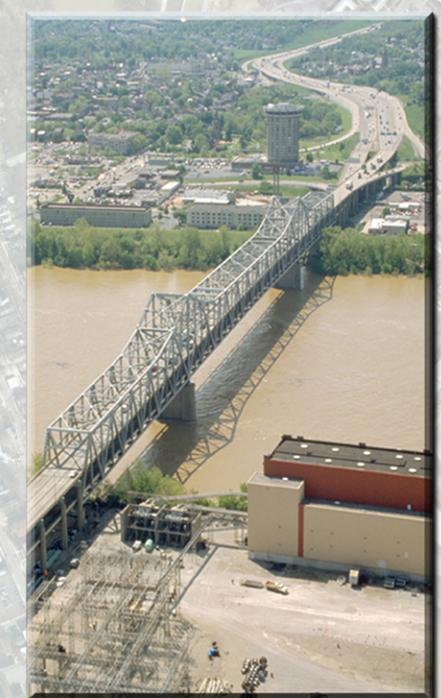




Brent Spence Bridge Replacement/Rehabilitation Project

Longworth Hall Impact Analysis Report Part One: Physical Impact Limits

ODOT PID No. 75119
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1.0 Project Overview

1.1 Introduction

Interstate 75 (I-75) within the Greater Cincinnati/Northern Kentucky region, is a major thoroughfare for local and regional mobility. Locally, it connects to I-71, I-74 and US Route 50. The Brent Spence Bridge provides an interstate connection over the Ohio River and carries both I-71 and I-75 traffic. The bridge also facilitates local travel by providing access to downtown Cincinnati, Ohio and Covington, Kentucky. Safety, congestion and geometric problems exist on the structure and its approaches. The Brent Spence Bridge, which opened to traffic in 1963, was designed to carry 80,000 vehicles per day. Currently, approximately 160,000 vehicles per day use the Brent Spence Bridge and traffic volumes are projected to increase to approximately 233,000 vehicles per day in 2035.

The I-75 corridor within the Greater Cincinnati/Northern Kentucky region is experiencing problems which threaten the overall efficiency and flexibility of this vital trade corridor. Areas of concern include, but are not limited to growing demand and congestion, land use pressures, environmental concerns, adequate safety margins, and maintaining linkage in key mobility, trade, and national defense highways.

To address these critical transportation needs, the Brent Spence Bridge Replacement/Rehabilitation Project is currently being undertaken. The purpose of the project is to:

- Improve traffic flow and level of service;
- Improve safety;
- Correct geometric deficiencies; and
- Maintain connections to key regional and national transportation corridors.

Throughout the Brent Spence Bridge Replacement/Rehabilitation project development process, specific measures were implemented to avoid, minimize or mitigate environmental impacts associated with the new Ohio River Bridge. These measures are identified and documented in the Environmental Assessment and will be implemented during detailed design and construction.

1.2 Longworth Hall

In Ohio, the proposed project will impact one historic resource, Longworth Hall located at 700 East Pete Rose Way in downtown Cincinnati. This building is located immediately west of I-71/I-75 and the preferred alternative for the project will pass through 204 feet of its northern and eastern end. Longworth Hall was listed on the National Register of Historic Places (NRHP) in 1986. This resource is

significant because it is a unique example of functional railroad architecture embellished with Romanesque Revival details. It exhibits distinctive characteristics of the style and is further enhanced because of its exceptional length of 1,160 feet. The building is also significant because it contributes to the understanding of freight movement by railroad during a period when this was an important mode of transportation.

Longworth Hall is a five-story, common bond brick railroad freight storage building. The existing structure consists of six adjacent blocks, designated Areas "A through F". The exterior façades consist of 17-foot-on center repetitive bays. Longworth Hall has a concrete foundation and a flat roof and maintains a high degree of integrity despite several changes to its exterior. The first floor has rock-faced ashlar piers supporting columns rising to the fourth floor, from which decorative semi-circular arches adorn the façades. The structure was designed by M.A. Long and built in 1904 in order to consolidate several smaller obsolete warehouses. The B & O Railroad had placed an emphasis on Cincinnati as a major shipping center and transfer point, and the warehouse contributed to the functioning of the railroad until competition from trucks reduced its effectiveness and profitability.

Originally 1,277 feet long, the east end of the warehouse was reduced by 150 feet in 1961 to allow for the supporting piers of elevated I-71/75. A five-story 30,000 square foot brick addition was then built onto the northeast corner. A fire in the original building destroyed part of the fifth floor which was never rebuilt. The warehouse is an important surviving example of an industry that is losing its older distinctive buildings. A two-story brick building originally associated with the boiler room and round house is also associated with this resource.

1.3 Mitigation Measures

The Ohio Department of Transportation (ODOT), Ohio Historic Preservation Office (OHPO), and Federal Highway Administration (FHWA) met on July 15, 2010 to discuss impacts to Longworth Hall. Information about the impacts to this resource was sent to Ohio Section 106 consulting parties for comment and posted on the project website. A consulting parties meeting was held on October 7, 2010 to discuss impacts to Longworth Hall and possible mitigation measures. During the meeting several mitigation options were presented and discussed, which resulted in six feasible mitigation measures identified for further analysis in a subsequent document.

1.4 Purpose of Report

This report presents the results of the analyses completed for the physical impact limits on Longworth Hall. The proposed impact limits were developed to a conceptual level of detail by outlining major architectural, structural, mechanical, electrical and plumbing systems and the associated alterations.

2.0 I-71/I-75 Physical Impact Limits on Longworth Hall

2.1 Architectural and Structural Summary



An investigation and analysis has been performed to determine the physical impacts of the Brent Spence Bridge Replacement/Rehabilitation Project on the historic Longworth Hall. This study establishes the proposed location for removal of the east portion of Longworth Hall in order to accommodate the project. The determination of the building cutoff location is based on the opportunities within the building’s architectural, structural, mechanical and electrical systems, along with a provision for both building and highway safety and maintenance clearances. The proposed cutoff location, just east of column line 57, is positioned to minimize the impact on the historic structure while the proposed mitigation aims at restoring the east end of Longworth Hall to a state better than its current condition. This results in the removal of approximately 204 feet of the north end of Longworth Hall. (See Figure 1 for the proposed removal of Areas “A” and “N” along with Figures 2-7 for the proposed removal of Area “B”.)

2.1.1 The Existing Building Envelope

The Longworth Hall building envelope consists of solid brick, load bearing walls constructed of multiwythe brick with stone trim at the building base and window sills, along with concrete copings at the top of the brick walls. The façades consist of simple brick detailing along with brick, corbelling, pilasters, and arches. The brick is turn of the century pressed brick. Current brick manufacturing techniques, typically wire-cut, make it difficult and expensive to match the brick type found at Longworth Hall, thus it is recommended that brick be saved, where possible, from demolition for reuse as part of the mitigation efforts. A great majority of the building’s original windows are in place. These existing windows are wood framed single pane and counterbalanced in the jamb. It is recommended that any replacement windows be wood framed insulated glass to match the profile and character of the existing openings.

2.1.2 The Existing Building Structure

Longworth Hall has a structural steel column and beam system with timber floor joists at floors one through five. The fifth floor consists of a combination of timber and steel columns supporting timber beams and timber and dimensional lumber joists. Both the floor and roof decking are a true two-inch wood lumber. The wood flooring is a true one-inch wood lumber.

2.1.3 The Existing Building Interior

Longworth Hall Area “B” is currently occupied by businesses with egress at the upper floors occurring at a stair in the southwest corner of Area “B”. The second means of egress for the upper floors is at the east end of Area “B” through a stair in the northeast corner of Area “A”. (See Figures 8-13)

2.1.4 Building Demolition

The existing dimensions of Areas “A”, “B”, and “N” are shown on Figures 2 thru 7 and square footages of each area are listed in Table 1. The length of the structure to be removed is 204 feet of the north and east end of Longworth Hall.

	Existing Square Footage			Building to be Demolished Square Footage			Remaining Square Footage		
	Area A	Area B	Area N	Area A	Area B	Area N	Area A	Area B	Area N
1 st Floor	5,070	9,929	9,074	5,070	4,829	9,074	0	5,100	0
2 nd Floor	5,010	9,929	3,510	5,010	4,829	3,510	0	5,100	0
3 rd Floor	5,010	9,929	10,312	5,010	4,829	10,312	0	5,100	0
4 th Floor	5,070	9,929	10,312	5,070	4,829	10,312	0	5,100	0
5 th Floor	5,070	9,929	10,312	5,070	4,829	10,312	0	5,100	0
Totals	25,230	49,645	43,520	25,230	24,145	43,520	0	25,500	0

Table 1: Square Footage by Area Location

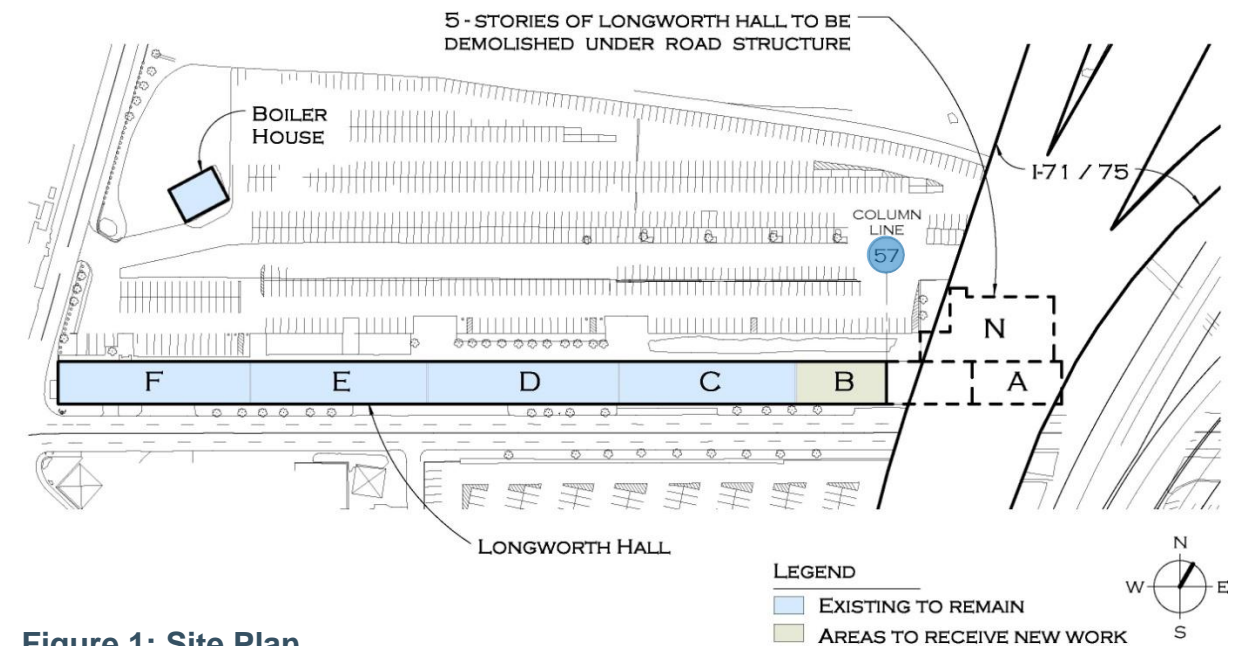


Figure 1: Site Plan

2.1.5 Architectural Rehabilitation

Once the east portion of Longworth Hall is removed, the new terminus will be as follows:

1. The new wall to close off the exposed end of the building left by the demolition of Areas “A” and “N” will be a masonry shear wall with 12-inch fully grouted concrete masonry. Bricks saved from the demolition of Area “A” will be used to face the interior and exterior side of the concrete masonry wall. Brick pilasters, arches and corbelling will complete the end of the building (See Figures 8 thru 13 for the new wall location.)
2. A new elevator and stairs will be added to all floors to complete egress and circulation systems required by code. (See Figures 8 thru 13 for new stair and elevator location.)
3. For additional information on areas to be removed see Figures 2 thru 7 detailing the demolition of Area “A” and the partial demolition of Area “B”.
4. For additional information on areas to receive remedies see Figures 2 thru 13 of existing/new work floor plans for the end of Longworth Hall at Area “B”.

2.1.6 Structural Rehabilitation

Removal of the structure east of column line 57 will start with the installation of cable ties and bracing to create a temporary lateral load resisting system to stabilize the structure. Demolition will be systematic, and for the historic Area “A” and “B” portions of the building demolition will be performed largely as a disassembly to preserve and salvage lumber and brick components for reuse. In Area ‘N’, a recent addition to historic Longworth Hall, there are no timber components to be salvaged. The brick envelope will not be salvaged for reuse, it is a newer brick that does not match the color, texture, or patina of the historic brick. Flooring lumber, sub-floor, and joists will be removed and stock-piled in protective conditions. Exterior brick walls shall also be removed in small sections to limit the number of damaged bricks.

