



REDSTONE ARCHITECTS INC.

Specialists in Law Enforcement, Justice, and Public Safety Architecture

ESTABLISHED 1937



Fire Station #1 Study
prepared for
West Bloomfield Township, MI
02/08/2023

Fire Station #1 Study Executive Summary

Introduction

Redstone Architects has been engaged by West Bloomfield Township to conduct a study for the renovation of Fire Station #1. Station #1 is located at 4610 Orchard Lake Rd., West Bloomfield Township, MI 48323. The study reflects the needs of the station to best serve the Township. As will be discussed later, two possible renovation design options are presented with pros and cons for each design, as well as an associated high level cost estimate for each.

Station #1 was built in 1971 and is functionally obsolete. It does not meet the needs of the department nor the community which it serves. Design and operational standards for essential facilities have increased since the station was built. For example, the structural design of this station was designed to office building standards. Today's design would require that the structural strength of fire stations meet more stringent requirements.

Protecting fire fighters' health and safety is very important. We are now designing Hot-Warm-Cold zones to protect the fire fighters against carcinogens by allowing them to cleanse their bodies before entering the living area of a station. The International Building Code has adopted the requirement to include ICC 500 Storm Shelters in essential facilities, including fire stations, and we anticipate that Michigan will soon adopt this practice. The existing building does not contain either of these current standards or requirements.

In addition to renovating the building to include safety measures for the firefighters, current fire station design includes individual sleep rooms, shower rooms and a locker room that are gender inclusive. The station needs to be able to staff the station based on the number of firefighters the community needs at that location without consideration of or based on gender.

Project Team

Redstone Architects, Daniel Redstone, and Teffera Kowalske, collaborated with key members of the Fire Department. The project team included the following Department staff:

Greg Flynn	Fire Chief
Mark Lawry	Assistant Chief
Byron Turnquist	Fire Marshal
John Donohue	Department Logistics Manager

Process

Our process followed the Approach and Work Plan provided with the proposal, which outlined how Redstone Architects develops the initial Space Needs Analysis Study. The Team, including Redstone and Fire Department representatives, collaborated throughout the entire design process to create our study and its contents.

The process included the following steps:

- Visit and document the existing conditions including, architectural, mechanical, plumbing, electrical and structural observations.

- Development of the Space Needs requirements of the station as if it were to be a new facility.
- Development of Block Floor diagrams to confirm the adequacy of the site to renovate and expand the current footprint.
- Development of Conceptual floor plans for review and approval by the department.
- Prepare design narratives and sketches by the mechanical, plumbing, electrical, and structural engineers for the conceptual design.
- Preparation of a Project Budget, which includes construction costs and soft costs.
- Preparation of a Space Needs Analysis report which would include the development of a presentation to the public.

Our initial task was to develop a Space Needs Program to identify the space needs of Station #1 as part of the Fire Department's overall plan to cover the Township. A kick-off meeting was held on 08/16/2022, to discuss with members of the team their goals for the project, and operations and functions that needed to be in the new facility. Also at this time, the Team toured the facility and documented the observed existing conditions.

In early September a meeting was held to interview key members of the Team to develop the space needs for the renovated facility. A subsequent meeting was held to review the initial space needs program. Adjustments in the program were made and then proceeded into plan concepts.

The initial, programmed square footage needs for the renovated facility was approximately 13,700 sf. Since the existing station is only 10,022 sf, the program was revised to minimize the additional square footage requirements needed for a renovation/expansion. The approved, programmed space was revised to approximately 11,430 sf.

Redstone then proceeded to develop Block diagrams for the renovation/expansion of the facility. A meeting was held in November 2022, to present block plan concepts and obtain the feedback of the Department. For this meeting, a few block diagram options were developed and discussed. Through this and another design meeting, the Project Team chose two options to be developed further into conceptual floor plans. Both options are for the renovation and expansion of the existing building.

The development of conceptual floor plans required some additional square footage to accommodate the approved block diagrams. The two design options are:

- Option #1 added a third floor to the existing two-level living space. Option #1 (additional 3rd floor) is 12,397 sf.
- Option #2 expanded the upper and lower floors out into the parking lot 25 feet. Both options required taking the 4th half bay of the apparatus bay for use as the decontamination space. Option #2 (enlarged upper and lower levels) is 14,122 sf.

The existing building is 10,022 sf.

Once the conceptual plans were reviewed and approved by the Team, the consulting engineers provided design narratives and sketches to support the systems needed for the new facility.

The conceptual plans for both options and the engineers design narratives were submitted to O'Brien Construction for a high-level cost estimate.

Results of Design Options

Both options are designed to meet the health needs of the firefighters and staff in the on-duty and administrative spaces by providing Hot-Warm-Cold Zone separations between the apparatus bays and occupied spaces.

Spaces and improvements that are included in the two renovation options are, but not limited to:

- Administrative offices with sleep and shower rooms.
- Individual Firefighter Sleep Rooms
- Individual Firefighter Shower Rooms
- Warm Zone spaces, including:
 - Personnel Decontamination
 - Separate Laundry facilities for levels of contamination
 - Gear Room
- Removing the roof of the Apparatus Bay and replacing it with a sloped roof.
- Replacing the North and South walls, and raising the East and West walls of the Apparatus Bay to allow for new 14' doors to accommodate any of the Townships current or future fire apparatus.

The following systems were recommended:

Mechanical:

- New HVAC duct work is required for the new spaces.
- Three new gas fired, high-efficiency furnaces are needed
- The Apparatus Bay will use the existing gas tube heaters.
- New exhaust system for the apparatus bay
- The Warm Zone spaces will have a new exhaust/supply system to ensure there is a positive or neutral pressure in those rooms.

Plumbing:

- New water service will be revised to accommodate the additional spaces.
- New gas hot water heater will be added to replace the existing.
- New drainage system to accommodate the slope roof.
- The station will receive a fire suppression system. There is not one currently.

Electrical:

- Electrical service and power distribution panels will be replaced due to age and the additional square footage.
- New energy-efficient LED lighting will be installed for both exterior and interior and will have code required lighting control systems.
- A new gas generator is needed due to the age of the existing and the additional square footage. It will feed the entire building during an outage.

Auxiliary Systems:

- Fire alarm system will need to be designed and installed per the Michigan Building Code, NFPA 72, NFPA 101, and the local West Bloomfield Township requirements.

Structural:

- Adding a new sloped roof to replace the low slope roof.
- Reinforced walls as needed to support the newly added spaces.
- Addition of new footings or reinforce the footings to support the newly added spaces.
- Remove the existing east wall of the living area due to deterioration.
- Addition of walls to the half bay to create Apparatus Bay support spaces.
- Level Apparatus Bay floor under new rooms in half bay.
- Replacing the North and South walls, and raising the East and West walls of the Apparatus Bay to allow for new 14' doors to accommodate any of the Townships current or future fire apparatus.

Pros and Cons of Each Option

	Pros	Cons
Option #1 – Three Levels	<ul style="list-style-type: none"> • Provides for Warm Zone spaces. • Easy access from Main Level living area. • Minimal renovation on lower level • Does not disturb East driveway and parking. • 14' tall Apparatus Bay doors to accommodate all departmental apparatus. • Separate Supervisor office, sleeping, and shower rooms. • Provides single occupancy/ neutral gender shower and sleep rooms. 	<ul style="list-style-type: none"> • 3rd level sleep rooms require fire fighters to go down an additional flight of stairs to respond to a tone. • Retains existing narrow stairwell. • Width of bays are 15' wide – recommended 18'-20' for new construction.
Option #2 – Expanded Upper Level	<ul style="list-style-type: none"> • Provides for Warm Zone spaces. • Easy access from Main Level living and sleeping areas. • 14' tall Apparatus Bay doors to accommodate all departmental apparatus. • Separate Supervisor office, sleeping, and shower rooms. • Provides single occupancy/ neutral gender shower and sleep rooms. 	<ul style="list-style-type: none"> • Retains existing narrow stairwell. • Width of bays are 15' wide – recommended 18'-20' for new construction.

Renderings

The Department asked Redstone to provide conceptual images for the renovated facility. They pointed out that Station #1 is the most visible station in the Township, with thousands of cars passing by daily, and that the renovation needed to include an updated image from Orchard Lake Road.

In addition, the Fire Department would like a design continuity of the stations throughout the Township and expressed satisfaction with the image at Station #3. The rendered images therefore reflect materials and façade design of the recently constructed Fire Station #3, including a refacing of the Orchard Lake elevation.

Cost Projections

Our Cost consultant, O'Brien Construction, provided initial **construction cost projections** for each option. It should be noted that **project costs** include hard (construction) costs and soft (non-construction) costs. O'Brien utilized the engineering analysis accomplished by IMEG and PBA in identifying necessary improvements.

Soft costs generally include professional fees; furniture, fixtures, and equipment ("FFE"); and Owner costs such as surveys, environmental, legal, bond costs, etc.) Redstone generally recommends a soft cost allowance of 20% for fire stations.

O'Brien's hard construction cost projections are as follows:

Option #1 - \$4,076,728 or approximately \$329 per square foot.
Option #2 - \$4,144,220 or approximately \$293 per square foot.

Approximate soft costs budgeted at 20%:

Option #1 - \$815,346 or approximately \$66 per square foot
Option #2 - \$828,844 or approximately \$58 per square foot

Projected Project Budget including construction and soft costs are:

Option #1 - \$4,892,074 or approximately \$394 per square foot
Option #2 - \$4,973,064 or approximately \$352 per square foot

Cost reflects late 2023 bidding and 2024 construction.

For comparison purposes, a Project Budget for a new, 13,700 square foot fire station would be approximately \$550-\$600 per square foot, or between \$7,500,000- \$8,000,000.

Summary

Redstone Architects, in collaboration with the West Bloomfield Township Fire Department, have developed a Space Needs Assessment and conceptual plans that will allow Station #1 to operate efficiently and safely, now, and for future decades. The additional space provides for separations to keep firefighters safer from carcinogens (implementation of hot-warm-cold zone design) and allows the station to staff firefighters in gender neutral sleep, shower, and locker rooms.

Either renovation option the Township and Fire Department choose will allow the station to better serve the community.

Attachments:

Revised Space Needs Assessment
Option #1 A101 Lower Level
Option #1 A102A Main Level
Option #1 A102B Apparatus Bay
Option #1 A103 Upper Level
Option #2 A101 Lower Level
Option #2 A102A Main Level
Option #2 A102B Apparatus Bay
Renderings
MEP Design Narrative
Structural Narrative and Sketches
Cost Estimate

Building Area Calculations	Current Staff	Planned Staff	Area Required
COLD ZONE AREAS			
1. Public Spaces	0	0	243
2. Suppression Operations	4	4	724
3. Staff Commons	9	15	2975
WARM ZONE			
4. Warm Zone	0	0	780
HOT ZONE			
5. Apparatus Bay	0	0	4303
6. Maintenance and Support	0	0	195
7. Optional Mezzanine/Basement Area	0	0	0
8. Building Support Area	0	0	720
Total	13	19	
Subtotal			9940
15% Gross-Up Factor (Common circulation, structure, shafts, etc.) (Use additional 5% Gross-Up Factor for Renovation)			1491
Total Main Building Area			11431
9. Physical Training Tower OPTIONAL- if Space is available	0	0	0

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg#		
1. Public Areas- COLD ZONE								
Public Vestibule & Lobby	Lobby			1	100		100	*Front Counter
	Vestibule			1	80		80	*Training Room
	Waiting Areas						0	*Conference Room
	Intercom/Buzzer						0	*Public Toilet
	After Hours 911 Phone						0	*Command Room
	Display Area / Bulletin Boards						0	No Blood Draws; now blood drives at this station
	Baby Drop Off Vest.						0	
	Brochure racks						0	
	Subtotal:						180	
Front Window	Counter Linear Ft ()						0	Into Command Room
	Subtotal:						0	
Community Room/Training Room/ EOC	Community Room	50-75		0	1,500		0	FD training uses Lunch Room Area
	White Board						0	Deleted 082922
	Projection Screen						0	
	Projector						0	
	A/V Cabinet						0	
	Podium						0	
	Tables						0	
	Chairs						0	
	Subtotal:						0	
Warming Kitchen	Pre-function area			0	100		0	
	Coffee Bar						0	
	Counter- Base/Wall						0	
	Cabinets						0	
	Coat Closet						0	
	Refrigerator						0	
	Subtotal:						0	

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg#		
PSAP	Room			0	100		0	
	One station							
	Subtotal:						0	
Training Room Furniture Storage	Closet			0	120		0	deleted 082922
	Subtotal:						0	
Community Room Storage	Closet			0	100		0	deleted 082922
	Subtotal:						0	
EOC Storage	Closet			0	100		0	deleted 082922
	Subtotal:						0	
EMS Storage	Closet			0			0	deleted 082922
	Subtotal:						0	
Public Restrooms - Womens	Mens Restroom			0	200		0	deleted 082922
	Toilet							
	Urinal							
	Lavatories (w/ ADA)						0	
	Subtotal:						0	
Public Restrooms - Mens	Mens Restroom			0	200		0	deleted 082922
	Toilet						0	
	Urinal						0	
	Lavatories (w/ ADA)						0	
	Subtotal:						0	
Unisex Restroom	ADA Bathroom			0	77		0	one unisex 082922
	Urinal							Deleted 102022- use RR at stair if needed
	Toilet							
	Subtotal:						0	
Net Area							180	
35% Internal Circulation Factor							63	
Subtotal: Public Areas		0	0				243	