After completion of demolition and clearing the site adjacent Longworth Hall Area “B”, the end wall will be reconstructed with a new concrete masonry unit (CMU) shear wall that will also permanently restore the lateral load resisting capability of the structure. The CMU wall will be completed in coordination with the brick fascia at the new east end of the building. The new east end will be constructed re-using the original brick obtained during demolition. The anticipated construction of the structural shear wall is a 12-inch thick, grouted and reinforced CMU wall. It will be built with integral 24 x 24-inch grouted and reinforced CMU pilasters at the ends of the shear wall adjacent to the existing north and south exterior brick walls and at two symmetrical interior locations approximately five feet apart. The locations described are intended to coordinate with locations of control joints in the exterior brick face.

Support of the new wall will be created by the construction of a new concrete foundation parallel and immediately east of column line 57. It is anticipated that the new shear wall foundation will be a continuous grade beam footing cast over a series of piles. The piles will be embedded in and anchored

to the grade beam to both support the weight of the wall and also to provide anchorage required to resist lateral load overturning. The pile type and quantity required shall be determined after completion of additional subsurface exploration.



Photo 1: Longworth Hall - “Before” (The image above shows the east end of Longworth Hall “before” the introduction of the proposed Brent Spence Bridge Replacement/Rehabilitation.)

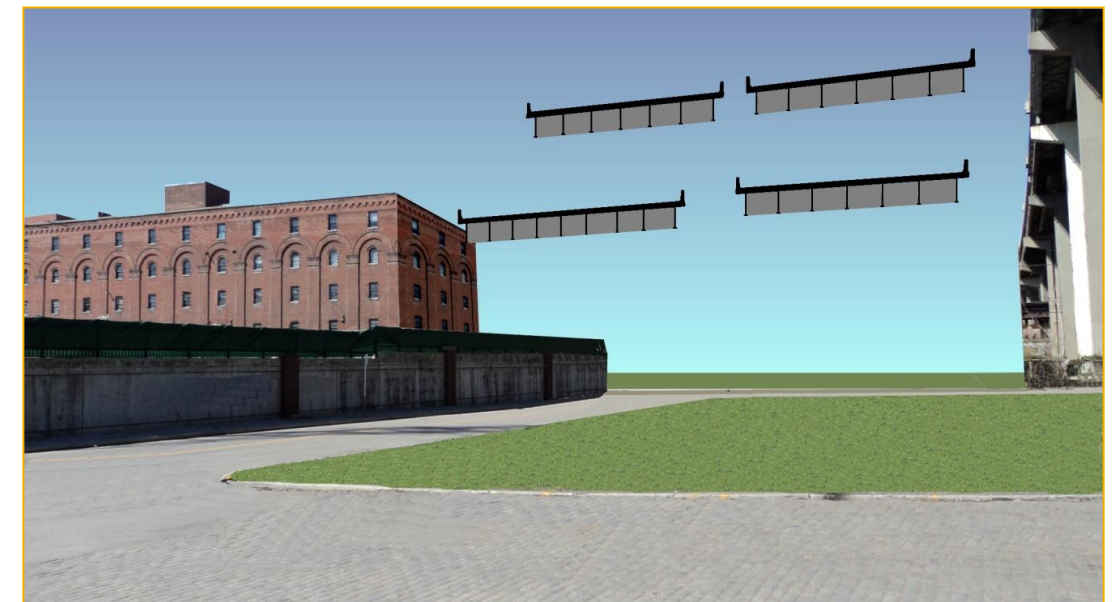


Photo 2: Longworth Hall - “After” (The image above shows how the east façade will be reconstructed as well as the bridge approach diagram.)

2.2 Existing Building / Proposed Demolition Floor Plans 1-5, Roof

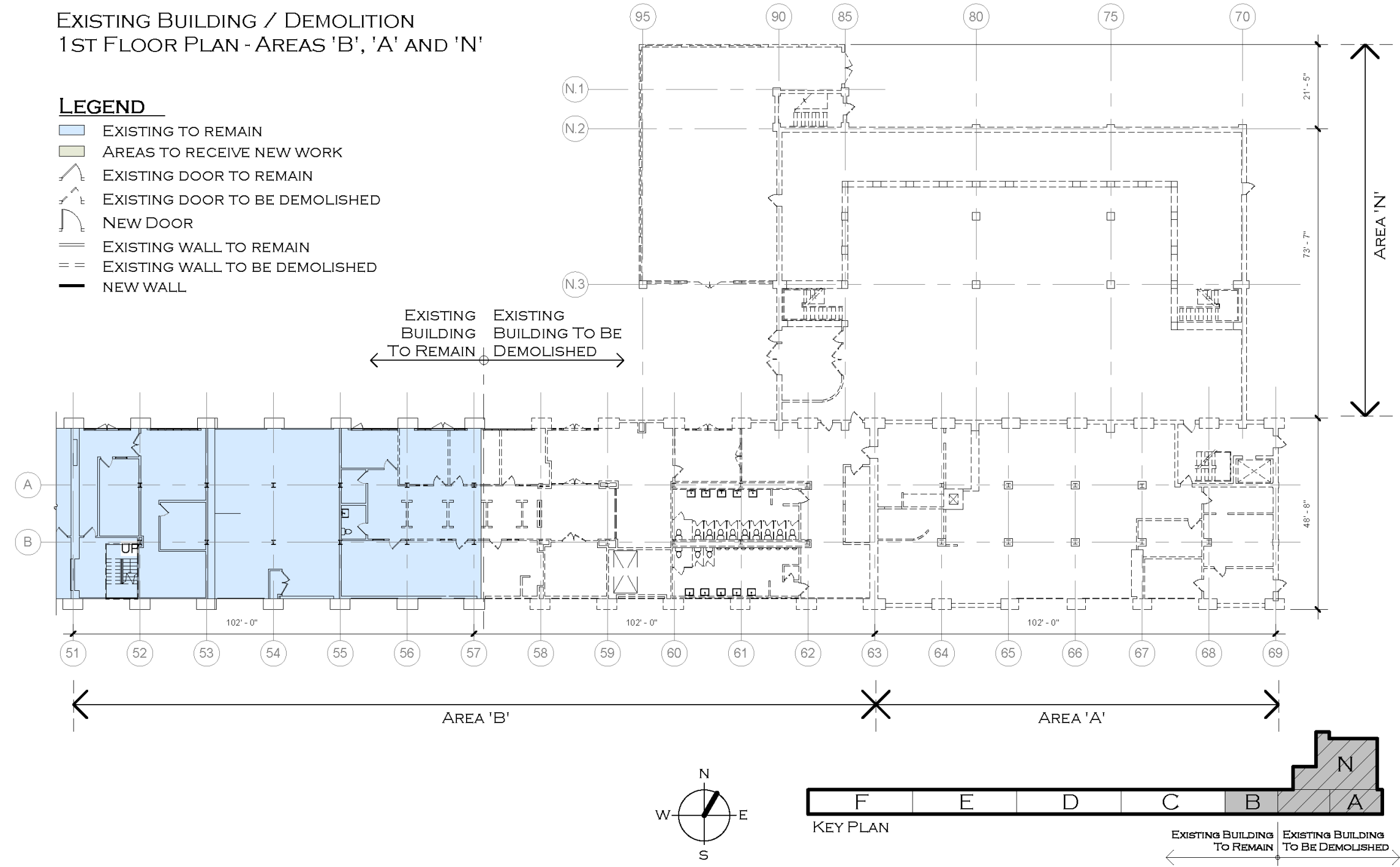


Figure 2

EXISTING BUILDING / DEMOLITION
3RD FLOOR PLAN - AREAS 'B', 'A' AND 'N'

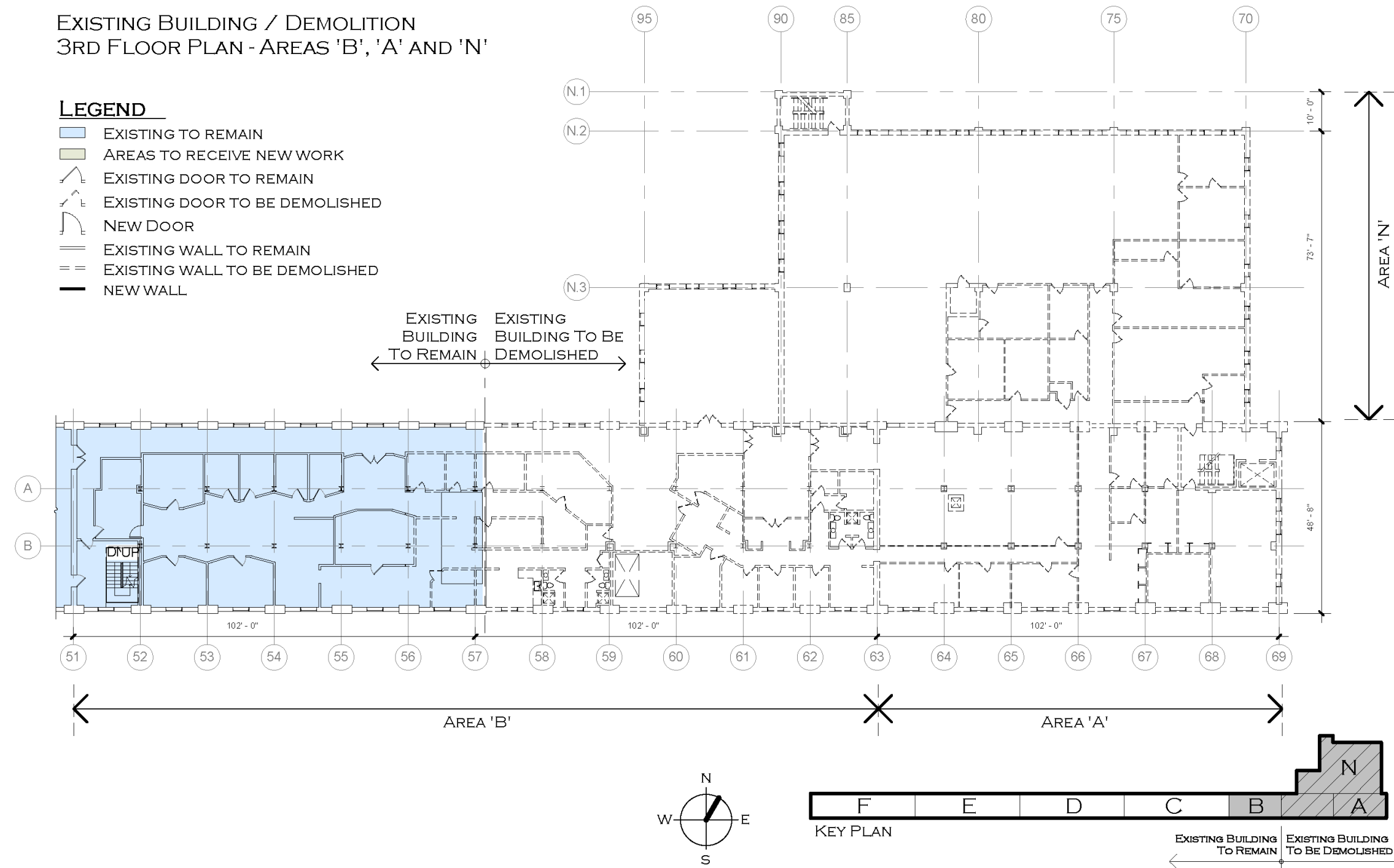


Figure 4

EXISTING BUILDING / DEMOLITION
4TH FLOOR PLAN - AREAS 'B', 'A' AND 'N'