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
2. Suppression Operations COLD ZONE								
Shift Command Office- 1-Lt; 3-Sgts.	Private Office	4	4	1	156		156	1 file cabinet
	one workstation						0	Storage space for 4
	1-four drawer file						0	1 for future officer
	Equipment:							082922 one office for all
	Computer						0	
	Multifunction printer						0	
	Subtotal:						156	
Shift Command Shower Room	separate rest room ?			1	100	07.07a	100	per 082922
							0	102022 If Possible; not a Must Have
							0	
	Subtotal:						100	
Station Officer Sleep Room	Sleep Room			1	100	07.04	100	deleted 082922
	2'x3'x6' Locker						0	102022 SMALL WORKSTATION IN LIEU OF DESK
	Bed						0	
		Subtotal:						100
EXISTING Watch Room	Cubical			1	180		180	Existing. 082922- three workstations- one for backup plus a study room
	Work Area						0	
	Desk						0	
	File Cabinets						0	
	Table w/ Chairs						0	
	Radio Equipment						0	
		Subtotal:						
Net Area							536	
35% Internal Circulation Factor							188	
Subtotal: Suppression Operations- Cold		4	4				724	

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
3. Staff Commons COLD ZONE								
Firefighters' Sleep Rooms	Private Room	3	5	5	100	7.04	500	would like to have windows
	Bed						0	Three Armoires per room
	Desk						0	Windows if possible
	Subtotal:						500	102022- DESK
Firefighters Full Time	Private Room	6	10				0	3 shifts
	Subtotal:						0	
Firefighters Part Time	Private Room	0	0				0	
	Subtotal:						0	
Firefighters' Storage Area	Storage for extra pillows/bedding			1	100		100	*Firefighters' Sleeping Quarters
	Subtotal:						100	
Library/Study Area	Area			0	100		0	2 cubicles/work station
	Desk for Computer & Writing						0	DELETED 102022- USE DESK IN SLEEP ROOM
	Four-shelf bookshelf						0	
	Table w/ 4 chairs						0	
	Subtotal:						0	
Day Room	Day Room			1	300		300	Dream Seats for furniture
	Recliners	6					0	NO Speaker
	Chair						0	
	Table						0	
	Telephone						0	
	TV						0	
	Desk						0	
	Book case						0	
Subtotal:						300		
Exercise Room- Use Lower Level Space	Exercise Room			1	650		650	Exposed ceiling
	Universal Gymnasium						0	better HVAC
	Secure Storage						0	Possible extention to the outdoors
	Athletic flooring						0	
	Exercise Equipment:							
	Exercise machines						0	SAME size as existing
	Treadmills						0	
	Free Weights						0	
Subtotal:						650		

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
Kitchen	Kitchen			1	350		350	*Locker Rooms
	Food Pantry	1		1	80		80	Closet for pantry
	Snack Bar & Food Prep Counter						0	Similar to Troy kitchen
	Plastic Laminate						0	Stainless Steel Countertops
	Cabinets						0	2 oven flat top commercial range
	Countertop w/ sink						0	Island in new kitchen
	Refrigerators	2					0	
	Commercial-grade Microwave	1					0	with covered patio - east facing?
	Commercial Range Class 1	1					0	
							0	
	Dishwasher	1					0	
		Subtotal:						430
Dining Room	Dining Room			1	200		200	Dream Seats for furniture
	Table	1					0	+ bar stools
	Chairs	6					0	REDUCED TO 6 - 102022
	Sideboard						0	
		Subtotal:						200
Individual Shower / Changing Rooms OFF OF HALLWAY	Toilets w/ ADA			2	100	7.07.a	200	*Locker Rooms
	Lavatories						0	*Exercise Room
	Showers						0	
		Subtotal:						200
Locker Room	Locker Room			0	15		0	*Apparatus Bay
	2'x3'x6' Lockers w/ sloped top	18					0	*USE ARMOIRS IN SLEEP ROOMS
	6x2=12+6						0	102022
	Subtotal:						0	*Living Quarters
Net Area							2,380	
25% Internal Circulation Factor							595	
Subtotal: Staff Commons- Cold		9	15				2,975	

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
4. WARM ZONE								
Turn Out Gear Room WARM ZONE	Gear Room Mesh Open Racks (2'x2') 18 Subtotal:			0	300		0 0 0	102022- USE ALCOVE ON WEST WALL Verify Room Size
Extra Turn Out Gear Storage	Gear Room Open area Subtotal:				0		0 0 0	In storage room on mezzanine Daily shoe storage
Washing Area/Laundry- WARM ZONE	Room Residential Washer & Dryer Laundry Tub Gas or Electric Dryer Exhaust Duct Subtotal:			1	300		300 0 0 0 0 0 300	*Apparatus Bay- 102022- REDUCE SIZE
Decontamin. Area- WARM ZONE	Room Gear Washer/Extractor 1-45 PPE Washer 1 Gear Dryer 3- Compartment Stainless Steel Sink Floor Drain						0 0 0 0 0 0 0	*Apparatus Bay dual hose and gear dryer 45 lb extractor- 2 sets Included in the wash area Station 3 has ger and hose dryer; ari dryer
Personal Decon. Shower WARM ZONE	Shower Area Showers 3 Sauna 4 person Lockers 18 SMALL Washer/Dryer 1 Subtotal:			1	250		250 0 0 0 250	102022 REDUCE SIZE *Apparatus Bay

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
EMS Supplies/Storage WARM ZONE	Area Storage Space w/ Locking Fence Secure			1	100		100	*Apparatus Bay
	Subtotal:						0	NO Oxygen Tank Storage ON TRUCKS
							0	
							0	
							100	
Net Area							650	
20% Internal Circulation Factor							130	
Subtotal: Warm Zone		0	0				780	

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
5. Apparatus Bay- HOT ZONE								
Apparatus Bay (18' wide)	Apparatus Bay			1	3,250		3,250	Existing 3-Bay Space 65' x 50' Utilize Half-Bay for Support Space (16' x 40' +/-)
	14'x14' Bi-fold / Overhead Doors						0	
	Engine						0	
	Rescue						0	
	Utility Truck						0	
	Technical Rescue Truck and Trailer						0	
	Pumper						0	
	Aerial (future)						0	
	Spare Engine (potential)						0	
	Compressed Air Lines over each bay						0	
	Hose Bibs & Reels						0	
	Space Ventilation						0	
	Vehicle Exhaust Connection						0	
							0	
							0	
	Subtotal:						3,250	
Hose Drying, Washing and Storage	Room			1	180		180	Existing 12' x 15'
	Hose Tower w/ platform						0	
	Mechanical Dryer	1					0	
	Dehumidification Room						0	hose storage to be in separate room
	Storage Racks for Hoses						0	oner good size rack on rollers; drain
	Exhaust Fan						0	
	Coiling Table						0	
	Hose Washer						0	
	Floor Drain						0	
	Water Supply						0	
	Subtotal:						180	

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
SCBA Cascade Room	Room			1	100		100	*Apparatus Bay
	Oxygen Filling Station	0					0	
	Oxygen Bottles Storage only	0					0	Oxygen in EMS Room
	Air Bottles Storage						0	
	Working Counter						0	Separate Room for clean room
	Writing Desk						0	
	Lockable Cabinets w/ Sink						0	
	Work Counter w/ Vices						0	
	Subtotal:						100	
Hot Zone Toilet	Area			1	56		56	moved from building support
	Toilet						0	
	Shower						0	
		Subtotal:						56
Net Area							3,586	
20% Internal Circulation Factor							717	
Subtotal: Apparatus Bay- HOT		0	0				4,303	