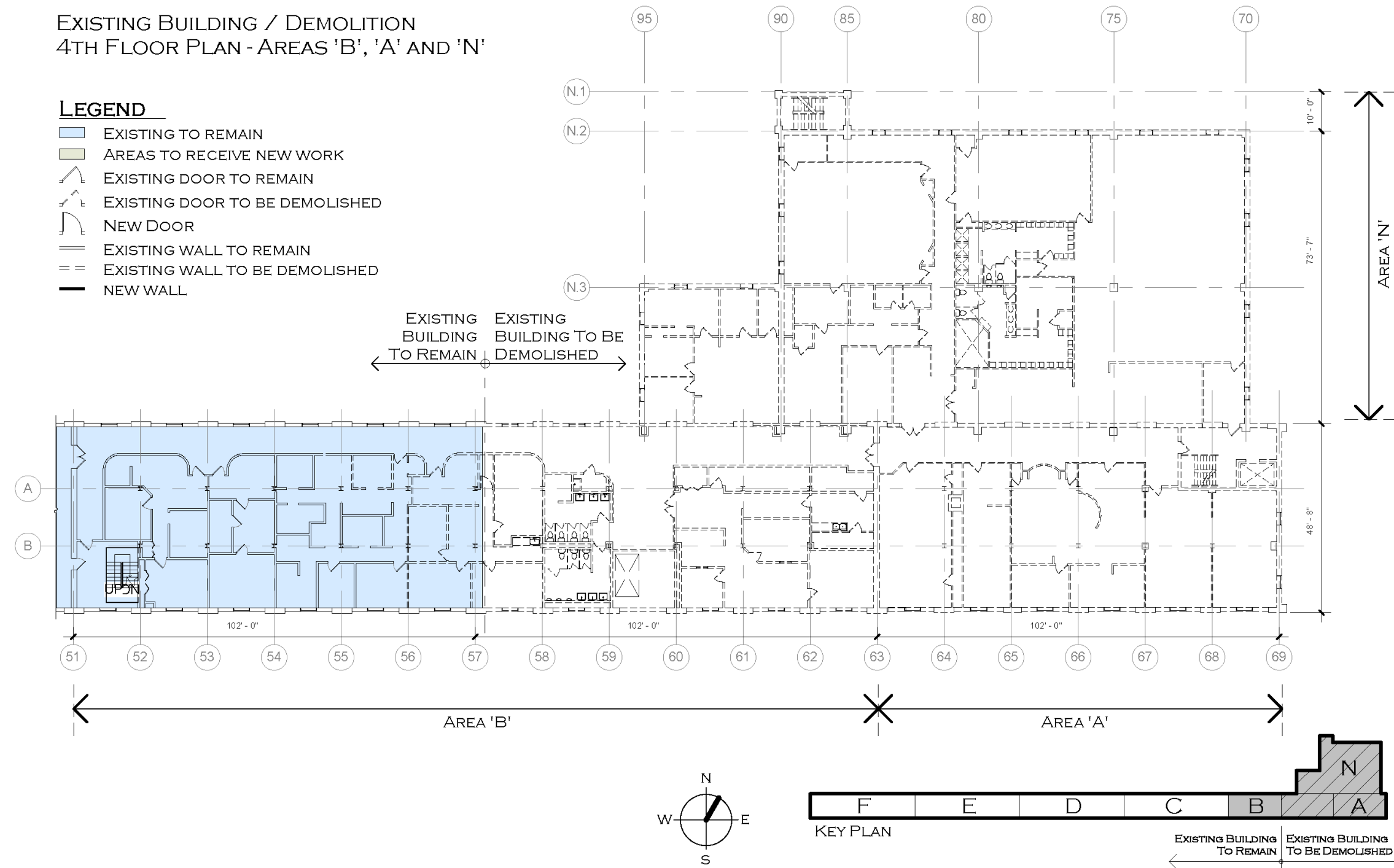


Figure 5

EXISTING BUILDING / DEMOLITION
5TH FLOOR PLAN - AREAS 'B', 'A' AND 'N'

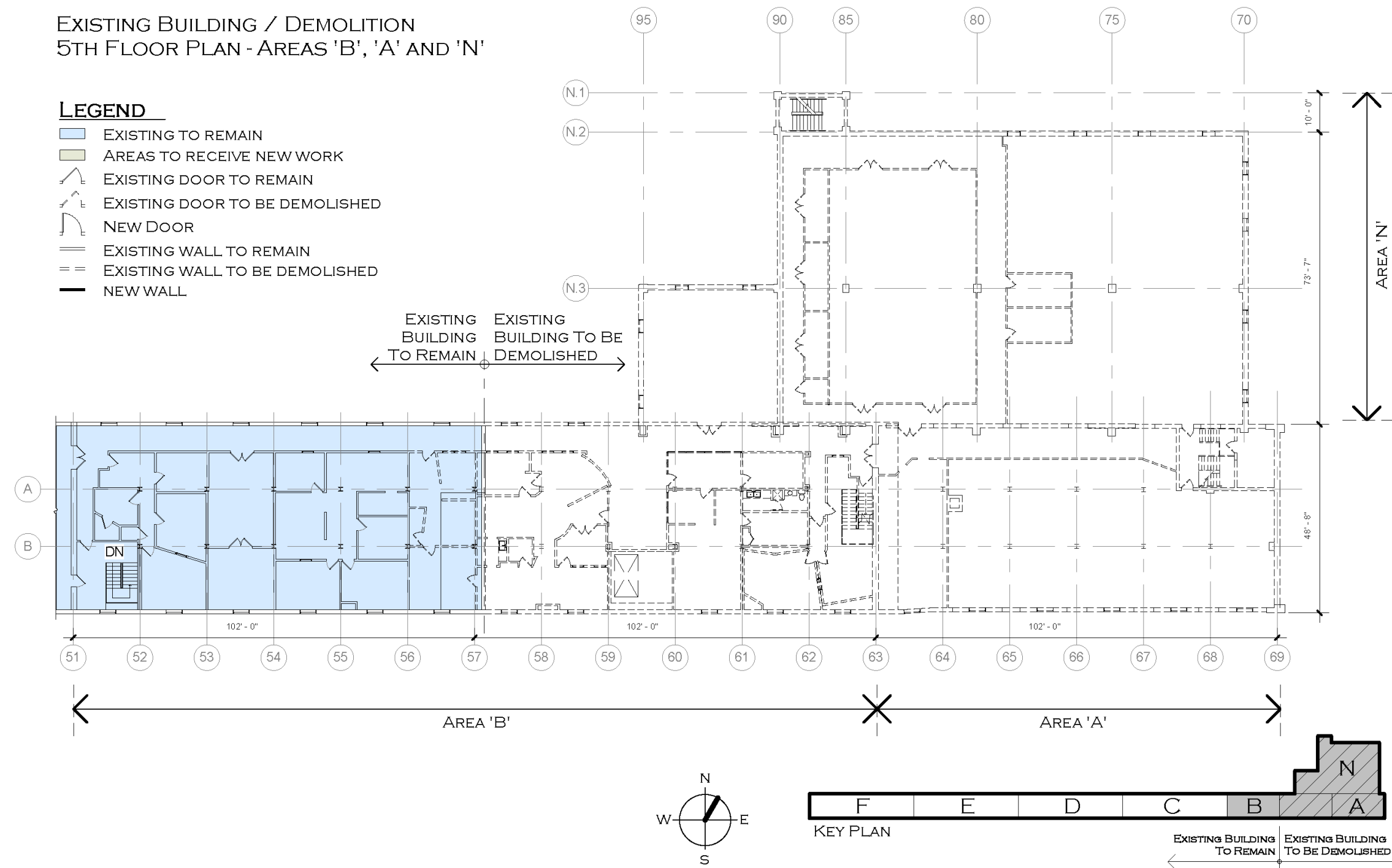


Figure 6

EXISTING BUILDING / DEMOLITION
ROOF PLAN - AREAS 'B', 'A' AND 'N'

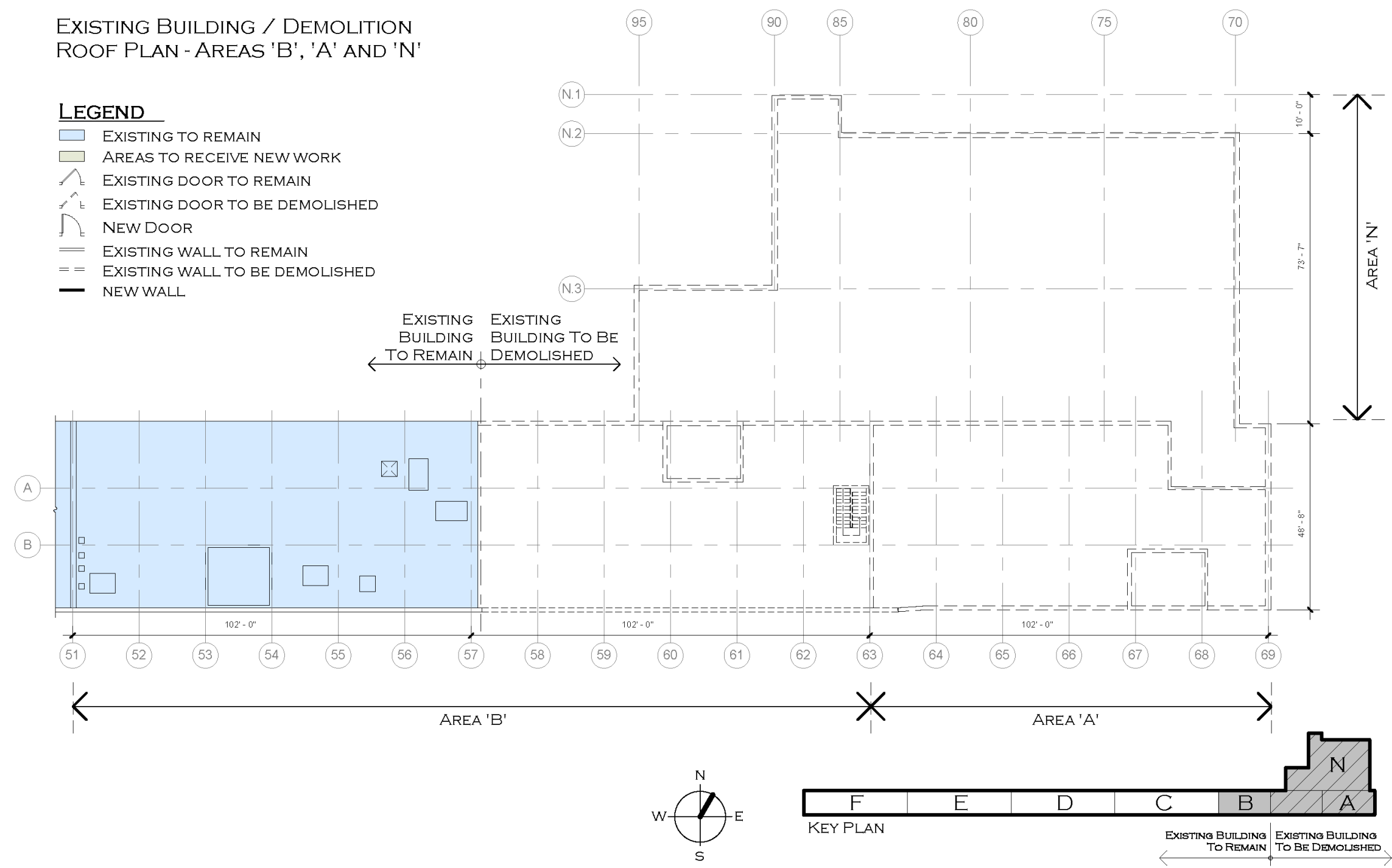
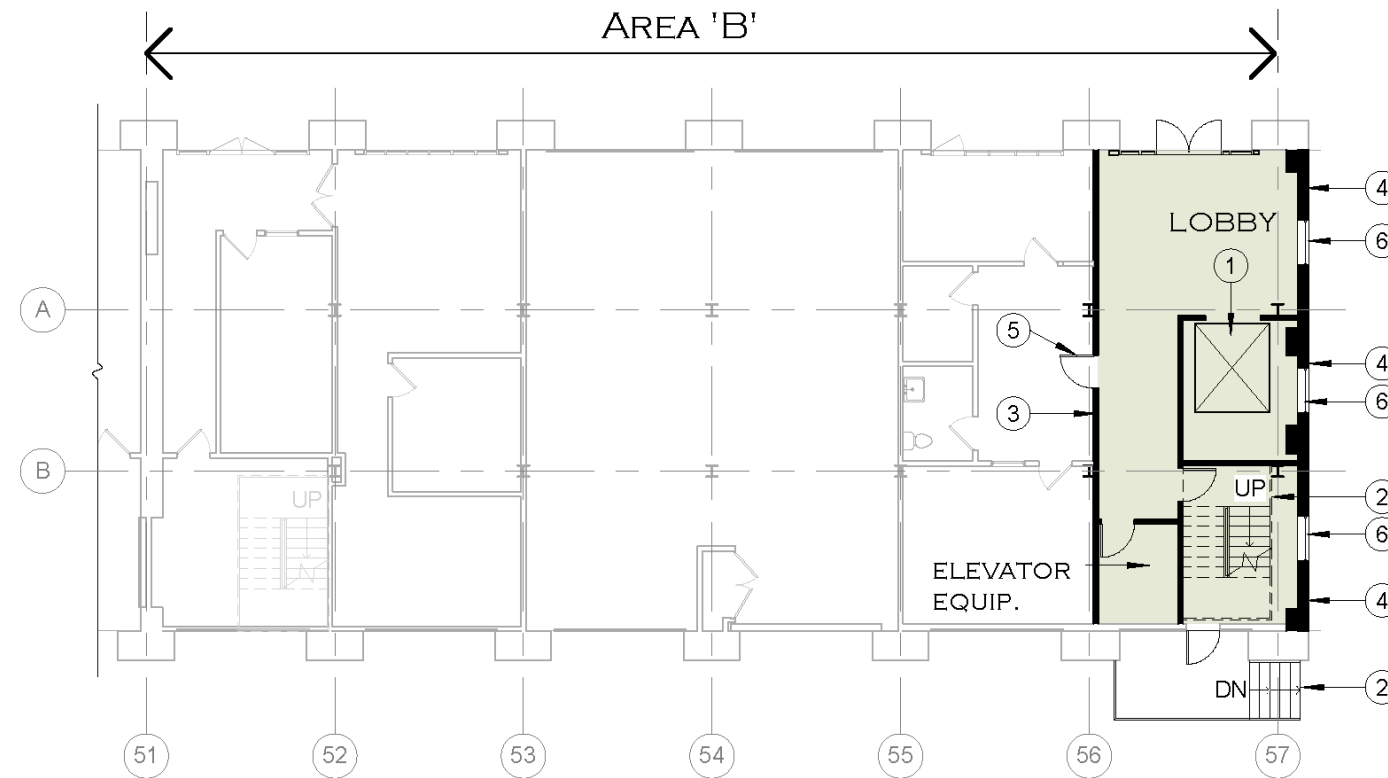
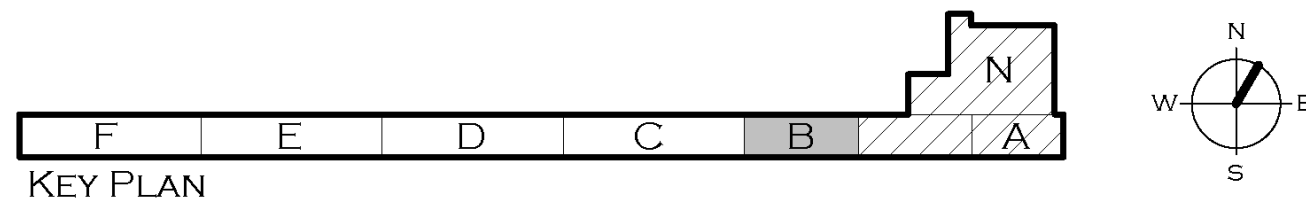


Figure 7

2.3 Existing Building / Repair Floor Plans 1-5, Roof



EXISTING BUILDING / REPAIR
1ST FLOOR PLAN - AREA 'B'



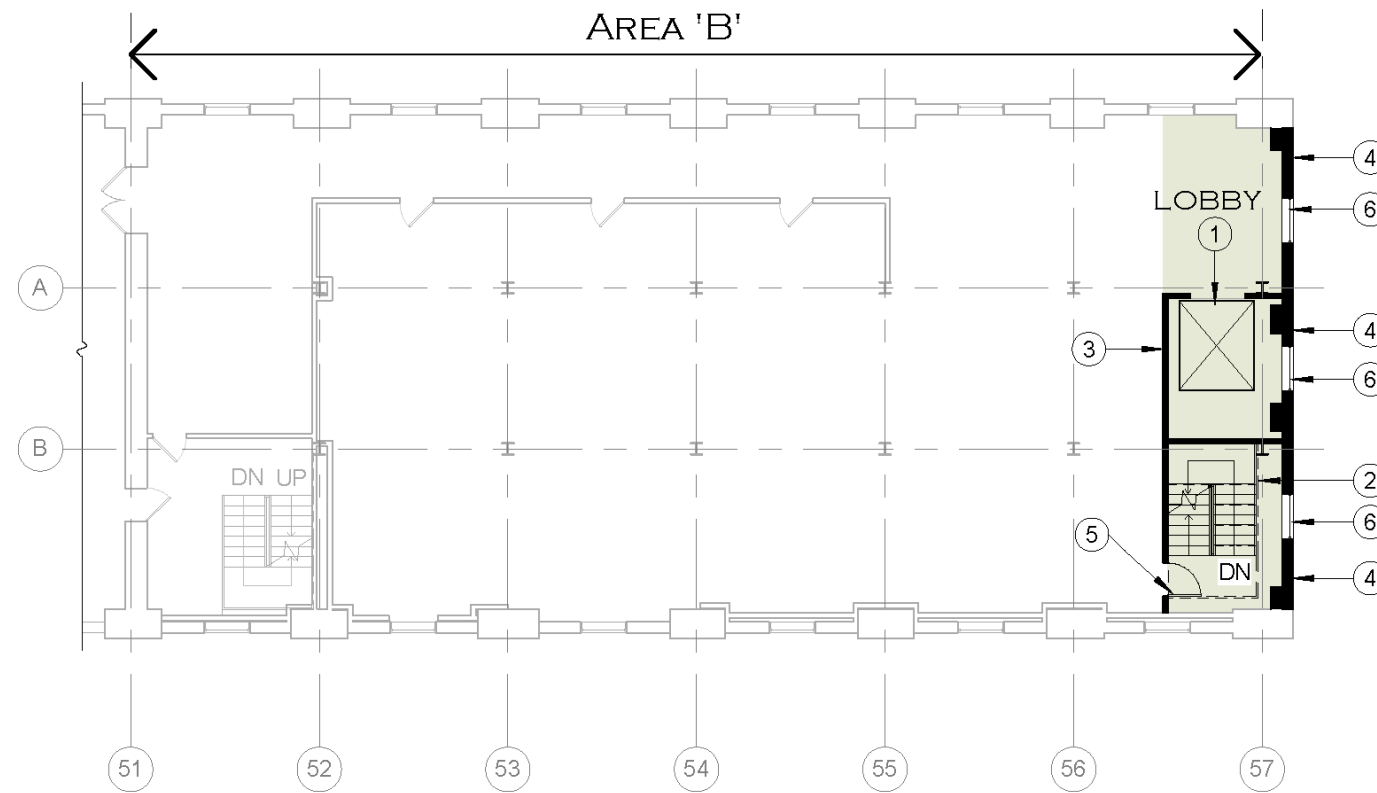
KEYED NOTES

- ① NEW ELEVATOR.
- ② NEW STAIR.
- ③ NEW GYPSUM BOARD PARTITION.
- ④ NEW MASONRY SHEAR WALL.
- ⑤ NEW DOOR.
- ⑥ NEW WOOD FRAME INSULATED WINDOW.

LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 8



EXISTING BUILDING / REPAIR
2ND FLOOR PLAN - AREA 'B'

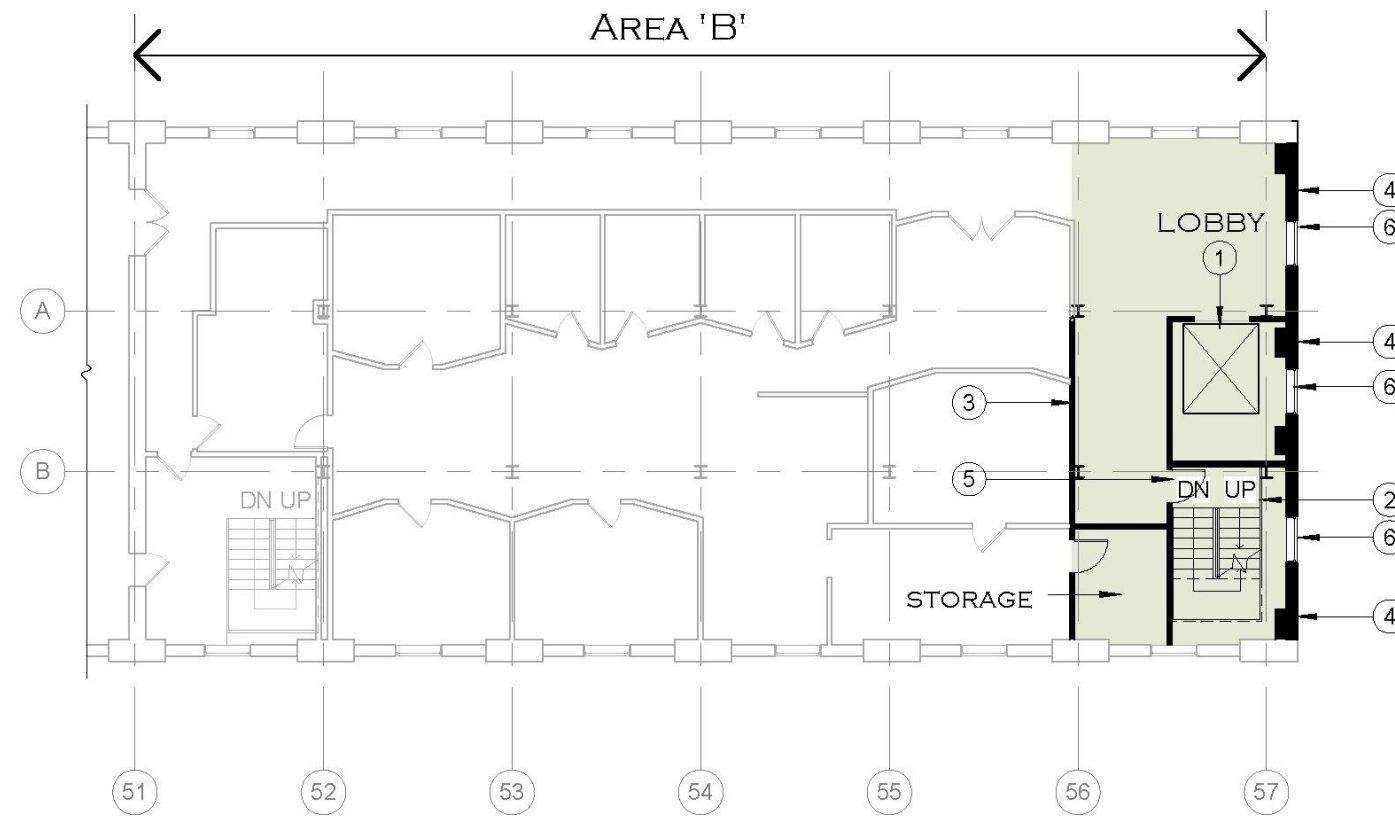
KEYED NOTES

- ① NEW ELEVATOR.
- ② NEW STAIR.
- ③ NEW GYPSUM BOARD PARTITION.
- ④ NEW MASONRY SHEAR WALL.
- ⑤ NEW DOOR.
- ⑥ NEW WOOD FRAME INSULATED WINDOW.

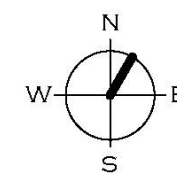
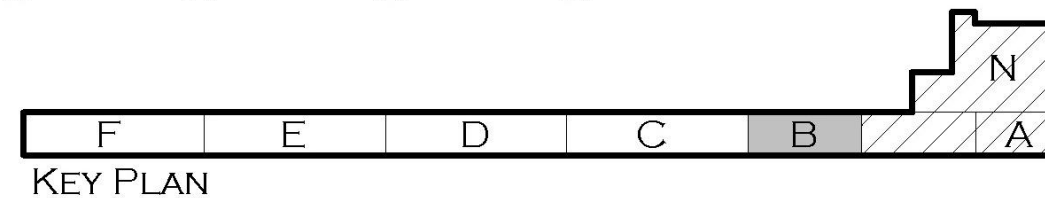
LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 9



EXISTING BUILDING / REPAIR
3RD FLOOR PLAN - AREA 'B'



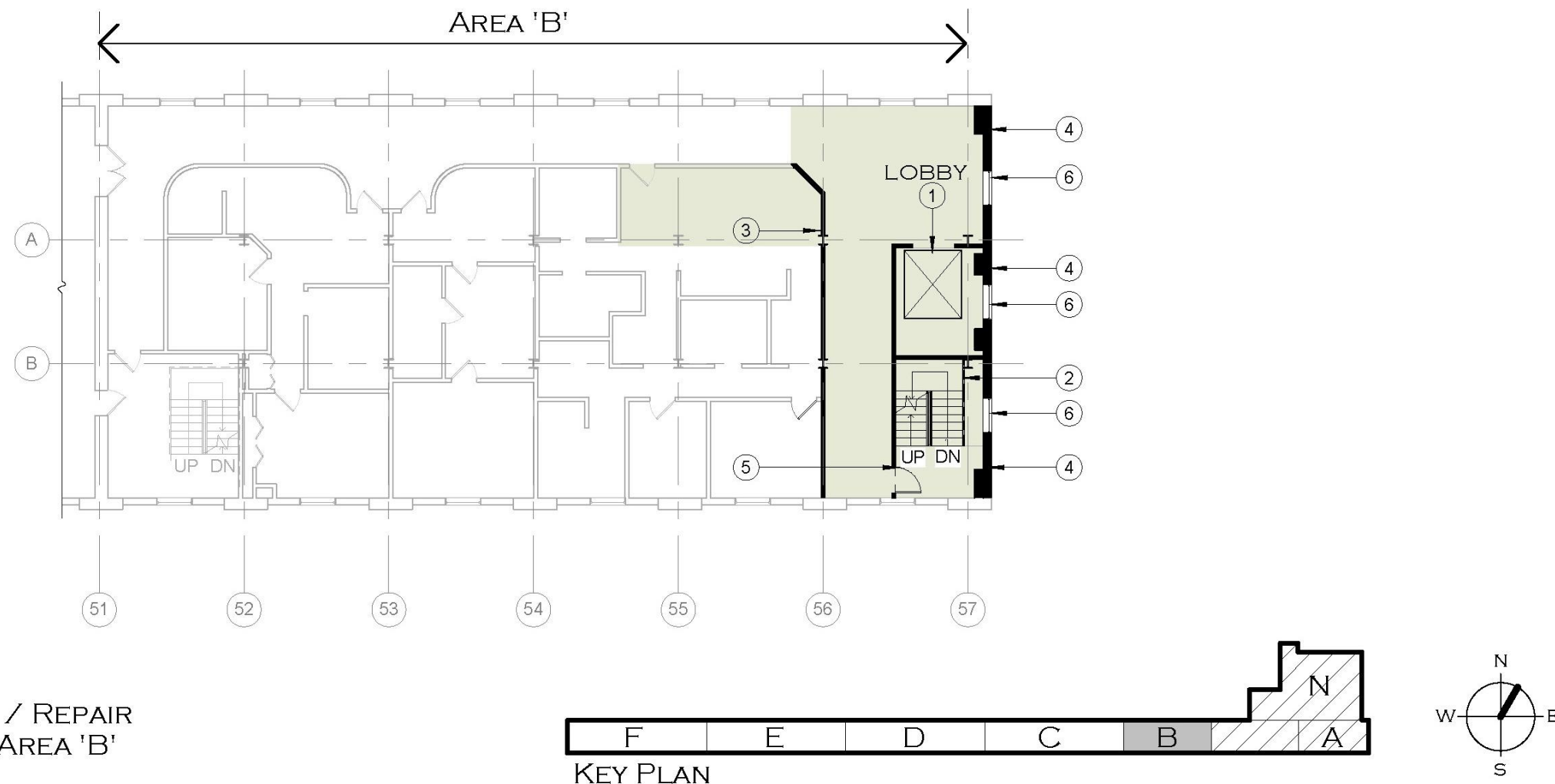
KEYED NOTES

- ① NEW ELEVATOR.
- ② NEW STAIR.
- ③ NEW GYPSUM BOARD PARTITION.
- ④ NEW MASONRY SHEAR WALL.
- ⑤ NEW DOOR.
- ⑥ NEW WOOD FRAME INSULATED WINDOW.

LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 10



EXISTING BUILDING / REPAIR
4TH FLOOR PLAN - AREA 'B'

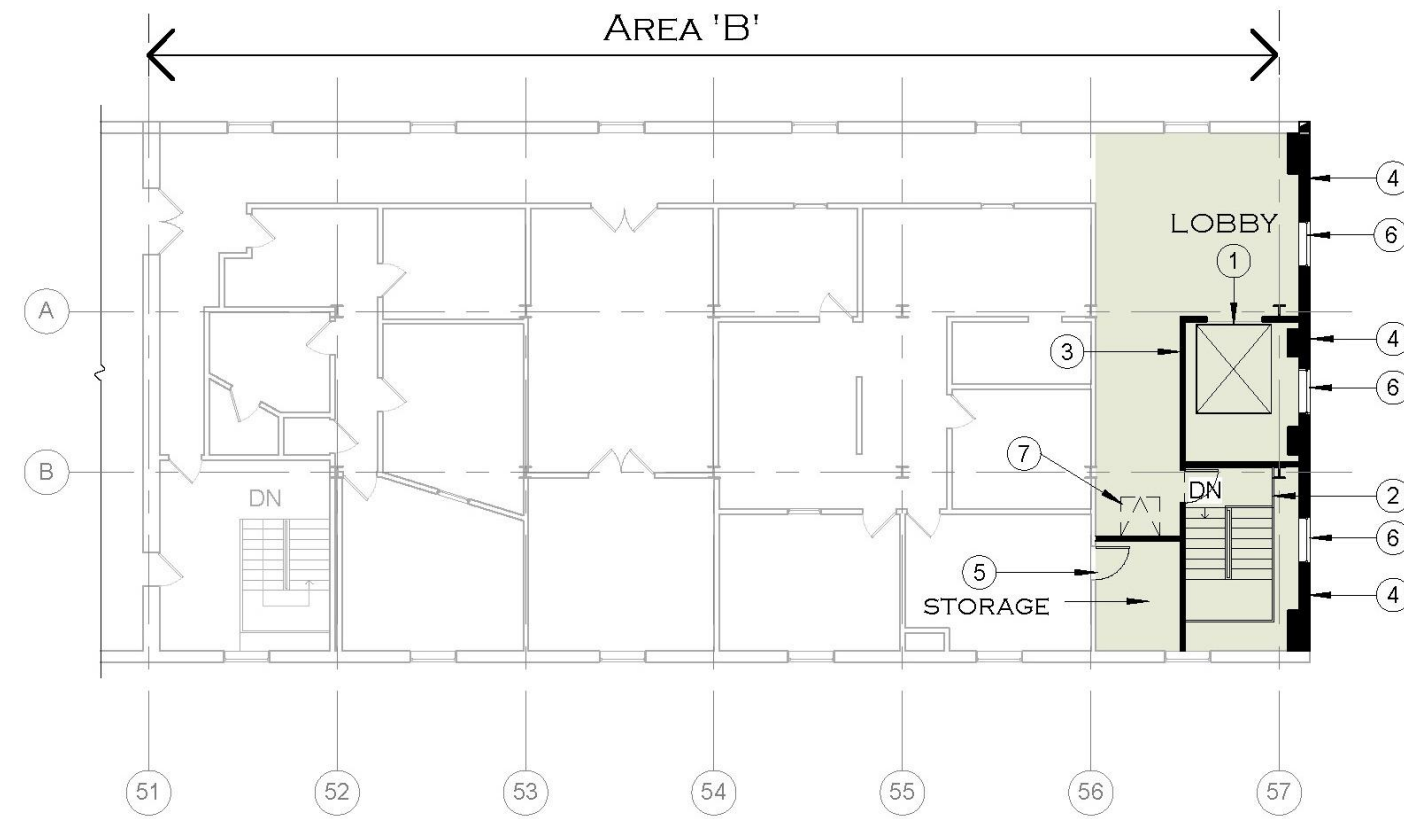
KEYED NOTES

- ① NEW ELEVATOR.
- ② NEW STAIR.
- ③ NEW GYPSUM BOARD PARTITION.
- ④ NEW MASONRY SHEAR WALL.
- ⑤ NEW DOOR.
- ⑥ NEW WOOD FRAME INSULATED WINDOW.

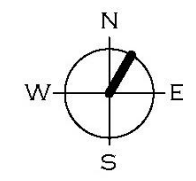
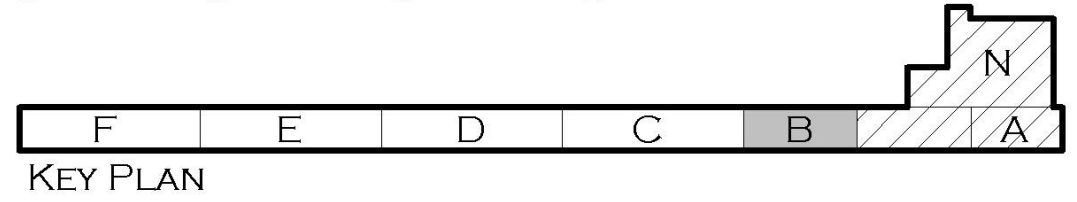
LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 11



EXISTING BUILDING / REPAIR
5TH FLOOR PLAN - AREA 'B'



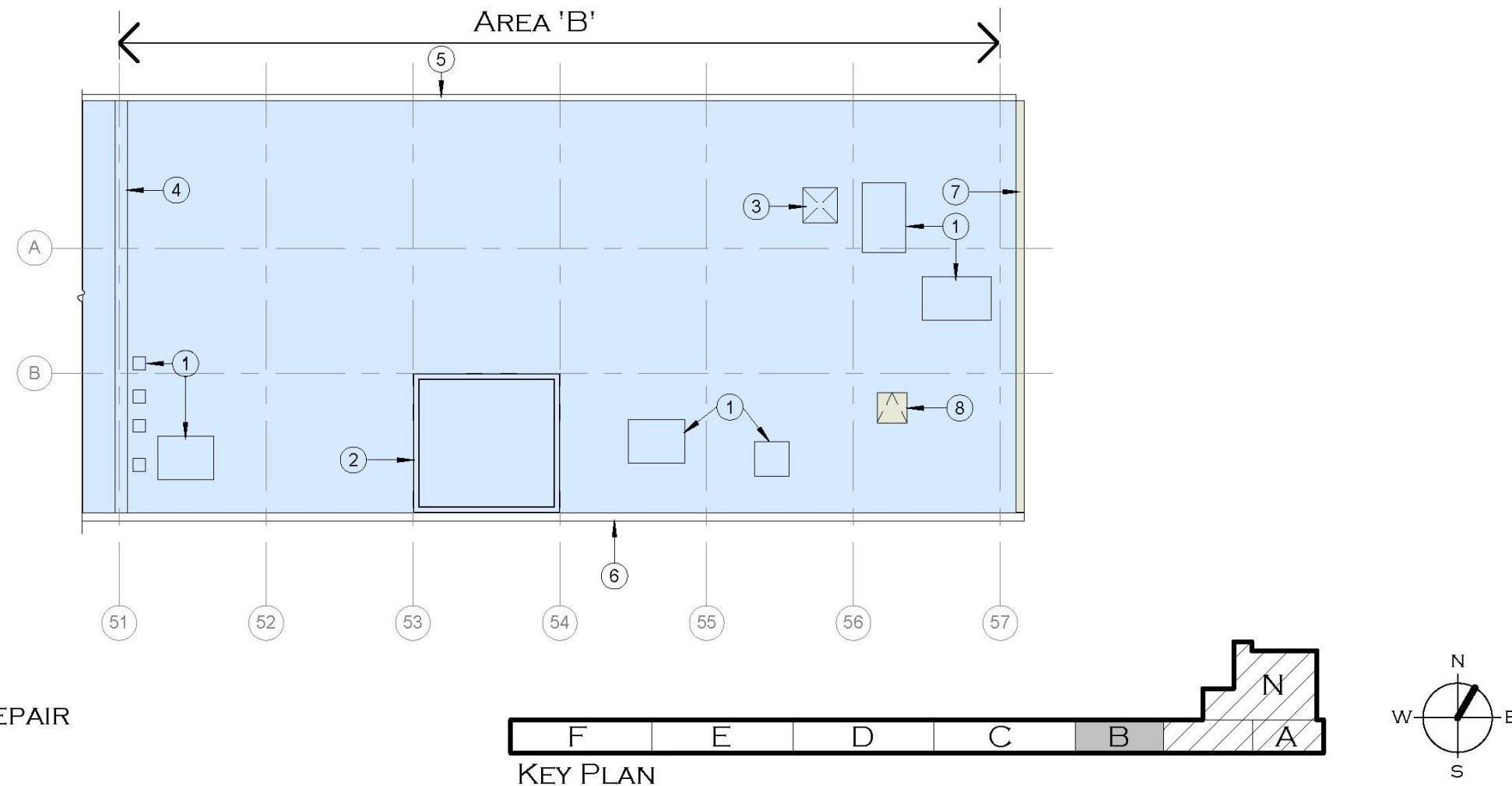
KEYED NOTES

- ① NEW ELEVATOR.
- ② NEW STAIR.
- ③ NEW GYPSUM BOARD PARTITION.
- ④ NEW MASONRY SHEAR WALL.
- ⑤ NEW DOOR.
- ⑥ NEW WOOD FRAME INSULATED WINDOW.
- ⑦ NEW LADDER TO ROOF HATCH ABOVE.

LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 12



EXISTING BUILDING / REPAIR
ROOF PLAN - AREA 'B'

KEYED NOTES

- ① EXISTING MECHANICAL UNIT.
- ② EXISTING ELEVATOR PENTHOUSE.
- ③ EXISTING SKYLIGHT.
- ④ EXISTING BRICK MASONRY PARTY WALL.
- ⑤ EXISTING GUTTER.
- ⑥ EXISTING PARAPET.
- ⑦ NEW BRICK MASONRY PARAPET.
- ⑧ NEW ROOF HATCH.

LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 13

2.4 Mechanical, Electrical and Plumbing (MEP) Systems Summary

Due to the removal of the Longworth Hall facility east of column line 57, mechanical, electrical and plumbing (MEP) systems will be modified. All MEP equipment, ductwork, piping, wiring etc. will be removed east of column line 57. Proper disposal of hazardous materials will be required along with refrigerant recovery at heating, ventilating and air conditioning (HVAC) equipment. Disposal of materials off-site will be in accordance with local, state and federal regulations. In order for the remainder of the facility to stay functional an MEP impact analysis has been done and is divided by disciplines. All existing MEP locations as described in the following sections can be found in Figures 14-20.

2.4.1 Heating, Ventilation and Air Conditioning (HVAC)

Longworth Hall's HVAC consists of dedicated tenant systems and Facility Owner (House) systems. There is not a central plant heating or cooling system. The tenants' as well as the Owner's HVAC systems are packaged self-contained units (eg. rooftop units, Photo 3) or indoor air handling units (AHU), (Photo 4), with an outdoor air cooled condensing unit (Photo 5). Cooling coils are direct expansion (DX) refrigerant-to-air coils while heating is accomplished by gas-fired heat exchangers. Ventilation air for occupants is accomplished either at the rooftop unit itself or air intake wall louvers for the AHUs. Each system is typically controlled via a single thermostat (Photo 6). There are both programmable and non-programmable thermostats throughout Longworth Hall. There is not a central building automation system (BAS). The age of the units are between 10-15 years old and in fair condition.

First Floor Impact Analysis – An AHU located west of column line 57 has two ducts crossing column line 57. This AHU can remain and the ductwork capped.



Photo 3: Typical rooftop unit



Photo 4: Typical indoor air-handling unit
(noted Photo H-2 in Figure 16)

The thermostat is located at column line 55 in Area "B" and will not be relocated. Refrigerant lines cross column line 57 near the south wall but these are currently (during 2011 site inspection) abandoned or disconnected.