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
6. Maintenance and Support								
Shop - Tools/Parts "TOOLBOX"	Area 15 x 30 suggested			1	100		100	in charge of putting Trucks in service needs
	Electronic						0	All tool storage at Station 1
	SCBA						0	102022 NOT A PRIORITY-100' IF AVAILABLE
	Subtotal:						100	
Outdoor yard Storage	Snowblower, etc.			1	100		100	102022 NOT A PRIORITY-100' IF AVAILABLE
							0	
							0	
	Subtotal:						100	
Net Area							156	
25% Internal Circulation Factor							39	
Subtotal: Maintenance and Support		0	0				195	

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
7. Optional Mezzanine/Basement Area								
Mezzanine Area	Optional			1			0	*Apparatus Bay
	Subtotal:						0	
Basement Area	Optional			0			0	*Apparatus Bay
	Subtotal:						0	
Net Areas							0	
20% Internal Circulation Factor							0	
Subtotal: Optional Mezzanine/Basement Area		0	0				0	

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
9. Building Support Areas								
Electrical Room	Room			1	150		150	includes Server Rack
	Subtotal:						150	
Mechanical Room	Room			1	150		150	
	Subtotal:						150	
Bulk Storage	Room			1	100		100	
	Accessible Ceiling Space						0	
	Climate-controlled						0	
	Open shelves						0	
	Subtotal:						100	
Server Room	Room						0	in electrical room
	Equipment:							
	911 Server						0	
	UPS unit						0	
	Equipment racks						0	
	Subtotal:						0	
Central Supply Storage Room	Storage Room			1	100		100	Possible Room 30x16
	Office in room							No central supply in Township; if possible FD storage at this location
	Subtotal:						100	102022- 100SF IF NEEDED Roll up door

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
Custodian's Storage	Storage Room			1	100		100	102022 USE EXISTING CLOSET
	Misc. Item Storage						0	
	Work Bench							
	Double door entryway							
	Subtotal:						100	
Cold Zone Stair from Lower Level to Main Level				0	175		0	Existing 3'8" wide stair
							0	102022 USE EXISTING STAIR;
		Subtotal:						0
Net Area							600	
20% Internal Circulation Factor							120	
Subtotal: Building Support Areas		0	0				720	

Space	Description	Staff		Space Needs			Net Sq. Ft.	Comments / *Adjacencies
		Current	Planned	Qty	Size	Reference Pg #		
8. Physical Training Tower								
Training Tower	Optional			0	400		0	*Apparatus Bay
	Subtotal:						0	
Props Storage	Optional			0	100		0	*Apparatus Bay
	Subtotal:						0	
Net Areas							0	
25% Internal Circulation Factor							0	
Subtotal: Physical Training Tower		0	0				0	

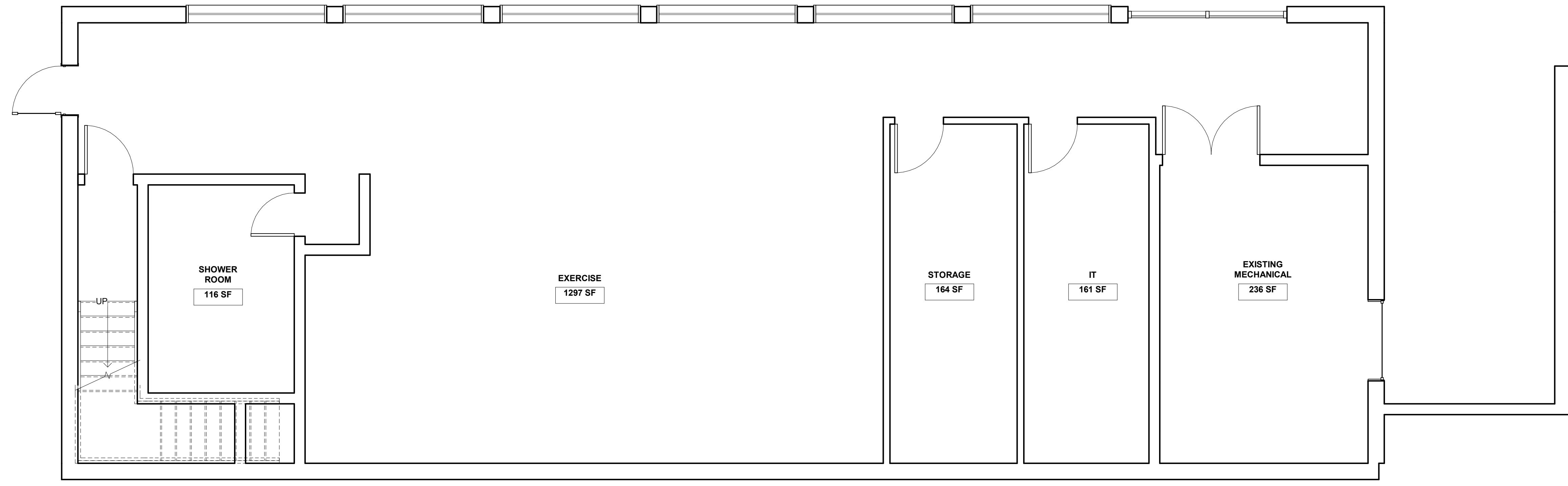
Parking Requirements:	Spaces
Peak demand for secure parking	
Secure Impound parking needs	
Other outdoor parkin	
Staff Parking	
Public (Visitor) Parking	
Total Spaces	0

Add hydrant to site

C. REDSTONE ARCHITECTS, INC. 2022
 NOTICE: THIS DRAWING AND THE DESIGN ARE THE PROPERTY OF THE ARCHITECT AND NO ALTERATIONS OR TRANSFERS OF WORK ARE PERMITTED UNLESS WRITTEN APPROVAL IS GRANTED BY REDSTONE ARCHITECTS, INC. VIOLATORS WILL BE PROSECUTED TO THE FULLEST EXTENT OF THE LAW.

NOTE:
 DO NOT SCALE PRINTS.
 USE ONLY FIGURED DIMENSIONS.

No.	Description	Date



① LOWER LEVEL
 1/4" = 1'-0"

SEAL / SIGNATURE
 DATE
 PROJECT MANAGER/ARCHITECT Checker
 DESIGNER/DRAFTSPERSON Author

West Bloomfield Fire Station #1
 4610 Orchard Lake Rd.
 West Bloomfield Twp., MI 48323