Second Floor Impact Analysis – There are no HVAC ducts or refrigerant lines crossing along column line 57. However, an AHU located near column line 61 in Area "B" serves the open space west of column line 57. The AHU's associated thermostat is located near column line 60 on the south wall. The existing split-system (AHU and condensing unit) will be removed and a new split-system will be installed with DX cooling and gas heating to serve the open space west of column line 57.

Third Floor Impact Analysis – One duct crosses column line 57 which originates from an AHU located east of column line 57 and serves spaces from column lines 59 to 55. This existing split-system (AHU and condensing unit) will be removed and a new split-system installed with DX cooling and gas heating to serve the spaces from column line 55 to 57.

Fourth Floor Impact Analysis – An AHU located west of column line 57 serves the tenant space between column lines 54 and 58. This AHU can remain and the ductwork reconfigured to serve the spaces west of column line 57. The AHU's associated thermostat is located near column line 55 in Area "B" and can remain as is.

Fifth Floor Impact Analysis – A rooftop unit (RTU) located west of column line 57 serves the tenant space between column lines 56 and 57. This RTU can remain and no ductwork reconfiguration is necessary. The RTU's associated thermostat is located west of column line 57 and can remain as is. Another RTU is located between column lines 57 and 58 that serves spaces only east of column line 57. This air system will be removed as part of this project.

Roof Level Impact Analysis – There are several air-cooled condensing units on the roof but there are no conflicts with refrigerant lines connecting across column line 57 to an AHU. The rooftop units condensate drain lines discharge directly on the roof surface which will remain.



Photo 5: Typical air-cooled unit



Photo 6: Typical thermostat

2.4.2 Plumbing

There are three domestic water service lines from the utility main into Longworth Hall. Points of entry are at Area “B” (column lines 62 and 63), “D” (column lines 38 and 39) and “F” (column lines 13 and 14). Each incoming line has its own meter and water usage is paid for by the Owner. Domestic water is distributed to various tenant and Owner restrooms, sinks, mop basins etc. Hot water heaters are located throughout the facility because there is not a centralized domestic hot water system. The main plumbing waste stack for Area “B” is located at column line 62. (Photo 7) The plumbing waste line leaves the building in Area “B” near column line 62 and then ties into the Metropolitan Sewer District’s sanitary sewer line. The facility roof is sloped downward towards the north to gutters and downspouts. (Photo 8)

General Impact – The incoming water service at column lines 62 and 63 will be removed. In addition the plumbing waste pipe at column line 62 will be removed.

First Floor Impact Analysis – There is a small restroom west of column line 57. The domestic water supply is fed from the second floor east of column line 57. A new water supply pipe will tie into the water service from Area “D”. The waste line is routed to east of column line 57. A new waste line will be installed and tapped into the street sewer main if it is not feasible to tie into the plumbing stack in Area “C” which is located at column line 43 at the south wall.

Second Floor Impact Analysis – The water and waste lines serving the first floor restroom are routed up to the second floor ceiling space and run towards the east end of Area “B” (east of column line 57). The waste line has a sewage ejector pump on the first floor which could be re-used.

Third Floor Impact Analysis – A drain line crosses column line 57 that serves a fourth floor sink. A new drain line will be installed and connect into a new Area “B” plumbing stack if it’s not feasible to tie into the plumbing stack in Area “C”, which is located at column line 43 at the south wall.

Fourth Floor Impact Analysis – A domestic water pipe crosses column line 57 serving a fourth floor sink and a fifth floor sink west of column line 57. A new water supply pipe will tie into the water service from Area “D” to serve these sinks. A drain line crosses column line 57 that serves a fifth floor sink. A new drain line will be installed and connect into a new Area “B” plumbing stack if it is not feasible to tie into the plumbing stack in Area “C”, which is located at column line 43 at the south wall.

Fifth Floor Impact Analysis – There are no domestic water or drain lines crossing column line 57 on this floor.



Photo 7: Area “B” Plumbing stack (noted Photo P-1 in Figure 16)

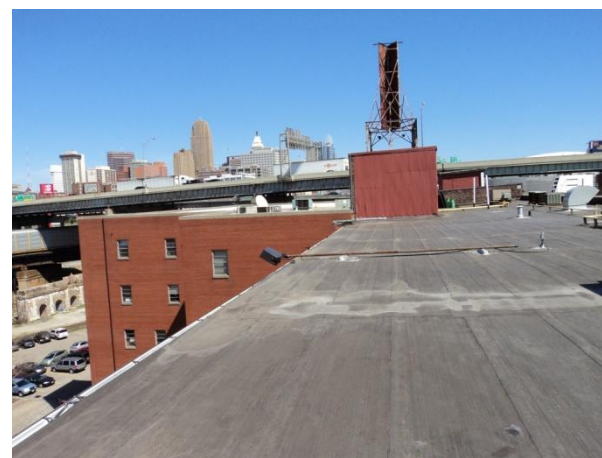


Photo 8: Gutters along north edge of roof

2.4.3 Gas Piping

There are three natural gas lines from the utility main into Longworth Hall. Points of entry are at Areas “B” (column lines 61 and 62, Photo 9), “D” (column lines 25 and 26, Photo 10) and “F” (column lines 5 and 6, Photo 11). The gas pressure steps down to low pressure (one pound per square inch [psi] or less) for distribution within the facility for all three lines. Gas consumption is tracked at tenant meters located at the tenant HVAC equipment.

General Impact – The existing incoming gas pipe line in Area “B” is located east of column line 57 and will be removed (Photo 9). This line serves Areas “A”, “N”, “B” and “C”. It is not feasible to serve the remaining portion of Area “B” and Area “C” with one of the two remaining facility’s low pressure gas lines. A new gas service from the utility main to Area “B” will be installed. The existing facility piping may be able to be reused if sized adequately.

First Floor Impact Analysis – One gas pipe approximately four-inches outside diameter (O.D.) crosses column line 57 which serves equipment west of column line 57. This pipe will be removed in its entirety unless it is sized adequately for reuse.

Second Floor Impact Analysis – One gas pipe approximately three-inches O.D. crosses column line 57 which serves equipment west of column line 57. This pipe will be removed in its entirety unless it is sized adequately for reuse.

Third Floor Impact Analysis – One gas pipe approximately one and a half-inches O.D. crosses column line 57 and serves an AHU located west of column line 57. This pipe will be removed in its entirety unless it is sized adequately for reuse.

Fourth Floor Impact Analysis – One gas pipe approximately three-inches O.D. crosses column line 57 and serves equipment in Area “C”. This pipe will be removed in its entirety unless it is sized adequately for reuse.

Fifth Floor Impact Analysis – There are no gas pipes crossing column line 57 on this floor.

Roof Level Impact Analysis – A gas pipe penetrates the roof of Area “B” near column line 61 (Photo 12). This pipe serves HVAC equipment on the roofs of Areas “A”, “B” and “N”. There are two rooftop units (RTUs) located west of column line 57 served by this gas pipe. These two RTUs will have new gas piping routed to them.



Photo 9: Area “B” incoming gas pipe (noted Photo G-1 in Figure 14)



Photo 10: Area “D” incoming gas pipe



Photo 11: Area “F” incoming gas pipe



Photo 12: Area “B” gas piping on roof

2.4.4 Fire Protection

There are multiple fire sprinkler water piping points of entry to Longworth Hall. Each Area has its own fire sprinkler water pipe service main. Points of entry for Areas “A” through “F” are at column lines 67, 54, 42, 29, 17, and 5. Upon entering Areas “A” through “F” there are fire sprinkler valve closets on the first floor. There are two fire department Siamese connections (Photo 13) on the south elevation of the facility at column lines 67 and 5.

The valve closet for Area “B” is west of column line 57, which can remain (Photo 14). On the first floor, the sprinkler main is routed to the east and west ends, then rise to each floor and branch. The point of separation of the branch piping for each riser is along column line 57 on each floor. The sprinkler main on the first floor will be capped at column line 57 but the remaining floors will not require any changes. A new fire department Siamese connection will be installed near column line 54 of Area “B” and connect with the sprinkler piping.



Photo 13: Fire Department Siamese connection



Photo 14: Area “B” valve closet (noted Photo FP-2 in Figure 14)

2.4.5 Electrical

Multiple electric overhead utility lines feed into Longworth Hall. Service locations are at column lines 69, 67-68, 62-63, 54-55, 44-46, 31-33, 17-18 and 6-8. Electrical meter banks for the tenants and Owner are located on the exterior wall at the incoming service location. All services are 208/120V, three-phase except for one which is 480V, three-phase. The 480V, three-phase service powers the elevators and is located at column lines 17-18 of Area “E”. The 480V, three-phase lines are routed to the north exterior wall of the facility which then serve the elevators. There is a second set of abandoned power lines (below the elevator power lines, Photo 15) mounted on the north exterior wall from column line 38 to 61.

General Impact Analysis – The abandoned power lines on the north exterior wall will be removed at a minimum, from column line 61 to 56. The elevator power lines on the north exterior wall will be modified with the removal of the facility at column line 57 and a new power feed provided for the new elevator in Area “B”. The electrical incoming services at column lines 69 (serves Area “N”), 67-68 (serves Area “A”), 62-63 (serves Area “N”) will be removed. The main incoming service for Area “B” is located at column lines 54 and 55 (Photos 16 and 17) which can remain. Meter modifications will be required for tenants.

First Floor Impact Analysis – There are multiple conduits crossing column line 57 that serve receptacles, lights etc. There is one circuit breaker panel located along column line 58 that feeds circuits west of column line 57. This panel will be removed. A new circuit breaker panel and wiring will be installed to replace the circuiting for the panel that will be removed.

Second Floor Impact Analysis - There are multiple conduits crossing column line 57 that serve receptacles, lights etc. There is one circuit breaker panel (Photo 18) located on the south wall at column line 58 that has circuits west of column line 57. This panel will be removed. There is another circuit breaker panel located on the south wall at column line 55. A new circuit breaker panel and wiring will be installed to replace the circuiting for the panel that will be removed.



Photo 15: Elevator power lines (top set)



Photo 16: Area “B” incoming power (noted Photo E-2 in Figure 14)



Photo 17: Area “B” main breaker panel (noted Photo E-3 in Figure 14)



Photo 18: Area “B” 2nd floor breaker panel (noted Photo E-4 in Figure 16)

Third Floor Impact Analysis - There are multiple conduits crossing column line 57 that serve receptacles, lights etc. There is one circuit breaker sub-panel (Photo 19) located at column lines 58 and Area "A" that has circuits west of column line 57. This panel will be removed. There is another circuit breaker panel located on the south wall at column line 54. A new circuit breaker panel and wiring will be installed to replace the circuiting.

Fourth Floor Impact Analysis - There are multiple conduits crossing column line 57 that serve receptacles, lights etc. There is one circuit breaker panel (Photo 20) located at column lines 58 and Area "B" that has circuits west of column line 57. This panel will be removed. There is another circuit breaker panel located at column lines 51 and Area "B". A new circuit breaker panel and wiring will be installed to replace the circuiting for the panel located at column lines 58 and Area "B" that will be removed.

Fifth Floor Impact Analysis – There is only one conduit that crosses column line 57. There is one circuit breaker panel (Photo 21) at column line 58 in Area "B" that has circuits west of column line 57. This panel will be removed. There is another circuit breaker panel located on the south wall at column line 55. A new circuit breaker panel and wiring will be installed to replace the circuiting.

Roof Level Impact Analysis – HVAC equipment and exterior lighting power is fed from below (Photos 22 and 23). The roof penetration is typically near the equipment. No power conduits cross along column line 57. The circuit breaker panel(s) serving the equipment are located on the floor(s) below.



Photo 21: Area "B" 5th floor breaker panel (noted Photo E-7 in Figure 19)



Photo 19: Area "B" 3rd floor breaker panel (noted Photo E-5 in Figure 17)



Photo 20: Area "B" 4th floor breaker panel (noted Photo E-6 in Figure 18)



Photo 22: Area "B" power on roof



Photo 23: Area "B" power on roof

2.4.6 Telecommunications / Systems

The main incoming voice and data communication cables and fiber optic utility feeds enter Longworth Hall in Area "A" on the second floor between column lines 64 and 65. The main communications closet (Photo 24-26) is in Area "A" near column line 67. This closet serves the entire facility and miscellaneous sub-gear closets (Photo 27). The fifth floor communications are fed from the floor below. There are two fiber optic lines that serve tenants west of column line 57. The tenants are identified as "Image Links" and "Cincinnati Arts and Technical College". The fire-alarm and security (CCTVs) systems head-end equipment is located near the lobby of Area "C".

General Impact Analysis - The main communications closet will be removed and a new main communications closet provided with new utility feeds. Modifications will be required to the fire-alarm and security systems due to the removal of the facility east of column line 57.