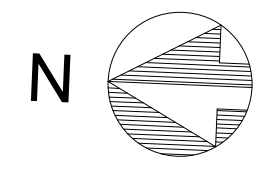
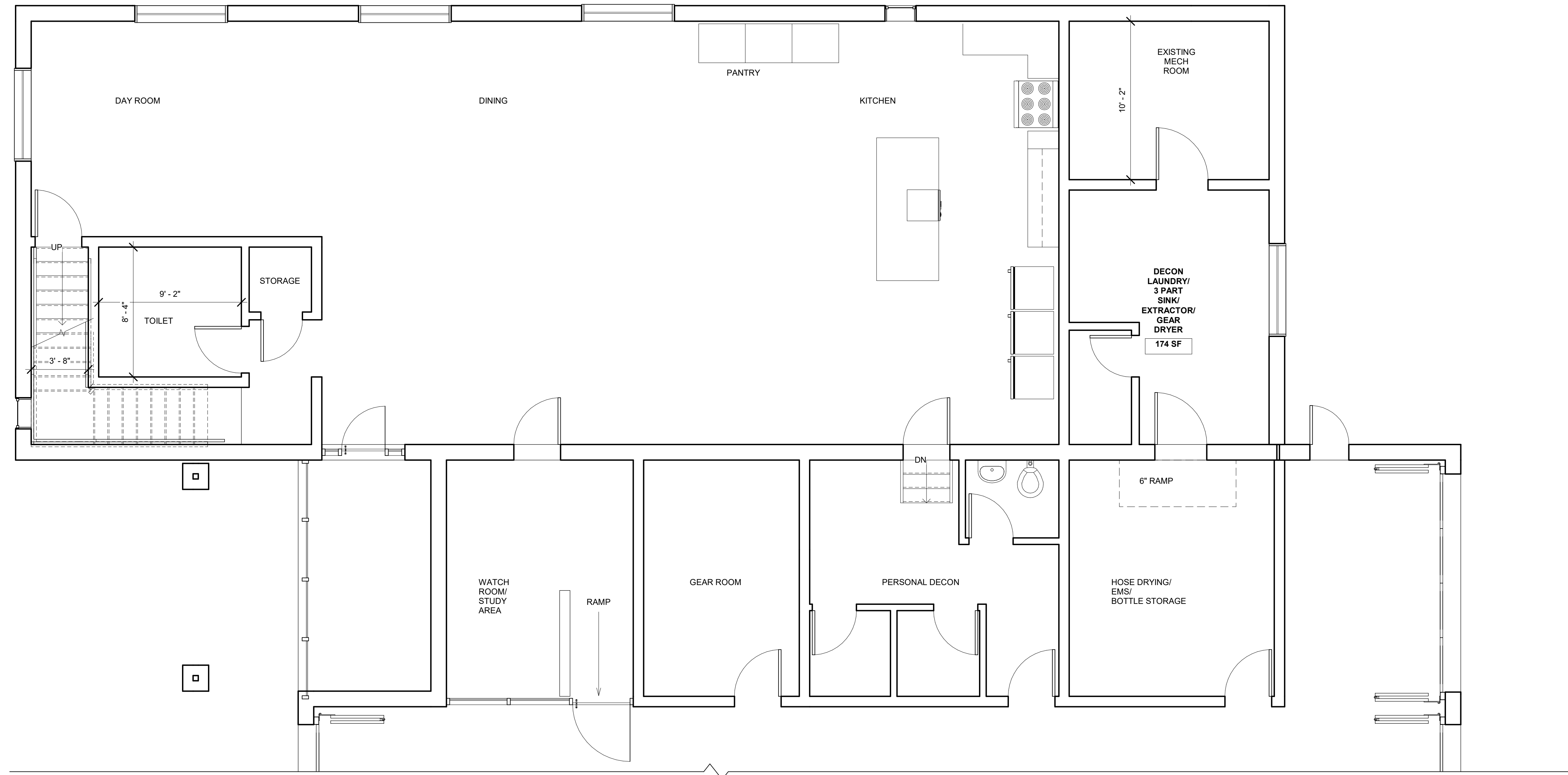
SHEET TITLE
**OPTION #1
 LOWER LEVEL**

DATE 02/08/2023 SHEET NO. A101
 PROJECT NO. 3698.00

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NOTE:
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 USE ONLY FIGURED DIMENSIONS.

No.	Description	Date



① MAIN LEVEL
 1/4" = 1'-0"

SEAL / SIGNATURE

DATE
 PROJECT MANAGER/ARCHITECT Checker
 DESIGNER/DRAFTSPERSON Author

West Bloomfield Fire Station #1
 4610 Orchard Lake Rd.
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SHEET TITLE
OPTION #1 MAIN LEVEL

DATE: 02/08/2023 SHEET NO.:
 PROJECT NO.: 3698.00 **A102A**

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 Bloomfield Hills, MI 48302-1008
 Phone: 248-418-0990
 Fax: 248-418-0999
 www.redstonearchitects.com

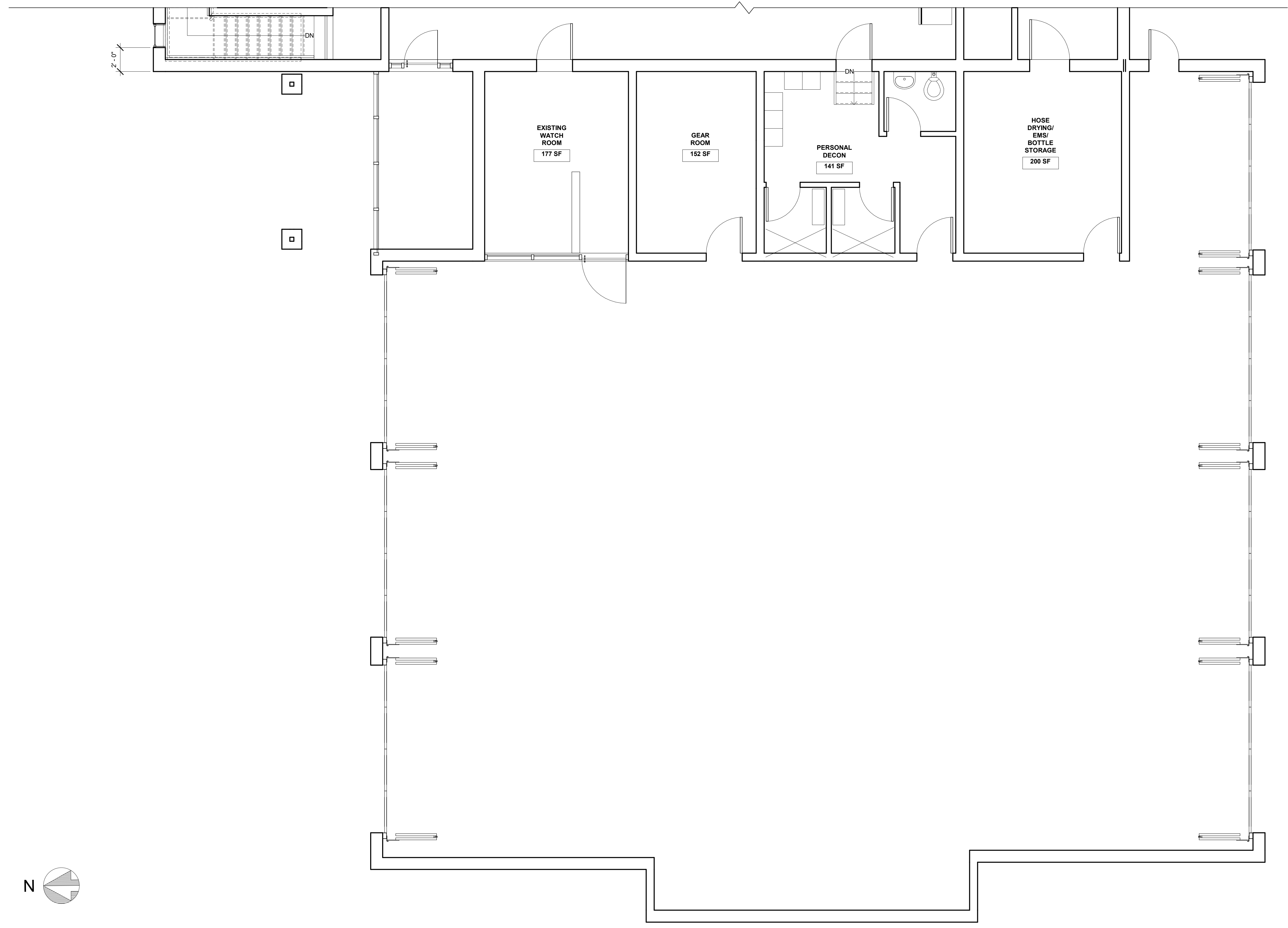
SEAL / SIGNATURE

DATE
 PROJECT MANAGER/ARCHITECT Checker
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SHEET TITLE
OPTION #1 APP. BAY

DATE: 02/08/2023 SHEET NO.:
 PROJECT NO.: 3698.00 **A102B**



2'-0"



1 APPARATUS BAY
 1/4" = 1'-0"

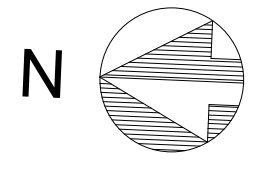
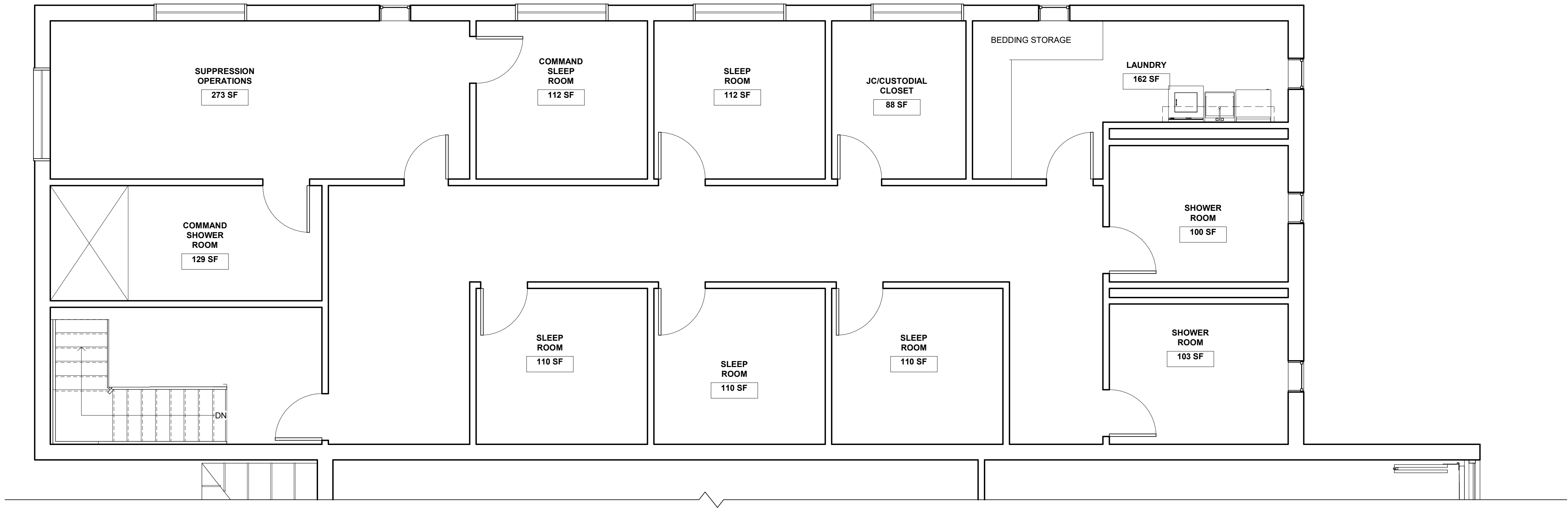
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① UPPER LEVEL
 1/4" = 1'-0"

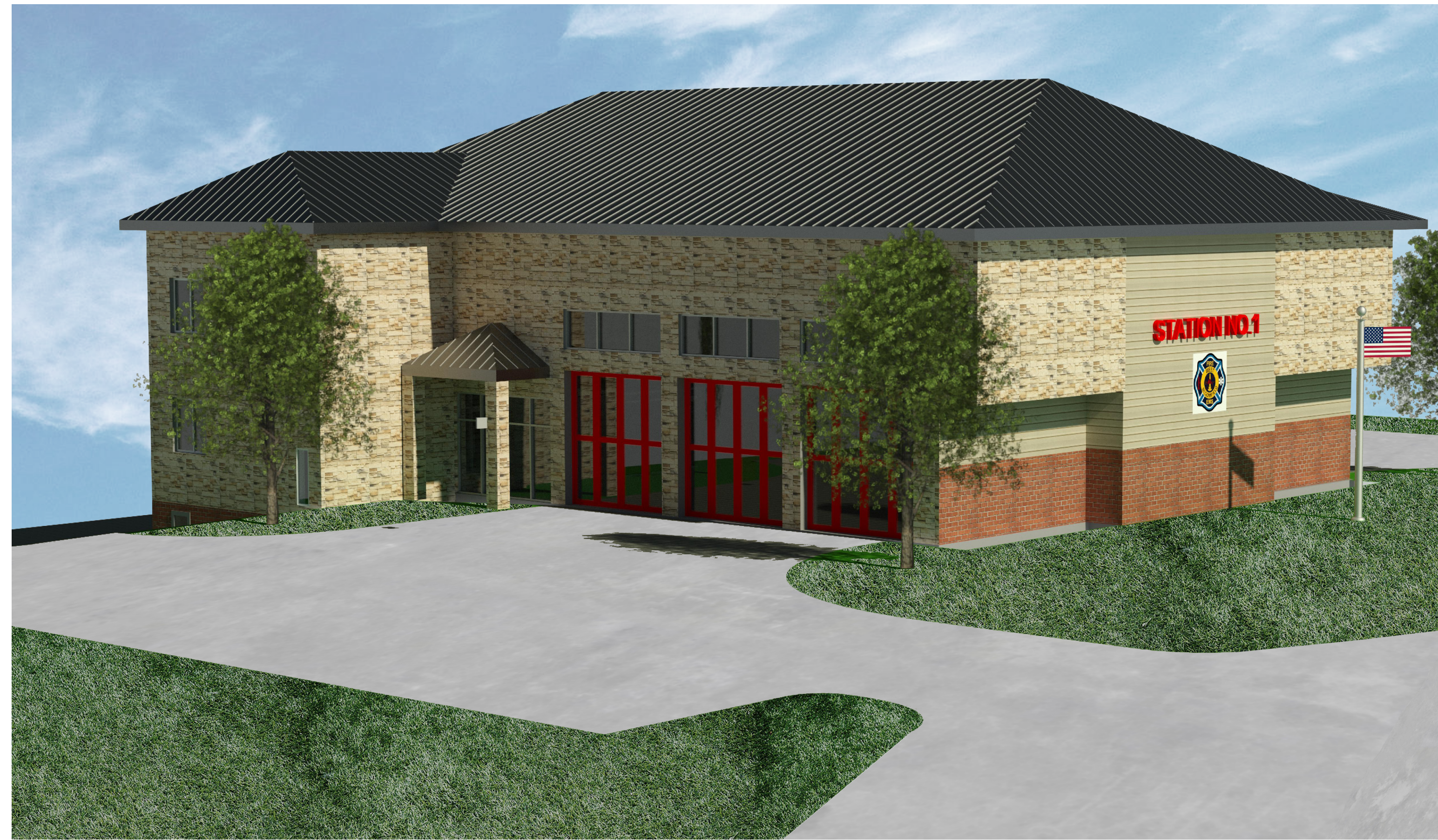
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SHEET TITLE
**OPTION #1
 UPPER LEVEL**