Photo 24: Main communications closet (noted Photo C-1 in Figure 15)



Photo 25: Main communications closet (noted Photo C-2 in Figure 15)

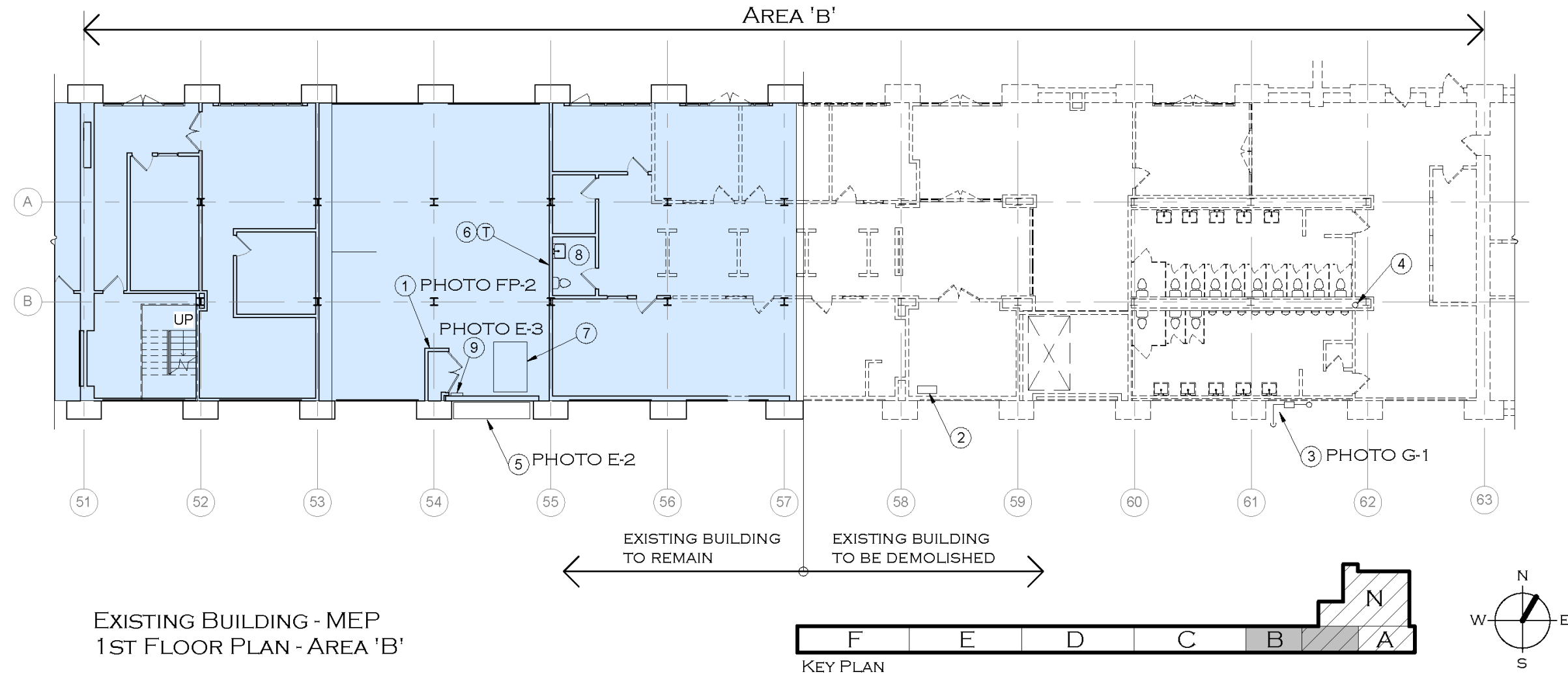


Photo 26: Main communications closet (noted Photo C-3 in Figure 15)



Photo 27: Sub-communications closet (noted Photo C-4 in Figure 17)

2.5 Existing Building – MEP Floor Plans 1-5, Roof



KEYED NOTES

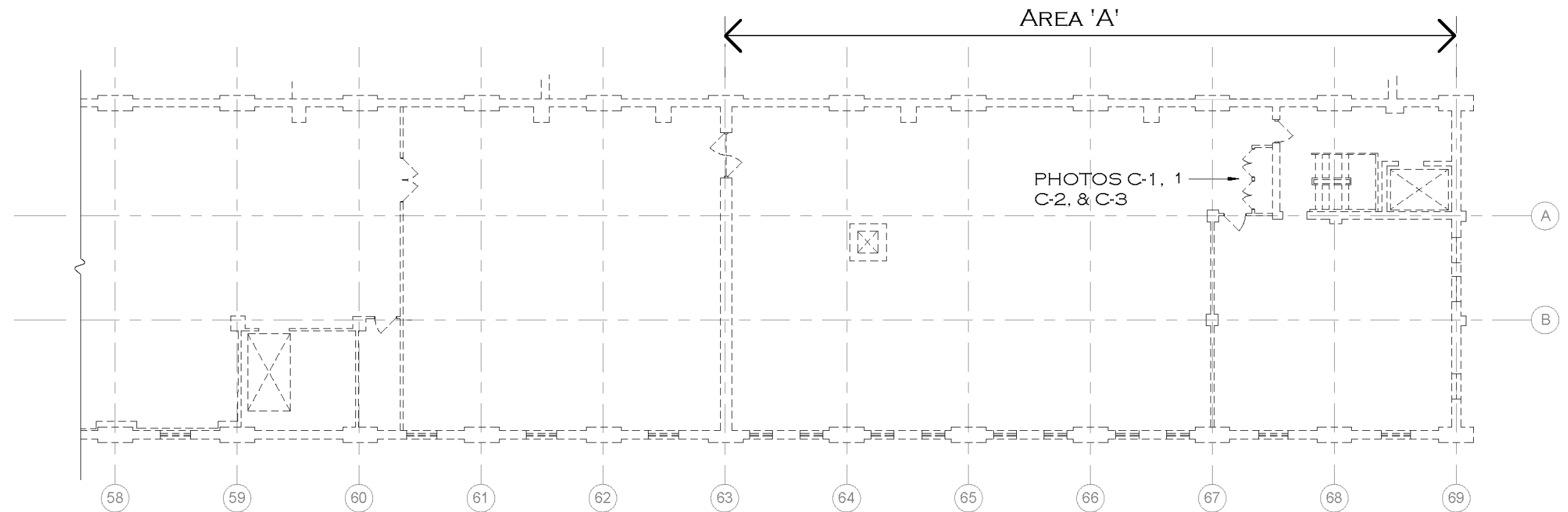
- ① EXISTING BUILDING B SPRINKLER VALVE CLOSET AREA.
- ② EXISTING CIRCUIT BREAKER PANEL SERVING AREA B FIRST FLOOR.
- ③ EXISTING INCOMING GAS SERVICE FOR AREAS A, N, B, AND C.
- ④ EXISTING PLUMBING STACK FOR AREA B.
- ⑤ EXISTING INCOMING ELECTRICAL SERVICE FOR AREA B.
- ⑥ EXISTING PROGRAMMABLE THERMOSTAT.

- ⑦ EXISTING AIR HANDLING UNIT SERVING AREA B PARTIAL FIRST FLOOR TENANT SPACE.
- ⑧ EXISTING RESTROOM.
- ⑨ EXISTING AREA B MAIN INCOMING POWER PANEL.

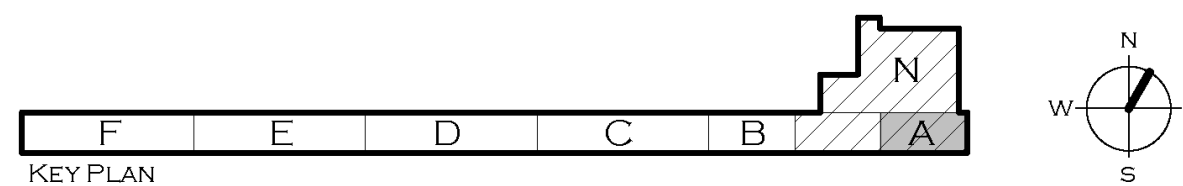
LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 14



EXISTING BUILDING - MEP
2ND FLOOR PLAN - AREA 'A'



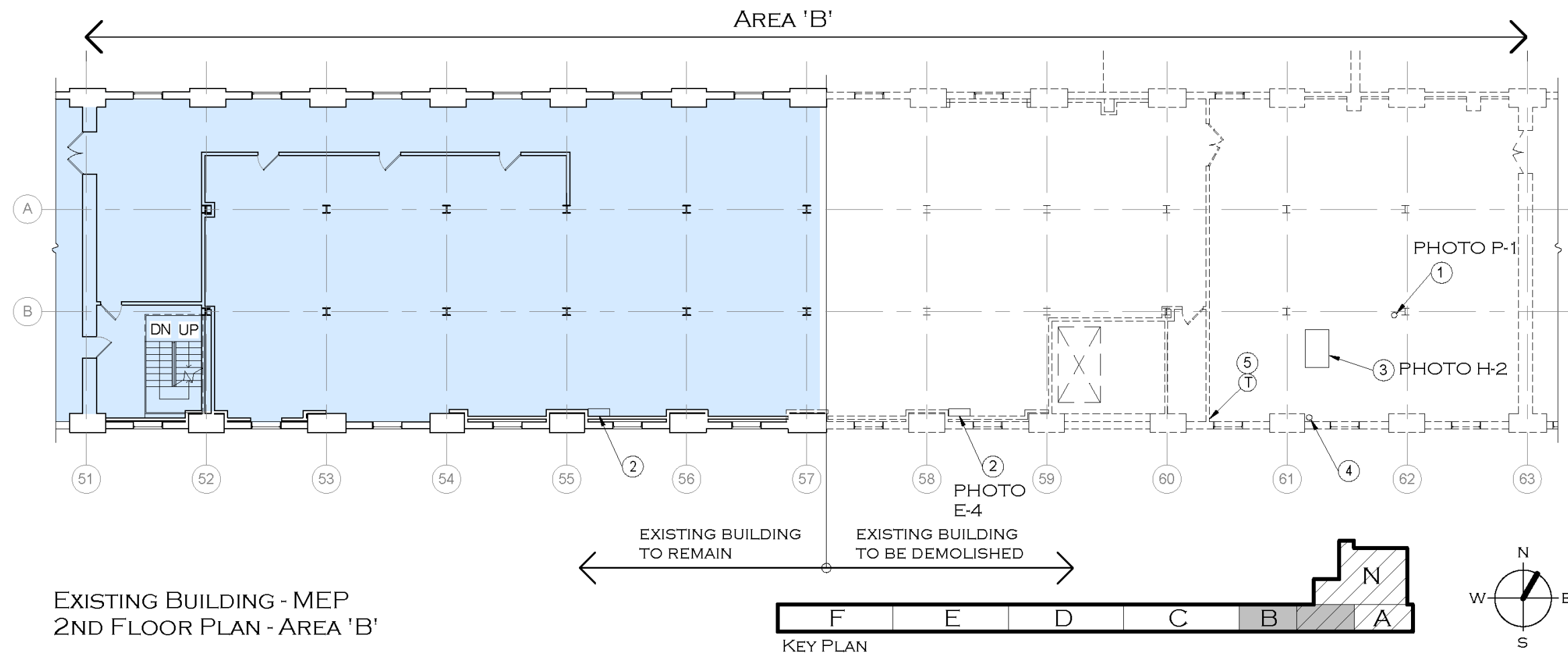
KEYED NOTES

- ① EXISTING MAIN COMMUNICATION CLOSET.

LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 15



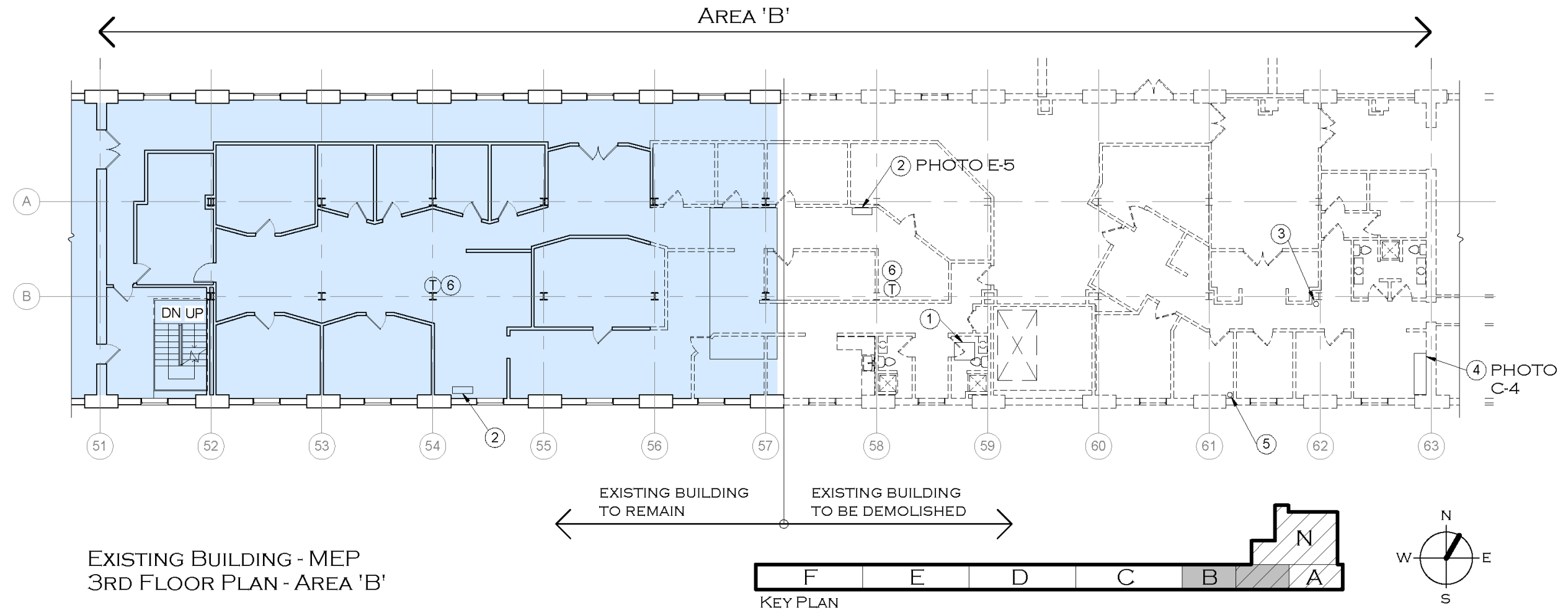
KEYED NOTES

- ① EXISTING PLUMBING STACK FOR AREA B.
- ② EXISTING CIRCUIT BREAKER PANEL SERVING AREA B PARTIAL SECOND FLOOR.
- ③ EXISTING AIR HANDLING UNIT SERVING AREA B SECOND FLOOR VACANT OPEN SPACE.
- ④ EXISTING GAS PIPE RISER FOR AREAS A, N, B AND C.
- ⑤ EXISTING NON-PROGRAMMABLE THERMOSTAT.

LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 16



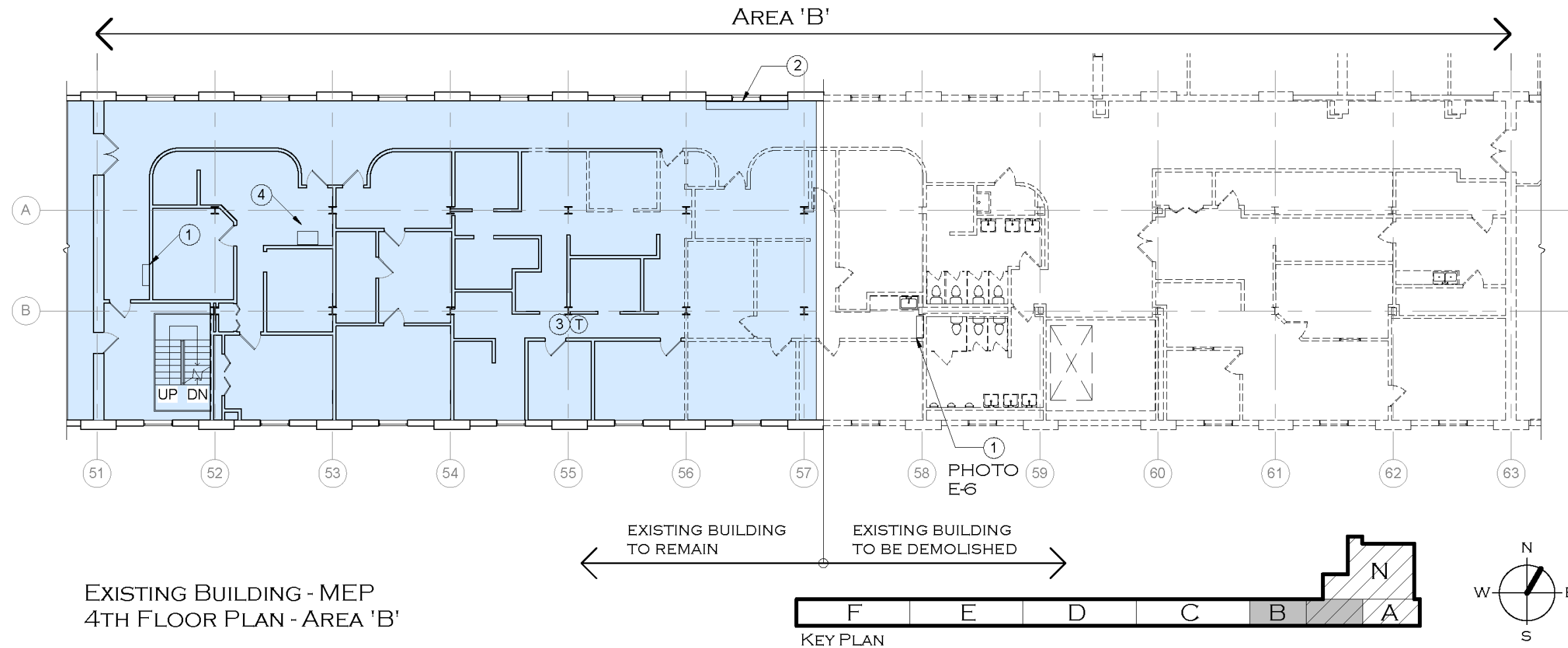
KEYED NOTES

- ① EXISTING AIR HANDLING UNIT SERVING AREA B PARTIAL THIRD FLOOR TENANT SPACE.
- ② EXISTING CIRCUIT BREAKER PANEL SERVING AREA B PARTIAL THIRD FLOOR.
- ③ EXISTING PLUMBING STACK FOR AREA B.
- ④ EXISTING TELEPHONE SUB-PANEL CLOSET.
- ⑤ EXISTING GAS PIPE RISER FOR AREAS A, N, B AND C.
- ⑥ EXISTING NON-PROGRAMMABLE THERMOSTAT.

LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 17



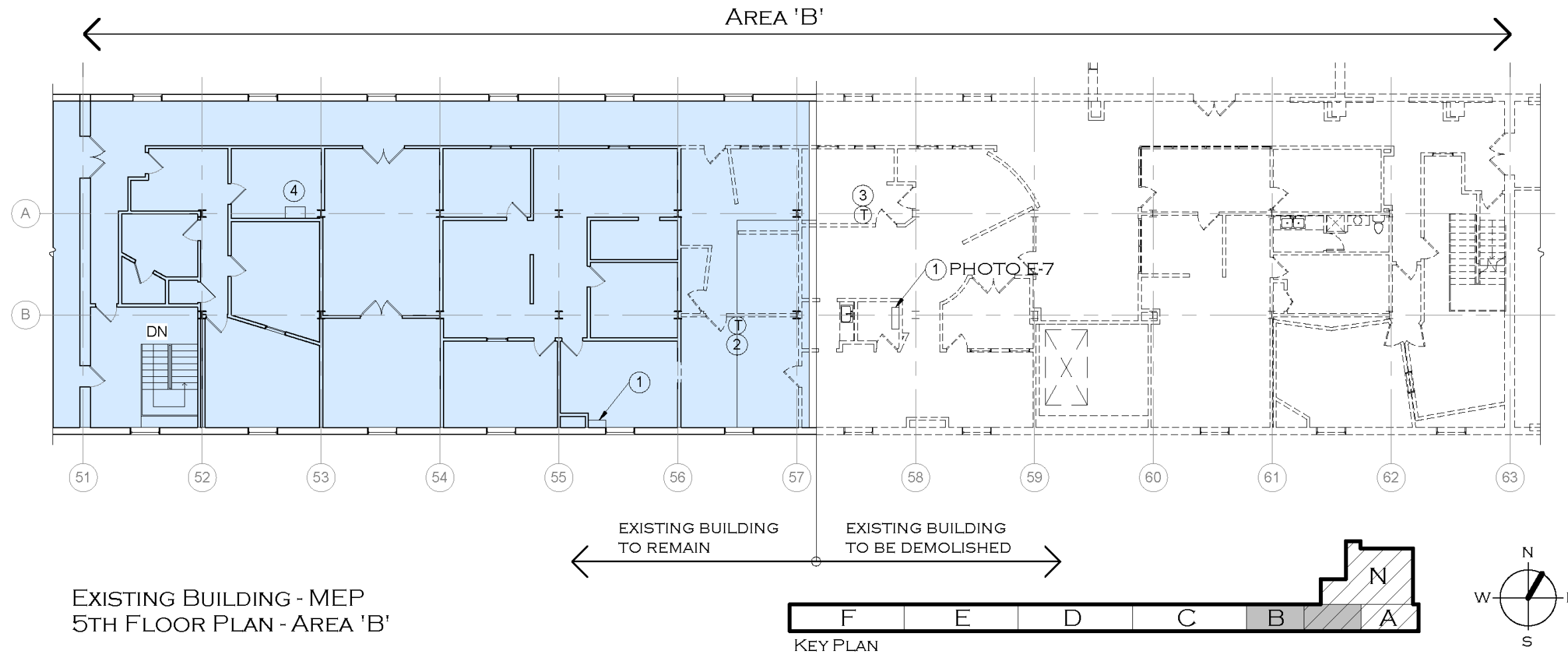
KEYED NOTES

- ① EXISTING CIRCUIT BREAKER PANEL SERVING AREA B PARTIAL FOURTH FLOOR.
- ② EXISTING ELECTRIC BASEBOARD HEATER.
- ③ EXISTING NON-PROGRAMMABLE THERMOSTAT.
- ④ APPROXIMATE LOCATION OF EXISTING SINK.

LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 18



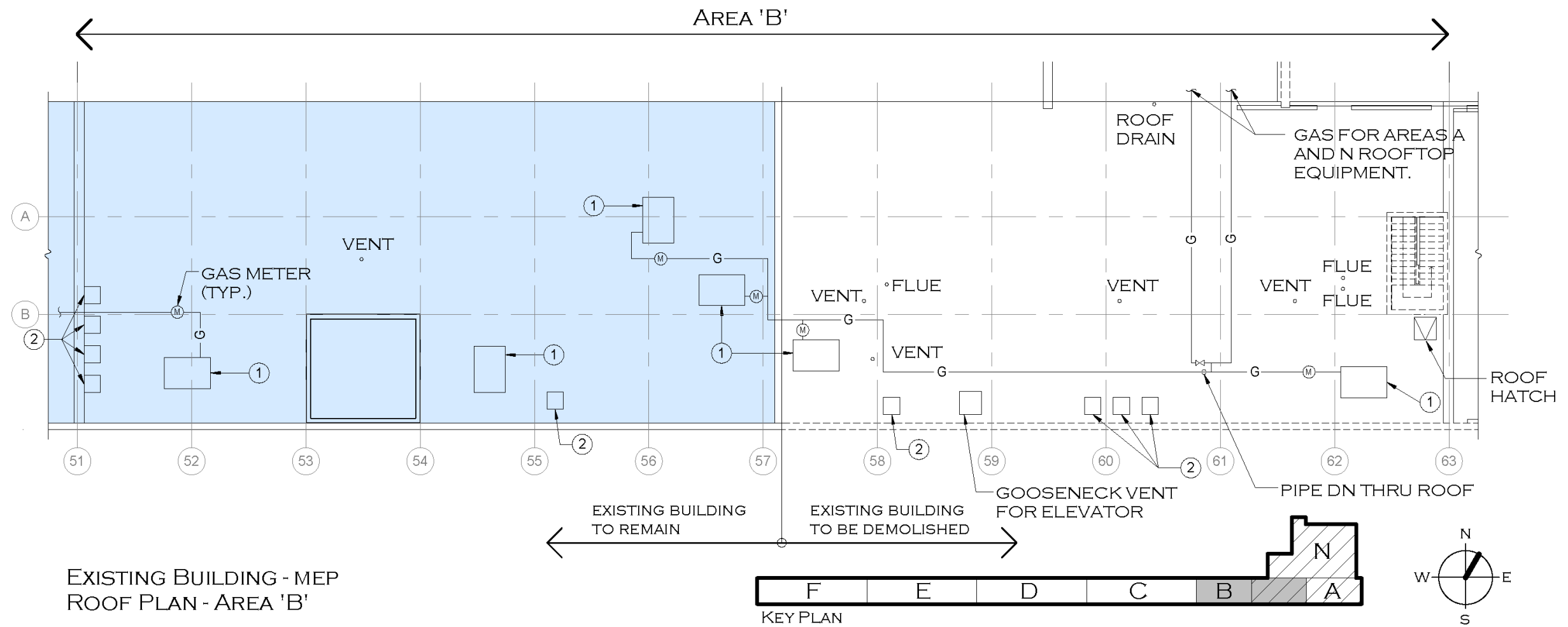
KEYED NOTES

- ① EXISTING CIRCUIT BREAKER PANEL SERVING AREA B PARTIAL FIFTH FLOOR.
- ② EXISTING NON-PROGRAMMABLE THERMOSTAT.
- ③ EXISTING PROGRAMMABLE THERMOSTAT.
- ④ EXISTING SINK.

LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 19



EXISTING BUILDING - MEP
ROOF PLAN - AREA 'B'

KEYED NOTES

- ① EXISTING PACKAGED ROOF TOP UNIT.
- ② EXISTING CONDENSING UNIT.

LEGEND

- EXISTING TO REMAIN
- AREAS TO RECEIVE NEW WORK
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NEW DOOR
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- NEW WALL

Figure 20