DATE 02/08/2023 SHEET NO.
 PROJECT NO. 3698.00 **A103**



VIEW TO SOUTHEAST



VIEW TO SOUTHWEST

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PROJECT MANAGER/ARCHITECT Checker
 DESIGNER/DRAFTSPERSON Author

**West Bloomfield
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SHEET TITLE
**OPTION 1
 VIEWS**

DATE
 02/08/2023
 PROJECT NO.
 3698.00

SHEET NO.
VIEW 1

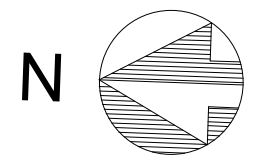
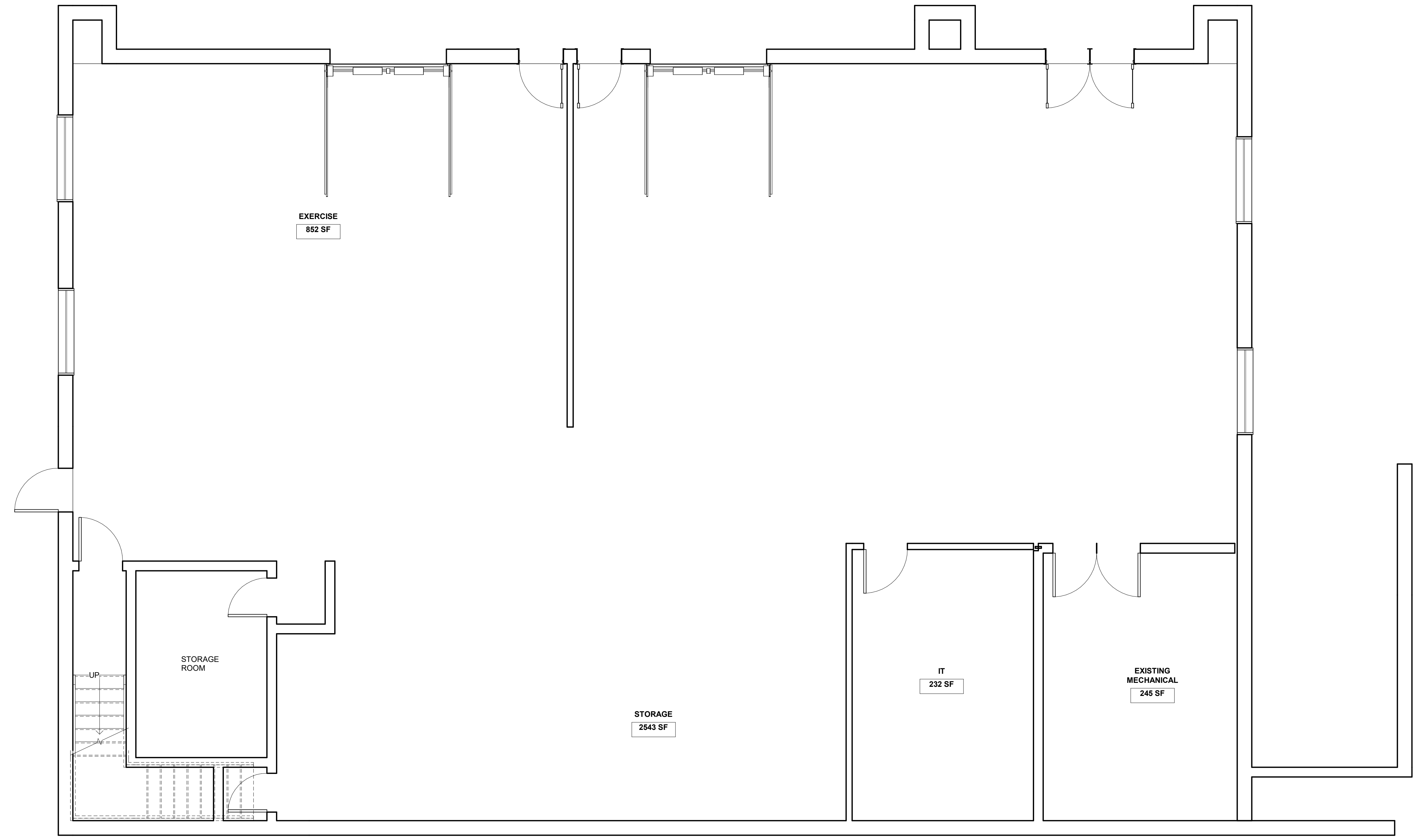
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① LOWER LEVEL
 1/4" = 1'-0"

SEAL / SIGNATURE
 DATE
 PROJECT MANAGER/ARCHITECT Checker
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West Bloomfield Fire Station #1
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SHEET TITLE
**OPTION #2
 LOWER LEVEL**

DATE 02/08/2023 SHEET NO. A101
 PROJECT NO. 3698.00

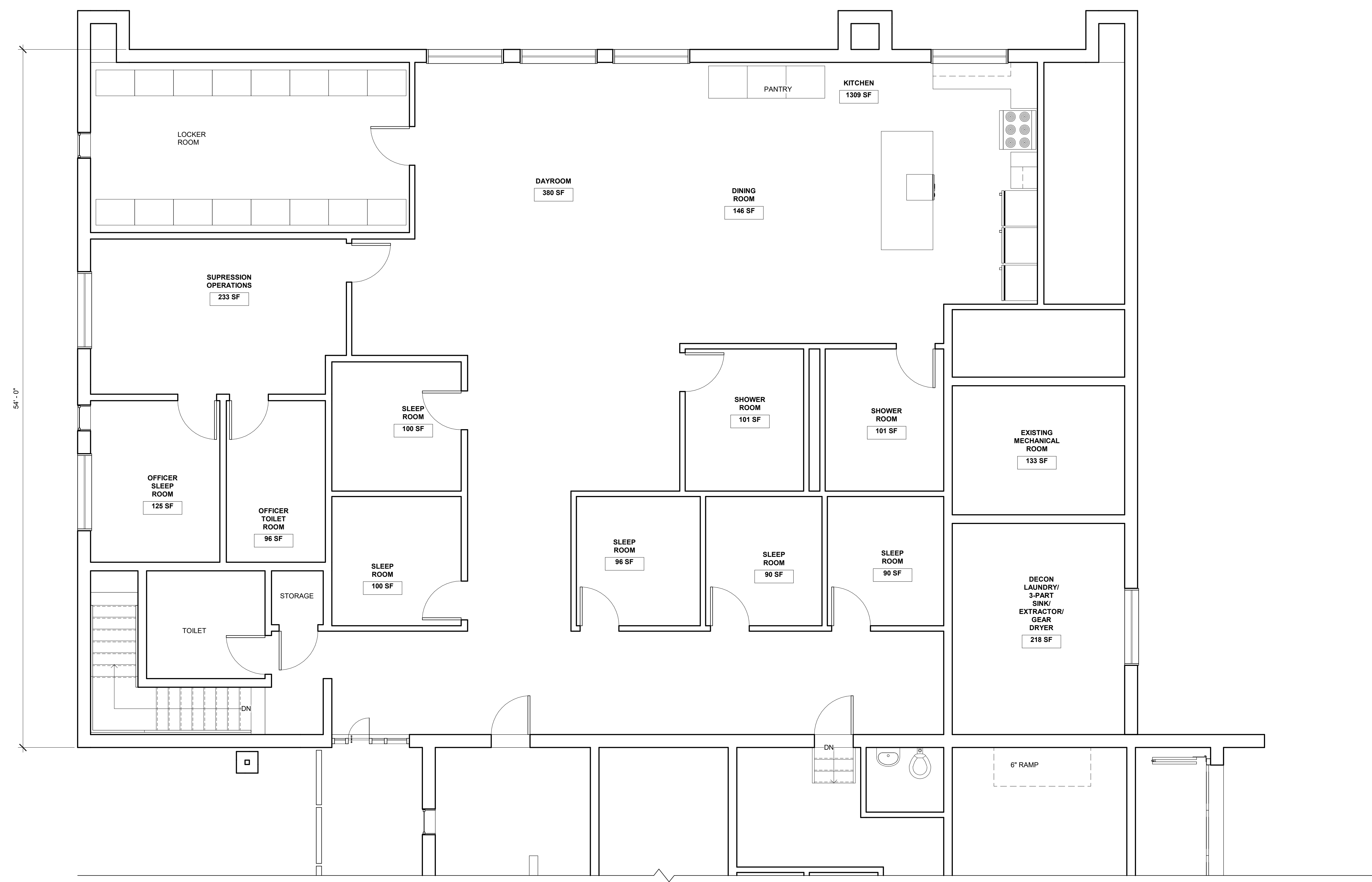
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54' - 0"



① MAIN LEVEL
 1/4" = 1'-0"

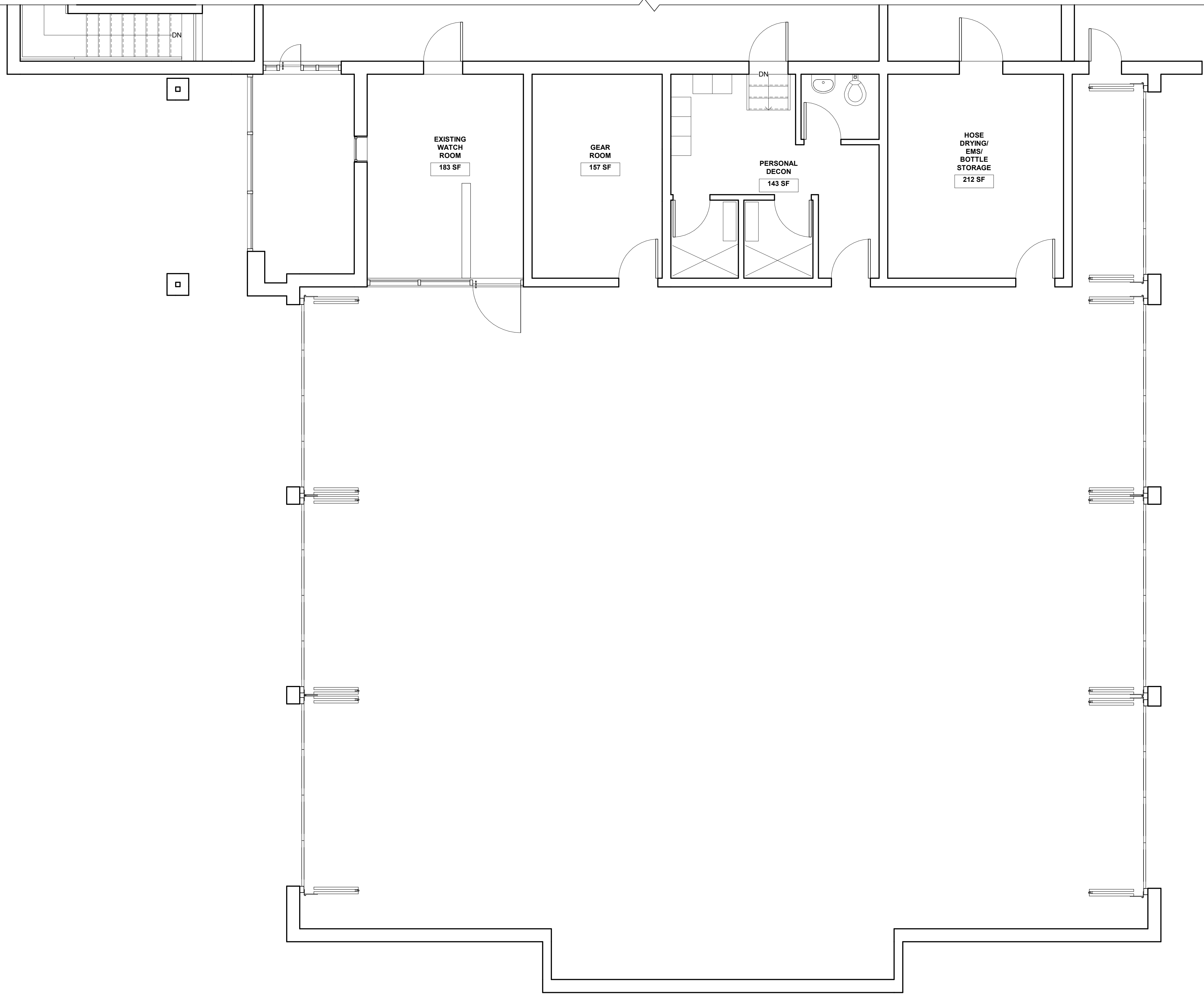
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DATE
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SHEET TITLE
**OPTION #2 MAIN
 LEVEL**

DATE 02/08/2023 SHEET NO.
 PROJECT NO. 3698.00 **A102A**



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SHEET TITLE
**OPTION #2 APP.
 BAY**

DATE 02/08/2023	SHEET NO. A102B
PROJECT NO. 3698.00	



① APPARATUS BAY
 1/4" = 1'-0"



VIEW TO SOUTHEAST



VIEW TO SOUTHWEST

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SHEET TITLE
**OPTION 2
 VIEWS**

DATE
 02/08/2023
 PROJECT NO.
 3698.00

SHEET NO.
VIEW2